



# FY 2000 Annual Financial Report



**Cover:** The Hoverprobe 2000 co-developed by the USGS with industry partners to drill in wetland areas where deep mud and shallow water cause extreme logistical difficulties in transporting and operating drilling equipment. The drill rig mounted on the hovercraft can perform continuous coring and ground-water profiling in wetlands and other previously inaccessible areas.



# FY 2000 Annual Financial Report

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**U.S. DEPARTMENT OF THE INTERIOR**  
**GALE A. NORTON, Secretary**

**U.S. GEOLOGICAL SURVEY**  
**CHARLES G. GROAT, Director**

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This report is also available on the World Wide Web at  
<http://pubs.usgs.gov/00financial/>

# Message from the Director

## Celebrating Success and Our Future

In last year's Annual Financial Report, I described priorities for the U.S. Geological Survey (USGS) over the next few years. I am happy to say we have made significant progress toward realizing a number of these goals. During fiscal year 2000, we continued to upgrade and modernize our real-time warning systems for floods, and we installed 81 modern digital seismometers in urban areas vulnerable to earthquakes. USGS scientists collaborated with counterparts in other Federal agencies and universities to address emerging issues, such as the West Nile virus and the effects of wildfire. We held listening sessions with many of our customers and stakeholders, and the insights gained through these discussions are helping to shape our scientific future. Other achievements are described elsewhere in this report; I urge you to read it and see how much the USGS has done to make the Nation safer, healthier, and more livable during the past year.



Charles G. Groat

The National Science Foundation recently issued a report by the National Research Council listing research issues to which Federal research dollars should be directed. Four areas were called out for immediate attention: ecosystem functioning, hydrologic forecasting, infectious disease and the environment, and land-use dynamics. The USGS has been working in these areas for years, and we are proud to have made a number of significant contributions to these topics. A few examples follow:

- USGS research has led to a better understanding of how toxic substances affect ground and surface waters and the ecosystems nourished by these waters
- USGS hydrologists work closely with staff at the National Weather Service and other partners to provide up-to-the-minute information on streamflow used for forecasting floods and droughts
- Recent USGS work on the West Nile virus complements our research on coccidioidomycosis, hantavirus, and other vector-borne disease, which is being used by many State and local health agencies to help keep people and communities healthy
- USGS researchers are combining historical data on urban growth with modern technology to show patterns of past development and derive models for future growth

As we learn more about how our planet works, we can see the consequences of past choices and provide new scientific knowledge to policymakers, so they can make better decisions for tomorrow.

These programs demonstrate that the USGS is a good investment for taxpayer dollars. An important aspect of USGS work is that we leverage our capabilities through strong partnerships with more than 2,000 Federal, State, and local government agencies, nongovernmental organizations, and the private sector. Through these collaborative efforts, USGS research, monitoring, and assessments of natural resources and natural hazards provide solid dividends of progress in science and technology to the American public.

A handwritten signature in black ink, which appears to read "C. Groat". The signature is fluid and cursive, written in a professional style.

Charles G. Groat  
Director

# Message from the Chief Financial Officer

Providing science for a changing world is the mission of the U.S. Geological Survey (USGS), and this FY 2000 Annual Financial Report describes how our scientific programs and accomplishments bring this mission to life. It presents some of the scientific goals, objectives, and standards by which we measure our success. This report also presents the USGS financial position and results of operations.

We are actively implementing systems and organizational changes to support the ability of the USGS to undertake integrated science. We are realigning our administrative support structure from scientific disciplines to a common Bureau focus. Our account structure has been streamlined, duties have been consolidated, and a revised management structure has been put in place to implement these changes.

As we move to this new strategic model, we will not compromise our commitment to financial accountability and control. The USGS has a proud history of good financial stewardship as evidenced by, among other accomplishments, our consecutive string of unqualified audit opinions on our financial statements. We will continue to devote the resources and management energy necessary to guarantee accountability in the financial arena.

Properly functioning financial management systems are key ingredients to ensuring financial accountability. We modified our accounting system last year to more accurately account for funding by its source. Our century conversion (Y2K) was very successful as there were no significant problems at the start of the year. We've also made significant strides in electronic commerce, and almost 95 percent of our disbursements are made electronically.

The USGS strongly supports the financial management goals of the Department of the Interior. Our unqualified audit opinion and the pace with which we have corrected identified audit findings are evidence of our active support. In addition, we have reduced our number of late payments and resulting penalties by about 70 percent over the past 2 years, and we have met the Departmental goals for referring delinquent debt to the Department of the Treasury for collection and offset.

We will continue to review and improve our financial management practices in FY 2001. We will consolidate several planning and administrative tracking systems to facilitate integrated science. Access to our automated procurement system will be expanded to more sites. We are converting to a new Governmentwide grants payment system to ease administrative burdens on our grantees and cooperators. We will continue implementing Governmentwide accounting standards that will enhance the integrity of our financial data. Finally, we will continue to support Departmental financial management goals, including efforts associated with migration to a new financial management system.

We are committed to maintaining an accountable environment that supports the vital science and information programs of the USGS.



Carol F. Aten

## Fiscal Year 2000 Annual Assurance Statement on Management Controls

The U.S. Geological Survey (USGS) completed an assessment of its systems of management, administrative, and financial controls in accordance with the standards, objectives, and guidelines prescribed by the Federal Managers' Financial Integrity Act (FMFIA) and the Office of Management and Budget (OMB). The objectives of this assessment are to ensure that—

- Programs achieve their intended results
- Resource use is consistent with agency mission
- Resources are protected from waste, fraud, and mismanagement
- Laws and regulations are followed
- Reliable and timely information is maintained, reported, and used for decisionmaking

In performing this assessment, the USGS relied on the knowledge and experience that managers have gained from the daily operation of programs and systems of accounting and administrative controls, as well as information obtained from sources such as automated internal management control assessments (three); audits by the Office of the Inspector General (OIG) and the Government Accounting Office (GAO); program evaluations and studies; audits of financial statements; and performance plans and reports. The scope of this assessment was broad enough to support the conclusions expressed within this memorandum.

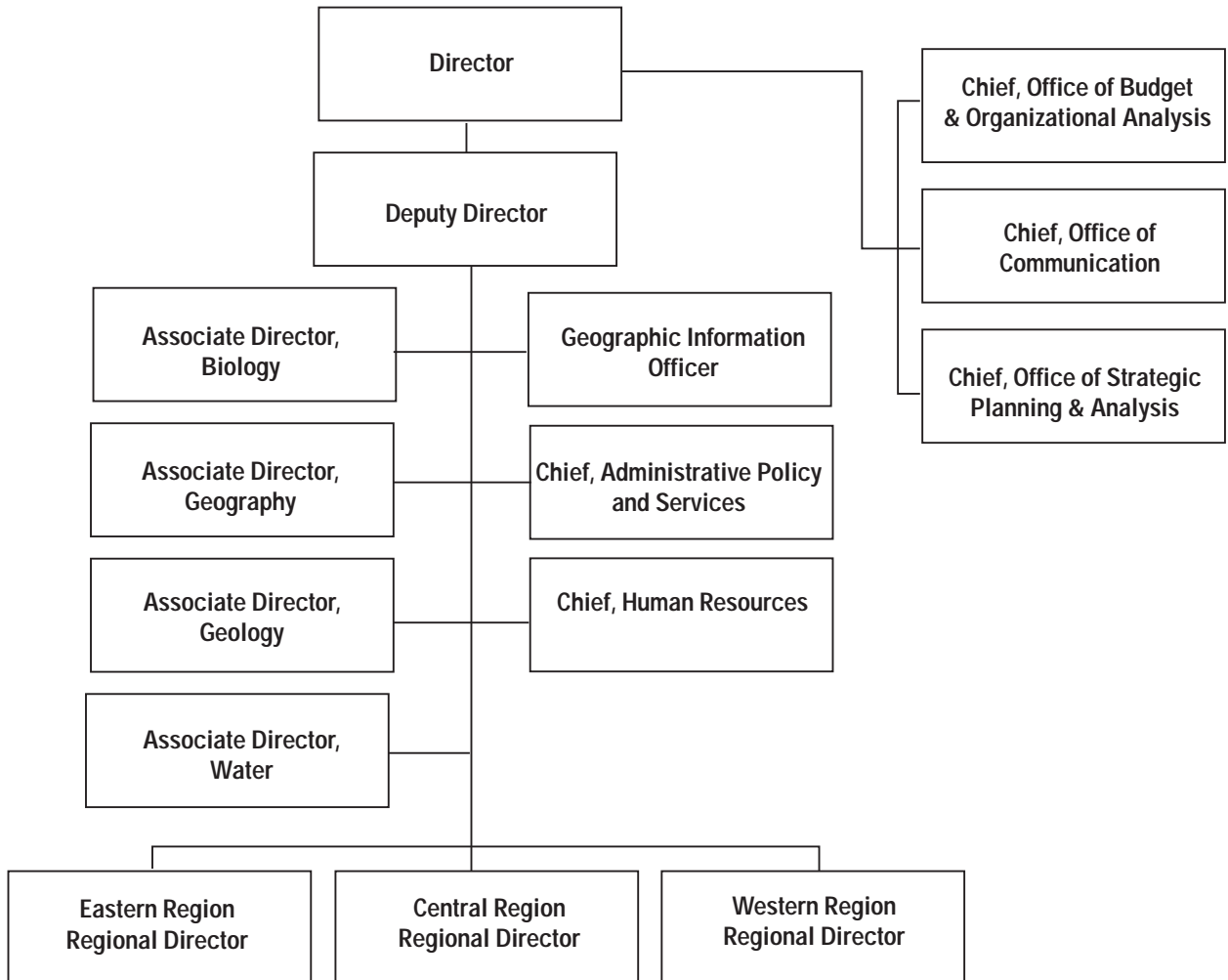
On the basis of the results of our FY 2000 assessment, I conclude that the USGS systems of management, administrative, and financial controls provide reasonable assurance that the objectives of the FMFIA have been achieved. I also conclude that the USGS sensitive information systems provide reasonable assurance that the objectives of OMB Circular A-130, "Management of Federal Information Resources," have been achieved. Further, I conclude that the USGS financial systems generally conform to Governmentwide standards and requirements.

Nevertheless, sufficient resources are not available to make measurable progress in repairing and maintaining critical research facilities. This lack of maintenance, in turn, jeopardizes our efforts to efficiently and effectively meet the first four of the five FMFIA objectives listed above. Mission-critical science activities affected by deferred maintenance include providing timely warnings and gaining scientific understanding of natural hazards, measuring trends in water quality, and acquiring the scientific understanding and technical information needed to support the sound management and conservation of our Nation's biological resources. To resolve this potential weakness, the USGS has aggressively pursued an increase in the funding for deferred maintenance in the FY 2002 and out years budget requests.



Carol F. Aten  
Chief Financial Officer and  
Chief, Office of Administrative Policy and Services

# U.S. Geological Survey Organization Chart for FY 2000





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Advanced earthquake sensors (digital seismometers) are installed to measure Earth movements. They can deliver real-time information on potentially damaging earthquakes to minimize loss of life and property.

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# Management Discussion and Analysis

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## Vision

The U.S. Geological Survey (USGS) is a world leader in the natural sciences through our scientific excellence and responsiveness to society's needs.

## 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.

## 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
- Enhance and protect our quality of life

## Mission Goals

The USGS strategic plan was revised in fiscal year 1999 (FY 1999) in accord with the Government Performance and Results Act (GPRA). The plan has two mission goals or GPRA program activities:

- Hazards
- Environment and Natural Resources

## Budget Linkage

The concept of GPRA program activities captures the contribution of all USGS program activities to a common mission requirement by applying a single set of annual goals and performance measures across four current budget activities—National Mapping Program; Geologic Hazards, Resources, and Processes; Water Resources Investigations; and Biological Research. The remaining two USGS budget activities—Science Support and Facilities—support all programmatic activities, and their funding is distributed on a prorated basis to the two GPRA program activities (Hazards and Environment and Natural Resources). These two Bureauwide accounts were created in FY 2000 to improve accountability for all aspects of the organization and promote common business practices while providing a much clearer view of the funding available for science.

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# Strategic Plan

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## Hazards

### USGS GPRA Program Activity

Provide science for a changing world by responding to present and anticipated needs (1) to predict and monitor hazardous events in near real and real time and (2) to conduct risk assessments to mitigate loss.

### Annual Goal

Develop, maintain, and improve monitoring networks and techniques of risk assessment by—

- Maintaining the baseline of data and risk assessments transferred to customers
- Increasing by 200 the quarterly average number of streamgages delivering real-time data on the Internet
- Increasing by 80 the number of improved earthquake sensors to deliver real-time information on potentially damaging earthquakes to minimize loss of life and property

### Performance Measures—Collection Methodology

**Real-time streamgages:** A robot program queries appropriate web sites daily to determine how many are delivering real-time streamgage data at that time. Daily values across the country are accumulated and averaged quarterly to produce the “quarterly average number of streamgages delivering real-time data on the Internet.”

**Real-time earthquake sensors:** An inventory of earthquake sensors is conducted annually by seismic network operators and is reported to headquarters at the end of the fiscal year.

## Environment and Natural Resources

### USGS GPRA Program Activity

Provide science for a changing world by responding to present and anticipated needs (1) to expand our understanding of environmental and natural resource issues on regional, national, and global scales and (2) to enhance predictive/forecast modeling capabilities.

### Annual Goal

Provide and improve long-term environmental and natural resource information, systematic analysis and investigations, and predictive options for decisionmaking about natural systems by—

- Maintaining 44 long-term data collection/data management efforts and supporting 2 large data infrastructures managed in partnership with others
- Delivering 995 new products from systematic analyses and investigations to our customers
- Improving and developing 6 new decision-support systems and predictive tools for decisionmaking and delivering them to customers
- Collaborating with university partners to understand natural systems and facilitate sound management practices through 248 external grants and contracts

### Performance Measures—Collection Methodology

Decision-support systems or predictive models are developed or improved and delivered to customers. Data on development, delivery, and use of decision-support systems and predictive models are monitored and reported by project scientists at research/field centers and are tracked through automated, electronic systems such as the ones at—

- <http://water.usgs.gov/software/> for new water models
- <http://biology.usgs.gov/science/currproj.html> for biological models

# Understanding Federal Financial Statements

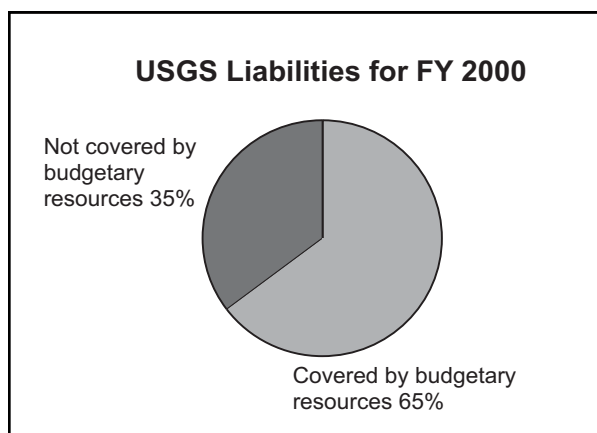
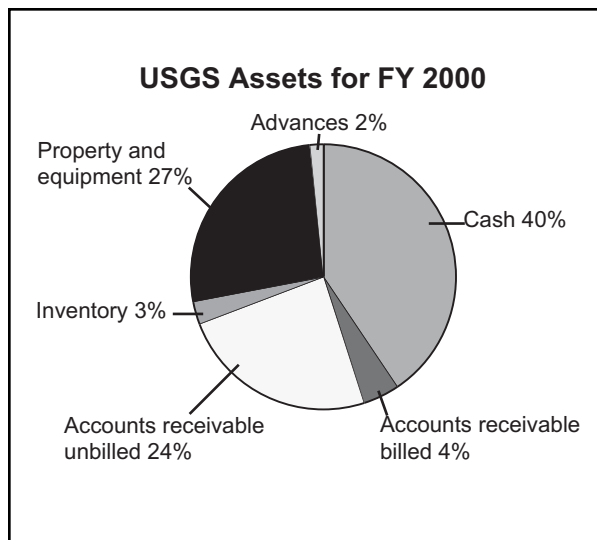
The USGS prepares consolidated financial statements that include a balance sheet, a statement of net cost, a statement of changes in net position, a statement of budgetary resources, and a statement of financing. When seen as a whole, all these statements present the current year's financial activity and the long-term financial position of the USGS.

Federal Government operations differ from those in the private sector in many ways. Two of the most obvious differences are that Government agencies are not profit oriented and that Congress provides most of the funds used to operate the agency for purposes of performing its mission.

## Balance Sheet

The consolidated balance sheet presents the USGS financial position (assets \$554 million, liabilities \$290 million, and net position \$264 million) at one point in time—the end of FY 2000. Assets include the fund balance with the Treasury, which is the USGS bank account. The balance is the cumulative amount of all money that was deposited and spent as a result of an appropriation and money collected for services performed. The assets also include funds due the USGS as a result of products sold or services performed for which accounts receivable are billed and unbilled. The top chart at right shows the major categories of assets with the percentage of each. In the chart, cash is 40 percent of total assets and includes the fund balance with the Treasury and cash and other monetary assets.

The liabilities reported are debts that the USGS has incurred in activities related to accomplishing the USGS mission. Liabilities covered by budgetary resources (accounts payable \$102 million, deferred revenue \$49 million, accrued payroll and benefits \$37 million) are debts that the USGS has incurred for which funding, either appropriated or reimbursable, is available for payment. These covered liabilities are similar to short-term debt and are shown in the bottom chart at right as 65 percent of liabilities. Liabilities not covered by budgetary resources are debts that the Bureau will pay in the future for which there is no current funding available. These liabilities are similar to long-term debt and constitute 35 percent of total liabilities.



The last portion of the consolidated balance sheet is the net position section. This section consists of unexpended appropriations (balances available at the end of each fiscal year, carryover balances from multiyear and no-year appropriations, and undelivered orders from appropriations not cancelled) and the cumulative results of operations, which is the difference of assets (owned) minus liabilities (amounts owed).

