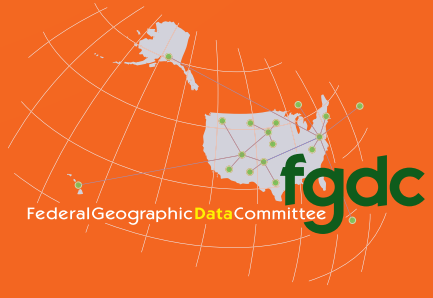
2008 Annual Report

Federal Geographic Data Committee



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Cover. A small fire at the edge of developed rural lands in the Bitterroot Valley, Montana, 8 September 2008. This fire posed no serious threats; however, multiple small fires under peak burn conditions must be triaged. Parcel data provide critical support for these decisions. Photo credit: Kevin Hyde, Management and Engineering Technologies International for USDA Forest Service.

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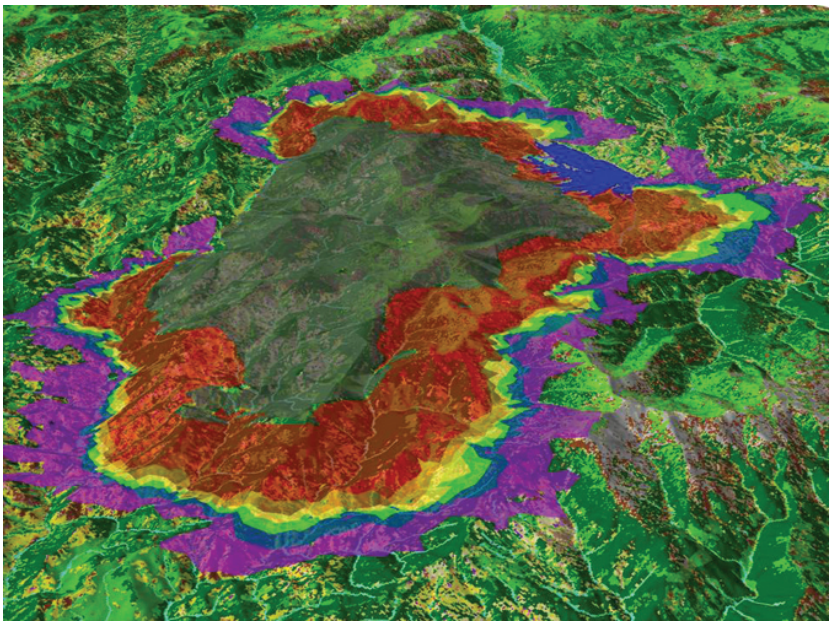


This image simulates fire spread in the Middle Fork Payette River region of the Boise National Forest. As can be seen, the modeled fire spread is nonlinear, with the probabilities dropping dramatically as the fire spreads across the lowland regions.

Fire spread probability information can be valuable for helping to reduce loss of life and property.

Message from the FGDC Chair

I am pleased to announce the release of the Federal Geographic Data Committee's (FGDC) 2008 Annual Report, which highlights some of the year's exciting activities across the geospatial landscape. The theme for this year's report is how geospatial data provide critical support for wildfire response.

In 2008, we were engaged in some very significant developments. We established and conducted the initial meetings of the National Geospatial Advisory Committee (NGAC), a Federal advisory committee whose membership includes representatives from 28 Government and nongovernmental organizations (see Appendix B). The NGAC holds public forums to discuss geospatial activities and solicits input from State, Tribal, regional, and local governments, academic institutions, and the private sector. At its inaugural meeting in April 2008, I asked the NGAC to provide advice on FGDC priority areas, including advancing the National Spatial Data Infrastructure (NSDI), public-private partnerships, and OMB Circular A–16. I also asked for an evaluation and recommendations on key data initiatives such as Imagery for the Nation (IFTN), *The National Map*, the National Land Parcel Study, and the National Land Imaging Program. Several important issues were raised and actions were assigned to subcommittees for further analysis. Their results were brought back to the full committee for consideration.

The FGDC Executive Committee also met for the first time in April. The committee is comprised of senior agency officials and represents agencies that conduct significant geospatial activities in support of their mission (see page 18). In 2008, the Executive Committee provided guidance and expedited some of the more challenging decisions placed before the FGDC Steering Committee. This resulted in a more collaborative and effective model for addressing geospatially related activities.

Secretary of the Interior Dirk Kempthorne is profiled in this Annual Report as the "Executive of the Year" for his vision, innovation, and outstanding achievements on behalf of the geospatial community. He was recognized and honored for his efforts with an industry award. Secretary Kempthorne's numerous accomplishments are highlighted in this report and are a tribute to his leadership.

Together, we have come a long way in positioning the geospatial community for the upcoming transition to a new Administration. Fiscal year 2009 will focus on continued strong leadership, effective coordination and analysis of business practices to enable better public-private partnerships and investments, and continued progress on the important issues designated by agencies and the public we serve.

I have thoroughly enjoyed working with the FGDC and the geospatial community, and I thank all of you who have contributed to its successes.

Sincerely yours,

James E. Cason, *U.S. Department of the Interior*
Chair, FGDC Steering Committee

Message from the FGDC Staff Director

On behalf of the FGDC member organizations and the broader geospatial community, I thank James E. Cason, FGDC Chair, and Karen S. Evans, FGDC Vice Chair, for their vision and strong leadership in advancing the National Spatial Data Infrastructure (NSDI). The FGDC has faced a number of challenges over the past several years in coordinating the development of the NSDI. Under the leadership of Mr. Cason and Ms. Evans, the FGDC has met these challenges and realized significant accomplishments, including the following:

- Establishment of the National Geospatial Advisory Committee (NGAC), which has brought the academic community, the private sector, professional societies, and others into a more formal process to aid in building the NSDI
- Improved Federal practices and leveraging of resources through the Geospatial Line of Business
- Establishment of the FGDC Executive Committee to help make the FGDC more responsive and active
- Success in making Imagery for the Nation (IFTN) a priority

In a speech he gave in August 2008, Secretary of the Interior Dirk Kempthorne said that, through the use of geospatial information and technology, "We can make a difference in peoples' lives." Mr. Cason and Ms. Evans have indeed made a difference, and their contributions will have a positive effect on the geospatial community for years to come.

New challenges are on the horizon as the FGDC begins to plan how to support the next Administration in providing the service that our citizens expect. At this time, please join me in recognizing the FGDC Chair and Vice Chair for their vital contributions to the NSDI and in thanking them for their service to the FGDC and to the citizens of our Nation.

Sincerely,

Ivan B. DeLoatch
Staff Director, Federal Geographic Data Committee

FGDC Executive of the Year Secretary Dirk Kempthorne

Making a Difference

Department of the Interior (DOI) Secretary Dirk Kempthorne's insightful leadership has been a vital catalyst in enabling the FGDC to make great strides forward in our geospatial initiatives for the Nation. Secretary Kempthorne has worked hard to build consensus in the geospatial community and has taken critical action on several key issues. He engaged with colleagues to invigorate the FGDC Steering Committee and created a goal-oriented FGDC Executive Committee. He named 28 nationally recognized leaders to be members of the National Geospatial Advisory Committee (NGAC), a step that institutionalizes invaluable advice from outside the Federal Government. Secretary Kempthorne also provided solid leadership and steadfast support for the continuity of the Landsat earth observation program. Under his guidance, the U.S. Geological Survey is making its entire 35-year Landsat archive available over the Internet at no cost to the public—a landmark development that will propel significant advancements in data access, analysis, and applications. Secretary Kempthorne oversaw the establishment of a Departmental geospatial governance structure and the creation of a new Geospatial Information Officer position within the DOI. This new Geospatial Information Officer will ensure communication and coordination of geographic information system (GIS) efforts in all DOI bureaus.

Secretary Kempthorne, for his decisive leadership in taking the Nation to a new level in the advocacy and application of geospatial technologies at DOI and the entire Federal Government, is recognized as the FGDC Executive of the Year.

Biography

Dirk Kempthorne was confirmed as the 49th Secretary of the U.S. Department of the Interior on May 26, 2006. Before his confirmation, Secretary Kempthorne served nearly two terms as Governor of Idaho, having been elected first in 1998 and then again in 2002. As Governor, Kempthorne worked to develop consensus on the management of the natural resources of Idaho and the West. He worked with his colleagues in Montana, Oregon, and Washington to develop a historic bipartisan agreement on a State-based solution for returning salmon runs in the region. Following the devastating wildfires of 2000, he worked with fellow Western Governors and Federal officials to fundamentally change the approach to forest health and wildfire management. Under his leadership, Idaho developed wolf and grizzly bear management plans aimed at removing these animals from the list of endangered species and giving the State of Idaho management responsibilities.

Before his terms as Governor, Kempthorne completed a successful 6-year term in the U.S. Senate (1993-1999). As a Senator, he wrote, negotiated, and won passage of two major pieces of legislation: a bill to end unfunded Federal mandates on State and local governments, and a substantial revision of the Federal Safe Drinking Water Act. He began his commitment to public service as the highly successful Mayor of the city of Boise (1985-1992).

Secretary Kempthorne has been recognized by his peers as a national leader. As Governor, his colleagues elected him as the Chairman of the National Governors Association in August 2003. He has served as President of the Council of State Governments and Chairman of the Western Governors Association. He served on the Executive Committees of the National Governors Association and the Republican Governors Association. Secretary of Education Rodney Paige appointed then-Governor Kempthorne to the National Assessment Governing Board and Secretary of Homeland Security Thomas Ridge appointed him to the Homeland Security Task Force.

From www.doi.gov/welcome.html.

Remarks by Secretary Kempthorne

The following is excerpted from remarks by Secretary of the Interior Dirk Kempthorne at the ESRI User Conference in San Diego, Calif., on August 4, 2008, after he received the organization's "Making a Difference" award.

Just over two centuries ago, President Thomas Jefferson purchased for $23 million a vast and unexplored region known as the Louisiana territory. At the time, Jefferson didn't know exactly what he was buying. He had no detailed maps and few reports about the land. So Jefferson commissioned Meriwether Lewis and William Clark to find out. President Jefferson wanted to know, "What is out there?"

…

Lewis and Clark knew that their Government supported their exploration of the new frontier. It is entirely fair for you to ask whether your Government supports your exploration of the new frontier in this new geospatial era.

You ask, "Does Washington understand us?" "Do they understand what we can do for the country and the world?" In short, "Do they get it?" The answer is yes.

Let me affirm to you that not only do we "get it," we are using it. In fact, the Department of the Interior, which manages 20 percent of the land in the United States, embodies the theme of this conference "Geography in Action." For example—

- As you well know, many parts of California are burning as I speak. When Interior Department firefighters are working a fire line, they get assistance from NASA, which uses unmanned surveillance aircraft to provide real time infrared mapping of fires.
- When I brief the President in the White House on the status of wildfires, I use the same satellite infrared imaging to demonstrate to the President what these brave young men and women are facing.
- Last week, when a 5.4-magnitude earthquake rocked Southern California, the U.S. Geological Survey within minutes produced a map, graphically depicting the earthquake's epicenter and impact.
- In overseeing offshore oil and gas production, our Minerals Management Service uses GIS to ensure that energy companies drill where they are supposed to.
- Our Bureau of Land Management is leading a multiagency effort utilizing GIS to identify areas important for the conservation and restoration of wildlife.

This integration of geographic information is all pretty amazing.

It further hit home for me earlier this year when I had to make a difficult decision on whether to list the polar bear as a threatened species under the Endangered Species Act. The decision was based on extensive geospatial information and mapping that showed the long-term threat to the polar bear's sea ice habitat. As I weighed the decision, satellite imagery [illustrated below] helped make the case for listing. It also helped me explain the decision to the American people.

…

My vision for the future is that with the click of a mouse, decisionmakers and land managers…will have access to maps that Lewis and Clark could never have imagined—

- Maps that include up-to-date digital imagery of the landscape.
- Maps that overlay population data, land use, wildlife habitat, and other forms of geographic information, to paint a more complete picture of our planet.

…

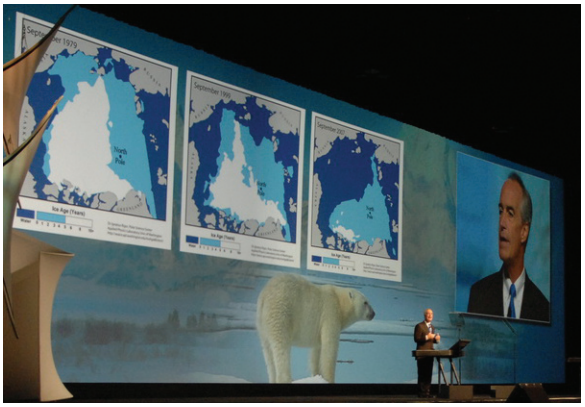
Information is power, and this information will be a powerful tool in the hands of policy makers, land managers, and scientists in the United States and around the world.

Finally, the Department of the Interior will continue to partner with other countries, the importance of which I saw first-hand in December when I led the U.S. delegation to the World Summit of the Group on Earth Observations in South Africa. Seventy-three nations were there. The other leaders and I left that summit united in the belief that the world must embrace the idea of science without borders, achieve global data compatibility, and have full access to coordinated Earth observations. We agreed to focus on helping countries to better share data from their weather satellites, ocean monitoring buoys, earthquake sensors, and other geospatial technology.

…

As we look to the future, we can envision a time when we can use GIS to better see and predict other disasters, like drought and crop failures. That way we can pre-position food and prevent massive starvation. We can make a difference in peoples' lives.

After all, we don't inherit the Earth from our parents—we borrow it from our children.



Highlights 2008

1. Geospatial Line of Business

The Geospatial Line of Business (Geospatial LoB) is achieving the important goals of facilitating collaboration of geospatial-related activities and investments across all levels of government, optimizing and standardizing common geospatial functions to improve the quality of government services, and providing cost-efficient acquisition and access to geospatial data and services. The activities of the Geospatial LoB are spread across six work groups, each of which is contributing to the successful achievement of these goals. For more information, see page 6.

2. National Geospatial Advisory Committee

The Department of the Interior (DOI) established the National Geospatial Advisory Committee (NGAC) as a new Federal Advisory Committee that reports to the FGDC Chair. Secretary of the Interior Dirk Kempthorne appointed 28 members from a broad range of organizations to serve on the NGAC. The NGAC held its first two meetings in April and June 2008 and has adopted bylaws, a mission and statement, and operating procedures. The NGAC has provided advice and comments on key geospatial issues, including the Imagery for the Nation (IFTN) initiative and the Geospatial LoB. For more information, see page 7.

3. Fifty States Initiative 2008

The Fifty States Initiative completed its third year in partnership with the National States Geographic Information Council (NSGIC). Eight new awards were made to support strategic and business plan development in a highly successful awardees kickoff meeting held in March. Thirty-three States, the District of Columbia, and the U.S. Virgin Islands have received about $1.7 million in funding during the past 3 years. A new contract to support the initiative has been awarded. For more information, see page 9.

4. International Activities

The FGDC continues to work closely with the Global Spatial Data Infrastructure (GSDI) organization. This year, the FGDC helped organize and conduct the GSDI–10 conference held in Trinidad and Tobago in February 2008 and supported this year's GSDI Small Grants Program. Responsibility for regional GSDI newsletters was transferred to the respective regions, which was a significant milestone.

The FGDC maintains collaborative activities with Canada. The FGDC and Land Information Ontario agreed to work on outreach and training materials for the upcoming North American metadata profile. The sixth cross-border spatial data infrastructure project was launched in 2008 in partnership with GeoConnections. For more information, see page 9.

Success Stories

Providing Water To Fight Wildfires

Challenge: The Evans Road Wildfire began on June 1, 2008, with a lightning strike. During the next 2 months, the fire grew and became entrenched in the deep peat soils found in the Pocosin Lakes National Wildlife Refuge (NWR) area. To contain these peat fires, large volumes of water were needed to flood the areas within the fire perimeter. Because of an ongoing drought in eastern North Carolina, however, the largest and closest body of water, Lake Phelps, was at a critically low level.

Action: The U.S. Fish and Wildlife Service geographic information system (GIS) specialists assigned to the fire were tasked with creating an elevation map of the area and mapping the drainage of the area to assist fire personnel in the most effective and efficient way to get water to the burning peat. Lidar data were used to create an elevation map of the area. The elevation map conveyed that the water would have to be moved from the lowest elevation in the eastern portion of the fire towards the west, which would mean that water would have to be progressively pumped with large-volume pumps. By using elevation data, fire managers were able to find the best route to flow the water. The GIS was also used to find alternate water sources to Lake Phelps.

Result: Fire managers were able to find and move water to the areas where it was most needed to combat the fire. The highest point of the fire served as the path of least resistance—millions of gallons per day of water was moved to flood the fire. By mid-July, water was being moved 43 miles from its source. This continued until August, when the flooding and rainfall were sufficient to contain the Evans Road Wildfire and pumping operations were ceased.

