

FY 2007 Performance and Accountability Report



On the Cover

The cover illustrates activities related to the International Polar Year, which is an intense scientific campaign to explore new frontiers in polar science, improve our understanding of the critical role of the polar regions in global processes, engage the public in polar discovery, and help attract the next generation of earth scientists.

Participation in the International Polar Year has allowed the USGS to celebrate this enduring tradition with the rest of the global polar research community and to renew our commitment to polar science at a time when the world is focused on the extraordinary changes happening in these regions.



Performance and Accountability Report

Limited copies of the FY2007 Performance and Accountability Report were printed in black and white.

The FY2007 Performance and Accountability Report is available at: http://www.doi.gov/pfm/bur_annual_rpt/index.html.

How to Read This Report: From Mission to Measurement

The U.S. Geological Survey (USGS) FY2007 Performance and Accountability Report (PAR) will reach many people who have specific needs for the information it contains. We have designed our presentation to serve multiple audiences, with varied approaches, points of view, and levels of interest.

Our PAR contains an introduction, three sections, and an appendix. Combined, these elements provide an accurate and thorough accounting of the USGS stewardship of critical resources and services to the American people.

The [introduction](#) contains a letter from our Director highlighting our mission, accomplishments, reliability of financial and performance data, and Federal Manager's Financial Integrity Act (FMFIA) assurances, followed by a depiction of the bureau at a glance.

[Section I: Management's Discussion and Analysis](#) is a high-level overview of the USGS's performance in FY2007. It is designed for the public, legislators, officials from Federal, State, and local governments, and other interested parties.

After a brief discussion of our mission and organizational structure, Section I summarizes our performance for the year by highlighting results of our most important performance measures and discusses our procedures to ensure their relevance and reliability, along with a description of difficulties experienced in measuring performance.

Section I also discusses our financial statements, including a discussion of our key financial related measures and stewardship information.

In addition, Section I presents USGS's compliance with legal and regulatory requirements, such as the FMFIA, Federal Financial Management Improvement Act, and the President's Management Agenda.

Section I also shares some forward-looking information on the current and future challenges facing USGS, and discloses limitations to our financial statements.

[Section II: Performance Data and Analysis](#) presents an evaluation of our performance budget, the USGS's performance results in detail, and program evaluation and procedures undertaken to validate and verify our performance results.

This will be most useful to Congressional members and staff, program examiners with the Office of Management and Budget, analysts with the Office of the Inspector General, the Government Accountability Office, and interested citizens and customers.

[Section III: Financial Information](#) will interest anyone who is concerned with tracking the bureau's financial performance.

This section contains an assessment of our consolidated financial statements by an independent certified public accounting firm. The objective of a financial statement audit is to determine whether the consolidated financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the consolidated financial statements. An audit also includes an assessment of the accounting principles used and significant estimates made by management, as well as an evaluation of the overall consolidated financial statement presentation.

Section III also presents consolidated financial statements, footnotes, required supplemental information, and required supplemental stewardship information.

The [Appendix](#) contains a list of acronyms.

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Message from the Director



By integrating our diverse scientific expertise, the USGS is able to understand complex natural science phenomena and provide timely, unbiased scientific products that lead to solutions. To respond to evolving national and global priorities, the USGS must periodically reflect on, and optimize, its strategic directions. For this reason, the USGS created the report “Facing Tomorrow’s Challenges—U.S. Geological Survey Science in the Decade 2007–2017,” the first comprehensive science strategy since the early 1990s to examine USGS science goals and priorities.

The six science directions proposed in this strategy are the following:

- understanding ecosystems and predicting ecosystem change;
- climate variability and change;
- energy and minerals for America’s future;
- a national hazards, risk, and resilience assessment program;
- the role of environmental and wildlife in human health; and
- a water census of the United States.

The development of this science strategy comes at a time of global trends and rapidly evolving societal needs that pose important natural-science challenges.

This Performance and Accountability Report for fiscal year (FY) 2007 highlights examples of USGS science that fulfill our science strategy and mission, and provides fundamental information to address America’s needs. These accomplishments, some of which are featured below, demonstrate the extent and value of USGS science:

Climate change is an issue of increasing public concern. The USGS plays a key role within the climate science community by providing on-the-ground science information from our numerous observation and monitoring networks and process-based research activities. These observations and related research efforts are essential components for building climate models. USGS findings and data provide critical information to decisionmakers regarding many important climate-related issues.

The USGS 2007 Congressional Briefing Series, “USGS Climate Change Science: Exploring the Past, Observing the Present, Forecasting the Future,” plays an influential role in increasing Congressional awareness of the role and relevance of USGS science. The briefings were the following: Climate Change—Impacts on Water Resources; Climate Change—The Energy Mix; Abrupt Climate Change in Our Lifetime—What Would It Mean?; and Climate Change—Impacts on Biodiversity, Ecosystems, and Human Health. The briefings were well attended by Congress, USGS partners, the public, and other government and nongovernment organizations.

The USGS has improved knowledge on the status of three polar bear subpopulations, projected future numbers of polar bears in relation to sea ice, and integrated the information into a range-wide assessment of polar bear status under scenarios of future climate change. USGS information is now being considered within the context of the Fish and Wildlife Service’s 1-year review. The Service will analyze it and other information provided by scientists, government agencies, and the public in order to arrive at an informed and scientifically justifiable decision whether to list the polar bear as a threatened species under the Endangered Species Act.

USGS participation in the International Polar Year 2007–2008, with scientists from more than 60 countries, allowed us to renew our commitment to polar science at a time when the world is focused on the extraordinary changes in these regions. The USGS participated in activities as diverse as the following:

- topographic mapping and geodetic control in Antarctica;
- satellite and ground-based monitoring of glaciers and ice caps;
- research on movements, distribution patterns, and adaptation of polar wildlife;

- estimates of circum-Arctic energy resources;
- monitoring changes in permafrost temperatures; and
- the development of paleoclimatic records from polar ice cores.

These scientific studies will help improve our understanding of polar change and its effects on Earth's ecosystems and people.

The USGS is currently in the process of systematically studying and assessing the entire Arctic for undiscovered oil and gas resources; the USGS assessment of undiscovered oil and gas resources in the East Greenland Rift Basins Province is the first completed section of this project. Once the Circum-Arctic assessment is complete, scientists will better understand what percentage of the world's resources occur in the Arctic.

Three premier USGS scientists were recognized by the Afghanistan government for their rehabilitation work in Afghanistan. President Hamid Karzai of the Islamic Republic of Afghanistan awarded former USGS Acting Director and Associate Director for Geology P. Patrick Leahy and USGS Regional Specialist for the Asia and Pacific Region Jack Medlin the Ghazi Mir Bach Khan Superior State Medal for their leadership in helping to develop and implement a 5-year plan to revitalize the natural resources sector in Afghanistan. USGS International Program Specialist and Senior Advisor for Natural Resources on the Afghanistan Reconstruction Group in Kabul, Afghanistan, Said Mirzad, received the Franklin Award from the Department of State, the Medal for Outstanding Public Service from the Secretary of Defense, and the Wazir Akbar Khan Medal, presented by Father of the Nation and former King of Afghanistan, Zahir Shah. USGS scientists have also been training scientists in Afghanistan on the latest scientific methods and technology so that they will be able to sustain and further develop the new natural resources assessments that the USGS has provided.

As part of the 5-year plan to assist in the reconstruction efforts of Afghanistan, the USGS was commissioned by the U.S. Agency for International Development and the Government of Afghanistan to develop a preliminary Seismic Hazard Map of Afghanistan. This report enables officials to make informed decisions about the designs and locations of critical structures, such as power plants, dams, pipelines, and hospitals, and will facilitate growth and development throughout Afghanistan by designing facilities that can better withstand strong earthquakes.

USGS scientists provided notification of several earthquakes around the world to enhance public safety and reduce losses through effective forecasts based on the best possible scientific information. These include the magnitude 8.4 earthquake on September 12, 2007, which struck Sumatra, Indonesia; a magnitude 8.1 earthquake on April 1, 2007, below the seafloor adjacent to the Solomon Islands in the southwest Pacific Ocean; a magnitude 8.1 undersea earthquake on January 13, 2007, east of the Kuril Islands and northeast of Japan; and a magnitude 8.3 earthquake on November 15, 2006, which struck the Kuril Islands near Japan and Russia.

In the United States each year, natural hazards cause hundreds of deaths and cost tens of billions of dollars in disaster aid, disruption of commerce, and destruction of homes and critical infrastructure. Through the USGS Multi-Hazards Demonstration Project, the USGS is helping to further the understanding of hazard possibilities, vulnerable environments, community responses, and associated risk-reduction options for Southern California. This project focuses on earthquakes, floods, wildfires, landslides, volcanos, coastal erosion, and tsunamis.

When a volcano erupts, the results can be enormous, especially since more and more people live, work, play, and travel in volcanic regions. USGS scientists monitor the activity of several restless and erupting U.S. volcanoes to ensure that people on the ground and in the air have accurate hazard information. The USGS monitored the August 2007 eruption of Pavlof Volcano in Alaska; unrest at Augustine, Korovin, Fourpeaked, Veniaminof, and Cleveland volcanoes in Alaska; how changes in the eruptive behavior of Kilauea Volcano could impact populated areas and infrastructure near Hilo, Hawaii; the ongoing eruption of Mount St. Helens in Washington; and unrest at Anatahan and Pagan volcanoes in the Northern Mariana Islands, where military and commercial aviation are at risk.

The USGS joined with earthquake professionals, business and community leaders, emergency managers, and others to organize "Dare to Prepare," a campaign to raise earthquake awareness and encourage readiness in Southern California. This year is the 150th anniversary of the last great San Andreas earthquake in Southern California, a magnitude 7.9 earthquake that shook the entire region. Scientists, emergency managers, and others are concerned about the potential for another great earthquake on the San Andreas Fault and fear major loss of life and property unless people take action now in order to be ready.

Message from the Director

USGS scientists worked with the Centers for Disease Control and Prevention and the University of Nevada to provide State and local officials with data documenting the occurrence of elevated polonium-210 levels in 17 wells in Lahontan Valley, near the town of Fallon, Churchill County, Nev. The USGS is collaboratively working to provide citizens of the Lahontan Valley with new information about ground water and the best possible advice on how they can protect their health.

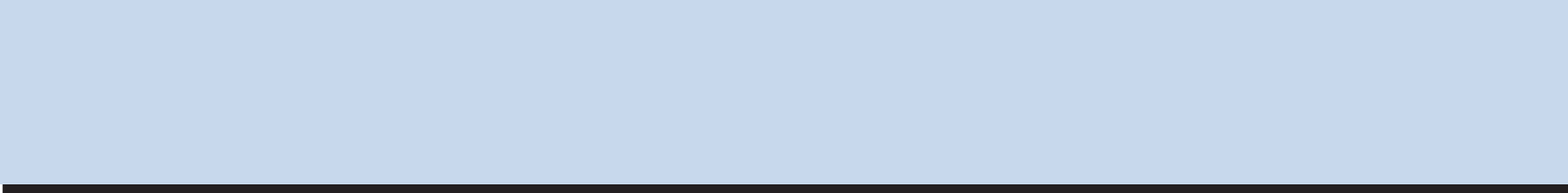
Twelve years of research by USGS scientists helped lead to the approval by the Food and Drug Administration of the first waterborne drug for fish diseases in more than 20 years. The drug, 35% PEROX-AID®, a product of EKA Chemicals Inc, in Marietta, Ga., was approved for use for three diseases of freshwater fish and their eggs that, left untreated, cause significant losses to the \$1 billion (2006) U.S. aquaculture industry.

The accomplishments in this report follow the six science directions proposed in the new USGS science strategy and fulfill the USGS mission to provide reliable scientific information to describe and understand the Earth; minimize loss of life and property from natural disasters; manage water, biological, energy, and mineral resources; and enhance and protect our quality of life.

USGS science is increasingly important as societal needs and global trends evolve, posing important natural-science challenges. The emergence of a global economy affects the demand for all resources. The last decade has witnessed the emergence of a new model for managing Federal lands. The U.S. Climate Change Science Program predicts that the next few decades will see rapid changes in the Nation's and the Earth's environment. The natural environment continues to pose risks to society in the form of volcanoes, earthquakes, wildland fires, floods, droughts, invasive species, variable and changing climate, natural and anthropogenic toxins, and animal-borne diseases that affect humans. The use of, and competition for, natural resources on the global scale, and natural threats to those resources, have the potential to impact the Nation's ability to sustain its economy, national security, quality of life, and natural environment.

The USGS will continue to respond to these national priorities and global trends and is honored to serve the Nation and help understand the complexity of the Earth's natural, physical, and life systems.

Mark D. Myers
Director
October 2007



The Bureau

History and Enabling Legislation

The USGS, a bureau within the Department of the Interior (Department and/or DOI), was created by an act in the final session of the 45th Congress in 1879 for the “classification of the public lands, and examination of the geological structure, mineral resources, and products of the national domain.”

Mission

The USGS serves the Nation by providing reliable scientific information to describe and understand the Earth; minimize loss of life and property from natural disasters; manage water, biological, energy, and mineral resources; and enhance and protect our quality of life.

Strategic Goals

Resource Protection:	Protect the Nation’s natural, cultural, and heritage resources
Resource Use:	Manage resources to promote responsible use and sustain a dynamic economy
Serving Communities:	Safeguard lives, property and assets, advance scientific knowledge, and improve the quality of life for communities we serve

Organization

Regions:	Eastern, Central, and Western
Scientific Disciplines:	Biology, Geology, Geography, and Water
Support Entities:	Geospatial Information, Facilities, and Science Support

Employees

USGS has scientists, technicians, and support staff in every State and several foreign countries with a total of approximately 8,400 employees.

Budget

The Bureau’s FY2007 budget, including transferred and supplemental appropriations, was \$994 million.

Internet

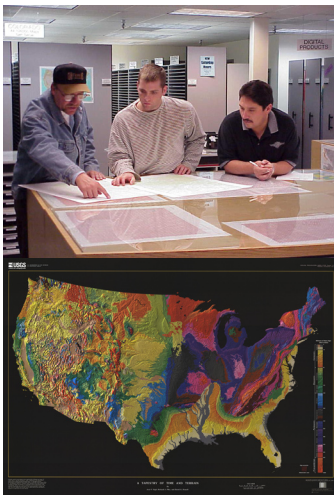
The Bureau’s Internet address is <http://www.usgs.gov>.

at a Glance

Biology



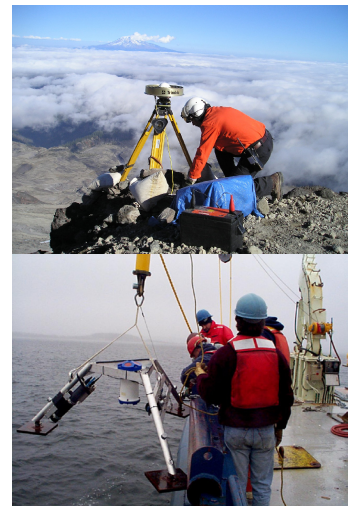
Geography



Programs

- Biological Informatics
- Coastal and Marine Geology
- Contaminant Biology
- Cooperative Research Units - Biology
- Cooperative Water
- Earth Surface Dynamics
- Earthquake Hazards
- Energy Resources
- Enterprise Information
- Facilities
- Fisheries: Aquatic and Endangered Resources
- Geographic Analysis and Monitoring
- Geomagnetism
- Global Seismic Network
- Ground Water Resources
- Hydrologic Networks and Analysis
- Hydrologic Research and Development
- Invasive Species
- Land Remote Sensing
- Landslide Hazards
- Mineral Resources
- National Cooperative Geologic Mapping
- National Geospatial
- National Streamflow Information
- National Water-Quality Assessment
- Priority Ecosystems Science
- Science Support
- Status and Trends of Biological Resources
- Terrestrial, Freshwater, and Marine Ecosystems
- Toxic Substances Hydrology
- Volcano Hazards
- Water Resources Research Act
- Wildlife and Terrestrial Resources

Geology



Water





USGS scientists capture from cold water, study, and release Diamondback terrapins.

Section I

Management's Discussion and Analysis

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Management's Discussion and Analysis

Who We Are and What We Do

The USGS serves the Nation as an independent fact-finding agency that collects and analyzes natural resource data and provides scientific understanding about conditions, issues, and problems. The USGS is the science provider of choice for information and understanding to help resolve complex natural resource problems across the Nation and around the world.

The USGS was created by an act of Congress in 1879. When the USGS was established, the Federal government held title to more than 1.2 billion acres of land, nearly all of it west of the Mississippi River, and only 200 million acres of this land had been surveyed. John Wesley Powell, who led one of the great western surveys that preceded the creation of the USGS and who later served as the second USGS Director, suggested that very little of the remaining public land was suitable for conventional farming and that only a small fraction of the arid land was irrigable using known resources. Powell proposed radical changes in the land system, including organization of irrigation and pasturage districts, to improve management of water and natural resources by sociopolitical institutions, based on natural science. One hundred and twenty-eight years later, the USGS continues to provide the scientific foundation to ensure the best planning and the best decisionmaking.

Today, the USGS is sought out by thousands of partners and customers for its natural science expertise and its vast earth and biological data holdings, and is the only integrated natural resources research bureau in the Federal government. The value of USGS to the Nation rests on its ability to carry out studies on a national scale and to sustain long-term monitoring and assessment of natural resources. Because it has no regulatory or managerial mandate, the USGS provides impartial science that serves the needs of our changing world. Its diversity of scientific expertise enables the USGS to carry out large-scale, multi-disciplinary investigations that build the base of knowledge

about the Earth. In turn, decisionmakers at all levels of government and citizens in all walks of life have information available to them for their needs to address pressing societal issues.

The thousands of scientists, technicians, and support staff of the USGS are located in nearly 400 offices in every State and in several foreign countries. With an annual budget of approximately \$991 million, the

USGS leverages its resources and expertise in partnership with more than 2,000 agencies of Federal, State, local, and Tribal governments; the academic community; non-governmental organizations; and the private sector. Field investigations, direct

observations of natural science processes and phenomena, and monitoring and data collection are the scientific hallmarks of the USGS.

The USGS is proud of its outstanding history of public service and staying at the forefront of advances in understanding the Earth, its processes, and its resources. USGS scientists pioneered hydrologic techniques for gaging the discharge in rivers and streams and modeling the flow of complex groundwater systems. Innovative ventures with the private sector have given the world access to digital images of neighborhoods and communities in one of the largest data sets ever made available online.

Modern-day understanding of the formation and location of energy and mineral resource deposits is rooted in fundamental scientific breakthroughs by USGS scientists. USGS biologists revolutionized thinking about managing wildlife resources, providing a sound scientific basis for waterfowl conservation and recreational hunting to work in tandem as adaptive management, not as conflicting interests. Advances in seismology are making early warnings of earthquakes a reality that will give the needed alert time to save lives. The future of the global community presents unprecedented opportunities for the science of the USGS to continue to make substantive and life-



enhancing contributions to the betterment of the Nation and the world.

The USGS addresses both national program priorities and local science needs on the landscape through a matrix-management approach. (See organizational chart below.)

Regional Directors, Regional Executives, and Regional Science Coordinators are deployed across the Nation, bringing bureau leadership and programs closer to customers and their issues. Together, they ensure the quality of our science and its relevance to the needs of land and resource management decisionmakers. National programs are overseen by Associate Directors for each discipline and administered by Program Coordinators at Headquarters in Reston, Virginia.

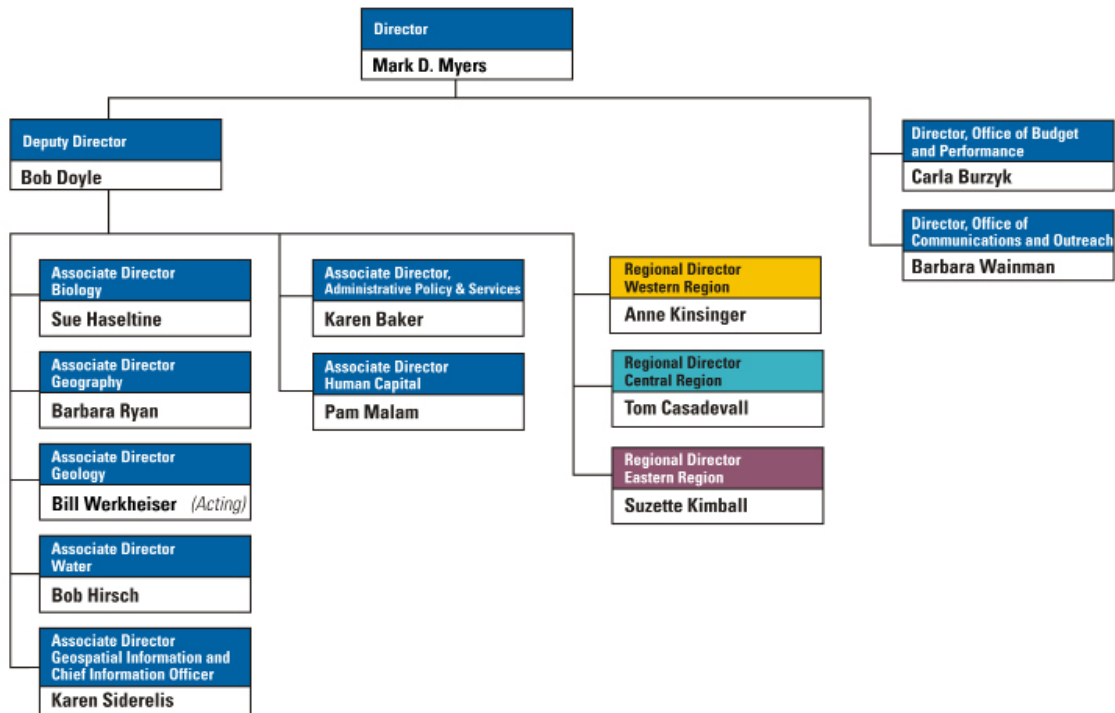
Together, they offer holistic science solutions by bringing to bear the expertise of scientists from

multiple disciplines, integrating science to confront the complexity of a continually changing world.

USGS resources and science benefit not only the immediate needs of partners and customers but also the Nation as a whole through application of the results to similar issues across the country and into the future.

Strategic Direction

The USGS will combine and enhance our diverse programs, capabilities, and talents and increase customer involvement to strengthen our science leadership and contribution to the resolution of complex issues.



September 2007

Management's Discussion and Analysis

How We Are Organized

The USGS has major field centers for the three regions in Reston, Virginia (Eastern), Denver, Colorado (Central), and Menlo Park, California (Western). The USGS rents 4.3 million square feet of space in about 190 GSA buildings nationwide and owns 34 installations with 1.3 million square feet of space in 283 owned buildings. The USGS operations include:

- a global earthquake monitoring network consisting of 147 stations distributed worldwide, contributing data in real-time to the USGS National Earthquake Information Center in Golden, Colorado, to support rapid earthquake assessments, impact and loss estimates, and scientific research supporting earthquake hazard reduction;
- 14 geomagnetic observatories;
- a landslide network and the National Landslide Information Center;
- a volcano hazards network and volcano observatories in five States to monitor 51 U.S. volcanoes;
- 17 biological science centers and associated field stations and a center for biological informatics;
- approximately 7,000 streamgages and water quality monitors, the National Water Quality Laboratory, and the Hydrologic Instrumentation Facility;
- Map products and services that provide 24/7 online accessibility to over 187 gigabytes of geospatial data in The National Map, over 57,000 hard-copy topographic maps that cover all 50 States, U.S. territories, and Federated states, satisfied more than 43 million requests per month for web mapping services in nationalatlas.gov and more than 350,000 page-sized smaller-scale maps downloaded per month, 2.6 petabytes of cartographic and digital data stored at the EROS Data Center, archived aerial photographs, and 32 years of global satellite data;
- an average of 10,800,000 successful requests made to the USGS homepage every month, an average of 400,000 customer inquiries made to USGS libraries and Earth Science Information Centers annually, more than 25,000 scientific and technical publications previously available only in paper made electronically accessible, and an average of 21.8 million SPAM and virus-infected messages

- blocked monthly by Information Technology security operations (74% of incoming email); and
- affiliation with 40 Cooperative Research Units and 54 State Water Resources Research Institutes.

USGS also owns 8 research vessels, all of which are at least 45 feet in length, have accommodations for overnight use by more than one person, and are manned by licensed Captains. Many of these vessels also contain operating laboratories.

The Eastern Region is composed of 175 sites in 26 States east of the Mississippi River, the District of Columbia, the Commonwealth of Puerto Rico, and the U.S. Virgin Islands and has approximately 2,656 employees distributed across duty stations throughout the region.

The Central Region is composed of 15 States between the Mississippi River and the western slope of the Rocky Mountains. Approximately 2,075 employees and 900 onsite contractors are distributed in 76 cities and 21 field offices across the Central region.

The Western Region is composed of 9 Western States, Guam, American Samoa, and the Commonwealth of the Mariana Islands. Approximately 2,251 employees are distributed in 33 cities and 64 field offices across the Western region.

The Headquarters location in Reston, Virginia, is within the District of Columbia metropolitan area and has approximately 1,687 employees stationed in Reston and in several foreign countries.

The Focus of Our Science

The USGS vision, mission, and strategic direction focus on responsiveness and customer service, underscoring the application of science to customer, partner, and other stakeholder needs; directing the combined expertise of the bureau's scientific disciplines; and defining its commitment to pursuing an integrated approach to providing science for a changing world.

Information— about natural hazards, resources, and the environment— is the key to understanding the Earth. USGS science provides comprehensive,

high-quality, and timely scientific information to decisionmakers and the public. The information holdings of the USGS offer an amazing gateway to rich data bases, manipulatable maps, newly acquired satellite images, real-time information, and a wealth of reports spanning more than a century of science. The growing global population lives in an information age that is becoming incredibly complex. Scientific information is increasingly essential to an ever-widening—and demanding—customer base.

To meet the critical science needs of the 21st Century, USGS is building on its traditional strengths while becoming more flexible and responsive. USGS is working to integrate its scientific disciplines while building on its world leadership and scientific excellence; to streamline operations to become as efficient as possible; to use the rapid advances in information technology to better deliver information to support the needs of decisionmakers; and to do a better job of understanding our many customers and partners.

The Focus of Our Revised Strategic Plan

The Government Performance and Results Act (GPRA) of 1993 requires Federal Agencies to revise their Strategic Plans every three years. The Department of the Interior concluded this process in early FY 2007 and published a revised GPRA Strategic Plan 2007-2012 that can be found at http://www.doi.gov/ppp/Strategic%20Plan%20FY07-12/strat_plan_fy2007_2012.doc.

Science continues to lie at the foundation of Interior programs, and USGS programmatic outcomes remain in the same three mission areas (Resource Protection, Resource Use, Serving Communities) as in the initial Strategic Plan 2003-2008. However, science's programmatic presence shifted from intermediate to end outcome level in the Resource Protection and Resource Use mission areas and resolved to a single end outcome in Serving Communities. As a result, science end outcome goals now support all three mission areas "to improve understanding of":

--- National ecosystems and resources (Resource Protection)

--- Energy and mineral resources (Resource Use)
--- Natural hazards (Serving Communities)

USGS also supports Management Excellence goals through two budget activities: Science Support and Facilities as well as infrastructure functions of Enterprise Information. These changes ensure that Interior's science mission has clearly defined goals and improved performance measures to gage their progress in achieving this mission. Several of these performance measures derived their origin from the Program Assessment Rating Tool (PART) evaluation process making a closer linkage of the plan to the programs and performance budget.

In the construct of the strategies to achieve the end outcome goals for science, the Administration's Research and Development criteria were used as the accountability premise for science investments. These criteria are performance, quality and relevance; therefore, the first strategy for each goal focuses on performance and the second strategy on quality and relevance with standardized language as follows:

Performance: 1. Ensure availability of ... scientific data and information...

Quality and Relevance: 2. Ensure the quality and relevance of science information and data to support decisionmaking

Because existing performance measures derived from the PART process were used in many instances to improve performance measures in the Strategic Plan, we have provided historical performance data in the performance budget and PAR for the revised plan. However, some prior plan measures have changed in scope which required rebaselining in FY 2007. In other instances, experience in using the measures over the past 3 years has led us to clarify some of our definitions to improve the understanding of "what counts" and therefore improve consistency of interpretation and application across the organization. An example is "systematic analyses." Measures that are rebaselined are noted in the performance tables.

Management's Discussion and Analysis

The following pages describe how our performance measures support tracking of progress toward achieving Interior goals. After describing the three mission areas and goals applicable to USGS, the performance data verification and validation process is noted. For the Management's Discussion and Analysis (MD&A), the Department has identified representative measures for each bureau to encapsulate their contribution to achievement of Interior goals. For USGS, three end outcome measures were selected as reference measures ---- one for each goal. The results for these three measures will be presented in performance tables for each end outcome goal. Each performance table will be followed by a brief illustration of the performance captured by the measure. Results and a more comprehensive and detailed presentation for all of the measures that appear in the USGS performance budget are included in Section II: Performance Data and Analysis.

To demonstrate the integration of performance and financial information, our financial results ---- discussed later in the Management Discussion and Analysis (MD&A) ---- are reported and directly correlated to the strategic plan and outcome goals.

GPRA Goals

Mission Area of Resource Protection:

[Protect the Nation's Natural, Cultural, and Heritage Resources](#)

DOI is the Nation's principal conservation agency, conserving Federally managed lands and waters, protecting fish and wildlife, and preserving public lands for future generations to enjoy. Science is key to making decisions on how to best conserve the Nation's natural resources. USGS plays an important role in accomplishing DOI's mission to administer programs on thousands of upland, wetland, and aquatic parcels, and protecting native plant and animal species.

The USGS produces scientific assessments and information on the quality and quantity of our Nation's water resources; collects, processes, integrates,

archives, and provides access to geographic, geospatial and natural resource data; and conducts multi-purpose natural science research to promote understanding of earth processes. USGS' multiple scientific disciplines combine their expertise in interagency ecosystem initiatives across the United States, from South Florida to the Puget Sound, where scientists are working together to understand, evaluate, and provide options for better resource management decisions.

USGS science programs work collaboratively with many organizations across the country to provide critical information to assist land and resource management agencies, partners, stakeholders, customers, and the general public with timely information to inform their decisionmaking.

Resource Protection End Outcome Goal: Improve the understanding of National ecosystems and resources through integrated interdisciplinary assessment.

USGS met the representative performance measure monitored during FY2007 related to this end outcome goal.

Mission Area of Resource Use:

[Improve Resource Management to Assure Responsible Use and Sustain a Dynamic Economy](#)

Managing the vast resources of America's public lands has been a core DOI responsibility since the Department was founded in 1849. Lands and water managed by DOI produce resources critical to the Nation's economic health. Science is a key foundation upon which DOI bases management decisions that promote natural resource use to sustain a dynamic economy while maintaining healthy lands and waters. USGS plays an important role in accomplishing DOI's mission to administer programs providing information on millions of square miles of land across all of the United States.

The USGS is the primary provider of earth science energy resource information and assessments for a variety of stakeholders in addition to Interior, including

Federal agencies such as the U.S. Department of Agriculture Forest Service, the Department of Energy, local and State agencies and coal and electric power producers. The USGS Energy Resources Program conducts national and global energy research on and assessments of oil, natural gas, coalbed methane, gas hydrates, coal, geothermal resources, oil shale, and uranium; evaluates environmental and human health impacts associated with production, use, and occurrence of energy resources; and provides information for the Nation to make sound decisions regarding increases or changes in domestic energy production or mix with an understanding of potential impacts on the environment. The USGS Mineral Resources Program is the sole Federal provider of scientific information for objective resources assessments and unbiased research results on mineral potential, production, consumption, and environmental effects. Land managers and policymakers use this information to support resource use decisions to enhance public benefit, promote responsible use, and ensure optimal value.

USGS research on and assessments of undiscovered non-fuel mineral and energy resources assist Interior's land management bureaus in their goal of providing responsible management of resources on Federal lands.

Resource Use End Outcome Goal: Improve the understanding of energy and mineral resources to promote responsible use and sustain the Nation's dynamic economy.

USGS met the representative performance measure monitored during FY2007 related to this end outcome goal.

Mission Area of Serving Communities:

Improve protection of Lives, Property, and Assets; Advance the Use Scientific Knowledge; and Improve the Quality of Life for the Communities We Serve

DOI's responsibility to serve communities extends well beyond the lands and resources it manages. Interior is responsible for protecting lives, resources, and

property, and providing scientific information for better decisionmaking. Science is at the heart of performing these tasks. USGS plays a critical role in accomplishing DOI's mission to protect communities by providing scientific information to reduce risks from earthquakes, landslides, and volcanic eruptions.

USGS geologic hazards programs conduct targeted research, gather long-term data, operate monitoring networks, perform assessments and modeling, and disseminate findings to the public, enabling the Nation's emergency management capabilities to warn of impending disasters, better define risk, encourage appropriate response, and mitigate damage and loss. When earthquakes strike, USGS delivers real-time information, providing situational awareness for emergency-response personnel. For volcanoes, the USGS has made steady annual progress on both monitoring and hazard-assessment efforts. Hazard research on landslides concentrates on understanding landslide processes, developing and deploying instruments that monitor threatening landslides, and forecasting the onset of catastrophic movement of future landslides.

These programs are designed to produce information and understanding that will lead to a reduced impact of natural hazards and disasters on human life and the economy.

Serving Communities End Outcome Goal: Improve understanding, prediction, and monitoring of natural hazards to inform decisions by civil authorities and the public to plan for, manage, and mitigate the effects of hazard events on people and property.

USGS met the representative performance measure monitored during FY2007 related to this end outcome goal.

Management's Discussion and Analysis

GPRA Performance Data Validation and Verification

In keeping with Departmental and Office of Management and Budget (OMB) policy for performance data validation and verification (V&V), USGS complies with requirements for performance data credibility.

Our approach to achieving performance data credibility includes providing Budget and Performance Integration and Activity Based Cost (ABC) Management training, tying organizational performance measures to individual performance plans, and implementation of the Department Data V&V Assessment Matrix. During FY2007, USGS continued to include USGS-specific measures, outputs, Management Excellence, and all Program Assessment Rating Tool performance measures in the Data V&V process. This extends the assurance of credibility to more performance data, ensuring usability for management decisionmaking and oversight. A more detailed discussion of Data V&V is in Section II: Performance Data and Analysis.

Resource Protection

End Outcome Goal:

Improve the understanding of National ecosystems and resources through integrated interdisciplinary assessment.

Representative Strategic Plan Measure	2004 Actual	2005 Actual	2006 Actual	2007 Planned	2007 Actual
Percentage of targeted science products that are used by partners for land or resource management decisionmaking.	85%	90%	93%	≥ 90%	93%

This end outcome measure provides an indication of usage of USGS science by a partner or customer in decision making and represents the ultimate outcome of our research, monitoring, and assessment. USGS continuously surveys customer satisfaction with associated data on specific science centers, programs, and products. The source data are individual responses to survey questions including questions regarding different types of usage. These data are compiled for program, project, and

Performance Measurement Challenges

Measuring performance of science is inherently difficult, and the USGS has customized the methods of measurement in order to make the results meaningful. Any performance data limitations are documented in the following pages and no corrective actions were needed.

How We Performed in FY2007

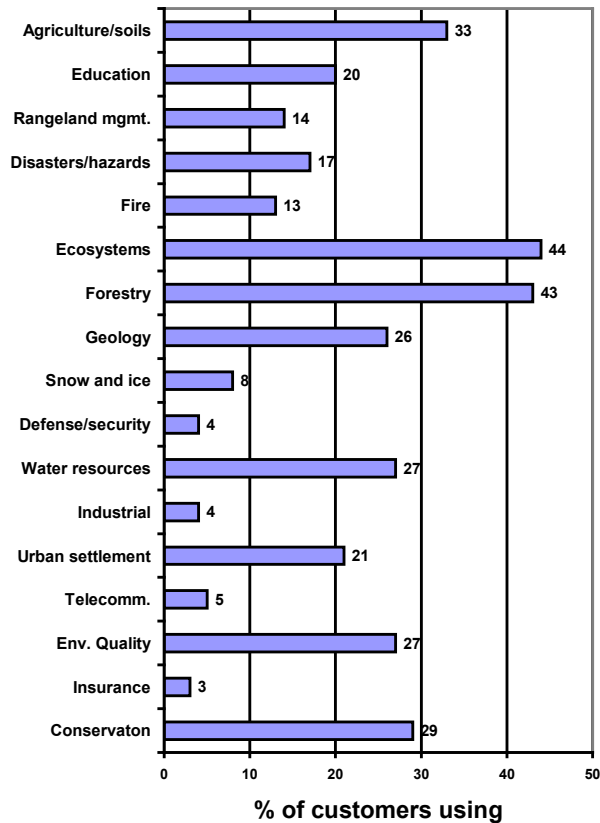
USGS met all three of the representative measures that were identified by the Department of Interior for USGS in FY2007. Our three end outcome measures are indicative of the cumulative impact of our research (i.e., use by land and resource managers for decision making). Results for these measures are presented below in tables followed by a brief illustration of performance captured by the measure. For a full report of the USGS performance measures, see Section II: Performance Data and Analysis.

In evaluating performance, USGS is applying the Department's 5 percent threshold in determining the result, which dictates that if the result is within 5 percent of the target performance, this generates a "goal met" rating. The summary result for values that are less than 95 percent or more than 105 percent of the target must be either Target Not Met or Target Exceeded, respectively.

organization managers to help guide program and product improvement. Two examples of the types of information obtained through this process for Landsat data and for the Cooperative Research Unit Program demonstrate the utility of our products and programs for a wide variety of decision making and outcomes.

Nearly 600 non-Federal purchasers of Landsat data were asked about their satisfaction with and use of Landsat data. Statistics and use examples follow:

Uses of Landsat data



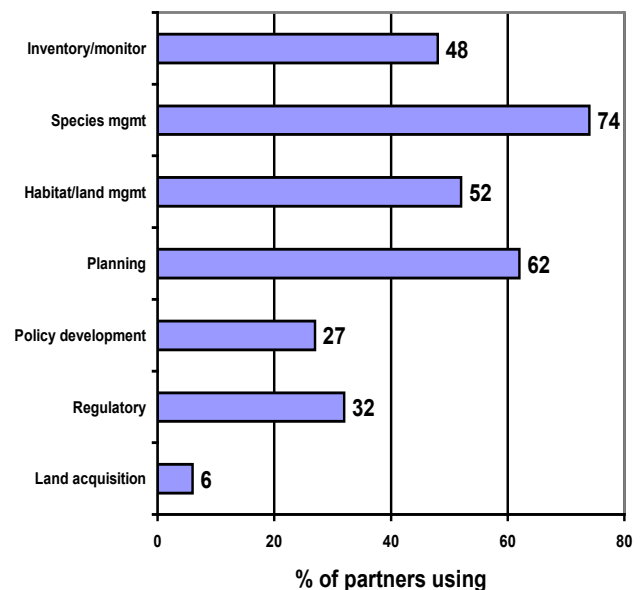
- For crop insurance damage estimates: vegetation biomass damage zones are created and sent to crop adjusters to better analyze the correct acres of hail or drought damage within a farm field.
- To measure the legacy effects of ancient farming systems in an arid environment: time series of Landsat scenes from SW New Mexico to measure vegetation resilience and stability in response to annual climatic variability.
- To monitor offshore sewage outfall plumes, river and storm water runoff plumes, and algae blooms: pioneered the addition of remote sensing component to the traditional field sampling program.
- For location of communication equipment: accurate representation of land use or land cover is a critical component to the development of an effective communications network; Landsat imagery is a crucial part of the service offering.

129 partners in Cooperative Research Units Program projects which ended in 2006 were asked about their satisfaction with and use of the delivered science projects.

Statistics and use examples received from partners follows:

- Avian predation research products are integral to our management decisions and actions for Caspian terns. They have formed the basis for the development of a management EIS. It is anticipated that research results will be used in the future to produce an EIS to determine if management of double-crested cormorants is warranted.
- Chaco Culture National Historic Park (CCNHP) represents the largest natural reference area in the Colorado Plateau for ungrazed desert grassland and arroyo riparian habitats. Recently, elk have colonized the Park, and concern exists that elk grazing will significantly alter the structure, composition, and function of the ecosystem. The Park needs baseline information on elk population and habitat use. Without this, CCNHP may cease to exist as an ecological reference for desert grassland and arroyo riparian communities.

Uses in support of natural resource decisions/management



Management's Discussion and Analysis

- Knowing that burning cattail marshes influences increased use of these wetlands by the Endangered rails, we will plan and manage more of these acres for treatment and to enhance the recovery of these 2 rail species.
- Results will be used to analyze impacts to the tidal freshwater marshes of Savannah National Wildlife Refuge from a potential deepening of the Savannah River harbor. Results will be used to assess the effectiveness of proposed mitigation plans. The results were used to make a decision on whether the construction of an engineered fish trap in a certain location would be an effective method of control for a nuisance species. The research was compelling and sound and led us to decide that the construction of the trap would not be effective.

Resource Use

End Outcome Goal:

Improve the understanding of energy and mineral resources to promote responsible use and sustain the Nations dynamic economy.

Representative Strategic Plan Measure	2004 Actual	2005 Actual	2006 Actual	2007 Planned	2007 Actual
Percentage of targeted science products that are used by partners and customers for land resource management decisionmaking.	80%	86.5%	87.5%	≥ 80%	99%

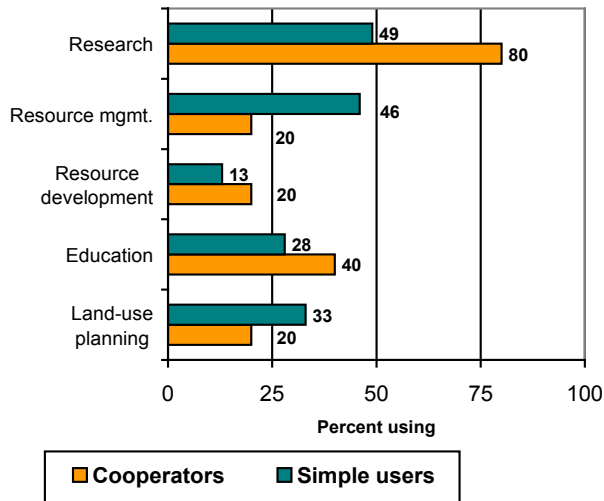
This measure is tracked through surveys that document usage and collect anecdotal information about use. To illustrate the use of our data and research for decisionmaking, the results of two customer surveys of users of users of a systematic analysis and of a Web site are provided below:

145 users of a Mineral Resources Program report: titled "Spatial Databases for the Geology of the Northern Rocky Mountains" were asked about their use of and satisfaction with the report. Six of the respondents had been collaborators on the report. The report includes GIS data that describe the spatial distribution of minerals and the relevant geologic characteristics.

User comments regarding statistics and use examples follow:

- Geologic digital coverage is critical to effective management of National Forest lands. I use this kind of information on a daily basis to do geologic and ground water analysis.
- Where the report is particularly useful is in the correlation of geologic formations. The data bases will be particularly useful for land use managers and for the next generation of resource development explorationists.
- Land management actions ranging from Forest Plan Revision to project level resource capability or hazard identification.
- We've used this database as a source of information for instructional modules on the Impacts of Resource Development on the Nez Perce Nation. It's the source reference for the underlying "science" that informs this topical issue.

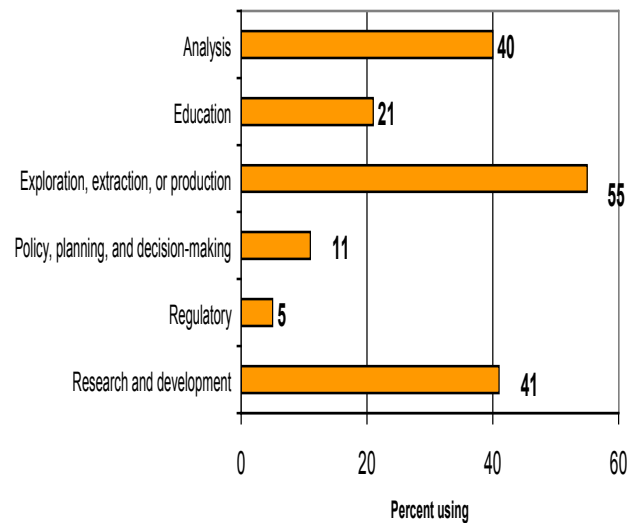
Uses for the databases



- These data form the backbone of our readily available information used whenever timeframes preclude development of custom information. They are used on a weekly basis for a multitude of analysis and information responses.

In the PART evaluation of the Energy Resources Program, one of the findings was to “Implement a redesigned Energy Resources Web site to ensure it meets users needs.” Having redesigned the Web site, the program surveyed 312 users about their use of and satisfaction with the Web site and its information. Respondents came from a wide variety of backgrounds, including government, private industry, and academia.

Uses for the databases



User comments regarding statistics and examples of uses follow:

- We used the information to assess likely targets for further research and exploration.
- Compiling information on naphthenic acids mainly and sources of acids, used in patent searches etc.
- The information has been used in decisionmaking related to my company’s strategic planning.
- For nearly forty years I have used the resources of the USGS in my work in exploration and resource forecasting. The web site is an efficient portal into the wealth of information available from the survey.
- Decisions on land acquisitions.
- Orientation of the research based on the supply prospect of future fossil energy.