## Statement of Net Cost

The statement of net cost presents the taxpayer's cost for the Bureau's missions and programs. Revenues shown are a result of money the USGS earned through its reimbursable programs, not money that came from an appropriation of taxes. Net cost is expenses less revenues earned, which results in the actual cost to taxpayers. USGS products and services provide 30 percent toward the cost of operations; the taxpayers provide, in the form of appropriations, for 70 percent of the cost of operating USGS mission activities.

## Statement of Changes in Net Position

The statement of changes in net position presents the sources of financing (other than what was earned) that funded the cost to taxpayers as shown on the statement of net cost. A brief description of the major financing sources follows:

- **Appropriations used**—Appropriations are considered to be used as a financing source when goods and services are received or benefits are provided under authority of the appropriations. This is true whether the goods, services, and benefits are paid for prior to the reporting date or are payable as of that date and whether the appropriations are used for items that are recorded as expenses or are capitalized.
- **Employee benefits**—The employee benefits are amounts for civilian pensions and other retirement benefits paid by the Office of Personnel Management above amounts contributed by employees.
- **Assets transferred out**—The assets transferred out are intragovernmental transfers of cash or capitalized assets without reimbursement.

Explanations follow for other items in the statement of changes in net position:

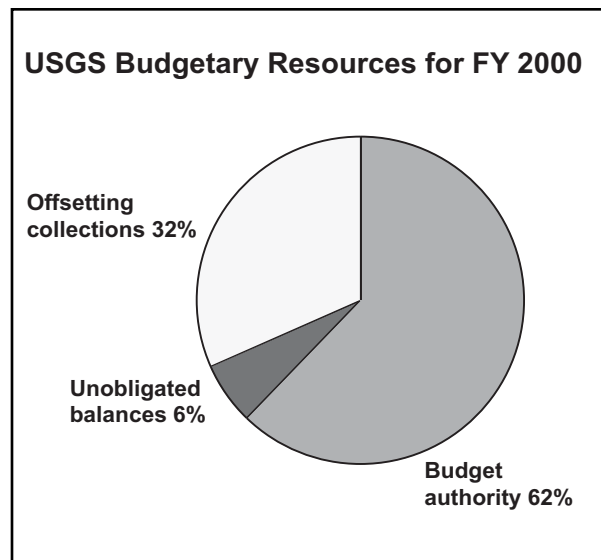
- The net results of operations (\$8,629,000) are calculated by subtracting the sum of all financing sources (\$843,639,000) from the net cost of operations (\$852,268,000).
- Prior period adjustments (\$15,733,000) are limited to corrections of errors and accounting changes with retroactive effects that can either increase or decrease net position. An increase is entered as a positive number, and a decrease is entered as a negative number.

- In the changes in net position section, the item "Increase in Appropriated Capital" (\$38,962,000) reflects the change from the beginning of the fiscal year (October 1999) in the amount of appropriations that was made available for use but not used.
- The net change in net position (\$14,600,000) is the difference between the total changes in cumulative results of operations (\$24,362,000) and the total changes in net position (\$38,962,000).

## Statement of Budgetary Resources

The statement of budgetary resources provides information about how budgetary resources were made available, as well as their status at the end of FY 2000. This statement is divided into three general sections: budgetary resources, status of budgetary resources, and outlays.

The budgetary resources section is designed to present the total budgetary resources available to the USGS during the past fiscal year. These include new budget authority (62 percent in chart below), spending authority from offsetting collections (offsetting collections 32 percent), and unobligated balances at the beginning of the fiscal year (unobligated balances 6 percent).





The status of budgetary resources section is designed to display information about the status of budgetary resources at the end of the fiscal year. It consists of the obligations incurred, the unobligated balances at the end of the fiscal year that remain available, and unobligated balances at the end of the fiscal year that are unavailable.

The outlays section of the statement displays total outlays (\$797,306,000) and reconciles obligations incurred (\$1,224,922,000) to total outlays by displaying spending authority from offsetting collections (\$420,862,000), obligated balances at the beginning of the period (\$123,260,000), and obligated balances at the end of the fiscal year (\$130,014,000). Outlays were 65 percent of the obligations incurred during FY 2000.

## Statement of Financing

The statement of financing reconciles the statement of budgetary resources to the statement of net cost. Accrual-based (expenses and revenues are recognized when they occur) measures used in the statement of net cost differ from the obligation-based (expenses and revenues are recognized when they are paid or received) measures used in the statement of budgetary resources. In order to understand these differences, information is needed to reconcile financial (proprietary) net cost of operations with obligations of budget authority. This reconciliation also ensures that there is a proper relation between proprietary and budgetary accounts in the reporting entity's financial management system.

The obligations and nonbudgetary resources section reports the computation of obligations incurred and adjustments for offsetting collections to expenditure accounts, recoveries of authority, and other items defined in OMB Circular A-34. It also reports financing that is not recognized in the entity's budget. For example, financing imputed for cost subsidies is the employee benefits from financing sources in the statement of changes in net position. Financing sources other than exchange revenues that are not in the budget are added to obligations because they provide additional resources. Exchange revenues not in the budget are subtracted from obligations because they were subtracted from gross costs in the calculation of net cost of operations. The total obligations and nonbudgetary resources were calculated as \$858,963,000.

The section on resources that do not fund net costs of operations lists some obligations or nonbudgetary financing sources that do not result in expenses on the statement of net cost for the period in which the

obligation was made or the nonbudgetary resource was recognized. Resources that do not fund net costs of operations commonly arise from three sources. One source is the change in goods, services, and benefits ordered but not yet received or provided (-\$13,220,000 + -\$12,389,000). Another source is any good or service capitalized on the balance sheet (+\$8,848,000). The third source is any item that was treated as a financing source yet to be provided in a prior period and that is being recognized as a budgetary resource in the current period (-\$70,568,000 + \$15,733,000). Because these items are included in obligations, as adjusted, and nonbudgetary financing sources but not in the net cost of operations, they are subtracted in the reconciliation. The total resources that do not fund the net cost of operations equal -\$71,596,000.

The costs that do not require resources are costs that do not require financing by either budgetary or nonbudgetary resources. There may be many expenses of this type, and two of the most common are (1) depreciation and (2) expenses related to the revaluation of assets. Because these items are part of the net cost of operations but are not included in obligations, as adjusted, and nonbudgetary resources, they are added in the reconciliation. Total costs that do not require resources were computed to be \$22,334,000.

The financing sources yet to be provided (+\$42,567,000) are the costs not funded in the period the costs are incurred. The example most common to agencies funded by appropriations is the cost of increases in unused annual leave. Costs of this nature are incurred in the reporting period but are normally funded through appropriations in subsequent years. Future funding required for these costs is reported as financing sources yet to be provided. Because these costs are part of the net cost of operations but are not in obligations, as adjusted, and nonbudgetary resources, they are added in the reconciliation. Note that in a subsequent year, when budgetary resources are provided, the costs are subtracted in the section entitled "Resources That Do Not Fund Net Cost of Operations."

Summing the totals from each of these sections results in the net cost of operations of \$852,268,000:

\$858,963,000
(71,596,000)
22,334,000
<u>42,567,000</u>
\$852,268,000

## Helpful Definitions

**Accounts receivable unbilled.** As the USGS performs work for a customer, it must pay for items such as salaries and supplies. The customer can be billed only when the service has been completed. During the lag time between performing services and completing projects, the expenses that have been incurred are recorded as an unbilled receivable.

**Appropriation.** Money provided by Congress that helps to fund mission programs.

**Budgetary resources.** The amount of money available for spending. This includes money provided by Congress, money collected from customers, and money set aside from a previous period that has not yet been expensed.

**Deferred revenue.** In order for the USGS to perform work for customers outside the Federal Government, the money must be collected in advance of the services performed. That money is recorded as deferred revenue until it has been earned by completing the requested product or service.

**Financing sources.** Money that is available for mission programs but that has not been earned by performing a reimbursable service.

**Obligations incurred.** Money that has been set aside and earmarked for a pending future payment.

**Reimbursables.** Money that is earned by the USGS by performing services and producing products for paying customers.

## Segment Reporting

Tables for USGS segments show the statement of net cost, the statement of changes in net position, and the budgetary statement for parts of the USGS to supplement the tables presented at a Bureau level. Two segments for financial reporting are aligned with GPRA program activities. The environment and natural resource activities segment and the hazard activities segment are composed of mission programs that are funded through appropriated funds and reimbursable funds. The self-financing and investment activities segment is the Bureau's working capital fund and is funded entirely through fees for services performed and investments. The other activities segment includes suspense accounts, accounts for which money is not kept by the USGS but instead is returned to the Treasury (such as interest and fines collected), and small transfer accounts for which the USGS is given money from other Government agencies to perform services.

The statement of changes in net position is not entirely presented by segment for the environment and natural resource activities segment and the hazard activities segment. In previous years, segment reporting was not required; therefore, the USGS did not allocate its budget to GPRA program activities. Consequently, prior year data that would be needed to report beginning balances are not available. Financial statement lines that are presented by segment are those that are showing only current-year data.

# Financial Statements

## Limitations of the Financial Statements

- The financial statements have been prepared to report the position and results of operations of the entity, pursuant to the requirements of 31 U.S.C. 3515(b).
- While the statements have been prepared from the books and records of the entity in accordance with the formats prescribed by OMB, 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 statements should be read with the realization that they are for a component of the U.S. Government, a sovereign entity. One implication of this is that liabilities cannot be liquidated without legislation that provides resources to do so.

U.S. Geological Survey  
Consolidated Balance Sheet  
As of September 30, 2000  
[Dollars in thousands]

<b>Assets</b>		
Fund Balance with Treasury	Note 2	\$224,546
Cash and Other Monetary Assets		47
Accounts Receivable Billed:	Note 3	
Due from the Public		20,986
Due from Federal Agencies		3,163
Accounts Receivable Unbilled:	Note 4	
Due from the Public		56,105
Due from Federal Agencies		77,639
Operating Materials & Supplies		22
Inventory	Note 5	15,588
Property & Equipment, Net of Depreciation	Note 6	146,803
Interest Receivable		70
Advances to Others:		
Due from Federal Agencies		1,924
Due from the Public		6,451
Prepayments		290
<b>Total Assets</b>		<b>\$553,634</b>
<b>Liabilities and Net Position</b>		
<b>Liabilities</b>		
<b>Liabilities Covered by Budgetary Resources:</b>		
Accounts Payable:		
Due to the Public		\$95,105
Due to Federal Agencies		7,065
Deferred Revenue:		
Due to the Public		10,158
Due to Federal Agencies		39,151
Accrued Payroll & Benefits:		
Due to the Public		31,211
Due to Federal Agencies		5,474
<b>Liabilities Not Covered by Budgetary Resources:</b>		
Accrued Annual Leave		47,860
Workers and Unemployment Compensation Payable		6,364
Actuarial Liabilities	Note 7	32,965
Estimated Future Liabilities	Note 8	14,794
Contingent Liabilities	Note 9	
<b>Total Liabilities</b>		<b>\$290,147</b>
<b>Net Position</b>		
Unexpended Appropriations	Note 10	\$189,110
Cumulative Results of Operations		74,377
<b>Total Net Position</b>		<b>\$263,487</b>
<b>Total Liabilities and Net Position</b>		<b>\$553,634</b>

The accompanying notes are an integral part of these statements

U.S. Geological Survey  
Consolidated Statement of Net Cost  
For the year ended September 30, 2000  
[Dollars in thousands]

<b>Operational Costs:</b>		
Operating Expenses	Note 11	\$1,189,774
Cost of Goods Sold		631
Depreciation		19,184
Loss on Disposition of Assets		2,159
Changes in Actuarial Liabilities		7,466
Future Funded Expenses		6,704
Bad Debt and Write-Offs		(1,365)
Interest Expense		53
<b>Total Costs</b>		<b>\$1,224,606</b>
<b>Revenues Earned:</b>		
Sales of Goods and Services to the Public	Note 12	\$159,017
Sales of Goods and Services to Federal Agencies		214,382
Interest & Penalties	Note 13	(1,067)
Gain on Disposition of Assets		6
<b>Total Revenue</b>		<b>\$372,338</b>
<b>Net Cost of Operations</b>		<b>\$852,268</b>

The accompanying notes are an integral part of these statements

U.S. Geological Survey  
Consolidated Statement of Changes in Net Position  
For the year ended September 30, 2000  
[Dollars in thousands]

<b>Net Cost of Operations</b>	(\$852,268)
<b>Financing Sources:</b>	
Appropriations Used	791,909
Donated Revenue	0
Employee Benefits	42,857
Assets Transferred Out	5,058
Other Financing Sources	7,438
Other Changes to Equity	(3,623)
<b>Net Results of Operations</b>	(\$8,629)
Prior Period Adjustments	(15,733)
<b>Total Changes in Cumulative Results of Operations</b>	(\$24,362)
<b>Changes in Net Position:</b>	
Increase (Decrease) in Appropriated Capital	\$38,962
<b>Total Changes in Net Position</b>	\$38,962
Net Change in Net Position	\$14,600
Net Position, Beginning of Period	\$248,887
<b>Net Position, End of Period</b>	\$263,487

The accompanying notes are an integral part of these statements

U.S. Geological Survey  
 Combined Statement of Budgetary Resources  
 For the year ended September 30, 2000  
 [Dollars in thousands]

<b>Budgetary Resources:</b>	
Budget Authority	\$817,192
Unobligated Balances, Beginning of Period	79,823
Spending Authority from Offsetting Collections	413,876
Adjustments	(168)
<b>Total Budgetary Resources</b>	<b>\$1,310,723</b>
<hr/>	
<b>Status of Budgetary Resources:</b>	
Obligations Incurred	\$1,224,922
Unobligated Balances Available	68,679
Unobligated Balances Not Available	17,122
<b>Total Status of Budgetary Resources</b>	<b>\$1,310,723</b>
<hr/>	
<b>Outlays:</b>	
Obligations Incurred	\$1,224,922
Less: Spending Authority from Offsetting Collections & Adjustments	(420,862)
Obligated Balance, Net, Beginning of Period	123,260
Less: Obligated Balance, Net, End of Period	(130,014)
<b>Total Outlays</b>	<b>\$797,306</b>

The accompanying notes are an integral part of these statements

U.S. Geological Survey  
 Combined Statement of Financing  
 For the year ended September 30, 2000  
 [Dollars in thousands]

<b>Obligations and Nonbudgetary Resources:</b>	
Obligations Incurred	\$1,224,922
Less: Spending Authority from Offsetting Collections & Adjustments	(420,862)
Donations Not in the Budget	0
Financing Imputed for Cost Subsidies	42,857
Transfers-Out	3,845
Exchange Revenue Not in the Budget	763
Other	7,438
<b>Total Obligations and Nonbudgetary Resources, as Adjusted</b>	<b>\$858,963</b>
<hr/>	
<b>Resources That Do Not Fund Net Cost of Operations:</b>	
Change in Goods, Services, & Benefits Ordered But Not Received	(\$13,220)
Change in Unfilled Customer Orders	(12,389)
Capitalized Costs from the Balance Sheet	8,848
Financing Sources that Fund Costs of Prior Period	(70,568)
Other	\$15,733
<b>Total Resources That Do Not Fund Net Cost of Operations</b>	<b>(\$71,596)</b>
<hr/>	
<b>Costs That Do Not Require Resources:</b>	
Depreciation	\$19,184
Bad Debt Expense	(1,365)
Revaluation of Assets and Liabilities	1,677
Disposition of Assets, Net	2,153
Other	685
<b>Total Costs That Do Not Require Resources</b>	<b>\$22,334</b>
<hr/>	
<b>Financing Sources Yet to be Provided</b>	<b>\$42,567</b>
<hr/>	
<b>Net Cost of Operations</b>	<b>\$852,268</b>
<hr/>	

The accompanying notes are an integral part of these statements



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# Notes to Financial Statements

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## **Note 1. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES**

### **A. Basis of Accounting and Presentation**

These financial statements have been prepared to report the financial position, net cost of operations, changes in net position, budgetary resources, and statement of financing of the U.S. Geological Survey (USGS) as required by the Chief Financial Officers Act of 1990, as amended by the Federal Financial Management Reform Act of 1994. The financial statements have been prepared from the books and records of the USGS in accordance with generally accepted accounting principles, as promulgated by the Federal Accounting Standards Advisory Board, the formats prescribed by the Office of Management and Budget Bulletin 97-01, as amended, and accounting policies and procedures of the USGS.

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 goods and services are received, without regard to receipt or payment of cash. Included are all funds and accounts under USGS control and allocations from other Federal agency appropriations transferred under specific legislative authority. Transactions affecting budgetary resources are recorded concurrently, facilitating compliance with legal constraints and controls over the use of Federal funds. Also, the Statement of Budgetary Resources contains intrabureau financial transactions for the USGS that have not been eliminated.

### **B. Reporting Entity**

The USGS 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 current 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.

### **C. Revenues and Other Financing Sources**

The USGS receives annual, multiyear, and no-year appropriations for mission programs. Most of the budget authority is received through the annual appropriation, “Surveys, Investigations, and Research.” Additional budgetary resources are available for goods and services furnished on a reimbursable basis. The USGS has specific legislative authority to record accounts receivable from non-Federal customers under reimbursable agreements as budgetary resources. The USGS also has authority to receive contributions from outside organizations to perform work desired mutually by both parties. In addition, the USGS receives rental receipts for providing quarters at remote locations. Revenues are recognized when goods have been delivered or services rendered. Revenues received in advance of performance are recorded as liabilities until actually earned.

### **D. Funds with the U.S. Treasury and Cash**

All cash disbursements are processed through the Department of Treasury (Treasury). Cash collections from product sales are received at various sites nationwide and deposited locally in commercial banks designated as Treasury General Account Depositories. Receipts from joint funding agreements with State and local governments are processed through the Treasury’s Lock-Box bank in Atlanta, Ga. Bureau cash balances are reconciled monthly with Treasury Report 6653, Undisbursed Appropriation Account Ledger. Cash balances held outside of Treasury are not material. Further details on fund balances with Treasury are contained in Note 2.

## **E. Foreign Currency**

The USGS maintains small balances of foreign currencies to be used to make payments in foreign countries. Those balances are reported at the U.S. dollar equivalent using the exchange rate in effect on the last day of the reporting period.