5. Geospatial One-Stop

The Geospatial One-Stop (GOS) portal (www.geodata.gov) continued its steady growth in fiscal year 2008. With more than 165,000 individual metadata records contributed by 392 publishers, the portal saw a 7 percent increase in records from fiscal year 2007. The Interagency Working Group on Ocean and Coastal Mapping and the State GIS Inventory System were significant contributors to this successful increase in content. In addition, the number of portal users increased by 40 percent during the past year. GOS continued to focus on outreach and increasing participation with local governments and related associations, resulting in more web mapping services becoming available, primarily from major U.S. cities and metropolitan areas.

The GOS portal had several key enhancements implemented. These new enhancements also provide value to the data partnership site, Marketplace. The GOS Marketplace provides a means for organizations to advertise their interest in or intent to collect geospatial data, and to seek partners for cost-sharing. Approximately 2,500 Marketplace records were discoverable this year, and an estimated 250 contacts were made regarding possible partnerships for data acquisition. For more information, see page 11.

6. Standards

The FGDC Standards Working Group promotes and coordinates FGDC standards activities. Highlights of the group's accomplishments for fiscal year 2008 include the following:

- FGDC endorsement of the Geographic Information Framework Data Standard and the National Vegetation Classification Standard (Version 2.0).
- Delivery of a final draft of the Wetlands Mapping Standard.
- Public review of the draft Federal Trails Data Standard.
- Approval of a standards project to develop a Cultural Resources Geospatial Data Content Standard and Coastal and Marine Ecological Classification Standard.
- Public review of the North American Profile of ISO 19115:2003, Geographic Information—Metadata.

For more information, see page 12.

7. Imagery for the Nation

The Imagery for the Nation (IFTN) initiative advanced significantly in fiscal year 2008. IFTN was embraced by the FGDC Executive Committee in the spring of 2008. The FGDC Executive Committee has provided unprecedented executive leadership and commitment to a collaborative process that will accomplish near-term steps to move existing Federal imagery programs towards IFTN goals while a more comprehensive plan for full implementation of IFTN is developed. Seven work groups were established and have begun implementing their primary tasks to complete Phase 1 outcomes by the end of calendar year 2008.

The IFTN concept received endorsement by the NGAC in June 2008. Several issues were identified, and these are being addressed as part of the Phase 1 effort. For more information, see page 14.

8. New Executive Committee

In fiscal year 2008, the FGDC Executive Committee was established as a component of the FGDC Steering Committee. The Executive Committee was organized to facilitate action on key activities such as Imagery for the Nation (IFTN) initiative. The committee will help expedite decisions and provide guidance on issues before they are addressed by the Steering Committee. The Steering Committee will continue to make all final decisions. See Appendix A for the members of the Executive Committee, page 18.

Success Stories

National Vegetation Classification Standard

Challenge: Develop a National Vegetation Classification Standard for use among Federal, State, Tribal, and local governments, academic institutions, and other partners.

Action: The U.S. Forest Service, which chairs the FGDC Vegetation Subcommittee, successfully finalized the National Vegetation Classification Standard. It was the culmination of more than a decade of effort by many Federal partners, including the National Park Service, the U.S. Fish and Wildlife Service, and the U.S. Geological Survey, and non-Federal partners, including the Ecological Society of America and NatureServe.

Result: The FGDC Steering Committee formally approved the National Vegetation Classification Standard on February 11, 2008. The Vegetation Subcommittee has begun developing an implementation plan for using the new standard in mapping vegetation data. The standard will produce nationally uniform Federal vegetation statistics.

Geospatial Data Meets the Wildfire Challenge

Wildfires pose a serious threat to people, wildlife, and vegetation. They are a hazard that takes into account immediate topography, weather, and other environmental conditions and discounts boundaries, ownership, and land use. Although longer-term effects often follow, wildfires are immediate impact events that require only heat, air, and fuel to sustain their dangerous and often aggressive advancement. Suppressing these events to minimize the impact on life, limb, and property requires the best understanding of the terrain and contributing factors within and around wildfires. Reliable geospatial information and its analysis are vital to understanding, preparing for, responding to, and recovering from wildfires. The following is a sampling of geospatial programs and tools in use to combat wildfires.

Fire Research and Management Exchange System Promotes Information Exchange and Technology Transfer

The Fire Research and Management Exchange System (FRAMES) provides a systematic method of exchanging information and transferring technology between wildfire researchers, managers, and other stakeholders using FGDC-compliant standards. FRAMES uses web technologies to help bridge the gap between science and management and helps eliminate redundancy, reduce costs, and promote increased productivity and efficiency. The goal of FRAMES is to make wildfire data and other information easy to find, access, and use. FRAMES is a collaborative partnership among the U.S. Geological Survey, the U.S. Forest Service, and the University of Idaho.

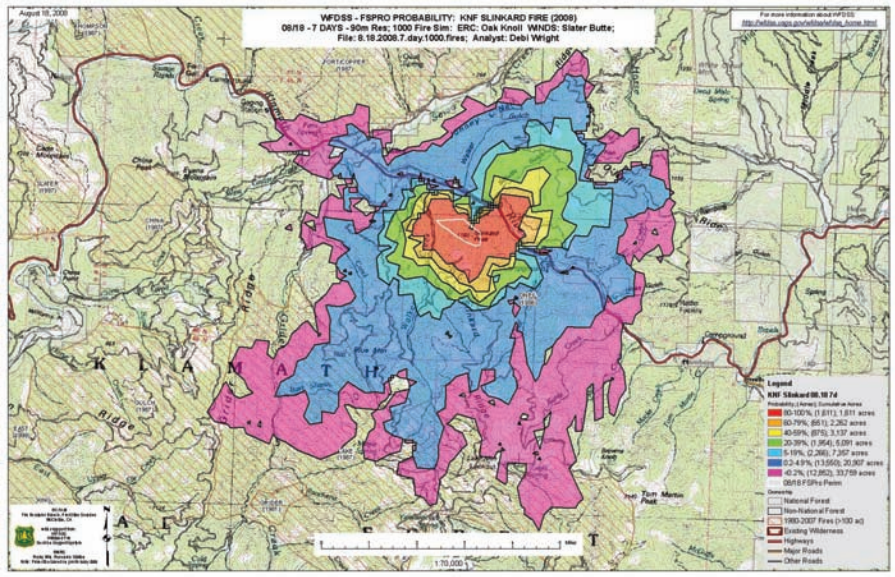
Landscape Fire and Resource Management Planning (LANDFIRE) Data Helps with Modeling Fire Spread

Landscape Fire and Resource Management Planning (LANDFIRE) strives to produce consistent and comprehensive maps and data that describe vegetation, wildland fuel, and fire regimes for the United States. Although the main goal of LANDFIRE is to provide national level landscape-scale geospatial products to support fire and fuels management, LANDFIRE data have also been used in assessments of bighorn sheep viability, grizzly bear density, and bee pollination.

One important application of LANDFIRE data is its use in the Fire Spread Probability model, which is a spatial model that calculates the probability of fire spread from a current fire. Data for the model include canopy characteristics, fuel information, digital elevation data, and wind information. The fire spread probabilities are valuable for tactical planning of fire suppression efforts as well as for public and firefighter safety. When combined with data that describe structures, fire spread probabilities are useful for estimating the economic valuations of a fire. LANDFIRE partners include the U.S. Forest Service, the U.S. Geological Survey (USGS), The Nature Conservancy, and the National Interagency Fuels Technology Team.

Wildland Fire Decision Support System Aids Decisionmaking

A new system called the Wildland Fire Decision Support System (WFDSS) is



Slinkard Fire–2008 Klamath National Forest. Wildland Fire Decision Support System/Fire Spread Probability model analysis showing the probability that a fire would spread across the landscape given fuels, topography, and weather data. These inputs help managers determine planning and suppression responses.

designed to help fire managers determine the appropriate response for fire incidents. In WFDSS, the decisionmaker uses existing spatial data, including LANDFIRE data, and current spatial information about the fire to perform an analysis of the spread and impact of the wildfire. WFDSS uses the Fire Spread Probability model. The model simulates fires over the landscape. As the fire simulations overlap, probability bands are created. For example, in a simulation of 100 fires, a 90 percent probability occurs where 90 of the 100 fires overlap.

Additional analysis of resources threatened by a fire can be done using the WFDSS' Rapid Assessment Values at Risk (RAVAR) model. This model uses critical infrastructure data and LANDFIRE data to analyze resources that may be at risk. The results are typically integrated with the probability bands to identify the likelihood of resources being threatened. The RAVAR model provides an economic assessment of values.

Another decision support tool available in the WFDSS is the Stratified Cost Index (SCI). This tool compares fire expenditures by projected fire size to historical fires within the same region. A range of projected fire sizes can be used to develop an estimated cost per acre for a fire. These cost comparisons during an active fire help to inform decisionmakers on suppression costs and strategies.

Land Parcel Data Bolsters Wildfire Response

The FGDC Cadastral Subcommittee has acquired as much available land parcel data as possible to support the analysis of and response to wildfire events. This data greatly aids the economic analysis done by RAVAR in the WFDSS. The most important element of RAVAR is the ability to map the location of private structures relative to potential fire spread. Knowing the location of structures relative to the fire dangers helps fire managers improve their decisionmaking.

The RAVAR delivered more than 130 wildfire risk maps and associated reports to large wildfire incidents across the United States during fiscal year 2008. This critical information helped in the allocation of scarce resources during the Santa Ana events in Southern California in October 2007 and the unprecedented Northern California fire events in the summer of 2008. In September 2008, the information was used to measure the increased wildfire potential due to forest downfall in east Texas from Hurricane Ike.

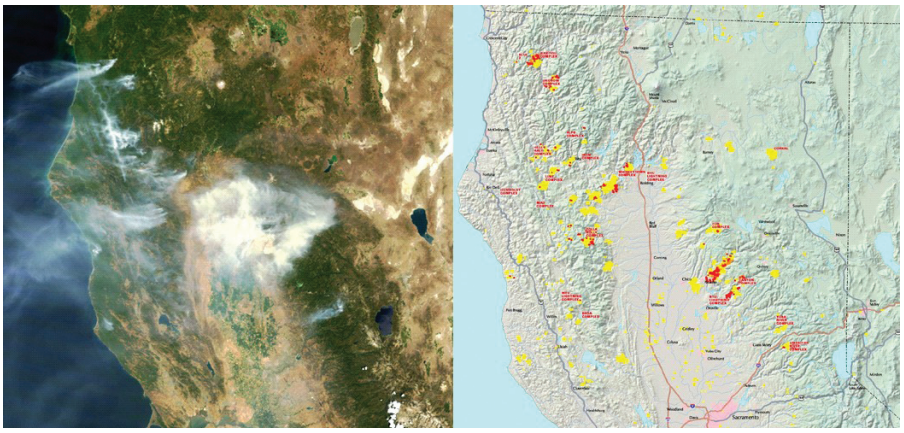
The FGDC Cadastral Subcommittee has made mission-critical contributions to the success of RAVAR and the new protocols for risk-based assessment for wildfire management. Quite simply, RAVAR would not exist in its current form without the land parcel data provided through the FGDC Cadastral Subcommittee.

Satellite Imagery Provides Strategic and Tactical Wildfire Information

To improve its ability to provide wildfire information, the U.S. Forest Service took action to provide near real-time information on the status and progression of fire activity in 2008 using satellite image data. The U.S. Forest Service also provided web-based geospatial applications to support fire management information needs and used the Moderate Resolution Imaging Spectroradiometer (MODIS) sensor to develop an Active Fire Mapping Program.

MODIS is the Moderate Resolution Imaging Spectroradiometer developed by NASA. The MODIS instrument is a polar orbiting, high temporal, moderate spatial resolution sensor that acquires remote sensing data for monitoring the Earth's land, oceans, and atmosphere. The MODIS instrument is currently on board two NASA Earth Observing System satellites—Terra, launched in December 1999, and Aqua, launched in May 2002.

The MODIS Active Fire Mapping Program provides a near real-time geospatial overview of the current wildfire situation at regional and national scales. Locations of current fires and the extent of previous fire activity are determined using satellite imagery acquired by the MODIS sensor. These fire data are integrated with various sources of spatial data into a suite of geospatial data and mapping products. This information is used by fire managers to assess the current fire situation and serves as a decision support tool in strategic decisions regarding fire suppression resource allocation. The data and products provided by the program are also valuable for numerous other fire-related applications.



Moderate Resolution Imaging Spectroradiometer (MODIS) surface reflectance image of Northern California acquired by the Terra satellite on July 8, 2008 (left), and a corresponding MODIS fire detection map for the afternoon of July 8th (right). Red areas on the map indicate fire activity in the past 12 hours. Yellow areas are locations of cumulative fire activity that has occurred since January 1, 2008.

This program delivers a set of geospatial data products and applications that characterize current fire activity nationwide. It also provides data and map products, with FGDC-compliant metadata, that help characterize the effects of wildland fire activity for wildfire decision support. As of September 2008, the Active Fire Mapping Program website (activefiremaps.fs.fed.us/) had logged 1.5 million users that downloaded more than 3 terabytes of data.

Unmanned Airborne Systems Promise to be Useful in Operational Fire Incidents

The U.S. Forest Service, in partnership with the National Aeronautics and Space Administration (NASA), continued the testing and evaluation of unmanned aerial systems for use in operational fire incidents. In a recent test, near real-time imagery was obtained using NASA's Ikhana unmanned research aircraft. The aircraft has sophisticated new thermal-infrared imaging sensors capable of peering through thick smoke and haze to record hot spots and the progression of wildfires over a lengthy period of time. Images collected from the different sensors onboard were transmitted via satellite to a ground station where they were analyzed and transmitted as a Google Earth overlay to fire experts.

Fire Boundary Coordinates Aid Recovery

In the summer of 2008, the Farm Service Agency (FSA) needed accurate information to identify the agricultural areas impacted by wildfires in California. Federal and private industry geographic information system (GIS) professionals were a large part of a nonfirefighter contingency that was sent to gather information by, in some cases, riding in helicopters to collect fire boundary coordinates. These coordinates were, in turn, shared with other Federal, State, and local agencies for response and recovery purposes.

The FSA used those coordinates to see what fields and producers were affected by the fires. By bringing the wildfire coordinates into a GIS and overlaying them with the digital field boundaries, called common land units, the FSA was able to see what fields and crops were impacted and what producers were affected by the fire. Damage assessments could be completed quickly, and the information was used to implement recovery programs, such as the Emergency Conservation Program.

With smoke from the Lake Arrowhead, Calif., area fires streaming in the background, NASA's Ikhana unmanned aircraft heads out on a wildfire imaging mission. Photograph by Jim Ross, NASA, photo ED07-0243-37, October 24, 2007.

Summary

Increased wildfire activity over the past several years has caused considerable damage to both public and private resources and has had profound effects on budgets and operational priorities of Federal agencies, as well as State and local entities with wildfire responsibilities. The geospatial community is responding. FRAMES promotes the sharing of interagency fire science research with managers. LANDFIRE provides data products that are needed to support fire management planning and prioritization. Decision support systems, such as the WFDSS, assist fire managers in determining the appropriate management response for fire incidents. Such tools as the RAVAR model allow decisionmakers to see the location of structures relative to the fire dangers and assess the economic impact of management decisions. Land parcel data is a key dataset for these analyses. Timely satellite imaging from MODIS provides information about active fires. Unmanned aircraft are beginning to bring new geospatial capability to wildfire response. Having coordinated geospatial information that is based on data standards ready for use in a GIS can facilitate the recovery from wildfires. Although it is unclear what the impact of wildfires will be in the future, it is clear that geospatial information and technology will play an ever increasing role in wildfire management.

FGDC: Leading the Development of Integrated Geospatial Capabilities

Geospatial Line of Business Develops a Strategic Plan

The participants in the Geospatial Line of Business (Geospatial LoB) initiative developed a strategic plan for achieving key goals and deliverables for the initiative and for the FGDC overall. The milestones and tasks within the strategic plan reflect a bottom-up analysis by each of the six Geospatial LoB work groups. Many of these tasks are expected to be fulfilled over a timeline that extends through 2013. Emphasis for 2008 was placed on common services and SmartBUY initiatives, data lifecycle management activities, and grants and procurement guidance. The work groups and their activities are summarized below.

The Common Services Work Group (CSWG) evaluates and expands cross-agency procurement opportunities and tool sharing to facilitate access to the best geospatial tools, software, and data. The CSWG has worked with the General Services Administration (GSA) SmartBUY Team to implement a multivendor blanket purchase agreement (BPA) that will provide Government users a common portfolio of geospatial technology options that benefit small-, medium-, and large-size agencies. CSWG developed the GEospatial Application Registry (GEAR) to give Government geospatial users the ability to nominate, share, and discuss geospatial software products and associated geo-enabling best practices.

The Lifecycle Management Work Group (LCWG) evaluates and defines the stages of the geospatial data lifecycle and identifies standard roles to facilitate the management of Government geospatial assets. The LCWG is tasked with developing supplemental guides that are in line with Office of Management and Budget (OMB) Circular A–16, including the following:

- Definition and processes for data lifecycle stages.
- Principles for assessing themes.
- Roles and responsibilities for agency officials.
- Geospatial lexicon of common terms.
- Coordination points for geospatial reporting.