Management's Discussion and Analysis

Serving Communities

End Outcome Goal:

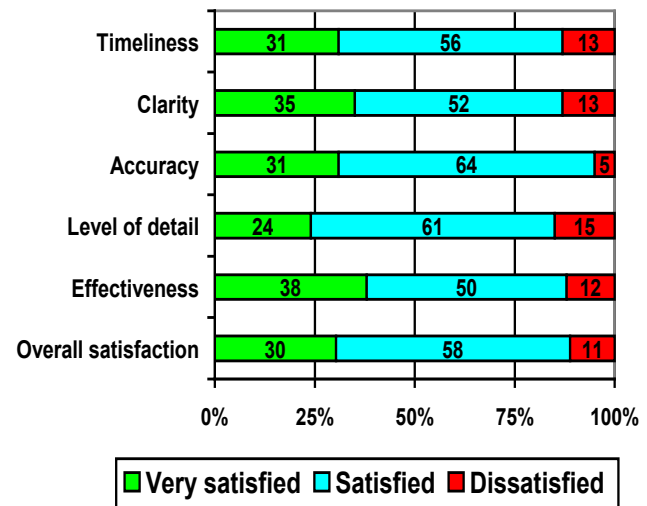
Improve the understanding, prediction, and monitoring of natural hazards to inform decisions by civil authorities and the public to plan for, manage and mitigate the effects of hazard events on people and property.

Representative Strategic Plan Measure	2004 Actual	2005 Actual	2006 Actual	2007 Planned	2007 Actual
Percentage of communities/Tribes using DOI science on hazard mitigation, preparedness and avoidance for each hazard-management activity.	43%	45%	48%	51%	50%

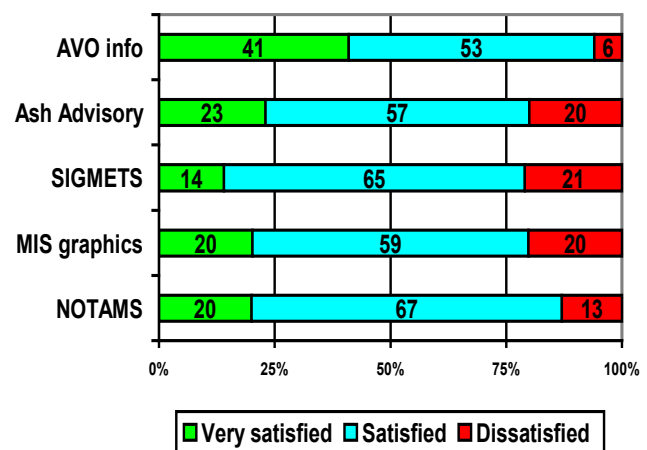
Research impact is tracked by each geologic hazard for its respective communities at risk. Results are documented in the performance budget for each hazard and as an aggregate average to give an indication of the level of usage of Interior's data for all geologic hazards. In addition, surveys like those for the other goals' products are conducted to further document usage and collect anecdotal information from the users. Following are comments from the results of 200 potential surveys of users of volcano hazards warnings that demonstrate why volcano hazard warnings matter to the aviation industry:

- I would much rather tell a flight crew flying that a volcano MAY erupt, than to scramble when we find out it does go off.
- I work in the area affected by Mt. St. Helens. The daily "Mt. St. Helens Update" provides a general overview of threat specifically identifying wind forecasts and ash drift potential.
- We have a benchmark on the color system; once a volcano goes to that particular color, and it is within 500 miles of our destination or departing airport, then we begin specific monitoring of that airport and volcano. We will begin carrying additional fuel, and activate contingency plans for possible diversions.
- As a controller personally involved in an aircraft/ash event, I appreciate the continued effort of the AVO (Alaska Volcano Observatory) to produce timely and accurate information. The products provided to ATC (air traffic control) and the aviation community is helping to prevent any future aviation mishaps related to ash.

Satisfaction with Process



Satisfaction with Products



- I was an air traffic controller at SeaTac when Mt. St. Helens erupted, and there was virtually no information as to what to expect in the air traffic world. The information you provide now is extremely helpful in planning traffic flows and execution of those flows when eruptions occur.

Management's Discussion and Analysis

The USGS principal financial statements, which are included in Section III of this report, are prepared in accordance with the U.S. Generally Accepted Accounting Principles using guidance issued by the Federal Accounting Standards Advisory Board (FASAB), OMB, and USGS accounting policies. While the financial statements have been prepared from the USGS books and records in accordance with the formats prescribed by OMB, they are different from the financial reports used to monitor and control budgetary resources that are prepared from the same books and records. The financial statements should be read with the realization that they are a component of the U.S. Government, a sovereign entity.

The DOI Office of the Inspector General (OIG) is responsible for auditing the basic financial statements of USGS and has satisfied their responsibility by contracting these services to KPMG LLP.

This analysis of the financial statements contains highlights on selected aspects of the accompanying principal financial statements.

Assets – What We Own

The Fund Balance with Treasury of \$295 million at September 30, 2007 is primarily composed of appropriated funds available to make authorized expenditures. It increased from FY2006 to FY2007 primarily due to timing of expenditures.

<i>(In Thousands)</i>	% Change	2007	2006
Condensed Financial Statement Data:			
Fund balance with Treasury	+14%	\$ 294,729	\$ 257,660
Accounts and interest receivable, net	-16%	110,074	127,180
Property, plant, and equipment, net	-1%	132,040	133,092
Other	-4%	3,289	3,753
Total Assets	+4%	\$ 540,132	\$ 521,685
Accounts payable	4%	\$ 66,431	\$ 63,802
Employee related liabilities	-1%	136,409	138,014
Other	-12%	49,140	54,891
Total Liabilities	-2%	\$ 251,980	\$ 256,707
Total Net Position	+9%	\$ 288,152	\$ 264,978
Total appropriations received - SBR	-1%	\$ 990,859	\$ 997,692
Total costs	-1%	\$ 1,449,947	\$ 1,463,920
Total revenue	1%	415,886	410,202
Total net cost of operations	-2%	\$ 1,034,061	\$ 1,053,718

The total net Accounts Receivable (A/R) of \$110 million at September 30, 2007 is represented by 41 percent of amounts owed from other Federal agencies and 59 percent owed from the public. The majority of the accounts receivable is established to cover the direct and indirect costs for reimbursable services performed in support of surveys, investigations, and scientific research.

Most of the receivable balance is unbilled: \$45 million is from Federal agencies and \$41 million is from the public. The large unbilled balance is a result of agreements that were written for survey and research work. The revenue is recognized as work is completed, but the receipt of payment is often not due until completion of the survey or research report. The balance of unbilled A/R remained consistent in FY2007 due to overall operations being generally consistent with the prior year.

The general property, plant, and equipment (PP&E), net of accumulated depreciation, amounted to \$132 million at September 30, 2007. The PP&E decrease from FY2006 to FY2007 is due to current year depreciation expense, combined with a volume of new purchases that were significantly offset by disposals incurred during the current fiscal year.

Liabilities – What We Owe

The USGS is a scientific service organization where the majority of its liabilities are payroll and benefits related.

At September 30, 2007, the accrued payroll and benefits of \$34 million, Federal Employees Compensation Act (FECA) liabilities, and annual leave due to employees represents 54 percent of USGS total liabilities of \$252 million.

Accounts payable of \$66 million consists of 10 percent due to other Federal agencies and 90 percent due to the public.

Deferred revenue, credits, and the deposit fund liability of \$11 million consists primarily of amounts advanced to the bureau to cover reimbursable services to be provided at a future date.

Unfunded liabilities represented a significant portion of the total outstanding liabilities in both FY2006 and FY2007. The largest liabilities in this balance consists of \$60 million of unfunded annual leave and \$42 million for FECA liabilities. The other significant unfunded liability is GSA tenant improvements of \$16 million.

Budgetary Resources – What We Receive

The USGS received approximately 61 percent, or \$991 million, of its total budgetary resources of \$1.6 billion through appropriations received in FY2007.

The approved budget for the USGS was modestly increased from FY2006. Other major sources of budgetary resources include unobligated balances carried over from FY2006 and spending authority from offsetting collections, totaling \$123 million and \$502 million respectively. As of September 30, 2007, \$1.5 billion of budgetary resources have been obligated.

The offsetting collections from the bureau's reimbursable programs include the following: reimbursements from non-Federal sources such as States, Tribes, and municipalities for cooperative efforts and proceeds from the sale of photographs and record copies; proceeds from sale of personal property; reimbursements for permits and licenses of the Federal Energy Regulatory Commission; and reimbursements from foreign countries and international organizations for technical assistance. Reimbursements from other Federal agencies are for mission-related work performed at the request of the financing agency.

Appropriations represent the vast majority of the budgetary financing sources of the bureau. Other major financing sources are comprised of \$95 thousand of transfers-in without reimbursement from other Federal agencies, \$1 million in donations, and \$66 million in imputed financing from costs absorbed by others. Imputed financed costs represent expenses paid by the Office of Personnel Management (OPM) for USGS retirement, health, and insurance benefits of USGS employees and Treasury's Judgement Fund on the behalf of USGS.

Management's Discussion and Analysis

Net Costs – What We Spend

In FY2007 and FY2006, net cost of operations totaled approximately \$1 billion each year.

Due to the creation of the new Strategic Plan, costs presented by the major mission and related end outcome goals were not consistent between FY2007 and FY2006. A detailed comparison of net costs is presented in Note 13 of the financial statements.

As mentioned in the previous budgetary resources discussion, the USGS budget was relatively flat from FY2006 to FY2007. Although the USGS instituted many changes in specific programs and operations at the cost center level during FY2007, there were generally no significant changes experienced in overall operations at the bureau level. As such, the total costs presented on the FY2007 Statement of Net Cost are generally consistent with the prior year amounts.

Key Financial Metrics – What We Measure

Delinquent Debt Referred to Treasury over 180 Days Past Due

The Debt Collection Improvement Act of 1996 requires that delinquencies older than 180 days be referred to the Department of the Treasury's Financial Management Service (FMS), which was established as the Federal government's debt collection center. The USGS reports the status of accounts receivable quarterly through the Treasury Report on Receivables (TROR). As of September 30, 2007, USGS referred to Treasury for cross servicing \$150 thousand, or 100 percent, in delinquencies over 180 days past due. In FY2007, USGS again surpassed the DOI's performance goal of referring 95 percent of the total amount eligible for referral to Treasury.

USGS billed accounts receivable due from the public decreased from \$28 million in FY2006 to \$24 million in FY2007. Delinquent amounts from the public over 180 days past due decreased from \$630 thousand in FY2006 to \$334 thousand at the end of FY2007.

Employee Bankcard Use and Delinquencies over 60 Days Past Due

The use of government issued bankcards for official employee travel has been required for several years within the USGS. Emphasis has also been placed internally on paying the balance due in full by the due date established on the bankcard statements, as well as requiring supervisors to closely review and approve bankcard statements for their employees.

The DOI set a performance goal of maintaining no more than 2 percent of the total balance due past 60 days old. USGS averaged about 0.4 percent of 60 days past due throughout FY2007. We attribute this success in part to our implementation during FY2005 of centralized billing of lodging cost, which significantly reduced the amount due by the individual traveler to the bankcard issuer and also increased the amount of rebate earned by the DOI from the credit card vendor. The rebate is available to the Secretary until expended for initiatives deemed appropriate and necessary.

Vendor Payments Made On Time

The Prompt Payment Act requires interest to be paid on invoices that are not paid on time in accordance with the Act. USGS strives to pay vendors on-time and to avoid paying late payment interest penalties. DOI established a performance goal for bureaus to maintain 98 percent of the number of payments not requiring interest over the total number of payments subject to the Prompt Payment Act. USGS again exceeded the DOI's performance goal by paying 99 percent of vendor invoices on-time and without penalty. USGS will continue to monitor payment performance to ensure our timely vendor payment percentage stays on target.

Vendor Payments Made Via Electronic Funds Transfer (EFT)

During FY2007, USGS continued its efforts to maximize the use of payment mechanisms compliant with EFT as required by the Debt Collection Improvement Act of 1996. The DOI established a performance goal to maintain over 96 percent of the number of vendor payments paid via electronic means over the total vendor payments made. During FY2007, the USGS

exceeded the DOI's performance goal by maintaining 98 percent of payments made via EFT for vendor payments.

Other Bureau Financial Performance Metrics

During FY2007, USGS continued to closely evaluate the financial operations of the bureau through sampling and other tests of compliance and performance. The results of internal performance metrics are distributed bureau-wide and have helped to maintain high quality processing of bureau transactions.

Stewardship Information

The USGS serves American citizens as a steward for a large, varied, and scientifically important body of heritage assets, and in conducting research and development that is critical to the health of our country and in understanding the Earth. Each year the USGS makes a substantial investment while fulfilling its stewardship responsibilities for the benefit of the Nation.

USGS has heritage assets in two categories: museum collections and scientific library collections. The museum collection includes a widespread collection of natural history specimens and cultural objects in many science and administrative centers throughout the United States. USGS library holdings, collected during more than a century of providing library services, are an invaluable legacy to the Nation.

Costs associated with stewardship initiatives are treated as expenses in the financial statements in the year the costs are incurred. However, these investments in stewardship are intended to provide long-term benefits to the public and are included as supplemental information to highlight their long-term-benefit nature and to demonstrate our accountability over them. Stewardship resources are not required to be included in the assets reported in our financial statements; they are, however, important to understanding the operations and financial condition of USGS. See the Required Supplementary Information and Required Supplementary Stewardship Information portions of Section III: Financial Section for complete disclosures regarding stewardship information.

Improper Payments Act

The Improper Payments Information Act of 2002 (P.L. 107-300) requires Federal agencies to carry out a cost-effective program for identifying payment errors and recovering any amounts overpaid. An improper payment includes any payment that should not have been made, or that was made in an incorrect amount under statutory, contractual, administrative, or other legally applicable requirement. Incorrect amounts include: overpayments; underpayments (including inappropriate denials of payment or service); any payment made to an ineligible recipient or for an ineligible service; duplicate payments; payments for services not received; and payments that do not account for credit for applicable discounts.

In accordance with Department policy, USGS concluded that our programs have a low risk for making improper payments and converted our annual risk assessments for all programs meeting OMB's criteria for significant erroneous payments to a three-year rotating cycle. Internal reviews are conducted annually to prevent, detect, and recover overpayments to vendors resulting from payment errors.

Limitations to Our Financial Statements

The principal financial statements have been prepared to report the financial position and results of operations of the USGS, pursuant to the requirements of 31 U.S.C. 3515(b).

While the statements have been prepared from the books and records of USGS in accordance with U.S. generally accepted accounting principles for Federal entities and the formats prescribed by the Office of Management and Budget, the statements are in addition to the financial reports used to monitor and control budgetary resources which are prepared from the same books and records.

The financial statements should be read with the realization that they are for a component of the United States government, a sovereign entity.

Management Assurances:

The Federal Managers' Financial Integrity Act of 1982 (FMFIA) and the OMB require all cabinet-level Federal agencies to annually review their management control system. The objectives of DOI's management control system are to provide reasonable assurance that:

- The Department's obligations and costs are in compliance with applicable laws;
- The Department's assets are safeguarded against waste, loss, unauthorized use, or misappropriation;
- The revenues and expenditures applicable to agency operations are properly recorded and accounted for to permit the preparation of reliable financial reports and to maintain accountability over assets;
- All programs are efficiently and effectively carried out in accordance with applicable laws and management policy.

The efficiency of the DOI's operations are continually evaluated using information obtained from reviews conducted by GAO, OIG, bureau reviews, and/or specifically requested studies. On a yearly basis, DOI requires all of its bureaus to conduct self-assessments of their FMFIA compliance. These diverse reviews provide a high level of assurance that Department systems and management controls comply with standards established by the FMFIA.

In support of the annually required DOI bureau reviews, the Associate Directors of Biology, Geology, Geography and Water; the Regional Directors of Eastern, Central, and Western Region; the Associate Director of Administrative Policy and Services; the Associate Director of Human Capital; and the Chief Information Officer provided signed assurance statements to the Director that their areas of responsibility had assessed the systems of management, administration, and financial controls in accordance with standards, objectives, and guidelines prescribed by the FMFIA and the OMB Circular A-123, *Management's Responsibility for Internal Control*.

The objectives of the assessments ensured that:

- programs achieved their intended results;
- resources were used consistent with the bureau's mission;
- resources were protected from fraud, waste and mismanagement;
- laws and regulations were followed; and
- reliable and timely information was maintained, reported, and used for decision making.

In performing this assessment, USGS relied on the knowledge and experience management has gained from the daily operations of its programs and systems of accounting and administrative controls, and information obtained from sources such as internal control assessments; OIG and GAO audits; program evaluations and studies; audits of financial statements; performance plans and reports; and other information.

Each assurance statement provided documentation on specific internal control assessments conducted, which included improvement actions to PART recommendations, and audits and/or reviews conducted by the OIG and/or GAO. The USGS Director relied on this extensive documentation to support the bureau assurance statement on financial reporting to the Department as of June 30, 2007, and for the overall assurance statement provided to the Department on September 30, 2007 (see Section II: Performance Data and Analysis for additional information on the program evaluation).

FFMIA Assurance Statement

Based on the results of the USGS FY2007 assessment, the USGS can provide reasonable assurance that its internal control over the effectiveness and efficiency of operations and compliance with applicable laws and regulations to include FMFIA as of September 30, 2007, was operating effectively and no material weaknesses were found in the design or operation of the internal controls.

In addition, the USGS conducted its assessment of the effectiveness of internal control over financial reporting, which includes safeguarding of assets and compliance with applicable laws and regulations, in accordance with the requirements of Appendix A of OMB Circular A-123, Management's Responsibility for Internal Control, and the CFO Council's Implementation guide dated July 31, 2005, as implemented by the DOI. The assessment focused on the specific financial reports and the related financial statements' line items identified by the DOI as material to the consolidated Department of Interior financial reports. Through this assessment, the USGS can provide reasonable assurance that its internal control over the financial reports and related line items identified by the DOI as material to the consolidated Department of Interior financial reports were suitably designed and operating effectively as of June 30, 2007, and no material weaknesses were found in the design or operation of internal control over financial reporting. Further subsequent testing through September 30, 2007, did not identify any reportable changes in key financial reporting internal controls. The USGS has no material weaknesses or nonconformances identified in the FY2007 assessment or carried over from prior fiscal years to report any corrective action plans.

I also conclude that USGS information technology systems generally comply with the requirements of the Federal Information Security Management Act (FISMA) and Appendix III of OMB Circular A-130, Management of Federal Information Resources.

Further, I conclude that the USGS substantially complies with the three components of the Federal Financial Management Improvement Act; financial systems requirements, Federal Accounting Standards, and the U.S. Standard General Ledger at the transaction level.

Mark D. Myers
Director, USGS
September 20, 2007

The President's Management Agenda (PMA):

In FY2007, USGS continued to improve in areas targeted in the PMA, which focuses on improving Federal management and program performance. Organized around the mutually reinforcing components, the PMA applies to every agency. The initiatives are:

- Strategic Management of Human Capital;
- Competitive Sourcing;
- Expanding Electronic Government (E-Gov);
- Budget and Performance Integration;
- Improved Financial Performance;

In addition to the five governmentwide management initiatives, the PMA also presents agency-specific program initiatives. The four departmental program initiatives that the USGS reports to are:

- Real Property Asset Management;
- Transportation Management;
- Energy Management; and
- Environmental Stewardship.

These initiatives share a common goal of enhancing citizen-centered governance focused on delivering results that matter to the American public.

OMB uses an Executive Branch Management Scorecard to monitor the status and progress of agencies toward attaining PMA goals. Color-coded ratings (red, yellow, and green) are used to visually depict agency ratings. USGS strived to make progress in all initiatives during FY 2007 and USGS ended the year "green" for progress on all nine initiatives. All scored "green" for status as well except Transportation that is red and Real Property Asset Management that is yellow. Current year accomplishments are discussed below.

Strategic Management of Human Capital

Workforce Planning-----The USGS participated on a departmentwide Workforce Planning Team that provided leadership, defined expectations and provided guidance to Bureaus and Offices on workforce planning. This included the creation of a workforce planning template to assist Bureaus in the development

of their own workforce plan. The USGS is now in the process of developing a bureauwide workforce plan that incorporates the USGS 10-year science plan and identifies staffing strategies that address the needed skills for achieving long-term science and science support goals.

The USGS continued to advance bureau workforce planning efforts with the approval of seven separate Voluntary Separation Incentive Payment and Voluntary Early Retirement authorities. These incentives were offered to 275 employees and resulted in more than 50 separations. The impact of these separations will help in the development of staffing strategies needed to address skills identified in the Bureau's Workforce Plan.

Leadership Training---- The USGS continued to provide leadership training for the purpose of developing a critical mass of leaders at all levels of the organization. The Management/Supervisory Program utilized a 360-degree evaluation process for supervisors based on the Human Resources competencies identified in the Core Competency Model for Managers. Using this assessment, participants develop individual and organizational action plans to enhance their strengths and improve their leadership competencies. The USGS also continued to implement the full suite of Core Competencies for Managers with the goal of improving managerial performance at all levels of the USGS. This effort has been linked with the USGS workforce planning effort and with the long-term leadership development goals of USGS.

Competitive Sourcing

Business Strategy Reviews and OMB circular

A-76----USGS continued execution of its Business Strategy Review (BSR) process, outlined in the USGS Competitive Sourcing Green Plan FY2005 - 2008. All full time equivalent (FTE) positions were grouped into nine functional business areas. Science technician activities located in Reston, VA, and Cook, WA, included in two streamlined competitive sourcing studies will remain in house, with Most Efficient Organizations (MEOs) already implemented. The performance decision for the standard competitive

Management's Discussion and Analysis

sourcing study for the activities performed at the National Water Quality Laboratory was announced in September 2007, with MEO implementation anticipated in early calendar year 2008. The standard competitive sourcing study of the National Geospatial Technical Operations Center (NGTOC) announced in September 2005 was cancelled in July 2007 as a result of various complications in execution of the study. Ultimately, the study's negative impact on the NGTOC's ability to perform its intended function was determined too significant and an expedited process of transforming geospatial technical operations was needed. The USGS is using an alternative strategy to the current A-76 process to achieve efficiencies and modernization of the NGTOC.

Expanding E-Government

Geospatial One-Stop (GOS)-----With the goal of strengthening the usability of the National Spatial Data Infrastructure, in 2007 USGS combined similar online capabilities of The National Map and the GOS Web portal. This included planning, testing, and implementing "phase 2" of the GOS portal's functionality. USGS continued to work with the Open Geospatial Consortium to develop specifications for open Web services and a common architecture for open services that reduces technical barriers to data sharing. USGS enabled more than 150,000 geospatial data resources in its GOS catalog, and usage of the portal grew to over 500,000.

Information Security-----In 2007 USGS ensured that effective information security practices were carried out by: (1) publishing information security standards, guidelines, and procedures; (2) providing general, role-based, and specialized IT security training; and (3) continuing to emphasize improved management, technical, and operational security controls. The transition of the security architecture to the Department's Enterprise Services Network continued, with the goal of establishing a comprehensive network security infrastructure across the U.S. Department of the Interior.

Security Certification and Accreditation (C&A)-----In 2007, USGS certified and accredited six information systems and mitigated weaknesses found during the C&A and Internal Control Review processes. Other

Security C&A activities included contingency plan tests, holding C&A training sessions, and conducting compliance reviews.

Security Operations-----Specific USGS accomplishments during 2007 include:

- developed internal processes and custom in-house technical solutions to address DOI policy requiring all bureaus to perform internal network and computer vulnerability scans;
- improved the intrusion detection and prevention (IDP) system used to protect USGS internal and external resources by upgrading application firewalls, issuing policy requiring all existing USGS public-facing Web servers must be located behind Web application-layer firewall appliances, developing customized scripts to automatically block malicious external systems without blocking Akamai vendor services, and dedicating additional resources to monitor networks;
- enhanced the USGS Computer Security Incident Response Capability by expanding and refining internal incident response processes to allow over 90 percent of computer security incidents to be handled within the timeframe established by Departmental policies, tripling the number of Certified Computer Examiners on staff, and increasing the USGS computer forensics capability by upgrading to the latest hardware and software platforms; and
- upgraded the Enterprise FTP infrastructure by deploying a new server cluster, increasing the amount of disk space available on the eFTP system. In addition, the new servers will allow maintenance to be performed on the current server cluster without having to schedule a maintenance window that makes the eFTP service unavailable.

Enterprise Services Network (ESN)-----In 2007 USGS completed the first of three milestones for full use of ESN networking services: ESN Transition, ESN Migration, and ESN Connection to Security Architecture. The Transition milestone resulted in the transition of all USGS-owned routers and wide area networking switches moving to the Department's ESN Network Operations and Security Center (NOSC)

management. All sites now have 24x7 proactive networking monitoring from NOSC.

USGS embarked on ESN Migration in March 2007. Expected to be completed during 2008, this effort will result in all USGS locations being migrated to the VerizonBusiness "very Broadband Network Service" (vBNS). This effort includes installation of new circuitry and equipment and will assure compliance with DOI security edits. By the end of September, over 100 USGS sites had been migrated. When completed, nearly 200 USGS locations will have migrated to vBNS. Like ESN Transition, ESN Migration is being accomplished regionally, starting with Eastern Region, then Central, and ending with Western Region.

The third and final ESN milestone, ESN Connection to the Security Architecture, is expected to be completed within weeks after achieving the ESN Migration milestone.

The USGS continues to move forward on the Remote Access and Virtual Private Network (VPN) services with testing of the electronic Remote Access Service (eRAS) in 2007 and continuing into 2008. If all prove successful, USGS plans to replace the existing USGS services in the FY 2008 timeframe.

Budget and Performance Integration

Program Assessment Rating Tool (PART)-----

The PART was introduced in FY 2002 by the Administration as a means to evaluate program level performance across the Government, with a goal of reviewing 20 percent of Federal programs each year. Using R&D criteria, OMB completed assessments of USGS major programs in 2006. Efforts in 2007 focused on continuous improvement relative to the findings. Of the ten USGS programs evaluated since 2002, nine were rated "moderately effective" and one "effective." All PART evaluated programs have efficiency measures and action plans for continuous improvement. USGS completed 74 PART action plan milestones in FY 2007. Three milestones were delayed with planned completion within the first quarter of FY 2008.

Cost and Performance-----ABC data were realigned to the revised Strategic Plan and ABC costs were

mapped to key reference or end outcome measures within the revised Strategic Plan. Efforts to refine this process and address costing of intermediate measures are underway. General ABC reports and data can be extracted by all managers at all levels on a daily basis for verifying and validating, and for performing analyses for decision making. Continued efforts are being applied to standardize processes and ensure consistency of interpretation.

Improving Financial Performance

OMB Circular A-123-----During 2007, USGS was able to report to the Department that USGS has effective internal control over financial reporting. USGS held a two-day meeting to prepare the guidance for the FY 2007 A-123 Internal Control Reviews Plan (ICRP) and developed its Risk Assessment Methodology to identify where future Internal Control Reviews will occur. USGS also developed a web-based system to track the location, progress, results and corrective action plans from all Internal Control reviews, Programs reviews, Inspector General reviews, outside auditor reviews, and audits.

Financial Information----USGS has refined reporting to senior managers on financial progress in several areas to reflect the results down to individual cost centers level. These financial status reports include statistical results of internal audits on bankcard and invoice charges, travel, and reimbursable agreements. The Bureau's financial managers use this information to identify problems and implement corrective actions.

Training----USGS formed a team to develop standardized financial training that will be offered on an annual basis to all cost centers in the Bureau. This training will be detailed and to the extent possible provide attendees with a "hands-on" experience. The first training sessions are scheduled for November 2007. The team is developing training for the following areas of responsibility.

- Beginner AO/Budget Analyst
- Advance AO/Budget Analyst
- Administrative Technician

Management's Discussion and Analysis

Financial and Business Management System---

USGS continues to dedicate significant resources to the development of the Department's new Financial and Business Management System (FBMS). Interior began work with a new integrator, IBM, during March 2006 and successfully implemented two bureaus in November 2006 with core finance and limited executive management information system functionality.

The scope of the project is to provide a Department-wide solution that significantly improves access to reliable, accurate, current, and complete financial and business management information to support the decisionmaking process throughout all levels of the Department, affecting all employees and operations. FBMS will replace current systems for budget formulation, core finance, personal and real property, financial assistance, acquisition, fleet management, and the executive management information system. High level functionality for budget formulation and project planning will also be replaced.

The Department revised the implementation schedule for out-year bureaus. The changes to the new schedule include bringing up all functional areas in deployments beginning in fiscal year 2009 and advancing USGS on the FBMS conversion schedule from FY 2011 to FY 2010.

Real Property Asset Management

The USGS continues its efforts to effectively manage its real property assets and to implement Executive Order 13327, Real Property Asset Management. Asset management principles and practices provide the tools that help USGS provide the space and facilities that are appropriate for world-class science while controlling costs. USGS completed detailed site-specific asset business plans for USGS regions, key science centers, and installations. These plans describe the life-cycle issues and portfolio characteristics for the site. They present a 5- and 10-year snapshot of associated assets using standard performance metrics, integrate science and facility planning and thereby align mission needs to facilities in terms of space types, amount of space, cost, location, timing, and space quality.

In 2007, USGS completed the requirement to provide 24 specific data elements for all USGS-owned, leased,

and State or foreign government-owned assets into the Federal Real Property Profile (FRPP) as required by the Federal Real Property Council (FRPC). The inventory included 56 land, 368 buildings, and 274 structures records. The DOI Asset Management Plan Three-Year Rolling Timeline and the OMB Real Property Score Card require each DOI bureau to establish a strategy to ensure accurate and complete reporting into the FRPP. As part of this strategy, a verification and validation review process was developed that requires a 25 percent sample review. In 2007, USGS completed the verification and validation of 25 percent of the FRPP assets.

USGS continued developing the planning requirements outlined in the Department's Asset Management Plan Three-Year Rolling Timeline. These major accomplishments include: establishing targets for meeting performance metrics identified by the FRPC; reporting accomplishments in asset performance; and implementing a standardized practice for modeling the annual operations and maintenance costs.

In 2007, the Department of Interior updated the DOI Asset Management Plan (AMP), which "establishes a strategic direction for the management of assets within the Interior portfolio." DOI's AMP required each bureau to develop a bureau real property AMP and update it on an annual basis. The USGS AMP was updated and submitted to the Department in March 2007. This document presents the strategic vision and plan of action for effective bureau facility management and supports the DOI's AMP for compliance with Executive Order 13327. The USGS AMP summarizes the bureau's current asset inventory, documents the condition of the inventory, and articulates the bureau's strategy and process for managing the total cost of asset ownership and serves as a framework to guide asset investment decisions, including operations, preventive maintenance, component renewal and repair and construction.

Real Property Investment Governance----- The Real Property program at USGS is supported by capital planning and investment control procedures to manage more effectively the entire USGS real property portfolio. The USGS Investment Review Board (IRB) reviews proposed facility renovation and construction

investments valued at \$2 million or more and proposed leases and GSA occupancy agreements costing \$1 million or more annually. Each USGS region also has a regional IRB that reviews projects before they are sent to the bureau IRB. The regional IRB reviews projects below the dollar threshold established for USGS-level review. Pursuant to Executive Order 13327, the USGS has in place a Senior Asset Management Officer to provide executive oversight of bureauwide asset management.

Deferred Maintenance----- FY2007, the USGS continued to address critical life safety issues through the Deferred Maintenance Capital Improvements Program. This included funding projects that addressed fire and life safety deficiencies at the Silvio O. Conte Anadromous Fish Research Center in Turner Falls, Mass., and funding needed repairs to two USGS research vessels, the R/V Grayling and the R/V Musky II. Other bureau priorities included repairs and improvements at four Biology discipline research centers. These projects include rehabilitating chemical bunkers, replacing steam boilers, an auto bridge, and a roof on a tight isolation building, all of which have exceeded their useful life expectancy. Replacement or renovation of cableways used to collect stream data continues to be a bureau priority. Revised load tests reveal that the 600 cable cars in active use nationwide could fail under adverse field conditions, such as snagged cables during flood conditions. Depending on their design and condition, remediation will require partial or total replacement of the cable cars. Interim actions have begun where risk is the highest, but all 600 cars will require either retrofit or replacement to ensure the safe collection of essential scientific data. It is anticipated that the replacement and renovation of active, deficient cableway systems will continue into FY 2008. The Northern California Seismic Network consists of analog and microwave stations that have exceeded their expected life and cannot be expected to operate continuously. These stations will be replaced to avoid failure during an emergency. These stations provide earthquake monitoring and (or) warnings for large metropolitan areas. There are approximately 325 analog stations that are being converted to digital systems and approximately 25 microwave stations that are being upgraded.

Condition Assessments----- The following centers had condition assessments scheduled and/or completed in FY2007: Western Fisheries Research Center, Steilacoom Warehouse and Storage, Newport Geophysical Observatory, National Wildlife Health Center, Tunison Fisheries Research Lab, Great Lakes Science Center, Marrowstone Island Research Station, Elko "H" Facility, Sitka Magnetic Observatory, Conte Anadromous Research Center. Condition assessments are performed on a 5-year cycle. The first 5-year cycle was completed in FY2004. The condition assessment reports identify the most critical maintenance deficiencies, update the deferred maintenance backlog, and help determine future priorities.

Denver Metropolitan Area Strategic Facilities

Master Plan-----In 2007, the USGS completed the development of a Facilities Master Plan for the Denver metropolitan area, including Lakewood, Golden, and Boulder, Colorado. The USGS has approximately 1,368 employees including government, contractor and emeritus in this location, which currently occupies approximately 1.3 million square feet of office and related space. This Facilities Master Plan is a planning tool that provides an excellent framework for future facilities decisions that will enhance USGS mission delivery and support the Department's effort to comply with Executive Order 13327. It is USGS's goal to consolidate all USGS functions and operations in the Denver metropolitan area onto the Denver Federal Center over the next 10 - 15 years.

Transportation Management---In 2007, the USGS implemented all the short-term goals of the Fleet Management Strategic Plan (FMSP) and began taking steps to implement the long-term goals of the FMSP. In 2007, a fleet inventory and utilization data validation effort was completed. Information obtained will be utilized to conduct an assessment and provide recommendations to optimize the placement of vehicles to increase vehicle sharing and the use of alternative fuels. The accuracy of fleet data continued to improve and programming changes were made to enhance the capabilities of the bureau's fleet utilization data collection application. A memorandum was issued to field offices to encourage the purchase of Alternative Fuel Vehicles (AFVs) and the Office of Administrative

Management's Discussion and Analysis

Policy and Services funded an AFV for field use in the Central Region. The Fleet Management Improvement Team worked to promote the acquisition and use of AFVs in their regional fleets. In 2008, the USGS will continue implementing the long-range goals of the FMSP, focusing on reducing fleet costs, the average age of the fleet, and fossil fuel consumption. Additionally, a Fleet Acquisition and Replacement Plan will be implemented as a strategy for acquiring higher fuel economy vehicles

Energy Management---- FY 2007, the USGS worked towards implementing a new contract for a Web-based system to assist in capturing, storing, and analyzing utility cost/consumption data. The contract will be awarded in FY 2008, and will replace the contract the bureau had in place for the previous five years. The contractor collects required energy data from all USGS facilities which pay utility providers directly. Regional Energy Managers were identified and energy management meetings were held monthly. Energy management strategies shared during these meetings included implementing a bureau metering plan, training for energy and facility managers, and Energy Conserving Opportunities (ECOs) in-place or planned across the bureau. FY 2007 ECOs include the installation of a dual-fuel summer boiler at the John W. Powell Building to reduce facility fuel consumption and emissions.

Environmental Stewardship----The USGS continues to aggressively pursue Environmental Management Systems (EMS) implementation and documentation efforts. Currently, external EMS conformance and Environmental Compliance audits are scheduled to occur at several of the EMS appropriate facilities during FY 2008. USGS is striving to update the current EMS electronic system to encompass new requirements outlined in Executive Order 13423 (EO). The additional capabilities will maximize USGS efforts to meet the EO performance goals. USGS also identified two new opportunities for EMS implementation: National Wetlands Research Center and a bureauwide EMS. USGS expects to have all existing appropriate facilities self-declared by December 2008.

The USGS is committed to promoting procurement of green products in accordance with the Department's draft affirmative procurement plan, comporting requirements, and internal directives on drafting procurement specifications that specifically invoke RCRA and other statutes and Executive Orders on pollution prevention and greening the government. USGS Contracting Officers receive training in environmental purchasing requirements through the governmentwide CO mandatory training curriculum, and promote environmental stewardship through Federal Acquisition Regulation Part 23 requirements.

The USGS promotes GSA's online green purchasing training in our online list of qualifying COR training. In addition, green purchasing objectives are emphasized in government charge card holder instructional materials. USGS has requested that DOI add green purchasing objectives to its annual online training for card holders departmentwide. USGS also maintains an internal Web page on Environmental Purchasing that includes links to recycled and biobased content product information and sources. USGS recognizes current shortcomings and advocates upgrading department- and governmentwide systems in the future to capture recycled/biobased content data in order to advance visibility and reporting capability.

USGS actively participates as a member of the DOI Sustainable Buildings Work Group (SBWG). This multi-bureau group reviewed and conducted a gap analysis of the existing Federal Leadership in High Performance and Sustainable Buildings Implementation Plan. As a result, a Departmental Plan was developed for submission to OMB. USGS plans to pattern the bureau plan after the DOI Sustainability plan. Regional Sustainability Coordinators meet monthly with the Regional Energy managers to provide updates and action items.

The present strategy calls for a 30-day review period of the final SBWG plan prior to the Assistant Secretary for Policy, Management and Budget's signature. OMB will then receive the final DOI Plan. USGS developed draft Sustainability clauses for all construction and renovation projects. The Sustainability clauses address adherence to the guiding principles listed

in the Implementation plan, and requires projects to aim for LEED Silver certification. Modifications were made to each Condition Assessment tasking with the same requirements. In FY 2008 (May 08), USGS will formalize the bureau specific Sustainable Buildings Implementation Plan. USGS will continue to incorporate new technologies and materials into building designs and renovations.

In FY2007, the USGS continued to participate in the DOI Electronic Stewardship Task Force. The DOI Electronic Stewardship Implementation Plan has been drafted and the USGS will approve this document in conjunction with other DOI bureaus. In FY2008, this document will be used as the foundation to draft the USGS Electronic Stewardship Plan. In FY2007, the USGS drafted an Electronics Disposal Policy which will be implemented in FY2008.

Compliance Management Plan is managed through the USGS Inspection and Abatement System (IAS). Internal environmental compliance audits are performed annually at all locations and documented within the IAS. This system allows all organizational levels to self assess environmental compliance, inclusive of tracking findings through final abatement action. The IAS was updated in FY 2007 to provide a better environmental auditing tool.

Looking Forward:

There is broad consensus in the United States and worldwide that the Earth is facing enormous pressure from growing human populations and the increasing impact of societal activities. The challenges associated with observing, understanding, interpreting, and managing natural resources require broad thinking and concerted action. In response to this need, the Director formed a team of scientists with a charge to develop a unified science strategy to outline how USGS might effectively respond to major emerging societal issues using our wealth of scientific capabilities. The Science Strategy Team (SST) reviewed literature from within and outside USGS to identify the greatest societal challenges the Nation is facing now and into the future. The following societal issues/topics emerged from these deliberations: 1) energy and minerals, 2) natural hazards, 3) environmental aspects of human health, 4) water, 5) climate, and 6) ecosystems.

These six strategic science directions are themselves interrelated. Their interaction, correlation, and interplay reveal the complexity of the Earth's natural, physical, and life systems. Developing new understanding therefore requires a "systems" approach that calls upon the full range of USGS capabilities. The USGS, with its breadth of scientific expertise, can provide an important perspective on the entire web of interrelated natural processes that affect national and global well-being. Our science strategy document contains an associated set of recommended strategic actions for each of the six strategic science directions that are designed to achieve this systems approach and enhance the USGS tradition of science in service to the Department and the Nation.

Current examples of regional challenges and how USGS is addressing them follow.

Challenge of Data Integration and Leveraging Technology

The use of and competition for natural resources on a global scale and natural threats to those resources have the potential to impact the Nation's ability to sustain its economy, national security, quality

of life, and natural environment. They also pose natural-science challenges. To ensure that resource managers and policymakers have the information they need to support decisions affecting ecosystems, data and information must be readily shared among scientists and collaborators and with partners and customers in forms suited to their needs, interests, and responsibilities. Development and application of state-of-the-art technologies as well as expansion of information technology to allow for seamless data and information sharing is critical to the success of science to make informed decisions in the future. The science strategy addresses these cross-cutting needs.

Grand Challenges in Environmental Science and the National Ecological Observation Network

Grand Challenges in Environmental Science, NRC 2001, as identified by the National Academy of Sciences, includes understanding biodiversity, biogeochemical cycles, climate change, hydroecology, infectious disease, invasive species, and land use. The USGS is collaborating with the National Science Foundation (NSF) in establishing the National Ecological Observation Network (NEON) to observe the state of the Nation's ecosystems. NEON is a continental-scale research platform for discovering and understanding the effects of climate change, land-use change, and invasive species on ecology. NEON will gather long-term data on ecological responses of the biosphere to changes in land use and climate and on feedbacks with the geosphere, hydrosphere, and atmosphere. Using standardized protocols and an open-data policy, NEON will gather essential data for developing the scientific understanding and theory required to manage the Nation's ecological challenges. During FY 2007, the USGS hosted a workshop for NEON scientists to identify 20 candidate sites for possible observatory locations. Setup of the infrastructure for these 20 observatories will begin in FY 2008. The USGS is working with NEON management to identify their remote-sensing and land-cover data needs.

The Challenge of Delivering Satellite Data Sets

For more than 3 decades, Landsat satellite data have been used to evaluate the dynamic changes of the Earth's land surface caused by both natural processes

and human practices. Applications range from disaster monitoring after Hurricane Katrina and the Indonesian tsunami to global crop-condition analysis. Landsat data are vital for evaluating seasonal surface- and ground-water use, planning water budgets, managing irrigation practices, administering water rights, studying effects related to converting agricultural lands to urban use, and much more.

Landsats 5 and 7 have exceeded lifecycle projections; however, they will eventually run out of fuel. The remote-sensing community has been working on a satellite and sensor successor—the Landsat Data Continuity Mission (LDCM)—currently (2007) planned for launch in 2011. One of the challenges is to make these large data sets more easily accessible to the user community. To address this challenge, the USGS implemented a distribution pilot releasing selected Landsat 7 image data of the U.S. through the Web (<http://glovis.usgs.gov> or <http://earthexplorer.usgs.gov>). This Web-enabled distribution pilot for the LDCM provides users easy access to Landsat 7 data. In only 3 weeks, 199 users downloaded almost 2,000 products (approximately 450 GB) through this pilot. Copies of these data also are available on CD or DVD at the cost of reproduction.

Regional Organizational Restructuring

In 2007 USGS laid the groundwork for an organizational restructure in the three Regions that will enhance the ability of USGS scientists to address science issues in a multidisciplinary manner on the landscape. This restructure has been endorsed by the National Academy of Sciences. On October 1, 2007, the USGS implemented a deployment of Regional Executives with multidisciplinary responsibilities across the landscape to promote better coordination and collaboration among the four science disciplines (geology, geography, hydrology and biology), encourage and facilitate integrated science within the bureau and foster partnerships to better accomplish the bureau's mission. The new organizational structure will provide a single point of entry to the USGS for customers, better align USGS senior management with that of other DOI bureaus, and further align USGS's business and scientific practices so that USGS will be better positioned to meet partner and customer needs for USGS science.



Section II

Performance Data and Analysis

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Message from the Director, Office of Budget and Performance



To say that fiscal year (FY) 2007 was an extraordinary year would be an understatement. As action on the Department of the Interior bill had not been completed by October 1, we began the year under a continuing resolution, which was superseded by three additional continuing resolutions. On February 15, 2007, the President signed a fourth and final continuing resolution to fund the Department of the Interior through the end of the 2007 fiscal year. The U.S. Geological Survey (USGS) appropriation under the year-long continuing resolution was \$982,780,000, with a supplemental appropriation of \$5,270,000 for research on avian influenza. The continuing resolution also required that agencies develop an operating plan within 30 days of the Bill's passage. Drafting an operating plan for FY 2007 proved to be a complex budget exercise, unprecedented in appropriations history. Our progress in meeting the goals established in that plan is documented in the following pages of our annual Performance and Accountability Report (PAR).

In these pages you will read about innovative and distinguishing efforts accomplished by USGS employees in FY 2007 across the country.

As Director of the Office of Budget and Performance (OBP), I lead experienced budget and performance management analysts who provide training, guidance, and support to program coordinators and regional executives throughout the USGS. OBP staff works directly with senior leadership, program managers, and scientists to assess and quantify performance that focuses on the highest priorities and on meaningful outcomes. We take seriously the challenge to be accountable to the American people for the performance of our programs, and for achieving objectives to continue to serve the Nation by providing timely and reliable scientific information. To that end, we continue to survey partners and customers to ensure relevance and assess satisfaction with quality, timeliness, and usefulness of our research, data products, and services. We believe our commitment to deliver high performance translates into success for all our stakeholders.