## **F. Inventories**

The USGS has inventories of supplies and materials used for normal agency operations and inventories of maps, map products, and hydrologic equipment held for sale. Costing methods that approximate historical cost are used to value inventories. General ledger balances are adjusted at yearend. See Note 5 for additional information concerning inventories.

## **G. Property and Equipment**

Property and equipment consist of buildings, structures, land, and equipment. In general, building and structures are capitalized if the acquisition cost is \$50,000 or more and depreciated by using the straight-line method of depreciation over a useful life of 30 years. Equipment is capitalized at cost if the original acquisition amount is \$15,000 or more and the asset has an estimated service life of 2 years or greater. Depreciation is recorded by using the straight-line method. Equipment with an acquisition cost of less than \$15,000 is expensed when purchased. See Note 6 for additional property and equipment information.

## **H. Prepaid and Deferred Charges**

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.

## **I. Liabilities**

Liabilities represent the amount of monies or other resources that are likely to be paid by the USGS as the result of past transactions or events. However, no liability can be paid by the USGS absent an appropriation. Liabilities for which an appropriation has not been enacted are, therefore, classified as liabilities not covered by budgetary resources, or unfunded liabilities, and there is no certainty that an appropriation will be enacted. Also, liabilities arising from other than contracts can be abrogated by the Government, acting in its sovereign capacity.

## **J. Annual, Sick, and Other Leave**

The USGS recorded an unfunded liability for accrued annual leave. This balance is adjusted at yearend to reflect current leave earned but not taken. Sick leave and other types of nonvested leave are expensed when used.

## **K. Retirement Plan**

USGS employees participate in the Civil Service Retirement System (CSRS) or the Federal Employee Retirement System (FERS), to which the USGS makes matching contributions. The consolidated financial statements do not report CSRS or FERS assets or accumulated plan benefits. Managing and reporting such amounts are the responsibility of the Office of Personnel Management (OPM).

The USGS recognizes its share of the expense of employee benefit programs and future pension outlays incurred by the OPM and the imputed financing source applicable to those expenses.

## NOTE 2. FUND BALANCE WITH TREASURY, CASH, AND OTHER MONETARY ASSETS

### Fund Balance With Treasury, Cash, and Other Monetary Assets at September 30, 2000

[Dollars in thousands]

Fund Balance:		
Appropriated Funds		\$163,096
Working Capital Fund		57,024
All Other		<u>4,426</u>
Subtotal		\$224,546
Cash		2
Other Monetary Assets (Foreign Currency)		<u>45</u>
Total Fund Balance, Cash, and Other Monetary Assets		<u><u>\$224,593</u></u>

The fund balance with Treasury represents the total of USGS unexpended account balances. The unexpended funds consist of obligated funds that are designated for goods and services ordered but not received, or received but not yet paid. In addition, depending on budget authority, unobligated funds either have restrictions placed on their availability for obligation or are available for continued obligation. Treasury maintains fund balances in specific USGS accounts and in the parent accounts of Federal agencies that have allocated funds to the USGS.

The cash amount includes change-making funds maintained in offices where maps are sold over the counter.

The foreign currency amount consists of two Treasury foreign transaction accounts maintained in the Paris and New Delhi overseas disbursing offices.

## NOTE 3. ACCOUNTS RECEIVABLE BILLED

### Accounts Receivable Billed at September 30, 2000

[Dollars in thousands]

	Public	Federal
Accounts Receivable	\$25,392	\$3,163
Less: Allowance for Doubtful Accounts	<u>4,406</u>	<u>—</u>
Accounts Receivable, Net	<u><u>\$20,986</u></u>	<u><u>\$3,163</u></u>

Accounts receivable represent amounts owed to the USGS from other Federal agencies and from the public. 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" 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 allowance for doubtful accounts was calculated on the basis of a review of outstanding billed receivables and includes an estimated percentage for uncollectible unbilled receivables.

The calculation of the allowance for public receivables considered anticipated increased collections and identification of uncollectible debts through referrals of eligible delinquent debts to Treasury under the Debt Collection Improvement Act (DCIA).

The calculation of the allowance for Federal receivables considered improved collections of delinquent bills owed by the Department of Defense (DOD) agencies through a coordinated effort with DOD's Defense Finance and Accounting Service.

#### NOTE 4. ACCOUNTS RECEIVABLE UNBILLED

The USGS has specific legislative authority to enter into reimbursable agreements to perform cooperative work in advance of payment. Accounts receivable unbilled includes amounts that have been earned but not yet billed to and collected from customers under reimbursable agreements. Billings are prepared in accordance with terms of the reimbursable agreements, which can be quarterly, semi-annually, or annually. Many agreements have performance periods ending in September, with bills for collection prepared in the first month of the new fiscal year.

#### NOTE 5. INVENTORY

Inventory includes maps, map products, hydrologic equipment, and raw materials. Maps and map products are located at the USGS Rocky Mountain Mapping Center in Denver, Colo., and at nine Earth Science Information Centers across the United States. Map and map product values are based on actual physical yearend counts.

The hydrologic equipment inventory of the USGS is located at the Hydrologic Instrumentation Facility (HIF) at the Stennis Space Center in Mississippi. Products located at the HIF can be sold only to Federal agencies. A physical yearend inventory was taken at the HIF, and an adjusting entry was made on the basis of the results.

##### Inventory at September 30, 2000

[Dollars in thousands]

Published Maps, Finished	\$7,407
Hydrologic Equipment, Finished	<u>7,123</u>
Total Finished Inventory	\$14,530
Raw Materials	1,058
Total	<u>\$15,588</u>

#### NOTE 6. PROPERTY AND EQUIPMENT, NET OF DEPRECIATION

##### Property and Equipment, Net at September 30, 2000

[Dollars in thousands]

	Acquisition Value	Accumulated Depreciation	Net Book Value
Land	\$378	—	\$378
Structures and Facilities	120,139	\$57,963	62,176
Equipment	<u>215,330</u>	<u>131,081</u>	<u>84,249</u>
Total	<u>\$335,847</u>	<u>\$189,044</u>	<u>\$146,803</u>

Of the \$189,044,000 in accumulated depreciation, \$19,184,000 was expensed in fiscal year 2000.

#### NOTE 7. ACTUARIAL LIABILITIES

The USGS has recorded an unfunded actuarial liability for the expected future cost for death, disability, and medical claims under the Federal Employees Compensation Act. The Department of Labor provided the data for this liability.

## NOTE 8. ESTIMATED FUTURE LIABILITIES

Estimated future liabilities represent removal and restoration costs of abandoned sites. The USGS has a legal liability to remove equipment and restore the land for abandoned data collection stations, observation well sites, and river cableway sites.

## NOTE 9. CONTINGENT LIABILITIES

The USGS has certain contingent liabilities that may eventually result in the payment of substantial monetary claims to third parties. The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 requires Federal agencies to report sites where hazardous wastes are or have been stored, treated, or disposed of and also requires responsible parties, including Federal agencies, to clean up releases of hazardous substances.

The management of the USGS, in consultation with the U.S. Department of the Interior Solicitor, believes that this and other such claims will not materially affect the future financial condition of the USGS. According to the Solicitor, there are no other contingent liabilities that materially affect the financial position or results of USGS operations.

## NOTE 10. UNEXPENDED APPROPRIATIONS

### Unexpended Appropriations at September 30, 2000

[Dollars in thousands]

Unobligated	\$85,800
Undelivered Orders	<u>103,310</u>
Unexpended Appropriations	<u>\$189,110</u>

## NOTE 11. OPERATING EXPENSES

### Operating Expenses by Object Classification at September 30, 2000

[Dollars in thousands]

Personnel Services	\$636,090
Contractual Services	228,882
Grants and Subsidies	83,743
Operating Leases	69,078
Equipment Not Capitalized	53,506
Supplies and Materials	45,157
Travel and Transportation	44,223
Communications Rental	23,813
Printing and Reproduction	5,135
Other Expenses	<u>147</u>
Total	<u>\$1,189,774</u>

## **NOTE 12. REVENUES EARNED**

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 cooperators represent about half of the total cost; the USGS pays the remaining half of the total cooperative project's 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.

## **NOTE 13. INTEREST AND PENALTIES**

This item represents interest and penalties that were assessed in the prior year but waived during the current fiscal year. In accordance with Title 4, Part 102, Section 13(g) of the Code of Federal Regulations (4 CFR 102.13(g)), an agency has the right to waive the collection of interest on a debt or any portion of a debt that is paid within 30 days after the date on which interest began to accrue.

# Required Supplemental Stewardship Information

## Research and Development Annual Stewardship Information

Federal investment in research and development comprises expenses for basic research, applied research, and development that are intended to increase or maintain national economic productive capacity or yield other benefits. Expense data are expressed in nominal dollars for the fiscal year 2000.

Following is a summary of stewardship data for the U.S. Geological Survey (USGS) for the fiscal year ending September 30, 2000.

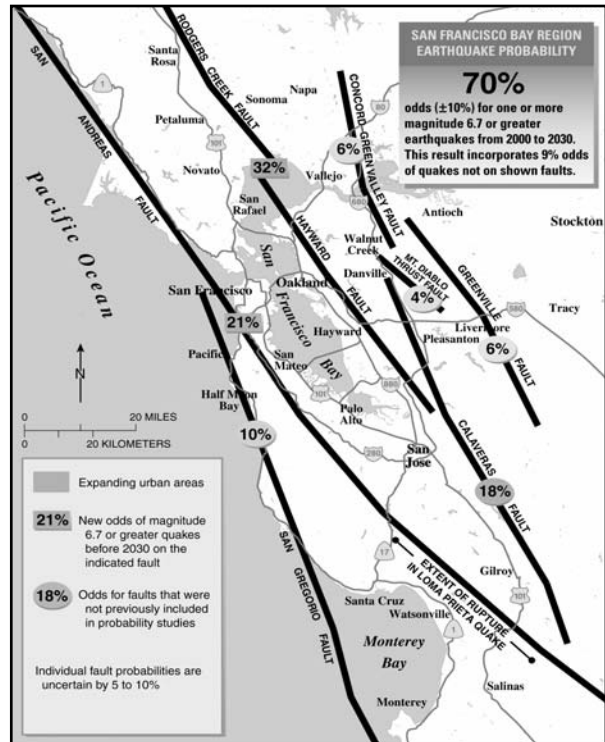
Program expenses (\$millions)	FY 2000	FY 1999
Basic Research	\$63	\$78
Applied Research	656	672
Development	53	39
Total	\$771*	\$789

\*Numbers do not add because of rounding.

### Basic Research

#### Earthquake Probabilities for the San Francisco Bay Region

In October 1999, the USGS released the results of a Working Group study giving a 70 percent probability of at least one magnitude 6.7 or greater earthquake, capable of causing widespread damage, striking the San Francisco Bay region before 2030. The report is based on research conducted since the 1989 Loma Prieta event and is far more comprehensive than the earlier, 1990, probability estimate. One of the major differences is that the new Working Group analyzed five additional faults (Calaveras, Concord-Green Valley, Mount Diablo, Greenville, and San Gregorio); authors of the 1990 study considered only the San Andreas and Hayward-Rodgers Creek faults. Additionally, the new assessment was not restricted to earthquakes of magnitude 7 or greater, as the 1990 assessment had been, but instead incorporated the potential for smaller earthquakes. This change was



The threat of earthquakes extends across the entire San Francisco Bay region, and a major quake is likely before 2030. Knowing this will help people make informed decisions as they continue to prepare for future quakes.

implemented so that an event comparable to the magnitude 6.7 Northridge earthquake, which killed 57 people and caused more than \$20 billion in damage, would be taken into account. The Working Group's assessment of the likelihood of moderate sized earthquakes in the bay region found an 80 percent chance of one or more quakes having magnitudes of 6 to 6.6 occurring before 2030.

Conclusions from the Working Group's 2-year effort are presented in USGS Open-File Report 99-517, "Earthquake Probabilities in the San Francisco Bay Region: 2000 to 2030—A Summary of Findings," which is available only online at <http://geopubs.wr.usgs.gov/open-file/of99-517/>. These results were formally presented at a conference of the Association of Bay Area Governments held to commemorate the 10th anniversary of the Loma Prieta earthquake.

## Wildlife

Basic research is fundamental to applications in new fields of research and conservation. Several examples are listed below:

- USGS researchers have worked on immuno-contraception techniques in deer that can have wide application for many wild grazing species and their control in suburban regions
- DNA analysis of hair and scat from bears in Glacier National Park, Mont., is providing a scientific foundation for noninvasive studies of bears and their family relationships and population dynamics
- Systemic analysis of mammal collections, also using basic DNA technology, in the National Museum of Natural History will provide a foundation for genetic typing and basic reassessment of mammal species

## Climate Change

The USGS is a leader in researching the role of vegetation growth, erosion, and sedimentation in the sequestration of carbon in sediments because understanding climate change requires study of the carbon cycle; wetlands, estuaries, bottomland forests, and Arctic tundra have the potential to process large quantities of carbon over time. USGS biologists participate in the U.S. Global Change Research Program by conducting research in six general fields: coastal and interior wetlands, Western mountains, arid lands, sensitive species and island ecosystems, bird and habitat interactions, and watershed biogeochemistry. Specific projects include the effects of climate change



USGS scientists collecting samples of vegetation for ecosystem research.

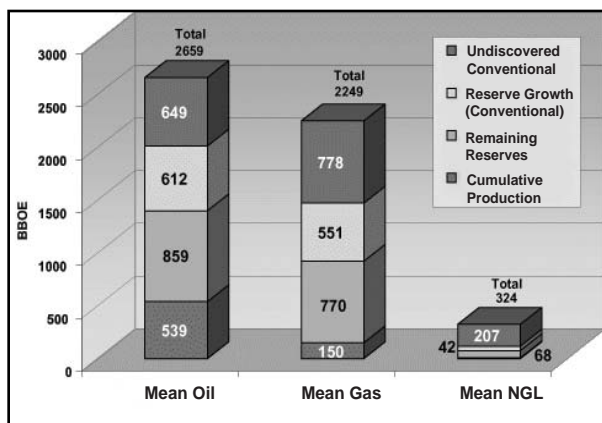
on Great Lakes wetlands, the response of desert vegetation to climate change in the arid Southwest, sea-level rise and its effects on Atlantic Coast migratory birds, and the effects of climate change on carbon and nitrogen cycles in national parks. The results of these studies have been used in the recent National Assessment of the Impacts and Consequences of Climate Change to provide a better understanding of regional ecosystem response to climate change. USGS research corroborates suspected loss of coastal wetlands as sea level rises, the likely increase of woody plants and loss of desert plants under a wetter climate, alteration of migratory waterfowl habitat, and regional shifts in nitrogen and carbon availability.

## Energy Resources

The USGS World Energy Assessment Team released the “U.S. Geological Survey World Petroleum Assessment 2000—Description and Results” as USGS Digital Data Series DDS-60 on June 12, 2000; it is available online at <http://greenwood.cr.usgs.gov/energy/WorldEnergy/DDS-60/>. The team estimated the volume of conventional oil and gas, exclusive of the United States, that may be added to the world’s reserves in a 30-year timeframe (1995–2025). The report provides detailed analyses of 246 geologically based assessment units largely in terms of known petroleum volumes and geologic potential for new petroleum discoveries. For each assessment unit, allocations of undiscovered resources were made to countries, geologic provinces, regions, and offshore areas.

The team estimated that, exclusive of the United States, the world’s conventional oil endowment is 2,659 billion barrels (of which 539 billion barrels has already been produced); the world’s conventional natural gas endowment is 2,249 billion barrels of oil equivalent (150 billion BOE already produced); and the world’s endowment of natural gas liquids is 324 billion barrels. A significant finding is that potential additions to reserves from reserve growth are nearly as large as the estimated undiscovered resource volumes; reserve growth is the increase in estimates of ultimate recovery as a field is explored. Overall, the USGS reported a 20 percent increase in undiscovered oil and a slight decrease in undiscovered natural gas, compared with the results of its last world assessment in 1994. The greatest potential for new discoveries is in the offshore regions of the world.





Mean estimates of the world's (exclusive of the United States) conventional endowment of oil, gas, and natural gas liquids. In billions of barrels of oil equivalent (BBOE). From the 2000 world petroleum assessment in USGS Digital Data Series DDS-60.

#### Wells at Risk from MTBE

Methyl tertiary butyl ether (MTBE) is a chemical that is added to gasoline to raise its oxygen content and to reduce the atmospheric pollution associated with automobile emissions. USGS and Oregon Graduate Institute scientists have developed a way to estimate the extent of ground-water damage from MTBE leaking from underground fuel storage tanks; their report was published in the web version of the journal *Environmental Science and Technology*. USGS scientists stressed in the report that there is no way to determine exactly how many community wells may be at risk because data are unavailable in some States. According to the study, States that collect MTBE data report that low levels of the gasoline additive may affect one-third of their community wells.

#### Customer Feedback

"I am a farmer, Baker County Commissioner, and Vice-Chairman of the newly formed Flint River Water Policy Development Association. Your web site is a tremendous source of info to me. I find it very gratifying in these trying times that you have quietly over the years compiled this invaluable storehouse of data that is so important to our State. Keep up the good work."

—W. Lucius Adkins

## Applied Research

### Fisheries and Aquatic Resources

USGS scientists investigate fish in many habitats. In Chesapeake Bay, fish kills, the appearance of ulcerated lesions, and indicators of compromised immune systems have given rise to concerns about fish health. USGS scientists conducted surveys in tributaries containing nutrient-rich runoff to examine the connection between land use and the health of aquatic resources. These surveys led to the discovery of a fungus that was responsible for fish lesions.

The Atlantic salmon has been a candidate for listing as an endangered species. Before adequate restoration plans can be developed, a better understanding of the populations of Atlantic salmon is needed. USGS researchers have done an exhaustive sampling of Atlantic salmon populations, not only across the Atlantic Ocean, but also within selected rivers in Maine. Findings of a distinct North American strain and also of isolated populations within certain rivers aid managers in selecting rehabilitation strategies.

Hatcheries have been used to supply Pacific salmon in areas where natural reproduction is insufficient. However, evidence exists that interactions between wild salmon and hatchery-produced salmon negatively affect the wild fish. USGS researchers are looking at the effects of the hatchery-reared fish in competing for resources with wild fish and whether there is a loss of fitness in young salmon that may be offspring from wild fish mating with hatchery fish.