The Grants and Contracts Work Group (GCWG) develops common policies, grants, cooperative agreements, contracts, and terms and conditions for geospatial information and services. GCWG drafted national guidelines for Federal grants, cooperative agreements, and contracts to help promote better access to data and services by all levels of government and by citizens. In addition, GCWG has helped develop requirements for the Geospatial One-Stop (GOS) portal (www.geodata.gov) to improve portal capabilities to locate and satisfy grants, cooperative agreements, and contracts compliance requirements.

The Technical Architecture Work Group (TAWG) develops geospatial requirements and recommendations for the technology and telecommunications infrastructure. The TAWG developed the Geospatial Profile of the Federal Enterprise Architecture (FEA) Version 2.0 to help chief architects determine how and where place-based approaches and associated geospatial resources fit into their enterprise architectures. The Geospatial Profile of the FEA also helps facilitate discussions with Government executives, program managers, and technical staff on how to enhance business operations and intelligence through geospatially enhanced enterprise architectures.

The Geo-Enabled Business Work Group (GEBWG) helps Federal program managers and executives take greater advantage of the benefits of geospatial applications.

Success Stories

Cadastral Data

Challenge: Manage the complexity of cadastral data from more than 4,000 sources in the United States.

Action: The U.S. Bureau of Land Management Cadastral Survey needed to develop standard cadastral datasets based upon business needs, such as wildfire in the western States and designated priority areas in the East. The FGDC Cadastral Subcommittee supported gathering parcel data that could be pre-deployed to 418 counties.

Result: These data provided critical information to allocate scarce resources during the unprecedented Northern California fire events in the summer of 2008.

GEBWG developed the Geospatial LoB Communications Strategy and Implementation Plan and other outreach materials that describe the importance of "geo-enabling" information, including fact sheets, posters, and best practices from the 2008 FGDC Cooperative Agreements Program (CAP) projects. This work group's role includes serving as the communications representative for outreach events.

The Performance Management Work Group (PMWG) provides greater transparency and accountability for Federal geospatial activities. The PMWG completed the Geospatial LoB Performance Management Plan and is reviewing OMB Circular A–16 to identify desired changes, particularly with respect to data themes and theme leads. The PMWG coordinates improved standardization, higher response rate, and more consistent reporting of geospatial investments by Federal agencies.

Milestones for these work groups will continue to be refined or expanded as the Geospatial LoB continues to mature. The accomplishments of the work groups serve as a starting point for meeting the overall goals of the Geospatial LoB. Additional milestones will be identified during the development of the Exhibit 300s for OMB for fiscal year 2010 and beyond. These additional milestones will facilitate the continued growth and success of the Geospatial LoB.

National Geospatial Advisory Committee Formed

In January 2008, Secretary of the Interior Dirk Kempthorne named 28 individuals to serve on the new National Geospatial Advisory Committee (NGAC). The NGAC was established to provide advice and recommendations on Federal geospatial policy and management issues and to provide a forum to convey views representative of partners in the geospatial community. The Committee is sponsored by the U.S. Department of the Interior on behalf of the FGDC member agencies.

Committee members were selected to provide a balanced representation of the various organizations involved in geospatial issues, including the private sector, nonprofit organizations, academic institutions, and various levels of government—Federal, State, Tribal, and local. Anne Hale Miglarese was appointed as Chair of the NGAC and Steven P. Wallach was appointed as Vice Chair. Ivan B. DeLoatch, FGDC Staff

National Geospatial Advisory Committee Leadership

NGAC Chair

Anne Hale Miglarese, NGAC Chair, is a Principal with Booz Allen Hamilton Inc. Previously, she was the President and Managing Director of Fugro EarthData, Inc., a company that specializes in airborne mapping, remote sensing, and geographic information system (GIS) services. She served as chief of the Coastal Information Services branch of the National Oceanic and Atmospheric Administration's Coastal Services Center and was a founding member of the National States Geographic Information Council.

> "I speak on behalf of all of my colleagues when I say I am excited to be part of this process. The NGAC provides an outstanding opportunity for us to work collaboratively, build positive momentum, and help drive the geospatial community toward the realization of the National Spatial Data Infrastructure." – *Anne Hale Miglarese*

NGAC Vice Chair

Steven P. Wallach, NGAC Vice Chair, is the Technical Executive with the National Geospatial-Intelligence Agency (NGA). He serves on the agency's Executive Committee and leads NGA's transformation efforts, including advancing geospatial intelligence, improving horizontal integration with community partners, fully enabling web services for geospatial intelligence access and collaboration, and moving towards foundation-based operations for the community.

Director, serves as the Designated Federal Officer (DFO) for the committee. A complete listing of NGAC members is found in Appendix B.

Based upon feedback from the FGDC Steering Committee members, FGDC Chair James E. Cason identified several initial priority areas for the NGAC to address, including the following:

- Advancing the National Spatial Data Infrastructure (NSDI), with a focus on future roles and responsibilities of key players.
- Public-private partnerships, with a focus on minimizing or removing investment barriers that impede effective partnerships.
- Management of Federal geospatial resources, to include review of revisions to OMB Circular A–16 data themes being developed and coordinated through the Geospatial LoB.
- Prioritization and comment on specific programmatic issues regarding current data initiatives, such as Imagery for the Nation, *The National Map*, and National Land Parcel Data.

The NGAC held its first two meetings in April and June 2008. At these initial meetings, the committee adopted bylaws and a mission statement and established operating procedures. The NGAC also provided recommendations and advice on key geospatial issues, including the IFTN initiative and the Geospatial LoB.

In fiscal year 2009, the NGAC will continue to review and offer recommendations and comment on the FGDC priority areas. The NGAC will meet three or four times per year. NGAC meetings are open to the public, and members of the public will be invited to comment and make suggestions at all committee meetings.

Additional information about the NGAC is available at www.fgdc.gov/ngac.

Cooperative Agreements Program Promotes NSDI

For more than 14 years, the FGDC has sponsored the Cooperative Agreements Program (CAP) with the goal of encouraging and enabling all levels of the geospatial data community to participate in the National Spatial Data Infrastructure (NSDI). The NSDI CAP provides organizations with more than funding; it also provides validation of the importance of an organization's geospatial work and leads to new opportunities that may not have occurred without the CAP funding. CAP efforts have created collaborations within all sectors of government, developed an understanding of geospatial information in organizations and disciplines new to the NSDI, provided seed money to enable geospatial organizations to participate in the national effort to implement the NSDI, promoted the development of standardized metadata in hundreds of organizations, and funded numerous implementations of the Open Geospatial Consortium, Inc.'s (OGC) web mapping services and web feature services.

The more than 25 CAP projects completed in 2008 demonstrate the program's range in scope and geography. A CAP project in Wisconsin, for example, resulted in a web feature services implementation for road network data in the State. Minnesota, North Dakota, and South Dakota partnered to promote shared client framework development and data services among the States and their local government organizations. South Carolina used the CAP funding to create My South Carolina Map (myscmap.sc.gov), a central gateway to geospatial information, and established a formal agreement among 11 State agencies and local governments. New Jersey developed and began hosting OGC-compliant web mapping services with metadata, as well as web feature services. In Washington, Pend Oreille County formed a GIS consortium and is providing integrated OGC-compliant geospatial datasets to *The National Map*. With a partnership between Ohio State agencies and the Federal Government, Ohio published a web mapping service for high-resolution imagery to the GIServOhio portal, *The National Map*, and the GOS portal. The metadata training and outreach projects resulted in more than 30 metadata workshops offered across the United States for a large number of diverse organizations and individuals. A sampling of the training materials created is available at www.rsgis.msu.edu/resources/metadata.

Under the 2008 CAP, funds were granted to 24 projects that addressed the six categories outlined below. Project descriptions and reports are available at www.fgdc.gov/grants/2008CAP/2008CAPDescriptions.

(1) The Metadata Trainer and Outreach Assistance category is designed to enable organizations with metadata expertise, knowledge, and experience to assist other organizations with training and implementation. CAP awarded assistance to four projects to advance metadata training.

(2) The Best Practices in Geospatial Service-Oriented Architecture (SOA) category supports the goals of the Geospatial LoB. The three awarded projects will design, deploy, and document reusable geospatial services and applications using SOA.

(3) The Fifty States Initiative category is designed to accelerate statewide coordination activities through consistent strategic and business plan development. CAP awarded assistance to eight States to begin developing State plans.

(4) The Joint Canadian and United States Spatial Data Infrastructure category is designed to stimulate cross-border cooperation over a geographic area through distributed data and services. The awarded project will focus on critical infrastructures.

(5) The Building Data Stewardships for *The National Map* and the NSDI category is critical to developing a national data inventory of consistent, seamless, integrated geospatial data. The CAP

awarded assistance to four projects to foster stewardship of structures and transportation data.

(6) The FGDC-Endorsed Standards Implementation Assistance and Outreach (excluding Metadata Standards) category is designed to enable organizations with geospatial standards expertise, knowledge, and experience to help other organizations implement FGDC-endorsed standards. CAP awarded assistance to four projects to advance FGDC-endorsed standards.

The CAP budget for fiscal year 2009 is just slightly more than $1.3 million, and these funds will be used to support up to 26 projects. For more information about CAP, see www.fgdc.gov/grants.

Fifty States Initiative Reaches More States

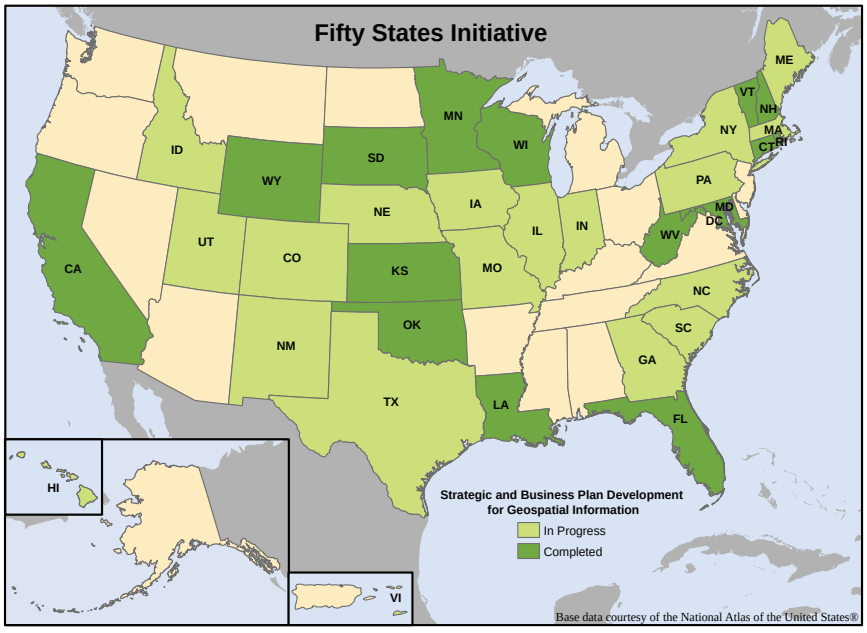
This year marks the third year of the Fifty States Initiative. The primary focus of the Fifty States Initiative is the development of strategic and business plans for geospatial coordination statewide. As of September 2008, 17 States had finished developing their plans and several additional States had plans that were nearly completed.

In developing their plans, each State took the approach that best met its particular needs. For example, to build the business case for developing Iowa's framework data, a rigorous return on investment (ROI) study for geospatial data was conducted. Indiana also performed an ROI that showed that more than $1.7 billion in economic activity depends on IndianaMap, which is the State's geospatial data portal. Vermont's plan focused on development of a geospatial enterprise architecture. Florida developed a statewide coordination strategy for improving response during emergencies.

Here is what some of the awardees are saying about the Fifty States Initiative:

- Our experience with the program was very positive. The exposure at National States Geographic Information Council conferences to the wealth of information to assist with strategic planning was very helpful.
- This fifty State funding made a difference.
- This is the first statewide GIS committee.

The Fifty States Initiative is reaching a majority of the States and having a positive effect. The initiative will reach additional States in 2009 to help them establish a best practice framework for implementing geospatial coordination statewide. Preparations are also underway to develop the next steps for the initiative.



Map showing status of the Fifty States Initiative at the end of fiscal year 2008.

International Activities Advance Global Spatial Data Infrastructure

The FGDC facilitates the building of the NSDI while also promoting the creation of spatial data infrastructures (SDIs) globally. In collaboration with the University of the West Indies, the FGDC played a major role in organizing and conducting the Global Spatial Data Infrastructure Association's 10th international conference (GSDI-10), which was held in Trinidad and Tobago in February 2008. GSDI conferences provide opportunities for geospatial experts and policymakers at local, regional, and global levels to interact for the purpose of considering how SDI developments can help address important worldwide needs.

The GSDI-10 conference program included opening and closing plenary sessions with keynote speakers, daily plenary sessions, technical paper sessions, pre-conference and post-conference workshops that were open to all registrants, a poster exhibit and competition, an exhibition area for highlighting agency initiatives and corporate product and service offerings, and numerous organized roundtable discussions to allow people from common regions of the globe or with common interests to present, discuss, and share issues, experiences, and plans. The conference resulted in roughly 200 papers and posters and about 400 registrants from more than 40 nations.

Another way in which the FGDC promotes the development of SDIs globally is as cosponsor of the GSDI Small Grants Program together with the GSDI Association and

GisCorps, a program of the Urban and Regional Information Systems Association (URISA). Individual small grants of $2,500 and (or) in-kind support are awarded to individual national and subnational SDI efforts. In 2007, small grants were awarded as follows (by region): Africa (7), Asia and Pacific (3), Americas (2), and Europe (1). In 2008, the call for proposals closed on August 30, 2008, and 41 proposals were received from the following regions: Africa (22), Asia and Pacific (12), Americas (7). Thirty-one of these proposals will be sent to their respective regions for review and recommendations. The GSDI Association anticipates announcing 16 awardees early in fiscal year 2009.

In 2002, the FGDC started publishing a monthly electronic newsletter for Africa featuring SDI and GIS conferences, workshops, training, and accomplishments for the countries of Africa. As a result, communication among programs and awareness of projects on the continent were vastly improved and led to the establishment of a professional network for information exchange on geospatial activities. Similar newsletters were implemented for the Americas and the Asia and Pacific region in succeeding years. In 2008, the actual management and operation of these newsletters was moved to the respective regions. The FGDC continues to provide partial financial support for the publication and dissemination of these newsletters through the GSDI Association.

The FGDC signed a letter of intent with Land Information Ontario (Canada) in fiscal year 2008 to develop training and promotional material for the upcoming North American Profile of ISO 19115:2003 Geographic Information—Metadata. A suite of training materials is being developed and made available to both U.S. and Canadian users of the standard. Ten or more guidance and implementation documents are being developed and jointly reviewed to ensure completeness and accuracy. The topics for these materials include an introduction to ISO Metadata, the North American Profile, implementation guides, and a cost-benefit analysis of implementing the NAP. The period covered by the joint agreement is May 2008 through November 2009.

The sixth joint U.S./Canadian SDI project, conducted in collaboration with GeoConnections (Canada), was announced and initiated in fiscal year 2008. This project, called "Cross-Border Content and Services for Critical Infrastructure Identification," will deploy standards-based web mapping services and web feature services for critical structures databases and framework data for use in both the United States and Canada.

FGDC Metadata Program Coordinates and Collaborates

Work continues with the profile for metadata, which is being developed jointly by the American National Standards Institute (ANSI) and the Canadian General Standards Board. The resulting document will be called the North American Profile (NAP). An ANSI–sponsored public review of the NAP was held August 25 through October 6, 2008, followed by adjudication of the comments. The resulting North American Profile of ISO 19115:2003 Geographic Information—Metadata is intended to meet the geographical metadata needs of both countries. ANSI adoption of the NAP is anticipated during the first half of fiscal year 2009 with adoption by the FGDC Standards Working Group to follow thereafter.

The FGDC Metadata Program is developing materials, a workbook, a guide, and a graphic representation to facilitate the transition to the NAP, which will take place over a span of time. The NSDI Training Program has developed a lesson on the NAP, and additional training materials will be available early in 2009. The FGDC and Land Information Ontario agreed in mid-year 2008 to review and share their respective NAP educational materials.

The FGDC Metadata Program continues to assist NSDI stakeholders in metadata implementation. Direct consultation was provided to more than 50 Federal, State, academic, nonprofit, and private sector organizations. The Metadata Working

Success Stories

Meeting the Data Needs of Agriculture Programs

Challenge: Make up-to-date orthoimagery available for agriculture program administration, compliance, and management.

Action: The U.S. Department of Agriculture (USDA) Farm Service Agency (FSA) continued to implement the National Agriculture Imagery Program (NAIP) in 2008, acquiring 1-meter-resolution imagery in 20 States. Total program expenditures were $14.3 million, with other Federal and State partners contributing $4.2 million. NAIP imagery is in the public domain and is distributed through the USDA Geospatial Data Gateway portal. The data is discoverable through Geospatial One-Stop.

Result: NAIP acquires imagery annually during the growing season and provides timely imagery to support administration, management, and monitoring of USDA programs. The imagery is a valuable dataset for agriculture producers to improve operations and maximize crop output. Other Federal, State and local entities, and commercial and private interests use the imagery. The NAIP is a significant imagery data source for rural areas and small- to mid-sized urban areas; it also offers current imagery for pre-disaster baseline information and post-disaster assessment.