Recognizing that constant renewal is an integral component of continued high performance, as we have done throughout our long history as a world leader in the scientific community, we continue to take steps to position the USGS for future growth. The USGS has devoted significant attention to improving the nature, application, and effectiveness of our performance measures and goals as we worked with the Department to revise our strategic plan in fulfillment of the provisions of the Government Performance and Results Act of 1993 (GPRA). Released in January, the revised "Department of the Interior's Strategic Plan for Fiscal Year 2007-2012" continues to place science at the foundation of Interior programs, and USGS programmatic outcomes remain in the same three mission areas (Resource Protection, Resource Use, and Serving Communities) as in the initial Strategic Plan 2003-08. However, science's programmatic presence shifted from intermediate to end outcome level in the Resource Protection and Resource Use mission areas and resolved to a single end outcome in Serving Communities. As a result, science goals now support all three mission areas in the same way, that is, "to improve understanding of" the following:

- National ecosystems and resources (Resource Protection): through our Enterprise Information's geospatial programs, Biology, Geography, Geology, and Water Resources;
- Energy and mineral resources (Resource Use): through Geology's Energy and Mineral Resources programs; and
- Natural hazards (Serving Communities): through Geologic Hazards programs.

These new changes for USGS in the DOI Strategic Plan ensure that Interior's science mission has clearly defined goals and improved performance measures to gauge progress. Several of the new performance measures derived their origin from the Office of Management and Budget (OMB) Program Assessment Rating Tool (PART) evaluation process, making a closer linkage of the plan to the programs and performance budget. In the construct of the strategies to achieve the end outcome goals for science, the OMB's Research and Development criteria were used as the accountability premise for science investments. These criteria are performance, quality, and relevance; therefore, the first strategy for each science goal focuses on performance and the second strategy on quality and relevance.

The USGS continues to improve upon and implement Activity Based Costing (ABC) in cooperation with the Department. The continued commitment to ABC will improve the overall analysis and use of all funding within USGS, including base funding. In 2007, USGS realigned its ABC activities to the three new Mission Goals within the revised Strategic Plan. The Department has begun to cost key reference measures rather than outputs or end outcome goals. For USGS, these have been defined as our three end outcome measures, which are indicative of the cumulative impact of our research (that is, use by land and resource managers for decision making). The pages that follow document what we as a bureau have accomplished during the past year in support of these goals and exemplify the outcome of our measures. The bureau's progress can be seen in the following few snapshots from the past year:

- Through the Department's participation in the Association of Government Accountants program on PAR evaluation, for which it has received the Certificate of Excellence in Accountability Reporting for a number of years, the USGS received a benchmark in the comments collected on the 2006 PAR. It was recommended that all bureaus present the results of Research and Development in the same manner as presented by the USGS.
- In 2007, major changes were put in place to the USGS Internal Control Process. USGS focused on the findings and recommendations by OMB resulting from their PART evaluations for the Program Component of the Internal Control Process. Using the PART scores as risk assessment and findings to identify internal controls integrates the OMB Circular A-123 requirement into the bureau's existing management process. The Administration Component reviews were based on risk assessment, testing each organization allocation to develop the Administration Component reviews. A formal tracking system was implemented to track all findings as a result of the reviews that were conducted.
- The USGS made considerable progress toward achieving the goals established in the President's Management Agenda, as evidenced in the double green scores (status and progress) received in seven of the nine initiatives in which we participate.

These "success stories" are witness to the many ways in which USGS employees made progress toward achieving the important goals in our current strategic plan. Collectively, the stories also illustrate our successful steps this year toward achieving our overall mission. USGS has become a world leader in the natural sciences thanks to our scientific excellence and responsiveness to society's needs. As we move forward, we will continue to link performance and costs to inform our decision making and ensure that we use all resources as efficiently and effectively as possible.

Carla Burzyk
Director, Office of Budget and Performance
October 2007

Performance Data and Analysis

Budget and Performance Integration

The integration of budget and performance is critical to the planning for and evaluation of success achieved by the USGS in the application of its science to building long-term bodies of data and information ensuring their relevance to partner and customer needs. The USGS has been particularly successful in this endeavor, owing to the physical integration of its budget, regional, and planning and performance teams in its Office of Budget and Performance.

Working in constant contact, these teams jointly develop and produce budget and performance documents that are fully integrated with respect to

description of base programs and analyses, their funding and FTE implications, what the standards of their performance will be and how they will be evaluated. The three teams work closely with bureau program staff to understand, evaluate, and plan the science programs' budget and performance levels, ensuring responsiveness to USGS executive management decisions, departmental concerns, and Administration policies. In FY2007 the Office of Budget and Performance made a concert effort to improve and enhance communication of budget and performance integration by redesigning and upgrading the content of our website: <http://www.usgs.gov/budget>.

FY2006 Criteria

Strategic and annual plans have a limited number of goals, use PART measures and focus on information used in senior management reports.

Performance appraisal plans adhere to merit system principles for SES, managers, and 60%+ of bureau employees.

Used performance information to improve results.

Reported full and marginal cost of achieving performance goals.

Every PART program has at least one efficiency measure.

PART ratings used to justify requests and fewer than 10% of PARTed programs are rated "results not demonstrated" for 2 years in a row.

FY2007 Criteria

Agency achieves planned improvements in program performance and efficiency in achieving results each year.

Strategic plans contain a limited number of outcome-oriented goals and objectives. Annual budget and performance documents incorporate measures identified in the PART and focus on the information used in the senior management report described in the first criterion.

Reports the full cost of achieving performance goals accurately in budget and performance documents and can accurately estimate the marginal cost of changing performance goals.

Has at least one efficiency measure for all PARTed programs.

Uses PART evaluations to direct program improvements, and PART ratings and performance information are used consistently to justify funding requests, management actions, and legislative proposals.

Less than 10% of agency programs receive a Results Not Demonstrated rating for two years in a row.

FY2007 Criteria

Agency achieves planned improvements in program performance and efficiency in achieving results each year.

Strategic plans contain a limited number of outcome-oriented goals and objectives. Annual budget and performance documents incorporate measures identified in the PART and focus on the information used in the senior management report described in the first criterion.

Reports the full cost of achieving performance goals accurately in budget and performance documents and can accurately estimate the marginal cost of changing performance goals.

Status

ELT Status of Funds and Performance Reviews focus on key measure and cost data. ABC data are continuously available and the Office of Budget and Performance posts quarterly ABC reports by program, region, goal, etc. on the Internet.

USGS senior managers continue to use performance information for planning and evaluation in the application of its science.

Examples of how programs use cost and performance data to improve programs are cited in the budget for all budget activities.

PART ratings and improvement plan actions are cited in the Budget submission, particularly in support of new initiatives.

In FY 2007 the fleet inventory validation and feasibility study was completed and program changes were made to enhance the capabilities of the bureau's fleet data collection application.

PART evaluations have indicated affirmative on limited number of goals.

PART measures have been used as the basis for revision of the Strategic Plan.

The USGS Annual Performance Budget fully describes the relationship between all relevant Strategic Plan intermediate and end outcome goals and bureau performance measure targets.

PART measures and rating have been used in the annual plan (Performance Budget) to justify program initiatives.

USGS documented full cost of achieving performance goals, demonstrated the costing relationship of intermediate and outcome measures, and cited marginal cost and incremental performance in program-initiative funding requests.

Realigned ABC to the new mission and goals within the new Strategic Plan and captured cost of end outcome measures while the task of costing intermediate outcome measures is continuing.

USGS continues to verify and validate data, improve understanding and process application, and to standardize ABC, Strategic Plan, and PART outputs so that the building blocks of the Strategic Plan can be costed, relationships understood, and management information leveraged.

Performance Data and Analysis

FY2007 Criteria

Has at least one efficiency measure for all PART programs.

Uses PART evaluations to direct program improvements, and PART ratings and performance information are used consistently to justify funding requests, management actions, and legislative proposals.

Less than 10% agency programs receive a "results not demonstrated" rating for two years in a row.

Status

All PART programs have one efficiency measure as documented in the DOI Efficiency Report tables submitted to OMB and in the performance budget.

USGS has particularly focused on program improvement through the PART process. In FY2006, PART evaluations stand at nine programs "moderately effective," one program "effective," and none rating "adequate," "ineffective," or "results not demonstrated." No USGS programs were evaluated by OMB in FY2007. Several other program reviews were concluded and are cited in the Program Evaluation of the 2007 PAR.

PART ratings and improvement plan actions are cited in the performance budget. The USGS meets quarterly with the Department to ensure accountability of PART programs.

A comprehensive collection of anticipated accomplishments and commitments was compiled and used to guide the development of individual performance plans. USGS also used these data to develop a database that contains all USGS commitments including GPRA; PART; congressional directives; OMB directives; and internal controls. Collectively, these represent the bureau's overall organizational commitments and enable us to develop a robust organizational assessment and individual performance plans that are aligned with organizational commitments and easily cascade into the bureau.

PART program improvement plan milestones were tested for the A-123 internal control process. A sample pool of 15 milestones was chosen by listing the 2007 milestones in the order of their target completion date and selecting every fifth milestone. When one of the selected milestones has been reported complete, the program manager must produce evidence of the milestone completion. (The 15 milestones are not known to the program managers ahead of time.) Any deficiencies are entered into the A-123 Reports Tracking System. For the FY 2007 process, no deficiencies have been cited and all evidence has been accepted as verifying completion by USGS management and the OMB examiner.

There are no "results not demonstrated" for any USGS programs.

PART

With program evaluations and peer review integral to our culture, USGS has particularly focused on program improvement through OMB's Program Assessment Rating Tool (PART) process. By the end of FY2007, USGS PART evaluations ratings included nine programs "moderately effective," one program "effective," and no programs rated "adequate," "ineffective" or "results not demonstrated." All OMB recommendations have been addressed with action plans having milestones and targets approved by the Department and OMB and tracked in the Department's Management Initiatives Tracking System (MITS). The Department quarterly reviews the Bureau's progress in achieving recommendations, improvement milestones, and performance targets. In addition, prior and current year efficiency measures results are reported. Of 23 follow up actions in FY2007, 20 were completed and 3 were delayed due to funding and procurement slippage and compressed work loads from the continuing resolution.

Activity Based Cost/Management

In FY2007, the USGS realigned ABC work activities to the new mission/goals within the revised strategic plan. The Department has begun to cost representative measures rather than outputs or end outcome goals. For USGS, these have been defined as our three end outcome measures which are indicative of the cumulative impact of our research that is used by land and resource managers in decisionmaking.

USGS believes that close linkages will enable better costing of outputs, understanding of relationships, and leveraging of management information. The process of developing these standardized outputs further refined the definition templates and further contributed to more consistent application.

General ABC reports and data can be extracted by all managers at all levels on a daily basis for verifying and validating and for performing analyses for decisionmaking. Continued efforts are being applied to standardize processes, ensure consistency of interpretation and meet the need for costing measures of outcomes.

USGS Activities

The USGS conducts research, monitoring, and assessments to contribute to understanding the natural world—America's lands, water, and biological resources and processes as well as its natural hazards. By combining biology, geology, hydrology, and geography expertise in one agency, the USGS is uniquely positioned to provide science information and conduct scientific research that ensure an integrated approach to advance scientific knowledge, improved understanding and utilize the latest technologies to provide timely answers and products and improve the quality of life for the communities we serve.

The USGS provides reliable, impartial information to the citizens of this country and to the global community in the form of maps, data, and reports containing analyses and interpretations of water, energy, mineral, and biological resources; land surfaces; marine environments; geologic structures; natural hazards; and dynamic processes of the Earth. The USGS provides scientific information to understand issues such as coastal erosion and pollution, sea-level rise, loss of wetlands and marine habitats, the geological processes controlling the invasion of cheat grass, and the role of dust in desert ecosystem health.

Armed with this understanding, decisionmakers can respond better to both natural and human-induced changes. Through the application of science, decisionmakers are able to address complex issues concerning public safety, our environment, and natural resources; to address public health questions; and to promote public prosperity for the future well being of our country. USGS data and information are used daily by managers, planners, and citizens to understand, respond to, and plan for changes in the environment. Examples of the multitude of users are provided in the Management Discussion and Analysis section. USGS research and data products support the Department's resource and land management needs and provide the science information needed by other Federal, State, Tribal, and local government agencies; industry groups; agricultural interests; academia; non-profit organizations; and the American public to guide planning, management, and regulatory programs.

Performance Data and Analysis

Management excellence is imperative to successful science. In FY 2007, tracking of progress in achieving the President's Management Agenda was augmented by an all-employee Organizational Excellence Assessment Survey. The survey results help the USGS management teams and the Director develop strategies to address the findings and identify actions that benefit our science and our employees and will advance Interior's strategic plan.

Implementation of Revised Strategic Plan

The Department of the Interior's Strategic Plan for Fiscal Year 2007-2012 has been revised in fulfillment of provisions of the Government Performance and Results Act of 1993 (GPRA) and was implemented in FY 2007. The revised GPRA plan continues to integrate and align bureau responsibilities under four major mission goal areas and reinforces our commitment to achieving results through the use of rigorous performance measures and management excellence. For USGS, a single science goal has been created for each of our mission areas (Resource Protection, Resource Use, and Serving Communities). Energy and Minerals remain in Resource Use, but now in a science goal, and Geologic Hazards remain in Serving Communities. The "Advance knowledge" end outcome goal in Serving Communities in the previous plan has been consolidated with the Biology Research intermediate outcomes from the previous plan in a single Resource Protection science end outcome goal. This array simplifies most of the multidisciplinary science issues by integrating most programs in a single goal (Resource Protection).

The Department's FY2007-2012 Strategic Plan will essentially serve as the agency's roadmap for future actions.

Structural support for mission areas are provided by management and partnership efforts. The Strategic Plan frames organizational responsibilities and operational assumptions, and converts them into expectations for performance and accomplishment. Essentially, it provides a high-level overview of performance, setting large mission goals and broad program objectives. Its greatest value, day-by-day, comes from connecting that larger view with each day's ground-level work.

Because the pressures on our resources have never been greater and will continue to grow in the years ahead, the Department is placing a constant focus on the efficient use and careful management of diminishing resources. Effectively measuring performance results is critical to making appropriate tactical and strategic adjustments to meet our goals.

The Strategic Plan structure is built on a logic model focused on end outcomes, selected high-priority intermediate outcomes, and on performance measures, indicators, and output that verify progress toward outcome achievement. Each mission area has its own end outcome goals. Supporting those are intermediate outcome goals and measures, with outputs and inputs below that. Targets are set at every level, providing numerical measures of USGS accomplishment.

Outputs are typically quantifiable products of work processes or activities. Activity-based costing, in its fourth year of implementation at USGS, holds the potential to connect outputs to costs and create a powerful management tool for identifying efficiencies, focus attention on achievement and innovation, and move more quickly to spread best practices throughout the organization.

The Management's Discussion and Analysis section is focused on end outcome measures that are used to make informed decisions. USGS performance data and accomplishments are further expanded in this section to include all performance measures that were used to request funding and to match achievement of these metrics against the targets that were set on enactment of the appropriation for 2007, a year long continuing resolution. USGS outcomes and measures focus on providing science to customers for solving the Nation's complex land- and resource -management problems and to minimize the loss of life and property from natural disasters. The ultimate outcome related to providing scientific information is that our customers and partners have the information with which to make informed decisions. Performance measures serve as stepping stones to the goal and the outcome, keeping the program on track, on time, and within budget.

Results

The PART and bureau level performance measures and their performance results are included with the strategic plan measures within the tables to follow. The following legend applies:

- ▼ Target Not Met
- ▲ Target Exceeded
- ✓ Target Met

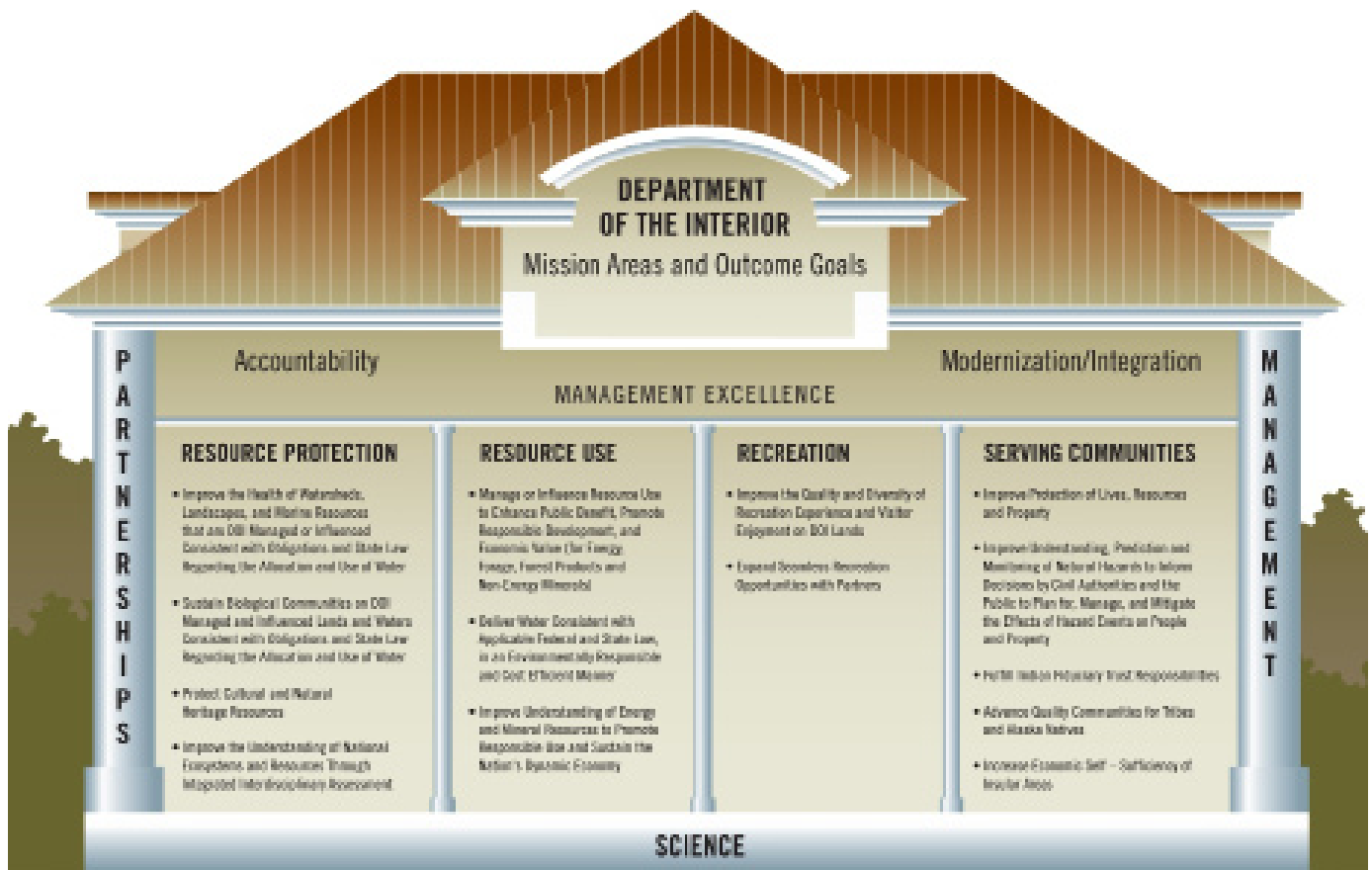
Each analysis of results begins with Target Met; Target Not Met; or Target Exceeded. USGS is applying the Department's 5 percent threshold in determining the result, which dictates that if the result is within 5 percent of the target performance, this generates a "goal met" rating. The summary result for values that are less than 95 percent or more than 105 percent of the target must be either Target Not Met or Target Exceeded, respectively.

The Department's Strategic Plan is available at the following address: http://www.doi.gov/ppp/Strategic%20Plan%20FY07-12/strat_plan_fy2007_2012.pdf

How We Performed in FY2007:

USGS met the representative measures monitored during FY2007. Summary results for all performance measures are presented on the next page.

The measures not met predominantly resulted from diversion of efforts to disaster-related data collection deployed funding for multiple catastrophic events and changing priorities of partners who contribute funds and/or data. Planned data collection will resume when immediate priorities are met.



This structure depicts the four mission areas of the Department and the supporting pillars of partnerships and management. Science is presented as the foundation for informed resource-management decisions.

Performance Data and Analysis

Summary of Performance Measure Results in FY2007:

√ **Targets Met** = 64 ▼ **Targets Not Met** = 9 ▲ **Targets Exceeded** = 32 ■ **Targets Rebaselined** = 3

End Outcome Goal	Total Number of Measures	Number of Measures Met	Number of Measures Exceeded	Number of Measures Not Met	Number of Measures Rebaselined	Number of Measures Estimated
Resource Protection: Protect the Nation's Natural, Cultural, and Heritage Resources						
Improve the understanding of National ecosystems and resources through integrated interdisciplinary assessment.	69*	34	24	7	2	1
Resource Use: Manage Resources to Promote Responsible Use and Sustain a Dynamic Economy						
Improve the understanding of energy and mineral resources to promote responsible use and sustain the Nation's dynamic economy.	17	14	3	0	0	0
Serving Communities: Improve Protection of Lives, Property, and Assets; Advance the use of Scientific Knowledge; and Improve the Quality of Life for the Communities We Serve						
Improve the understanding, prediction, and monitoring of natural hazards to inform decisions by civil authorities and the public to plan for, manage, and mitigate the effects of hazard events on people and property.	24	16	5	2	1	0
Totals	110*	64	32	9	3	1

In the following pages, we present each of our performance measures with historical and current year results in relationship to their applicable mission area and end outcome goals. For those measures that did not meet expected results, comments are provided immediately following the tables results. Highlights of significant accomplishments illustrating our work performed are also included in the following pages.

* One measure not counted, no opportunity to perform.

Resource Protection: Protect the Nation's Natural, Cultural, and Heritage Resources

End Outcome Goal:

Improve the understanding of National ecosystems and resources through integrated interdisciplinary assessment.

✓ **Targets Met** = 34 ▼ **Targets Not Met** = 7 ▲ **Targets Exceeded** = 24 ■ **Targets Rebaselined** = 2

GPRA End Outcome Measure

1	Percentage of targeted science products that are used by partners for land or resource management decisionmaking (<u>DOI strategic plan key measure</u>)	2004 Actual	2005 Actual	2006 Actual	2007 Planned	2007 Actual
		85%	90%	93%	≥ 90%	93%

✓ **Target Met.** This measure is tracked by survey of customers and partners. The target is a threshold below which performance would indicate a problem and would mean that some sort of corrective action is needed. So long as the actual result is above the target level, the process is under control and no corrective action is needed.

Intermediate Outcome: Ensure availability of long-term environmental and natural resource information, data and systematic analyses needed by land and resource managers for informed decisionmaking

2	Percentage of North American migratory birds for which scientific information on their status (species distribution and number) and trend are available to inform and improve conservation (<u>PART measure</u>) (<u>DOI strategic plan key measure</u>)	2004 Actual	2005 Actual	2006 Actual	2007 Planned	2007 Actual
		n/a	26%	26%	26%	26.6%

✓ **Target Met.**

3	Percentage of targeted fish and aquatic populations for which information is available regarding limiting factors (<u>PART measure</u>) (<u>DOI strategic plan key measure</u>)	2004 Actual	2005 Actual	2006 Actual	2007 Planned	2007 Actual
		n/a	31%	31%	37%	38.66%

✓ **Target Met.**

4	Percentage of targeted invasive species for which scientific information and decision support models are available to improve early detection (including risk assessments) and invasive species management (<u>PART measure</u>) (<u>DOI strategic plan key measure</u>)	2004 Actual	2005 Actual	2006 Actual	2007 Planned	2007 Actual
		n/a	51.6%	51.6%	52.5%	54%

✓ **Target Met.**

5	Percentage improvement in detectability limits for selected high-priority environmentally available chemical analyses (<u>PART Efficiency measure</u>)	2004 Actual	2005 Actual	2006 Actual	2007 Planned	2007 Actual
		n/a	n/a	6%	12%	12%

✓ **Target Met.**

Performance Data and Analysis

6	Increase long-term precision (decrease bias) for existing species monitored through the Breeding Bird Survey to enable a detection of 50% population decline of relevant species within 20 years (<u>PART measure</u>)	2004 Actual n/a	2005 Actual n/a	2006 Actual .0008	2007 Planned .0008	2007 Actual .0008
	√ Target Met.					
7	Percentage of CRU students that work on subsequent fish and wildlife science advanced degrees or obtain employment in the fish and wildlife or other natural resources field, within targeted dates post-graduation	2004 Actual n/a	2005 Actual n/a	2006 Actual 95%	2007 Planned 95%	2007 Actual 95%
	√ Target Met.					
8	Percentage of focal migratory bird populations for which scientific information is available to support resource management decisionmaking (USGS in coordination with FWS) (<u>PART measure</u>)	2004 Actual n/a	2005 Actual n/a	2006 Actual 56.88%	2007 Planned 57.02%	2007 Actual 57.02%
	√ Target Met.					
9	Percentage of US land with land characterization and species distribution information available for resource management decisionmaking updated in the last 5 years (<u>PART measure</u>)	2004 Actual 18.3%	2005 Actual 23.3%	2006 Actual 42.3%	2007 Planned 34%	2007 Actual 36.4%
	▲ Target Exceeded. Due to a project completed ahead of schedule.					
10	Percentage of North American migratory birds for which scientific information on their status (species distribution and number) and trends are available in a standardized and exchangeable format, to improve conservation plans of Federal and State agencies) (<u>PART measure</u>)	2004 Actual 15%	2005 Actual 20%	2006 Actual 25%	2007 Planned 30%	2007 Actual 30%
	√ Target Met.					
11	Percentage of North American amphibians and reptiles for which scientific information on their status (species distribution) are available in a standardized and exchangeable format, to improve conservation plans of Federal and State agencies (<u>PART measure</u>)	2004 Actual 88%	2005 Actual 90%	2006 Actual 91%	2007 Planned 92%	2007 Actual 92%
	√ Target Met.					

Performance Data and Analysis

12	Percentage of North American mammals for which scientific information on their status (species distribution) are available in a standardized and exchangeable format, to improve conservation plans of Federal and State agencies (<u>PART measure</u>)	2004 Actual	2005 Actual	2006 Actual	2007 Planned	2007 Actual
		91%	93%	94%	94%	94%
	√ Target Met.					
13	Percentage of US Federally-listed threatened and endangered or indicator fish species for which scientific information on a species status is available in a standardized and exchangeable format, to improve conservation plans of Federal and State agencies (<u>PART measure</u>)	2004 Actual	2005 Actual	2006 Actual	2007 Planned	2007 Actual
		2.6%	7.5%	12.4%	17.5%	17.5%
	√ Target Met.					
14	Percentage of river basins that have streamflow stations (<u>PART measure</u>) (<u>DOI strategic plan key measure</u>)	2004 Actual	2005 Actual	2006 Actual	2007 Planned	2007 Actual
		77%	82%	81%	84%	81%
	√ Target Met.					
15	Percentage of the Nation's 65 principal aquifers with monitoring wells used to measure responses of water levels to drought and climatic variations to provide information needed for water-supply decisionmaking (<u>PART measure</u>) (<u>DOI strategic plan key measure</u>)	2004 Actual	2005 Actual	2006 Actual	2007 Planned	2007 Actual
		60%	61%	61%	60%	60%
	√ Target Met.					
16	Percentage of targeted contaminants for which methods are developed to assess potential environmental and human health significance (<u>PART measure</u>) (<u>DOI strategic plan key measure</u>)	2004 Actual	2005 Actual	2006 Actual	2007 Planned	2007 Actual
		10%	20%	85%	33%	41%
	▲ Target Exceeded. USGS targeted 187 chemicals to have methods developed for 2007, and developed methods and published information for 77 of those chemicals, resulting in performance of 41%. The list of contaminants changes each year as the target is set annually in consultation with other Federal agencies through the CENR Toxics and Risk Subcommittee and associated workgroups.					
17	Percentage of streamflow stations with real-time measurement/reporting of water quality (<u>PART measure</u>)	2004 Actual	2005 Actual	2006 Actual	2007 Planned	2007 Actual
		6%	7%	9%	8%	11%
	▲ Target Exceeded. Partner agencies contributed additional funding that was not anticipated when targets were set.					
18	Percentage of ground-water stations that have real-time reporting capability in the ground-water climate response network (<u>PART measure</u>)	2004 Actual	2005 Actual	2006 Actual	2007 Planned	2007 Actual
		57%	67%	47%	63%	52%
	▼ Target Not Met. Overall expansion of the network can result in a decrease in the performance metric because not all of the new wells added to the network are real-time.					

Performance Data and Analysis

19	Percentage of U.S. with ground-water quality status and trends information to support management decisions (<u>PART measure</u>)	2004 Actual	2005 Actual	2006 Actual	2007 Planned	2007 Actual
		0	39%	58%	51%	68%

▲ Target Exceeded. Accelerated cyclic sampling schedule due to change in priorities.

20	Percentage of States with Web-based streamflow statistic tools to support water management decisions (<u>PART measure</u>)	2004 Actual	2005 Actual	2006 Actual	2007 Planned	2007 Actual
		4%	10%	14%	20%	18%

▼ Target Not Met. Funding was delayed till mid-year due to CRs.

21	Percentage of U.S. ground-water availability status and trends information to support resource management decisions (<u>PART measure</u>)	2004 Actual	2005 Actual	2006 Actual	2007 Planned	2007 Actual
		5%	7%	8%	9%	9%

✓ Target Met.

22	Percentage improvement in accuracy of watershed (SPARROW) model prediction for total nitrogen and total phosphorus (measured as reduced error) (<u>PART measure</u>)	2004 Actual	2005 Actual	2006 Actual	2007 Planned	2007 Actual
		40%	31%	24%	32%	20%

▲ Target Exceeded. Normal year-to-year variation in results of model calibration.

23	Percentage of proposed streamflow sites currently in operation that meet one or more Federal Needs (<u>PART measure</u>)	2004 Actual	2005 Actual	2006 Actual	2007 Planned	2007 Actual
		64%	61%	61%	62%	62%

✓ Target Met.

24	Percentage of surface area of the coterminous U.S. for which high-resolution geospatial datasets are cataloged, managed, and available through the <i>National Map</i> (<u>DOI strategic plan key measure</u>)	2004 Actual	2005 Actual	2006 Actual	2007 Planned	2007 Actual
		n/a	n/a	n/a	83%	99.71%

▲ Target Exceeded. Greater than planned due to unexpected donation of nearly all “man-made structures” layer from a Federal agency.

25	Percentage of the area of 11 Western States for which orthoimagery have been acquired through a FSA/USGS partnership with other entities to achieve a 5-year cycle for 1-meter NAIP imagery	2004 Actual	2005 Actual	2006 Actual	2007 Planned	2007 Actual
		n/a	43%	23%	62%	100%

▲ Target Exceeded. Ten States have complete coverage of 1-m NAIP data that are < 5 years old; Nevada has partial coverage due to military restrictions. Measure is complete.

26	Percentage of total cost FSA and USGS saved through partnering with other entities for imagery acquisition of 1-meter NAIP orthoimagery	2004 Actual	2005 Actual	2006 Actual	2007 Planned	2007 Actual
		n/a	44%	41%	36%	32%

▼ Target Not Met. State and Federal partners contributed less than expected amounts.

Performance Data and Analysis

27	Percentage of data acquisition costs for the <i>National Map</i> funded by partners	2004 Actual	2005 Actual	2006 Actual	2007 Planned	2007 Actual
		45%	47%	74%	60%	59.3%
	✓ Target Met.					
28	Percentage of surface area with contemporary land cover data needed for major environmental monitoring and assessment programs (<u>DOI strategic plan key measure and PART measure</u>)	2004 Actual	2005 Actual	2006 Actual	2007 Planned	2007 Actual
		45%	65%	94%	95%	95%
	✓ Target Met.					
29	Percentage of surface area with temporal and spatial monitoring, research, and assessment/data coverage to meet land-use planning and monitoring requirements (number of completed eco-region assessments out of 84 eco-regions) (<u>PART measure</u>)	2004 Actual	2005 Actual	2006 Actual	2007 Planned	2007 Actual
		31%	37%	48%	60%	61%
	✓ Target Met.					
30	Percentage of data accessible: Percentage of satellite data available from archive within 24 hours of capture (<u>PART measure</u>)	2004 Actual	2005 Actual	2006 Actual	2007 Planned	2007 Actual
		90%	97.2%	98.7%	95%	95%
	✓ Target Met.					
31	Percentage of US with regional geologic map coverage that is available to customers through the NGMDB (<u>PART measure</u>)	2004 Actual	2005 Actual	2006 Actual	2007 Planned	2007 Actual
		50.25%	53%	55%	57.5%	60.4%
	✓ Target Met.					
32	Percentage of geologic investigations in NPS units that are cited for use by the NPS within three years of delivery (<u>PART measure</u>)	2004 Actual	2005 Actual	2006 Actual	2007 Planned	2007 Actual
		n/a	80%	80%	80%	100%
	▲ Target Exceeded. Only one geologic map within National Park Service units was completed in 2004, and this map was used by NPS.					
33	Percentage of EDMAP students that work on subsequent geoscience degrees or obtain a job in a geoscience field (<u>PART measure</u>)	2004 Actual	2005 Actual	2006 Actual	2007 Planned	2007 Actual
		95%	94%	95%	95%	94%
	✓ Target Met.					

Performance Data and Analysis

34	Percentage of US with geologic maps that are being integrated into ground-water availability status and trends to support resource management decisions (PART measure)	2004 Actual	2005 Actual	2006 Actual	2007 Planned	2007 Actual
		3%	5%	6%	8%	8%

✓ Target Met.

35	Number of counties or comparable jurisdictions that have adopted hazard mitigation measures based in part on geologic mapping and research (PART measure)	2004 Actual	2005 Actual	2006 Actual	2007 Planned	2007 Actual
		n/a	10	12	14	14

✓ Target Met.

36	Percentage of NPS units for which environmental characterization based on airborne remote sensing is provided as digital GIS products and for which products are cited or use by NPS within two years (PART measure)	2004 Actual	2005 Actual	2006 Actual	2007 Planned	2007 Actual
		n/a	50%	50%	60%	60%

✓ Target Met.

37	Percentage of regional and major topical studies for which interpretive and synthesis products are cited by identified partners and users within three years of study completion (PART measure)	2004 Actual	2005 Actual	2006 Actual	2007 Planned	2007 Actual
		60%	80%	80%	80%	80%

✓ Target Met.

Intermediate Outcome: Ensure the quality and relevance of science information and data to support decisionmaking

38	Percentage of studies validated through appropriate peer review or independent review (DOI strategic plan key measure)	2004 Actual	2005 Actual	2006 Actual	2007 Planned	2007 Actual
		100%	100%	100%	100%	100%

✓ Target Met.

39	Percentage satisfaction with scientific and technical products and assistance for environmental and natural resource decisionmaking (DOI strategic plan key measure)	2004 Actual	2005 Actual	2006 Actual	2007 Planned	2007 Actual
		90%	96%	91%	≥ 90%	90%

✓ Target Met. Customer satisfaction measures are a type of statistical quality control - with the target being the threshold level. That is, an actual result below the target would indicate a problem and would mean that some sort of corrective action is needed. So long as the actual result is above the target level, the process is under control and no corrective action is needed.

Performance Data and Analysis

PART Efficiency and Other Output Measures

40	Average cost per sample for selected, high priority environmentally available chemical analysis (<u>PART measure</u>)	2004 Actual	2005 Actual	2006 Actual	2007 Planned	2007 Actual
		n/a	\$700	\$680	\$680	\$680
	√ Target Met.					
41	Number of cumulative gigabytes managed (Biology)	2004 Actual	2005 Actual	2006 Actual	2007 Planned	2007 Actual
		360	791.25	1,134.22	820	931
	▲ Target Exceeded. Reflects continued improved process to counting on backup servers.					
42	Number of annual gigabytes collected (Enterprise Information)	2004 Actual	2005 Actual	2006 Actual	2007 Planned	2007 Actual
		34,815	6,023	76,550	25,428	94,802
	▲ Target Exceeded. Due to influx of unanticipated large volume of high resolution geospatial data from partners.					
43	Number of cumulative gigabytes managed (Enterprise Information)	2004 Actual	2005 Actual	2006 Actual	2007 Planned	2007 Actual
		85,857	108,035	187,842	200,635	278,646
	▲ Target Exceeded. Due to influx of unanticipated large volume of high resolution geospatial data from partners.					
44	Number of annual terabytes collected (Geography)	2004 Actual	2005 Actual	2006 Actual	2007 Planned	2007 Actual
		527.2	438.8	537.9	534.0	96
	▼ Target Not Met. Reduction in actual from target is due to the reprocessing of MODIS & ASTER data based on new algorithms developed by NASA (usually on an 18-month cycle).					
45	Number of cumulative terabytes managed (Geography)	2004 Actual	2005 Actual	2006 Actual	2007 Planned	2007 Actual
		2,448.3	2,887.4	3,425.3	4,043.8	4,255.9
	▲ Target Exceeded. Increase due to reprocessing of Landsat data to make them web accessible.					
46	Number of annual gigabytes collected (Geology)	2004 Actual	2005 Actual	2006 Actual	2007 Planned	2007 Actual
		407.2	117.8	218.8	210.8	1,570
	▲ Target Exceeded. Target based largely on the NGMDB project's plan to acquire map images by scanning. Additional thousands of map images were received from the USGS Publications Warehouse (PW) that were appropriate to the Map Catalog.					

Performance Data and Analysis

47	Number of cumulative gigabytes managed (Geology)	2004 Actual	2005 Actual	2006 Actual	2007 Planned	2007 Actual
		898.2	1,016	1,235	1,445	2,824.6
	▲ Target Exceeded. Target based largely on the NGMDB project's plan to acquire map images by scanning. Additional thousands of map images were received from the USGS Publications Warehouse (PW) that were appropriate to the Map Catalog.					
48	Number of systematic analyses and investigations delivered to customers	2004 Actual	2005 Actual	2006 Actual	2007 Planned	2007 Actual
		1,526	2,127	2,157	1,732	2,879
	■ Target Rebaselined. Bureau-wide effort to further standardize counting in anticipation of Bureau-wide publications system implementation.					
49	Number of formal workshops or training provided to customers	2004 Actual	2005 Actual	2006 Actual	2007 Planned	2007 Actual
		179	403	313	194	392
	▲ Target Exceeded. Due to higher customer demand for workshops than anticipated.					
50	Number of students who completed degree requirements for MS, PhD, and post-doctoral programs under the direction and mentorship of cooperative research unit scientists	2004 Actual	2005 Actual	2006 Actual	2007 Planned	2007 Actual
		106	100	103	95	95
	✓ Target Met.					
51	Amount of fire-related data and information available on-line via the NBII, to assist land managers in fire management decisionmaking (<u>PART measure</u>)	2004 Actual	2005 Actual	2006 Actual	2007 Planned	2007 Actual
		.5 gb	1.5 gb	15.42 gb	2.5 gb	23.3gb
	▲ Target Exceeded. FRAMES geospatial data was brought online in addition to normal data volume growth.					
52	Number of Natural History Museum specimen data records available on-line via the NBII, to assist researchers in identifying and addressing threats to human and animal health	2004 Actual	2005 Actual	2006 Actual	2007 Planned	2007 Actual
		n/a	20 million	57.6 million	35 million	59.3 million
	▲ Target Exceeded. Several large botanical and herbaria collections were received through the Southeast Regional Network Expertise and Collections.					
53	Amount of invasive species data and information available on-line via the NBII, to assist in modeling and forecasting the spread of invasives (<u>PART measure</u>)	2004 Actual	2005 Actual	2006 Actual	2007 Planned	2007 Actual
		750 mb	800 mb	1,137 mb	920 mb	1,441 mb
	▲ Target Exceeded. Many new profiles of invasive species brought online by domestic and international partners.					

Performance Data and Analysis

54	Average cost per gigabyte of data available through servers under program control (<u>PART Efficiency measure</u>)	2004 Actual	2005 Actual	2006 Actual	2007 Planned	2007 Actual
		\$66,000	\$63,000	\$17,155	\$55,000	\$3,794.4
	■ Target Rebaselined. To accommodate change in method of calculation, resulting in a more accurate figure.					
55	Number of real-time streamgages reporting in NWIS Web (<u>PART measure</u>)	2004 Actual	2005 Actual	2006 Actual	2007 Planned	2007 Actual
		5,978	6,246	6,496	6,195	6,728
	▲ Target Exceeded. Increased interest by partner agencies, who contributed additional funding than anticipated.					
56	Number of real-time ground-water sites reporting in NWIS Web	2004 Actual	2005 Actual	2006 Actual	2007 Planned	2007 Actual
		799	796	917	685	983
	▲ Target Exceeded. Because of increased interest by partner agencies, who contributed additional funding amounts that were not anticipated when targets were set.					
57	Number of real-time water-quality sites reporting in NWIS Web	2004 Actual	2005 Actual	2006 Actual	2007 Planned	2007 Actual
		1,062	1,125	1,102	887	1,249
	▲ Target Exceeded. Increased interest by partner agencies, who contributed additional funding than anticipated.					
58	Percentage of WRD streamflow stations with 30 or more years of record (<u>PART measure</u>)	2004 Actual	2005 Actual	2006 Actual	2007 Planned	2007 Actual
		60%	58%	59%	63%	59%
	▼ Target Not Met. Number of new streamgages increased more than planned. The number attaining 30 year status also increased enough to maintain status quo but not to meet the planned target.					
59	Percentage of daily streamflow measurement sites with data that are converted from provisional to final status within 4 months of day of collection (<u>PART measure</u>)	2004 Actual	2005 Actual	2006 Actual	2007 Planned	2007 Actual
		0 baseline	10%	20%	25%	24%
	Target is Estimated. Full implementation of upgrade to NWIS to permit reporting of the conversion of surface-water data from provisional to final was delayed due to delay in funding. The USGS has estimated performance on this measure by sampling a subset of the water science centers. In FY2008 USGS will fully implement the means to acquire the data.					
60	Average cost per analytical result, adjusted for inflation, is stable or declining over a 5-year period (<u>PART measure</u>)	2004 Actual	2005 Actual	2006 Actual	2007 Planned	2007 Actual
		\$8.64	\$8.63	\$8.34	\$8.64	\$8.08
	▲ Target Exceeded. NWQL costs has been exceeded by continual efforts to reduce costs by using new instruments and technologies that require less personnel time and maintenance, streamlining sample processing procedures automating more of the sample tracking costs, and applying additional energy saving approaches throughout the NWQL.					

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61	Percentage of ground systems designed, built, and tested	2004 Actual	2005 Actual	2006 Actual	2007 Planned	2007 Actual
		n/a	n/a	8%	44%	44%
	√ Target Met.					
62	Number of hours for fieldwork, compilation, and publication of a typical geologic map (<u>PART Efficiency measure</u>)	2004 Actual	2005 Actual	2006 Actual	2007 Planned	2007 Actual
		3,160	3,070	2,980	2,890	2,890
	√ Target Met.					
63	Number of State Geological Surveys that add geologic map information to the NGMDB (<u>PART measure</u>)	2004 Actual	2005 Actual	2006 Actual	2007 Planned	2007 Actual
		47	48	49	50	50
	√ Target Met.					
64	Number of EDMAP students trained each year (<u>PART measure</u>)	2004 Actual	2005 Actual	2006 Actual	2007 Planned	2007 Actual
		60	62	66	60	58
	√ Target Met.					
65	Number of digital geographic information products for priority NPS units that provide environmental characterization based on airborne remote sensing (<u>PART measure</u>)	2004 Actual	2005 Actual	2006 Actual	2007 Planned	2007 Actual
		3	10	8	9	10
	▲ Target Exceeded. One more product requested and provided than planned.					
66	Fraction of significant landfalling hurricanes for which post-storm assessment of impact are developed (<u>PART measure</u>)	2004 Actual	2005 Actual	2006 Actual	2007 Planned	2007 Actual
		4/5	3/3	≥ 3/4	≥ 3/4	0/1
	NA. No opportunity to perform. The 2006 season was unusual, producing no landfall hurricanes and the 2007 season through September produced one category 1 hurricane Humberto that required no post-storm assessment.					
67	Percentage of open ocean and great-lakes shoreline of coterminous US for which up-to-date characterization of the shoreline is provided (<u>PART measure</u>)	2004 Actual	2005 Actual	2006 Actual	2007 Planned	2007 Actual
		62%	62%	80%	90%	80%
	▼ Target Not Met. West coast survey proposed for FY 2007 moved to FY 2008 due to ongoing Gulf Coast efforts related to impact of Hurricane Katrina.					

68	Cost of collection and processing of airborne remote sensing data for coastal characterization and impact assessments (<u>PART measure</u>)	2004	2005	2006	2007	2007
		Actual	Actual	Actual	Planned	Actual
		.58	.56	.55	.47	.57

▼ Target Not Met. To better characterize vertical structures used more expensive system with more powerful laser and 3-band digital multispectral high-resolution camera.

69	Number of environmental products in marine protected and managed areas provided for resource management and restoration planning (<u>PART measure</u>)	2004	2005	2006	2007	2007
		Actual	Actual	Actual	Planned	Actual
		40	54	63	72	76

▲ Target Exceeded. Requirement for four more products than planned.