USGS scientist injecting adult female fish with gonadotropin-releasing hormone (GnRH) to generate in-tank spawning.

## Wildlife

Research by USGS scientists can be applied to solve wildlife problems. Several examples are described below.

The desert tortoise was listed as a threatened species in 1990 by the U.S. Fish and Wildlife Service. One cause for declines in desert tortoise populations is predation on juveniles by common ravens, predatory birds native to the Mojave Desert, Calif. USGS researchers are studying the effects of raven predation on desert tortoise populations. The data will be used to evaluate the need for management actions to protect tortoises.

The North American Breeding Bird Survey has been in existence since 1966 and provides a continent-wide program to monitor the status of North American bird populations. It is coordinated by the USGS Patuxent Wildlife Research Center in Laurel, Md., in partnership with the Canadian Wildlife Service. Data are collected by volunteers along nearly 3,000 routes on a single day each year in the local breeding season. The survey provides basic data that are applied to management decisions by State and Federal conservation agencies. A Peer Review Panel gave 31 recommendations about the survey to the Patuxent center in February 2000, and the USGS is implementing them.

The breeding ecology research on the American black duck provides direct application for waterfowl conservation. The black duck lives in eastern North America, and its population had shown a long-term decline until the early 1980's.



USGS scientists engaging in a black duck survey.

Some long-term research projects are continuing to produce important information. After the Exxon *Valdez* oil spill, breeding success studies of the Barrow's goldeneye waterfowl were initiated. This work continues and provides important information for State and Federal wildlife management. Work on restored wetlands in the Central Valley of California provides data on waterfowl success and also valuable insights into the new field of restoration ecology. USGS research on amphibians is fundamental to understanding their status while also illustrating applied management techniques and the results of changing land-use activities.

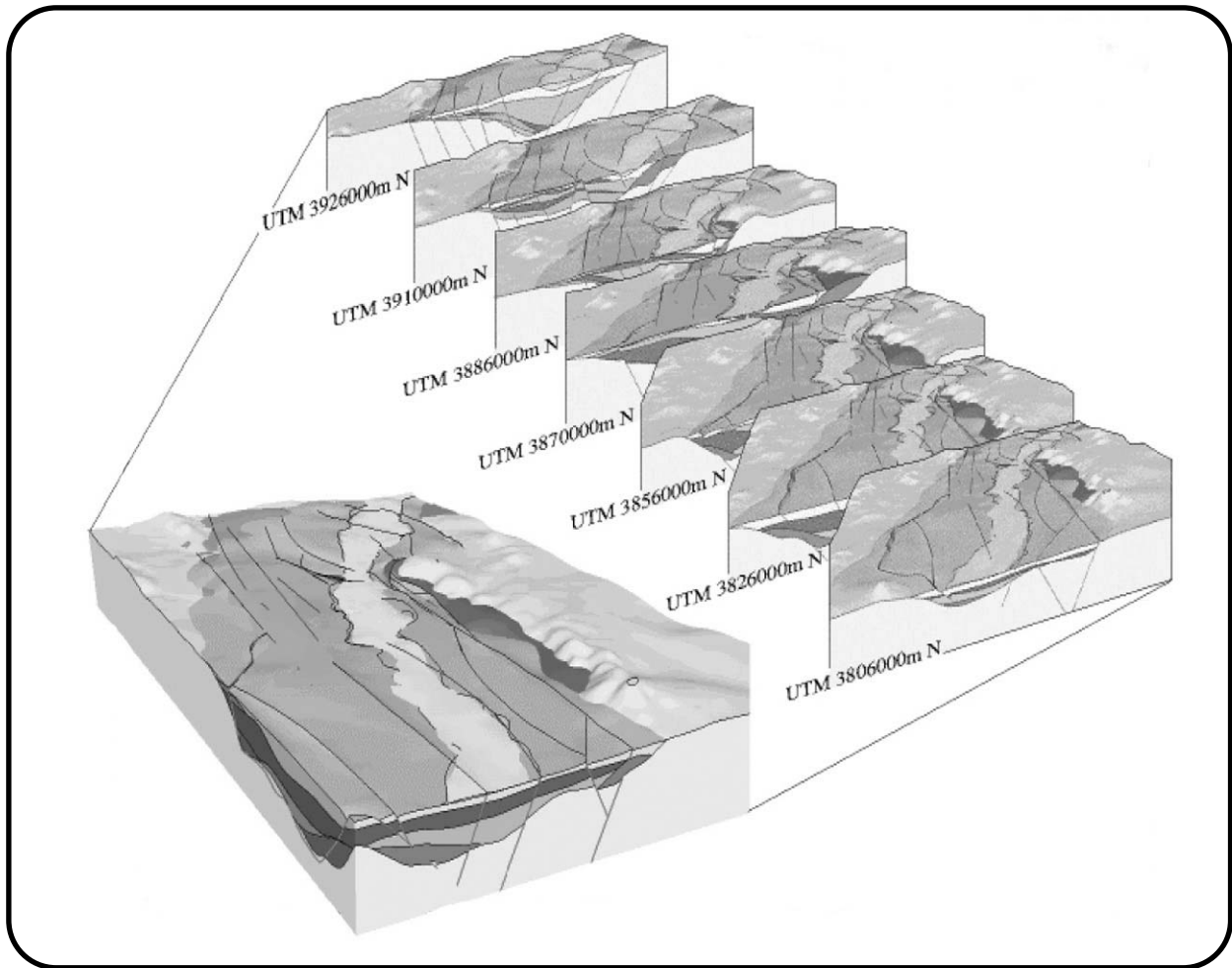
## National Cooperative Geologic Mapping Program

Recent geophysical surveys and geologic mapping provide important information about detailed patterns of buried faults that offset the Santa Fe Group aquifers in the Middle Rio Grande Basin. The organization of this effort dovetails geologic mapping supported by all three components of the National Cooperative Geologic Mapping Program: FEDMAP, STATEMAP, and EDMAP. Students supported under EDMAP work closely with geologists from both the USGS and the New Mexico Bureau of Mines and Mineral Resources. The new surface and subsurface data contribute to a three-dimensional model of the basin structure. The model will allow water allocation policies to be formulated on a more factual and technically rigorous basis and will facilitate more credible forecasts of the possible effects of various water-use projections for Albuquerque.

## Coastal and Marine Geology Program

The USGS, in cooperation with the U.S. Army Corps of Engineers, is producing geologic maps of the sea floor along the south shore of Long Island, N.Y. The maps are being used in efforts to mitigate significant and widespread coastal erosion. The economic importance of this area is substantial. Approximately \$2.8 billion worth of real estate and a tourist industry worth \$1.5 billion annually are dependent on the region's recreational beaches, which are undergoing rapid erosion.

Researchers are determining regional-scale sand resource availability for planned beach-nourishment programs and investigating the roles that the inner shelf morphology and geologic framework play in the evolution of this coastal region. Information collected is being used by the Corps of Engineers to assess the sand resource potential and to evaluate the effect that extraction of this resource might have on adjacent beaches.



Three-dimensional model of the geologic framework for ground-water resources near Albuquerque, N. Mex.

## West Nile Virus

The West Nile virus can cause encephalitis in humans and also threatens the health of animals and birds, especially crows. It is transmitted through the bite of an infected mosquito. The spread of the West Nile virus into the Western Hemisphere was first documented in the fall of 1999 in the New York City area.

Since the beginning of this outbreak, USGS scientists have assisted colleagues at the Division of Vector-Borne Infectious Diseases of the Centers for Disease Control and Prevention (CDC) in tracking the West Nile virus. As a result of continuing investigations with the CDC, USGS scientists were poised to respond to this outbreak and were able to incorporate the epidemiological and epizootological data on the outbreak into a geographic information system (GIS) for display and analysis. The information has been compiled to produce graphical displays and animations showing the pattern and spread of the outbreak.

The National Atlas of the United States published maps from reports of the West Nile Virus Surveillance System, 2000. The CDC requested timely publication of these maps to help inform citizens and public health officials about the geographic extent of the virus in mosquitoes, animals, and humans. The web site of the National Atlas was updated regularly to deliver new dynamic interactive maps, multimedia maps that illustrated West Nile virus occurrences over time, and useful printable maps. The web site is at <http://nationalatlas.gov/virusmap.html>.



Scientists performing necropsy on crow to test for the West Nile virus.

Scientists from the USGS National Wildlife Health Center in Madison, Wis., used their specialized skills in capturing wild birds and sampling their blood to monitor the spread of the virus in 20 States throughout FY 2000 and helped public health officials manage this important new public health threat. Surveillance of mosquito and bird populations is used to detect West Nile virus infection, to identify the species of mosquitoes and birds carrying the infection in a particular area, and to monitor the prevalence of the virus in a given area.

## National Hydrography Dataset

With the opening of the 21st century, the American public had a new way to dip into a rich stream of information about the Nation's surface waters. Led by the USGS and the Environmental Protection Agency (EPA), with contributions from several State and Federal agencies, the initial release of the National Hydrography Dataset (NHD) was made available online (<http://nhd.usgs.gov/>) in January 2000. The NHD contains comprehensive and detailed data about America's surface waters from the streams of the Virgin Islands to the farm ponds of Illinois and the mountain lakes of Montana. As anticipated, individuals, businesses, and all levels of government from across the country have tapped into this new digital resource. The NHD assigns unique identifiers for each type of the country's surface waters, such as lakes, ponds, streams, rivers, springs, and wells. Thus, each person who uses the dataset can link and share information within one consistent and compatible body of data representing water bodies in every corner of the country. The NHD is already playing a role in helping people throughout the country to better understand, use, protect, and improve our water resources. Examples of organizations that have used the NHD include—

- State departments of natural and water resources, geological surveys, and environmental protection, conservation, and transportation agencies
- Local water authorities, irrigation districts, county GIS departments, metropolitan park commissions, and conservation districts
- Public libraries
- Universities
- Federal agencies and Tribal entities
- Private consulting firms
- Nonprofit groups, such as the Nature Conservancy

Individuals from these organizations accessed the information to assess a subbasin for trout subspecies



The National Hydrography Dataset contains comprehensive data about America's surface waters from the streams of the Virgin Islands to the farm ponds of Illinois and the mountain lakes of Montana.

viability, link hydrography to other features on a national level, study nonpoint pollution in the Tennessee Valley, study the landscape ecology of the Everglades, model watersheds in Arkansas, teach hydrologic engineering, monitor water quality in Virginia, analyze crop production in watersheds, conduct a regional environmental monitoring and assessment program, estimate flood hazards, study mining and water chemistry in semi-arid environments, and assess a subwatershed in Oregon.

The National Hydrography Dataset is a unique information source that can meet the needs of those working nationally, regionally, or within one State, urban area, or a single stream. This is the first resource that can readily provide hydrographic information that is as comprehensive or specific as required by the user of the data.

## Development

### National Land Cover Dataset

The USGS and the EPA teamed up to compile the first national dataset of land cover using satellite imagery. The National Land Cover Dataset (NLCD) shows forests, grasslands, agricultural activities, and urban areas in the 21 classes of land cover portrayed at a resolution of 30 meters (98 feet), the most detailed

land cover information ever mapped for the conterminous United States. Land cover information is vital to the informed management of natural resources; its uses include modeling pesticide runoff, characterizing watershed hydrology, mapping wildlife habitat, identifying areas prone to insect-borne diseases, planning disaster response, and siting towers for the wireless communications industry.

### Fisheries and Aquatic Resources

Fishery researchers are developing methods for captive propagation of freshwater mussels. The United States has the most diverse freshwater mussel fauna in the world, but many species are threatened because of extensive modifications of the habitats in our Nation's waterways. The USGS has developed methods to artificially propagate mussel populations and assure their survival.

Many species of fish require passages around dams to reach important habitats. The USGS tested labyrinth weirs installed in a prototype seven-pool section of a fish ladder. Migrating American shad were individually tagged with passive integrated transponder (PIT) tags so their progress could be detected. Initial results suggested improved performance over more traditional designs.



USGS staff taking biological data and attaching passive integrated transponder (PIT) tags to American shad to evaluate their passage in a prototype labyrinth weir fish ladder in May 2000.

The USGS is working to make biological data more accessible to scientists, resource managers, and other customers through research and development of advanced information discovery, analysis, and delivery technologies. The goal is to make the broadest possible use and application of the vast amounts of existing biological data collected through the research and monitoring activities of USGS scientists and other sources. The USGS is leading the collaborative development of the National Biological Information Infrastructure (NBII, <http://www.nbio.gov>), which is a distributed, Internet-based network of biological data and analysis tools from many different sources. Biological datasets, information products, and data analysis tools developed by USGS scientists are made more broadly accessible for customers by including them in the NBII network. USGS scientists also lead efforts to work with partner agencies and organizations in cooperative activities that help make the significant biological data and information collected by these groups widely accessible through the NBII.

Wetland conditions such as deep mud and shallow water cause extreme logistical difficulties in transporting and operating drilling equipment and severely limit the size and range of equipment available for safe and efficient site investigations. To perform geologic investigations in wetland areas, the USGS co-developed a drilling system with Hovertechnics, Inc., and MPI Drilling, Inc., that incorporates a vibracore (also known as sonic) drill rig mounted on a hovercraft. The combined craft and drill rig is called the “Hoverprobe 2000”; it can perform continuous coring and groundwater profiling in wetlands and other previously inaccessible areas. The Hoverprobe 2000 was used in April and May 2000 to collect samples safely at a site containing hazardous waste.



The Hoverprobe 2000 co-developed by the USGS with industry partners to drill in wetland areas. The skirt at the base of the craft traps pressurized air, allowing the craft to fly over land, water, ice, snow, or mud. The drill rig can cut a hole and collect core samples to a depth of about 100 feet or it can install a monitoring well rapidly. No fluids are used or injected into the ground.

## Heritage Assets Annual Stewardship Information

Heritage assets are property, plant, and equipment that have one or more of the following characteristics: historical or natural significance; cultural, educational, or aesthetic value; or significant architectural characteristics. The most relevant facts about heritage assets are their existence and condition. Therefore, heritage assets are reported in terms of physical units. The USGS has heritage assets in two categories: museum property and scientific library collections.

### Museum Property

Data on USGS museum property were updated in 2000 and are shown in the following table.

Museum Property	FY 2000	FY 1999
Number of USGS units holding museum property	5	5
Number of other institutions holding museum property for the USGS	2	2
Objects in USGS facilities:		
Art	61	61
History	9	9
Ethnography	1	Unknown
Documents	3	Unknown
Zoology	12,414	12,414
Objects in other institutions:		
History	1	1
Zoology	26,738	25,770
Objects added this year:		
History	26	0
Zoology	<u>86</u>	<u>968</u>
Total number of objects	39,339	39,223

### Description of the Methods of Acquisition and Withdrawal of Heritage Assets

No museum objects have been withdrawn.

There were 26 "History" objects added to the collection in FY 2000. They were identified as possible museum objects as a result of a Bureauwide survey conducted in FY 2000. Representatives to the Museum Property Steering Committee recommended that they be considered USGS museum property. The committee voted to approve the recommendations.

The 86 zoological specimens added to the biological resources collections were acquired through the annual field collection process. Field collections are not performed on private property without the owner's permission.

### Condition of the Assets and Estimated Deferred Maintenance

The heritage assets are in good condition, and no maintenance has been deferred for the museum collections.

### Scientific Library Collections

#### Description of Heritage Asset Category

The U.S. Geological Survey Library collections cover all aspects of the earth sciences and related subjects. The collections are comprehensive, covering as much as possible of worldwide literature. Extensive sets of State and foreign geological survey publications, as well as publications from geological and other scientific societies, from universities and institutions, and from other government agencies throughout the world are included in the library collections. Special collections include the George F. Kurt collection of books on gems and minerals; the Alvison collection on Russian geology, minerals, and mining; extensive photographs taken during USGS field work; and field notebooks and additional material relating to USGS projects.

There are 21 libraries within the USGS, including the Library Services Group Library at the National Center (the largest library) and its three branch libraries. The libraries, with the exception of Library Services Group Libraries, serve USGS personnel in field offices, have separate administrations, and have small specialized collections.

#### **The Number of Physical Units at Yearend**

The four libraries of the USGS Library Services Group contain 1.4 million books and periodicals and 1.55 million nonbook items for a total of 2.9 million items.

Units added during the year (all 4 libraries):	42,273
Units withdrawn during the year (all 4 libraries):	9,367

#### **Methods of Acquisition and Withdrawal**

Materials are acquired from extensive exchange agreements with institutions and agencies worldwide, from research projects, and by 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.

#### **Condition of the Assets and Estimated Deferred Maintenance**

Approximately 35 percent of the collection is in good condition, 40 percent is in fair condition, and 25 percent is in poor condition. No maintenance has been deferred for the library collection.



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## Required Supplemental Information

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### Deferred Maintenance

The USGS owns assets such as land, buildings and structures (including office buildings, storage buildings, warehouses, laboratories, river cableways, and wells), equipment related to a facility, specialized research equipment, monitoring networks, roads, and vessels. These assets are mission critical, parts of which are fundamental to provide timely warnings and scientific understanding of natural hazards, to measure trends in water quality, and to provide the scientific understanding and technologies needed to support the sound management and conservation of our Nation's biological, energy, water, and mineral resources. There is, however, a significant maintenance backlog relative to these assets, arising from the lack of sufficient annual funding to fully cover maintenance expenses and from unforeseen circumstances such as hurricanes and flood damage.

The USGS defines deferred maintenance as "maintenance that was not performed when it should have been or when it was scheduled and which, therefore, was put off or delayed for a future period." It is the unfunded or otherwise delayed work required to bring a facility or item of equipment to a condition that meets acceptable codes, laws, and standards and preserves the facility or equipment so it continues to provide acceptable services and achieves its expected life. The USGS prepared a listing of deferred maintenance projects based on Departmental and Bureauwide guidance issued for the FY 2002 Five-Year Maintenance and Capital Improvement Plan.

The estimated amount necessary to correct this backlog is approximately \$50 million to \$90 million. Because the actual cost of correcting this backlog will

not be known until the work is performed and because comprehensive condition assessments have been initiated but not completed, this amount is by necessity an estimate.