Group was convened, via teleconference, during fiscal year 2008 to discuss metadata-related issues and activities. The group's annotated meeting notes are available at www.fgdc.gov/participation/working-groups-subcommittees/mwg/index_html.

The Metadata Working Group led the development of an ISO 19115 Metadata Editor Review and solicited input from software developers and users. The latest version of the review is available at www.fgdc.gov/participation/working-groups-subcommittees/mwg/isoreview/index_html.

Geospatial One-Stop Continues to Grow and Improve

The Geospatial One-Stop (GOS) portal is the official means for accessing metadata resources managed in the National Spatial Data Infrastructure Clearinghouse Network. Metadata held by Federal, State, Tribal, and local entities, and by academic and nonprofit organizations, and the private sector are published through the Clearinghouse Network at www.geodata.gov.

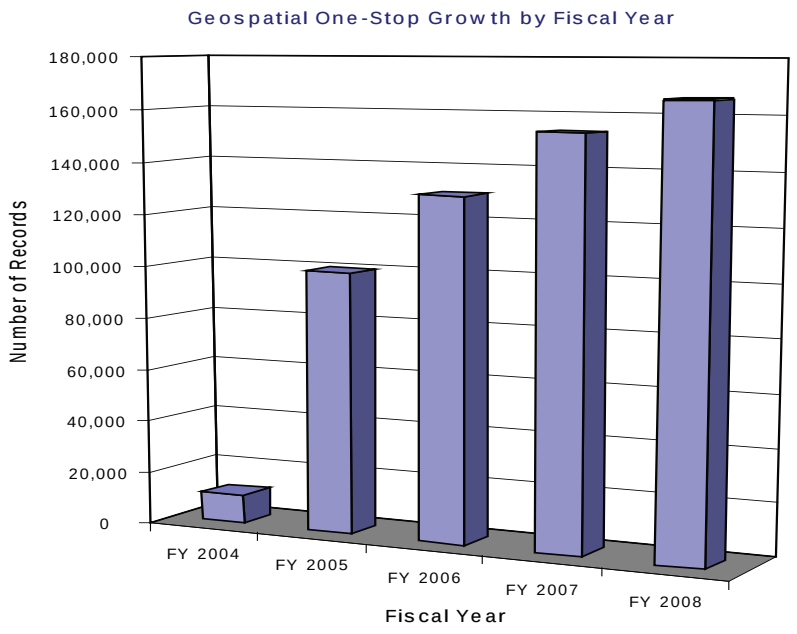
With intergovernmental cooperation and support, the GOS portal continued its steady growth in fiscal year 2008 with the addition of more than 165,000 individual metadata records contributed by 392 publishers, which is a 7 percent increase in the number of records from the previous year. The efforts of the Interagency Working Group on Ocean and Coastal Mapping and the State GIS Inventory System contributed significantly to the increase in valuable content. In addition, the number of portal users averaged about 80,000 per month in fiscal year 2008, which represents an increase in traffic to the site of more than 40 percent. Through an interagency personnel agreement, GOS continued to focus on outreach and increasing the participation of local governments, which resulted in increased registration of web mapping services, primarily by major U.S. cities and metropolitan areas.

In fiscal year 2008, key enhancements to the GOS portal included improving the quality of linkages to live map services through implementation of the FGDC Map Service Checker and integration of the checker with the GOS portal search results. This upgrade provides publishers with tools for checking the quality of metadata and web mapping services. A second key enhancement was the introduction of an improved catalog service for the web interface, which greatly increases the speed at which the catalog's content may be searched from outside systems. This enhancement also benefits Global Earth Observing System of Systems (GEOSS) catalog connection activities, given that GOS is a primary U.S. node in this international effort. A third enhancement is the improved classification of Federal publishers, which helps facilitate the reporting of Federal activities. This effort will also enhance reporting on metadata usage to publishers and upgrade metric reporting. Other enhancements to the GOS portal focused on taking advantage of new technologies and data types. For example, GOS now supports publishing of GeoRSS and Keyhole Markup Language (KML) content types and the use of representational state transfer (REST) interfaces to improve notification of new content.

These new enhancements also provide value to the data partnering opportunities available through the GOS Marketplace, which is a site where organizations can advertise their interest in or intent to collect geospatial data and seek partners to share the cost. This year, approximately 2,500 records were available for discovery via the Marketplace and an estimated 250 contacts were made regarding possible partnerships for data acquisition.

The GOS communities continue to improve, although some data categories need additional refinement to foster better collaboration. Communities are specialized areas for sharing information in specific data categories, such as administrative boundaries, agriculture, and the environment.

New content added to the GOS portal in fiscal year 2008 includes ocean and coastal data, fire mapping data, and hurricane data. In addition, a new historical data collection



Graph showing growth in overall collection of geospatial data records over the past 5 years.

was added by the National Archives and Records Administration (NARA) and the U.S. Library of Congress. The FGDC Homeland Security Working Group took initial steps towards the publishing of public safety national datasets in the Homeland Security community.

Standards Press Forward

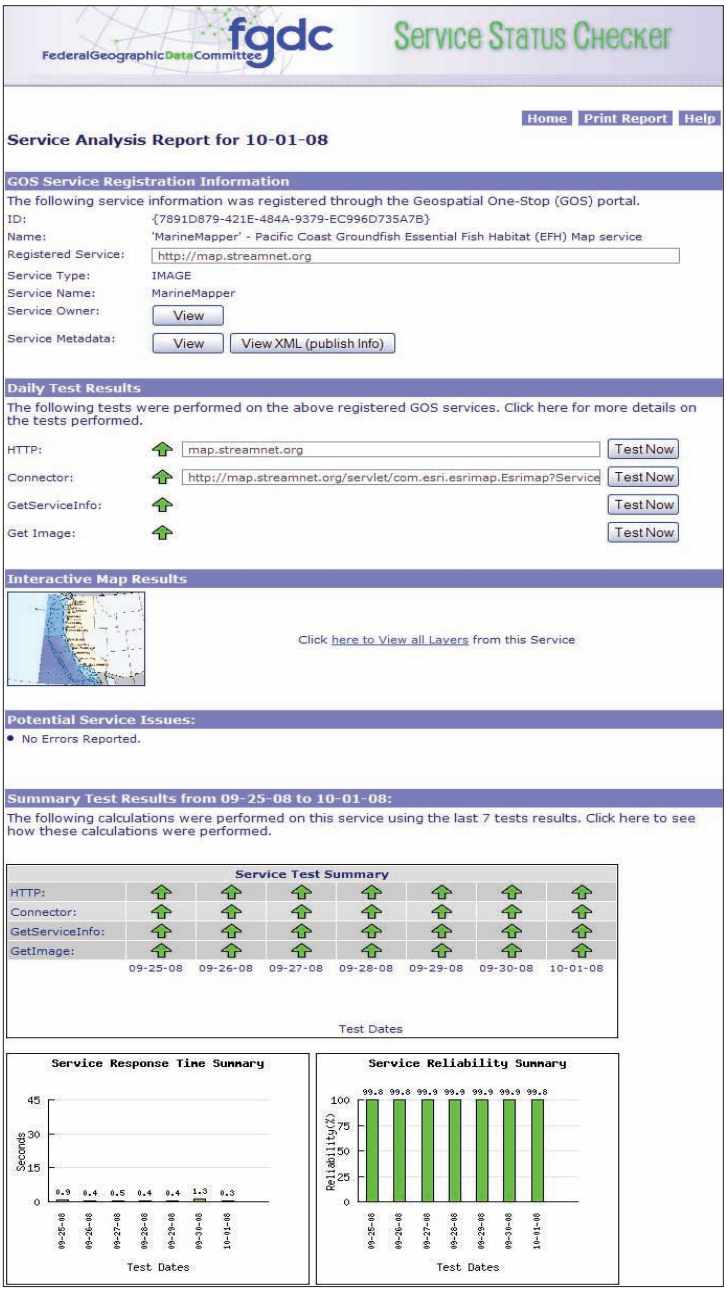
Standards are critical to the development, sharing, and use of geospatial data. The FGDC develops geospatial data standards for implementing the NSDI, in consultation and cooperation with State, Tribal, and local governments; academic institutions; the private sector; and, to the extent feasible, the international community.

The FGDC Standards Working Group promotes and coordinates FGDC standards activities; provides guidance on FGDC standards policy and procedures; facilitates coordination between subcommittees having overlapping standards activities; and reviews and makes recommendations on the approval of standards proposals, committee draft standards for public review, and final draft standards for FGDC endorsement.

The FGDC oversees the development of standards only when no equivalent voluntary consensus standards exist. OMB Circular A–119 directs Federal agencies to use voluntary consensus standards whenever possible. In addition, it directs Federal agencies to participate in voluntary consensus standards activities. To that end, the FGDC and its member agencies have joined the International Committee for Information Technology Standards (INCITS) Technical Committee L1 on Geographic Information. INCITS Technical Committee L1 is the means by which Federal agencies and non-Federal organizations participate in geospatial standardization activities of the ANSI and ISO, the International Organization for Standardization.

In May 2008, the FGDC endorsed the Geographic Information Framework Data Standard. This standard was created to enable data exchange for the seven NSDI Framework data themes (cadastral, digital orthoimagery, elevation, geodetic control, governmental unit boundaries, hydrography, and transportation) identified in OMB Circular A–16. FGDC endorsement enabled the Geographic Information Framework Data Standard to be freely available to producers and users.

In February 2008, the FGDC endorsed the National Vegetation Classification Standard (Version 2.0), which is a complete revision of the National Vegetation Classification Standard that the FGDC endorsed in 1997.



Example of Geospatial One-Stop service analysis report.

A final draft Wetlands Mapping Standard and adjudication of comments from public review that closed in fiscal year 2007 was submitted to the FGDC standards program manager in July 2008 in preparation for FGDC endorsement.

The FGDC approved release of the draft Federal Trails Data Standard for a 90-day public review period. Public review opened in May 2008 and closed in August 2008.

Two proposals for standards projects were approved in fiscal year 2008. The National Park Service has begun work to develop a Cultural Resources Geospatial Data Content Standard under the sponsorship of the FGDC Subcommittee on Cultural and Demographic Data. The FGDC Coastal and Marine Spatial Data Subcommittee has begun work to develop a Coastal and Marine Ecological Classification Standard.

INCITS Technical Committee L1 voted to recommend advancing the draft North American Profile of ISO 19115:2003, Geographic Information—Metadata to become an American National Standard (ANS). An ANSI-sponsored public review of the draft NAP opened on August 22, 2008. The ANSI-sponsored public review of the draft NAP lasts 45 days.

In addition, INCITS Technical Committee L1 voted to recommend advancing the draft Information Technology—Minimum Geographic Feature Identifying Attributes standard to become an ANS. The feature record identifier described in this draft standard supersedes the Federal Information Processing Standard (FIPS) 55 Place Code in the Geographic Names Information System (GNIS, geonames.usgs.gov). The ANSI-sponsored public review opened on November 30, 2007, and closed on January 14, 2008. The draft Information Technology—Minimum Geographic Feature Identifying Attributes standard is pending approval as an ANS.

NSDI Training Partnership Continues

The National Spatial Data Infrastructure (NSDI) Training Program continues to offer courses in partnership with the NSDI CAP and the USGS geospatial liaisons, as well as with the Federal Emergency Management Agency (FEMA) and the U.S. Fish and Wildlife Service (FWS). NSDI and metadata sessions are presented in courses offered several times per year at FEMA's Emergency Management Institute and FWS's National Conservation Training Center; they are also offered in the field quarterly. As part of FEMA's multihazard and risk assessment cadre of classes, the components of the NSDI are invaluable as they relate to the analysis of potential losses from flood, hurricane winds, and earthquakes. All courses are well attended with students from Federal, State, Tribal, and local governments.

Since 2005, the FGDC has engaged in a partnership with Texas A&M University to support metadata training in the Gulf Coast region. In 2007, the project achieved great success in training regional councils in Texas. In fiscal year 2008, this project continued to use metadata training expertise from GeoMaxim, John C. Stennis Space Center, Radiance Technologies, Inc., and Texas A&M and coordination from the Texas State GIS Coordinator. The USGS geospatial liaisons from Alabama, Florida, Georgia, and Mississippi have been instrumental in coordinating training in the region. Two Train-the-Trainer and three Introduction to Metadata workshops have been held under this partnership. The Florida workshops will be delayed until 2009 because of hazardous travel conditions resulting from tropical storms and hurricanes.

The NSDI Training Materials Project added six new and updated lessons in fiscal year 2008. Information collected by a survey of users and a web performance assessment is being used to update the curriculum and project work plan. Key components of the updated work plan include the development

Success Stories

Neighborhood Stabilization

Challenge: Escalating housing foreclosures have had a devastating impact not only on individuals and families but on local neighborhoods and the broader economy. Foreclosures and long-term vacancy can have pernicious effects on the value of surrounding homes, the quality of life within communities, and the overall local economy in affected regions.

Action: Congress authorized the Department of Housing and Urban Development (HUD) to design a formula for allocating $3.92 billion to State and local governments for emergency assistance with redeveloping abandoned and foreclosed homes. HUD engaged a number of geospatially-enabled federal and publicly available data sources to create a transparent and equitable allocation formula for disseminating these funds. These public data capture several of the major elements that predict where foreclosures are occurring, falling home values, concentrations of high cost loans, and unemployment.

Result: Local governments and States are receiving funds in a timely, fair, and expeditious manner to help deal with the serious housing-related challenges in communities across the Nation.

of new lessons and a strategy for converting presentations to an online interactive learning environment. All lessons are available on the FGDC website for review, download, and (or) edit. Users of the lessons are encouraged to comment on the content and the value of the lessons. The lessons are available at www.fgdc.gov/training/nsdi-training-program/online-lessons#nsdi.

Imagery for the Nation Starts Phase 1

Building upon the cost-benefit analysis that was performed in 2007, the Imagery for the Nation (IFTN) initiative was advanced significantly in fiscal year 2008. In the spring, the newly formed FGDC Executive Committee embraced IFTN as its first leadership initiative. The NGAC also endorsed IFTN but identified several procurement, management, and strategic issues that need to be addressed.

Executive Champions have been selected to lead seven activity areas that make up the IFTN Phase 1 project, and Federal and State geospatial leaders from across the imagery community have been engaged to chair or participate in work groups for each of the activities. Together, the FGDC Executive Committee and the IFTN work groups are working to address the several issues identified by the NGAC and to develop a plan for implementing the IFTN.

The goal of the IFTN program is that "the Nation will have a sustainable and flexible digital imagery program that meets the needs of local, State, regional, Tribal and Federal agencies." The IFTN is being designed as a Federal program conducted in partnership with State and local governments. The program plans to leverage resources across all levels of government to address their basic business needs. From the Federal perspective, the intent of IFTN is to address the needs of the Federal enterprise, including all agencies that acquire and (or) consume imagery products.

The table lists the IFTN work groups and some of their current activities.

Imagery for the Nation Work Groups and Current Activities

Work group	Executive Champion	Current activities
Technical Plan	Charles R. Christopherson, Jr. U.S. Department of Agriculture	Document Federal imagery requirements, develop plans for rescoping existing programs, develop plans for the "to-be" IFTN program, and recommend an IFTN governance structure
Funding Strategy	James E. Cason U.S. Department of the Interior	Document Federal imagery expenditures, develop funding strategies for rescoping existing programs, and develop funding strategies for the "to-be" IFTN program
Contracting Strategy	Steven P. Wallach National Geospatial-Intelligence Agency	Document the practices and capacities of the existing Federal imagery contracting configuration and develop a contracting strategy for the "to-be" IFTN program
Hosting and Archiving Strategy	Joseph F. Klimavicz U.S. Department of Commerce	Document existing capacities and practices as a baseline to determine a hosting and archiving architecture for the "to-be" IFTN program
Partnership Strategy	Molly A. O'Neill U.S. Environmental Protection Agency	Determine agreements vehicles for institutionalizing funding at the executive level for existing Federal imagery programs and for the "to-be" IFTN program
Guidance and Direction	Dominic Sale Office of Management and Budget	Develop guidance and direction for Federal agencies for implementing the "to-be" IFTN program
Communications Strategy	Charles J. Gay National Aeronautics and Space Administration	Establish an effective external communications process for the IFTN initiative during Phase 1 of the project, and develop a communications strategy for the "to-be" IFTN program

FGDC Goals for Fiscal Year 2009

1. Implement the Geospatial Line of Business

The Geospatial Line of Business (Geospatial LoB) has identified milestones for the six Geospatial LoB work groups. Key goals for fiscal year 2009 include the following:

- Make and implement changes to Office of Management and Budget (OMB) Circular A–16, Appendix E: Data Themes, Definitions, and Lead Agencies.
- Develop a repeatable process for modifying OMB Circular A–16 appendices and making recommendations for specific Circular A–16 changes.
- Establish two multiagency Enterprise License Agreements.
- Submit a proposal for Government-wide management of data lifecycles for significant geospatial datasets.
- Develop a timeline for changes to Federal acquisition regulations and Defense Federal acquisition regulations or additions to contracts with approval from the OMB.
- Deploy web services testing and requirements reporting for the Federal Enterprise Architecture.