Resource Protection Goal Accomplishments

Mercury Research in South Florida Plays Major Role in Utilities Ruling

The USGS has been conducting research during the last decade in South Florida to determine the relation of sulfates to the methylation of mercury. Methylmercury, the most harmful and biologically available form of mercury, has impacted fish and wildlife in the ecosystem of the Everglades and forced health warnings against eating many species of fish. Recently, State of Florida regulators were faced with the decision to issue a permit to Florida Power and Light (FPL) for a new coal-fired electric-generating plant in South Florida. Coal-fired generating facilities are a substantial source of both mercury and sulfate emissions. The State's regulators unanimously ruled against the request of FPL stating that it would not provide a cost-effective energy source. Among the written testimony provided for the ruling was a letter to the Public Service Commission from Daniel Kimball, superintendent of Everglades National Park, citing the agency's concerns about air-quality impacts and sulfate and mercury loading to the Everglades ecosystem. This testimony was an important factor in the State's ruling. Superintendent Kimball attributed credit to USGS research as having "...played a major role in defining a key environmental concern associated with the project."

Arsenic Research in Northern New England Contributes to Recommendations for Monitoring of Domestic Well Water

The USGS developed a geologic model for use in an ongoing study of bladder cancer in Northern New England by the National Cancer Institute, Colorado State University, and the Dartmouth School of Medicine. A leading hypothesis for the increased bladder cancer in the region is exposure to inorganic arsenic through drinking water. Epidemiological researchers are testing this hypothesis owing to the elevated levels of arsenic in much of New England's ground-water supply. To effectively test this hypothesis, the study design required life-time exposure to arsenic through drinking water. The USGS was asked to develop a geologic model to estimate past exposure

because many study participants used multiple private wells throughout their lifetime and it is not feasible to sample every well. The model, which estimates the probability of elevated arsenic in bedrock wells, is based upon geochemical, hydrologic, and geologic factors. This geologic model served as the basis for development of an arsenic-exposure model for the collaborative epidemiology study. The geologic model has served to heighten awareness of the risks posed by elevated levels of arsenic in drinking water. It also has contributed to recommendations for increased monitoring of drinking water derived from domestic wells by Federal, State, and local health officials throughout the region.

Performance Data and Analysis

Storm-Surge Sensors Swiftly Sent to Measure the Swelling Tides

Hurricanes Katrina and Rita vividly demonstrated that storm surge can be as dangerous as riverine floods. To determine the timing, extent, and magnitude of hurricane-driven surge waters and waves, the USGS has designed and developed a network of rugged, inexpensive water-level and barometric-pressure sensors, called storm-surge sensors, which can be quickly installed in anticipation of a storm. The information from these sensors is used to calibrate the storm-surge models used by forecasters along the Gulf and Atlantic Coasts and helps them provide improved forecasts of what lands will be inundated and to what depth in future hurricanes.

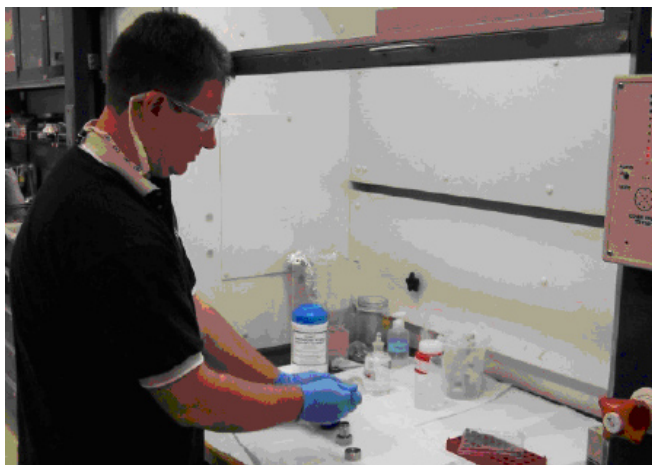


Pressure sensor strapped to a power pole near Vinton, Louisiana.

Pharmaceuticals Found in Soil Irrigated with Reclaimed Water

Many areas of the Nation are faced with water shortages owing to an appreciable demand for water. As a result, supplies are being augmented with treated wastewater for uses such as irrigation. In a study recently published in the journal *Environmental Toxicology and Chemistry*, a team of USGS scientists reported that pharmaceuticals in wastewater used for irrigation persisted in the soil for several months after the irrigation had stopped for the season. Previous studies have documented that wastewater from sewage-treatment plants contains a variety of pharmaceuticals and other organic-wastewater

contaminants. As a result, increased attention is being given to the use of reclaimed water as a potential source for such contaminants in the environment.



USGS scientist processes soil samples for laboratory analysis for the presence of pharmaceuticals.

Salt in the River of Grass: Understanding Everglades Salinity for Ecosystem Recovery

The interplay of freshwater and saltwater in Florida's Everglades is fundamental to the habitats of creatures great and small, from American alligators to spiny lobsters to oysters. Scientists in the USGS's Ecosystem History of South Florida's Estuaries Project are involved in an effort to understand the dynamics of salinity in the South Florida Everglades, with an eye toward ecosystem recovery. Working closely with colleagues from Federal, State, and local agencies on the Southern Estuaries sub-team of REstoration COordination and VERification (RECOVER), the team has established performance measures and targets for restoration—critical factors that are used in making and validating management decisions regarding the region. RECOVER is part of the Comprehensive Everglades Restoration Plan “responsible for linking science and the tools of science to set system-wide planning, evaluation, and assessment tasks.” (<http://www.evergladesplan.org/search.aspx>).



Collecting cores in the South West coastal area of the Everglades National Park.

USGS Leverages Orthoimagery Data and Saves Taxpayers' Money

For the third year in a row, the USGS has leveraged appropriated and reimbursable Federal funding with State and local partners to reduce the cost of orthoimagery data. The USGS, the National Geospatial-Intelligence Agency (NGA), and the Department of Homeland Security have collaborated with dozens of State, county, city, and regional consortia across the Nation to expand orthoimagery coverage to urban areas. These efforts have supported the multi-agency Homeland Security Infrastructure Program (HSIP). The USGS has, in effect, been able to buy \$102.4 million worth of high-resolution orthoimagery data for \$25.6 million. Nearly all these data are in the public domain, available through The National Map, and are accessible through the USGS Geospatial One-Stop Internet portal. The geospatial data are used by land-use managers, scientists, emergency responders, and citizens to make choices such as how to mitigate adverse effects from development, monitor impacts from natural disasters, and optimize emergency routes.

Cooperative Conservation in Wyoming

The USGS brought together over 150 representatives from more than 35 diverse organizations such as Federal (BLM, FWS, NPS, BuR, USDA-FS) and State



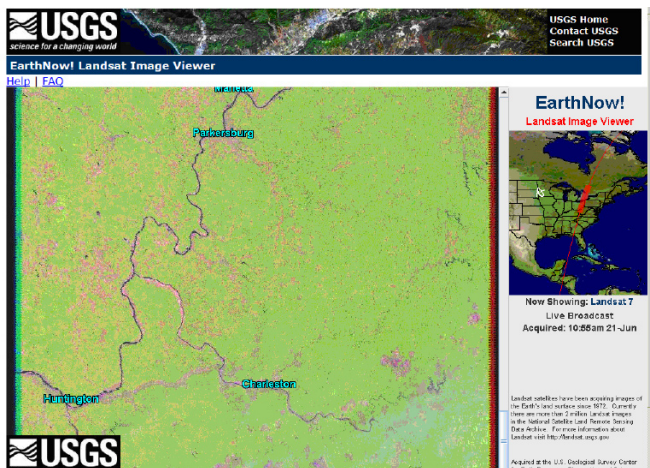
Sampling vegetation near Saratoga, WY, to evaluate the effects on sagebrush habitat of grazing by domesticated and wild animals.

agencies, universities, petroleum and ranching industries, non-governmental conservation organizations, and private land managers to develop a science plan that would provide the best possible mix of research and data and respond to a spectrum of land-management needs. Participants developed a science strategy that will include USGS involvement in the Wyoming Landscape Conservation Initiative—a long-term, science-based, collaborative effort—to ensure Wyoming's wildlife and their habitats are fully considered and addressed in the face of increasing land-use issues in Wyoming. The USGS Science Plan includes an overall research and monitoring approach as well as a work plan for 2007–2008 activities that strengthen partnerships, ensure on-the-ground coordination, address the most pressing management needs, and set the foundation for future work. USGS scientists participated in the ranking of management activities planned for FY 2008, such as BLM habitat-improvement projects. To support these projects, the USGS acquired an appreciable amount of remotely sensed data for the area. Early products will include detailed sagebrush-habitat and infrastructure maps in FY 2007.

Performance Data and Analysis

View the EarthNow!

For more than 35 years, Landsat satellites have been orbiting the Earth revealing its dynamic changes to scientists around the world. As an outreach effort, the USGS created EarthNow! (<http://earthnow.usgs.gov>) displaying real-time images of the Earth captured by sensors on-board Landsat 5 and Landsat 7. Data captured from the satellites by the ground station at the Earth Resources Observation and Science (EROS) Center, Sioux Falls, South Dakota, are converted to a quick look scrolling screen showing the view from the spacecraft. In November 2006, images from EarthNow! made their public debut at the Air and Space Museum in Washington, D.C., as part of Earth from Space Exhibition, which is being displayed across the United States. Almost 47,000 users have accessed EarthNow! since its introduction; the site has been translated and released in Spanish, French, and Russian for viewers around the world.



A live broadcast image taken from Landsat 7 as it passes over Parkersburg, West Virginia. This image can be downloaded over the internet from the EROS Center in Sioux Falls, SD.

Avian Research Contributes to San Francisco Bay Salt Pond Restoration Actions

San Francisco Bay is an important wintering area and stopover site for migratory shorebirds and waterfowl, and the historic salt ponds are used by these species in high numbers. A major goal of salt pond restoration is to retain existing habitat value for these species within the restoration areas coincident with restoring marsh

habitat from previously operational salt ponds where possible. USGS has compiled long-term datasets that provide baseline avian data for the restoration area and relate bird use to physical environmental variables, food availability, and water quality. Land managers at FWS and the California Department of Fish and Game and project planners at the California State Coastal Conservancy are using the information to decide the proportion and configuration of salt ponds that will be restored to tidal salt marsh or retained as managed ponds. USGS analysts and scientists are helping to develop thresholds for adaptive management actions and evaluating the success of early management actions, such as pond breaches and water circulation.

Land-Based Pollution and Its Link to Coral Reefs Decline

Coral reefs are declining worldwide due to a host of causes, including poorly understood impacts of land-based pollution. The importance of identifying and monitoring the impact of land-based pollution, sedimentation, and nutrient loading has become crucial within the United States, as evidenced by priorities set by the U.S. Coral Reef Task Force (USCRTF). In Hawaii, local representatives of the USCRTF specifically developed and established a Local Action Strategy (LAS) to address land-based sources of pollution and their impact on reefs. Research for ridge-to-reef has resulted in some landmark observations about sediment distribution, sources, transport history, residence time, and its impact on coral health. USGS has been working with LAS, and with other managers on the islands of Molokai, Kauai, and Maui, to explain how changing tropical watersheds are affecting coral ecosystems and coastal habitats. Information from sedimentation and run-off on the reefs of south-central Molokai and Honolua Bay, Maui, was instrumental for understanding requirements for sedimentation control and intensive monitoring. USGS has had a distinct impact on efforts at the Federal, State, and local levels to identify the reefs most impacted by land-based pollution and to implement changes in land use to lessen those impacts. For example, results, shared through peer-reviewed reports and hosted research meetings identifying sedimentation and run-off conditions on the reefs, were crucially important in selection of sites for LAS monitoring.

Climate Research Contributes to Restoration Actions of San Francisco Bay Delta and Water Use in California

USGS analyzed climate and hydrologic data and developed regional climate and hydrologic models to analyze changes in climate patterns in California. The analyses focused on the effect these changes will have and are having on restoration plans in the San Francisco Bay Delta and on water storage and use in the State. USGS analyses have shown that the snowpack is degrading, thereby resulting in earlier streamflows. USGS models show these changes will continue and become more extreme. USGS findings indicate the need for the state to change its storage methods to meet the water needs of the State and must incorporate these changes in its restoration plans in the Bay Delta area.

As a result of this work, USGS scientists have been appointed to the steering committee for the Governors task force on Climate Change Risks for California and appointed as the special climate advisor for the CALFED Bay-Delta Program. Additional collaboration between the National Oceanic & Atmospheric Administration (NOAA) and the USGS led the California Department of Water Resources to develop a new plan for the "21st Century Flood-Management Observing Network." This work has heightened the awareness of the California Department of Water Resources, CALFED, and the U.S. Bureau of Reclamation (BOR) of the need to incorporate climate change in all facets of water development, storage and use, flood management, and ecosystem restoration in the State.

Integrated Multidisciplinary Desert Tortoise Habitat Model

Since the desert tortoise (*Gopherus agassizii*) was listed as a threatened species in 1990, populations have further declined in many areas, due to direct loss, habitat degradation or fragmentation, poaching, military activities, vehicular impact, livestock trampling, disease, and raven encroachment. An applied research project integrating all USGS research disciplines was developed to produce a new model for use by resource managers for government agencies and the public. This model is the first desert tortoise habitat model to incorporate the entire protected Mojave population

of the desert tortoise at a spatially explicit scale and resolution useful for resource managers. This type of information is in high demand among management agencies in the desert southwest. At the request of the U.S. Fish & Wildlife Service (FWS), the USGS has regularly briefed the FWS Science Advisory Committee for the Recovery of the Desert Tortoise to provide preliminary information about our provisional habitat model. The draft habitat map and information has been used to identify sites where FWS would establish long-term monitoring sites for the recovery of the desert tortoise. The newly identified sites include some areas within desert tortoise critical habitat that were not previously recognized for their importance to the species. The model has greatly informed management decisions for the recovery effort by FWS and others.

Ecological Research in Alaska Contributes to Departmental Endangered Species Act Decisions

USGS conducts long-term research on DOI trust marine mammal and seabird species in Alaska, and in FY 2007, these studies provided foundational information on population status and trends critical to Endangered Species Act (ESA) decisions of FWS. Currently listed as threatened in Washington, Oregon, and California due to losses of their forested nesting habitats, an assessment of the status of marbled murrelets (a coastal seabird) in the remainder of their range was necessary for a potential decision to delist the species. The studies found that murrelet populations have declined in Alaska and British Columbia in the past 20 years due to a combination of human and natural influences. The findings have helped clarify the species current status and provided FWS with needed context for their impending decision.

USGS also conducted analyses and provided a series of published and administrative reports to FWS to inform their final decision on listing the polar bear as a threatened species due to predicted losses of their sea ice habitats from climate warming. The polar bear listing decision (to be made in early 2008) is groundbreaking in that it is the first time where predicted climate warming is the primary threat to a species existence. USGS used data from long-term studies on polar bears and their sea ice habitats in Alaska and Canada, and from projections of future sea ice distribution from a range of available global

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climate models, to develop models of the likely effect of sea ice changes on polar bear populations and their distribution worldwide. The modeling studies helped reduce the uncertainty about the magnitude and direction of likely changes in polar bear populations throughout the Arctic due to predicted changes in sea ice. Due to the uniqueness of listing decisions based on predictive modeling, USGS's role in clarifying the uncertainties involved will be critical to FWS's decisionmaking processes.

Louisiana Wetlands Research Center and the Loss of Land after Hurricanes

In 2007 the U.S. Geological Survey's (USGS) National Wetlands Research Center published two peer-reviewed reports documenting the 217 square mile loss of Louisiana coastal land after Hurricanes Katrina and Rita.

The USGS Data Series Report 281, *Satellite Images and Aerial Photographs of the Effects of Hurricanes Katrina and Rita on Coastal Louisiana* <<http://pubs.usgs.gov/ds/2007/281/>>, contains dozens of Landsat Thematic Mapper satellite imagery and aerial photography, acquired before and after the hurricanes, showing new water areas that represent land losses caused by direct removal of wetlands. They also depict transitory changes in water area caused by remnant flooding, removal of aquatic vegetation, scouring of marsh vegetation, and water-level variation attributed to normal tidal and meteorological variation between time periods depicted by the images.

The article, "Land Area Changes in Coastal Louisiana After Hurricanes Katrina and Rita" describes in detail how land losses occurred in the various basins along the State's coast and the methodology used to determine the 217 square miles of coastal land loss. Permanent losses cannot be estimated until several more growing seasons have passed and the transitory impacts of the hurricanes are minimized, but this work serves as a regional baseline for monitoring posthurricane wetland recovery. The article appears in the USGS Hurricane Circular 1306, *Science and the Storms: the USGS Response to the Hurricanes of 2005*, which describes the work of all USGS disciplines after Hurricanes Dennis, Katrina, Rita and Wilma. The report, a joint effort of many USGS biologists, geologists,

hydrologists, and geographers, was developed and managed by the National Wetlands Research Center. It is in press and will soon be available on line at the USGS Pubs Warehouse <http://infotrek.er.usgs.gov/pubs/> and at www.nwrc.usgs.gov.

Earlier reports and maps of coastal land loss can be found at the National Wetlands Research Center's Web site, <http://www.nwrc.usgs.gov/special/landloss.htm>.

Resource Use: Manage Resources to Promote Responsible Use and Sustain a Dynamic Economy

End Outcome Goal:

Improve understanding of energy and mineral resources to promote responsible use and sustain the Nation's dynamic economy.

√ **Targets Met** = 14 ▼ **Targets Not Met** = 0 ▲ **Targets Exceeded** = 3 ■ **Targets Rebaselined** = 0

GPRA End Outcome Measure

		2004	2005	2006	2007	2007
		Actual	Actual	Actual	Planned	Actual
70	Percentage of targeted science products that are used by partners for land or resource management decisionmaking (<u>DOI strategic plan key measure</u>)	80%	86.5%	87.5%	≥ 80%	99%
	√ Target Met. This measure is tracked by survey of customers and partners. The target is a threshold below which performance would indicate a problem and would mean that some sort of corrective action is needed. So long as the actual result is above the target level, the process is under control and no corrective action is needed.					
Intermediate Outcome: Ensure availability of energy and mineral resources information and systematic analyses needed by land and resource managers for informed decisionmaking						
71	Number of targeted basins with energy resource assessments available to support management decisions (<u>DOI strategic plan key measure and PART measure</u>)	5	7	6	5	5
	√ Target Met.					
72	Percentage of targeted non-fuel mineral commodities for which up-to-date deposit models are available to support decisionmaking (<u>DOI strategic plan key measure and PART measure</u>)	n/a	n/a	n/a	baseline	0%
	√ Target Met. In 2007, the Mineral Resources Program (MRP) consulted with stakeholders to identify the list of targeted mineral commodities and inventoried the existing mineral deposit models to determine which need to be updated. There are no commodities for which all deposit models are currently up to date, so for 2007, the actual value would be 0. In addition, a sequence of work in the next 4+ years was established to set targets. Assuming the President's budget for 2008 and beyond, we will have none completed in 2008, but at the end of 2009 7% will be finished and at the end of 2012 60% will be finished.					
73	Baseline Information: Average square miles of the United States with non-energy mineral information available to support management decisions (<u>PART measure</u>)	2,401,329	3,097,647	3,318,208	3,346,737	3,346,000
	√ Target Met.					

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Intermediate Outcome: Ensure the quality and relevance of science information and data to support decisionmaking

74	Percentage of studies validated through appropriate peer review or independent review (<u>DOI strategic plan key measure</u>)	2004 Actual	2005 Actual	2006 Actual	2007 Planned	2007 Actual
		100%	100%	100%	100%	100%

√ Target Met.

75	Percentage satisfaction with scientific and technical products and assistance for natural resource decisionmaking (<u>DOI strategic plan key measure</u>)	2004 Actual	2005 Actual	2006 Actual	2007 Planned	2007 Actual
		n/a	n/a	n/a	≥ 80%	97%

√ Target Met. Customer satisfaction measures are a type of statistical quality control - with the target being the threshold level. That is, an actual result below the target would indicate a problem and would mean that some sort of corrective action is needed. So long as the actual result is above the target level, the process is under control and no corrective action is needed.

PART Efficiency and Other Output Measures

76	Number of annual gigabytes collected (Energy)	2004 Actual	2005 Actual	2006 Actual	2007 Planned	2007 Actual
		.745	97.793	158.048	20.038	37.409

▲ Target Exceeded. More legacy data were received and processed than anticipated.

77	Number of cumulative gigabytes managed (Energy)	2004 Actual	2005 Actual	2006 Actual	2007 Planned	2007 Actual
		211.458	351.289	509.338	524.826	546.747

▲ Target Exceeded. More legacy data were received and processed than anticipated.

78	Number of cumulative gigabytes managed (Minerals)	2004 Actual	2005 Actual	2006 Actual	2007 Planned	2007 Actual
		15.420	16.131	16.221	16.3	16.3

√ Target Met.

79	Number of systematic analyses and investigations delivered to customers	2004 Actual	2005 Actual	2006 Actual	2007 Planned	2007 Actual
		10	10	11	11	11

√ Target Met.

80	Number of formal workshops or training provided to customers	2004 Actual	2005 Actual	2006 Actual	2007 Planned	2007 Actual
		16	16	15	15	15

√ Target Met.

Performance Data and Analysis

81	Percentage of targeted analyses/investigations delivered which are cited by identified partners within 3 years of delivery (Energy) (PART measure)	2004	2005	2006	2007	2007
		Actual	Actual	Actual	Planned	Actual
		80%	86%	82%	≥ 80%	82%

✓ Target Met.

82	Average cost of a systematic analysis or investigation (PART measure) (ERP)	2004	2005	2006	2007	2007
		Actual	Actual	Actual	Planned	Actual
		\$2.2M	\$2.73M	\$1.98M	\$2.75M	\$1.3M

▲ Target Exceeded. The target cost per systematic analysis is based on a National average that includes research in varied terrain, conditions, and geographic location. The analyses completed in 2007 did not include extreme conditions and the cost was therefore lower than the National average.

83	Number of mineral commodity reports available for decisions (PART measure)	2004	2005	2006	2007	2007
		Actual	Actual	Actual	Planned	Actual
		733	746	690	720	717

✓ Target Met.

84	Percentage of expected responses for which canvas forms have been converted to electronic format (PART measure)	2004	2005	2006	2007	2007
		Actual	Actual	Actual	Planned	Actual
		58%	81%	88%	100%	100%

✓ Target Met.

85	Percentage of targeted analyses/investigations delivered that are cited by identified partners within 3 years of delivery (Minerals) (PART measure)	2004	2005	2006	2007	2007
		Actual	Actual	Actual	Planned	Actual
		80%	87%	93%	≥ 80%	93%

✓ Target Met.

86	Average cost of a systematic analysis or investigation (PART measure) (MRP)	2004	2005	2006	2007	2007
		Actual	Actual	Actual	Planned	Actual
		\$4.31M	\$4.18M	\$4.3M	\$3.8M	\$3.7M

✓ Target Met.

Performance Data and Analysis

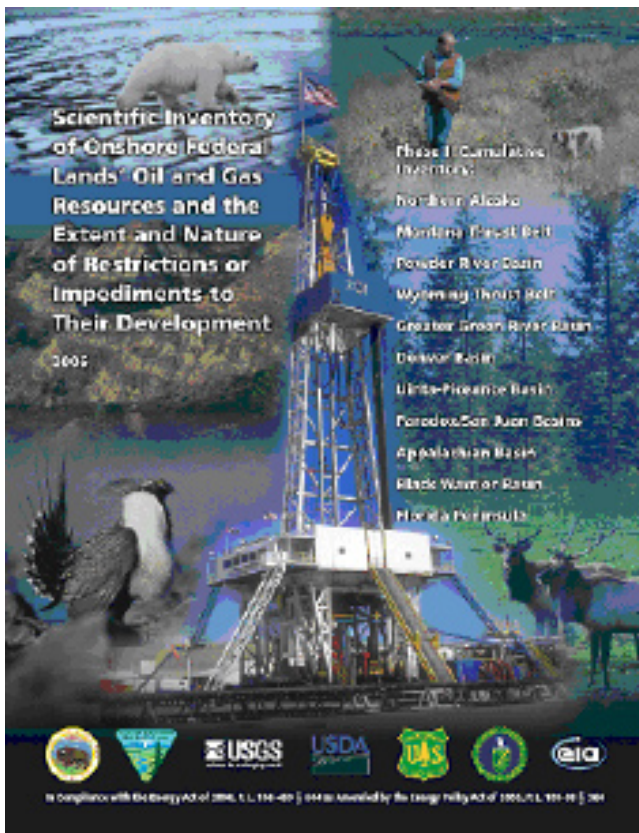
Resource Use Goal Accomplishments

USGS Science and Interagency Cooperative Effort Facilitates Improved Understanding to Responsibly Meet America's Energy-Resource Needs

The second phase of the Energy Policy and Conservation Act Amendments of 2000 (EPCA) inventory – “Scientific Inventory of Onshore Federal Lands’ Oil and Gas Resources and Reserves and the Extent and Nature of Restrictions or Impediments to their Development” – was delivered to Congress and released to the public in November 2006. The Federal lands within these areas, especially in the West, are becoming increasingly important for recreation, livestock grazing, open space, wildlife habitat, cultural resources, and mineral resources as well as for oil and gas and other energy production. This inventory is the culmination of a multi-agency collaborative effort that includes the USGS, Bureau of Land Management (BLM), the U.S.D.A. Forest Service, the Department

of Energy, and the Energy Information Administration. This document presented a comprehensive review of Federal oil and gas resources in eleven basins in the United States and constraints on their development. The Federal lands within these areas, especially in the West, are becoming increasingly important for recreation, livestock grazing, open space, wildlife habitat, cultural resources, and mineral resources as well as oil and gas and other energy production. USGS assessment results for undiscovered, technically recoverable oil and gas resources form the basis for the inventory. The Phase II inventory is available for download from the BLM website: (<http://www.blm.gov/epca/>).

The Phase II inventory studied approximately 100 million acres of Federal lands, including split estate. USGS estimates for undiscovered oil and gas resources under these Federal lands total 21.2 billion barrels of oil and 186.9 trillion cubic feet of natural gas. Overall, the study shows that undiscovered oil and gas resources are concentrated in Northern Alaska and the Interior West. The study also found that approximately 24 percent of the Federal land in these areas is accessible under standard lease terms, approximately 30 percent of the Federal land is accessible with restrictions on oil and gas operations beyond standard stipulations, and approximately 46 percent of the Federal land is inaccessible. Information from this inventory is used by the BLM in producing Reasonable Foreseeable Development (RFD) scenarios that are incorporated into the Resource Management Plan (RMP) and its associated Environmental Impact Statement (EIS).



Collage, taken from the cover of the EPCA Phase II Inventory Report, highlighting the interagency collaboration in support of this study.

The Impact of Successful Partnerships: DOI Science Supports DOI Land Management

The Mancos Shale in Colorado and Utah is a dark-colored, easily eroded rock that underlies arid terrain and poses considerable problems for land-use managers. A multidisciplinary effort on Mancos Shale



Information exchanged on a multi-agency tour of Mancos Shale terrains facilitated the coordination of the multidisciplinary scientific effort to address issues related to management of these areas.

in Colorado and Utah, which was led by scientists supported by the USGS Mineral Resources Program, has addressed the problem of insufficient data required to formulate scientifically supportable policies. These policies are related to the sustainable development of mineral and energy resources contained in black-shale terrains and stewardship of black-shale landscapes by resource and land managers, especially those at the BLM. A description of the partnership activities is available at (<http://www.blm.gov/nstc/USGS%20BLM/>). The current (2007) Mancos Shale studies have resulted in basic scientific data that are applicable to the study of black-shale terrains elsewhere. Results from current studies are being used for planning and implementation of the DOI Healthy Lands Initiative and meet the DOI goal of targeted-science products that are used by partners for adaptive-land or resource-management decision making.

USGS-BLM Cooperative Coalbed Methane Project in the Powder River Basin, Wyoming

Since 1999, the Bureau of Land Management (BLM) Wyoming Reservoir Management Group and the USGS have been working together to collect technical and analytical data on coalbed methane (CBM) resources and the quality of the water produced from coalbeds in the Wyoming part of the Powder River Basin. BLM has derived numerous benefits from this USGS-BLM cooperative study that include: (1) producing recoverable gas reserve estimates for resource management, planning, and environmental impact study; (2) estimating drainage and depletion of CBM resources; and (3) addressing and resolving issues between CBM development and coal mining that have resulted from the drainage of CBM resources. The USGS uses the data to address several research issues, including: (1) study of the occurrence and distribution of economically minable coal; (2) definition of the extent, distribution, and character of coal reservoirs; (3) determination of the origin of CBM in the basin; and (4) study of the evolution of produced water. USGS publications documenting recent developments from this cooperative project may be found at the following Web sites:

<http://pubs.usgs.gov/fs/2006/3132/>

<http://pubs.usgs.gov/of/2006/1174/>

Second National Conference on USGS Health-Related Research, February 27-March 1, 2007, Reston, Va.

The USGS convened its Second National Conference on USGS Health-Related Research from February 27-March 1, 2007, in Reston, Va., to highlight USGS research activities supporting our understanding of the environmental contributions to disease and human health. The conference hosted more than 200 attendees and fostered collaboration between the public health and earth-science communities to discuss and find solutions to existing and emerging environmental health problems. Scientists discussed public health threats affected by the relationship between people and the physical, chemical, and biological nature of our natural environments.

Performance Data and Analysis

Public health problems caused by environmental contamination and emerging wildlife-related infectious diseases are a growing concern worldwide. These public health threats are affected by the relationship between people and the physical, chemical, and biological nature of our natural environments. Therefore, understanding environmental and ecological health is important to protecting public health. For an overview of all USGS human health-related research, please visit: <http://health.usgs.gov/>.

Understanding Metal Pathways in Mineralized Ecosystems

Understanding processes that influence the distribution, concentration, and bioavailability of potentially toxic elements, such as arsenic, cadmium, lead, mercury, selenium, and zinc, is critical to successful management of ecosystems chronically impacted by historical mine waste where total remediation of environmental problems is not financially or technically possible.

Recent studies of historical mine sites in the western United States have improved our understanding of how elements are mobilized from mineralized sources, transported through the environment, and become available to humans and other biota. The BOR and the U.S. Bureau of Land Management (BLM) have used USGS study results in the restoration of selected areas of the Trinity and Clear Creek Rivers, Calif., where historic placer-gold dredging in the flood plains has modified rivers and impaired the spawning and rearing habitats of salmonid species. Study results minimized the effects of mercury, an element used in some mining processes to concentrate gold, in the course of restoration. Other examples of how agencies responsible for land use and land management decisions have used the results of the studies can be found at <http://minerals.usgs.gov/west/projects/path.htm>. This work supports the goal of the USGS Mineral Resources Program to ensure availability of up-to-date geoenvironmental assessments of priority

Federal lands and the Department of Interior's strategic plan goal to ensure the availability of energy and mineral resource information and systematic analyses needed by land and resource managers for informed decisionmaking.

Big Bend National Park: Contaminant Studies of Inactive Mercury Mines

One of the most significant environmental concerns associated with mercury mines is the ability of mercury to transform chemically and microbially into organic compounds, such as methylmercury. Methylmercury, the most toxic of the mercury compounds and a human neurotoxin, is of special concern because it is water soluble and can be readily transferred from sediment, to water, and to biota, such as fish. Conversion and transfer of methylmercury from active and inactive mercury mines to surrounding ecosystems is a potential concern worldwide. A number of mercury mines that have been inactive since the 1970s are located in and near Big Bend National Park, Texas. Access to the only mercury mine in the park is generally unrestricted, and as a result, tourists often visit this site.

A recently completed USGS study of mining-related mercury contamination in and around Big Bend National Park found that, although mercury concentrations were elevated in mine waste, the concentrations of methylmercury were generally low in the ecosystems downstream because this hot, dry desert climate provides conditions unfavorable for transformation to methylmercury. Based on this information, National Park Service (NPS) managers know that they do not have to take special corrective actions to protect humans, fish, and other wildlife from highly toxic methylmercury. This work was part of ongoing collaborative studies of the geology, geochemistry, geochronology, and geophysics of Big Bend National Park between the NPS and the USGS Mineral Resources and National Cooperative Geologic Mapping Programs. This work supports the goal of the USGS Mineral Resources Program to ensure availability of up-to-date geoenvironmental assessments of priority Federal lands.



Studies in the Tintina Gold Province, Alaska

The Mariscal mercury mine, located in Big Bend National Park, was mined from 1900 until 1943. This view shows retorts, where the mercury was separated from the ore when the mine was active, and mine waste; both were the subject of recent studies.

The Tintina Gold Province (TGP) is historically the region of some of the very first placer and lode gold discoveries in northern North America; it has recently seen resurgence in mineral exploration, development, and mining activity. This resurgence is due to both new discoveries and to the application of modern extraction methods to previously known, but economically restrictive, resources.

From 2002 to 2007, the USGS has studied the TGP to understand how mineral resources were deposited, why this area is so abundantly endowed, and the environmental consequences related to the development of mineral resources in this broad region. The studies resulted in refinement of the model for the newly identified epizonal gold deposits that characterize the area, providing a fundamental scientific understanding of both how the gold deposits were formed and important environmental considerations, especially for arsenic, mercury, and antimony levels in soils and waters—that is critical information for land managers and regulators involved with resource development. A 1:63,360-scale geologic mapping product was prepared that underpins the

studies on the origin of the mineralization, as well as regional hydrologic and geoenvironmental studies.

The results of this project will be used by land managers, exploration companies, and mining companies to ensure that exploration and mining are conducted using practices that minimize environmental degradation, and by USGS to improve the accuracy of mineral resource and geoenvironmental assessments. This work supports the goal of the USGS Mineral Resources Program to ensure availability of reliable geologic, geochemical, geophysical, and mineral locality data for the United States and the Department of Interior's strategic plan goal to ensure the availability of energy and mineral resource information and systematic analyses needed by land and resource managers for informed decisionmaking.



The Tintina Gold Province is an arc-shaped, 1,200 km (750 mile)-long metallogenic province extending from northern British Columbia, through the Yukon, across and into southwestern Alaska.

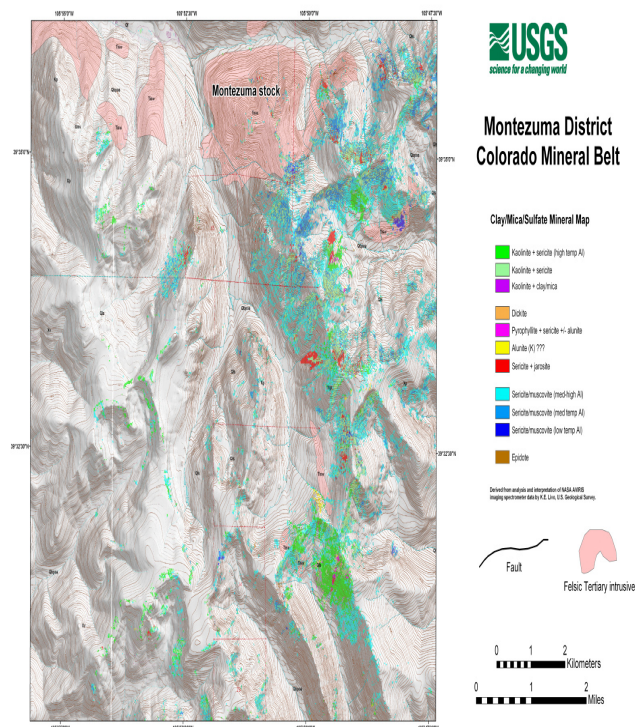
Performance Data and Analysis

Understanding Contaminants Associated with Mineral Deposits

Recent studies of contaminants associated with mineral deposits focused on abandoned and inactive mines and mineralized areas in the Rocky Mountains of Montana, Colorado, New Mexico, Utah, and Arizona, where thousands of abandoned mines occur. As a result of these studies, substantial progress has been made in understanding (1) what controls the release of metals and acidity from inactive mines and mineralized areas; (2) transport of metals and acidic waters to streams; and (3) the effect of metals and acidity on downstream ecosystems. In Handcart Gulch, Colo., in a watershed that lies along the Continental Divide and that is underlain by a low-grade copper-molybdenum deposit, researchers found a unique opportunity to study natural sources of metals and acidity and their movement through the surface and ground water in the fragile alpine watershed. This study, combined with a number of other studies detailed at <http://minerals.cr.usgs.gov/projects/contaminants/index.html>, provide information to Federal land management agencies, such as BLM and U.S. Forest Service, tasked with managing lands with mines and mineralized areas. This work supports the goal of the USGS Mineral Resources Program to ensure availability of up-to-date geoenvironmental assessments of priority Federal lands.

Remote Sensing Research and Applications

A project designed to extend the usefulness of remote sensing data and technology for geoenvironmental and mineral resource applications has been completed. USGS compared spectral information with known geochemical and geophysical properties of materials on the Earth's surface to establish the links between remote sensing data and geochemical and geophysical data, provide the rationale for interpreting the results of remote sensing analyses, and form the basis for designing remote sensing applications. Spectral library material, providing standards against which new data can be compared, were created, updated, and made available online as part of the new work. This work supports the goal of the USGS Mineral Resources Program to ensure availability of up-to-date quantitative assessments of potential for undiscovered mineral deposits.



Clay-mica-sulfate mineral map of the Montezuma mining district in the Colorado Mineral Belt was created using techniques developed as part of the Remote Sensing Research and Application Project from interpretation of Airborne Visible and Infrared Imaging Spectrometer (AVIRIS) hyperspectral data.

Performance Audit of the USGS Energy Resources Program Inorganic Geochemistry Laboratory

The USGS Inorganic Geochemistry Laboratory (IGL), an integral component of coal quality and other energy resource studies, conducts analyses of major, minor, and trace elements in coal, overburden, water, and related samples not only from U.S. coal regions, but also from around the world. A performance audit of the IGL was conducted to ensure that a high level of analytical performance was maintained and to identify any procedures and techniques that could be enhanced. The audit concluded that the IGL performance for trace element analyses ranked within the top two among the nine laboratories from the around the world that participated in this comparison. Several recommendations made to enhance performance on major and minor elemental parameters were implemented, and the resulting improvements were documented. For more information on the IGL performance audit findings, please visit the USGS Open-File Report located at: <http://pubs.usgs.gov/of/2007/1136/>.

Performance Data and Analysis

Serving Communities: Improve Protection of Lives, Property, and Assets; Advance the Use of Scientific Knowledge; and Improve the Quality of Life for Communities We Serve

End Outcome Goal:

Improve the understanding, prediction, and monitoring of natural hazards to inform decisions by civil authorities and the public to plan for, manage, and mitigate the effects of hazard events on people and property.

✓ **Targets Met** = 16 ▼ **Targets Not Met** = 2 ▲ **Targets Exceeded** = 5 ■ **Targets Rebaselined** = 1

GPRA End Outcome Measure

87	Percentage of communities/Tribes using DOI science on hazard mitigation, preparedness, and avoidance for each hazard-management activity (Hazards) (<u>DOI strategic plan key measure</u>)	2004 Actual	2005 Actual	2006 Actual	2007 Planned	2007 Actual
		43%	45%	48%	51%	50%

✓ Target Met.

Intermediate Outcome: Provide information to assist communities in managing risks from natural hazards

88	Number of areas for which detailed hazard assessments are completed (<u>DOI strategic plan key measure</u>)	2004 Actual	2005 Actual	2006 Actual	2007 Planned	2007 Actual
		n/a	n/a	49	51	51

✓ Target Met.

89	Number of urban areas for which detailed seismic hazard maps are completed (<u>PART measure</u>)	2004 Actual	2005 Actual	2006 Actual	2007 Planned	2007 Actual
		2	3	3	3	3

✓ Target Met.

90	Number of metropolitan regions where Shakemap is incorporated into emergency procedures (<u>PART measure</u>)	2004 Actual	2005 Actual	2006 Actual	2007 Planned	2007 Actual
		5	5	5	5	5

✓ Target Met.

91	Percentage of potentially hazardous volcanoes with published hazard assessments (<u>PART measure</u>)	2004 Actual	2005 Actual	2006 Actual	2007 Planned	2007 Actual
		61.4%	62.8%	64.3%	65.7%	65.7%

✓ Target Met.

Performance Data and Analysis

92	Use Rate — Earthquakes: Percentage of communities using DOI science on hazard mitigation, preparedness, and avoidance for each hazard management activity	2004 Actual 62.7%	2005 Actual 63.4%	2006 Actual 63.9%	2007 Planned 62.8%	2007 Actual 67%
	▲ Target Exceeded. Primarily due to a priority that arose to upgrade stations in Hawaii following the October 2006 Kiholo Bay earthquake.					
93	Use Rate — Landslides: Percentage of communities using DOI science on hazard mitigation, preparedness, and avoidance for each hazard management activity	2004 Actual 3.7%	2005 Actual 3.9%	2006 Actual 4.4%	2007 Planned 4.9%	2007 Actual 4.9%
	√ Target Met.					
94	Use Rate — Volcanoes: Percentage of communities using DOI science on hazard mitigation, preparedness, and avoidance for each hazard management activity	2004 Actual 63.3%	2005 Actual 66.4%	2006 Actual 74.2%	2007 Planned 83.6%	2007 Actual 76.6%
	▼ Target Not Met. Lack of timely 2007 FAA funding and diversion of activities, due to threat level of Mt. St. Helens and Augustine.					
95	Use Rate — Landslide Hazards: Number of responses to inquiries from the public, educators, and public officials to the National Landslide Information Center on hazard mitigation, preparedness, and avoidance strategies for landslide hazards	2004 Actual 1,600	2005 Actual 5,200	2006 Actual 1,600	2007 Planned 1,600	2007 Actual 1,600
	√ Target Met.					

Intermediate Outcome: Ensure the quality and relevance of science information and data to support decisionmaking

96	Percentage of studies validated through appropriate peer review or independent review (<u>DOI strategic plan key measure</u>)	2004 Actual 100%	2005 Actual 100%	2006 Actual 100%	2007 Planned 100%	2007 Actual 100%
	√ Target Met.					
97	Percentage satisfaction with scientific and technical products and assistance for natural hazard planning, mitigation, and emergency response (<u>DOI strategic plan key measure</u>)	2004 Actual n/a	2005 Actual n/a	2006 Actual n/a	2007 Planned ≥ 80%	2007 Actual 87%
	√ Target Met. Customer satisfaction measures are a type of statistical quality control - with the target being the threshold level. That is, an actual result below the target would indicate a problem and would mean that some sort of corrective action is needed. So long as the actual result is above the target level, the process is under control and no corrective action is needed.					

Performance Data and Analysis

PART Efficiency and Other Output Measures

98	Number of systematic analyses and investigations delivered to customers	2004 Actual	2005 Actual	2006 Actual	2007 Planned	2007 Actual
		3	6	4	252	248
	✓ Target Met.					
99	Number of real-time ANSS earthquake sensors (reported yearly and cumulative at the end of the year) (PART measure)	2004 Actual	2005 Actual	2006 Actual	2007 Planned	2007 Actual
		95 (cum 523)	40 (cum 563)	160 (cum 723)	40 (cum 763)	60 (cum 783)
	▲ Target Exceeded. Primarily due to a priority that arose to upgrade stations in Hawaii following the October 2006 Kiholo Bay earthquake.					
100	Percentage of earthquake monitoring global seismic network stations that have telemetry (increase reporting speed from one hour to 20 minutes)	2004 Actual	2005 Actual	2006 Actual	2007 Planned	2007 Actual
		80%	86%	89%	93%	96%
	✓ Target Met.					
101	Number of formal workshops or training provided to customers	2004 Actual	2005 Actual	2006 Actual	2007 Planned	2007 Actual
		14	19	15	12	14
	▲ Target Exceeded. Additional stakeholder workshops and/or training opportunities arose during the year than anticipated in target planning.					
102	Number of sites (mobile or fixed) monitored for ground deformation to identify volcanic activity	2004 Actual	2005 Actual	2006 Actual	2007 Planned	2007 Actual
		85	88	94	125	159
	■ Rebaselined. A new base incorporates instruments operated by the NSF Plate Boundary Observatory (PBO) installed on volcanoes. PBO is in year 4 of a 5-year installation phase.					
103	Number of areas or locations for which geophysical models exist that are used to interpret monitoring data (PART measure)	2004 Actual	2005 Actual	2006 Actual	2007 Planned	2007 Actual
		4	4 ⅓	4 ⅔	5	5
	✓ Target Met.					
104	Number of volcanoes for which information supports public-safety decisions (PART measure)	2004 Actual	2005 Actual	2006 Actual	2007 Planned	2007 Actual
		49	51	51	52	52
	✓ Target Met.					

Performance Data and Analysis

105	Percentage of potentially active volcanoes monitored (PART measure)	2004 Actual	2005 Actual	2006 Actual	2007 Planned	2007 Actual
		67%	72.9%	72.9%	74.3%	74.3%
	√ Target Met.					
106	Number of counties, or comparable jurisdictions, that have adopted improved building codes, land-use plans, emergency response plans, or other hazard mitigation measures based on USGS earthquake-hazards information (PART measure)	2004 Actual	2005 Actual	2006 Actual	2007 Planned	2007 Actual
		559	565	569	556	593
	▲ Target Exceeded. Primarily due to a priority that arose to upgrade stations in Hawaii following the October 2006 Kiholo Bay earthquake.					
107	Number of counties, or comparable jurisdictions, that have adopted improved building codes, land-use plans, emergency-response plans, or other hazard-mitigation measures based on USGS landslide hazards information (PART measure)	2004 Actual	2005 Actual	2006 Actual	2007 Planned	2007 Actual
		68	71	80	89	89
	√ Target Met.					
108	Number of counties, or comparable jurisdictions, that have adopted improved building codes, land-use plans, emergency-response plans, or other hazard-mitigation measures based on USGS volcano-hazards information (PART measure)	2004 Actual	2005 Actual	2006 Actual	2007 Planned	2007 Actual
		162	170	190	214	196
	▼ Target Not Met. Lack of timely 2007 FAA funding and diversion of activities due to threat level of Mt. St. Helens and Augustine.					
109	Percentage data availability for real-time data from the GSN (PART measure)	2004 Actual	2005 Actual	2006 Actual	2007 Planned	2007 Actual
		90.5%	89%	88%	87%	88%
	√ Target Met.					
110	Data processing and notification costs per unit volume of input data from earthquake sensors in monitoring networks (in cost per gigabyte) (PART measure)	2004 Actual	2005 Actual	2006 Actual	2007 Planned	2007 Actual
		.90 \$/Gb	0.79 \$/Gb	1.3 \$/Gb	1.33 \$/Gb	1.19 \$/Gb
	▲ Target Exceeded. Efficiencies realized from restructuring processing to minimize handling of digital media.					