The following factors were considered in arriving at this estimate:

- This estimate includes deferred maintenance for property such as buildings, cableways, gaging stations, equipment, roads, and vessels
- This estimate excludes personal property such as passenger vehicles, automated data-processing equipment, and printing presses
- This estimate excludes items such as routine maintenance (annual and cyclical) and capital improvement projects as defined in the Departmental guidance

The USGS has a formal process for periodic condition assessment surveys. It is consistent with and implements the Department of the Interior Facilities Condition Assessment Survey Guidelines, which were issued on December 2, 1999. The process requires either the completion of an annual condition survey checklist or a professional (Architect/Engineer) comprehensive condition assessment at least once each 5 years. The USGS has accelerated this latter assessment process and hopes to have assessments initiated for all major installations by September 30, 2001. Preliminary findings from the first comprehensive assessments are just now available. In the meantime, to develop the deferred maintenance estimate, the Bureau canvassed each facility and office to prepare a listing of deferred maintenance projects Bureauwide. The deferred maintenance estimate will change as the USGS continues to improve the procedures for accumulating and tracking data and completing formal condition assessments.

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## Performance Measurement

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### FY 2000 Cost Performance Report

The USGS planned to obligate approximately 16 percent of its FY 2000 appropriation for achievement of the Hazards goal and 84 percent for achievement of the Environment and Natural Resources goal. Actual obligations and expenditures for FY 2000 totaled approximately 13 percent of appropriated and reimbursable funds for Hazards and 87 percent for Environment and Natural Resources.

### FY 2000 Program Performance Report

The USGS exceeded the selected performance measures for both the Hazards and the Environment and Natural Resources mission goals for FY 2000.

#### GPRA Program Activity: Hazards

**Long-Term Goal:** Ensure the continued transfer of hazards-related data, risk assessments, and disaster scenarios needed by our customers before, during, and after natural disasters and, by 2005, increase the delivery of real-time hazards information by increasing the average number of streamgages reporting real-time data on the Internet during each quarter to 5,500 (thus reducing the time it takes to provide flood information at that site from 6–8 weeks to 4 hours) and installing 500 improved earthquake sensors (thus reducing delivery time of information on potentially damaging earthquakes from 40 to 20 minutes) to minimize the loss of life and property.

**FY 2000 Annual Performance Goal:** Develop, maintain, and improve monitoring networks and techniques of risk assessment by—

- Maintaining the baseline of data and risk assessments transferred to customers
- Increasing by 200 (to 4,700) the quarterly average number of streamgages delivering real-time data on the Internet
- Increasing by 80 the number of improved earthquake sensors to deliver real-time information on potentially damaging earthquakes to minimize loss of life and property

Performance measure	FY 98 actual	FY 99 actual	FY 00 planned	FY 00 actual	FY 01 planned	FY 02 proposed
Real-time streamgages on the Internet (quarterly average)	NA*	4,500	4,700	4,872	5,374	5,374
Real-time earthquake sensors (cumulative)	100	120	200	201	329	429

\*Not applicable, as the performance measure was changed after FY 98.

**GPRA Program Activity: Environment and Natural Resources**

**Long-Term Goal:** Ensure the continued availability of long-term environmental and natural resource information and systematic analysis and investigations needed by customers and, by 2005, develop 20 new decision-support systems and predictive tools for informed decisionmaking about natural systems.

**FY 2000 Annual Performance Goal:** Provide and improve long-term environmental and natural resource information, systematic analysis and investigations, and predictive options for decisionmaking about natural systems by—

- Maintaining 44 long-term data collection/data management efforts and supporting 2 large data infrastructures managed in partnership with others
- Delivering 995 new products from systematic analyses and investigations to our customers
- Improving and developing 6 new decision-support systems and predictive tools for decisionmaking and delivering them to customers
- Collaborating with university partners to understand natural systems and facilitate sound management practices through 248 external grants and contracts

<b>Performance measure</b>	<b>FY 98 actual</b>	<b>FY 99 actual</b>	<b>FY 00 planned</b>	<b>FY 00 actual</b>	<b>FY 01 planned</b>	<b>FY 02 proposed</b>
Decision-support systems or predictive models developed or improved and delivered to customers	5	7	6	7	7	4

**Data Verification and Validation**

Each performance measure has its own performance data collection strategy and validation hierarchy of review. In addition to the processes cited, the USGS conducts cyclical program evaluations that contribute to the validation of performance measurement.

**Performance measure and definition**

**Real-time streamgages:** Telemetry is added to existing streamgages to provide real-time flow data for National Weather Service forecasters and emergency management and response officials. The metric not only reflects the number of real-time streamgages that the USGS puts in place each year but also captures our ability to deliver hazards data to those who need it.

**Performance data sources and limitations**

**Data sources:** The USGS developed a robot program that queries each District Office web site every day, asking: “How many sites are delivering real-time data on the web right now?” This query results in a total number of gaging stations across the Nation that are delivering real-time data over the Internet at that particular moment. At the end of the quarter, all the daily values collected by the robot program are averaged together, resulting in one number that represents the “quarterly average number of gages reporting real-time data on the Internet.”

**Data limitations:** No significant performance data limitations were identified.

**Verification and validation**

**Verification:** The Water Resources Headquarters Webmaster certifies the performance data.

**Validation:** The performance measure must support specific decisions about future improvements to the streamgaging network, otherwise performance data will not be collected, compiled, or analyzed. Customers and stakeholders are engaged in the strategic planning of performance goals.

Performance measure and definition	Performance data sources and limitations	Verification and validation
<p><b>Real-time earthquake sensors:</b> Ground motion detectors are the initial instrument installed to capture and transmit real-time information.</p>	<p><b>Data sources:</b> USGS seismic network operators report installation status to the Seismic Network Manager, who reports to the Earthquake Program Manager. Performance data are captured by a physical count by in-house sources.</p> <p><b>Data limitations:</b> No significant performance data limitations were identified.</p>	<p><b>Verification:</b> The Seismic Network Manager certifies the status of installation efforts reported by the regional network operators. The coordinator of the Earthquake Hazards Reduction Program certifies the performance data and transmits them to the Director's Office.</p> <p><b>Validation:</b> The performance measure must support specific decisions about future improvements to the earthquake monitoring network, otherwise performance data will not be collected, compiled, or analyzed. Customers and stakeholders are engaged in the strategic planning of performance goals.</p>
<p><b>Decision-support systems or predictive models developed or improved and delivered to customers:</b> Decision-support tools and predictive models are broad in scope, are robust, yield either quantitative predictions about natural resources or the environment or quantitative options for land and resource management, and are used regularly by managers for informed decisionmaking.</p>	<p><b>Data sources:</b> Data on development, delivery, and use of decision-support systems and predictive models are monitored and reported by project scientists at research/field centers and are tracked through automated, electronic systems such as those at—</p> <ul style="list-style-type: none"> <li>• <a href="http://water.usgs.gov/software/">http://water.usgs.gov/software/</a> for new water models</li> <li>• <a href="http://biology.usgs.gov/science/currproj.html">http://biology.usgs.gov/science/currproj.html</a> for biological models</li> </ul> <p>Performance data are captured by a physical count by in-house sources.</p> <p><b>Data limitations:</b> No significant performance data limitations were identified.</p>	<p><b>Verification:</b> For mapping models, the Senior Program Advisor for Geographic Research and Applications verifies delivery and use by customers. For geologic models, verification is conducted by program coordinators and stakeholder representatives. For water-resource models, a technical memorandum is issued for each model. For biological models, verification occurs through national program element reviews and reviews of individual research centers.</p> <p><b>Validation:</b> Ultimately customers validate that the systems and models are acceptable and useful. The recently published National Research Council evaluation validated this performance measure in its recommendation that multiscale, multidisciplinary, integrated projects that use system modeling are the best way to address the Nation's complex natural resource problems.</p>

## Planned Improvements

The USGS will continue to build upon current measures for each of the long-term goals. The responsible Executive Leadership Team official for the long-term goal will work with the Deputy Director to finalize action plans for improving current measures and developing next generation measures. The plans will outline specific directions that will be taken in measurement development and identify levels of accountability within the USGS.



Installation of a velocity meter in Taylor Slough, Everglades National Park, Fla. The data from such meters will be used to improve the accuracy of models of water flow.

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## Customer Service

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Since 1994, the USGS has made customer service excellence a priority and a part of the way it conducts its business. The Bureau is actively collecting information about our customers, their needs, how we can better meet these needs, and how we can communicate to customers that we are listening. Each year since 1996, the USGS has published annual reports that contain examples of the ways customers are using our products to make a difference and comments from our customers. Our latest report to customers is online at <http://www.usgs.gov/customer>.

As a complement to tracking customer comments and feedback, the USGS has been piloting a common-sense approach to measuring and communicating customer information within our science programs. What we learn from these activities will be used strategically to ensure that our research continues to provide “science for a changing world.” The results of this pilot effort will be released at the web site above.

The USGS has set standards for the service we will provide to our customers. When interacting with the USGS, our customers can expect the following:

- Relevant, impartial scientific information about the natural sciences and support systems for these sciences
- Courteous and respectful treatment
- Prompt and accurate answers to questions
- Timely responses to information requests without being referred elsewhere, whenever possible
- Customer input to be considered in our plans, programs, and services
- Prompt attention to correcting mistakes and problems

To ensure that we meet these standards and provide our customers with excellent service, products, and information, the USGS has set the following customer service goals:

- Goal 1: USGS customers are satisfied with our products, information, and services.
- Goal 2: USGS products are delivered to our customers in a timely and accurate manner.
- Goal 3: Customer needs are integrated into USGS program planning and product development.

Goal 4: Products, services, and information provided by USGS to its customers make this a better world.

At the end of every calendar year, the USGS collects information that helps us assess how well we are meeting these goals. Highlights of progress for FY 2000 follow.

### National Water Information System

As part of the USGS program of disseminating water data to the public, the USGS maintains a distributed network of computers and file servers for the storage and retrieval of water data collected through its activities at approximately 1.5 million sites around the country. This system is called the National Water Information System (NWIS). Many types of data are stored in this NWIS network, including site information, time-series data (flow, stage, precipitation, chemical), peak flow, ground-water levels, and water quality.

A new tool, called NWISWeb, has been designed to provide both internal and external users of USGS water information with an easy-to-use, geographically seamless interface to the large volume of USGS water data maintained in 48 separate NWIS databases nationwide. Data are updated from the NWIS sites on a regularly scheduled basis; real-time data are transmitted to NWISWeb several times a day.

NWISWeb provides several output options: real-time streamflow, water-level and water-quality graphs, data tables, and site maps; tabular output in HTML (HyperText Markup Language) and ASCII (American Standard Code for Information Interchange) tab delimited files; and lists of selected sites and summaries with reselection for details. Data are retrieved by category of data, such as surface water, ground water, or water quality, and by geographic area. Further refinement is possible by selecting specific information and by defining the output desired. NWIS data come from all 50 States, selected territories, and border stations from 1896 to the present. Of the 1.5 million sites with NWIS data, 80 percent are wells; 350,000 are water-quality sites; and 19,000 are streamflow sites, of which over 5,000 provide real-time data. NWISWeb contains data from about 4.3 million water-quality samples and 64 million water-quality sampling results.

The USGS opened the NWISWeb site (<http://water.usgs.gov/nwis/>) to the public for customer feedback. Focus groups were conducted in August 2000 using an audience of water-resource professionals and managers from all over the country. The response from these prospective users was very positive.

### **Customer Feedback**

One participant in a focus group on the National Water Information System web site was the Director of the Colorado Water Resources Research Institute, Colorado State University. He echoed comments heard from other participants when he remarked: “[I am] absolutely thrilled with the scope and level of detail in the system .... I’ve been waiting for something like this for a long time and I will be using this in all my classes to teach students to retrieve and analyze data on water problems ... those that become familiar with this system will easily get jobs ....”

### **Print-on-Demand Topographic Maps**

In FY 2000, the USGS signed an agreement with Wildflower Productions (which was later purchased by National Geographic Maps) for print-on-demand topographic maps. Using digital elevation models (DEM’s) with scanned USGS topographic maps, customers are now able to print customized topographic maps, with boundaries of their own choosing. During calendar year 2000, 19 kiosks opened in 3 USGS Earth Science Information Centers (ESIC’s) and in 16 private-sector retail stores across the country as part of a pilot project involving the USGS and National Geographic Maps. This new tool will allow the USGS to reach more customers than ever before.

### **USGS Earth Science Information Centers**

USGS ESIC’s are located across the country to provide customers with products, information, and services of the USGS. During FY 2000, the USGS conducted a survey of walk-in ESIC customers to assess customer satisfaction with current services. The survey included questions about customers, products, and methods of customer inquiry, such as phone or mail, and was used to improve customer service.

ESIC’s are further improving customer service by using a new e-mail-based database tool to help them respond in a timely, efficient manner. In FY 2000, USGS ESIC offices participated in the design and implementation of an Answers! Database to complement the new National ESIC e-mail program of [ask@usgs.gov](mailto:ask@usgs.gov). The e-mail address makes it easy for the public to submit any question to the USGS, and the Answers! Database helps USGS staff improve response time.

### **USGS Energy Resources Program**

Scientists associated with the USGS Energy Resources Program worked closely with their customers during FY 2000 to collect information about their priorities. This information helps set future programmatic directions for Energy Resource Program projects such as the World Energy Assessment. In FY 2000 and 2001, members of the National Coal Resource Assessment Project are releasing the latest National Coal Assessment and simultaneously gathering input from customers about their priorities for the next phase of coal and coal-quality assessment studies. When the USGS worked with stakeholders of its World Petroleum Assessment, they provided support for the USGS assessment methodology and shared data that enhanced the assessment results.

### **USGS Landslide Hazards Program**

Representatives of the USGS Landslide Hazards Program met with members of the American Planning Association (APA) to determine their needs and priorities. The USGS learned that land-use planners at every level of government and private industry share a demand for appropriate-scale information on landslide hazards. In response, the USGS initiated a project with the APA to produce a practical handbook describing ways to reduce losses from landslide hazards, as well as a web site and other products that help land-use planners access and incorporate landslide information into their planning process. The USGS will also work with the APA and members of the planning community on a 2-year effort to increase the integration of landslide-hazard information into the planning process to reduce losses from landslides throughout the United States. This effort will include training sessions, maintenance of a web site, and production of reports on paper and on CD-ROM’s.

## USGS Earthquake Hazards Reduction Program

The USGS Earthquake Hazards Reduction Program, in conjunction with the Federal Emergency Management Agency (FEMA), the National Science Foundation (NSF), and the National Institute of Standards and Technology (NIST), conducted a workshop to obtain feedback on future directions for the National Earthquake Hazards Reduction Program (NEHRP). This workshop involved over 100 individuals from the earthquake hazards stakeholder community (State geological surveys, State and local governments, universities, and the private sector). Following this workshop, participants generated four separate reports, one for each of the four main goals of the NEHRP. The reports outlined recommended areas of research and anticipated products that would be most beneficial to the earthquake mitigation community. In 2000, a draft NEHRP strategic plan was prepared as a result of this meeting, and a follow-up workshop was held to present these results to the stakeholder community.

As a result of interaction with the engineering community, the USGS prepared a set of design maps for use with the NEHRP Seismic Design Provisions. Special versions of the maps were prepared and delivered in time for inclusion in the International Building Code, which was published in early 2000.

The USGS received overwhelming support from California customers for a special new product called ShakeMap. ShakeMap is a seismic monitoring software package that will offer a contoured display of the intensity of strong ground shaking in the region surrounding an earthquake. ShakeMap, when fully implemented, will be available online and will offer data in near real time (within approximately 5–10 minutes of the event). It has been made available to critical users such as the California Office of Emergency Services, the utility company Southern California Edison, the Los Angeles Water District, and even news services such as CNN. In September 2000, the head of the California Office of Emergency Services invited the USGS to talk about ShakeMap at a national meeting on seismic hazard reduction. ShakeMap has become a driver in modernizing and enhancing seismic monitoring across the United States.

## USGS Coastal and Marine Geology Program

The USGS Coastal and Marine Geology Program has worked with the Massachusetts Water Resources Authority (MWRA) through a joint funding agreement on the Boston Harbor and Massachusetts Bay Project. The results of the USGS study of Boston Harbor and Massachusetts Bay have been used to help make management decisions throughout the Boston Harbor Cleanup Program. The USGS sidescan-sonar maps of the sea floor in western Massachusetts Bay were used by the MWRA to help decide between two alternative sites for Boston's new sewage outfall.

### Customer Feedback

According to the former executive director of the Massachusetts Water Resources Authority (MWRA), "The timely production of this map saved MWRA the significant expense of geotechnical studies of the rejected site."

## USGS Online Automated Recruitment System

A USGS Bureauwide survey found that the single biggest complaint of employees was that the hiring process takes too much time. The USGS Human Resources Office has implemented its Online Automated Recruitment System (OARS). OARS enables applicants to apply online by answering multiple-choice questions instead of submitting lengthy narratives. Then on the closing date of the vacancy announcement, the system automatically determines qualifications and rates and ranks applicants. After a human resource professional verifies the information, OARS issues a list of eligible applicants to the desktop of the selecting official.

OARS has significantly reduced the length of the hiring process and has dramatically increased the average number of applications received per vacancy. The new system also provides valuable feedback on the effectiveness of our recruitment efforts. OARS is an easily accessible, user-friendly system that eliminates the laborious, time-consuming processing aspects of recruitment. The human resources staff members have more time to devote to their management advisory role, and applicants can apply quickly and easily from anywhere.



### Customer Feedback

As one applicant told us about the USGS Online Automated Recruitment System, "... the OARS web page is really, really a great relief to those of us interested in government employment. Your site says to me that USGS is an agency ahead of the curve and presents a really attractive image to people choosing careers. Thanks to you and the human resources staff, job well DONE!"

## National Atlas of the United States

The National Atlas of the United States is designed to meet the Nation's needs for authoritative and integrated geographic information. Its products and services were developed and are continuously improved on the basis of customer feedback received from correspondence and information collection activities. The growing popularity of the National Atlas web site (<http://www.nationalatlas.gov/>) is a direct result of this focus on customers. The site recently satisfied 3.6 million requests for service in a single month.