2. Collaborate with the National Geospatial Advisory Committee (NGAC)

The National Geospatial Advisory Committee (NGAC) plans to hold three or four public meetings in fiscal year 2009. The FGDC will manage the review, disposition, and implementation of NGAC recommendations. Goals for the NGAC in fiscal year 2009 include the following:

- The NGAC will review and make recommendations on key geospatial policy and management issues, including transition recommendations, and issues related to national land parcel data, Imagery for the Nation, Geospatial LoB implementation, and strategies for *The National Map*.
- FGDC will review and respond to advice and recommendations from NGAC.
- FGDC will initiate and facilitate the next cycle of NGAC nominations and appointments.

3. Develop a National Strategy for Geospatial Information

The FGDC, with recommendations from the NGAC, will develop an initial framework for a National Strategy for Geospatial Information to strengthen our ability to advance the development of the National Spatial Data Infrastructure (NSDI).

4. Expand the Fifty States Initiative

In fiscal year 2009, seven new Fifty States Initiative awards are planned, with a kickoff meeting scheduled for February 2009. These awards are targeted at adding new States. Focus will be placed on the implementation of these plans. The next step will be to identify best practices for implementation. A workshop and other information gathering methods will be used to scope out the next steps for the Fifty States Initiative.

5. Continue International Collaboration and Leadership

The FGDC will continue to support the Global Spatial Data Infrastructure (GSDI) Association and its 11th international conference (GSDI-11), which will be held in June 2009 in Rotterdam, Netherlands. FGDC will also support the GSDI Small Grants Program. Furthermore, FGDC will continue its collaboration with foreign agency counterparts through existing agreements with Canada and Europe; specifically, by supporting technical assistance and information exchange on geospatial standards and practices through the intergovernmental Group on Earth Observations (GEO). Lastly, FGDC plans to coordinate and host [through the U.S. Geological Survey (USGS)] the Second Circumpolar Conference on Geospatial Applications (GeoNorth-II) to be held in August 2009 in Fairbanks, Alaska.

6. Enhance the Geospatial One-Stop Portal

A key goal for the Geospatial One-Stop (GOS) portal for fiscal year 2009 is to help develop a simplified search function to assist potential Federal grantees and contractors. Grantees or contractors must search for existing data before they begin acquisition of new data, and subsequently must ensure that the geospatial data they created through a Federal grant or contract process are published through the GOS portal. Another key goal in supporting the NSDI CAP is to lead projects that will take advantage of the GOS metadata catalog through open system interfaces.

The GOS team will continue to improve the quality and reliability of published linkages to web mapping services to enable easier sharing of 'live' data services. This will be accomplished by working closely with the USGS geospatial liaisons, State geographic information system (GIS) coordinators, agency partners, and *The National Map*

program. In addition, new reports will provide better feedback to GOS publishers on how their data are being used. Other major efforts will focus on integration of the GOS portal with *The National Map*, supporting the Oceans and Coastal Mapping inventory, and continuing outreach efforts to further expand the GOS catalog.

7. Advance the Development and Acceptance of Standards

The following standards documents are expected to be completed in fiscal year 2009:

- Committee draft for the Address Data Standard, the Hydrologic Units Codes, and the Cadastral Data Content Standard, v1.4.
- Proposal to revise the FGDC-endorsed Standard for a U.S. National Grid.
- A final draft of the Federal Trails Data Standard and the Shoreline Data Content Standard.
- Working drafts of the Cultural Resources Geospatial Data Content Standard and the Coastal and Marine Ecological Classification Standard.
- A revised final draft of the Wetlands Mapping Standard.
- A new standard, Information Technology—Minimum Geographic Feature Identifying Attributes, which is scheduled to replace the existing standard for Geographic Names Information System (GNIS) identifiers.

8. Advance Imagery for the Nation

A key goal of Imagery for the Nation (IFTN) is to complete the Phase 1 project by the end of calendar year 2008 and to present the plan to the FGDC Steering Committee for review and decision on further action. The goal for Phase 1 is to develop a foundation that will provide momentum for continuing development and, eventually, funding to implement the IFTN vision. The project can then serve as a model for the coordination of other national data theme initiatives.

9. Improve National Land Parcel Data

The primary goal of the FGDC Cadastral Subcommittee is to work in collaboration with cadastral data producers and stakeholders to implement policies and procedures for standardizing and sharing cadastral data. In fiscal year 2009, the subcommittee plans to—

- Track and report progress in the use of cadastral data and standards.
- Establish standardized Public Land Survey Systems in seven States.
- Establish standardized parcel information in two Western States in support of wildfire management (the information should be sustainable and self-sufficient).
- Become the national coordinator for parcel data, pending approval and funding for three full-time positions in the U.S. Bureau of Land Management (BLM) as outlined in the National Land Parcel Data study.
- Obtain a CAP grant funding category for parcel information and fund it through the existing FGDC CAP at $600,000 per year for 5 years.

10. Support Homeland Security and Emergency Management

In fiscal year 2009, the FGDC Homeland Security Working Group (HSWG) plans to assist in preparing OMB Circular A–16 supplemental guidance that adds NSDI homeland security and homeland defense data themes and corresponding proposed lead agencies. It will support continued coordination and reviews of the U.S. Department of Homeland Security (DHS) Geospatial Data Model (GDM), including physical data model implementations, GDM documentation, and automated web-based tools intended to help users adopt the DHS GDM. Lastly, the HSWG will deal with issues associated with emergency management and other homeland security map symbol needs; specifically, expanding the ANSI emergency response symbol sets, supporting additional map scales, training, and defining additional symbol formats.

Success Stories

Productive Lands and a Healthy Environment

Challenge: Provide customers with authoritative geospatial data to help meet the U.S. Department of Agriculture (USDA) goals of productive lands and a healthy environment.

Action: The USDA enhanced and maintained the USDA Geospatial Data Gateway.

Result: The USDA's Geospatial Data Gateway portal (datagateway.nrcs.usda.gov) processed more than 100.7 terrabytes of geospatial data for internal and external customers in fiscal year 2008. The most popular products were National Agriculture Imagery Program (NAIP) imagery; soils, common land units, and watershed boundary data; and elevation and base maps layers to support natural resource applications.

Appendix A.
FGDC Leadership Profiles

James E. Cason

Associate Deputy Secretary, U.S. Department of the Interior
Chair, FGDC Steering Committee and Executive Committee

Since 2001, James E. Cason has served as Associate Deputy Secretary for the U.S. Department of the Interior. In March 2007, he was also tasked with fulfilling the duties and responsibilities of the Assistant Secretary for Policy, Management and Budget. He is originally from Portland, Oregon, and earned a bachelor's degree in business administration from Pacific University.

Karen S. Evans

Administrator of Electronic Government and Information Technology
Office of Management and Budget
Vice Chair, FGDC Steering Committee and Executive Committee

Karen S. Evans previously served as Chief Information Officer for the U.S. Department of Energy. She earned a bachelor's degree in chemistry and a master's degree in business administration from West Virginia University.

Ivan B. DeLoatch

Staff Director
Federal Geographic Data Committee

Ivan B. DeLoatch previously served as Chief of the Data Acquisition Branch in the U.S. Environmental Protection Agency's Office of Environmental Information. He earned a bachelor's degree in biology from Bowie State University.

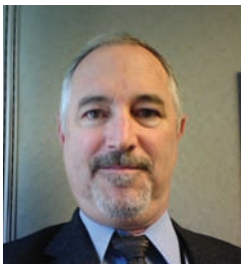
New FGDC Executive Committee

In fiscal year 2008, the FGDC Executive Committee was established as a component of the FGDC Steering Committee. In addition to Mr. Cason, FGDC Chair, and Ms. Evans, FGDC Vice Chair, who are profiled in the FGDC Leadership, the members of the Executive Committee are listed below.

Charles R. Christopherson, Jr.

Chief Information Officer and Chief Financial Officer
U.S. Department of Agriculture

Before coming to the U.S. Department of Agriculture, Charles R. Christopherson, Jr., was cofounder and President of CB Solutions LLC. He has a master's degree in business administration from the University of Oregon, a bachelor's degree in accounting from Brigham Young University, and a Certified Public Accountant license in the State of Washington.



Charles J. Gay

Deputy Associate Administrator for the Science Mission Directorate
National Aeronautics and Space Administration

Charles J. Gay was previously Deputy Director of the Office of System Safety and Mission Assurance at Goddard Space Flight Center. Mr. Gay received a bachelor's degree in civil engineering and a master's degree in structural engineering from the University of Maryland.

Joseph F. Klimavicz

Chief Information Officer and Director, High Performance Computing and Communications, National Oceanic and Atmospheric Administration
U.S. Department of Commerce

Joseph F. Klimavicz previously served at the U.S. Department of Defense as the National Geospatial-Intelligence Agency Deputy Chief Information Officer. Mr. Klimavicz received a Bachelor of Science degree and a master's degree in engineering from Virginia Polytechnic Institute and State University.

Richard F. Mangogna

Chief Information Officer
U.S. Department of Homeland Security

Richard F. Mangogna oversees the U.S. Department of Homeland Security's technology programs. Mr. Mangogna has taken extensive Continued Professional Development coursework at the Harvard Advanced Management Development Program, the Harvard Managing Computer Resource Program, the Dartmouth Senior Management Program, and IBM's Systems Engineering Program.

Molly A. O'Neill

Assistant Administrator for the Office of Environmental Information and Chief Information Officer
U.S. Environmental Protection Agency

Molly A. O'Neill is a member of the Federal Chief Information Officers (CIO) Council, where she currently serves as co-chair of the Architecture and Infrastructure Committee. She is a graduate of Virginia Polytechnic Institute and State University.

Steven P. Wallach

Technical Executive
U.S. Department of Defense

Steven P. Wallach serves on the National Geospatial-Intelligence Agency's Executive Committee. He holds a master's degree in computer resources management from Webster University and is a graduate of the Armed Forces Staff College and the Industrial College of the Armed Forces.

Appendix B.
FGDC Structure and Membership

The explosive growth of technologies that produce and leverage geospatial information has created enormous opportunities as well as considerable challenges for the Federal Government.

The effective use of geospatial information requires close coordination among the many agencies involved in its development. Office of Management and Budget (OMB) Circular A–16 was originally issued in 1953, revised in 1967, and revised again in 1990 and 2002. It created the Federal Geographic Data Committee (FGDC) as the interagency coordinating body to promote development, sharing, and dissemination of geospatial data. By Executive Order 12906 in 1994, the FGDC was charged to develop the National Spatial Data Infrastructure (NSDI).

The NSDI encompasses the technology, policies, standards, and human resources necessary to acquire, process, store, distribute, and improve utilization of geospatial data for a variety of users nationwide. The FGDC's leadership role is critical as the importance of geospatial capabilities to improve the efficiency and effectiveness of government is recognized.

OMB Circular A-16 (revised August 2002) incorporates Executive Order 12906 and reaffirms the FGDC's role to provide leadership for the NSDI with the coordinated development, use, sharing, and dissemination of the Nation's geospatial data. In 2008, the National Geospatial Advisory Committee (NGAC) was established as a Federal advisory committee sponsored by the U.S. Department of the Interior.

FGDC Structure

The FGDC is governed by a steering committee that sets its high-level strategic direction. An Executive Committee of officials from agencies with a major geospatial component in their mission provides additional guidance to the steering committee. Advice and recommendations on Federal and national geospatial programs come from the NGAC. The Coordination Group advises on the FGDC's day-to-day business, which is carried out by the FGDC Secretariat located at the U.S. Geological Survey in Reston, Va.

The FGDC infrastructure also includes committees, agency-led working groups and subcommittees, and collaborating partners representing organizations from State, Tribal, and local governments, as well as industry and academic and professional groups. All initiate and support the following activities crucial to expanding the NSDI:

- Developing and establishing the National Geospatial Data Clearinghouse on the Internet.
- Developing and implementing standards.
- Creating a national digital geospatial data framework. The framework covers seven fundamental geographic themes: geodetic control, elevation, orthoimagery, transportation, hydrography, governmental units, and cadastral information.
- Promoting collaborative relationships for sharing geospatial data among non-Federal partners.
- Developing policies and processes to better harmonize collective action.

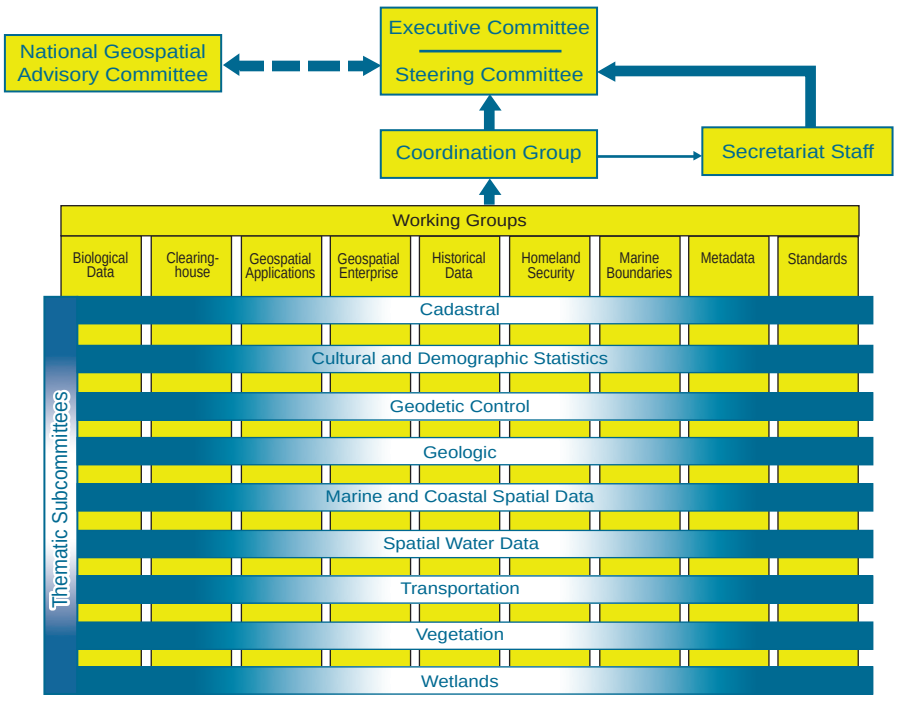


Chart showing the structure of the Federal Geographic Data Committee.

Steering Committee

The Steering Committee is the policy-level interagency group responsible for overseeing OMB Circular A–16-related activities and implementation of the NSDI. It provides executive leadership and establishes policy to coordinate geospatial activities between, among, and within Federal agencies. The Committee meets three to four times per year in Washington, D.C., and is composed of senior agency officials for geospatial information (SAOGIs).

The Secretary of the Interior or designee chairs the FGDC Steering Committee, which is composed of representatives from Federal organizations, including the Executive Office of the President and Cabinet-level and independent Federal agencies. The Deputy Director for Management of the OMB or designee serves as Vice Chair.

A subset of the Steering Committee, the Executive Committee, meets more frequently and is responsible for providing guidance and helping move forward critical decisions. The Executive Committee makes recommendations to the Steering Committee and provides a focal point for coordination with the NGAC.

2008 Steering Committee Members

Chair, Deputy Secretary, U.S. Department of the Interior	www.doi.gov	∆**James E. Cason**
Vice Chair, Administrator, Electronic Government and Information Technology (IT), Office of Management and Budget	www.omb.gov	∆**Karen S. Evans**
U.S. Department of Agriculture	www.usda.gov	*∆**Charles R. Christopherson, Jr.**
U.S. Department of Commerce	www.commerce.gov	*∆**Joseph F. Klimavicz**
U.S.Department of Defense	www.defenselink.mil	*∆**Steven P. Wallach**
U.S. Department of Education	www.ed.gov	*Mark Schneider
U.S. Department of Energy	www.doe.gov	*Tom Pyke
U.S. Department of Health and Human Services	www.dhhs.gov	*John L. Teetet
U.S. Department of Housing and Urban Development	www.hud.gov	*Darlene F. Williams
U.S. Department of Homeland Security	www.dhs.gov	*∆**Richard F. Mangogna**
U.S. Department of the Interior	www.doi.gov	*James E. Cason
U.S. Department of the Interior	www.doi.gov	Tim Petty
U.S. Department of Justice	www.usdoj.gov	*Vance E. Hitch
U.S. Department of Labor	www.dol.gov	*Patrick Pizzella
U.S. Department of State	www.state.gov	*Susan Swart
U.S. Department of Transportation	www.dot.gov	*Dr. Steve Dillingham
U.S. Department of the Treasury	www.treasury.gov	*Peter McCarthy
U.S. Department of Veterans Affairs	www.va.gov	*Mark Gorenflo
U.S. Environmental Protection Agency	www.epa.gov	*∆**Molly A. O'Neill**
Federal Communications Commission	www.fcc.gov	Julius Knapp
General Services Administration	www.gsa.gov	*Diane L. Herdt
Library of Congress	www.loc.gov	*Dr. John Hébert
National Aeronautics and Space Administration	www.nasa.gov	*∆**Charles J. Gay**
National Archives and Records Administration	www.archives.gov	*Michael J. Kurtz
National Science Foundation	www.nsf.gov	*Jarvis Moyers
Nuclear Regulatory Commission	www.nrc.gov	*Darren Ash
Office of Personnel Management	www.opm.gov	*Janet L. Barnes
Small Business Administration	www.sba.gov	*Michael P. McHale
Smithsonian Institution	www.si.edu	vacant
Social Security Administration	www.socialsecurity.gov	vacant
Tennessee Valley Authority	www.tva.gov	*Roy Teal
U.S. Agency for International Development	www.usaid.gov	*Michael Hess
U.S. Army Corp of Engineers	www.usace.army.mil	James C. Dalton

*Designated Senior Agency official for Geospatial Information
∆Executive Committee Members

Coordination Group

The FGDC Coordination Group advises on the day-to-day business of the FGDC, carrying out the interagency coordination and implementation of the NSDI at the operational level. It also facilitates and oversees the work of the FGDC subcommittees and working groups. The Coordination Group meets monthly in Washington, D.C., and is composed of representatives from Federal agencies and collaborating partners.