Performance Data and Analysis

Serving Communities Goal Accomplishments

USGS Releases PAGER Rapid Earthquake Impact Alert

The USGS released the Prompt Assessment of Global Earthquakes for Response (PAGER), which uses advanced-seismological methods to estimate the societal impact of major earthquakes worldwide based upon estimates of people exposed to potentially damaging levels of ground motion. PAGER provides rapid situational awareness to emergency-relief organizations, government agencies, and the media, helping those groups to quickly evaluate the scale and type of response required. A prototype system

(protoPAGER) has been sending population-exposure estimates to select users, including the U.S. Agency for International Development (USAID). ProtoPAGER produced alerts for more than 450 earthquakes; the information was used immediately to prepare maps and brief top U.S. response officials as well as responders on the ground to aid in planning their search-and-rescue efforts. PAGER also has been used as the basis for decisions on when a response is not needed, thereby saving many taxpayers' dollars.

A public version of PAGER was released in September 2007, since operational advancements were sufficiently complete. Current users include the USAID/OFDA,

State Department, FEMA, Northcom, AFTAC, the United Nations and European Commission, Geohazards International, BP Atlantis, the CA Office of Emergency Services, and the Indonesian Meteorological and Geophysical Agency.

PAGER is depicted on the Web at <http://earthquake.usgs.gov/eqcenter/pager/> and on this USGS fact sheet: <http://pubs.usgs.gov/fs/2005/3026/>.

Scientists Probe Internal Workings of the San Andreas Fault

The San Andreas Fault Observatory at Depth (SAFOD) began in 2003 and penetrates the fault at an unprecedented depth of about 2 miles. SAFOD, which was completed in 2007 and expected to operate for 20 years, is the only earthquake observatory with



M 6.3 JAVA, INDONESIA

Origin Time: Fri 2006-05-26 22:54:01 UTC
Location: 7.96°S 110.43°E Depth: 17 km



PAGER Version 2.1

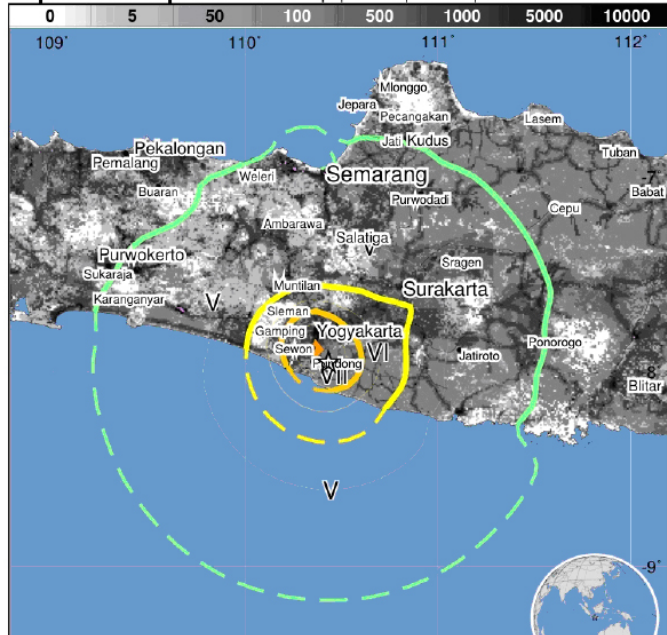
Created: 326 days, 9 hrs after earthquake

Estimated Population Exposed to Earthquake Shaking

ESTIMATED POPULATION EXPOSURE (k = x1000)	--*	--*	24,212k*	23,269k*	3,049k*	1,413k*	1,217k*	--	--
ESTIMATED MODIFIED MERCALLI INTENSITY	I	II-III	IV	V	VI	VII	VIII	IX	X+
PERCEIVED SHAKING	Not felt	Weak	Light	Moderate	Strong	Very strong	Severe	Violent	Extreme
POTENTIAL DAMAGE	Resistant Structures	none	none	none	V. Light	Light	Moderate	Moderate/Heavy	Heavy
	Vulnerable Structures	none	none	none	Light	Moderate	Moderate/Heavy	Heavy	V. Heavy

*Estimated exposure only includes population within the map area.

Population Exposure

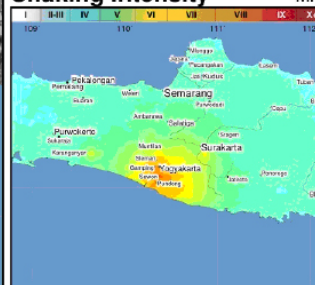


Selected City Exposure

MMI City	Population
VIII Sewon	89k
VIII Bantul	63k
VIII Yogyakarta	493k
VIII Gamping	77k
VIII Godean	55k
VII Kasihan	67k
VII Depok	137k
V Malang	842k
IV Semarang	1,300k
IV Bandung	2,800k
III Surabaya	3,100k

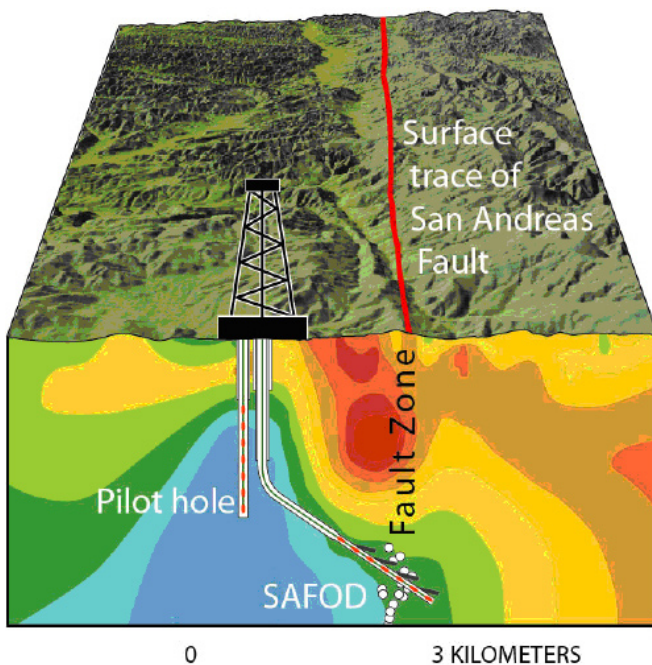
bold cities appear on map (k = x1000)

Shaking Intensity



PAGER earthquake alert gives maps and tables summarizing the distribution of shaking and exposed population around the epicenter of the May 2006 Yogyakarta, Indonesia earthquake, which killed nearly 5,700 people and injured 38,000. Key agencies worldwide receive PAGER alerts within one hour of a damaging earthquake.

instruments installed directly within an active fault to give researchers a unique window into the process of stress buildup and release in faults. Scientists obtained samples of the rocks and fluids near and within this actively sliding and snapping fault and placed a variety of sensitive instruments within the fault to record future earthquakes. SAFOD, which builds upon 3 decades of intensive, USGS-led research on faulting and earthquake prediction at this central-California location, will provide new insights into the composition and physical properties of fault-zone materials at depth and the forces that cause earthquakes. Results from SAFOD will improve models that predict the occurrence and shaking from earthquakes and may help to determine whether the long-sought goal of earthquake prediction can ever be attained. SAFOD is being constructed and operated by the USGS and academic colleagues, with major funding from the National Science Foundation's Earthscope Program (<http://www.earthscope.org>) and the Intercontinental Drilling Program (<http://www.icdp-online.org/>).



Map and cut-away diagram show the location of the SAFOD drill site on the west side of the San Andreas fault in central California, and the path of the inclined SAFOD borehole that penetrated the fault zone during drilling operations in 2005 and 2007. Colors on the cut-away section show the electrical properties of the rock (used by scientists to determine the fault's path at depth), and white dots are small earthquakes.

The Great Southern California ShakeOut

During the summer of 2007, the first of four stages of the Multi-hazards Demonstration Project was completed for a scenario that describes what will happen in a future southern San Andreas Fault earthquake, including secondary hazards triggered by the earthquake, such as fires and landslides. The scenario is designed to support decisionmaking by emergency managers, allowing examination of a range of consequences, from the direct physical impacts, to the social, cultural, environmental, and economic effects. The scenario will also consider what factors will distinguish whether the event is a disaster, which disrupts the community that can be recovered within a few years, or a catastrophe, from which it will take decades to recover. The scenario focuses on a magnitude 7.8 earthquake on the southernmost 300 km of the San Andreas fault, chosen by geologists as highly probable and one that will cause moderate to strong shaking over much of southern California. Over 50 different entities have joined in a partnership with USGS to create this scenario, including the California Geological Survey, California Office of Emergency Services (OES), the Federal Emergency Management Agency (FEMA), American Red Cross, Los Angeles Chamber of Commerce, emergency management agencies, and local governments within the eight southern California counties, as well as several utility companies.

The next phases of this natural hazard study include a description of physical impacts, which will be completed in October 2007, and the social and economic consequences, which will be completed by January 2008. OES and the U.S. Department of Homeland Security (DHS) have jointly committed to applying this scenario to a statewide earthquake response exercise in 2008. This exercise, scheduled for November 13, 2008, will be combined with a public event, called the Great Southern California ShakeOut, where schools, businesses, the media, and the public will engage in earthquake drills, educational events, and simulations.

Performance Data and Analysis

Debris Flow Early Warning System

The USGS and the National Weather Service (NWS) have prototyped a public debris flow early warning system in Southern California. Across Western United States forests and rangelands, wildland fire is a growing problem due to a combination of drought, invasive species, climate change, as well as shifts in fire ecology regime. Landslides and debris flows have become an increasingly frequent secondary impact, especially where urbanization relentlessly pushes into the mountainous wildland interface. The USGS determines threshold rainfall levels sufficient to trigger warnings of potential debris flows in recently burned areas. The warnings are issued by the NWS when predicted rainfall exceeds the thresholds. The warning system operated throughout the record low-precipitation winter of 2006-07 with 10 watches and 4 warnings issued.

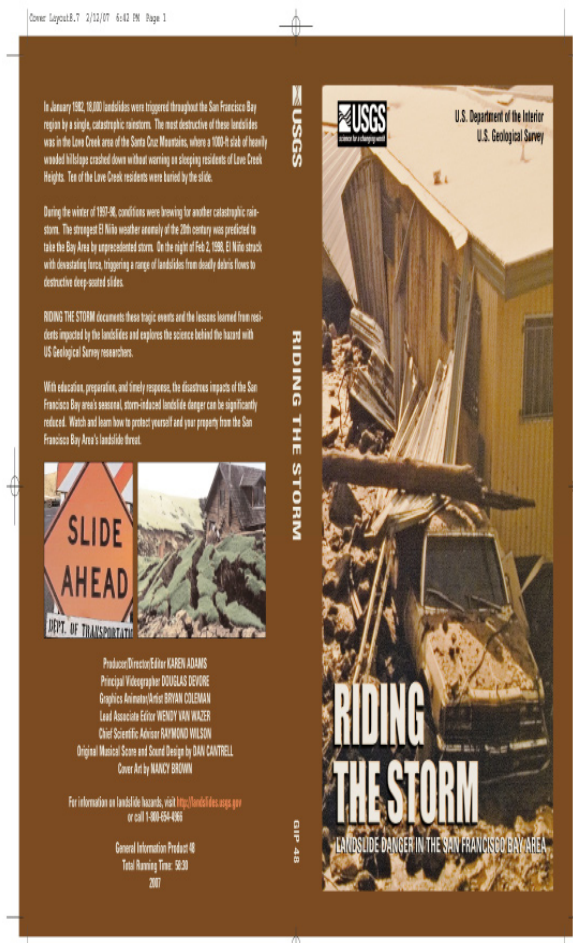
In collaboration with NWS, USGS selected an area in Los Angeles and Ventura Counties for intensive study to improve understanding of the hydrologic and geomorphic processes in recently burned areas, with a specific focus on debris-flow triggering mechanisms. USGS installed instrumentation networks to quantify rainfall, overland flow, soil moisture, and sediment transport by dry gravel at two locations in the area. USGS selects a different burn area each year for intensive study.



Overland flow detectors on surface of hillslope monitoring location in Day Fire Intensive Research Area.

“Riding the Storm”

“Riding the Storm,” a one-hour documentary produced by USGS, outlines the causes of landslides and is especially useful for its interviews with victims and emergency responders who experienced damaging landslides in the San Francisco Bay area. The combination of steep slopes, weak rocks, and intense winter storms make the Bay area particularly vulnerable to landslides. The documentary, which aims to inform, and therefore, protect the community from potential hazards associated with landslides, aired on public television in San Jose, Calif., has been released on DVD, and can be viewed or downloaded from the Landslide Hazards Program Web site at <http://landslides.usgs.gov>.



Management Excellence Goal Accomplishments

Successful management is imperative to meet strategic mission goals. To succeed, USGS is holding managers as well as scientists accountable for results, more effective means of leveraging available resources, and the continuous introduction and evaluation of process, structural, and technology improvements. The Department's management approach is guided by the Secretary's key business principles: accountability and modernization/integration. In the Interior Strategic Plan, our goals of Accountability and Modernization/Integration and the President's Management Agenda converge to form a non-mission area of the strategic plan—Management Excellence. Like the programmatic mission areas, Management Excellence is structured to include outcome goals and strategies with associated performance measures. Each aspect of the President's Management Agenda is reflected within this framework. USGS supports Management Excellence goals throughout the organization with dedicated funding in Science Support and Facilities as well as the information security, technology, and resource components of Enterprise Information. Performance is reported by the Department as an aggregate of Bureau performance. Two examples of management accomplishments follow:

USGS Leadership Programs

Organizational development efforts continue through the use of the USGS Organizational Excellence Model as a tool to analyze the linkage between organizational dimensions (people, processes, structures, and leadership and management) and organizational performance, in order to focus on the most critical levers for success and to effectively manage organizational change brought about by competitive sourcing, workforce adjustments, and restructuring activities. To aid in this analysis, a USGS all-employee survey was conducted in the spring of 2007. This survey, coupled with the results of the Federal Human Capital Survey from 2006, provides very useful information that helps the USGS assess organizational excellence. Utilizing these results, the USGS management teams and the Director develop strategies to address the findings and identify actions that benefit our science and our employees and that will advance the Department of Interior's strategic plan.

An example of a change that resulted from survey results is with the USGS Leadership Programs. In 1999, results from an all-employee assessment indicated that employees did not think that the USGS valued leadership characteristics. In response, the Leadership Development Program was designed and developed to address this area of concern. Two leadership development courses, taught 18 months apart, were created to address individual awareness, teamwork, creativity and innovation, problem solving, and emotional intelligence. Using 360-degree assessments, participants learn about their leadership qualities and develop individual and organizational action plans to enhance their strengths and improve their leadership competencies. These assessments also serve as the data source for a research project focused on determining the effectiveness of the Leadership Development Program and the diffusion of leadership behaviors from program participants to nonprogram participants. Early results indicate a statistically relevant correlation between the behaviors of course participants and the perceptions of their leadership qualities by their supervisors, peers, and employees. In the book entitled "Evaluating Training Programs," by Donald L. Kirkpatrick and James D. Kirkpatrick, published in late 2006, Chapter 16 is devoted to the USGS Leadership Development Program's evaluation study methodology and findings. Additionally, a leadership and management resource library and leadership performance support Web site were established, and an annual and very prestigious "excellence in leadership" award is presented. In the 2007 Organizational Excellence Assessment Survey (OEAS), employees were asked if the USGS values leadership; the results indicated a 16 percent favorable-response increase over the 2002 results and a 7 percent favorable-response increase over the 1999 results.

USGS Mentoring Program

The USGS Mentoring Program was developed based on analysis that showed turnover rates at the entry level were higher than desired. The program was originally focused on acculturation of new employees but quickly evolved to focus on succession planning and knowledge transfer. The Mentoring Program has both

Performance Data and Analysis

formal and informal components. The formal program focuses on employees with less than 5 years of service with the USGS. Individuals are self-nominated and must have supervisory approval. Mentors are carefully screened and matched with protégés, who complete an in-depth application that helps them identify their desired priority outcomes from the mentoring.

The formal component lasts for 1 year and consists of a face-to-face shadowing opportunity at the beginning to help the mentor and protégé create a shared set of goals and objectives. The informal component is for anyone who wants help finding a mentor and establishing a productive mentoring relationship. The Mentoring Program provides training and resources, and conducts monthly cyber seminars on a variety of topics to reinforce and stimulate the mentoring relationships. This program was highlighted in a June 25, 2007, Human Resources Special Report in the Federal Times. Since its publication, the USGS has received numerous inquiries from other Federal agencies requesting assistance with establishing similar programs.

In keeping with Departmental and OMB policy for performance data verification and validation (V&V), USGS has complied with requirements for performance data credibility.

The Department's contracted a review of performance V&V practices throughout the Department in FY 2006. Regarding USGS V&V materials and data sources the report dated April 18, 2006, states the following:

"USGS complies with the requirements for performance data credibility, utilizing an approach that includes providing Budget and Activity Based Cost Management training, SES performance measure alignment, and implementation of the Department Data V&V Assessment Matrix. In 2004, USGS expanded the initial scope for data V&V to include USGS-specific measures, outputs, all PART and Management Excellence performance measures. Strong compliance of data V&V procedures was found across all program offices within the USGS. The USGS has a standardized checklist of validation and verification procedures that is distributed to all program offices. This standardized form has worked well for USGS, and has the potential to be a model for how other Bureaus and agencies in DOI document validation and verification procedures." USGS is maintaining the same performance data practices in FY 2007.

During FY2007, USGS GPRA coordinators for each Budget Activity/scientific discipline completed and certified a validation checklist comprised of criteria in the DOI V&V Assessment Matrix for the key, non-key performance measures of the DOI Strategic Plan, bureau specific, PART measures, and outputs to which USGS contributes. This included assessing data accuracy, completeness, consistency, availability, and inter-control practices that serve to determine the overall reliability of the data collected. GPRA coordinators document any inconsistencies, inaccuracies or anomalies in performance data to ensure that problems are addressed so that integrity of the performance data are ensured.

USGS demonstrated accountability by establishing a clear connection among mission, work, and what work accomplishes for the funds that have been authorized and appropriated. Criteria include scrutiny to determine that goals are realistic and measurable, understandable to users, and ultimately used in decisionmaking. This added documentation and assurance of creditability and usability of USGS performance measures for management decisionmaking.

Data Validation and Verification Element	Explanation
Status of Data V&V implementation in bureau activity area	Response to GPRA requirements and DOI-AS-PMB Data V&V directive January 16, 2003 is ongoing.
1. Extent to which data V&V criteria have been disseminated throughout the bureau activity area units	Data V&V criteria have been disseminated to all USGS GPRA coordinators for each Budget Activity/scientific discipline and to program coordinators throughout the bureau.
2. Extent to which protocols have been implemented in units providing performance data	Program coordinators and/or performance measure owners have documented and signed performance data verification and validation process criteria for each measure included in the performance budget.

Performance Data and Analysis

a) Are collection standards followed?	Performance measure names, terminology and DOI performance definition templates are understood and being followed. There is no common enterprise-wide data entry system for the bureau. The data entry point for collection of performance data is in the Office of Budget and Performance (OBP). An example of how program coordinators collect data for program performance is given for a biological resources discipline that they provide to OBP for consolidation. The Biological Information Management and Delivery Web site requires common collection standards to report quarterly accomplishments. Reporting stations are notified at the same time of a reporting requirement, and all use the same procedure for reports. For Biological Research & Monitoring, new GPRA guidance was communicated to center directors and Regional Executive (REX) staff. This guidance establishes collection and review and editing procedures involving REX staff, with headquarters follow-up. Consistent reporting procedures, including database formats are used by centers and regions.
Data Validation and Verification Element	Explanation
b) Are data entry and transfer rules used?	Systems used to track performance data do not have extensive editing capabilities, but standard processes are used to capture performance data. Program offices understand how to obtain information about performance data and maintain data currency. For example, Water procedures for data entry, data sources and assumptions, and methods are documented by OBP discipline coordinator and are available to other OBP staff.
c) Are data security measures implemented?	1) Firewalls, password protection, etc. are established according to bureau information system requirements. 2) Access to the databases and/or Excel spreadsheets are only available to registered, logged-on USGS users.
3. Does the bureau conduct oversight and certification of data?	USGS GPRA coordinators for each budget activity/scientific discipline provide oversight and standards to be followed, verify performance data accuracy, ensure documentation is maintained, and certify performance data reported. OBP provides a second level of oversight.
4. Are other relevant actions taken to insure credibility of performance data?	Yes, for example, OBP makes comments in the DOI database, if for any reason; the data is changed after it has been entered.
Data Source(s)	Data sources such as large databases, local files, Excel spreadsheets, reference files, and hardcopy files are documented. For example, the Water Discipline uses a software query to extract the performance data from the National Water Information System (NWIS), a database and user interface through which the streamgages, ground-water sites, and water-quality sites report their hydrologic data on the Internet.
Data Limitations	Any data limitations are documented.
Corrective/Improvement Actions (Needed, In Progress, or Recently Completed)	DOI's contracted evaluation made four recommendations for improvement and USGS developed an Action Plan to address recommendations. USGS has implemented all the recommendations and will encourage Program Coordinators to take DOI training when it becomes available.

Performance Data and Analysis

Program evaluations are an important tool in analyzing the effectiveness and efficiency of our programs and evaluating whether they are meeting their intended objectives. Our programs are evaluated through a variety of means, including performance audits, PART, financial audits, internal control reviews, and external reviews from Congress, OMB, OIG, and other organizations, such as the National Academy of Public Administration and the National Academy of Science.

These reviews, which may take several years to complete, are critical to maintaining the USGS's reputation for scientific excellence and credibility as well as providing guidance for future research needs. The evaluations improve the accountability and quality of programs, but also identify and address gaps in programs; redirect or reaffirm program directions; identify and provide guidance for development of new programs; and review and/or motivate managers and scientists.

USGS conducts both internal and external peer and management reviews to improve the accountability and quality of programs; identify and address gaps in programs; redirect or reaffirm program directions; identify and provide guidance for the development of new programs; and review and/or motivate managers and scientists.

Reviews are both internal and external, conducted by USGS and non-USGS scientists, technicians, or specialists who are not involved in the specific proposal, project, program, or product under review. USGS goal is to conduct an independent external peer review of ongoing programs about every 5 years, combined with more frequent independent internal management reviews.

Program	Strategic Plan Mission Area	Purpose of Program Evaluation	Actions Taken in Response to Evaluation
Earth Science and Applications from Space: National Imperatives for the Next Decade and Beyond	Resource Protection	To generate consensus recommendations regarding a systems approach to space-based and ancillary observations that encompass the research and operational programs of USGS, NASA and NOAA (e.g. Landsat).	Report was published by NAS in August 2007. The USGS is working with NASA and NOAA on evaluating the recommendations and discussing next steps. Report is available at: http://books.nap.edu/catalog.php?record_id=11820 .
River Science at the USGS	Resource Protection	To advise USGS on how to best address river science and the highest priority river science issues. The report calls for expanding existing monitoring and research, especially Water Resources activities in collaboration with Geology and Biology disciplines.	Report was published by NAS August 2007. USGS is reviewing the recommendations to determine what actions should be taken during the next few years. Report is available at: http://books.nap.edu/catalog.php?record_id=11773 .

Performance Data and Analysis

Program	Strategic Plan Mission Area	Purpose of Program Evaluation	Actions Taken in Response to Evaluation
A Research Agenda for Geographic Information Science at the United States Geological Survey	Resource Protection	To recommend research goals and priorities for the newly formed Center of Excellence for Geospatial Information Science (CEGIS) at USGS.	Report was published by NAS September 2007. USGS is reviewing the recommendations to determine what actions should be taken during the next few years. Report is available at: http://books.nap.edu/catalog.php?record_id=12004 .
Research Priorities in Earth Science and Public Health	Resource Protection Resource Use and Serving Communities	To explore avenues for interdisciplinary research at the interface between the earth science and public health disciplines. The NSF, USGS and NASA charged the study committee to advise on the high-priority research activities that should be undertaken for optimum societal benefit, and to describe the most profitable areas for communication and collaboration between the earth science and public health communities.	Report was issued by NAS January 2007. In February, the USGS hosted a meeting of earth scientists and researchers in the public health sector as well as policy makers and congressional staffers to foster communication and to showcase USGS research in earth science related to public health issues. All NAS recommendations have been incorporated into the new USGS Science Strategy as well as being utilized by Mineral, Energy, Coastal and Marine Geology, and Geologic Mapping Programs. Report is available at: http://books.nap.edu/catalog.php?record_id=11809 .

USGS scientist discussing the geology of Mount St. Helens.



Section III

Financial Information

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Message from the Chief Financial Officer



Fiscal Year 2007 has been very productive and successful not only for our continued excellence in science but also for the significant achievements and improvements accomplished in the bureau's business management arena. Our continued progress towards management excellence is presented in the FY2007 Performance and Accountability Report (PAR). The PAR is our most important financial and program performance information for the USGS. It is our chief publication and report to Congress and the American people. This report details program leadership and stewardship of the public funds to which we have been entrusted.

I am delighted to report that for the fourth consecutive year we have received an unqualified ("clean") opinion on the bureau's consolidated financial statements from our auditors. This is the best possible audit result. With it the American people can have confidence that the financial statement information presented here is both accurate and reliable. In addition to our opinion, the USGS achieved a number of other noteworthy accomplishments in FY2007. The USGS:

- Achieved a green status in accomplishing the President's Management Agenda goals concerning Improved Financial Management, Human Capital, Budget and Performance Integration, Environmental and Energy Management, and E-Government;
- Continued supporting Executive Order 13423, "Strengthening Federal Environmental, Energy, and Transportation Management" by purchasing an alternative fuel vehicle for the Fort Collins Science Center in Colorado. The Fort Collins site was chosen based on its proximity to E85 ethanol fueling stations and its effective use of a local consolidated motor pool;
- Completed the first USGS standard competitive sourcing study for an entire science center. The winner of this competitive process was announced on September 27, 2007 which resulted in the operation of the National Water Quality Laboratory remaining in-house. The Most Efficient Organization (MEO) will be implemented during FY2008;
- Successfully cleared the reportable condition and instance of noncompliance with laws and regulations identified in the Independent Auditor's Report for FY 2006: Improve Controls over Charge Cards and compliance with the Single Audit Act Amendments of 1996;

- Completed our annual review of financial reporting processes and internal controls, as required by OMB Circular A-123, "Management's Responsibility for Internal Control" and issued an unqualified Statement of Assurance which indicates USGS's internal controls are operating effectively with no material weaknesses found in the design or operation of these controls;
- Completed a bureau-wide employee survey to assess how well the bureau operates, are we on target with scientific mission and goals, and whether we are delivering science that makes a difference. The results of this survey have been published and focus groups are working to address issues that were highlighted by our employees;
- Continued to have historically lower than average accident rates compared to overall Federal and Department of the Interior rates with USGS SHARE Incident rates for FY2007 reported at 2.270 and Lost Time Rate at .322;
- Received from the Office of the Federal Environmental Executive the Federal Electronics Reuse and Recycling Campaign Award for recycling the most surplus or excess electronic equipment in a mid-sized organization; and
- Met and/or exceeded our annual performance goals.

Our number one resource in the USGS is our employees. This PAR and the achievements that it describes are the result of these extraordinarily dedicated and exemplary folks. It is with their ongoing commitment and dedication that the USGS will continue its journey towards management excellence. Our mission, performance metrics, and management will continue to be the foundation on which we achieve results.

Karen D. Baker
Chief Financial Officer
October 2007



United States Department of the Interior

OFFICE OF INSPECTOR GENERAL

Washington, DC 20240

DEC 14 2007

Memorandum

To: Director, U.S. Geological Survey

From: Kimberly Elmore *Kimberly Elmore*
Acting Assistant Inspector General for Audits

Subject: Independent Auditors' Report on the U.S. Geological Survey Financial Statements for Fiscal Years 2007 and 2006 (Report No. X-IN-GSV-0015-2007)

INTRODUCTION

This memorandum transmits the KPMG LLP (KPMG) auditors' report of the U.S. Geological Survey (USGS) financial statements for fiscal years (FYs) 2007 and 2006. The Chief Financial Officers Act of 1990 (Public Law 101-576), as amended, requires the Inspector General or an independent auditor, as determined by the Inspector General, to audit the Department of the Interior (DOI) financial statements.

Under a contract issued by DOI and monitored by the Office of Inspector General (OIG), KPMG, an independent public accounting firm, performed an audit of the USGS FY2007 and FY2006 financial statements. The contract required that the audit be performed in accordance with the "Government Auditing Standards" issued by the Comptroller General of the United States and Office of Management and Budget Bulletin No. 07-04, "Audit Requirements for Federal Financial Statements."

RESULTS OF INDEPENDENT AUDIT

In its audit report dated November 5, 2007 (Attachment 1), KPMG issued an unqualified opinion on the USGS financial statements. However, KPMG identified one significant deficiency in internal controls over financial reporting, which was not considered to be a material weakness. KPMG made 13 recommendations that, if implemented, should resolve the finding.

STATUS OF RECOMMENDATIONS

In its November 19, 2007 response (Attachment 2) to the draft report, USGS partially agreed with the finding and recommendations and stated that it was in the process of implementing 9 of the 13 recommendations and disagreed with 4 recommendations. We will refer the four unresolved recommendations to the Assistant Secretary for Policy, Management

and Budget for resolution and the remaining nine recommendations for tracking of implementation (see Attachment 3, “Status of Audit Report Recommendations”).

EVALUATION OF KPMG AUDIT PERFORMANCE

To ensure the quality of the audit work performed, the OIG:

- reviewed KPMG’s approach and planning of the audit;
- evaluated the qualifications and independence of the auditors;
- monitored the progress of the audit at key points;
- coordinated periodic meetings with USGS management to discuss audit progress, findings, and recommendations;
- reviewed and accepted KPMG’s audit report; and
- performed other procedures we deemed necessary.

KPMG is responsible for the attached auditors’ report dated November 5, 2007, and the conclusions expressed in it. We do not express an opinion on USGS financial statements or on KPMG’s conclusions regarding 1) effectiveness of internal controls, 2) compliance with laws and regulations, or 3) substantial compliance of USGS financial management systems with the Federal Financial Management Improvement Act of 1996.

REPORT DISTRIBUTION

The legislation, as amended, creating the OIG requires semiannual reporting to the Congress on all audit reports issued, actions taken to implement audit recommendations, and recommendations that have not been implemented. Therefore, we will include the information in the attachment in our next semiannual report. The distribution of the report is not restricted, and copies are available for public inspection.

We appreciate the cooperation and assistance of USGS personnel during the audit. If you have any questions regarding the report, please contact Jeff Carlson at 202–208–5724.

Attachments

cc: Assistant Secretary, Water and Science
Audit Liaison Officer, Water and Science
Chief Financial Officer, U.S. Geological Survey
Audit Liaison Officer, U.S. Geological Survey
Audit Liaison Officer, Office of Financial Management



KPMG LLP
2001 M Street, NW
Washington, DC 20036

Independent Auditors' Report

Director of the U.S. Geological Survey and Inspector General
U.S. Department of the Interior:

We have audited the accompanying consolidated balance sheets of the U.S. Geological Survey (USGS) as of September 30, 2007 and 2006, and the related consolidated statements of net cost and changes in net position, and combined statements of budgetary resources (hereinafter referred to as "consolidated financial statements") for the years then ended. The objective of our audits was to express an opinion on the fair presentation of these consolidated financial statements. In connection with our fiscal year 2007 audit, we also considered USGS's internal controls over financial reporting and performance measures and tested USGS's compliance with certain provisions of applicable laws, regulations, contracts, and grant agreements that could have a direct and material effect on these consolidated financial statements.

SUMMARY

As stated in our opinion on the consolidated financial statements, we concluded that USGS's consolidated financial statements as of and for the years ended September 30, 2007 and 2006, are presented fairly, in all material respects, in conformity with U.S. generally accepted accounting principles.

As discussed in our opinion, in fiscal year 2007, USGS changed its method of accounting for and reporting of the reconciliation of net cost to budget and allocation transfers to adopt changes in accounting standards and Office of Management and Budget (OMB) requirements. Also, as discussed in our opinion, USGS revised its method of allocating certain costs and revenues between programs on the statement of net cost in fiscal year 2007.

Our consideration of internal control over financial reporting resulted in the following condition being identified as a significant deficiency:

Significant Deficiency

A. General and Application Controls over Financial Management Systems

However, this significant deficiency is not believed to be a material weakness.

We noted no deficiencies involving the design of the internal control over the existence and completeness assertions related to key performance measures.

The results of our tests of compliance with certain provisions of laws, regulations, contracts, and grant agreements disclosed no instances of noncompliance or other matters that are required to be reported under *Government Auditing Standards*, issued by the Comptroller General of the United States, and OMB Bulletin No. 07-04, *Audit Requirements for Federal Financial Statements*.



The following sections discuss our opinion on USGS's consolidated financial statements; our consideration of USGS's internal controls over financial reporting and performance measures; our tests of USGS's compliance with certain provisions of applicable laws, regulations, contracts, and grant agreements; and management's and our responsibilities.

OPINION ON THE FINANCIAL STATEMENTS

We have audited the accompanying consolidated balance sheets of the U.S. Geological Survey (USGS) as of September 30, 2007 and 2006, and the related consolidated statements of net cost and changes in net position, and the combined statements of budgetary resources (hereinafter referred to as "consolidated financial statements") for the years then ended.

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of USGS as of September 30, 2007 and 2006, and its net costs, changes in net position, and budgetary resources for the years then ended, in conformity with U.S. generally accepted accounting principles.

As discussed in Note 15 to the consolidated financial statements, USGS changed its method of reporting the reconciliation of net cost to budget in fiscal year 2007. Also, as discussed in Note 1(r) to the consolidated financial statements, USGS changed its method of accounting for and reporting allocation transfers in fiscal year 2007. Also, as discussed in Note 13 to the consolidated financial statements, USGS's fiscal year 2007 consolidated statement of net cost is not comparable to its fiscal year 2006 consolidated statement of net cost because USGS revised its method of allocating certain costs and revenues between programs in fiscal year 2007.

The information in the Management's Discussion and Analysis, Required Supplementary Information, and Required Supplementary Stewardship Information sections is not a required part of the consolidated financial statements, but is supplementary information required by U.S. generally accepted accounting principles and OMB Circular No. A-136, *Financial Reporting Requirements*. We have applied certain limited procedures, which consisted principally of inquiries of management regarding the methods of measurement and presentation of this information. However, we did not audit this information and, accordingly, we express no opinion on it.

Our audits were conducted for the purpose of forming an opinion on the consolidated financial statements taken as a whole. The information in the Introduction, Performance Data and Analysis, and Appendix, as reflected in the 2007 Performance and Accountability Report's accompanying table of contents, is presented for purposes of additional analysis and is not required as part of the consolidated financial statements. This information has not been subjected to auditing procedures and, accordingly, we express no opinion on it.

INTERNAL CONTROL OVER FINANCIAL REPORTING

Our consideration of the internal control over financial reporting was for the limited purpose described in the Responsibilities section of this report and would not necessarily identify all deficiencies in the internal control over financial reporting that might be significant deficiencies or material weaknesses.

A control deficiency exists when the design or operation of a control does not allow management or employees, in the normal course of performing their assigned functions, to prevent or detect



misstatements on a timely basis. A significant deficiency is a control deficiency, or combination of control deficiencies, that adversely affects USGS's ability to initiate, authorize, record, process, or report financial data reliably in accordance with U.S. generally accepted accounting principles such that there is more than a remote likelihood that a misstatement of USGS's consolidated financial statements that is more than inconsequential will not be prevented or detected by USGS's internal control over financial reporting. A material weakness is a significant deficiency, or combination of significant deficiencies, that results in more than a remote likelihood that a material misstatement of the consolidated financial statements will not be prevented or detected by USGS's internal control.

In our fiscal year 2007 audit, we consider the deficiency, described below, to be a significant deficiency in internal control over financial reporting. However, we do not believe that the significant deficiency described below is a material weakness. Exhibit I presents the status of prior year reportable conditions.

A. General and Application Controls over Financial Management Systems

USGS did not have adequate information technology controls to protect two of its financial information systems as required by OMB Circular No. A-130, *Management of Federal Information Resources*. These conditions could affect USGS's ability to prevent and detect unauthorized changes to financial information, control electronic access to sensitive information, and protect its information resources.

We identified the following conditions during fiscal year 2007:

1. Entity-wide Security Program and Planning

The USGS General Support System (GSS) certification and accreditation (C&A) included a financial application. However, this C&A lacked specific application-related information and documentation to satisfy its recertification and reaccreditation requirements. Specifically, the System Test and Evaluation was not included in the C&A package, and the security plan and risk assessment were not updated.

2. Access Controls

USGS did not develop procedures to recertify user access accounts privileges on a periodic basis or perform this recertification for two financial applications. Also, for two USGS applications, the logging and review of changes to application security profiles was not performed. Additionally, three users were not terminated in a timely manner from two financial applications.

3. Change Controls

USGS has in place multiple procedural documents related to one financial application change management process; however, these procedures lack specific critical elements related to configuration management. Specifically, there is no delineation between the approval requirements of system changes for new or modified functionality (i.e., enhancements) and system changes to fix bugs (i.e., defects).

There are individuals that have access to the source code repository and database. These individuals also have access to migrate changed code into the production environment, which is a segregation of duties conflict. Additionally, the users that have access to migrate changed code



into the production environment have this ability through a generic/ shared user ID. Because of this, logs used to capture the changes to the financial application that are migrated into production would not be able to be attributed to a single user.

4. *System Software*

While USGS has taken steps to implement change management procedures that address changes to the configuration of hardware, database, operating systems, and the network infrastructure that supports a financial application, these system software change management procedures lack, or are non-specific about, certain important aspects of a change management program. Additionally, USGS was unable to provide a comprehensive list of all fiscal year 2007 system software changes supporting one financial application. Therefore, USGS was unable to provide documentation of the system software change requests, testing and approval for these changes.

USGS has not fully implemented a process to ensure that unauthorized modifications by system administrators to one financial system's operating systems and database are detected and reported. Specifically, we noted a mechanism to identify and monitor inappropriate changes to the financial systems database and operating system was not implemented.

Recommendations

We recommend that USGS:

1. *Entity-wide Security Program and Planning*

- a. Update the GSS C&A to include the specific information related to the one financial application, as required by Department of the Interior (DOI) and National Institute of Standards and Technology (NIST) standards.

2. *Access Controls*

- a. Develop and implement procedures to recertify application user access rights on a periodic basis.
- b. Ensure that the logging and review of changes is performed on a periodic basis and documented.
- c. Ensure that all terminated user access is removed in a timely manner.

3. *Program Changes*

- a. Compile existing informal change and configuration management procedures and ensure that the new procedures:
 1. Include specific delineation between the documentation requirements of system changes related to required approvals for new or modified functionality (i.e., enhancements) and system changes to fix bugs (i.e., defects); and
 2. Include segregation of duties principles in place throughout the change management process;



- b. Separate the logical access functions of the user(s) that have access to the source code and also have the ability to migrate changed code into production. Where this is not possible due to staffing constraints, implement mitigating controls such as automated audit logging and review of these actions by personnel independent of the change management process.
- c. Implement audit logging and review of the actions of user accounts on the production server that are used to migrate code into production.
- d. Lock down the generic/ shared user ID within the production environment, and provide each shared ID user with individual user IDs so that actions performed on the production environment can be attributed to one individual user.

4. System Software

- a. Implement formal change management procedures that are compliant with DOI and NIST requirements.
- b. Implement an automated process to log all changes to system software and review this log on a periodic basis to detect unauthorized activity.
- c. Ensure that all changes to system software are properly authorized.
- d. Improve the process by which it documents approvals for one financial system software changes.

Management's Response

Management has prepared an official response presented as a separate attachment to this report. Management agreed with findings 2 and 4. Management disagreed with finding 1 because although not specifically referenced, the testing and evaluation were completed and the Plan of Action and Milestones was in place for each risk area. Management agreed with recommendation 3.a. Management disagreed with recommendations 3.b, 3.c, and 3.d because they believed they have sufficient mitigating controls. We did not audit USGS's response and, accordingly, we express no opinion on it.

Auditors' Response to Management's Response

As summarized above, USGS's C&A lacked specific application-related information and documentation to satisfy its recertification and reaccreditation requirements and USGS's change control procedures lack certain critical elements related to change control and configuration management. Therefore, we continue to believe that the weaknesses constitute a significant deficiency.

INTERNAL CONTROL OVER PERFORMANCE MEASURES

Our tests of internal control over performance measures, as described in the Responsibilities section of this report, disclosed no deficiencies involving the design of the internal control over the existence and completeness assertions related to key performance measures.



COMPLIANCE AND OTHER MATTERS

Our tests of compliance with certain provisions of laws, regulations, contracts, and grant agreements, as described in the Responsibilities section of this report, exclusive of those referred to in the *Federal Financial Management Improvement Act of 1996* (FFMIA), disclosed no instances of noncompliance or other matters that are required to be reported herein under *Government Auditing Standards* or OMB Bulletin No. 07-04.

The results of our tests of compliance as described in the Responsibilities section of this report, exclusive of those referred to in FFMIA, disclosed no other instances of noncompliance or other matters that are required to be reported herein under *Government Auditing Standards* or OMB Bulletin No. 07-04.

The results of our tests of FFMIA disclosed no instances in which USGS's financial management systems did not substantially comply with the three requirements discussed in the Responsibilities section of this report.

* * * * *

RESPONSIBILITIES

Management's Responsibilities. The United States Code Title 31 Section 3515 and 9106 require agencies to report annually to Congress on their financial status and any other information needed to fairly present their financial position and results of operations. To assist the U.S. Department of the Interior meet these reporting requirements, USGS prepares and submits financial statements.

Management is responsible for the consolidated financial statements, including:

- Preparing the consolidated financial statements in conformity with U.S. generally accepted accounting principles;
- Preparing the Management's Discussion and Analysis (including the performance measures), Required Supplementary Information, and Required Supplementary Stewardship Information;
- Establishing and maintaining effective internal control; and
- Complying with laws, regulations, contracts, and grant agreements applicable to USGS, including FFMIA.

In fulfilling this responsibility, management is required to make estimates and judgments to assess the expected benefits and related costs of internal control policies.

Auditors' Responsibilities. Our responsibility is to express an opinion on the fiscal year 2007 and 2006 consolidated financial statements of USGS based on our audits. We conducted our audits in accordance with auditing standards generally accepted in the United States of America; the standards applicable to financial audits contained in *Government Auditing Standards* and OMB Bulletin No. 07-04. Those standards and OMB Bulletin No. 07-04 require that we plan and perform the audits to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement. An audit includes consideration of internal control



over financial reporting as a basis for designing audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of USGS's internal control over financial reporting. Accordingly, we express no such opinion.

An audit also includes:

- Examining, on a test basis, evidence supporting the amounts and disclosures in the consolidated financial statements;
- Assessing the accounting principles used and significant estimates made by management; and
- Evaluating the overall consolidated financial statement presentation.

We believe that our audits provide a reasonable basis for our opinion.

In planning and performing our fiscal year 2007 audit, we considered USGS's internal control over financial reporting by obtaining an understanding of USGS's internal control, determining whether internal controls had been placed in operation, assessing control risk, and performing tests of controls as a basis for designing our auditing procedures for the purpose of expressing our opinion on the consolidated financial statements. We limited our internal control testing to those controls necessary to achieve the objectives described in *Government Auditing Standards* and OMB Bulletin No. 07-04. We did not test all internal controls relevant to operating objectives as broadly defined by the *Federal Managers' Financial Integrity Act of 1982*. The objective of our audit was not to express an opinion on the effectiveness of USGS's internal control over financial reporting. Accordingly, we do not express an opinion on the effectiveness of USGS's internal control over financial reporting.

As required by OMB Bulletin No. 07-04 in our fiscal year 2007 audit, with respect to internal control related to performance measures determined by management to be key and reported in the Management's Discussion and Analysis and Performance Data and Analysis sections, we obtained an understanding of the design of internal controls relating to the existence and completeness assertions and determined whether these internal controls had been placed in operation. We limited our testing to those controls necessary to report deficiencies in the design of internal control over key performance measures in accordance with OMB Bulletin 07-04. However, our procedures were not designed to provide an opinion on internal control over reported performance measures and, accordingly, we do not provide an opinion thereon.

As part of obtaining reasonable assurance about whether USGS's fiscal year 2007 consolidated financial statements are free of material misstatement, we performed tests of USGS's compliance with certain provisions of laws, regulations, contracts, and grant agreements, noncompliance with which could have a direct and material effect on the determination of the consolidated financial statement amounts; and, certain provisions of other laws and regulations specified in OMB Bulletin No. 07-04, including certain provisions referred to in FFMIA. We limited our tests of compliance to the provisions described in the preceding sentence, and we did not test compliance with all laws, regulations, contracts, and grant agreements applicable to USGS. However, providing an opinion on compliance with laws, regulations, contracts, and grant agreements was not an objective of our audit and, accordingly, we do not express such an opinion.