### Customer Feedback

"Wanted to let you know that a professor of environmental science that I chatted with at last week's Ecological Society of America meeting in Utah had most sincere praise for the electronic National Atlas. She said that it is so clear and easy to use and that her students really like it."

"I work in the Pesticide Education Program at Penn State University. Our program has been following the West Nile virus very closely. The maps you put on the web are awesome."

## "Ask USGS"

The USGS has expanded customer access to our information and data through new customer-friendly web sites and an "Ask USGS" information strategy designed to meet customer needs. For example:

- EarthExplorer, <http://earthexplorer.usgs.gov>, allows customers to search for and order USGS products on the web through e-commerce.
- In partnership with Microsoft, the USGS has added USGS topographic maps, called digital raster graphics, to the inventory of data that can be

downloaded at the TerraServer web site at <http://terraserver.microsoft.com/>.

- At the "Ask USGS" web site, <http://ask.usgs.gov>, customers can find answers to their natural science questions. In addition, the "Ask USGS" information strategy includes a toll-free telephone number, 1-888-ASK-USGS, providing water, hazards, biology, and mapping options, and an e-mail address, [ask@usgs.gov](mailto:ask@usgs.gov), for customer inquiries to USGS Earth Science Information Centers.

### Customer Feedback

"I don't know what it is about the USGS, but you are the nicest government agency in the country."

"Professionally, I'm a cartographer, and I've gotten amazing help on various projects from Survey folks out in Denver. I'm very impressed with you folks in Reston, now, too. Thank you so much."

## USGS and U.S. Forest Service Map Sales

Through a recently signed agreement, the USGS now sells U.S. Forest Service Visitor Maps of the National Forests and Grasslands. This one-stop shopping approach allows outdoor recreation customers to purchase Forest Service maps showing campgrounds and wildlife information at the same places where they buy USGS topographic maps showing natural and manmade features. This improved access to Government products provides better service to a growing group of map users.

## USGS Visitors' Center

The USGS Visitors' Center, located at the National Center in Reston, Va., introduces visitors to the vast array of activities and programs of the USGS. During the school year, students of all ages participate in hands-on scientific activities and guided tours. For the past 5 years, the Visitors' Center has partnered with the Reston Association Summer Camp Program to provide a science camp experience for more than 1,100 children. The Visitors' Center staff has also provided customized tours for groups such as local college professors; the Madagascar National Institute of Geography and Hydrography; students of remote sensing and photography from Athens, Greece; several Chinese delegations; and the American Society for Photogrammetry and Remote Sensing.

## **USGS Biological Resources Program**

In its fourth survey of customers, the USGS Biological Resources Program asked 772 customers to rate their satisfaction with and the importance of a number of attributes of Biological Resources Program products including overall satisfaction, courtesy, relevance, and timeliness. Results were pooled to estimate proportions. Out of 772 valid customer names, 350 responded, for a response rate of 45 percent. The survey revealed a high level of satisfaction with USGS biological products and services, as 96.2 percent of the customers were satisfied or very satisfied overall. Estimated satisfaction with different aspects ranged from 93 to 100 percent.

## **USGS Contributions to Wildfire Tracking**

In response to wildfires in the Western United States in the summer of 2000, the USGS teamed with Federal firefighting agencies and private industry to form the Geospatial Multi-Agency Coordination Group (GeoMAC). USGS mapping and GIS specialists contributed to the GeoMAC Internet mapping application, which integrates advanced digital maps, satellite images, infrared imagery from fixed-wing airplanes, GPS data, and incident reports to show the status of fires on a regional scale. Fire managers can use real-time data from the web site (<http://wildfire.usgs.gov>) to prioritize the use of wildfire suppression resources and provide for public and firefighter safety.

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## Supplemental Information–FY 2000 Accomplishments

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### Hazards

#### Volcano Monitoring

The USGS Hawaiian Volcano Observatory (HVO) continued to monitor the ongoing (since 1983) eruption of Kilauea Volcano on Hawaii Island, helping the National Park Service and County Civil Defense to keep people out of harm's way while still allowing them to enjoy the island's natural beauty. In addition to scorching lava flows, Kilauea's hazards include sulfurous vog (volcanic smog) that has debilitating respiratory effects on people, explosive eruptions caused by mixing of magma and ground water, sudden collapses into the ocean of oversteepened new lava benches, damaging earthquakes, and local tsunamis, all of which the HVO helps to assess.

At Long Valley Caldera, adjacent to a popular recreational area in California and in the path of heavily traveled West Coast air-traffic routes, USGS scientists continued to monitor the latest signs of the area's two decades of recurring volcanic unrest. By providing objective interpretation of the significance of the unrest and by openly communicating with affected communities and agencies, the USGS is reducing uncertainties about potential volcanic activity there and contributing to informed decisionmaking by private individuals, businesses, and public officials.



USGS volcanologist collecting samples of eruptive deposits at Shishaldin Volcano, Alaska.

At Mount St. Helens in Washington, the USGS Cascades Volcano Observatory and its partner the University of Washington kept a vigilant eye on the volcano, monitoring the intermittent seismic swarms and small mudflows that still persist there long after the catastrophic eruption of 1980. With a heavily visited U.S. Forest Service visitor center now situated a few miles north of the summit crater excavated in the explosive 1980 eruption, continuing watchfulness is warranted.

The interagency Alaska Volcano Observatory operated its far-flung monitoring activities at 21 Alaskan volcanoes, watching carefully for signs of explosive eruptive activity that could produce ash clouds damaging to engines of jet aircraft traversing North Pacific airspace. Shishaldin Volcano, which last erupted in April of 1999 and is one of Alaska's most active volcanoes, required extra attention as signs of restlessness continued.

#### Geomagnetism

A new World Magnetic Model (WMM) was completed in FY 2000; it resulted from a joint effort by the U.S. Geological Survey and the British Geological Survey. This mathematical model of the Earth's magnetic field depicts the field strength and direction in 2000 and predicts the secular variation of the field 5 years into the future (2000–2005); it characterizes only the part of the Earth's magnetic field that is generated by the Earth's fluid outer core. The model was based on data from USGS geomagnetic observatories and satellite observations.

The new model has many applications in navigation, spatial orientation, surveying, and research. The model has been provided to the National Imagery and Mapping Agency (NIMA) for U.S. Department of Defense purposes. NIMA will redistribute the model to NATO (North Atlantic Treaty Organization) countries. The model has also been provided to the GPS-NAVSTAR Program Office for distribution to government and private GPS interests; the global positioning system (GPS) relies on a group of navigation satellites called NAVigation Satellite Timing And Ranging (NAVSTAR). This magnetic field model is incorporated into every GPS receiver used by the Department of Defense.



Testing a solar-powered radio telemetry system for remote transmission of real-time landslide data. Photograph by Mark Reid, USGS.

### Landslide Hazards

Quick response and continuing real-time monitoring of landslides by the USGS have served as a catalyst and model for the deployment of a permanent monitoring and warning system by the Colorado Department of Transportation as part of its landslide hazards mitigation efforts. In the 3 years following the DeBeque Canyon, Colo., landslide in 1998, USGS monitoring has provided data essential to better understand and identify the potential significant hazards posed by this unique feature to Interstate 70, the Colorado River, and a major railroad corridor. A large study for mitigation of this hazard is being funded by the Federal Highway Administration and includes cooperative efforts by the Colorado Department of Transportation, the Colorado Geological Survey, the USGS, and a private consultant.

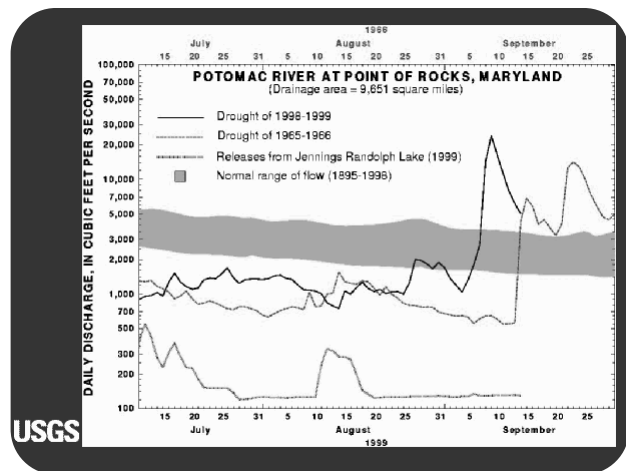
Similarly, monitoring at Rio Nido, Calif., and U.S. Highway 50 east of Placerville, Calif., and at Woodway, Wash. (near Seattle), is providing key information for dealing with landslide hazards in those areas. Using real-time data collected during landslide activity, USGS scientists have determined relations that distinguish slow movement from the onset of catastrophic failure of landslides along Highway 50 in California. This finding represents a considerable

advance in the ability to provide short-term forecasts of hazardous landslide activity.

At the request of Congress, a strategy has been proposed that will provide assessment and mitigation of the landslide hazards in the United States. The strategy includes strong collaboration with other Federal and State agencies, academia, and the private sector.

### Real-Time Streamflow Data on the Internet

During FY 2000, the USGS significantly improved its delivery of real-time streamflow data on the Internet. During the first quarter of FY 2000, the USGS was serving real-time streamflow data on the Internet from about 4,500 locations (based on a quarterly average). By the end of the third quarter of FY 2000, real-time streamflow data were available for an average of 4,800 locations. This increase is partially due to the addition of some new real-time streamflow gaging stations, but it is also due to improvements that the USGS has made in the reliability of its data delivery systems, including backup computers that keep the vital data flowing to emergency management officials even when floods and hurricanes disrupt electrical service.



A real-time hydrograph, available from the USGS on the Internet at <http://water.usgs.gov/realtime.html>.

### Customer Feedback

Just a few words to express my thanks and gratitude ... for the wonderful data that are available to the public. Our research laboratory has benefited for a number of years from your information ... Your user friendly web site and the real time flow information ... has been absolutely critical to carrying out [our New York City drinking water] project. I just wanted to take the time to say thanks to someone at the USGS and emphasize that the network of USGS gauging stations is truly a national treasure.

—Bernard W. Sweeney  
Director, Stroud Water Research Center

Your web site is an excellent resource. Your streamflow, stage and rainfall data greatly enhances our understanding of what is happening to the Mississippi. As a result, we can improve our treatment and operational strategies. With more experience and a PC upgrade we hope to make better use of your web site. Treating the Mississippi River has always been a great challenge and your site is another tool we can use to meet the challenge. Thanks for your efforts!

—Greg Swanson  
Water Plant Manager

## Environment and Natural Resources

### Non-Native Species and Biodiversity

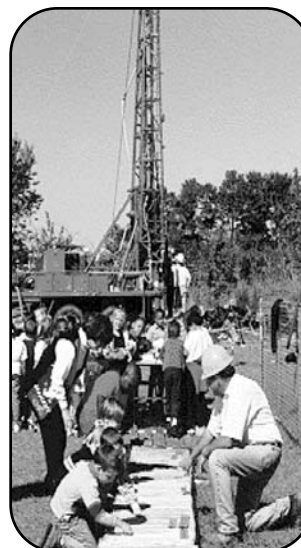
USGS scientists are working to understand the conditions of cheatgrass (*Bromus tectorum*) invasion into native shrublands and grasslands on the central Colorado Plateau, Utah. Cheatgrass was introduced from Eurasia about 110 years ago and now replaces many native plants, reducing biodiversity and endangering native plant and animal species. Recent discoveries have revealed landscape-scale links between cheatgrass footholds and climate, soil texture, soil composition, and geomorphic features. Combined with new theories about plant-nutrient requirements and uptake mechanisms for native and non-native species in the region, these discoveries support new understanding about how geologic processes influence ecosystem processes and health. Continued monitoring of climate and nutrient inputs from windblown dust derived from distant sources will help achieve goals of alerting land managers to potential future invasion and ultimately identifying possible ways to halt continued damage to the ecosystem.



Cheatgrass has invaded many Western grass lands and is causing damage to the ecosystem. The USGS geologist stands in an area of cheatgrass surrounded by native grasses.

### Geologic Mapping

Geologic and hydrologic framework studies along the southeastern coastal plain of the United States produced maps defining the three-dimensional structure and continuity of aquifers that supply drinking water in the area. These FEDMAP maps will also help to resolve multistate issues of ground-water quality and salt-water contamination. Partners include the U.S. Department of Energy and the South Carolina Department of Natural Resources. Geologic mapping, supported by STATEMAP funds and the South Carolina Geological Survey, is concentrated in the fastest growing recreational and retirement area of the State along the coast. As human activities come in contact with the fragile estuary ecosystem, the need for geologic mapping increases.



Drill holes at selected public schools in South Carolina help to explain the geologic history of the area and provide an opportunity for students to observe a research effort and gain an understanding of earth science issues.

## Water Education Posters in Spanish

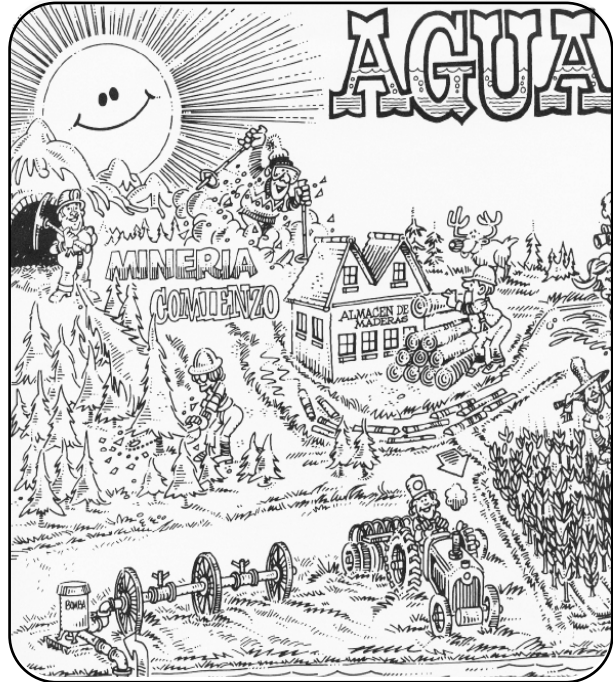
Spanish-speaking students can now learn about water through Spanish versions of the USGS Water Education Poster Series. Water Use, Hazardous Waste, Watersheds, and Oceans posters are now available in Spanish (call 1-888-ASK-USGS). The USGS Water Education Poster Series is popular with educators, students, scientists, and the general public. The Spanish translation of these posters was accomplished in cooperation with the U.S. Environmental Protection Agency and the National Oceanic and Atmospheric Administration. The Office of Bilingual Education in the Department of Education, the National Clearinghouse for Bilingual Education, and the United Nations Educational, Scientific, and Cultural Organization (UNESCO) will assist in the distribution of these posters to Spanish-speaking communities in the United States and to Spanish-speaking countries around the world.

## Ground-Water Contamination

The U.S. Environmental Protection Agency has issued an Emergency Administrative Order under the Safe Drinking Water Act to address ground-water contamination in and near the East Poplar oil field in the Fort Peck Indian Reservation in northeastern Montana. The order will result in provision of an alternative source of drinking water for many rural residents of the area and calls for remediation. USGS investigations conducted in cooperation with the Fort Peck Tribes concerning saline contamination of ground water in shallow aquifers in the area provided much of the basis for the order.



Field analysis of water samples on Tribal lands.



A portion of the Spanish version of the USGS Water Use poster.

## Precipitation Chemistry Data for Instruction

The USGS has sponsored a new guide for science teachers entitled, "Inside Rain—Working with Precipitation Chemistry Data." The National Science Teachers Association is distributing the guide, which contains six sets of exercises that require students to access the National Atmospheric Deposition Program site (<http://nadp.sws.uiuc.edu/>) for precipitation chemistry data. The program provides national monitoring and research to measure the chemistry of precipitation at more than 270 monitoring sites located throughout the United States.

## National Daily Streamflow Conditions Map

In an effort to enhance the provision of hydrologic information during droughts, the USGS developed a web-based Daily Streamflow Conditions Map of the United States (<http://water.usgs.gov/waterwatch/>). This product depicts streamflow as a percentile of its long-term value for each day at more than 2,000 real-time streamgage locations having at least 30 years of continuous record. In FY 2000, the monthly visits were more than 12,000. The material has also become a vital piece of information in the public dissemination of weather information. The Weather Channel routinely uses the maps and plots contained on these pages to prepare broadcast materials, especially during floods

and droughts. This web site represents a major breakthrough in getting hydrologic data into the hands of the general public, and the USGS is currently working in partnership with the Weather Channel to develop new graphical products for on-camera use.

#### Customer Feedback

A severe-weather expert at the Weather Channel said: "I continue to use these maps as real-time assessments of the flood stage in NC. This work is super ... you and your staff are to be commended! I pulled off a couple of charts and shared the info with our on-camera meteorologists this morning. We are planning on putting them on the air."

#### Water Quality Concerns after Hurricanes

After hurricanes, the USGS measured concentrations of sediment, nutrients, bacteria, and pesticides at numerous streams to determine the damage to the water quality and aquatic habitat. There was much concern about the effects of high rainfall and runoff on the water quality and aquatic habitat of the streams flooded by hurricanes. Flooding of swamps in coastal areas can reduce dissolved oxygen levels for some distance downstream over many days, harming aquatic organisms. Increased nutrients can cause nuisance algal growth and contribute to low oxygen levels in streams and lakes. High sediment loads can damage aquatic habitats and fill navigation channels, lakes, and reservoirs. Bacteria were of particular concern, especially in North Carolina, where many animals drowned and remained in waterlogged areas for days before they could be removed.



A USGS hydrologic technician analyzing a water sample.

#### Prairie Ecosystems Monitoring

Methods and a protocol have been developed by USGS biologists to monitor large invertebrates such as crayfish in prairie streams. Prairie stream species are particularly vulnerable to changes in water quality, which may result from certain agricultural land-use practices. Four parks will use this protocol: (1) Agate Fossil Beds National Monument, Neb.; (2) Homestead National Monument of America, Neb.; (3) Pipestone National Monument, Minn.; and (4) Wilson's Creek National Battlefield, Mo. With this protocol, the National Park Service will be able to identify animal populations at risk and propose changes in the practices.