2008 Coordination Group Members

U.S. Department of Agriculture	
USDA Geospatial Projects Manager	Dennis Crow
Natural Resources Conservation Service	Marisa Capriotti
U.S. Forest Service	Betsy Kanalley
Farm Service Agency	Shirley Hall
U.S. Department of Commerce	
U.S. Census Bureau	Randy Fusaro
National Oceanic and Atmospheric Administration	Tony LaVoi
U.S. Department of Defense	
Business Domain	David LaBranche
National Geospatial-Intelligence Agency	Mark DeMulder
U.S. Army Corps of Engineers	Nancy Blyler
U.S. Department of Education	vacant
U.S. Department of Energy	David Morehouse
U.S. Department of Health and Human Services	vacant
U.S. Department of Homeland Security	Scott McAfee
U.S. Department of Housing and Urban Development	Jon Sperling
U.S. Department of the Interior	
Bureau of Land Management	Don Buhler
Minerals Management Service	Jim Fulmer
National Park Service	Joe Gregson
U.S. Fish and Wildlife Service	Doug Vandegraft
U.S. Geological Survey	Bob Pierce
U.S. Department of Justice	
National Institute of Justice	Lew Sanford Alt: Rani Balasubramanyam
U.S. Department of Labor	vacant
U.S. Department of State	Ray Milefsky
U.S. Department of Transportation	Mark Bradford
U.S. Department of the Treasury	vacant
U.S. Department of Veterans Affairs	Dat Tran Alt: Pheakdey Lim
U.S. Environmental Protection Agency	Wendy Blake-Coleman
Federal Communications Commission	Donald Campbell
Federal Energy Regulatory Commission	Susan Tseng
General Services Administration	John D'Alessandro Alt: Sandra Downie
Library of Congress	Colleen Cahill & Jacqueline Nolan
National Academy of Sciences	Maria Uhle
National Archives and Records Administration	Brett Abrams
National Aeronautics and Space Administration	Francis Lindsay
National Capital Planning Commission	Shane Dettman
National Science Foundation	vacant
Nuclear Regulatory Commission	vacant
Office of Personnel Management	vacant
Small Business Administration	vacant
Smithsonian Institution	vacant
Social Security Administration	vacant
Tennessee Valley Authority	Charles Smart
U.S. Agency for International Development	vacant

National Geospatial Advisory Committee

The National Geospatial Advisory Committee was established under the Federal Advisory Committee Act and is sponsored by the U.S. Department of the Interior. It is an advisory body that provides advice and recommendations on Federal geospatial policy and management issues and a forum to convey views representative of partners in the geospatial community. NGAC membership includes representatives from 28 Government and nongovernmental organizations. The NGAC holds public forums to discuss geospatial activities and solicits input from State, Tribal, regional, and local governments, academic institutions, and the private sector.

National Geospatial Advisory Committee Mission Statement

The mission of the NGAC is to provide advice on strategies regarding the creation, management, and dissemination of cohesive geospatial data, information, and knowledge to enable commercial, academic, and nonprofit organizations and all levels of government to more effectively—

- Empower and serve the public
- Protect the homeland
- Foster economic growth
- Advance science
- Manage the Nation's resources
- Govern the Nation
- Prepare for and respond to emergencies

2008 National Geospatial Advisory Committee Members

Anne Hale Miglarese, NGAC Chair	Booz Allen Hamilton Inc.
Steven P. Wallach, NGAC Vice Chair	National Geospatial-Intelligence Agency
Sean Ahearn	Hunter College–City University of New York
Timothy M. Bull Bennett	North Dakota Association of Tribal Colleges
Michael Byrne	State of California
Allen Carroll	National Geographic Society
David J. Cowen	University of South Carolina
Jack Dangermond	ESRI
Donald G. Dittmar	Waukesha County, Wisconsin
Dennis B. Goreham	State of Utah
Kass Green	The Alta Vista Company
Randy Johnson	Hennepin County, Minnesota
Randall L. Johnson	Metropolitan Council, St. Paul, Minnesota
Jerry J. Johnston	U.S. Environmental Protection Agency
Barney Krucoff	District of Columbia
Timothy Loewenstein	Buffalo County, Nebraska
David F. Maune	Dewberry
Charles Mondello	Pictometry International
Zsolt Nagy	State of North Carolina
Kim Nelson	Microsoft Corporation
Matthew O'Connell	GeoEye
John M. Palatiello	Management Association for Private Photogrammetric Surveyors
Jay Parrish	State of Pennsylvania
G. Michael Ritchie	Photo Science
David Schell	Open Geospatial Consortium, Inc.
Eugene A. Schiller	Southwest Florida Water Management District
Christopher Tucker	ERDAS, Inc.
Ivan B. DeLoatch, NGAC Designated Federal Officer (DFO)	Federal Geographic Data Committee

Secretariat Staff

The FGDC Secretariat Staff provides support for the FGDC subcommittees and performs the following tasks:

- Administers the FGDC standards program.
- Initiates and participates in FGDC Subcommittees and working groups.
- Drafts policies and procedures for consideration and approval by the Coordination Group, Steering Committee, and Executive Committee.
- Provides support to the National Geospatial Advisory Committee (NGAC).
- Administers the NSDI Cooperative Agreements Program (CAP).
- Administers the FGDC International Spatial Data Infrastructure program.
- Manages the NSDI training and outreach program.
- Maintains the FGDC web site.
- Manages all administrative requirements associated with scheduling and conducting meetings.
- Undertakes staff analysis, technical development, and other activities on behalf of the Coordination Group.

2008 Secretariat Staff

Staff Director	Ivan DeLoatch
Deputy Staff Director	Kenneth Shaffer
Senior Advisor to Staff Director	John Mahoney
Senior Program Analyst	Lew Sanford
Program Assistant	Carol Greenough
Program Assistant	Vanessa Hardnett
Secretary	Arista Salimi Mahar
Clearinghouse Coordinator	Doug Nebert
FGDC Interagency Liaison	Patricia Phillips
Framework and Cooperating States Coordinator	Milo Robinson
Metadata Coordinator	Sharon Shin
Standards Coordinator	Julie Binder Maitra
Training and Education/Tribal Liaison Coordinator	Bonnie Gallahan
NSDI CAP Coordinator	Brigitta Urban-Mathieux
Webmaster	Vaishal Sheth
Program Analyst	Roxanne Lamb

Thematic Subcommittees

OMB Circular A–16 enumerates 34 data themes of national significance and assigns responsibility for each of the themes to one or more Federal agencies. FGDC thematic subcommittees are established for nine of the data themes.

Federal agencies lead the thematic subcommittees; each subcommittee focuses on a particular NSDI spatial data theme. Lead agency responsibilities and new data themes may be added or altered by FGDC recommendation and OMB concurrence.

Definitions of the nine active thematic subcommittees appear in the table to the right.

Thematic Subcommittees by Lead Agency and Definition

Thematic subcommittee	Lead agency	Definition of spatial data theme
*Cadastral	DOI BLM	The geographic extent of past, current, and future right, title, and interest in real property; the framework to support the description of that geographic extent. Geographic extent includes survey and description frameworks.
Cultural and Demographic Statistics	DOC USCB	Geospatially referenced data that describe characteristics of people: nature of structures in which they live and work; economic and other activities they pursue; facilities they use to support their health, recreational, and other needs; environmental consequences of their presence; boundaries, names, and numeric codes of geographic entities used to report information collected.
*Geodetic Control	DOC NOAA	Common reference system for establishing coordinates for all geographic data. All NSDI framework data and users' applications data require geodetic control to accurately register spatial data. The National Spatial Reference System is the fundamental geodetic control for the United States.
Geologic	DOI USGS	Geologic mapping information and related geoscience spatial data that can contribute to a National Geologic Map Database as pursuant to Public Law 106-148.
Marine and Coastal Spatial Data	DOC NOAA	The subcommittee, through its member agencies and the FGDC, develops strategic partnerships, relevant standards, collaborative tools, and outreach that will enhance access to and utility of coastal and ocean framework data.
*Spatial Water Data (Advisory Committee on Water Information)	Co-leaders: DOI USGS and USDA NRCS	The Advisory Committee on Water Information (ACWI) advises the Federal Government, through DOI USGS, on the coordination of Federal water information programs. The purpose of ACWI is to represent the interests of water information users and professionals on activities and plans related to Federal water information programs and the effectiveness of those programs in meeting the Nation's water information needs.
*Transportation	DOT BTS	Used to model geographic locations, interconnectedness, and characteristics of transportation systems in the United States; includes physical and nonphysical components representing all modes of travel that enable movement of goods and people between locations.
Vegetation	USDA Forest Service	Collection of plants or plant communities with distinguishable characteristics that occupy an area of interest. Existing vegetation covers or is visible at or above land or water surface and does not include abiotic factors that tend to describe potential vegetation.
Wetlands	DOI FWS	Provides classification, location, and extent of wetlands and deepwater habitats; no attempt is made to define the proprietary limits or jurisdictional wetland boundaries of any Federal, State, or local agencies.

** Indicates framework theme.*
Note: Abbreviations are defined in the glossary in Appendix D.

FGDC Working Groups

Working groups crosscut the subcommittees and focus on infrastructure issues common to many of the NSDI data themes. Descriptions of the active working groups are listed in the table below.

FGDC Working Groups by Lead Agency and Description

Working group	Lead agency	Description
Biological Data	DOI USGS BRD	The Biological Data Working Group promotes development and coordination of standards for biological data in order to increase compatibility in the development, use, sharing, and dissemination of biological data among government agencies and other interested institutions. The working group develops means to facilitate the sharing and consistent use of biological data standards and protocols, and encourages interagency partnerships in developing and implementing these standards and protocols. The working group helps integrate biological data standards activities into the National Spatial Data Infrastructure and the National Biological Information Infrastructure.
Clearinghouse	DOI USGS	FGDC is tasked by Executive Order 12906 to develop procedures for and assist in the implementation of a distributed discovery mechanism for digital geospatial data. Using the data elements defined in the FGDC Metadata Standard, governmental, nonprofit, and commercial participants publish their geospatial resources to the Clearinghouse Network.
Geospatial Enterprise Architecture Community of Practice	DOI USGS	The primary objective of the Geospatial Enterprise Architecture Community of Practice (COP) is to improve the understanding and integration of geospatial concepts by mainstream governmental business planners and technical practitioners through a variety of outreach mechanisms. The COP was convened through the request of the Architecture and Infrastructure Committee of the Chief Information Officer (CIO) Council and FGDC to develop guidance known as the "Geospatial Profile of the Federal Enterprise Architecture (FEA)."
Historical Data	NARA	The Historical Data Working Group promotes an awareness among Federal agencies of the historical dimension to geospatial data; to facilitate the long-term retention, storage, and accessibility of selected historically valuable geospatial data; and to establish a mechanism for the coordinated development, use, sharing, and dissemination of historically valuable geospatial data that have been financed in whole or part by Federal funds.
Homeland Security	DHS	The Homeland Security Working Group ensures that the NSDI supports the preparation for, prevention of, protection against, response to, and recovery from threats to the Nation's population centers and critical infrastructures that are of terrorist, criminal, accidental, or natural origin and related adverse events.
Marine Boundary	DOC NOAA and DOI MMS	The Marine Boundary Working Group fosters integrated approaches to the legal and geospatial descriptions of marine boundaries and mapping of marine boundary features within the territorial waters of the United States. The goals of the working group are to make maximum use of public resources to avoid duplicating efforts; provide a venue for communicating and coordinating on marine boundary activities; and to use standardized methodologies to produce more complete and usable marine boundary data, metadata, and charts.
Metadata	DOI USGS	The Metadata Working Group promotes and coordinates geospatial metadata activities among FGDC member agencies in support of the NSDI. The Metadata Working Group promotes awareness among FGDC member agencies of the metadata dimension to geospatial data; facilitates the evolution and revision of the Content Standard for Digital Geospatial Metadata; and establishes a mechanism for the coordination, development, use, sharing, and dissemination of geospatial metadata among FGDC member agencies.
Standards	DOI USGS	The FGDC Standards Working Group (SWG) actively promotes and coordinates FGDC standards activities. The SWG provides guidance on FGDC standards policy and procedures, facilitates coordination between subcommittees having overlapping standards activities, and reviews and makes recommendations on the approval of standards proposals, draft standards for public review, and draft standards for FGDC endorsement.

Note: Abbreviations are defined in the glossary in Appendix D.

Collaborating Partners

The FGDC involves public interest groups who participate within the committee structure to ensure that their needs are included in developing the NSDI. These collaborating partners include State, Tribal, and local governments; academic institutions; and a broad array of private sector geographic, statistical, demographic, and other business information providers and users. NSDI strives to build upon local data wherever possible.

Collaborating partnerships are open to public, private, and nonprofit organizations with missions complementary to the FGDC. Organizations interested in becoming partners are invited to send a written request to the FGDC Chair. Current non-Federal collaborating partners include the organizations listed to the right.

Collaborating Partners and Descriptions

Partner	Description
American Congress on Surveying and Mapping (ACSM)	A nonprofit educational organization that advances the sciences of surveying and mapping and related fields to further the welfare of those who use and make maps.
Association of American Geographers (AAG)	A scientific and educational society whose members share interests in the theory, methods, and practice of geography and geographic education.
Cartographic Users Advisory Council (CUAC)	An organization of representatives from national and regional library organizations, dedicated to cartographic interests.
Geospatial Information and Technology Association (GITA)	A nonprofit educational association serving the global geospatial community.
International City/County Management Association (ICMA)	A professional and educational organization for chief appointed managers, administrators, and assistants in cities, towns, counties, and regional entities throughout the world.
National Association of Counties (NACo)	Advances issues with a unified voice before the Federal Government, improves the public's understanding of county government, assists counties in finding and sharing innovative solutions through education and research, and provides value-added services to save counties and taxpayers money.
National Association of State Chief Information Officers (NASCIO)	Represents State CIOs and information resource executives and managers from the 50 States, the District of Columbia, and 6 U.S. territories.
National League of Cities (NLC)	Strengthens and promotes cities as centers of opportunity, leadership, and governance.
National States Geographic Information Council (NSGIC)	Provides a unified voice on geographic information and technology issues, advocates State interests, and supports its membership in their statewide initiatives.
Open Geospatial Consortium, Inc.® (OGC)	A nonprofit, international, voluntary consensus standards organization of more than 365 companies, government agencies, research organizations, and universities; leads the development of standards for geospatial and location-based services.
University Consortium for Geographic Information Science (UCGIS)	A nonprofit organization of more than 50 universities and other research institutions.
Urban and Regional Information Systems Association (URISA)	Facilitates the use and integration of information technologies to improve the quality of life in urban and regional environments.
Western Governors' Association (WGA)	Addresses important policy and governance issues in the West, advances the role of the western States in the Federal system, and strengthens the social and economic fabric of the region.

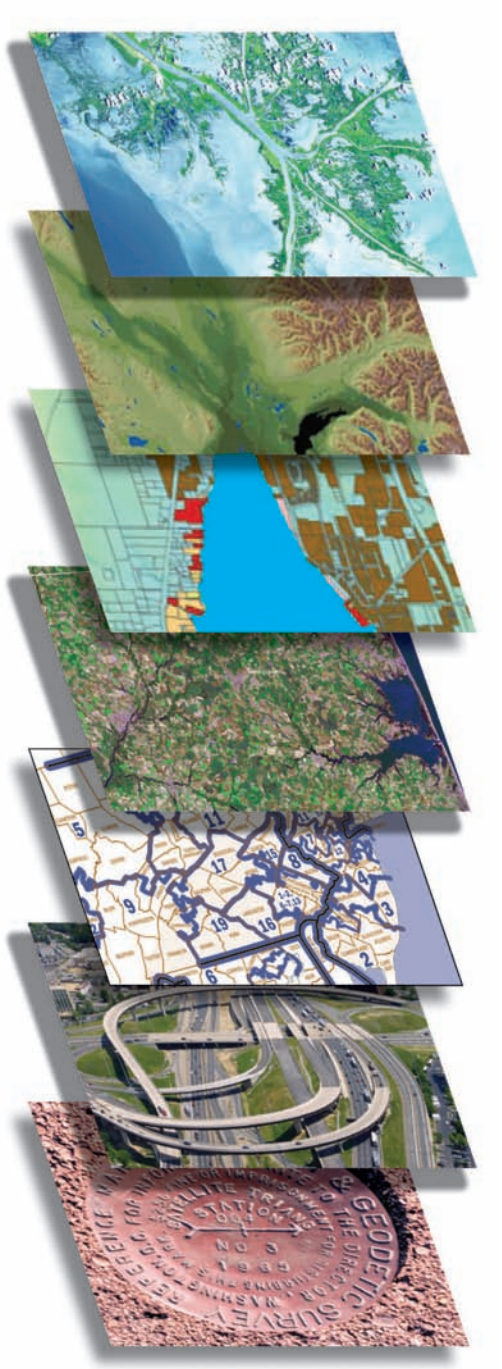
Note: Abbreviations are defined in the glossary in Appendix D.