Under OMB Bulletin No. 07-04 and FFMIA, we are required to report whether USGS's financial management systems substantially comply with (1) Federal financial management systems requirements, (2) applicable Federal accounting standards, and (3) the United States Government



Standard General Ledger at the transaction level. To meet this requirement, we performed tests of compliance with FFMIA Section 803(a) requirements.

We noted certain additional matters that we have reported to management of USGS in a separate letter dated November 5, 2007.

This report is intended solely for the information and use of USGS’s management, the U.S. Department of the Interior’s Office of Inspector General, OMB, the U.S. Government Accountability Office, and the U.S. Congress and is not intended to be and should not be used by anyone other than these specified parties.

KPMG LLP

November 5, 2007

Exhibit I

U.S GEOLOGICAL SURVEY

Status of Prior Year Findings

September 30, 2007

Ref	Condition	Status
A	Controls over Charge Cards	This condition has been corrected.
B	Single Audit Act Amendments of 1996	This condition has been corrected.



United States Department of the Interior

U.S. GEOLOGICAL SURVEY
Office of the Director
Reston, Virginia 20192

Kimberly Elmore
Acting Assistant Inspector General for Audits
U.S. Department of the Interior
Office of Inspector General
1849 C Street, NW, MS 5341
Washington, DC 20240

NOV 19 2007

Jeff Norris
c/o KPMG LLP
2001 M Street, NW
Washington, DC 20036

Dear Ms. Elmore and Mr. Norris:

Thank you for the opportunity to comment on the Draft Independent Auditor' Report on the U.S. Geological Survey's (USGS) Financial Statements for Fiscal Years 2007 and 2006. We have reviewed the report and partially concur with the one internal control finding on general and application controls over financial management systems classified as a significant deficiency.

The bureau has already begun implementing corrective actions that respond to the recommendations included in the report. Karen Baker, USGS Associate Director for Administrative Policy and Services and the bureau's Chief Financial Officer, is the responsible official for ensuring that these actions are completed. Specifically:

A. General and Application Controls over Financial Management Systems

1. Entity-wide Security Program and Planning (SSP)

Although the System Test and Evaluation (ST&E) document was not included in the SSP by reference, USGS did perform the testing and evaluation. Subsequently, USGS did update the ST&E, SSP, and risk assessment. Plans of Actions and Milestones (POA&Ms) were already in place for each of the risk areas and the overall risk assessment did not change.

NIST Special Publication 800-37, Section 2.1, describes the accreditation process in terms of risk:

"Security accreditation is about the acceptance and management of risk—the risk to agency operations, agency assets, or individuals that results from the operation of an information system. Authorizing officials must be able to determine the risk to operations, assets, or individuals and the acceptability of such risk given the mission or business needs of their agencies. Authorizing officials must weigh the appropriate factors and decide to either accept or reject the risk to their respective agencies. To ensure that authorizing officials make credible, risk-based decisions, the following questions must be answered during the certification and accreditation process:

Does the potential risk to agency operations, agency assets, or individuals described in the system security plan (or risk assessment) prior to security certification appear to be correct, and if so, would this risk be acceptable?

Are the security controls in the information system effective in achieving the desired level of protection as defined by the security requirements for the system?

What specific actions have been taken or are planned to correct any deficiencies in the security controls for the information system and reduce or eliminate known vulnerabilities-and have resources been allocated to accomplish those actions?

How do the results of security certification translate into actual agency-level risk and is this risk acceptable?"

Because the risk to the system was not significantly impacted by the omission of a reference to certain tests, the risks still "*appear to be correct*" and acceptable. Current security controls are effective, POA&Ms are in place, and resources are allocated to correct all deficiencies. The final risk assessment was not affected by the omission of the test references, therefore, USGS believes we are in compliance with NIST.

2. Access Controls

USGS is dedicated to maintaining strong user access controls over all IT systems. USGS is in the process of implementing user recertifications for those systems which do not have such a procedure in place. USGS will work with application service providers to log and review changes to application security profiles. Procedural errors caused delays in removing the access of three former USGS employees. New procedures are being implemented to prevent this situation in the future.

3. Change Controls

Approval requirements for enhancements versus defects are delineated in the USGS Configuration Management Committee charter, which assigns the responsibility of classifying initial change requests as defects or enhancements to the Branch of Project Systems. Ultimately, the system owner approves all changes, regardless of classification. Therefore, USGS believes that there are adequate procedures in place for the delineation of defects and enhancement. However, USGS will update the system documentation to clarify these procedures.

KPMG is correct that although primary software developers do not have access to the production environment, there are several individuals, database administrators (DBAs), who are responsible for applying code changes to the production environment and who also have database administration responsibilities for the development environment. These individuals fall under the special administrative access policies. USGS has a formal "Separation of Credentials Standard" that covers these positions, and the affected people have read this document and signed the "Statement of User Responsibilities for Computer Security". Further, our configuration management procedures include identifying the developer, who makes the software change, and the configuration manager, who applies the change to the production

environment, in the relevant logs/documents. Based on these controls, USGS believes we have successfully mitigated the risk to an acceptable level and further controls would be cost prohibitive.

4. *System Software*

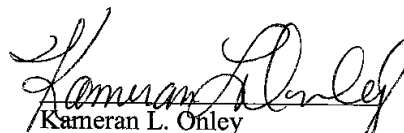
USGS documented the existing comprehensive change management procedures over our system software during FY2007. Because these procedures were not formalized at the beginning of the fiscal year, we were not able to provide complete documentation of the changes to KPMG. Also, we do acknowledge that there are areas for improvement to the procedures that we will implement during FY2008.

Should you have questions regarding our response, please feel free to contact Karen Baker at (703) 648-7200.

Very truly yours,



Mark D. Myers
Bureau Director



Kameron L. Onley
Assistant Deputy Secretary

STATUS OF AUDIT REPORT RECOMMENDATIONS

<u>Recommendation</u>	<u>Status</u>	<u>Action Required</u>
A.1.a., A.3.b., A.3.c., and A.3.d.	Unresolved	Recommendations will be referred to the Assistant Secretary, Policy, Management and Budget for resolution.
A.2.a., A.2.b., A.2.c., A.3.a.1., A.3.a.2., A.4.a., A.4.b., A.4.c., and A.4.d.	Resolved; not implemented	Recommendations will be referred to the Assistant Secretary, Policy, Management and Budget for tracking of implementation.



USGS scientist sampling bulk density to characterize soil properties in a backhoe trench dug to investigate soil and stratigraphic controls on boundaries between sagebrush and grasslands.

Financial Statements

This part of the Section III *Financial Information* contains our principal financial statements.

Contents include:

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Statements of Changes in Net Position	103
Statements of Budgetary Resources	105

Financial Information

U.S. Geological Survey

Balance Sheets

As of September 30, 2007 and 2006

(in thousands)

Assets (Note 2):	<u>2007</u>	<u>2006</u>
Intragovernmental assets:		
Fund balance with Treasury (Note 3)	\$ 294,729	257,660
Accounts and interest receivable (Note 4)	45,390	52,291
Other	2,713	3,149
Total intragovernmental assets	<u>342,832</u>	<u>313,100</u>
Accounts and interest receivable, net (Note 4)	64,684	74,889
Inventory and related property, net (Note 5)	489	582
General property, plant, and equipment, net (Note 6)	132,040	133,092
Other	87	22
Total assets	\$ <u>540,132</u>	<u>521,685</u>
Stewardship assets (Note 11)		
 Liabilities (Note 7):		
Intragovernmental liabilities:		
Accounts payable	\$ 6,472	5,448
Other (Notes 2, 7, and 8)	34,144	34,910
Total intragovernmental liabilities	<u>40,616</u>	<u>40,358</u>
Accounts payable	59,959	58,354
Federal employee and veteran benefits (Note 8)	35,644	38,873
Environmental and disposal liabilities (Note 10)	108	66
Other:		
Unfunded annual leave	59,622	59,175
Abandoned sites liabilities	20,757	21,049
Other liabilities	35,274	38,832
Total liabilities	<u>251,980</u>	<u>256,707</u>
Commitments and contingencies (Notes 10 and 12)		
 Net position:		
Unexpended appropriations - other funds	192,712	193,230
Cumulative results of operations - earmarked funds (Note 16)	2,466	3,079
Cumulative results of operations - other funds	92,974	68,669
Total net position	<u>288,152</u>	<u>264,978</u>
Total liabilities and net position	\$ <u>540,132</u>	<u>521,685</u>

U.S. Geological Survey
 Statement of Net Cost
 For the Year Ended September 30, 2007
(in thousands)

(Note 13)	<u>2007</u>
Resource Protection	
Improve the Understanding of National Ecosystems and Resources	
Costs	\$ 1,224,777
Less: earned revenue	<u>401,817</u>
Net costs	<u>822,960</u>
 Resource Use	
Improve the Understanding of Energy and Mineral Resources	
Costs	99,257
Less: earned revenue	<u>5,985</u>
Net costs	<u>93,272</u>
 Serving Communities	
Improve the Understanding, Prediction, and Monitoring of Natural Hazards	
Costs	125,913
Less: earned revenue	<u>8,084</u>
Net costs	<u>117,829</u>
 Total	
Costs	1,449,947
Less: earned revenue	<u>415,886</u>
Net cost of operations	<u><u>\$ 1,034,061</u></u>

Financial Information

U.S. Geological Survey
Statement of Net Cost
For the Year Ended September 30, 2006
(in thousands)

(Note 13)	<u>2006</u>
Resource Protection	
Improve Health of Watersheds and Landscapes	
Costs	\$ 95,271
Less: earned revenue	<u>34,354</u>
Net costs	<u>60,917</u>
Sustain Biological Communities	
Costs	180,277
Less: earned revenue	<u>37,255</u>
Net costs	<u>143,022</u>
Resource Use	
Manage or Influence Resources— Energy	
Costs	28,785
Less: earned revenue	<u>1,662</u>
Net costs	<u>27,123</u>
Manage or Influence Resources— Non-Energy	
Costs	66,089
Less: earned revenue	<u>3,138</u>
Net costs	<u>62,951</u>
Serving Communities	
Protect Lives, Resources, and Property	
Costs	118,577
Less: earned revenue	<u>12,450</u>
Net costs	<u>106,127</u>
Advance Knowledge through Scientific Leadership	
Costs	974,921
Less: earned revenue	<u>321,343</u>
Net costs	<u>653,578</u>
Total	
Costs	1,463,920
Less: earned revenue	<u>410,202</u>
Net cost of operations	<u>\$ 1,053,718</u>

U.S. Geological Survey

Statement of Changes in Net Position
For the Year Ended September 30, 2007
(in thousands)

	(Note 16) Earmarked	All Other	2007
UNEXPENDED APPROPRIATIONS:			
Beginning balances	\$ -	193,230	193,230
Adjustments:			
Change in Accounting Principles	-	(572)	(572)
Beginning balance, as adjusted	-	192,658	192,658
Budgetary financing sources:			
Appropriations received, general funds	-	988,050	988,050
Appropriations used	-	(981,327)	(981,327)
Other adjustments	-	(6,669)	(6,669)
Net change	-	54	54
Ending balances - Unexpended Appropriations	\$ -	192,712	192,712
CUMULATIVE RESULTS OF OPERATIONS:			
Beginning balances	\$ 3,079	68,669	71,748
Adjustments:			
Change in Accounting Principles	(531)	-	(531)
Beginning balance, as adjusted	2,548	68,669	71,217
Budgetary financing sources:			
Appropriations used	-	981,327	981,327
Non-exchange revenue and other	-	20	20
Transfers in/(out) without reimbursement	(3)	6,382	6,379
Donations and forfeitures of cash and cash equivalents	2,709	-	2,709
Other financing sources:			
Imputed financing from costs absorbed by others (Note 9)	-	66,346	66,346
Transfers in/(out) without reimbursement	-	95	95
Donations	-	1,408	1,408
Total financing sources	2,706	1,055,578	1,058,284
Net cost of operations	(2,788)	(1,031,273)	(1,034,061)
Net change	(82)	24,305	24,223
Ending balances - Cumulative Results of Operations	\$ 2,466	92,974	95,440

Financial Information

U.S. Geological Survey

Statement of Changes in Net Position
For the Year Ended September 30, 2006
(in thousands)

		(Note 16)		
		Earmarked	All Other	2006
UNEXPENDED APPROPRIATIONS:				
Beginning balances	\$	-	181,906	181,906
Budgetary financing sources:				
Appropriations received, general funds		-	995,204	995,204
Appropriations transferred in/(out)		-	2,023	2,023
Appropriations used		-	(966,424)	(966,424)
Other adjustments		-	(19,479)	(19,479)
Net change		-	11,324	11,324
Ending balances - Unexpended Appropriations	\$	-	193,230	193,230
CUMULATIVE RESULTS OF OPERATIONS:				
Beginning balances	\$	3,721	80,348	84,069
Budgetary financing sources:				
Appropriations used		-	966,424	966,424
Non-exchange revenue and other		-	18	18
Transfers in/(out) without reimbursement		878	150	1,028
Donations and forfeitures of cash and cash equivalents		2,400	-	2,400
Other financing sources:				
Imputed financing from costs absorbed by others (Note 9)		-	67,931	67,931
Transfers in/(out) without reimbursement		-	1,999	1,999
Donations		-	1,597	1,597
Total financing sources		3,278	1,038,119	1,041,397
Net cost of operations		(3,920)	(1,049,798)	(1,053,718)
Net change		(642)	(11,679)	(12,321)
Ending balances - Cumulative Results of Operations	\$	3,079	68,669	71,748

U.S. Geological Survey
Statements of Budgetary Resources
For the Years Ended September 30, 2007 and 2006
(in thousands)

	2007	2006
Budgetary resources (Note 14):		
Unobligated balance:		
Beginning of fiscal year	\$ 123,303	116,266
Recoveries of prior year unpaid obligations	7,802	7,875
Budget authority:		
Appropriations received	990,859	997,692
Spending authority from offsetting collections:		
Earned:		
Collected	523,393	498,703
Change in receivables from Federal sources	(17,224)	(8,603)
Change in unfilled customer orders:		
Advance received	(2,007)	(1,268)
Without advance from Federal sources	(2,015)	8,739
Total budget authority	1,493,006	1,495,263
Nonexpenditure transfers, net	6,159	1,500
Permanently not available	(6,669)	(19,479)
Total budgetary resources	\$ 1,623,601	1,601,425
Status of budgetary resources:		
Obligations incurred:		
Direct	\$ 999,058	985,933
Reimbursable	488,582	492,189
Total obligations incurred	1,487,640	1,478,122
Unobligated balance:		
Apportioned	115,236	100,022
Unobligated balance not available	20,725	23,281
Total status of budgetary resources	\$ 1,623,601	1,601,425
Obligated balance:		
Obligated balance, net:		
Unpaid obligations, brought forward, beginning of fiscal year	\$ 305,785	297,155
Less: Uncollected customer payments from Federal sources, brought forward, beginning of fiscal year	(181,376)	(181,240)
Total unpaid obligated balances, net, beginning of fiscal year	124,409	115,915
Obligations incurred, net	1,487,640	1,478,122
Less: gross outlays	(1,472,449)	(1,461,615)
Less: recoveries of prior year unpaid obligations, actual	(7,802)	(7,875)
Change in uncollected customer payments from Federal sources	19,239	(138)
Total, unpaid obligated balance, net, end of fiscal year	151,037	124,409
Obligated balance, net, end of period - by component:		
Unpaid obligations	313,175	305,785
Less: Uncollected customer payments from Federal sources	(162,138)	(181,376)
Total, unpaid obligated balance, net, end of fiscal year	151,037	124,409
Net outlays:		
Gross outlays	1,472,449	1,461,615
Less: offsetting collections	(521,386)	(497,435)
Less: distributed offsetting receipts	(2,401)	(2,483)
Net outlays	\$ 948,662	961,697



USGS scientists conducting a water column survey of a frozen pit lake at the Elizabeth mine superfund site in Vermont.

Notes to the Financial Statements

This part of the Section III *Financial Information* contains our accompanying notes, which are an integral part of the financial statements.

Contents include:

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Financial Information

Note 1 Summary of Significant Accounting Policies

A. Reporting Entity

The USGS, a bureau within the Department of the Interior, was established on March 3, 1879, by an act of Congress to conduct systematic and scientific “classification of the public lands, and examination of the geological structure, mineral resources, and products of the national domain.” The mission of the USGS is to serve the Nation by providing reliable scientific information to describe and understand the earth; minimize loss of life and property from natural disasters; manage water, biological, energy and mineral resources; and enhance and protect our quality of life.

The USGS accomplishes its mission through integrated science programs consisting primarily of

- the National Mapping program, which meets the Nation’s needs for accurate, nationally-consistent base geospatial data by ensuring access to and advancing the application of these data and related natural science information for users;
- the Geologic Program, which provides Earth science information used to evaluate resource potential, define risks associated with natural hazards, and characterize the potential impact of natural geologic processes on human activity, the economy, and the environment;
- the Water Resources program, which continuously assesses the Nation’s water availability and quality, provides geographic and cartographic information, and addresses flood hazards by moderating the impacts of floods and improving flood disaster response; and
- the Biologic Research program, which generates and distributes information needed in the conservation and management of the Nation’s biological resources.

B. Basis of Presentation

These financial statements have been prepared to report the consolidated financial position, net cost of operations, changes in financial position, and combined budgetary resources of the USGS, consistent

with the Chief Financial Officers’ Act of 1990 and the Government Management Reform Act of 1994. These financial statements have been prepared from the books and records of the USGS in accordance with U.S. Generally Accepted Accounting Principles using guidance issued by the Federal Accounting Standards Advisory Board (FASAB), OMB, and USGS accounting policies, which are summarized in this note. These financial statements present proprietary and budgetary information, while other financial reports also prepared by the USGS pursuant to OMB directives are used to monitor and control USGS use of Federal budgetary resources. The Statements of Budgetary Resources are presented on a combined, rather than consolidated basis, and therefore intra-entity eliminations were not made for the purposes of these statements.

C. Basis of Accounting

Financial transactions are recorded on an accrual accounting basis and a budgetary basis. Under the accrual method, revenues are recognized when earned and expenses are recognized when a liability is incurred, without regard to receipt or payment of cash. Budgetary accounting facilitates compliance with legal requirements and mandated controls over the use of Federal funds. It generally differs from the accrual basis of accounting in that obligations are recognized when new orders are placed, contracts are awarded, and services are received that will require payments during the same or future period. Except for the Statements of Budgetary Resources, all statements are presented on a consolidated basis and use eliminating entries to avoid overstatement of balances caused by intra-entity activity.

D. Assets

Assets presented on USGS’s Consolidated Balance Sheets include both entity and non-entity balances. Entity assets are assets that USGS has authority to use in its operations. Non-entity assets are held and managed by USGS, but are not available for use in operations.

Intragovernmental assets arise from transactions between USGS and other Federal entities.

E. Fund Balance with Treasury and Cash

Fund balance with Treasury is a cash balance remaining as of fiscal year-end from which USGS is authorized to pay liabilities resulting from operational activity, except as restricted by law. Fund balance with Treasury includes funds received from direct appropriations, transfers, offsetting receipts, recoveries, and funds held in budget clearing accounts. The USGS is permitted by law to use appropriated funds to finance its working capital fund.

F. Accounts and Interest Receivable

Accounts receivable consist of amounts owed to the USGS by other Federal agencies and the public. Unbilled accounts receivable represent amounts that have been earned but not yet billed to reimbursable customers. Receivables from Federal agencies result from reimbursable services performed, and from joint funding agreements with State, local, and regional agencies for cooperative work in support of the "Surveys, Investigations, and Research" (SIR) appropriation. Receivables also include balances owed for credit sales of products and maps to Federal agencies and the public and for interest, administrative costs, and penalties due on delinquent receivables. The majority of USGS accounts receivable are generated from the water resource and national mapping programs.

Amounts due from Federal agencies are considered fully collectible. Receivables due from the public are stated net of an allowance for estimated uncollectible amounts, determined by considering the debtor's current ability to pay, the debtor's payment record and willingness to pay, and an analysis of aged receivable activity.

G. Inventory

Inventory includes maps and map products that are held for sale. All inventory products and materials are valued at historical cost, using a method of averaging actual costs to produce like-kind scale maps within the same fiscal year. The USGS estimates an allowance for excess, spoiled, or obsolete map inventory to arrive at a net realizable value, based on inventory turnover and current stock levels.

H. Property, Plant, and Equipment

Property, plant, and equipment consist of land, structures, facilities, leasehold improvements, facilities under construction, equipment, and software purchased or developed for internal use. There are no restrictions on the use or convertibility of property, plant, and equipment.

The USGS capitalizes property, plant, and equipment purchases with an acquisition cost in excess of \$100 thousand for land, structures, facilities, and software, and \$15 thousand for all other capital assets. Depreciation or amortization is computed using the straight-line method over the assets' useful lives of 30 years for structures and facilities, and ranging from 3 to 25 years for equipment and 2 to 10 years for software.

Internal use software includes purchased commercial off-the-shelf software (COTS), contractor-developed software, and software that was internally developed by USGS employees. Internal use software is capitalized at cost if the acquisition cost is \$100 thousand or more. For COTS software, the capitalized costs include the amount paid to the vendor for the software; for contractor-developed software it includes the amount paid to a contractor to design, program, install, and implement the software. Capitalized costs for internally developed software include the full cost (direct and indirect) incurred during the software development stage. Amortization of capitalized software begins on the date of acquisition, if purchased, or when the module or component has been successfully tested if developed internally.

Costs for construction projects are recorded as construction-in-progress until completed. Depreciation expense begins once the asset is placed into service.

The USGS leases the majority of its office space and vehicles from the General Services Administration (GSA). The lease costs approximate commercial lease rates for similar properties and vehicles.

I. Other Assets, Advances, and Prepayments

Payments in advance of the receipt of goods and services are recorded as prepaid charges at the time of prepayment and recognized as expenditures/operating expenses when the related goods and services are received.

Financial Information

J. Stewardship Assets

Stewardship assets consist of museum and library collection heritage assets that have been entrusted to USGS to be maintained in perpetuity for the benefit of current and future generations. The stewardship heritage assets managed by USGS are considered priceless and irreplaceable. Because of this, USGS assigns no financial value to them and the property, plant, and equipment capitalized and reported on the Consolidated Balance Sheets excludes these assets in accordance with Federal accounting standards. Any purchases of new stewardship assets are expensed in the year they were incurred.

K. Liabilities

Liabilities covered by budgetary or other resources are those liabilities of USGS for which Congress has appropriated funds or funding is otherwise available to pay amounts due. Liabilities not covered by budgetary or other resources represent amounts owed in excess of available Congressionally-appropriated funds or other amounts. The liquidation of liabilities not covered by budgetary or other resources is dependent on future Congressional appropriations or other funding. Intragovernmental liabilities are claims against USGS by other Federal entities.

L. Contingent Liabilities

A contingency is an existing condition, situation, or set of circumstances involving uncertainty as to possible gain or loss. The uncertainty will ultimately be resolved when one or more future events occur or fail to occur. USGS recognizes a contingent liability when a past event or exchange transaction has occurred and a future outflow or other sacrifice of resources is measurable and probable. A contingency is disclosed in the Notes to the Financial Statements when any of the conditions for liability recognition are met and when the chance of the future confirming event or events occurring is more than remote but less than probable. A contingency is not disclosed in the Notes to the Financial Statements when any of the conditions for liability recognition are not met and when the chance of the future event or events occurring is remote.

M. Other Liabilities: Deferred Revenue, Deferred Credits, and Deposit Fund Liability

Deferred revenue and deferred credits consist of advances received from Federal and public entities for goods and services that will not be fully earned until the related goods or services have been provided by USGS. The majority of USGS deferred revenue is generated from the Water Resources Program. Revenue is recognized as reimbursable costs are incurred, and the deferred revenue balance is reduced accordingly.

The deposit fund liability represents receipts of funds held on deposit prior to completion of a signed agreement to provide reimbursable services to Federal and public entities. The deposit fund liability also consists of monies that were not obligated prior to the agreement expiration that are funded by annual year appropriations, which will be returned to the customer.

N. Accrued Annual, Sick, and Other Leave and Compensatory Time

Annual leave and other compensatory leave time are accrued when earned. The accrual is presented as a component of other liabilities with the public in the Consolidated Balance Sheets and is adjusted for changes in compensation rates and reduced for annual leave taken. Sick leave is provided to employees on a use or lose basis and is expensed when taken.

O. Workers' Compensation

The Federal Employees' Compensation Act provides income and medical cost protection to covered Federal civilian employees injured on the job, to employees who have incurred work-related occupational diseases, and to beneficiaries of employees whose deaths are attributable to job-related injuries or occupational diseases. The FECA program is administered by the Department of Labor (DOL), which pays valid claims and subsequently seeks reimbursement from the Federal agencies employing the claimants.

The FECA liability consists of two components. The first component is based on actual claims paid by DOL but not yet reimbursed. USGS reimburses DOL for the amount of the actual claims as funds are appropriated for this purpose. Reimbursements to the DOL on payments made occur approximately two years

subsequent to the actual disbursement. As a result, USGS recognizes a liability for the actual claims paid by DOL and to be reimbursed by USGS. Budgetary resources for this intra-governmental liability are made available to USGS as part of its annual appropriation from Congress in the year in which the reimbursement to the DOL takes place.

The second component is the estimated liability for future benefit payments as a result of past events. This liability includes death, disability, medical, and miscellaneous costs. DOL determines this component annually, as of September 30, using a method that considers historical benefit payment patterns, wage inflation factors, medical inflation factors, and other variables. The projected annual benefit payments are discounted to present value using OMB's economic assumptions for 10-year Treasury notes and bonds. To provide for the effects of inflation on the liability, wage inflation factors (i.e., cost of living adjustments) and medical inflation factors (i.e., consumer price index medical adjustments) are applied to the calculation of projected future benefit payments. These factors are also used to adjust historical benefit payments to current-year constant dollars. A discounting formula is also used to recognize the timing of benefit payments as thirteen payments per year instead of one lump sum payment per year. Based on information provided by the DOL, the Department allocates the actuarial liability to its bureaus and Departmental offices based on the payment history for the bureaus and Departmental offices. The estimated liability is not covered by budgetary resources and will require future funding.

DOL also evaluates the estimated projections to ensure that the estimated future benefit payments are appropriate. The analysis includes three tests: (1) a comparison of the current-year projections to the prior-year projections; (2) a comparison of the prior-year projected payments to the current-year actual payments, excluding any new case payments that had arisen during the current year; and (3) a comparison of the current-year actual payment data to the prior-year actual payment data. Based on the outcome of this analysis, adjustments may be made to the estimated future benefit payments.

P. Revenues, User Fees, and Financing Sources

Appropriations. The USGS receives the majority of the funding needed to support its programs through Congressional appropriations. Financing sources are received in annual, multi-year, and no-year appropriations that may be used, within statutory limits, for operating and capital expenditures.

Upon expiration of an annual or multiple-year appropriation, the obligated and unobligated balances retain their fiscal year identity, and are maintained separately within an expired account. The unobligated balance can be used to make adjustments to existing obligations, but is otherwise not available for expenditures. Annual and multiple-year appropriations are canceled at the end of the fifth year after expiration. No-year appropriations do not expire. Appropriations of budget authority are recognized as used when a liability for goods and services or benefits and grants are incurred.

Exchange revenues. Additional funds are obtained through reimbursements for services performed for other Federal agencies and the public, and fees charged for surveys, investigations, and research. Revenue and intra-governmental reimbursements are recognized as earned when the goods have been delivered or services rendered by USGS. Revenues earned from public sources are derived from States and municipalities for making cooperative topographic and geologic surveys and water resource investigations; proceeds from the sale of photographs, maps, and records; proceeds from the sale of personal property; and reimbursements from permits and licenses of the Federal Energy Regulatory Commission. Revenues from certain cooperators represent about half of the total cost; the USGS pays the remaining half of the total cooperators cost. Revenues earned from other Federal agencies are derived from special-purpose mapping and investigations. Revenues are also received through the Department of State, from foreign countries, and international organizations for scientific and technical assistance.

The USGS has specific legislative authority to receive revenue from non-Federal reimbursable customers as budgetary resources. The USGS also has authority to receive contributions from outside organizations to perform work desired mutually by multiple parties. In

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addition, the USGS receives rental receipts for quarters provided at remote locations.

User fees are set at a level that will recover the full costs associated with the services for specific customers. Prices for information products that are sold on a retail basis are set at a level that will recover the full costs of reproduction and dissemination, or costs incurred after the mission related information is collected and archived. User fees and product prices are developed in accordance with cost components of OMB Circular A-25, *User Charges* with review and approval by the Director, or a delegated party. The annual Cost Recovery Report and regularly scheduled independent pricing reviews by product line are among the methods used to monitor compliance with the USGS policies.

Imputed financing sources. In certain cases, operating costs of the USGS are paid for by funds appropriated to other Federal entities. For example, pension benefits for most USGS employees are paid for by the OPM and certain legal judgments against the USGS are paid from the Judgment Fund maintained by Treasury. OMB indicates that imputed costs to be recognized by Federal entities include the following: (1) employees' pension benefits; (2) health insurance, life insurance, and other benefits for retired employees; (3) other post employment benefits for retired, terminated, and inactive employees, including severance payments, training and counseling, continued health care, and unemployment and workers' compensation under the Federal Employees' Compensation Act; and (4) losses in litigation proceedings. USGS also records intra-departmental imputed costs in accordance with Department policy and FASAB's Interpretation Number 6, *Accounting for Imputed Intra-departmental Costs: An Interpretation of SFFAS Number 4*. The USGS includes applicable imputed costs on the Consolidated Statements of Net Cost. In addition, an imputed financing source is recognized on the Consolidated Statements of Changes in Net Position.

Q. Retirement Plans

Civil Service Retirement System (CSRS) and Federal Employees Retirement System (FERS). All USGS employees with permanent status participate in either the CSRS or FERS defined-benefit pension plans. FERS

went into effect on January 1, 1987. FERS automatically covers most employees hired after December 31, 1983. Employees hired prior to January 1, 1984, could elect to either join FERS or remain in CSRS.

USGS is not responsible for and does not report CSRS or FERS assets, accumulated plan benefits, or liabilities applicable to its employees. OPM administers the plans, is responsible for, and reports these amounts.

For CSRS-covered employees, in both FY2007 and FY2006, USGS was required to make contributions to the plan matching the employee's contribution, which was 7 percent of the employee's basic pay. For each fiscal year, OPM calculates the U.S. government's service cost for covered employees, which is an estimate of the amount of funds that, if accumulated annually and invested over an employee's career, would be enough to pay that employee's future benefits. Since the U.S. government's estimated service cost exceeds contributions made by employer agencies and covered employees, this plan is not fully funded by the USGS and its employees.

USGS has recognized an imputed cost and imputed financing source for the difference between the estimated service cost and the contributions made by USGS and its covered employees.

FERS contributions made by employer agencies and covered employees exceed the U.S. Government's estimated service cost. For FERS-covered employees, USGS was required in FY2007 and FY2006 to make contributions of 11.2 percent of basic pay. Employees contributed 0.8 percent of basic pay. Employees participating in FERS are covered under the Federal Insurance Contributions Act (FICA), for which USGS contributes a matching amount to the Social Security Administration.

Thrift Savings Plan (TSP). Employees covered by CSRS and FERS are eligible to contribute to the U.S. Government's TSP, administered by the Federal Retirement Thrift Investment Board. A TSP account is automatically established for FERS-covered employees, and USGS makes a mandatory contribution of 1 percent of basic pay. FERS-covered employees are entitled to contribute up to \$15,500 of basic pay to their TSP

account, with USGS making matching contributions up to 5 percent of basic pay. Employees covered by CSRS are entitled to contribute up to \$15,500 of basic pay to their TSP account. USGS makes no matching contributions for CSRS-covered employees.

Federal Employees' Health Benefit (FEHB) Program. Most USGS employees are enrolled in the FEHB Program, which provides post-retirement health benefits. OPM administers this program and is responsible for the reporting of liabilities. Employer agencies and covered employees are not required to make any contributions for post-retirement health benefits. OPM calculates the U.S. government's service cost for covered employees each fiscal year. USGS has recognized the entire service cost of these post-retirement benefits for covered employees as an imputed cost and imputed financing source.

Federal Employees' Group Life Insurance (FGLI) Program. All USGS employees with permanent status can elect to participate in the FGLI Program. Participating employees can obtain basic term life insurance, with the employee paying two-thirds of the cost and USGS paying one-third. Additional coverage is optional, to be paid fully by the employee. The basic life coverage may be continued into retirement if certain requirements are met. OPM administers this program and is responsible for the reporting of liabilities. For each fiscal year, OPM calculates the U.S. Government's service cost for the post retirement portion of basic life coverage. USGS contributions to the basic life coverage are fully allocated by OPM to the pre-retirement portion of coverage, and accordingly, USGS has recognized the entire service cost of the post-retirement portion of basic life coverage as an imputed cost and imputed financing source.

R. Allocation Transfers

The USGS is a party to allocation transfers with other Federal agencies as a receiving (child) entity. Allocation transfers are legal delegations by one department of its authority to obligate and outlay funds to another department. A separate fund (allocation account) is created in the U.S. Treasury as a subset of the parent fund account for tracking and reporting purposes. All allocation transfers of balances are credited to this account, and subsequent obligations

and outlays incurred by the child entity are charged to this allocation account as they execute the delegated activity on behalf of the parent entity. Generally, all financial activity related to these allocation transfers is reported in the financial statements of the parent entity from which the underlying legislative authority, appropriations, and budget apportionments are derived. The USGS receives allocation transfers, as the child, from the U.S. Agency for International Development and the Office of the Secretary, Department of the Interior.

Effective in FY 2007, OMB Circular A-136 requires parent entities to report all financial activity related to allocation transfers. The cumulative effect of this change in accounting principle resulted in a decrease of \$1,263 thousand to assets and \$158 thousand to liabilities on the Balance Sheet and a corresponding decrease of \$573 thousand to unexpended appropriations and \$532 thousand to cumulative results of operations on the Statement of Changes in Net Position.

S. Income Taxes

The USGS, as a Federal agency, is not subject to Federal, State, or local income taxes and, accordingly, no provision for income taxes has been recorded in the accompanying financial statements.

T. Use of Estimates

The preparation of financial statements in accordance with U.S. generally accepted accounting principles requires management to make certain estimates and assumptions in reporting assets, liabilities, revenues, expenses, and financial sources; and in the related note disclosures. Actual results could differ from these estimates. Significant estimates underlying the accompanying financial statements include accounts payable; the allowance for doubtful accounts receivable; property, plant, and equipment useful lives and impairments; contingent and environmental liabilities; the FECA actuarial liability; and the allowance for obsolete inventory.

U. Reclassifications

Certain reclassifications have been made to the 2006 balances to conform to the 2007 presentation.

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Note 2 Assets Analysis

All USGS assets are entity assets, except a portion of accounts receivable of \$102 and \$67 thousand at September 30, 2007 and 2006, respectively. Non-entity assets include amounts due to USGS from accrued interest and penalties on delinquent debt. A corresponding payable to Treasury is recorded in other liabilities. USGS does not have any entity restricted assets.

Note 3 Fund Balance with Treasury

Fund Balance with Treasury consists of the following as of September 30, 2007 and 2006:

	2007	2006
General funds	\$ 187,419	159,892
Special funds	133	815
Revolving funds	98,223	87,016
Trust funds	1,226	1,254
Other fund types	7,728	8,683
Total fund balance with Treasury by fund type	\$ <u>294,729</u>	<u>257,660</u>

USGS maintains balances with Treasury by fund type. The fund types and purpose are described below:

General funds. These funds consist of expenditure accounts used to record financial transactions arising from Congressional appropriations.

Special funds. These accounts are credited with receipts from special sources that are designated by law for a specific purpose. When collected, these receipts are available immediately for expenditure for special programs, such as providing housing for employees on field assignments, operations and maintenance for the temporary housing, cleanup associated with the Exxon Valdez oil spill, and operating science and cooperative programs.

Revolving funds. These funds account for cash flows to and from the government resulting from operations of the Working Capital Fund and do not fund normal operating expenses of the bureau. These funds are also restricted to the purposes set forth in the legislation that established the Working Capital Fund and related investment plans.

Trust funds. These funds are used for the acceptance and administration of funds contributed from public and private sources and programs in cooperation with other Federal and State agencies or private donors.

Other Fund Types. These include miscellaneous receipt accounts, transfer accounts, performance bonds, deposit and clearing accounts maintained to account for receipts, and disbursements awaiting proper classification.

Unobligated, unavailable fund balance represents amounts from appropriations for which the period of availability for obligation has expired. These balances remain available for upward adjustments of obligations incurred during the period for which the appropriation was available.

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Status of Fund Balance with Treasury as of September 30, 2007 and 2006 is as follows:

	2007	2006
Unobligated:		
Available	\$ 115,236	100,937
Unavailable	20,725	23,281
Obligated not yet disbursed	151,037	124,759
Subtotal	286,998	248,977
 Fund balance with Treasury not covered by budgetary resources:		
Clearing and deposit accounts	7,731	8,683
Total status of fund balance with Treasury	\$ 294,729	257,660

Note 4 Accounts and Interest Receivable, Net

Accounts receivable consist of amounts owed to the USGS by other Federal agencies and the public. Unbilled accounts receivable represents amounts that have been earned but not yet billed to reimbursable customers. This account functions much like a “work-in-progress” record of the costs incurred on customer agreements. Due to the nature of certain agreements with reimbursable customers that require invoicing upon completion of the work, USGS sometimes bills customers years after the project was initiated. This procurement practice results in the majority of accounts receivable being comprised of unbilled balances.

Accounts receivable are reduced to net realizable value by an allowance for doubtful accounts. The allowance for public receivables is estimated quarterly based on identification of specific delinquent receivables, an analysis of aged receivable activity and historical trends adjusted for current market conditions, as well as management’s judgment regarding the debtor’s willingness and ability to pay. Federal receivables are considered fully collectible.

Interest receivable represents interest income earned on outstanding receivables that has not yet been collected. Interest accrues on a daily basis beginning thirty days from the date the notice of amount due was sent. Interest is charged at the rate established by the Secretary of the Treasury.

Accounts and Interest Receivable from Public Agencies as of September 30, 2007 and 2006, respectively, consists of:

	2007	2006
Accounts and interest receivable from the public:		
Current	\$ 16,129	20,365
1 - 180 days past due	7,585	6,663
181 - 365 days past due	231	527
1 to 2 years past due	103	103
Total billed accounts and interest receivable - public	24,048	27,658
Unbilled Accounts and Interest Receivable - public	41,072	47,692
Total accounts and interest receivable - public	65,120	75,350
Allowance for doubtful accounts - public	(436)	(461)
Total accounts and interest receivable - public, net of allowance	\$ 64,684	74,889

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Accounts and Interest Receivable from Federal Agencies as of September 30, 2007 and 2006, respectively, consists of:

	2007	2006
Accounts and interest receivable from Federal agencies:		
Billed	\$ 189	674
Unbilled	45,201	51,617
Total accounts and interest receivable - Federal	<u>\$ 45,390</u>	<u>52,291</u>

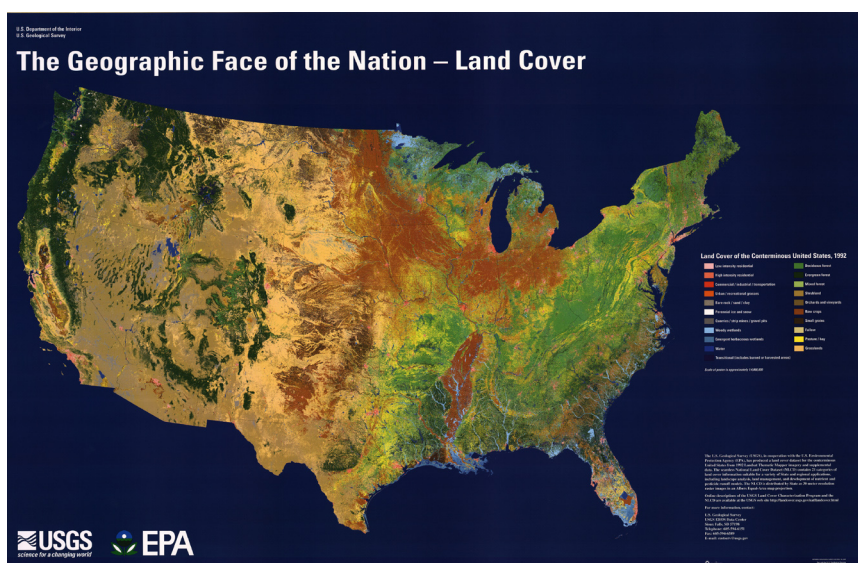
Note 5 Inventory and Related Property, Net

Inventory consists of the following as of September 30, 2007 and 2006:

	2007	2006
Inventory:		
Published maps held for sale	\$ 7,378	8,600
Allowance for obsolescence	(6,889)	(8,018)
Net inventory and related property	<u>\$ 489</u>	<u>582</u>

USGS disseminates earth, water, and biological science information through various media, including maps, reports, digital data sets, and general interest publications of the USGS and other Federal agencies. Maps and map products are located at the USGS Rocky Mountain Mapping Center in Denver, Colorado, and at several Earth Science Information Centers across the United States. The USGS maintains an inventory of maps and map products that are available to respond to national emergencies and resource management needs, as well as governmental requests.

Below are examples of maps included in inventory available for sale.



Note 6 General Property, Plant, and Equipment, Net

Property, plant, and equipment consist of the following as of September 30, 2007:

	<u>Acquisition Cost</u>	<u>Accumulated Depreciation</u>	<u>Net Book Value</u>
Land and land improvements	\$ 300	-	300
Buildings	104,678	75,369	29,309
Structures and facilities	13,340	10,437	2,903
Leasehold improvements	30,344	13,649	16,695
Construction in progress - general	3,227	-	3,227
Equipment and vehicles	342,972	267,182	75,790
Internal use software:			
In use	10,783	7,717	3,066
In development	750	-	750
Total property, plant, and equipment	<u>\$ 506,394</u>	<u>374,354</u>	<u>132,040</u>

Property, plant, and equipment consist of the following as of September 30, 2006:

	<u>Acquisition Cost</u>	<u>Accumulated Depreciation</u>	<u>Net Book Value</u>
Land and land improvements	\$ 300	-	300
Buildings	104,678	72,938	31,740
Structures and facilities	13,340	10,024	3,316
Leasehold improvements	27,512	9,643	17,869
Construction in progress - general	3,048	-	3,048
Equipment and vehicles	464,787	392,769	72,018
Internal use software:			
In use	10,783	6,209	4,574
In development	227	-	227
Total property, plant, and equipment	<u>\$ 624,675</u>	<u>491,583</u>	<u>133,092</u>

Both the acquisition cost and accumulated depreciation for equipment decreased by \$129 million during FY2007 because USGS adjusted the value of its Landsat 7 satellite due to an impairment affecting the operation of the satellite that was written-off in FY2003. This adjustment had no effect on the financial statements. The Landsat 7 satellite was fully depreciated as of September 30, 2007.

Depreciation and amortization expense amounted to approximately \$18 million and \$40 million, for the years ended September 30, 2007 and 2006, respectively.

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Note 7 Liabilities Not Covered by Budgetary Resources

Liabilities not covered by budgetary or other resources represent amounts owed in excess of available Congressional appropriated funds or other amounts. The liquidation of liabilities not covered by budgetary or other resources is dependent on future Congressional appropriations or other funding source.