#### Tracking Change on Coral Reefs

Monitoring of coral reef organisms poses special challenges because of the need to work underwater; thus, few biological monitoring efforts have been undertaken in the past. The USGS has produced a 10-minute video that describes the primary methodology for reef monitoring, including sampling design, fieldwork, and data analysis; it is available online at [http://www.fcsc.usgs.gov/rm/coral\\_protocol.ram](http://www.fcsc.usgs.gov/rm/coral_protocol.ram). A written synopsis of the video "A New Approach to Tracking Change on Coral Reefs" has been sent to four National Park Service sites: Virgin Islands National Park, Buck Island Reef National Monument, Dry Tortugas National Park, and Biscayne National Park. Several Caribbean countries have requested the protocol. The video production will allow wide dissemination of new and much-needed monitoring techniques for tropical coral communities.

#### Fish and the Natural History of Isla del Coco, Costa Rica

A USGS coral reef biologist from the Virgin Islands Field Station of the Florida Caribbean Science Center has published "Isla del Coco Fishes," a field identification guide to the fishes and an introduction to the natural history of Isla del Coco, Costa Rica. Intended for naturalists, divers, and other park visitors in addition to scientists, the book will enable park visitors to learn about the ecology of the marine ecosystem as well as to identify the fish and learn about their biology and behavior.

Isla del Coco is a Costa Rican National Park located 380 miles northwest of the Galapagos Islands. A World Natural Heritage Site, it has a unique assemblage of flora and fauna on land and underwater.

Several thousand people visit the park each year to dive with hammerhead sharks, manta rays, whale sharks, and thousands of jacks and to see the endemic fish species.

Range extensions of several fish species were documented as the book was researched. Professional and amateur photographers donated hundreds of color photographs, and ichthyologists from the United States, Costa Rica, Panama, Mexico, and Australia donated time and expertise to ensure the book's accuracy. UNESCO funded the printing and translation of the book into Spanish; and the Instituto Nacional de Biodiversidad paid for the design and editing. The book is a milestone in public dissemination of knowledge of hitherto little-known marine species.

### Application of Science Information to Management

Diverse scientific information from a 400-mile-long course of the upper Mississippi River has been synthesized and visualized to help natural resource managers make decisions. A decision-support system (DSS) has been developed that ensures that the latest biological data and the most relevant information are considered in making decisions about complex issues including navigation, water flow and control, recreational use, and the living environment. This dynamic decision-support system was developed with numerous partners in mind, especially the U.S. Fish and Wildlife Service, which is beginning to use the DSS across several land units to develop scientifically sound management plans for species and habitats under the Comprehensive Conservation Planning process. This comprehensive DSS for the major river system of the United States represents a major advance for management of natural resources in the region.

### Fire Ecology of Invasive Plants

The Department of the Interior manages vast landscapes in the arid West that are being rapidly transformed due to interactions among land use, fire regimes, and invasive species. In the shrub lands typical of the Great Basin, Mojave, and Sonoran Deserts, Old World annual plants, such as cheatgrass (*Bromus tectorum*), red brome (*Bromus madritensis*), and medusahead (*Taeniatherum asperum*), and the perennial buffel grass (*Pennisetum ciliare*) have greatly



USGS fire science researchers working with Bureau of Land Management resource managers to conduct an experimental burn in the northwestern Mojave Desert. They are studying the effect of fire on invasive plants, native vegetation, and small mammals to better understand habitat conversion.

increased fuel loads, allowing fires, which have historically been very infrequent and small, to spread easily through large landscapes. In the perennial grasslands prevalent in the Chihuahuan Desert, native grasses, herbs, and shrubs are being replaced by invasive grasses that withstand frequent fires better than native species, which are declining. The result is a gradual transformation of these landscapes from high-diversity native shrub-steppes to low-diversity alien grasslands.

USGS research is confirming that conversion of native shrub land to alien grassland is associated with increased fire frequency, uniform distribution of nutrients across the landscape, and increased nutrient availability following fire. Restoration of the native desert plant communities appears to require an appropriate balance between fire and soil nutrients. Conversion of grassland to shrub land is associated with lower fire frequency, a shift from uniform to patchy nutrient distribution with higher nutrient concentrations under shrubs, and an overall decrease in nutrients available for plant growth. The research is enabling managers to manage fire to encourage restoration of native communities. In most cases, fire is excluded, but in some cases, it needs to be reestablished on a controlled basis to maintain ecosystem integrity and minimize the occurrence of destructive wildland fire.



## National Biological Information Infrastructure

In FY 2000, the USGS worked with partner agencies and organizations to provide more biological data and information through the National Biological Information Infrastructure (NBII). The NBII gateway web site was redesigned to make it easier for customers to find and retrieve biological information. Significant new search tools were provided, including an intelligent biological search agent (BioBot) and a “species locator” search tool that facilitates rapid searching across the web for data and information on a given species—even where a species has been listed under multiple scientific or common names. During FY 2000, customer use of the NBII (as indicated by web site usage statistics) increased by more than 40 percent over FY 1999.

The USGS and the U.S. Department of Agriculture collaborated to launch the first comprehensive web site for invasive species information and to highlight this site as a thematic node on the NBII. The USGS and its NBII partners expanded the contents of the NBII Clearinghouse—a free online “card catalog” that contains complete, accurate descriptions of many hundreds of biological databases and information products. Descriptions of hundreds of new biological data sets and information products were added to the Clearinghouse in FY 2000, and NBII partners also launched three additional NBII Clearinghouse nodes. The USGS also provided training on the NBII biological metadata standard to over 200 USGS scientists, as well as resource managers and scientists from other Federal and State Government agencies, universities, and other organizations.

## Geospatial Technology Programs

In FY 2000, the USGS administered biological characterization programs in support of the National Park Service (NPS) and the U.S. Fish and Wildlife Service. These programs make data and information available that provide the structure for framing and answering critical scientific questions about vegetation communities and their relations to environmental processes across the landscape. The USGS–NPS Vegetation Mapping Program completed three projects, and seven were underway. The Gap Analysis Program (GAP) was the recipient of a prestigious Renew America National Award in recognition of the USGS role in leading the change to sustainability. During FY 2000, GAP projects were completed or ongoing in 49 States.

Working with the National Aeronautics and Space Administration (NASA), the U.S. Department of Agriculture, the NPS, and university partners, the USGS is participating in a landmark project to determine the extent to which hyperspectral imaging can be used to develop automated methods for detecting and mapping the invasive leafy spurge (*Euphorbia esula*) infestation in Theodore Roosevelt National Park near Medora, N. Dak.

Encompassing the time of pre-European settlement to the present, a report titled, “Perspectives on the Land Use History of North America: A Context for Understanding Our Changing Environment,” was jointly published by the USGS and NASA. This major report demonstrates how diverse databases, archived in different formats and at numerous locations, can be brought together to provide an integrated perspective on the relation between land-use and land-cover change. In collaboration with Northern Arizona University, the USGS launched a multidisciplinary, multimedia effort to provide a historical context for understanding land cover and land use in the Colorado Plateau. This web-based gateway to the past brings the future into focus for students, teachers, land and resource managers, and all interested citizens to help guide environmental policy and management decisions that will shape our future.

## **Additional Financial Statements**

U.S. Geological Survey  
Consolidating Statement of Net Cost  
For the year ended September 30, 2000  
[Dollars in thousands]

	Environment & Natural Resource Activity	Hazard Activity	Total Scientific Activities	Self-Financing & Investment Activities	Other Activities	Intrabureau Eliminations	Bureau Total
<b>Operational Costs:</b>							
Operating Expenses	\$1,036,885	\$154,937	\$1,191,822	\$35,746	\$3,741	(\$41,535)	\$1,189,774
Cost of Goods Sold	631	0	631	0	0		631
Depreciation	16,177	2,417	18,594	424	166		19,184
Loss on Disposition of Assets	1,878	281	2,159	0	0		2,159
Change in Actuarial Liability	6,496	970	7,466	0	0		7,466
Future Funded Expenses	5,833	871	6,704	0	0		6,704
Bad Debt and Write-Offs	(138)	(21)	(159)	0	(1,206)		(1,365)
Interest Expense	46	6	52	1	0		53
<b>Total Costs</b>	\$1,067,808	\$159,461	\$1,227,269	\$ 36,171	\$2,701	(\$41,535)	\$1,224,606
<b>Revenues Earned:</b>							
Sales of Goods and Services to the Public	\$146,632	\$11,037	\$157,669	\$0	\$1,348		\$159,017
Sales of Goods and Services to Federal Agencies	203,780	15,338	219,118	36,730	69	(\$41,535)	214,382
Interest and Penalties	0	0	0	0	(1,067)		(1,067)
Gain on Disposition of Assets	6	0	6	0	0		6
<b>Total Revenues</b>	\$350,418	\$26,375	\$376,793	\$36,730	\$350	(\$41,535)	\$372,338
<b>Net Cost of Operations</b>	\$717,390	\$133,086	\$850,476	(\$559)	\$2,351	\$0	\$852,268

The accompanying notes on p. 13-18 are an integral part of these statements.

U.S. Geological Survey  
Consolidating Statement of Changes in Net Position  
For the year ended September 30, 2000  
[Dollars in thousands]

	Environment & Natural Resource Activity	Hazard Activity	Total Scientific Activities	Self-Financing & Investment Activities	Other Activities	Bureau Total
<b>Net Cost of Operations</b>	(\$717,390)	(\$133,086)	(\$850,476)	\$559	(\$2,351)	(\$852,268)
<b>Financing Sources:</b>						
Appropriations Used	\$684,970	\$102,352	\$787,322	\$1,972	\$2,615	\$791,909
Donated Revenue	0	0	0	0	0	0
Employee Benefits	36,540	5,460	42,000	857	0	42,857
Assets Transferred Out	4,261	637	4,898	(268)	428	5,058
Other Financing Sources	6,471	967	7,438	0	0	7,438
Other Changes in Equity	(1,302)	(195)	(1,497)	(3,634)	1,508	(3,623)
<b>Net Results of Operations</b>	\$13,550	(\$23,865)	(\$10,315)	(\$514)	\$2,200	(\$8,629)
Prior Period Adjustment	(\$13,202)	(\$1,973)	(\$15,175)	\$0	(\$558)	\$15,733)
<b>Total Changes in Cumulative Results of Operation</b>	\$348	(\$25,838)	(\$25,490)	(\$514)	\$1,642	(\$24,362)
<b>Changes in Net Position:</b>						
Increase in Appropriated Capital	\$35,002	\$5,230	\$40,232	\$1,662	(\$2,932)	\$38,962
<b>Total Changes in Net Position</b>	\$35,002	\$5,230	\$40,232	\$1,662	(\$2,932)	\$38,962
Net Change in Net Position	\$35,350	(\$20,608)	\$14,742	\$1,148	(\$1,290)	\$14,600
Net Position, Beginning of Period	\$241,701	(\$1,542)	\$240,159	\$1,904	\$6,824	\$248,887
<b>Net Position, End of Period</b>	\$277,051	(\$22,150)	\$254,901	\$3,052	\$5,534	\$263,487

The accompanying notes on p. 13-18 are an integral part of these statements.

U.S. Geological Survey  
Combining Statement of Budgetary Resources  
For the year ended September 30, 2000  
[Dollars in thousands]

	Scientific Activities	Self-Financing & Investment Activities	Other Activities	Bureau Total
<b>Budgetary Resources:</b>				
Budget Authority	\$814,626	\$0	\$2,566	\$817,192
Unobligated Balances, Beginning of Period	32,747	43,865	3,211	79,823
Spending Authority from Offsetting Collections	376,465	37,821	(410)	413,876
Adjustments	533		(701)	(168)
<b>Total Budgetary Resources</b>	<b>\$1,224,371</b>	<b>\$81,686</b>	<b>\$4,666</b>	<b>\$1,310,723</b>
<b>Status of Budgetary Resources:</b>				
Obligations Incurred	\$1,186,875	\$34,768	\$3,279	\$1,224,922
Unobligated Balances Available	21,523	45,867	1,289	68,679
Unobligated Balances Not Available	15,973	1,051	98	17,122
<b>Total Status of Budgetary Resources</b>	<b>\$1,224,371</b>	<b>\$81,686</b>	<b>\$4,666</b>	<b>\$1,310,723</b>
<b>Outlays:</b>				
Obligations Incurred	\$1,186,875	\$34,768	\$3,279	\$1,224,922
Less: Spending Authority from Offsetting Collections & Adjustments	(383,452)	(37,820)	410	(420,862)
Obligated Balance, Net, Beginning of Period	117,593	2,203	3,464	123,260
Less: Obligated Balance, Net, End of Period	(118,488)	(10,107)	(1,419)	(130,014)
<b>Total Outlays</b>	<b>\$802,528</b>	<b>(\$10,956)</b>	<b>\$5,734</b>	<b>\$797,306</b>

The accompanying notes on p. 13-18 are an integral part of these statements.

U.S. Geological Survey  
Consolidated Working Capital Fund Balance Sheet  
As of September 30, 2000  
[Dollars in thousands]

<b>Assets</b>	
Fund Balance with Treasury	\$57,024
Cash and Other Monetary Assets	
Accounts Receivable Billed:	
Due from the Public	4
Due from Federal Agencies	
Accounts Receivable Unbilled:	
Due from the Public	794
Due from Federal Agencies	2,103
Inventory	
Operating Materials & Supplies	
Property & Equipment, Net of Depreciation	4,246
Interest Receivable	
Advances to Others:	
Due from Federal Agencies	
Due from the Public	
Prepayments	(6)
<b>Total Assets</b>	<b>\$64,165</b>
<hr/>	
<b>Liabilities</b>	
<b>Liabilities Covered by Budgetary Resources:</b>	
Accounts Payable:	
Due to the Public	\$4,154
Due to Federal Agencies	183
Deferred Revenue:	
Due to the Public	(78)
Due to Federal Agencies	56,116
Accrued Payroll & Benefits:	
Due to the Public	648
Due to Federal Agencies	89
<b>Liabilities Not Covered by Budgetary Resources:</b>	
Accrued Unfunded Annual Leave	
Actuarial Liabilities	
Estimated Future Liabilities	
Contingent Liabilities	
<b>Total Liabilities</b>	<b>\$61,112</b>
<hr/>	
<b>Net Position</b>	
Unexpended Appropriations	(\$5)
Cumulative Results of Operations	\$3,058
<b>Total Net Position</b>	<b>\$3,053</b>
<b>Total Liabilities and Net Position</b>	<b>\$64,165</b>

The accompanying notes on p. 13-18 are an integral part of these statements.

## **Independent Auditors' Report**



## United States Department of the Interior

OFFICE OF THE INSPECTOR GENERAL  
Washington, D.C. 20240

September 6, 2001

Memorandum

To: Director, U.S. Geological Survey

Subject: Independent Auditors Report on U.S. Geological Survey  
Financial Statements for Fiscal Year 2000 (No.01-I-1409)

As discussed in the attached independent auditors report, we found that the U.S Geological Survey's (USGS) principal financial statements<sup>1</sup> for fiscal year 2000 were fairly presented in all material respects. Our tests of the USGS's internal controls, however, identified material weaknesses and reportable conditions. In addition, our test of USGS's compliance with laws and regulations identified an area of noncompliance. Our detailed findings are in the attached independent auditors report.

### Internal Controls

**Material Weaknesses.** We found material internal control weaknesses in the areas of undelivered orders and accounting adjustments.

- > **Undelivered Orders.** The USGS overstated its year-end undelivered orders account balance and understated its year-end accounts payable and expense account balances. This condition required the USGS to adjust its undelivered orders account by about \$29 million and its accounts payable account by \$24 million.
- > **Accounting Adjustments.** The USGS had to make \$2.6 billion of adjustments to its budgetary and proprietary accounts in order to present financial statements that were reliable and accurate.

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<sup>1</sup>The USGS's principal financial statements consist of the Consolidated Balance Sheet as of September 30, 2000; the Consolidated Statement of Net Cost and Consolidated Statement of Changes in Net Position for the fiscal year ended September 30, 2000; and the Combined Statement of Budgetary Resources and Combined Statement of Financing for the fiscal year ended September 30, 2000.



**Reportable Conditions.** We identified reportable conditions in the following areas: capitalized equipment records and advance payments recorded in the USGS's project cost accounting system.

- **Capitalized Equipment Records.** The USGS did not ensure that its capitalized equipment records were accurate or complete. For example, we identified equipment for which the serial number was not recorded and the property location was incorrect. Also, 51 of the 61 Custodial Property Officers (CPO) did not respond to our request for evidence of their required official designations as CPOs because they were either unaware of the requirement or did not maintain evidence of their designations.

- **Advance Payments Recorded in Project Cost Accounting System.** The USGS Project Cost Accounting System (PCAS) did not accurately account for advance payments made to the USGS under certain contractual agreements, thereby requiring an adjustment of about \$4 million to correct the misstatement caused by the inaccurate accounting.

## **Compliance With Laws and Regulations**

Our testing of the USGS's compliance with laws and regulations identified one instance of noncompliance.

> **Noncompliance With the Prompt Payment Act.** The USGS did not timely compensate vendors for purchases totaling an estimated \$24 million and did not compensate vendors for late payment interest penalties totaling an estimated \$89,000. This noncompliance occurred because the USGS did not follow procedures developed in fiscal year 1999 to improve the timeliness of payments and update its procedures to reflect changes in the Code of Federal Regulations governing prompt payment for fiscal year 2000.

We made four recommendations to address the weaknesses and reportable conditions identified during our tests of the USGS's internal controls and one recommendation addressing the USGS's compliance with laws and regulations. The USGS concurred with the five recommendations. Based on the USGS's response to our draft report (see Appendix 2), we considered four recommendations resolved but not implemented and one recommendation implemented. Accordingly, the unimplemented recommendations will be referred to the Assistant Secretary for Policy, Management and Budget for tracking of implementation.

Since the recommendations are considered resolved, no further response to the Office of Inspector General is required (see Appendix 3).

Section 5(a) of the Inspector General Act (5 U.S.C. app. 3) requires the Office of Inspector General to list this report in its semiannual report to the Congress. In addition, the Office of Inspector General provides audit reports to the Congress.

The independent auditors report is intended for the information of management of the Department of the Interior, the Office of Management and Budget, and the Congress. The report, however, is a matter of public record, and its distribution is not limited.