Appendix C.
NSDI Data Themes

The Office of Management and Budget (OMB) revised OMB Circular A–16 in August 2002. The circular provides direction for Federal agencies that produce, maintain, or use spatial data either directly or indirectly in the fulfillment of their mission. The circular establishes a coordinated approach to electronically develop the National Spatial Data Infrastructure (NSDI), reaffirms the Federal Geographic Data Committee (FGDC), and incorporates Executive Order 12906. The circular describes the management and reporting requirements of Federal agencies in the acquisition, maintenance, distribution, use, and preservation of spatial data by the Federal Government. Appendix E of Circular A–16 identifies 34 data themes of national significance and the responsible Federal agency. It also identifies framework data themes.

The FGDC published the Framework Introduction and Guide in 1997. This document laid the foundation concepts and requirements for the seven NSDI framework data themes. The guide identifies the NSDI as a means to assemble geographic data nationwide to serve a variety of users. The NSDI also provides an environment within which organizations and technology interact to foster activities for using, managing, and producing geographic data. The framework forms the data building blocks of the NSDI. The framework is designed to facilitate production and use of geographic data, reduce operating costs, and improve service and decisionmaking. The seven framework data themes of geographic data are those that are produced or used by most agencies and organizations, and they form a critical and useful base for the NSDI.

Framework Themes



Hydrography

Elevation

Cadastral

Digital Orthoimagery

Governmental Units

Transportation

Geodetic Control

NSDI Data Themes:

Baseline (Maritime)

Biological Resources

*Cadastral

*Cadastral (Offshore)

Climate

Cultural and Demographic Statistics

Cultural Resources

*Digital Orthoimagery

Earth Cover

*Elevation Bathymetric

*Elevation Terrestrial

Buildings and Facilities

Federal Land Ownership Status

Flood Hazards

*Geodetic Control

Geographic Names

Geologic

*Governmental Units

Housing

*Hydrography

International Boundaries

Law Enforcement Statistics

Marine Boundaries

Offshore Minerals

Outer Continental Shelf Submerged Lands

Public Health

Public Land Conveyance (patent) Records

Shoreline

Soils

*Transportation

*Transportation (Marine)

Vegetation

Watershed Boundaries

Wetlands

*Indicates framework theme

Themes in the Geospatial Line of Business

In March 2006, OMB launched the Geospatial Line of Business (LoB) as a Government-wide initiative supporting effective geospatial investments and better performance across the Federal Government. The Geospatial LoB is governed by the FGDC and focuses on improving the effectiveness of the government through more widespread use of geospatial information. The goal of the Geospatial LoB is to improve the efficiency of government by making geospatial data more accessible and reliable and less expensive to acquire through enhanced data sharing and more effective management of investments.

The Geospatial LoB is executing tasks that support Circular A–16 management and reporting requirements. These include tasks to define the stages of the geospatial data lifecycle and to define and establish Circular A–16 data steward lifecycle responsibilities, including developing a repeatable process for the evaluation and updating of the nationally significant data themes identified in Circular A–16 Appendix E. Lead agency responsibilities and new data themes may be added or altered by recommendation of the FGDC and concurrence by the OMB as stated in Appendix E.

Circular A–16 Supplemental Guidance

A draft Circular A–16 supplemental guidance package has been developed by the Geospatial LoB Lifecycle Management Work Group. The work group, which is chaired by the U.S. Environmental Protection Agency and has direct representation from 16 Federal agencies, used an iterative process to develop this guidance and provided extensive and repeated opportunities for interagency comment. The guidance serves as the foundation for a consistent inventory of data, clarifies and further defines the Federal geospatial framework, and provides consistent lifecycle processes to be used to improve the efficiency and effectiveness of Federal geospatial investments. When the guidance is adopted it will provide Federal agencies with a line of sight from the conceptualization of needed data, to adequate budget planning, to interagency investment decisions. It will support efforts like Imagery for the Nation (IFTN) and National Land Parcel Data.

The proposed Circular A–16 supplemental guidance establishes a repeatable process for updating the list of nationally significant data themes and their responsible lead agencies designated in Circular A–16, Appendix E. This process will better enable the FGDC to revise and add to the list in order to adapt to changes in the requirements and priorities of the Nation. For example, the current list of data themes needs to be updated to include homeland security and emergency management data themes, which have become priorities.

Status of NSDI Framework Data Themes

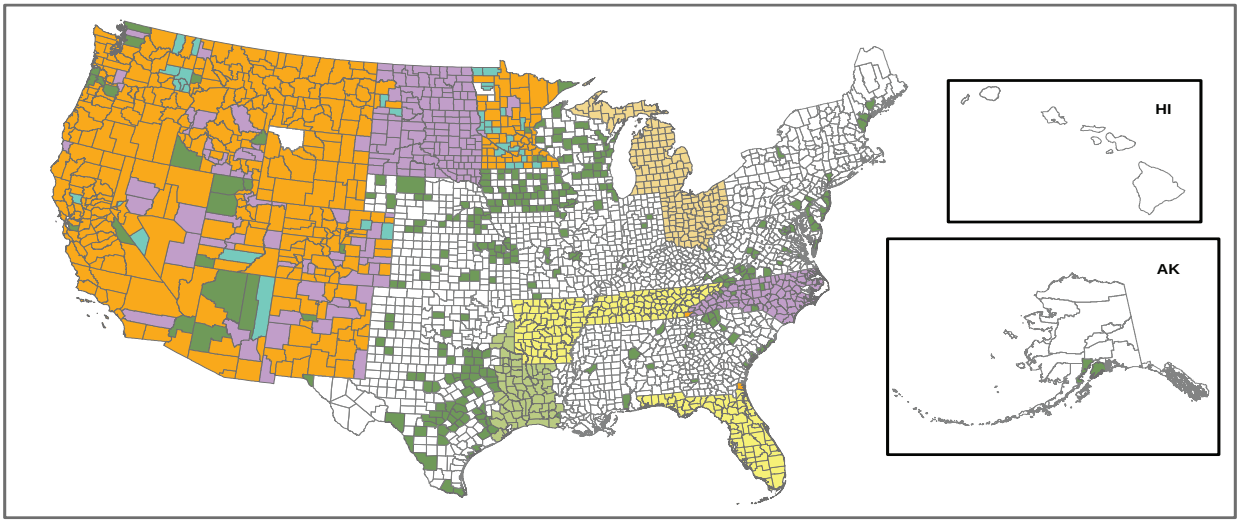
National Spatial Data Infrastructure (NSDI) recognizes that geospatial applications of various disciplines have a recurring need for a several themes of data—the NSDI framework. Local, regional, State, and Federal government organizations and private companies perceive the framework as a means for sharing resources, improving communication, and increasing efficiency. The framework's seven data themes are geodetic control, digital orthoimagery, elevation, transportation, hydrography, governmental units, and cadastral information. The framework is one of the key building blocks of the NSDI and forms the NSDI's data backbone.

Data Theme: Cadastral

Responsible agency: U.S. Department of the Interior, Bureau of Land Management (BLM)

Description: In the West, the FGDC Cadastral Subcommittee contacted more than 600 counties to establish county-by-county the status and availability of parcel data to support wildfire response. In Arkansas, Florida, North Carolina, and Tennessee, State coordinators have established partnerships with the subcommittee to access parcel data. Michigan, Minnesota, and Ohio have provided contact information for county parcel data. In addition to wildfire response, Arkansas, Kentucky, Louisiana, Tennessee, and Texas have provided State coordination for county parcel data to support the response to Hurricane Ike. Additional information on the work of the subcommittee is available at www.nationalcad.org.

County Parcel Partnership Status



Partnership Status

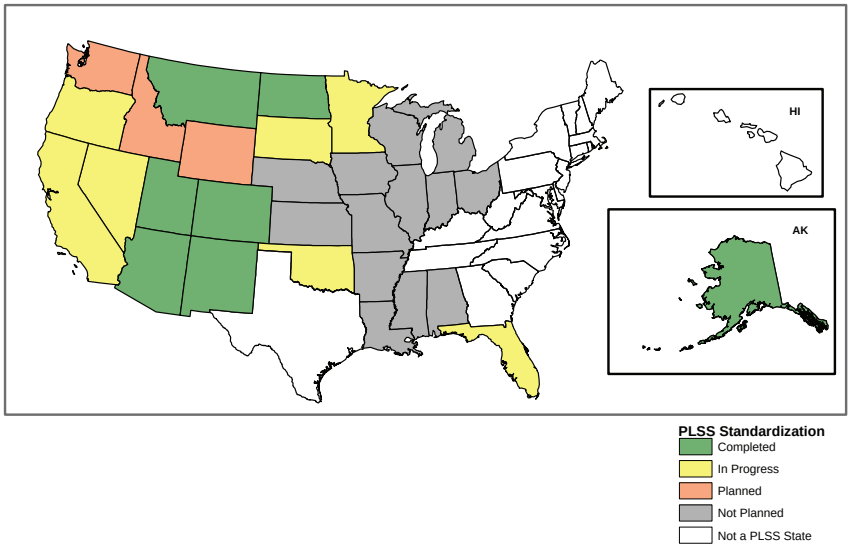
- Not Contacted
- Has Parcel Related Website
- Contacted for Hurricane/Flood
- Included in State Portal or Plan
- Cadastral Contacts Identified
- Parcel Data Available for Wildland Fire
- Digital Parcel Data Planned
- Contacted for Wildland Fire

September 2008

Data Theme: Cadastral (continued)

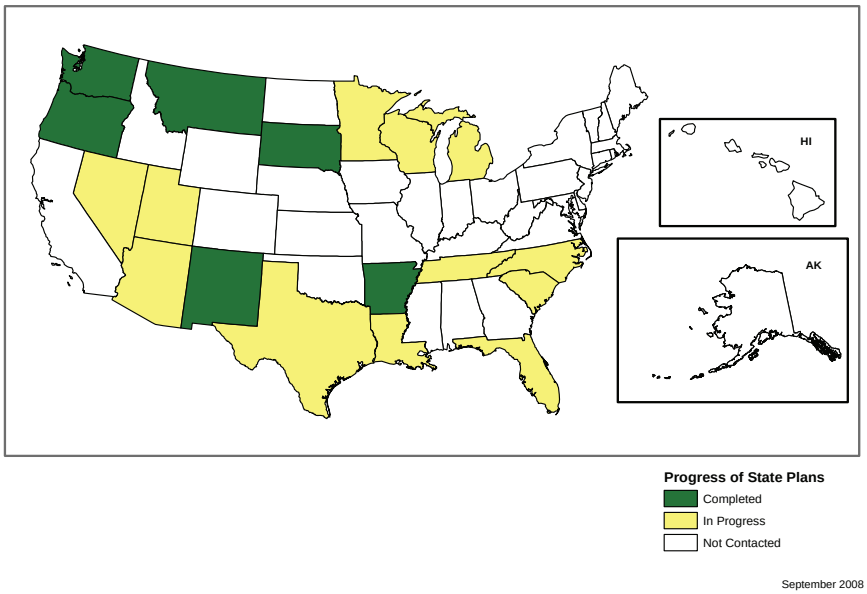
The Public Land Survey System (PLSS) is a cadastral reference system used to define many legal descriptions and other features in the 30 public domain States. Standardized PLSS representation supports geographic information system (GIS) applications that facilitate data integration, enabling searches by PLSS location. The statewide standardized PLSS representation is linked to PLSS legal survey records.

PLSS Standardization Status by State



The FGDC Cadastral Subcommittee has developed a template for use in developing State business plans for cadastral information that can be developed in harmony with State strategic plans. This map shows the status of the business plans for cadastral information of those States that have been in contact with the Cadastral Subcommittee.

Cadastral Business Plan Status by State



Data Theme: Digital Orthoimagery

Responsible agency: U.S. Department of the Interior, U.S. Geological Survey (USGS), and U.S. Department of Agriculture (USDA), Farm Service Agency (FSA)

Description: The USGS is the lead Federal agency for orthoimagery; however, a number of other Federal agencies, including the Federal Emergency Management Agency (FEMA); the FSA; the National Geospatial-Intelligence Agency (NGA); the National Oceanic and Atmospheric Administration (NOAA); the Natural Resources Conservation Service (NRCS); the National States Geographic Information Council; the U.S. Bureau of Land Management (BLM); and the U.S. Census Bureau, cooperate in the National Digital Orthophoto Programs (NDOP) consortium to develop and maintain national orthoimagery coverage in the public domain. The primary Federal programs for the NDOP are the NGA 133 Urban Areas Program, the USDA National Agriculture Imagery Program (NAIP), and the USGS National Orthoimagery Program.

USGS National Orthoimagery Program

The USGS National Orthoimagery Program concentrates on acquiring data in support of requirements in the following areas:

(1) High-resolution natural-color orthoimagery (1-foot resolution) for urban areas for the Homeland Security Infrastructure Program (HSIP), and

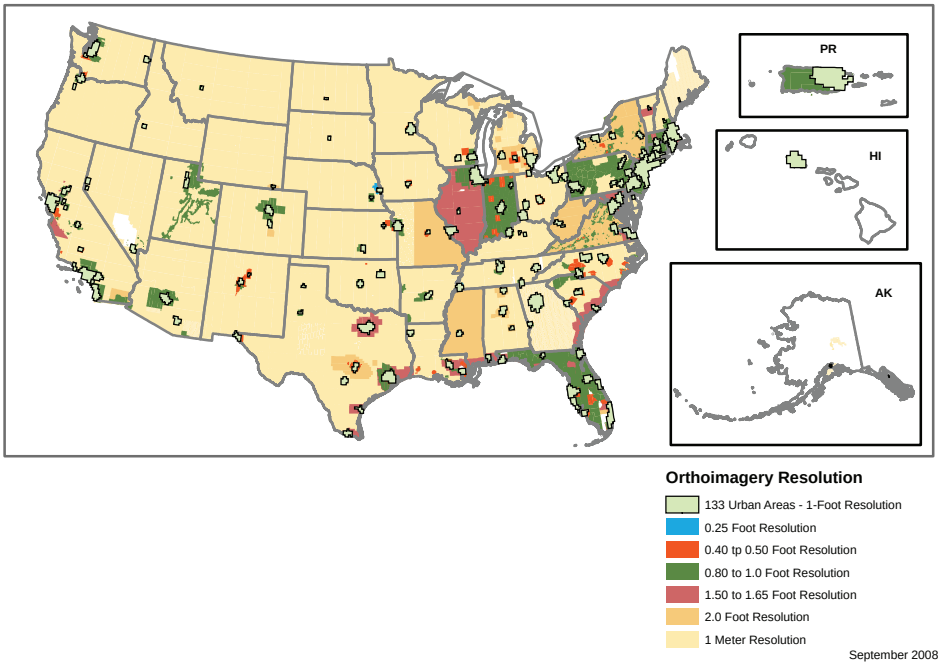
(2) Medium-resolution natural color orthoimagery (1-meter resolution) in support of the National Geospatial Program's graphic project and maintenance of the national orthoimagery dataset.

In fiscal year 2008, the Urban Areas program saved approximately $6.8 million by partnering with 27 State, regional, and city governments to acquire orthoimagery with resolutions of 1 foot or finer. Fiscal year 2008 saw the national digital orthoimagery database grow largely through partnerships for imagery at resolutions of finer than 1 meter. High-resolution (less than 2-foot resolution) orthoimagery along the Gulf Coast, mainly in Texas and Florida, was acquired to assist with emergency response. Four-band NAIP orthoimagery of 1-meter resolution covering the State of Arizona was also acquired through partnership with the FSA.