Liabilities consist of the following as of September 30, 2007:

	Covered by Budgetary Resources	Not Covered by Budgetary Resources		2007
	<u>Current</u>	<u>Current</u>	<u>Non-Current</u>	
Intragovernmental Liabilities:				
Accounts payable	\$ 6,472	-	-	6,472
Other:				
Resources payable to Treasury	-	102	-	102
Advances and deferred revenue	809	-	-	809
Deposit funds	-	1,252	-	1,252
Accrued employee benefits	5,985	-	3,270	9,255
Unfunded FECA liability	-	2,741	4,112	6,853
GSA tenant improvement loans	-	4,021	11,852	15,873
Total other intragovernmental liabilities	<u>6,794</u>	<u>8,116</u>	<u>19,234</u>	<u>34,144</u>
Total intragovernmental liabilities	13,266	8,116	19,234	40,616
Public liabilities:				
Accounts payable	59,959	-	-	59,959
Federal employee and veterans' benefits:				
FECA actuarial liability	-	-	35,644	35,644
Total Federal employee veterans' benefits	-	-	35,644	35,644
Environmental and disposal liabilities	-	-	108	108
Other:				
Unfunded annual leave	-	2,981	56,641	59,622
Abandoned sites liabilities	-	-	20,757	20,757
Other liabilities:				
Accrued payroll and benefits	25,036	-	-	25,036
Advances and deferred revenue	2,327	285	-	2,612
Deposit funds	-	6,476	-	6,476
Contract holdbacks	124	-	1,026	1,150
Total other liabilities	<u>27,487</u>	<u>6,761</u>	<u>1,026</u>	<u>35,274</u>
Total other public liabilities	<u>27,487</u>	<u>9,742</u>	<u>78,424</u>	<u>115,653</u>
Total public liabilities	<u>87,446</u>	<u>9,742</u>	<u>114,176</u>	<u>211,364</u>
Total liabilities	<u>\$ 100,712</u>	<u>17,858</u>	<u>133,410</u>	<u>251,980</u>

Liabilities consist of the following as of September 30, 2006:

	Covered by Budgetary Resources	Not Covered by Budgetary Resources		2006
	<u>Current</u>	<u>Current</u>	<u>Non-Current</u>	
Intragovernmental Liabilities:				
Accounts payable	\$ 5,448	-	-	5,448
Other:				
Resources payable to Treasury	-	98	-	98
Advances and deferred revenue	626	-	-	626
Deposit funds	-	1,912	-	1,912
Accrued employee benefits	5,276	-	3,006	8,282
Unfunded FECA liability	-	2,694	4,042	6,736
GSA tenant improvement loans	-	3,821	13,435	17,256
Total other intragovernmental liabilities	<u>5,902</u>	<u>8,525</u>	<u>20,483</u>	<u>34,910</u>
Total intragovernmental liabilities	11,350	8,525	20,483	40,358
Public liabilities:				
Accounts payable	58,354	-	-	58,354
Federal employee and veterans' benefits:				
FECA actuarial liability	-	-	38,873	38,873
Total Federal employee veterans' benefits	-	-	38,873	38,873
Environmental and disposal liabilities	-	-	66	66
Other:				
Unfunded annual leave	-	2,959	56,216	59,175
Abandoned sites liabilities	-	-	21,049	21,049
Other liabilities:				
Contingent liabilities	-	-	1,279	1,279
Accrued payroll and benefits	24,948	-	-	24,948
Advances and deferred revenue	4,517	129	-	4,646
Deposit funds	-	6,770	-	6,770
Contract holdbacks	151	-	1,038	1,189
Total other liabilities	<u>29,616</u>	<u>6,899</u>	<u>2,317</u>	<u>38,832</u>
Total other public liabilities	<u>29,616</u>	<u>9,858</u>	<u>79,582</u>	<u>119,056</u>
Total public liabilities	87,970	9,858	118,521	216,349
Total liabilities	<u>\$ 99,320</u>	<u>18,383</u>	<u>139,004</u>	<u>256,707</u>

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Note 8 FECA Liabilities

USGS has recorded an estimated, unfunded liability for the expected future cost for death, disability, and medical claims under the Federal Employees' Compensation Act. This estimated liability is calculated by DOL using a method that considers historical benefit payment patterns, wage inflation factors, medical inflation factors, and other variables. These actuarially computed projected annual benefit payments are discounted to present value using the OMB's economic assumptions for 10-year Treasury notes and bonds. USGS also recorded an estimated, unfunded liability for the expected future payments to the DOL in payment of outstanding workers compensation claims.

FECA liabilities for the years ended September 30, 2007 and 2006, consisted of:

	2007	2006
Department of Labor:		
FECA actuarial liability	\$ 35,644	38,873
FECA workers compensation liability	6,853	6,736
Total FECA liabilities	\$ 42,497	45,609

Note 9 Imputed Financing from Costs Absorbed by Others

Imputed financing sources are recorded in the financial statements for amounts paid or to be paid on behalf of the USGS by other Federal agencies. The OPM pays Federal employee pension and other future retirement benefits on behalf of Federal agencies. The OPM provided rates for recording the estimated cost of pension and other future retirement benefits paid by OPM on behalf of Federal agencies. The costs of these benefits are reflected as imputed financing in the consolidated financial statements.

Imputed financing costs for the years ended September 30, 2007 and 2006, consisted of:

	2007	2006
Office of Personnel Management:		
Pension expense	\$ 20,742	23,237
Federal employees health benefits	39,584	38,250
Federal employees group life insurance program	87	91
Total OPM	60,413	61,578
Intra-departmental imputed costs	5,867	5,903
Non-reimbursable claims paid by Treasury's judgment fund	66	450
Total imputed financing costs	\$ 66,346	67,931

Note 10 Contingent and Environmental and Disposal Liabilities

The USGS is a party to various administrative proceedings, legal actions, environmental suits, and claims that may eventually result in the payment of substantial monetary claims to third parties, or in the unplanned reallocation of material budgetary resources to pay for the cleanup of environmentally damaged sites.

In FY2006, USGS accrued legal liabilities deemed to be probable of loss in the Balance Sheet. The payment of some judgments against USGS are made from the U.S. Department of the Treasury's Judgment Fund. In FY2007, USGS had no contingent liabilities deemed to be probable of loss.

Additionally, USGS is party to legal actions that the Solicitor believes are reasonably possible of loss. The range of loss could not be estimated in FY2006, thus no disclosure for that year is presented in the below table. However in FY2007, the Solicitor was able to estimate a range of possible loss for two new cases. These cases involve claims involving the Employees Equal Opportunity Act.

The USGS has accrued the probable and estimable liability represented by environmental site cleanup. Additionally, USGS has several environmental cases that USGS experts believe the range of loss cannot presently be estimated. Changes in existing estimated environmental and disposal costs are based on progress made in, and revision of, the cleanup plans assuming current technology, laws, and regulations.

Estimated contingent and environmental disposal liabilities as of September 30, 2007 and 2006, are:

	2007	Estimated Range of Loss	
		Accrued Liabilities	Upper End of Range
Contingent liabilities			
Reasonably Possible	\$ -	289	699
Environmental and disposal liabilities			
Probable	108	108	128

	2006	Estimated Range of Loss	
		Accrued Liabilities	Upper End of Range
Contingent liabilities			
Probable	\$ 1,279	1,279	5,279
Environmental and disposal liabilities			
Probable	66	66	66

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Note 11 Stewardship Assets

The USGS serves the Nation by providing reliable scientific information to describe and understand the Earth. The USGS serves American citizens as a steward for a large, varied, and scientifically important body of heritage assets, and in conducting research and development that is critical to the health of our country and in understanding the Earth.

During FY2006, USGS prospectively implemented the FASAB's Statement of Federal Financial Accounting Standard No. 29, *Heritage Assets and Stewardship Land*. USGS considers its four library collections to be heritage assets which provide scientific information needed by Interior researchers, as well as researchers of other government agencies, universities, and professional communities. Besides providing resources for USGS scientific investigations, the library collections provide access to geographical, technical, and historical literature in paper and electronic formats for the general public and the industry. USGS manages these assets to the standards set in the Survey Manual and uses the Environmental Guidelines for the Storage of Paper Records published by the National Information Standards Organization as a guide to maintaining their condition. USGS utilizes a library classification system designed for earth science libraries.

USGS also considers its museum collections, comprised of collections of natural history specimens and cultural objects, to be heritage assets. Natural history specimens are important as they contribute reliable scientific information to our research activities, while our cultural objects provide educational and informational services on the history of the bureau through museum and other exhibits of historical activities/events. USGS endeavors to manage these assets to the standards set in the Departmental Manual 411, Policy and Responsibilities for Managing Museum Property, and other Federal authorities.

Note 12 Leases and Occupancy Agreements

The USGS has many cancelable occupancy agreements with the GSA, primarily for office space. Some of these agreements do not have a stated expiration. USGS also has many operating leases, primarily for storage and housing for employees working on location, with public entities. There were no personal property lease agreements with the public exceeding one year as of September 30, 2007.

USGS has estimated its future minimum liability for GSA occupancy agreements by adding OMB approved inflationary rate increases per year to the FY2007 lease rental expense. Public operating leases were calculated based on lease agreement terms.

Future estimated minimum operating lease payments as of September 30, 2007 are:

		Real Prop		Personal Prop	
		Federal	Public	Federal	Total
FY2008	\$	70,186	2,253	6,972	79,411
FY2009		64,168	2,020	7,147	73,335
FY2010		60,068	1,710	7,325	69,103
FY2011		55,815	1,689	7,508	65,012
FY2012		34,712	1,630	7,696	44,038
Thereafter		85,914	3,347	0	89,261
Total future operating lease payments	\$	370,863	12,649	36,648	420,160

Rental expenses for occupancy agreements, operating leases, and exhibit hall space during FY2007 and FY2006 were approximately \$78 and \$80 million, respectively.

In some cases, USGS secures funds from GSA's building fund to finance improvements made to space where USGS is the tenant. Because these improvements are made to convert the existing structures into workable space tailored to USGS needs, USGS is required to repay GSA the cost of the improvements over the term of the occupancy agreement, which is incorporated into the total rent payments billed to USGS by GSA. The principal loan balance of approximately \$16 and \$17 million at September 30, 2007 and 2006, respectively, is recorded as a liability and the corresponding leasehold improvements are recorded in Property, Plant & Equipment, which are amortized over the period of the occupancy agreements.

Note 13 Statements of Net Cost by Segment

USGS Statements of Net Cost are summarized into a format that aligns with the Department of the Interior's primary mission areas, as outlined in the DOI Strategic Plan. USGS also further displays its net costs under the Department's end outcome goals, a level of detail one layer beneath the primary missions areas.

In accordance with the Government Performance Results Act of 1993 (GPRA), DOI revised its Strategic Plan during FY2007. While this revision did not affect the primary mission areas, or GPRA goals, the Department's end outcome goals for which the data is summarized within each GPRA goal changed. This substantially affected how USGS costs and revenues are summarized into the GPRA goals as the revision has USGS reporting to only three end outcome goals in FY2007 versus six end outcome goals in FY2006. This revision resulted in a significant shift in the categorization of USGS costs and revenues between the GPRA goals Serving Communities and Resource Protection. The revision also caused a slight shift in the categorization of costs between responsibility segments. The FY2006 principal Statement of Net Cost was not reclassified into the FY2007 format. Thus, for comparability purposes, included in the following tables is a reclassified FY2006 Consolidating Schedule of Net Cost as compared to FY2007.

In the FY2006 presentation, USGS reported to four responsibility segments which represented the major operating segments by which achievement of USGS missions and goals are measured. These responsibility segments were Biology, Water, Geology, and Geography. For FY2007 reporting, a fifth responsibility segment was added: Geospatial Information Office (GIO). An approximate increase of \$64 million dollars, from \$5 million to \$69 million, was requested in the FY2007 Budget Justification to fund the National Geospatial Program. As a result of this increase, GIO was separated into its own responsibility segment.

The following tables reflect USGS net cost by responsibility segment for the year ended September 30, 2007, followed by both the reclassified and original USGS net cost by responsibility segment for the year ended September 30, 2006.

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Consolidating Schedule of Net Cost For the Year Ended September 30, 2007

	Water	Geology	Geography	Biology	GIO	Eliminations	Total
Improve the Understanding of National Ecosystems and Resources							
Intragovernmental costs	\$ 198,397	32,875	28,931	78,335	14,242	(60,930)	291,850
Public costs	446,603	93,289	120,948	237,639	34,448	-	932,927
Total costs	645,000	126,164	149,879	315,974	48,690	(60,930)	1,224,777
Intragovernmental earned revenue	142,295	11,388	26,587	73,972	8,810	(60,930)	202,122
Public earned revenue	168,017	9,579	3,674	6,342	12,083	-	199,695
Total earned revenue	310,312	20,967	30,261	80,314	20,893	(60,930)	401,817
Net costs	334,688	105,197	119,618	235,660	27,797	-	822,960
Improve the Understanding of Energy and Mineral Resources							
Intragovernmental costs	-	30,600	-	-	-	(2,983)	27,617
Public costs	-	71,640	-	-	-	-	71,640
Total costs	-	102,240	-	-	-	(2,983)	99,257
Intragovernmental earned revenue	-	7,926	-	-	-	(2,983)	4,943
Public earned revenue	-	1,042	-	-	-	-	1,042
Total earned revenue	-	8,968	-	-	-	(2,983)	5,985
Net costs	-	93,272	-	-	-	-	93,272
Improve the Understanding, Prediction, and Monitoring of Natural Hazards							
Intragovernmental costs	-	29,317	-	-	-	(2,145)	27,172
Public costs	-	98,741	-	-	-	-	98,741
Total costs	-	128,058	-	-	-	(2,145)	125,913
Intragovernmental earned revenue	-	8,991	-	-	-	(2,145)	6,846
Public earned revenue	-	1,238	-	-	-	-	1,238
Total earned revenue	-	10,229	-	-	-	(2,145)	8,084
Net costs	-	117,829	-	-	-	-	117,829
Total							
Intragovernmental costs	198,397	92,792	28,931	78,335	14,242	(66,058)	346,639
Public costs	446,603	263,670	120,948	237,639	34,448	-	1,103,308
Total costs	645,000	356,462	149,879	315,974	48,690	(66,058)	1,449,947
Intragovernmental earned revenue	142,295	28,305	26,587	73,972	8,810	(66,058)	213,911
Public earned revenue	168,017	11,859	3,674	6,342	12,083	-	201,975
Total earned revenue	310,312	40,164	30,261	80,314	20,893	(66,058)	415,886
Net costs	\$ 334,688	316,298	119,618	235,660	27,797	-	1,034,061

Financial Information

Consolidating Schedule of Net Cost, Reclassified using FY2007 presentation
For the Year Ended September 30, 2006

	Water	Geology	Geography	Biology	Eliminations	Total
Improve the Understanding of National Ecosystems and Resources						
Intragovernmental costs	\$ 198,099	36,810	43,334	72,020	(54,725)	295,538
Public costs	443,490	97,381	157,444	257,162	-	955,477
Total costs	641,589	134,191	200,778	329,182	(54,725)	1,251,015
Intragovernmental earned revenue	137,190	11,998	34,675	74,469	(54,725)	203,607
Public earned revenue	159,111	7,580	14,760	7,894	-	189,345
Total earned revenue	296,301	19,578	49,435	82,363	(54,725)	392,952
Net costs	345,288	114,613	151,343	246,819	-	858,063
Improve the Understanding of Energy and Mineral Resources						
Intragovernmental costs	-	26,881	-	-	(1,905)	24,976
Public costs	-	69,922	-	-	-	69,922
Total costs	-	96,803	-	-	(1,905)	94,898
Intragovernmental earned revenue	-	6,152	-	-	(1,905)	4,247
Public earned revenue	-	553	-	-	-	553
Total earned revenue	-	6,705	-	-	(1,905)	4,800
Net costs	-	90,098	-	-	-	90,098
Improve the Understanding, Prediction, and Monitoring of Natural Hazards						
Intragovernmental costs	-	25,595	-	-	(1,718)	23,877
Public costs	-	94,130	-	-	-	94,130
Total costs	-	119,725	-	-	(1,718)	118,007
Intragovernmental earned revenue	-	11,890	-	-	(1,718)	10,172
Public earned revenue	-	2,278	-	-	-	2,278
Total earned revenue	-	14,168	-	-	(1,718)	12,450
Net costs	-	105,557	-	-	-	105,557
Total						
Intragovernmental costs	198,099	89,286	43,334	72,020	(58,348)	344,391
Public costs	443,490	261,433	157,444	257,162	-	1,119,529
Total costs	641,589	350,719	200,778	329,182	(58,348)	1,463,920
Intragovernmental earned revenue	137,190	30,040	34,675	74,469	(58,348)	218,026
Public earned revenue	159,111	10,411	14,760	7,894	-	192,176
Total earned revenue	296,301	40,451	49,435	82,363	(58,348)	410,202
Net costs	\$ 345,288	310,268	151,343	246,819	-	1,053,718

Financial Information

Consolidating Schedule of Net Cost, using Original FY2006 presentation For the Year Ended September 30, 2006

	Water	Geology	Geography	Biology	Eliminations	Total
Improve Health of Watersheds and Landscapes						
Intragovernmental costs	\$ -	-	-	26,070	(1,784)	24,286
Public costs	-	-	-	70,985	-	70,985
Total costs	-	-	-	97,055	(1,784)	95,271
Intragovernmental earned revenue	-	-	-	32,645	(1,784)	30,861
Public earned revenue	-	-	-	3,493	-	3,493
Total earned revenue	-	-	-	36,138	(1,784)	34,354
Net costs	-	-	-	60,917	-	60,917
Sustain Biological Communities						
Intragovernmental costs	-	-	-	34,927	(2,876)	32,051
Public costs	-	-	-	148,226	-	148,226
Total costs	-	-	-	183,153	(2,876)	180,277
Intragovernmental earned revenue	-	-	-	35,952	(2,876)	33,076
Public earned revenue	-	-	-	4,179	-	4,179
Total earned revenue	-	-	-	40,131	(2,876)	37,255
Net costs	-	-	-	143,022	-	143,022
Energy - Manage or influence resources						
Intragovernmental costs	-	8,239	-	-	(522)	7,717
Public costs	-	21,068	-	-	-	21,068
Total costs	-	29,307	-	-	(522)	28,785
Intragovernmental earned revenue	-	2,123	-	-	(522)	1,601
Public earned revenue	-	61	-	-	-	61
Total earned revenue	-	2,184	-	-	(522)	1,662
Net costs	-	27,123	-	-	-	27,123
Non-energy Minerals - Manage or influence resources						
Intragovernmental costs	-	18,668	-	-	(1,383)	17,285
Public costs	-	48,804	-	-	-	48,804
Total costs	-	67,472	-	-	(1,383)	66,089
Intragovernmental earned revenue	-	4,029	-	-	(1,383)	2,646
Public earned revenue	-	492	-	-	-	492
Total earned revenue	-	4,521	-	-	(1,383)	3,138
Net costs	-	62,951	-	-	-	62,951
Protect Lives, Resources and Property						
Intragovernmental costs	-	25,475	-	147	(1,718)	23,904
Public costs	-	93,177	-	1,496	-	94,673
Total costs	-	118,652	-	1,643	(1,718)	118,577
Intragovernmental earned revenue	-	11,890	-	-	(1,718)	10,172
Public earned revenue	-	2,278	-	-	-	2,278
Total earned revenue	-	14,168	-	-	(1,718)	12,450
Net costs	-	104,484	-	1,643	-	106,127
Advance Knowledge through scientific leadership						
Intragovernmental costs	198,099	36,804	43,334	10,976	(50,065)	239,148
Public costs	443,493	97,256	157,444	37,580	-	735,773
Total costs	641,592	134,060	200,778	48,556	(50,065)	974,921
Intragovernmental earned revenue	137,190	11,998	34,675	5,872	(50,065)	139,670
Public earned revenue	159,111	7,580	14,760	222	-	181,673
Total earned revenue	296,301	19,578	49,435	6,094	(50,065)	321,343
Net costs	345,291	114,482	151,343	42,462	-	653,578
Total						
Intragovernmental costs	198,099	89,186	43,334	72,120	(58,348)	344,391
Public costs	443,493	260,305	157,444	258,287	-	1,119,529
Total costs	641,592	349,491	200,778	330,407	(58,348)	1,463,920
Intragovernmental earned revenue	137,190	30,040	34,675	74,469	(58,348)	218,026
Public earned revenue	159,111	10,411	14,760	7,894	-	192,176
Total earned revenue	296,301	40,451	49,435	82,363	(58,348)	410,202
Net costs	\$ 345,291	309,040	151,343	248,044	-	1,053,718

Note 14 Budgetary Resources

The USGS receives budgetary resources from appropriations, offsetting receipts, and reimbursable activities. At September 30, 2007 and 2006, respectively, approximately \$136 and \$123 million of the budgetary resources were unobligated. These amounts include expired budget authority of \$21 and \$23 million at September 30, 2007 and 2006, respectively. The expired funds remain available for up to five years to pay expenses against obligations incurred. Recoveries of prior year obligations are comprised of canceled or downward adjustments of obligations incurred in prior years that were not subsequently disbursed. Undelivered orders as of September 30, 2007 and 2006 totaled \$218 million and \$215 million, respectively.

Apportionment categories of obligations incurred

Apportionments are categorized as either A, B, or C. Category A apportionments are those where OMB makes a distribution of budgetary resources by calendar quarters; category B apportionments are made by other specified time periods, programs, activities, projects, or combinations thereof; and category C represents budgetary resources that are not subject to apportionment. USGS obligations incurred during FY2007 and FY2006 were all category B and were subject to apportionment.

Obligations incurred balances as of September 30, 2007 and 2006 are:

	Apportioned, Category B	
	2007	2006
Obligations incurred:		
Direct	\$ 999,058	985,933
Reimbursable	488,582	492,189
Total obligations incurred	\$ 1,487,640	1,478,122

Permanent Indefinite Appropriations

Permanent indefinite appropriations refer to the appropriations that come from permanent public laws, which authorize USGS to retain certain receipts rather than a specific annually appropriated amount. These funds do not require annual appropriation action by Congress as they are subject to the authorities of the permanent law. USGS has three permanent indefinite appropriations. The majority of funding is from the "Surveys, Investigations, and Research" appropriation used to conduct operations in topography, geology, hydrology, biology, and mineral resources.

Appropriations Received

Appropriations received on the Consolidated Statements of Changes in Net Position differs from that reported on the Combined Statements of Budgetary Resources because appropriations received on the Combined Statements of Budgetary Resources does not include available receipt funds.

Financial Information

Legal Arrangements Affecting Use of Unobligated Balances

Unobligated balances whose period of availability has expired are not available to fund new obligations but are available to pay for adjustments to obligations incurred prior to expiration. For a no-year account, the unobligated balance is carried forward indefinitely until (1) specifically rescinded by law; or (2) the head of the agency concerned or the President determines that the purposes for which the appropriation was made have been carried out and disbursements have not been made against the appropriation for 2 consecutive years.

For a fixed appropriation account, the balance can be carried forward for five fiscal years after the period of availability ends. At the end of the fifth fiscal year, the account is closed and any remaining balance is canceled. Canceled authority is returned to the U.S. Treasury at the end of the 5th year of availability for annual and multi-year funds under Public Law 101-510. Resources permanently not available were adjusted pursuant to Public Law 114 Stat 2763A-214, SEC 1403.

Explanation of Differences between the Statement of Budgetary Resources and the Budget of the United States Government

The Statements of Budgetary Resources (SBR) have been prepared to coincide with the President's Budget (PB), the Budget of the United States Government. The FY2007 actual amounts as shown on the FY2009 President's Budget were not available at the time the financial statements were prepared. The FY2009 President's Budget is expected to be available in February 2008 and will be located at <http://www.whitehouse.gov/omb>.

USGS had differences that existed between the FY2006 Statement of Budgetary Resources and the FY2006 actual amounts reported in the President's FY2008 budget request. The differences relate to amounts included in the Statement of Budgetary Resources that are not reported in the President's Budget. These amounts include expired amounts and cancelled authority, working capital fund obligation balances, and offsetting collections.

Below is a table with significant differences and explanations between the FY2006 Statement of Budgetary Resources and the FY2006 actual amounts reported in the President's FY2008 budget request.

	Amount per PB	Amount per SBR	Expected differences
Unobligated balance, beginning of fiscal year	\$ 85,000	\$ 116,266	\$ 31,266 (A)
Spending authority from offsetting collections	\$ 502,000	\$ 498,703	\$ 3,297 (B)
Unobligated balance available and not available	\$ 100,000	\$ 123,303	\$ 23,303 (A)
Offsetting Collections	\$ (373,000)	\$ (497,435)	\$ (124,435) (A)

(A) Amount of expired authority included in the SBR but not in the PB.

(B) Amount of collections included in the PB but not in the SBR.

Note 15 Reconciliation of Net Cost of Operations to Budget

SFFAS Number 7 requires a reconciliation of proprietary and budgetary information. The objective of this information is to provide an explanation of the differences between budgetary and financial (proprietary) accounting. This is accomplished by a reconciliation of budgetary obligations and non-budgetary resources available to the USGS with its net cost of operations.

In FY 2006 this reconciliation was accomplished by presenting the Statement of Financing as a principal financial statement. Effective for fiscal year 2007, OMB guidance prescribed this reconciliation be reported as a note rather than a principal statement.

Financial Information

The following table contains the Reconciliation of Net Cost of Operations to Budget (formerly, the Statement of Financing) for the years ended September 30, 2007 and September 30, 2006.

	<u>2007</u>	<u>2006</u>
Resources used to finance activities:		
Budgetary resources obligated:		
Obligations incurred	\$ 1,487,640	1,478,122
Less: Spending authority from offsetting collections and recoveries	(509,949)	(505,446)
Obligations net of offsetting collections and recoveries	977,691	972,676
Less: Offsetting receipts	(2,401)	(2,483)
Net obligations	975,290	970,193
Other resources:		
Donations and forfeitures of property	1,408	1,597
Transfers in/(out) without reimbursement	95	1,999
Imputed financing from costs absorbed by others	66,346	67,931
Net other resources used to finance activities	67,849	71,527
Total resources used to finance activities	1,043,139	1,041,720
Resources used to finance items not part of the net cost of operations:		
Change in budgetary resources obligated for goods, services, and benefits ordered but not yet provided	(3,462)	(21,025)
Change in unfilled customer orders	(4,021)	7,470
Resources that fund expenses recognized in prior years	(4,835)	(4,551)
Budgetary offsetting collections and receipts that did not affect net cost of operations:		
Offsetting receipts not part of the net cost of operations	2,292	452
Resources that finance the acquisition of assets	(18,693)	(14,682)
Other Resources or Adjustments to net obligated resources that did not affect net cost of operations	(114)	(80)
Total resources used to finance items not part of the net cost of operations	(28,833)	(32,416)
Total resources used to finance the net cost of operations	1,014,306	1,009,304
Components of net cost of operations that did not require or generate resources in the current year:		
Components requiring or generating resources in future years:		
Increase in annual leave liability	447	-
Increase in Environmental and Disposal Liability	42	-
Decrease in exchange revenue receivable from the public	88	-
Increase in other	382	117
Total components of net cost of operations that will require or generate resources in future years	959	117
Components not requiring or generating resources:		
Depreciation and amortization	17,535	40,551
Revaluation of assets or liabilities	1,252	1,853
Allocation transfers reconciling items	-	1,699
Other	9	194
Total components of net cost of operations that did not require or generate resources in the current year	18,796	44,297
Total components of net cost of operations that did not require or generate resources	19,755	44,414
Net cost of operations	\$ 1,034,061	1,053,718

Note 16 Earmarked Funds

During FY2006, USGS prospectively implemented the FASAB's Statement of Federal Financial Accounting Standard No. 27, *Identifying and Reporting Earmarked Funds*. Earmarked funds are financed by specifically identified revenues and are required by statute to be used for designated activities or purposes, and must be accounted for separately from the Government's general revenues. The following funds have been designated as earmarked funds.

14X5055— Quarters

5 U.S.C. 591 allows the USGS to provide an employee stationed in the United States with quarters and facilities when conditions of employment or the availability of quarters warrant the action. In 1985, 5 U.S.C. 591 was amended to allow for the rental rates for the provided quarters to be collected into a special fund. The collections are then available until expended for the maintenance and operation of the quarters. The collections are accounted for as offsetting receipts that do not affect the net cost of operations.

14X5198.008— Natural Resource Damage Assessment and Restoration Fund

The Natural Resource Damage Assessment and Restoration Fund (NRDAR) program assesses the damages and injuries to natural resources entrusted to the Department of the Interior and negotiates legal settlements or takes other legal actions against the responsible parties for the spill or release. Settlements often include the recovery of the costs incurred in assessing the damages. These funds were used to fund further damage assessments. USGS received a portion of the funds from the Department to assist with the damage assessment process. These funds were accounted for as Transfers-In for the USGS.

Due to the change in accounting principle as stated in Note 1.R, beginning in FY 2007 USGS no longer reports activities for the Natural Resource Damage Assessment and Restoration Fund.

14X8562— Contributed funds

43 U.S.C. 36C allows the USGS to accept lands, building, equipment, and other contributions from public and private sources and to participate in projects in cooperation with other agencies, Federal, State, or private. Contributions come from donations received from private individuals, Technical Assistance Agreements, and Consortiums for Cooperative Research and Development Agreements. The contributions received via agreement are dedicated to specific projects and are accounted for as offsetting receipts that do not affect the net cost of operations.

Financial Information

Earmarked funds as of September 30, 2007 consist of:

	Contributed Fund	Natural Resources, Damage Assessment, and Restoration Fund	Quarters Fund	2007
Balance Sheet				
Assets				
Fund balance with Treasury	\$ 1,225	-	133	1,358
Accounts receivable, net	284	-	-	284
General property, plant, and equipment, net	1,344	-	-	1,344
Total assets	<u>\$ 2,853</u>	<u>-</u>	<u>133</u>	<u>2,986</u>
Liabilities				
Accounts payable	\$ 177	-	-	177
Other Liabilities	343	-	-	343
Total Liabilities	<u>520</u>	<u>-</u>	<u>-</u>	<u>520</u>
Net position				
Cumulative results of operations	2,333	-	133	2,466
Total net position	<u>2,333</u>	<u>-</u>	<u>133</u>	<u>2,466</u>
Total liabilities and net position	<u>\$ 2,853</u>	<u>-</u>	<u>133</u>	<u>2,986</u>
Statement of Net Cost				
Gross costs	2,794	-	92	2,886
Earned revenue	-	-	(98)	(98)
Net cost of operations	<u>\$ 2,794</u>	<u>-</u>	<u>(6)</u>	<u>2,788</u>
Statement of Changes in Net Position				
Net position, beginning balance	\$ 2,421	531	127	3,079
Change in accounting principle	-	(531)	-	(531)
Net position, beginning balance as adjusted	2,421	-	127	2,548
Budgetary financing sources				
Donations and forfeitures of cash and cash equivalents	2,709	-	-	2,709
Transfers in/(out) without reimbursement	(3)	-	-	(3)
Net cost of operations	(2,794)	-	6	(2,788)
Change in net position	(88)	-	6	(82)
Net position, ending balance	<u>\$ 2,333</u>	<u>-</u>	<u>133</u>	<u>2,466</u>

Financial Information

Earmarked funds as of September 30, 2006 consist of:

	<u>Contributed Fund</u>	<u>Natural Resources, Damage Assessment, and Restoration Fund</u>	<u>Quarters Fund</u>	<u>2006</u>
Balance Sheet				
Assets				
Fund balance with Treasury	\$ 1,255	683	132	2,070
Accounts receivable, net	130	-	-	130
General property, plant, and equipment, net	1,344	-	-	1,344
Total assets	<u>\$ 2,729</u>	<u>683</u>	<u>132</u>	<u>3,544</u>
Liabilities				
Accounts payable	\$ 69	141	5	215
Other Liabilities	239	11	-	250
Total Liabilities	<u>308</u>	<u>152</u>	<u>5</u>	<u>465</u>
Net position				
Cumulative results of operations	2,421	531	127	3,079
Total net position	<u>2,421</u>	<u>531</u>	<u>127</u>	<u>3,079</u>
Total liabilities and net position	<u>\$ 2,729</u>	<u>683</u>	<u>132</u>	<u>3,544</u>
Statement of Net Cost				
Gross costs	2,502	1,413	93	4,008
Earned revenue	-	-	(88)	(88)
Net cost of operations	<u>\$ 2,502</u>	<u>1,413</u>	<u>5</u>	<u>3,920</u>
Statement of Changes in Net Position				
Net position, beginning balance	\$ 2,523	1,066	132	3,721
Budgetary financing sources				
Donations and forfeitures of cash and cash equivalents	2,400	-	-	2,400
Transfers in/(out) without reimbursement	-	878	-	878
Net cost of operations	(2,502)	(1,413)	(5)	(3,920)
Change in net position	(102)	(535)	(5)	(642)
Net position, ending balance	<u>\$ 2,421</u>	<u>531</u>	<u>127</u>	<u>3,079</u>



USGS scientist wade into tule to collect Hg samples in Franks Tract, California.

Required Supplementary Information

(Unaudited; see Independent
Auditors' Report)

This part of the Section III *Financial Information* contains our required supplementary information disclosures.

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Financial Information

Surveys, Investigations, and Research (Treasury Symbol (0804):

The USGS is primarily funded by the SIR appropriation. The SIR appropriation is for expenses necessary for the USGS to perform surveys, investigations, and research covering topography, geology, hydrology, biology, and the mineral and water resources of the United States, its territories and possessions, and other areas authorized by law; classify lands as to their mineral and water resources; give engineering supervision to power permittees and FERC licensees; administer the minerals exploration program; and to conduct inquiries into the economic conditions affecting mining and materials processing industries and related purposes as authorized by law; and to publish and disseminate data relative to the foregoing activities. [Department of the Interior, Environment, Related Agencies Appropriations Act, 2006]

The following activities are funded by the SIR appropriation: Geographic Research, Investigations, and Remote Sensing; Geologic Hazards, Resources, and Processes; Water Resources Investigations Activity; Biological Research; Enterprise Information; Science Support; and Facilities. The following paragraphs describe each activity.

Geography

The Geographic Research, Investigations, and Remote Sensing activity seeks to observe the earth at various scales using remote sensing to understand the human and environmental dynamics of land change. The Geography Program also provides scientific information to describe and interpret America's landscape by mapping the terrain, monitoring changes over time, and analyzing how and why these changes have occurred. The knowledge gained through these activities is used to model the processes of change and to forecast future changes.

The Geographic Research, Investigations, and Remote Sensing activity is broken down into two subactivities: Land Remote Sensing and Geographic Analysis and Monitoring.

Geology

The Geologic Hazards, Resources, and Processes activity provides the Earth science information needs for a wide variety of partners and customers, including Federal, State, and local agencies, non-government organizations, industry, and academia. This information is used by the USGS and its partners, cooperators, and customers in evaluating resource potential, defining and mitigating risks associated with natural hazards, and characterizing the potential impact of natural geologic processes on human activity, the economy, and the environment.

USGS programs improve the safety of the United States from natural disasters and include efforts to (1) increase USGS ability to rapidly determine the location, size, and depth of large earthquakes, (2) discriminate kinds of earthquakes and geologic areas of the Pacific and Caribbean likely to cause tsunamis, (3) improve landslide models, assessments, and alert systems, (4) improve monitoring of the most dangerous volcanoes, and (5) work with Federal, local, and foreign partners to improve coordination, ensure timely warnings can be issued for all geologic hazards, and provide information so that informed community response plans can be developed and put in place.

The Geologic Hazards, Resources, and Processes activity supports three subactivities: Geologic Hazard Assessments, Geologic Landscape and Coastal Assessments, and Geologic Resource Assessments.

Water

The Water Resources Investigations activity funds work on issues related to water availability, water quality, and flood hazards. Over 4,000 scientific and support staff in offices located in every State support and/or perform work involving 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.

USGS programs involve operating streamgages that measure the flow of rivers and provide data that are used in resource planning and dispute resolution, performing water-quality studies that have a strong connection to human health issues, and collecting

and providing data that enables citizens, communities, businesses, and local emergency-response agencies to make the best possible decisions about protecting lives and property in floods. The Water Resources Investigations activity supports three subactivities: Hydrologic Monitoring, Assessments, and Research, Cooperative Water Program, and the Water Resources Research Act Program.

Biology

The Biological Research activity generates and distributes information needed in the conservation and management of the Nation's biological resources. Biological Research activities contribute to achieving improved management of the Nation's water resources, availability of maps and map data, and improved decision making regarding land and water use.

USGS programs provide scientific information through research, inventory, and monitoring investigations, and increase the quantity of biological information available by improving access to and interactions with biological data. USGS biologists and information scientists, in partnership with many others, provide the scientific understanding and technologies necessary to support sound management and conservation of the Nation's biological resources. Biological studies develop new methods and techniques to identify, observe, and manage fish and wildlife, including invasive species, and their habitats; inventory populations of animals, plants, and their habitats; and monitor changes in abundance, distribution, and health of biological resources through time.

The Biological Research activity is broken down into three subactivities: Biological Research and Monitoring, Biological Information Management and Delivery, and Cooperative Research Units.

Support Services: Enterprise Information, Science Support, and Facilities

The Enterprise Information activity supports bureau-level activities and investments in the areas of information technology, information security, information management, information policy and standards, and information science. In 2007 a budget restructure moved the National Map from

Geographic Research, Investigations, and Remote Sensing to Enterprise Information. The National Geospatial Program is focused on improving, geospatial data access, integration, and applications through implementation of the National Map and the National Spatial Data Infrastructure. Partnerships with other Federal, State, and local agencies and the private sector and academia are the keystone for accomplishing this mission. Enterprise Information is broken down into three subactivities: Enterprise Information Security and Technology, Enterprise Information Resources, and the National Geospatial Program.

The Science Support activity provides resources for the executive and managerial direction of the bureau and support services to all USGS scientific programs. Science Support is broken down into two subactivities: Bureau Operations and Payments to the National Business Center.

The Facilities activity provides workspace and facilities for accomplishing the bureau mission. The Facilities activity supports three subactivities: Rental Payments, Operations and Maintenance, and Deferred Maintenance and Capital Improvement.

Working Capital Fund (Treasury Symbol 4556):

The Working Capital Fund was established by law to provide USGS with the ability to finance a continuing cycle of operations in two components: Investments and Fee-for-Service. The Investment Component provides funding for Telecommunications, Equipment, Facilities, and Publications. The fee-for-service component provides continuing funding for the National Water Quality Laboratory, the USGS Hydrologic Instrumentation Facility, Publications, bureau laboratories, the National Training Center, drilling, Landsat 7, and GSA delegated buildings.

Other Aggregated Accounts:

The USGS also receives a variety of other funding. Other funding includes donations and contributions, reimbursables, miscellaneous receipts, and operations and maintenance of quarters.

Financial Information

Combining Statement of Budgetary Resources For the Year Ended September 30, 2007

(in thousands)

	Fund 0804	Fund 4556	Other Budgetary Accounts	2007
Budgetary resources (Note 14):				
Unobligated balance:				
Beginning of fiscal year	\$ 50,312	71,899	1,092	123,303
Recoveries of prior year unpaid obligations	7,018	769	15	7,802
Budget authority:				
Appropriations received	988,050	-	2,809	990,859
Spending authority from offsetting collections:				
Earned:				
Collected	452,161	71,232	-	523,393
Change in receivables from Federal sources	(17,224)	-	-	(17,224)
Change in unfilled customer orders:				
Advance received	(2,007)	-	-	(2,007)
Without advance from Federal sources	(2,015)	-	-	(2,015)
Total budget authority	1,418,965	71,232	2,809	1,493,006
Nonexpenditure transfers, net	6,159	-	-	6,159
Permanently not available	(6,669)	-	-	(6,669)
Total budgetary resources	\$ 1,475,785	143,900	3,916	1,623,601
Status of budgetary resources:				
Obligations incurred:				
Direct	\$ 995,825	-	3,233	999,058
Reimbursable	429,335	59,247	-	488,582
Total obligations incurred	1,425,160	59,247	3,233	1,487,640
Unobligated balance:				
Apportioned	29,900	84,653	683	115,236
Unobligated balance not available	20,725	-	-	20,725
Total status of budgetary resources	\$ 1,475,785	143,900	3,916	1,623,601
Obligated balance:				
Obligated balance, net:				
Unpaid obligations, beginning of fiscal year	\$ 290,376	15,117	292	305,785
Less: Uncollected customer payments from Federal sources, beginning of fiscal year	(181,376)	-	-	(181,376)
Total unpaid obligated balances, net, beginning of fiscal year	109,000	15,117	292	124,409
Obligations incurred	1,425,160	59,247	3,233	1,487,640
Less: gross outlays	(1,409,588)	(60,025)	(2,836)	(1,472,449)
Less: recoveries of prior year unpaid obligations, actual	(7,018)	(769)	(15)	(7,802)
Change in uncollected customer payments from Federal sources	19,239	-	-	19,239
Total, unpaid obligated balance, net, end of fiscal year	136,793	13,570	674	151,037
Obligated balance, net, end of period - by component:				
Unpaid obligations	298,931	13,570	674	313,175
Less: Uncollected customer payments from Federal sources	(162,138)	-	-	(162,138)
Total, unpaid obligated balance, net, end of fiscal year	136,793	13,570	674	151,037
Net outlays:				
Gross outlays	1,409,588	60,025	2,836	1,472,449
Less: offsetting receipts	(450,154)	(71,232)	-	(521,386)
Less: distributed offsetting receipts	-	-	(2,401)	(2,401)
Net outlays (receipts)	\$ 959,434	(11,207)	435	948,662

Combining Statement of Budgetary Resources
For the Year Ended September 30, 2006
(in thousands)

	Fund 0804	Fund 4556	Other Budgetary Accounts	2006
Budgetary resources (Note 14):				
Unobligated balance:				
Beginning of fiscal year	\$ 52,864	62,242	1,160	116,266
Recoveries of prior year unpaid obligations	7,276	584	15	7,875
Budget authority:				
Appropriations received	995,205	-	2,487	997,692
Spending authority from offsetting collections:				
Earned:				
Collected	435,933	62,770	-	498,703
Change in receivables from Federal sources	(8,603)	-	-	(8,603)
Change in unfilled customer orders:				
Advance received	(1,268)	-	-	(1,268)
Without advance from Federal sources	8,739	-	-	8,739
Total budget authority	1,430,006	62,770	2,487	1,495,263
Nonexpenditure transfers, net	1,500	-	-	1,500
Permanently not available	(19,479)	-	-	(19,479)
Total budgetary resources	\$ 1,472,167	125,596	3,662	1,601,425
Status of budgetary resources:				
Obligations incurred:				
Direct	\$ 983,363	-	2,570	985,933
Reimbursable	438,492	53,697	-	492,189
Total obligations incurred	1,421,855	53,697	2,570	1,478,122
Unobligated balance:				
Apportioned	27,031	71,899	1,092	100,022
Unobligated balance not available	23,281	-	-	23,281
Total status of budgetary resources	\$ 1,472,167	125,596	3,662	1,601,425
Obligated balance:				
Obligated balance, net:				
Unpaid obligations, beginning of fiscal year	\$ 278,270	18,144	741	297,155
Less: Uncollected customer payments from Federal sources, beginning of fiscal year	(181,240)	-	-	(181,240)
Total unpaid obligated balances, net, beginning of fiscal year	97,030	18,144	741	115,915
Obligations incurred	1,421,855	53,697	2,570	1,478,122
Less: gross outlays	(1,402,472)	(56,140)	(3,003)	(1,461,615)
Less: recoveries of prior year unpaid obligations, actual	(7,276)	(584)	(15)	(7,875)
Change in uncollected customer payments from Federal sources	(138)	-	-	(138)
Total, unpaid obligated balance, net, end of fiscal year	108,999	15,117	293	124,409
Obligated balance, net, end of period - by component:				
Unpaid obligations	290,375	15,117	293	305,785
Less: Uncollected customer payments from Federal sources	(181,376)	-	-	(181,376)
Total, unpaid obligated balance, net, end of fiscal year	108,999	15,117	293	124,409
Net outlays:				
Gross outlays	1,402,472	56,140	3,003	1,461,615
Less: offsetting receipts	(434,665)	(62,770)	-	(497,435)
Less: distributed offsetting receipts	-	-	(2,483)	(2,483)
Net outlays (receipts)	\$ 967,807	(6,630)	520	961,697

Financial Information

The Office of Management Services (OMS) at USGS provides for safe, functional, and high-quality workspace for accomplishing the bureau's science mission and ensuring that workspaces are maintained in compliance with applicable safety and other standards set by GSA and the Occupational Safety and Health Administration.

The USGS has key science facilities that are mission critical, including those that are fundamental to providing timely warnings of geologic hazards, as well as scientific understanding and technologies needed to support the sound management and conservation of the Nation's biological, energy, water, and mineral resources. The USGS is committed to improving the maintenance of existing facilities to ensure the health and safety of the public and employees, protection of cultural and natural resources, and compliance with building codes and standards.

USGS developed a "Five-Year Deferred Maintenance and Capital Improvement Plan" to provide necessary up-keep on property and equipment and to provide facilities that will best fulfill our mission. Deferred maintenance is work that was not performed when it was or should have been scheduled, often because of funding or priority ranking of work, and was thus delayed to a future period. Capital improvements include the construction of new facilities or the alteration of an existing facility to accommodate a change of function or unmet programmatic need. All capital improvement components of projects were excluded from the estimate in this report.

The Five-Year Plan is re-evaluated annually pursuant to the budget process and is subject to adjustments at that time depending on funding levels and revised priorities.

Estimations on deferred maintenance are based on condition assessment surveys that are conducted every 5 years at each USGS site to determine the current condition of facilities and the estimated cost to correct deficiencies. These surveys are conducted by an independent architect/engineering firm and are supplemented by annual condition surveys performed by USGS personnel. These installation-wide, building specific assessments are the linchpin of the DOI program to establish core data on the condition of the Department's constructed assets.

The FY2009 budget formulation process was used to establish the base from which the FY2007 deferred maintenance priority listing was derived. OMS, which formulates the bureau's deferred maintenance budget, collected project proposals from regional and headquarters facilities projects for possible inclusion in the bureau plan for FY2008 – FY2012, which were then ranked to reflect the criticality of the health and safety deficiencies being addressed. A project that addressed a critical health and safety deferred maintenance need received a higher ranking than one addressing a critical mission deferred maintenance need. Teams of regional and headquarters facility and safety specialists reviewed the ranked proposals to confirm the accuracy of rankings and otherwise ensure the adequacy of the project proposals. Due to funding constraints, USGS addresses the most critical maintenance and capital improvement needs first.

A summary of the USGS deferred maintenance estimate at September 30, 2007, is reflected below. The amount is presented as the low estimate range and the high estimate range, which is based on the low estimate plus future funding requests of \$3.4 million per year through 2032, including inflation.