Roger La Rouche /sig/  
Assistant Inspector General for Audits

Attachment

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**Independent Auditors Report**  
**U.S. Geological Survey**  
**Financial Statements**  
**Fiscal Year 2000**

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We have audited the U.S. Geological Survey's (USGS) principal financial statements for the fiscal year ended September 30, 2000. The USGS principal financial statements consist of the Consolidated Balance Sheet as of September 30, 2000; the Consolidated Statement of Net Costs and Consolidated Statement of Changes in Net Position for the fiscal year ended September 30, 2000; and the Combined Statement of Budgetary Resources and the Combined Statement of Financing for the fiscal year ended September 30, 2000. These financial statements are the responsibility of the USGS, and our responsibility is to express an opinion, based on Our audit on these principal financial statements.

We conducted our audit in accordance with generally accepted auditing standards, the "Government Auditing Standards," issued by the Comptroller General of the United States, and with Office of Management and Budget (OMB) Bulletin 01-02, "Audit Requirements for Federal Financial Statements." These standards require that we plan and perform the audit to obtain reasonable assurance as to whether the accompanying principal financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures contained in the principal financial statements and the accompanying notes. An audit also includes assessing the accounting principles used and the significant estimates made by management as well as evaluating the overall financial statement presentation. We believe that our audit work provides a reasonable basis for our opinion. Prior audit coverage and scope of audit are discussed in Appendix 1.

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**Opinion on Principal Financial Statements**

In our opinion, the principal financial statements appearing on pages IV-1 to IV-6 present fairly, in all material respects, the financial position of the USGS as of September 30, 2000 and its consolidated net cost, changes in net position, budgetary resources, and financing activities for the fiscal year ended September 30, 2000 in conformity with generally accepted accounting principles.

Our audit was conducted for the purpose of forming an opinion on the principal financial statements taken as a whole, and our opinion relates only to the principal financial statements. The supplemental financial and management information contained in the USGS's Annual Report is presented for additional analysis and is not a required part of the principal financial statements but is supplementary information required by the Federal Accounting Standards Advisory Board or OMB Bulletin 97-01, "Form and Content of Agency Financial Statements," as amended. We applied certain limited procedures, including discussions with management, on the methods of measurement and presentation of this information to ensure compliance with OMB guidance and consistency with the financial statements. This information, however, has not been subjected to the auditing procedures applied to our audit of the principal financial statements, and accordingly, we do not express an opinion on it

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## **Report on Internal Controls**

We conducted our audit in accordance with generally accepted auditing standards, the "Government Auditing Standards," issued by the Comptroller General of the United States, and with Bulletin 01-02.

In planning and performing our audit, we considered the USGS's internal controls over financial reporting by obtaining an understanding of the internal controls, determining whether the internal controls had been placed in operation, assessing control risks, and performing tests of the controls to determine our auditing procedures for the purpose of expressing an opinion on the principal financial statements. We limited our internal control testing to those controls necessary to achieve the objectives described in Bulletin 01-02. We did not test all internal controls relevant to operating objectives as broadly defined by the Federal Managers' Financial Integrity Act of 1982, such as those controls relevant to ensuring efficient operations. The objective of our audit was not to provide assurance on internal controls, and accordingly, we do not provide an opinion on the internal controls.

Our consideration of the internal controls over financial reporting would not necessarily disclose all matters in the internal controls over financial reporting that might be reportable conditions. Under standards issued by the American Institute of Certified Public Accountants, reportable conditions are matters coming to our attention relating to significant deficiencies in the design or operation of the internal controls that, in our judgment, could adversely affect the ability of the USGS to record, process, summarize, and report financial data consistent with the assertions made by management in the financial statements. Material weaknesses are reportable conditions in which the design or operation of one or more of the internal control components does not reduce to a relatively low level the risk that misstatements in amounts that would be material in relation to the financial statements being audited may occur and not be detected within a timely period by employees in the normal course of performing their assigned functions.

Because of inherent limitations in internal controls, misstatements, losses, or noncompliance may nevertheless occur and not be detected. However, we noted certain matters involving the internal controls and their operation that we considered to be material weaknesses or reportable conditions.

## **Material Weaknesses**

### **A. USGS Needs Improved Controls Over Undelivered Orders**

Our review identified two conditions that we believe to be material weaknesses, as discussed in the paragraphs that follow.

USGS overstated its year-end undelivered orders account balance and understated its year-end accounts payable and expense account balances. Of the year-end balance of \$128 million reported for the undelivered orders account, we tested \$53.2 million (151 undelivered orders) and found 56 errors totaling \$5.8 million. Of the 56 errors identified in the undelivered orders testing, we found 12 items (\$549,000) that were not valid obligations and 44 items (\$5.3 million) that had not been recognized as received.

As a result of our tests, the USGS performed additional analyses and adjusted its undelivered orders account by about \$29 million and its accounts payable account by about \$24 million. The overstatement of undelivered orders occurred because the USGS had not adequately trained its program staff in the accounting procedures necessary to identify invalid obligations and account for delivered goods and services.

### **Recommendation**

We recommend that the Director of the USGS ensure that bureau management continues to emphasize the importance to validating obligations and the delivery of goods and services to USGS staff with responsibility for ensuring that year-end undelivered orders and accounts payable accounts are properly stated

**Bureau Response:** The USGS agreed with our recommendation and stated that it had issued seven separate instructions on managing unliquidated obligations and accruals last fiscal year. The USGS user community had considerable input to these instructions to ensure that they would be understood at all levels of the bureau. However, the USGS agreed that this condition still exists and will investigate other ways to address managing unliquidated obligations, including conducting interactive training and making site visits.

## **B. USGS Needs Improved Controls Over Accounting Adjustments**

The USGS was required to make \$2.6 billion of adjustments to reflect its financial data accurately. The adjustments were required to be made to budgetary and proprietary accounts before the financial statements were reliable and accurate.

Our audit revealed that the USGS did not independently review all adjustments made to accounting data in its Federal Financial System (FFS) and maintain evidence that adjustments made to its Hyperion System were independently reviewed. One individual prepared and entered about 70 percent of the year-end adjustments to the FFS without independent review, and of the 33 adjustments we reviewed made by this individual totaling \$1.2 billion, we found discrepancies in 5, or 15 percent, of the total number. Adjustments to Hyperion included over \$1.4 billion in adjustments made to reconcile budgetary information in this system to the budgetary information contained in the USGS's budgetary reporting system. As a result, mistakes in the preparation and entry of adjustments to financial system data could materially impact the fair presentation of the financial statements and could result in management decisions being made on the basis of inaccurate system information. Because the USGS made the necessary adjustments, the financial statements were fairly presented.

### **Recommendation**

We recommend that the USGS Office of Financial Management ensure that all accounting adjustments are reconciled, adequately supported, and independently reviewed throughout the fiscal year.

**Bureau Response:** The USGS agreed with our recommendation and stated that it will develop formal procedures for reconciling, documenting, and reviewing adjustments made for the Federal Agencies' Centralized Trial Balance System II and Hyperion. The USGS also stated that it had contracted for assistance in identifying and correcting structural problems that were the cause of the adjustments.

### **Reportable Conditions**

We identified two reportable conditions, as described in the paragraphs that follow.

## **C. USGS Needs Improved Controls Over Its Capitalized Equipment Records**

The USGS did not ensure that its capitalized equipment records were accurate or complete. Property that is difficult to identify and locate is more susceptible to theft and abuse, property that is incorrectly listed and valued could result in a misstatement of property values, and property controlled by Custodial Property Officers (CPO) unaware of their specific responsibilities may be more susceptible to theft or abuse.

In reviewing the supporting information for 64 sample equipment items, we found 21 inconsistencies for 19 items. Specifically, 8 items did not have serial numbers recorded; 8

items had the physical location recorded incorrectly; 4 items had the name of the CPO recorded incorrectly; and 1 item was recorded as existing, even though it had been reported as excess and destroyed. In addition, 51 of the 61 CPOs did not respond to our request for evidence of their required official designation as CPOs because they were either unaware of the requirement or did not maintain evidence of their designation.

### **Recommendations**

We recommend that property management officials:

1. Ensure that procedures for maintaining accurate and complete property records in the property system are clear and that employees are reminded of their property responsibilities.
2. Ensure that all CPOS are officially designated in writing and are aware of their responsibilities.

**Bureau Response:** The USGS agreed with our recommendations and stated that it had received a "very positive response regarding the property management procedures available on the USGS Program Support pages on the Intranet and believe the information to be "very clear as written." The USGS said that it will continue to issue reminders to employees concerning their property responsibilities and will ensure that CPOs' property records are complete. The USGS also stated that it will send an e-mail message to an Accountable Property Officers (APO) and CPOs reiterating that they have been designated as APOs or CPOs and reminding them of their responsibilities

### **D. USGS Needs Improved Controls Over Advance Payments Recorded in its Project Cost Accounting System**

The USGS Project Cost Accounting System (PCAS), which tracks the costs of USGS projects, did not accurately account for advance payments received by the USGS under certain contractual agreements, thereby requiring an adjustment of about \$4 million to correct the misstatement. This occurred because the USGS did not update agreement expiration dates in the FFS, resulting in expenses not being applied against the proper advance.

The USGS developed written procedures in fiscal year 2000 to correct the PCAS deficiency in tracking advance payments but had not yet finalized the procedures. In addition, some of the corrections were not made in time to be reflected in the year-end trial balance.

### **Recommendation**

We recommend that the USGS finalize and implement its draft procedures to correct the PCAS deficiency in tracking advance payments.

**Bureau Response:** The USGS agreed with our recommendation and stated that it had developed a manual "workaround" of the deficiency late in fiscal year 2000. The USGS further said that it had finalized and implemented these procedures and is investigating automating the process.

## **Stewardship and Performance Measures**

We also considered USGS internal controls over the Required Supplementary Stewardship Information by obtaining an understanding of USGS internal controls, determining whether these internal controls had been placed in operation, assessing control risk, and performing tests of controls as required by Bulletin 01-02. We did not find any misstatement in the Supplementary Stewardship Information. Assurance on the internal controls over this information, however, was not part of our objective, and, accordingly, we do not provide an opinion on such controls.

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## **Report on Compliance With Laws and Regulations**

Management of the USGS is responsible for complying with applicable laws and regulations. As part of obtaining reasonable assurance as to whether the USGS financial statements were free of material misstatement, we performed tests of USGS compliance with certain provisions of laws and regulations (noncompliance with which could have a direct and material effect on the determination of financial statement amounts) and certain other laws and regulations specified in Bulletin 01-02, including the requirements referred to in the Federal Financial Management Improvement Act (FFMIA) of 1996. We limited our tests of compliance to these provisions and did not test compliance with all laws and regulations applicable to the USGS.

Under FFMIA, we are required to report whether USGS financial management systems substantially comply with (1) Federal financial management system requirements, (2) applicable Federal accounting standards, and (3) the U.S. Government Standard General Ledger at the transaction level. To meet our reporting requirement we performed tests of compliance with FFMIA section 803(a) requirements. The results of of tests disclosed no instances in which the USGS financial management system did not substantially comply with these three requirements.

The results of our tests of compliance with certain laws and regulations, exclusive of FFMIA, disclosed instances of noncompliance with the Prompt Payment Act that are required to be reported under the "Government Auditing Standards" and Bulletin 01-02. The Prompt Payment Act requires that Federal agencies pay their bills on time, pay interest penalties when payments are made late, and take discounts only when payments are made within the discount period and are advantageous to the Government



## **E. USGS Needs Improved Controls Over Compliance With the Prompt Payment Act**

The USGS did not timely compensate vendors for purchases totaling an estimated \$24 million and did not compensate vendors for late payment interest penalties totaling an estimated \$89,000. This noncompliance occurred because the USGS did not follow fiscal year 1999 procedures to correct deficiencies in the timeliness of payments and update its procedures to reflect changes in Code of Federal Regulations requirements governing prompt payment for fiscal year 2000.

### **Recommendation**

We recommend that the USGS update its prompt payment procedures to reflect fiscal year 2000 requirements and take steps to verify that its procedures are followed.

**Bureau Response:** The USGS agreed with our recommendation and stated that it will update its policies and procedures for recording payment information and revise the post-payment voucher audit process to verify that these policies and procedures are being followed.

Based on the USGS's response (see Appendix 2), we consider Recommendations A.1, B.1, C.1, and E.1 resolved but not implemented and Recommendation D1 implemented. Accordingly, the unimplemented recommendations will be referred to the Assistant Secretary for Policy, Management and Budget for tracking of implementation.

Since the recommendations are considered resolved, no further response to the Office of Inspector General is required (see Appendix 3).

Section 5(a) of the Inspector General Act (5 U.S.C. app. 3) requires us to list this report in our semiannual report to Congress. In addition, we provide audit reports to Congress.

Roger La Rouché  
Assistant Inspector General for Audits

## **Prior Audit Coverage and Scope of Audit**

### **Prior Audit Coverage**

Our review of prior Office of Inspector General and General Accounting Office audit reports related to the U.S. Geological Survey (USGS) financial statements did not disclose any significant unresolved or unimplemented recommendations that affected the USGS's principal financial statements

### **Scope of Audit**

Management of the USGS is responsible for the following:

- > Preparing the principal financial statements and the required supplementary information referred to in the Consistency of Other Information section of this report in conformity with generally accepted accounting principles and for preparing the other information contained in the Annual Report for fiscal year 2000
- > Establishing and maintaining an internal control structure over financial reporting. In fulfilling this responsibility, estimates and judgments are required to assess the expected benefits and related costs of internal control structure policies and procedures
- > Complying with applicable laws and regulations.

We are responsible for the following:

- > Expressing an opinion on the USGS's principal financial statements.
- > Obtaining an understanding of the internal controls based on the internal control objectives in Bulletin 01-02, which require that (1) transactions be properly recorded, processed, and summarized to permit preparation of the principal financial statements and the required supplementary information in accordance with Federal accounting standards; (2) assets be safeguarded against loss from unauthorized acquisition, use, or disposal; and (3) transactions and other data supporting reported performance measures be properly recorded, processed, and summarized to permit the preparation of performance information in accordance with criteria stated by management
- > Testing USGS compliance with selected provisions of laws and regulations that could materially affect the principal financial statements or the required supplementary information.

To fulfill these responsibilities, we took the following actions:

- > Examined, on a test basis, evidence supporting the amounts disclosed in the principal financial statements.

- > Assessed the accounting principles used and the significant estimates made by management.
- > Evaluated the overall presentation of the principal financial statements.
- > Obtained an understanding of the internal control structure related to safeguarding assets; compliance with laws and regulations, including the execution of transactions in accordance with budget authority; financial reporting; and certain performance measure information reported in the annual report.
- > Tested relevant internal controls over the safeguarding of assets; compliance with laws and regulations, including the execution of transactions in accordance with budget authority; and financial reporting.
- > Tested compliance with selected provisions of laws and regulations.

We did not evaluate all of the internal controls related to the operating objectives as broadly defined by the Federal Managers' Financial Integrity Act, such as the controls related to preparing statistical reports and ensuring efficient operations. We limited our internal control testing to those controls needed to achieve the objectives outlined in our report on internal controls.



## United States Department of the Interior

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

### MEMORANDUM

To: Regional Audit Manager, Eastern Region Audits

From: Kathryn Clement  
Deputy Director, U.S. Geological Survey

Subject: Comments on the Draft Report on U.S. Geological Survey Financial Statements for Fiscal Year 2000

Thank you for the opportunity to comment on your draft report. Our comments are keyed to the recommendations in the report.

**A. Undelivered Orders.** The U.S. Geological Survey (USGS) issued seven separate instructions on managing unliquidated obligations and accruals last fiscal year (FY.) The USGS user community had considerable input to these instructions to insure that they would be understood at all levels of the bureau. Despite this, the condition you cite still exists. The USGS will investigate other ways to address managing unliquidated obligations including interactive training and site visits.

We will, of course, diligently strive to correct our undelivered order balances, but the recommendation as written creates an immeasurable standard that cannot be met and, therefore, necessitates perpetual tracking. We suggest revising the recommendation to read as follows:

"We recommend that the Director of the USGS ensure that bureau management continues to emphasize the importance of validating obligations and the delivery of goods and services to USGS staff with responsibility for ensuring that yearend undelivered orders and accounts payable are properly stated."

**B. Accounting Adjustments.** The USGS will develop formal procedures for reconciling, documenting, and reviewing adjustments made for the Federal Agencies' Centralized Trial-Balance System II and Hyperion. In addition, the USGS contracted for assistance in identifying and correcting structural problems that are the cause of these adjustments.

**C. Personal Property.** We have received a very positive response regarding the property management procedures available on the USGS Program Support Pages on the Internet and believe the information to be very clearly written. However, we will continue to issue reminders to employees concerning their property responsibilities and will ensure that we contact Custodial Property Officers (CPO's) whose property records are incomplete.

As to the second recommendation, we will send an e-mail message out to all Accountable Property Officers (APO's) and CPO's reiterating that they have been designated as APO'S or CPO's and reminding them of their responsibilities.

**D. Project Cost Accounting System (PCAS).** As noted in your finding, a PCAS deficiency is the root cause of the problem. The USGS developed a manual "workaround" of the deficiency late in FY 2000 and provided you with these procedures. These procedures have been finalized and implemented, and we are investigating automating this process.

**E. Interest Penalties.** We will update our policies and procedures for recording payment information and revise our non-payment voucher audit process to verify that these policies and procedures are being followed. This recommendation, like recommendation A, is very subjective and not measurable. Accordingly, we suggest the second phrase of the recommendation be changed to "...take steps to verify that its procedures are followed."

Please contact Jack Blickley at (703) 648-7609 or [jblickley@usgs.gov](mailto:jblickley@usgs.gov) if you have any questions concerning this response.

**STATUS OF AUDIT REPORT RECOMMENDATIONS**

<b>Finding/Recommendation Reference</b>	<b>Status</b>	<b>Action Required</b>
A.1, B.1, C.1, and E.1	Resolved; not implemented	No further response to the Office of Inspector General is required. The recommendations will be forwarded to the Assistant Secretary for Policy, Management and Budget for tracking of implementation.
DI	Implemented.	No further action is required