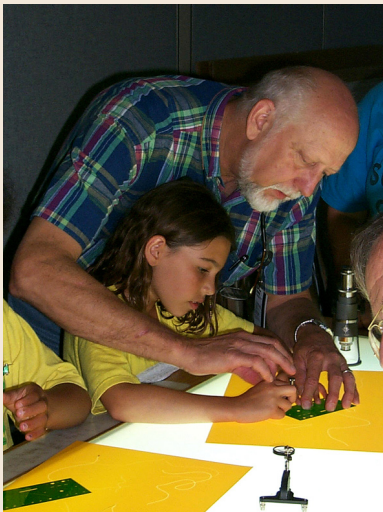
		<i>(in thousands)</i>	
		Low	High
Buildings	\$	38,693	44,667
Other Structures		16,194	18,694
Total	\$	54,887	63,361

The USGS serves the citizens of the United States as steward for a large, varied, and scientifically important body of heritage assets, and in conducting research and development that is critical to the health of our country and in understanding the Earth. Each year the USGS makes a substantial investment while fulfilling its stewardship responsibilities for the benefit of the Nation.

Costs associated with stewardship initiatives are treated as expenses in the financial statements in the year the costs are incurred. However, these investments in stewardship are intended to provide long-term benefits to the public and are included as Required Stewardship Information (RSI) reporting to highlight their long-term-benefit nature and to demonstrate our accountability over them. Stewardship resources are not required to be included in the assets reported in our financial statements; they are, however, important to understanding the operations and financial condition of USGS.

Stewardship assets often have physical properties that resemble those of the general property, plant, and equipment that is traditionally capitalized in the financial statements of Federal entities. However, due to the nature of these assets, valuation would be difficult and matching costs with specific periods would not be meaningful. Heritage assets have one or more of the following characteristics: historical or natural significance; special cultural, educational, or aesthetic value; or significant architectural characteristics.

USGS has heritage assets in two categories: museum collections and scientific library collections. The mission-related importance of these assets is described in the following pages.



Making science fun is the first requirement when communicating science to youngsters. Science Camp, a partnership between the USGS and Reston Association, offers 8-to-12-year-old children an opportunity to meet scientists, participate in science experiments, learn and practice new computer skills, create a newspaper, take field trips, and participate in swimming, boating, crafts, and sports. Science Camp demonstrates the many exciting scientific activities in which the USGS is involved. Meeting real scientists and specialists working at the USGS is a vital part of our camp program, providing opportunities for children to think about pursuing a career in science.



Financial Information

The USGS manages a widespread collection of natural history specimens and cultural objects that support the mission of the bureau in many science and administrative centers throughout the United States. These unique collections serve to illustrate important achievements and challenges to the Earth Sciences, to document the history of the USGS, and to enlighten those who use the collections. The collections also provide the public with an interpretive demonstration of the history and enterprise of the USGS. The museum collections are divided into two major categories: historical (including art, history, ethnography, and documents), and zoology.

Historical Collections:

USGS manages hundreds of historical objects that are loaned to other institutions for exhibits and placed on exhibit in the USGS National Center in Reston, VA, hallways or lobbies in regional offices, and science centers around the country. These collections are evidence of the resources, events, and people associated with USGS activities, and are studied by historians and scientists alike.

Our collection includes many special objects related to the cultural history of USGS, including a hat worn by geologist Levi Noble while attending the 3rd Pan-Pacific Science Congress held in Tokyo, Japan, in 1927; oil paintings of many historical figures; a 1930 Model A Ford (pictured below) used to successfully map the geology of California deserts through the 1960s; and the Lunar Rover used in the southwestern deserts to train astronauts in the lunar landing program through the 1970s. USGS had previously loaned the lunar rover to NASA to conduct space suit ergonomic studies,



1930 Model A Ford used to map the deserts of California

fuel-cell power system studies, and vehicle operational capability studies in advance of NASA's planned Mars exploration.

Other interesting objects in the collection include John Wesley Powell's commission, one of the few documents signed by President James A. Garfield, appointing Powell as the second director of the USGS; an oak arm chair used by John Wesley Powell in his office when he served as USGS director from 1881 to 1894; geologic field mapping equipment from Arnold Hague's late 19th Century expedition to map Yellowstone National Park; a field desk used in the American West shortly after the turn of the century; and Director Thomas Nolan's field equipment and academic robe from St. Andrew's University in Scotland.

Zoology Collections:

Our zoology objects, which represent over 40,000 natural specimens, are housed at the Biological Research Arid Lands Field Station of the Fort Collins Science Center. These zoological specimens were collected to document the status of the environment on our public lands. A USGS wildlife research biologist and USGS zoology museum specialist stationed at the University of New Mexico's Museum of Southwestern Biology maintain this collection under a joint agreement between the USGS and the University of New Mexico at Albuquerque.

Of primary importance in our collection is the unique natural history collection of vertebrates that were used in support of food habit studies by researchers at the USDA's Food Habits Laboratory in Denver, CO. Transferred to Fort Collins in the mid-1970s and then to the University of New Mexico in the 1990s, this collection (pictured on next page) includes over 8,000 fluid-preserved specimens of amphibians and reptiles, as well as mammal and avian skeletons and skins. Specimens have continued to be acquired as a result of the research emphasis to document mammal species from public lands in the West.



Fluid-preserved amphibian and reptile specimens storage

Condition Evaluations:

Cataloging efforts have also been a priority within USGS, as 100 percent of our museum collections have been catalogued. During the cataloging process, USGS evaluates the condition of each collection object. “Good” is considered to show little or no sign of aging or wear; “fair” applies to objects that are showing signs of deterioration such as faded color of fabric or wood, and “poor” objects that have missing parts or are extremely worn. Additions to the collection in the current year were transferred within the USGS. No deferred maintenance is necessary for our museum collections.

USGS also evaluates the condition of the locations housing the collections in accordance with Departmental guidelines. The evaluation is based on a lengthy list of conditions. Regarding the non-storage facilities housing our collections, a good condition rating means it met more than 70% of standards in



USGS personnel evaluating the condition of natural specimens

Departmental Manual Chapter 411, Museum Property. Per Department policy, the condition of storage facilities is not required to be assessed.

Museum collections	Condition assessments of facilities housing collections	
	Good	Not Assessed
Held at USGS facilities	3	1
Held at non-USGS facilities	2	-

Museum Collections at a Glance:

During both FY2007 and FY2006, USGS maintained four collections in bureau facilities and two collections in non-Federal facilities in an effort to maximize accessibility to the public. Although there were twenty objects added to the existing collections during FY2007, no new collections were added. Likewise, there were no collection disposals during FY2007.

Museum objects housed in two non-storage facilities were both evaluated as good using the Department’s definitions. For the museum objects housed in storage facilities, we monitored the collection’s environmental conditions by hydrothermographs.

Condition assessments of collection objects			
Good	Fair	Poor	Total
40,586	120	18	40,724

Public Information:

The public has been granted access to view these collections through a new Web site (www.usgs.gov/aboutusgs/who_we_are/museum) and can visit USGS facilities to see them on exhibit. During FY2007, USGS responded to dozens of requests for information on our museum collections.

Financial Information

USGS library holdings, collected during more than a century of providing library services, are an invaluable legacy to the Nation. Congress established the library in the 1879 legislation that founded the USGS. The Act decreed that copies of reports published by the USGS should be given to the library to exchange for publications of State and national geological surveys and societies. The USGS Library built from this notable and cost-effective exchange program, plus purchases and gifts, has become the world's largest collection of earth science information. The library was originally located in Washington, D.C.; however, the library collection is now housed in four libraries across the country in Reston, VA, Menlo Park, CA, Denver, CO, and Flagstaff, AZ.



The reception desk at the National Center Library in Reston, Virginia.

In addition to the annual purchases of serials, maps and books, the library has built its collection through exchange. Since its beginning, the library has administered a major program of international and domestic exchange of earth science publications authorized by the legislation that established USGS. The exchange program, with national and foreign geological surveys and research organizations, has enabled the library to collect materials published in small numbers, never widely distributed, and never reprinted.

While responding to the current and anticipated subject interests of USGS researchers, such as those in ecology, geology, hydrology, health, and biology, the

library maintains its heritage collection of core science publications dating back to the 17th century, providing a unique historical record of the progress of natural science. Besides providing resources for scientific investigations, the library's multi-disciplinary collection provides access to geographical, technical, and historical literature in paper and electronic formats for the general public and industry.

Library users bring their questions to the library daily, in person or by phone or e-mail, and expert librarians assist them in using the wealth of well-organized information to find answers.

During a century of collecting, the library has acquired many treasures such as the George F. Kunz collection. George F. Kunz was a former employee of the USGS, a vice-president of Tiffany & Co., and one of the world's preeminent gem experts at the time of his death in 1932. The Kunz collection includes rare books on gemology, the lapidary arts, the folklore of gemstones through history, and archival gem trade records, including the original provenance of the Hope diamond.

Another unusual acquisition was the group of books and maps known as the Heringen collection. These military geology texts and maps were looted by the Nazis from European libraries, including Russia, and hidden in a potash mine in Heringen, Heese, Germany. At the end of World War II they were transported by the U.S. military to the United States and are now part of the USGS library.

The map collections include an archival and working collection of USGS topographical maps, plus thematic and topographical maps of the United States and the World. These maps have provided invaluable aid to authorities and scientists in times of disasters and military interventions. Maps, photographs, and literature in the USGS library have provided evidence to solve boundary disputes and water rights litigation, to trace geographic names, and to research natural and man-made changes in an area over time.

Our Field Records collection in Denver includes items such as field notes, field maps and sketches, and project-related correspondence created or collected by USGS scientists during official project work. The

Photographic Archive provides the public with access to over 19,000 photographs and original sketches dating from 1868 to the present. Additionally, USGS maintains a collection of over 500,000 photographs taken during geologic studies of the U.S. and its territories dating from 1868 to present. Some photographs have been used to illustrate publications, but most have never been published.

The Library supports the research of the DOI and other government agencies, universities, and professional communities. Libraries throughout the world, including the largest and most renowned, borrow from our library's unique collection. The USGS library has loaned scientific publications and objects to thousands of libraries in every State and in over 37 foreign countries that were public, State, Federal, nonprofit, company, and academic libraries. Although not defined by Congress as a national library, the library is recognized as the premier national collection of geologic and hydrologic publications, supplementing the Nation's large library collections in major universities and government agencies.

Condition Evaluations:

Careful consideration is given to assessing the condition of the facilities housing the USGS library collections. USGS evaluates the condition of the facilities in accordance with Departmental guidelines. Those guidelines require the use of the national Information Standards Organization's "Environmental Guidelines for the Storage of Paper Records" (NISO TR01-1995) as the official standards for the measurement of the physical condition of our facilities. The standards address four primary considerations in the storage of paper documents; temperature and relative humidity, exposure to light, gaseous contaminants, and particulates. Acceptable levels in each of the four areas are specified as well as overall condition assessment ratings when the four areas are combined. A Fair rating is achieved when 50% of the standards are met. Under these guidelines all four of the USGS library facilities are reported as Fair. No deferred maintenance is necessary for our library collections.

Condition Assessment of Facilities

USGS Library Facilities	Good	Fair	Poor
National Center Facilities	-	1	-
Denver Branch Facilities	-	1	-
Flagstaff Branch Facilities	-	1	-
Menlo Park Branch Facilities	-	1	-

Library Collections at a Glance:

During both FY2007 and FY2006, USGS maintained library collections at four Federal facilities. Although there were additions of objects to the existing collections, there were no new library locations/collections added during FY2007. There were also no disposals of library locations/collections during FY2007.

The USGS library system (four libraries) contains over 1.2 million books and over 1.8 million non-book items, including maps, photographs, pamphlets, field record notebooks, digital media, and other collectible items, for a total of over 3 million items.

Materials are acquired from extensive exchange agreements with institutions and agencies worldwide, from research projects and purchases from a wide variety of publishers and institutions. Items are withdrawn only after the professional library staff has made a critical analysis of the collection.

USGS scientist conducting a geophysical survey on the Youghiogheny River in Pennsylvania.



Required Supplementary Stewardship Information

(Unaudited; see Independent
Auditors' Report)

This part of the Section III *Financial Information* contains our required supplementary stewardship information disclosures.

Contents include:

Research and Development Investments..... 148

Financial Information

The USGS is the earth and natural science research bureau of the Department and the only integrated natural science bureau in the Federal government. By combining biology, geology, hydrology, and geography in one agency, the USGS is uniquely positioned to provide science information and conduct scientific research that ensures an integrated approach to advance scientific knowledge and utilize the latest technologies to provide timely answers and products, and improve the quality of life for the communities we serve. USGS research and data products support the Department's resource and land management needs and provide the science information needed by other Federal, State, Tribal, and local government agencies to guide planning, management, and regulatory programs.

The USGS reviews Research and Development (R&D) investments and weighs the value of existing programs against changing needs and priorities. The Director prioritizes new initiatives on the basis of the following criteria: interdisciplinary science; collaboration and partnerships with Department bureaus, other government agencies, and universities (**relevance**, first of OMB's three R&D investment criteria); results of program evaluations; and demonstration of progress toward meeting the Department's **performance** (second of three OMB R&D criteria) goals and objectives. The Director then selects from among the prioritized initiatives those that can be accommodated within the funding target.

Peer review has been the **quality** (third OMB R&D criteria) standard for USGS scientific publications and a documented component of USGS policy throughout our 128-year history. Our programs are cyclically evaluated to ensure the quality and timeliness of our science. The evaluations not only improve the accountability and quality of programs, but also identify and address gaps in programs; redirect or reaffirm program directions; identify and provide guidance for development of new programs; and review and (or) motivate managers and scientists. All of USGS programs evaluated by OMB's PART process have received a "moderately effective" rating or better.

Investments in research and development are expenses incurred to support the search for new or refined knowledge and ideas, the application or use

of such knowledge and ideas, and the development of new or improved products or processes with the expectation of maintaining or increasing national economic productive capacity or yielding other future benefits.

In accordance with OMB Circular No. A-11, USGS research activities are classified as basic, applied, or developmental research. A definition of each of the categories is below.

Basic – defines activities as systematic studies directed toward fuller knowledge or understanding of the fundamental aspects of phenomena and of observable facts without specific applications toward processes or products in mind.

Applied – defines activities as systematic studies to gain knowledge or understanding necessary for determining the means by which a recognized and specific need may be met.

Developmental – defines activities as systematic application of knowledge or understanding, directed toward the production of useful materials, devices, and systems or methods, including design, development, and improvement of prototypes and new processes to meet specific requirements.

Our science is being used more and more in decision making, and this is essential to our success in demonstrating relevance. That doesn't mean that all of what we do needs to be applied; as former Director Walter C. Mendenhall said, "There can be no applied science unless there is science to apply."

Research and development activities are a vital part of work performed in accomplishing our mission.

Summary Information:

Total research and development investments were \$755 and \$742 million during FY2007 and FY2006, respectively.

A summary table reflecting R&D stewardship investments by GPRA goal is presented at right.

Financial Information

DOI Mission Areas, End Outcome Goals, and R&D Type	2003	2004	2005	2006	2007	
Resource Protection						
Improve the understanding of National ecosystems and resources through integrated interdisciplinary assessment	\$					
Basic research			60	54	33	
Applied research			550	489	487	
Developmental research			51	61	68	
Total Resource Protection			661	604	588	
Resource Use						
Improve the understanding of energy and mineral resources to promote responsible use and sustain the Nation's dynamic economy						
Basic research			15	14	16	
Applied research			63	58	64	
Developmental research			1	-	1	
Total Resource Use			79	72	81	
Serving Communities						
Improve the understanding, prediction, and monitoring of natural hazards to inform decisions by civil authorities and the public to plan for, manage, and mitigate the effects of hazard events on people and property						
Basic research			4	4	14	
Applied research			45	42	67	
Developmental research			20	20	5	
Total Serving Communities			69	66	86	
Total research and development						
Basic research		77	71	79	72	63
Applied research		681	740	658	589	618
Developmental research		101	72	72	81	74
Total	\$	859	883	809	742	755

Data not available by GPRA end outcome goals.

Financial Information

Below are output and outcome examples of how our research and development activities demonstrate results that are consistent with their intended purpose, and highlights from each science discipline's FY2007 research and development activities describing the research program.

Additional outputs and outcomes demonstrating results that are consistent with the intended research program purpose beyond the examples provided are presented in Section II: Performance Data and Analysis – Performance Measure Results.

Basic Research Outputs and Outcomes

Access to Fish Virus Information Provides Rapid Response for Fishery Managers

Salmon and trout fish species play a role in food supply, recreational sport fishing, and biodiversity in the Pacific Northwest. Hatchery fish populations have become increasingly vulnerable to disease on commercial aquaculture and conservation hatchery operations, there is evidence that diseases can be transferred between cultured and wild fish. Infectious hemotopietic necrosis virus (IHNV) causes severe disease outbreaks among stocks of salmon and trout in the Western United States, including threatened and endangered fish species. Epidemics of IHNV occur in fish culture facilities every year and can cause mortality levels of 20-90 percent. Numerous samples of the virus have been obtained from wild and hatchery fish during the last 40 years. Over 600 IHNV samples from Washington, Oregon, Idaho, California, Alaska, and British Columbia have been analyzed and different patterns on IHNV have been observed. For years, the data and information were contained in paper documents and an independently managed database. Managers in the field had to submit requests by phone or mail, which added considerable time to accessing the data. Researchers and information specialists at the USGS National Biological Information Infrastructure, National Alliance for Computational Science and Engineering at Oregon State University, and the USGS Western Fisheries Research Center recognized the need to catalog and integrate these data to reduce response time to managers in the field. Through this collaboration, the IHNV database was developed to provide virus-related disease data from each of the

virus samples, as well as to compare the associated biological, genetic, and special components. Results are displayed in tabular form and on an interactive map to provide managers with multiple methods of reviewing the data. A special feature allows users to compare samples collected in disparate locations, which gives managers a better way to handle the problem across the geographic area. The database provides information to fish health managers and researchers about strains of IHNV within the various watersheds and fish culture facilities and provides a means to rapidly compare emerging new strains of IHNV and try to decrease further transmission of the virus. The IHNV fish virus database can be accessed at <http://gis.nacse.org/ihnv/> or through the Pacific Northwest Information Node at <http://pnwin.nbii.gov>.



Fish top left is healthy, dark color and exophthalmia (bulging eyes) on the other fish are signs of IHNV. Photo Credit: Gael Kurath, USGS Western Fisheries Research Center.

Gas Hydrate Research Test Well, Milne Point, Alaska North Slope

Recently, the U.S. Department of Energy, BP Exploration (Alaska), and USGS successfully drilled a research well on the North Slope of Alaska to collect samples and information about gas hydrates, a potential unconventional natural gas energy resource. Gas hydrates, which are accumulations of methane (natural gas) trapped in ice-like structures with water, represent an immense potential energy resource underlying large portions of the world's marine continental shelves and Arctic continental areas. The USGS is participating in

several international consortia of research, industry, and academic institutions. The USGS also has ongoing cooperative research efforts with the BLM, MMS, the State of Alaska, the Department of Energy, industry, and Native Alaskan corporations to further the understanding of gas hydrate endowment and recoverability from Alaska's North Slope.

The target for this test well, located at Milne Point, was gas hydrate within the Sagavanirktok Formation in the Mt. Elbert prospect accumulation. This occurrence had been identified by seismic, well, and reservoir modeling studies during earlier phases of this research program. Drilling crews and research team members collected about 430 ft of core samples from this well. Subsequent data collection and analysis will continue for several months and research findings will be reported thereafter.

The research thrusts of this effort provide a better understanding of the occurrence of gas hydrates, as well as information that can be used in assessing the endowment of this resource. They also improve the understanding of the types of technology and protocols that are needed to identify, explore, and ultimately produce this resource. For more information, and to read a press release on this drilling effort, please visit the following non-USGS Web sites:

http://www.netl.doe.gov/technologies/oil-gas/FutureSupply/MethaneHydrates/rd-program/ANSWell/ANSWell_main.html

<http://www.bp.com/genericarticle.do?categoryId=2012968&contentId=7028944>

Applied Research Outputs and Outcomes

USGS Competes a Comprehensive Land Cover Database for the United States

The 2001 National Land Cover Database (NLCD 2001) was completed for the lower 48 States in FY2007. The massive database describes the land surface condition of each 30-meter cell of land in the conterminous United States. Based on satellite imagery taken in 2001, the database was constructed in a 6-year collaborative effort by the 11 Multi-Resolution Land

Characteristics Consortium (MLRC) agencies (www.mrlc.gov). Interagency cooperation in this complex endeavor minimizes duplication of effort and facilitates optimal leveraging of government resources. The range and accuracy of information in the database enables managers of public and private lands, urban planners, agricultural experts, and scientists with many different interests (for instance, climate change or invasive species) to identify critical characteristics of the land for a wide variety of investigations. Information from previous versions of NLCD has already been used in thousands of applications in the private, public, and academic sectors (applications that range from helping to site cell phone towers to tracking how diseases spread) and will be completed with the current dataset for change detection.

LANDFIRE Completed for Western United States

LANDFIRE is an interagency project to develop a national assessment of vegetation, wildland fuels, and fire regime condition classes. Using era satellite data and a set of ecologically relevant datasets and models, the technical team (including scientists from the USGS, U.S. Forest Service, and the Nature Conservancy) has completed the western half of the conterminous United States, Southeast States, and is on schedule to complete the entire lower 48 States within one year and Alaska and Hawaii in 2009. There are 24 geospatial data products (all in 30-m spatial resolution) that describe ecosystems in terms of vegetation composition and structure, succession dynamics, wildland fuels, reference fire regime groups, and departure of ecosystems from their reference conditions. Research in land cover mapping and ecological modeling led to mature methodologies to map and characterize elements of vegetated ecosystems in the United States.

Delivery of hundreds of gigabytes of data to fire management and other user communities, and publication of research results in technical reports. LANDFIRE supports a broad range of wildland fire and other environmental applications. For example, in the 2006 fire season, LANDFIRE data were used to provide decision support for wildland fire incident management in a number of fire situations. Fire managers working on the Brins Fire near Flagstaff, Arizona, relied on a wildland fire decision-support computer model and

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LANDFIRE data to decide on a fire-suppression effort that contained \$96 million in economic valuation. In 2006 and 2007, LANDFIRE data have been used in decision support for a number of fires that resulted in the saving of millions of fire suppression dollars. The LANDFIRE data products have also been used to plan and prioritize land conservation strategies, restoration of impaired ecosystems, and mapping of grizzly bear and other wildlife habitats. As the interagency technical team is completing the first cycle of LANDFIRE, a strategy has been developed to test for an operational methodology for updating LANDFIRE in areas of major ecosystem alterations (such as wildland fire, forest biomass removal, wind storms, and forest defoliation). For more information about LANDFIRE see the project Web page at <http://www.landfire.gov/index.php>. To access the data products distributed via the USGS map server, please visit <http://landfire.cr.usgs.gov/viewer/>.

USGS Launches Land Cover Data Web Tool

The USGS has launched the USGS Land Cover Visualization and Analysis Tool, which allows users to analyze, in specific detail, how land cover has changed over time. Designed for both novice and expert users, the Web-based system provides an intuitive interface able to selectively view and analyze land cover data from any Web browser.

Land cover data provide an objective systematic method to assess human impacts on the environment. With increasing population and the challenging prospect of climate change, comprehensive information about the condition of our land and how it is changing becomes more and more vital. This easy-to-use Web-based application delivers national land information assets to a wide audience, demonstrating how our environment is changing and broadening the use of land cover data in decision making. Land cover, the pattern of natural vegetation, agriculture, and urban areas are shaped by both natural processes and human influences. Information about land cover is used by managers of public and private lands, urban planners, agricultural experts, and scientists for studying such issues as climate change or invasive species. This Web-based application allows users to:

- Access land cover data for any area of the United States from any Web browser without the need for specialized GIS software;
- Filter specific land cover classes for specific time periods (e.g., view all urban or forest areas in 1990);
- Clip selected areas by political, natural, or user-defined boundaries (i.e., user drawn areas, watersheds, or city, county and state boundaries);
- Calculate land cover statistics within selected areas and print out simple reports.

Filling in the Gaps: Providing Decision makers with Data that Cross State Boundaries

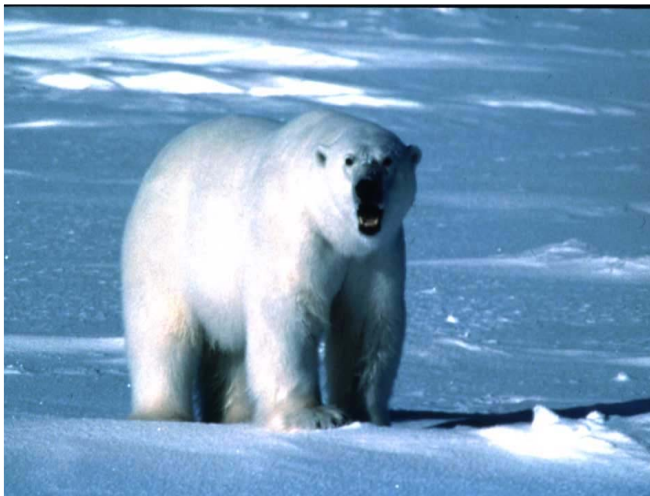
In FY2007, the USGS National Gap Analysis Program completed the Southwest Regional Gap Project, which included the states of Colorado, Nevada, Arizona, New Mexico, and Utah. For this region, a detailed land cover map was created based on Ecological Systems classifications, and predicted species distributions were developed for native vertebrates. An ownership and management spatial database was developed to facilitate analysis for conservation and management purposes. The associated report provides detailed descriptions of the process for developing these data products, as well as discusses the importance of the findings and analyses based on these products. The output of this project provides decision makers with an integrated, multistate view of present and predicted conservation conditions, and sets the standard for completing and reporting future GAP projects.

The Southeastern Regional Gap Project, launched in 2006, completed a major dataset in FY2007. This project extends from Florida, northward into Virginia, and from the east coast to the west as far as the Mississippi alluvial valley. In FY2007, the land ownership/management database was completed for the entire region. This database includes spatial depictions of Federal, State, and other protected lands, along with attributes that describe owner, manager, and the relative level of permanent protection status. While the entire project is far from completion, this critical dataset provides decision makers with the data needed

for any assessment of the role in protected lands and private lands for conservation and management.

Research to Support Polar Bear Finding under the Endangered Species Act

Researchers with the USGS's Alaska Science Center completed studies and delivered results to the U.S. Fish and Wildlife Service to support a finding and proposed rule to list the polar bear (*Ursus maritimus*) as threatened throughout its range. Supporting information developed by USGS included information on population, distribution and movement, food habits, and declines in condition of samples of polar bears attributable to reduction in food availability. Models were developed and data provided regarding the flux of sea ice and trends in the decline of sea ice that can potentially contribute to the species' decline. This information on polar bear populations and habits made possible an informed finding on the polar bear. This research addresses the Department of the Interior Resource Protection strategic goal of improving the understanding of national ecosystems and resources.



Research to Support Polar Bear Finding under the Endangered Species Act.

NCGMP Receives Recognition for Providing High-Quality Maps

The National Cooperative Geologic Mapping Program (NCGMP) of the USGS was recognized by the NPS Geologic Resources Division for "support in providing high-quality maps for the use by park

resource and interpretive staff in enhanced science-based decisionmaking and in educating the public on the geologic splendors of the NPS". The NPS Natural Resource Inventory and Monitoring Program was established in the early 1990's to acquire the information and expertise needed by park managers in their efforts to maintain ecosystem integrity in the approximately 270 NPS units that contain significant natural resources. NCGMP scientists have contributed valuable geologic information to 125 of these park units as geologic maps, geologic reports, 3-D interpretations, assistance with park displays, and interpretive signs. The type of product provided depends upon the needs of the individual park unit, and these are determined through participation on NPS's Geologic Resource Evaluation annual scoping sessions and through discussions with NPS's Geologic Resources Division, Water Resources Division, and resource managers. Examples of NPS uses of these products include protecting ecosystems and paleontological sites, managing water quality and quantity, and assisting in infrastructure construction and maintenance decisions. NCGMP is currently working with NPS to measure the usefulness of the products that we deliver.

Spokane Rathdrum Aquifer Study Wraps It Up

USGS provided water managers in Idaho and Washington a new tool to help manage water supplies that depend on the Spokane Valley-Rathdrum Prairie aquifer. The new tool, a computer model of the two-state aquifer, was developed as part of a comprehensive study of the aquifer by a partnership of the Idaho Department of Water Resources (IDWR), the Washington Department of Ecology (Ecology), and the USGS. The Spokane Valley-Rathdrum Prairie aquifer in Spokane County, Washington, and Bonner and Kootenai Counties, Idaho, is the sole source of drinking water for a large segment of the two state population. Concerns about the impacts of increased ground-water withdrawals resulting from urban growth had spurred the comprehensive study of the aquifer to better understand and manage the resource. The new aquifer model lets users analyze aquifer inflows and outflows, simulate the effects of future changes in ground-water withdrawals from the aquifer, and evaluate aquifer management strategies. The scale of the model and the level of detail are for analysis of aquifer-wide water-supply issues.

Financial Information

Developmental Research Outputs and Outcomes

Fishing Expeditions Give Users Specific Results with “Fish On”-Line

“Fish On”-Line is a management and delivery system for aquatic biological monitoring data, and can be accessed at <http://greatbasin.nbi.gov/fish/>. It was collaboratively developed by the USGS National Biological Information Infrastructure Great Basin Information Project (NBII/GBIP) and the USGS Idaho Water Science Center (IWSC). Since the early 1990s, the IWSC has collected biological data describing algae, aquatic macroinvertebrates, and fish communities as they relate to water-quality conditions from many locations in Idaho, Washington, Montana, and Wyoming. Prior to completion of “Fish On”-Line, these data were stored in separate Excel spreadsheets for each sampling event and delivered through an Internet Map Service. The flat Excel files were not particularly usable because they were not cross-referenced, and data was only available in temporally and spatially restricted site-specific blocks. “Fish On”-Line resolved these limitations through development of a relational database and query engines. Now users can search the database in two ways: using an interactive map or using drop-down menus. Searches can focus on specific streams, fish species, or sampling events. Detailed sampling-site information and summary fish data are also available for each site. Aquatic biological monitoring data helps managers determine whether a stream can support species such as cold-water biota or pollution-tolerant species. Community data have also been used to determine beneficial uses of streams and rivers that are required for developing total maximum daily loads. Long-term trend analysis of aquatic communities helps managers evaluate the effectiveness of management practices.

NSDI Cooperative Agreement Projects (CAP) Create Visualization Tools

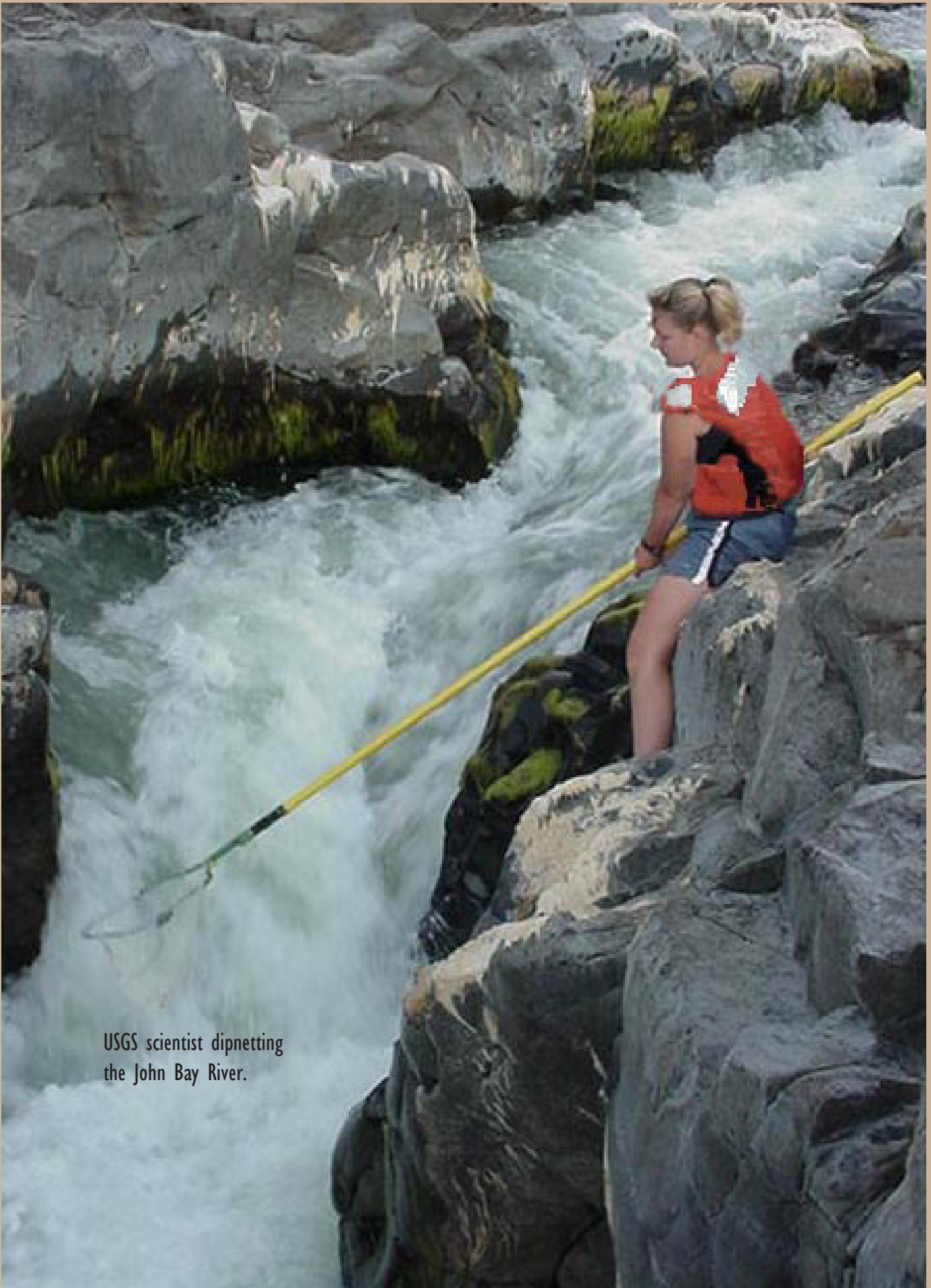
Completed in 2007, two National Spatial Data Infrastructure (NSDI) Cooperative Agreement projects prototyped and documented access to standard geographic data championed by the

Federal Geographic Data Committee. A collection of annual grants, the 2006 awards focused on aiding the development of NSDI. The Western Regional Air Partnership (a collaboration between the Western Governors’ Association and the National Tribal Environmental Council) developed an “Interactive Mapping and Analysis Tool (IMAT)” that can be used to visualize regional air quality in the context of national geographic base maps. The “Carbon Project” was developed by a partnership between a private sector company, the North Carolina Department of Environment and Natural Resources, and the City of Charlotte, North Carolina. It is an incident response mapping and collaboration software program that is being used in North Carolina for natural hazards appraisal and response, using standardized national and local map data feeds. These software programs may be easily re-purposed to support other applications. See: <http://victor.cira.colostate.edu/imat/> and <http://www.thecarbonproject.com/gaia.php>. For more information on the CAP please visit the project list pages on FGDC grants Web site, <http://www.fgdc.gov/grants>.

USGS National Atlas Team Creates Collaborative Maps for North America - Land Cover History and Watersheds

National Atlas framework data were completely redone at 1:1,000,000 - scale (from the current 1:2,000,000 - scale). As part of this effort, researchers in USGS derived small-scale national data set of surface water features from the intermediate-scale National Hydrography Database. Transportation, boundary, land cover, and elevation data sets were also recompiled and updated for the entire Nation. There were two immediate benefits beyond the use of these data within the National Atlas of the United States. First, USGS worked closely with its international partners in Canada and Mexico to harmonize these framework data at international borders to create consistent and reliable map information for all of North America at 1:1,000,000 - scale. Second, the Bureau followed specifications of the international Global Map project and hence all of the data will be published in the National Atlas, the Atlas of North America, and the Global Map.

Within the scope of the North American Atlas, USGS revised framework data at 1:10,000,000 - scale, worked with the North America Land Cover Monitoring group to publish a land cover history of the continent, and published a map of North American watersheds that earned the USGS Shoemaker Award for excellence in communicating science.



USGS scientist dipnetting
the John Bay River.

Section IV

Appendix

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Appendix

AAG	American Association of Geographers	EFT	Electronic Funds Transfer
ABC/M	Activity-Based Costing/Management	EHP	Earthquake Hazards Program
ACWI	Advisory Committee on Water Council	EPA	U.S. Environmental Protection Agency
ANSS	Advanced National Seismic System	EPCA	Energy Policy and Conservation Act
APA	American Planning Association	EROS	Earth Resources Observation and Science Center
APS	Administrative Policy and Services	ERP	Energy Resources Program
A/R	Accounts Receivable	ESN	Enterprise Services Network
BASIS+	Budget and Science Information System	ETM+	Enhanced Thematic Mapper Plus
BBS	Biology Breeding Survey	FAIR	Federal Activities Inventory Reform
BFC	Big File Cabinet	FASAB	Federal Accounting Standards Advisory Board
BIA	U.S. Bureau of Indian Affairs	FBMS	Financial Business Management System
BOR	U.S. Bureau of Reclamation	FBWT	Fund Balance with Treasury
BLM	U.S. Bureau of Land Management	FCI	Facilities Condition Index
BMP	Best Management Practices	FECA	Federal Employee Compensation Act
BRD	Biological Resources Discipline	FEGLI	Federal Employees' Group Life Insurance
CA	Condition Assessment	FEHB	Federal Employees' Health Benefit
CAP	Cooperative Agreements Program	FEMA	Federal Emergency Management Agency
CBP	Chesapeake Bay Program	FERC	Federal Energy Regulatory Commission
CD	Compact Disc	FERS	Federal Employees' Retirement System
CERP	Comprehensive Everglades Restoration Plan	FFMIA	Federal Financial Management Improvement Act of 1996
CINDI	Center for Integration of Natural Disaster Information	FGDC	Federal Geographic Data Committee
CISN	California Integrated Seismic Network	FICA	Federal Insurance Contributions Act
CLICK	Center for LIDAR Information Coordination & Knowledge	FISC	Florida Integrated Science Center
CMGP	Coastal and Marine Geology Program	FISMA	Federal Information Security Management Act
COTS	Commercial Off-the-Shelf	FMFIA	Federal Managers' Financial Integrity Act of 1982
CPIC	Capital Planning and Investment Control	FMMS	Facilities Maintenance Management System
CREW	Cascadia Regional Earthquake Workgroup	FMS	U.S. Treasury's Financial Management Service
CSRS	Civil Service Retirement System	FTE	Full-Time Equivalent
CTM	Cooperative Topographic Mapping	FTP	File Transfer Protocol
DCIA	Debt Collection Improvement Act	FWS	U.S. Fish and Wildlife Service
DHS	U.S. Department of Homeland Security	FY	Fiscal Year
DOD	Department of Defense	GAAP	Generally Accepted Accounting Principles
DOI	U.S. Department of the Interior	GAM	Geographic Analysis and Monitoring Program
DOL	U.S. Department of Labor	GAO	Government Accountability Office
DOT	U.S. Department of Transportation	Gb	Gigabyte
DSS	Decision Support System	GCP	Global Change Program

GIO	Geospatial Information Office	NGA	National Geospatial Intelligence Agency
GIS	Geographic Information System	NGIC	National Geomagnetic Information Center
GOS	Geospatial One Stop	NHSS	Natural Hazards Support System
GPRA	Government Performance and Results Act	NHWC	National Hydrologic Warning Council
GPS	Global Positioning Satellite	NOAA	National Oceanic and Atmospheric Administration
GSA	General Services Administration	NPS	U.S. National Park Service
GSN	Global Seismographic Network	NRC	National Research Council
HHS	U.S. Department of Health and Human Services	NRCS	National Resources Conservation Council
HPAI	Highly Pathogenic Avian Influenza	NSDI	National Spatial Data Infrastructure
IP	Investment Plan	NSF	National Science Foundation
IRIS	Incorporated Research Institutions for Seismology	NSIP	National Streamflow Information Program
InSAR	Interferometric Synthetic Aperture Radar	NWIS	National Water Information System
JWP	John W. Powell	NWQL	National Water Quality Laboratory
KSAs	Knowledge, Skills, and Abilities	NWQLC	National Water Quality Monitoring Council
IT	Information Technology	NWS	National Weather Service
LIDAR	Light Detecting and Ranging	OAFM	USGS Office of Accounting and Financial Management
LHP	Landslide Hazard Program	OBP	USGS Office of Budget and Performance
LMV	Lower Mississippi Valley	OIG	Office of the Inspector General
LRS	Land Remote Sensing	OMB	Office of Management and Budget
LTRMP	Long-Term Resource Monitoring Program	OMS	Office of Management Services
LUPM	Land Use Portfolio Model	OPM	Office of Personnel Management
M	Million	PAR	Performance and Accountability Report
MD&A	Management's Discussion and Analysis	PART	Program Assessment Rating Tool
MITS	Management Initiatives Tracking System	PB	President's Budget
MMS	Minerals Management Service	PGV	Peak Ground Velocity
MRERP	Mineral Resources External Research Program	P.L.	Public Law
MRP	Mineral Resources Program	PMA	President's Management Agenda
NAIP	National Agriculture Imagery Program	PP&E	Property, Plant, and Equipment
NARA	National Archives and Records Administration	PTWC	Pacific Tsunami Warning Center
NASA	National Aeronautics and Space Administration	R&D	Research and Development
NAWQA	National Water Quality Assessment	REX	Regional Executive
NBC	Dept. of Interior - National Business Center	RMGSC	Rocky Mountain Geographic Science Center
NBII	National Biological Information Infrastructure	RLA	Resource Lands Assessment
NCGMP	National Cooperative Geologic Mapping Program	RSSI	Required Supplementary Stewardship Information
NEIC	National Earthquake Information Center	RTS	Reports Tracking System (Water Resources)
NEHRP	National Earthquake Hazards Reduction Program	SAFOD	San Andreas Fault Observatory at Depth

Appendix

SAIN	Southern Appalachian Information Node	WRD	Water Resources Discipline
SBR	Statement of Budgetary Resources	WPA	World Petroleum Assessment 2000
SCEC	Southern California Earthquake Center	WRIR	Water Resources Investigation Report
SES	Senior Executive Service	WSC	Water Science Center
SETAC	Society of Environmental Toxicology and Chemistry		
SFFAS	Statement of Federal Financial Accounting Standards		
SFMP	Strategic Facilities Master Plan		
SFWMD	South Florida Water Management District		
SLC	Scan Line Corrector		
SGL	Standard General Ledger		
SIR	Surveys, Investigations, and Research		
Sparrow	Spatially Referenced Regressions on Watershed Attributes		
SPRESO	South Pole Remote Earth Science Observatory		
SRTM	Shuttle Radar Topographic Mission		
SST	Science Strategy Team		
STEP	Short-Term Earthquake Probability		
TBLM	The Biotic Ligand Model		
TCUs	Tribal Colleges and Universities		
TES	Threatened and Endangered Species		
TLSA	Teshekpuk Lake Special Area		
TNM	The National Map		
TRIP	The Road Indicator Project		
TROR	Treasury Report on Receivables		
TRPA	Tahoe Regional Planning Agency		
TSP	Thrift Savings Plan		
TWRA	Tennessee Wildlife Resources Agency		
USCOE	U.S. Army Corp. of Engineers		
USDA	U.S. Department of Agriculture		
USFS	U.S. Forest Service		
USGCRP	U.S. Global Change Research Program		
USGS	U.S. Geological Survey		
VHP	Volcano Hazards Program		
VPN	Virtual Private Network		
V&V	Validation and Verification		
WAN	Wide Area Network		
WCF	Working Capital Fund		
WNV	West Nile Virus		

Sample of International Polar Ice Year Multimedia Links



“Melting Ice, Rising Seas,” a Climate Change Documentary at the American Museum of Natural History

Ice sheets and shelves from Greenland to Antarctica have changed dramatically in recent years. A new seven-minute documentary on these changes is now available on-line. Featuring Robert Hawley, a glaciologist at the University of Washington, it takes visitors to Greenland’s glaciers and to fossilized coral reefs of the Florida Keys, where scientists are studying evidence of past warming in hopes of understanding future changes.

View at http://sciencebulletins.amnh.org/?sid=e.f.melting_ice.20070514&src=e

Wandering Wildlife: USGS Animations Show How Alaska Wildlife Migrations are Tracked...and Why

Animated maps on the U.S. Geological Survey’s Alaska Science Center Web site allow you to see how migrations of polar bears, salmon, and seabirds are tracked by satellite and explain why tracking is an important conservation tool.

View at http://alaska.usgs.gov/science/biology/wandering_wildlife/



Exploring the Moon and Mars in Antarctica

The search for chunks of solar system debris is underway in the extreme conditions of the Antarctic as part of the “Antarctic Search for Meteorites” program, supported by NASA, the National Science Foundation and the Smithsonian Institution. Go behind the scenes and see the search in progress.

View at <http://ipy.nasa.gov/multimedia/m000000/m000000/m000017/index.html>

See complete list of multimedia links at <http://www.ipy.gov/Multimedia/tabid/67/currentpage/3/Default.aspx>

We Welcome Your Comments!

Thank you for your interest in the U.S. Geological Survey’s FY2007 Performance and Accountability Report. We welcome your comments on how we can make this report a more informative document for our readers. We are particularly interested in your comments on the usefulness of the information and the manner in which it is presented. Please send your comments to:

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