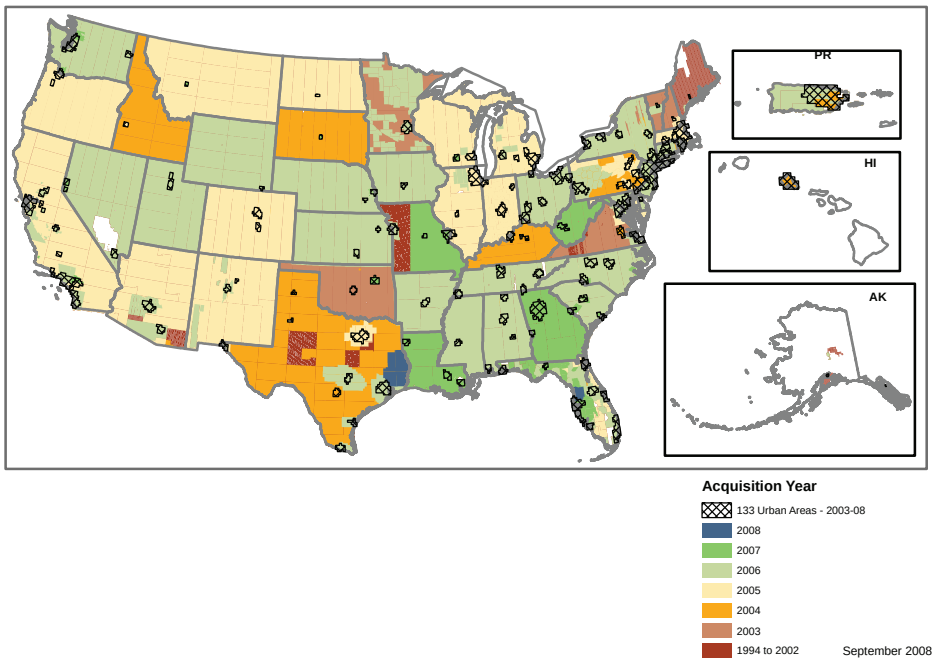
In response to FGDC Executive Committee recommendations, the USGS is coordinating with other Federal agencies on the development of plans and recommendations to implement the Imagery for the Nation (IFTN) proposal. That proposal envisions a sustainable and flexible digital orthoimagery program that meets the needs of Federal, State, Tribal, regional, and local agencies. If fully realized, the IFTN will see the creation of a national federally financed orthoimagery program that can meet the Nation's orthoimagery needs for the future.

Data Theme: Digital Orthoimagery (continued)

The National Map Orthoimagery
1 Meter or Finer Resolution



The National Map Orthoimagery
1 Meter or Less Resolution By Acquisition Year



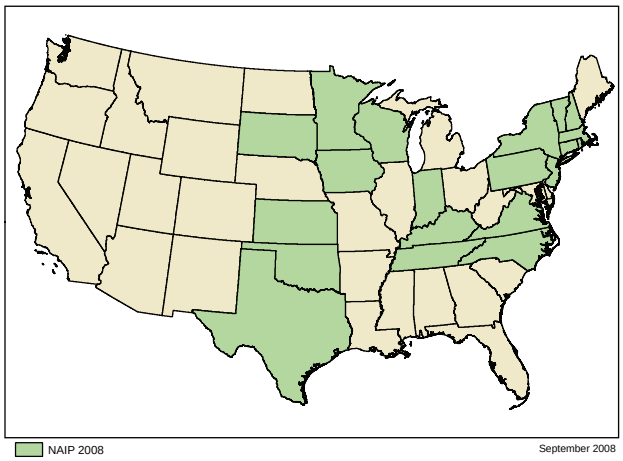
Data Theme: Digital Orthoimagery (continued)

USDA National Agriculture Imagery Program

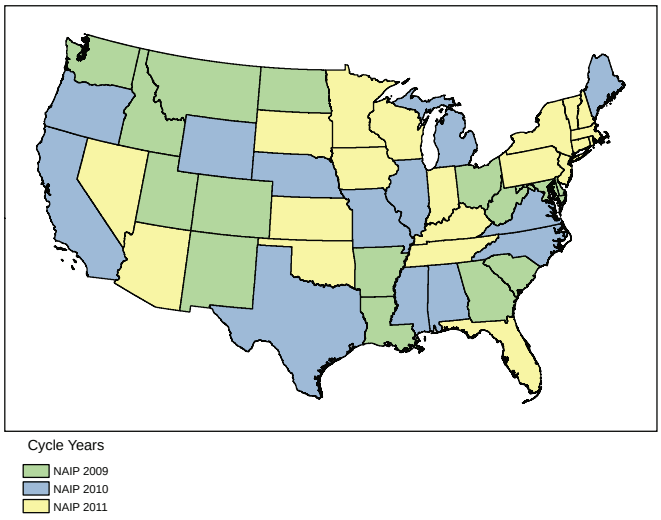
The NAIP is an annual program that acquires imagery during the growing season. FSA and other USDA agencies use the imagery to manage farm subsidy, conservation, credit and agriculture-related disaster recovery programs. In fiscal year 2008, FSA acquired imagery for 20 States, which is 6 more than in fiscal year 2007. Total acquisition cost was $14.3 million with $4.2 million coming from partnership contributions. NAIP 2008 imagery has a 1-meter ground sample distance. The imagery is in the public domain and is widely used by Federal, State and local agencies, as well as by private entities and businesses. A few examples of the business processes that the data have been used to support are economic development, emergency response, environmental management, growth planning, health and human services, homeland security, precision farming and other agribusiness activities, and transportation planning.

In fiscal year 2009, FSA proposes to change the NAIP significantly. Although the revised program will reduce the total amount of imagery collected each year by discontinuing the annual 2-meter-resolution collection, it will increase the frequency of collection by moving to a 3-year acquisition cycle (previously NAIP had been on a 5-year refresh cycle for 1-meter resolution). All imagery will have a 1-meter ground sample distance. The FSA will collect data on privately owned farmland as identified by common land unit boundaries and will require that other Federal and State partner participation be in place for collection outside of those areas. The partnership model for NAIP has been revised to require a minimum monetary commitment for participation. Federal agency and State government consortium partners will use the revised NAIP strategy to help plan for future funding needs and determine budget allocations.

National Agriculture Imagery Program
States Acquired in 2008



National Agriculture Imagery Program
3-Year Cycle



Data Theme: Elevation

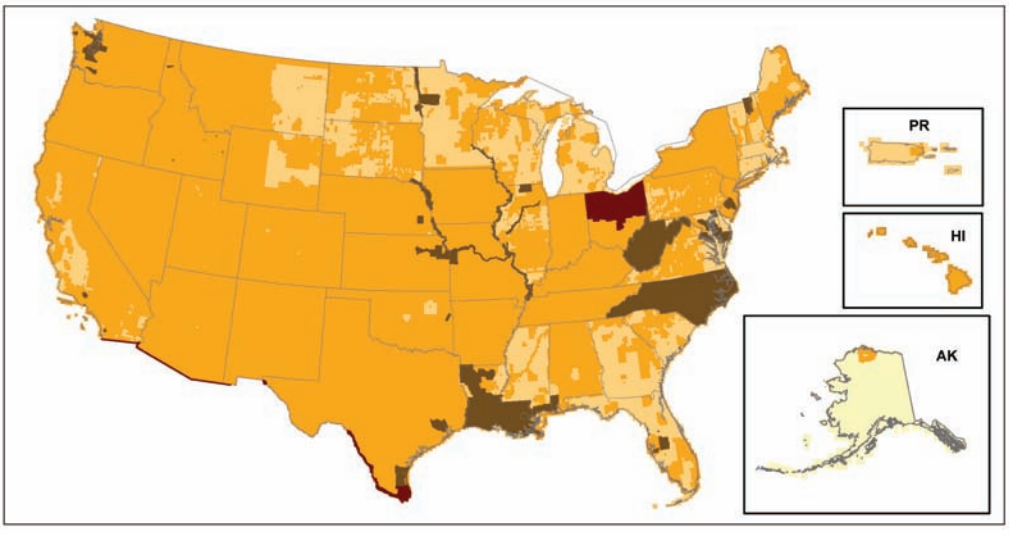
Responsible agency: U.S. Department of the Interior, U.S. Geological Survey (USGS)

Description: The National Elevation Dataset (NED) contains elevation data that provide three-dimensional surface models of the Earth's surface. The USGS makes elevation data available both for land areas and, in cooperation with the National Oceanic and Atmospheric Administration (NOAA), under coastal waters. The USGS identifies digital elevation data based upon the resolution (spacing between the points) of a grid. One-arc-second-resolution (equivalent to 30-meter-resolution) elevation data are complete and available for the entire United States, except Alaska. Current USGS efforts concentrate on providing finer resolution of elevation data at 1/3- and 1/9-arc-second (equivalent to 10- and 3-meter resolutions, respectively) grid spacing. The data are developed from a variety of sources, including State and local governments and the private sector.

In 2008, the trend toward higher resolution elevation data from lidar continues. Almost all new acquisitions for NED are from lidar-source products. Approximately $1 million from the USGS was leveraged to acquire $5.4 million worth of lidar data in cooperation with 32 partners, including the National Geospatial-Intelligence Agency (NGA). The NGA, working with USGS geospatial liaisons, began collaborations with State and local governments for high-resolution urban-area lidar data. Lidar data were collected along the U.S.–Mexico border, over most of Louisiana, and along the coasts of Florida and Alabama. The USGS is currently incorporating those data in the 1/9-arc-second layer of the NED, and those data will also be used to update the 1/3- and 1-arc-second data layers.

Elevation data in Alaska were reprocessed. Now all the data in NED are on the North American Datum of 1983. For the first time, portions of Alaska will be available at resolutions of 1 and 1/3 arc-seconds; the entire State will remain available at 2 arc-seconds. Radar-derived elevation data were obtained to update areas of Alaska. The inclusion of Shuttle Radar Topography Mission data in the Aleutian chain is particularly significant, as it allows the USGS to retire older data of generally poor quali

National Elevation Dataset Source Information



NED is a multi-resolution dataset that provides the best available digital elevation data to the public. In 2008, 6,546 7.5-minute quadrangles of lower quality 30-meter data were replaced by 10 meter or better source data.

NED RESOLUTION
- High Resolution Data Being Processed
- 1/9 Arc-Second (~3 meter of LIDAR Source)
- 1/9 Arc-Second (~10 meter or better source)
- 1 Arc-Second (~30 meter source)
- 2 Arc-Second - Alaska Only

September 2008

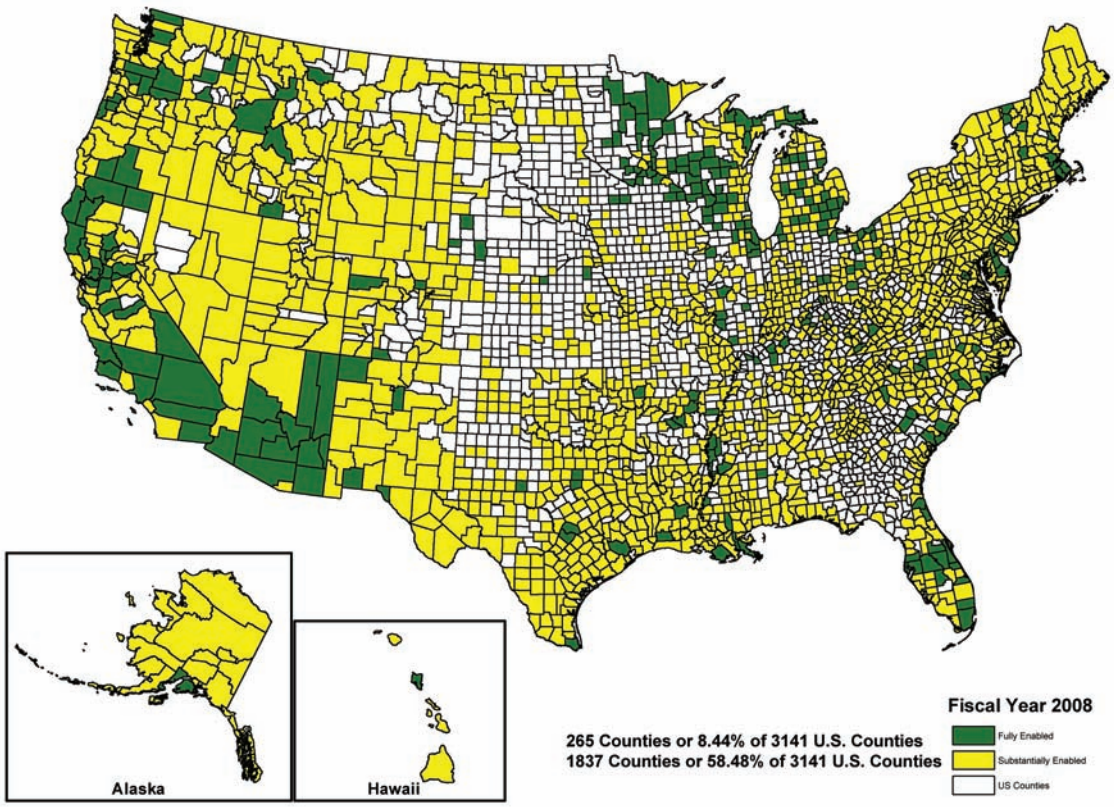
Data Theme: Geodetic Control

Responsible agency: National Oceanic and Atmospheric Administration (NOAA), National Geodetic Survey (NGS)

Description: The NGS is using a county scorecard to gather input from the surveying community on how better to meet local needs for accurate positioning. County usage statistics for the Online Positioning User Service (OPUS) are used as a proxy for determining positioning product usage and substantially enabled status with accurate positioning capacity. In addition, county feedback from a web-based county scorecard is a major factor in determining fully enabled status. Other factors used in the scorecard include an identified county geospatial representative, coverage by the NOAA State Geodetic Advisor program, and publication of new geodetic control stations in the NGS database. In 2008, the NGS launched a website that provided access to the information and results gathered through this scorecard initiative. The NGS has received feedback from more than 745 county geospatial representatives. Additional information is available at www.ngs.noaa.gov/scorecard/.

In the status map below, the number of U.S. counties that are substantially enabled for accurate positioning are shown in yellow; those that are fully enabled for accurate positioning are shown in green.

Fully or Substantially Enabled Counties with Accurate Positioning

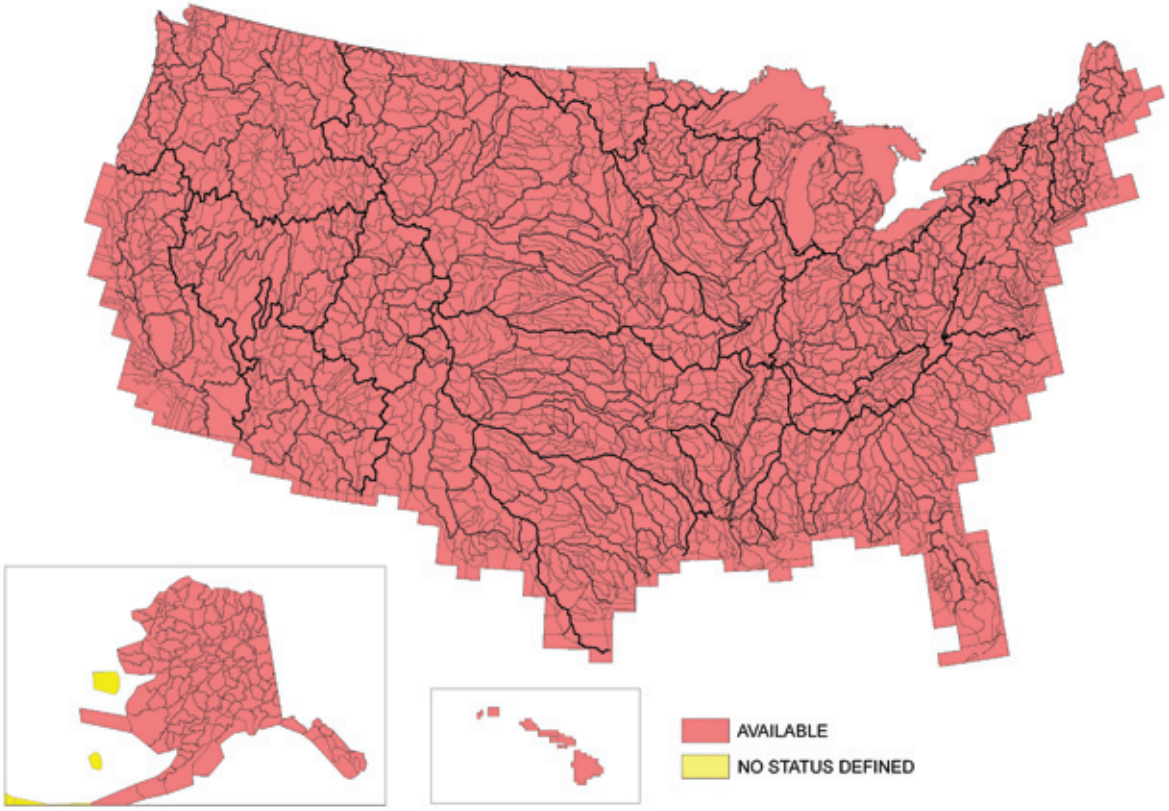


Data Theme: Hydrography

Responsible agency: U.S. Department of the Interior, U.S. Geological Survey (USGS)

Description: These data make up the National Hydrography Dataset (NHD), which is a common data model that contains nationwide coverage of surface water features at 1:100,000 scale and 1:24,000 scale. These data have been produced by a consortium of more than 50 government agencies at the Federal and State levels to provide a universal solution for hydrography across the Nation. The USGS provides the central database, technical development, distribution, data integration, leadership, program management, coordination, and continuous maintenance through stewardship partnerships with the user community.

Status of the High Resolution National Hydrography Dataset



Data Theme: Transportation

Responsible agency: U.S. Department of Transportation (DOT), Bureau of Transportation Statistics (BTS)

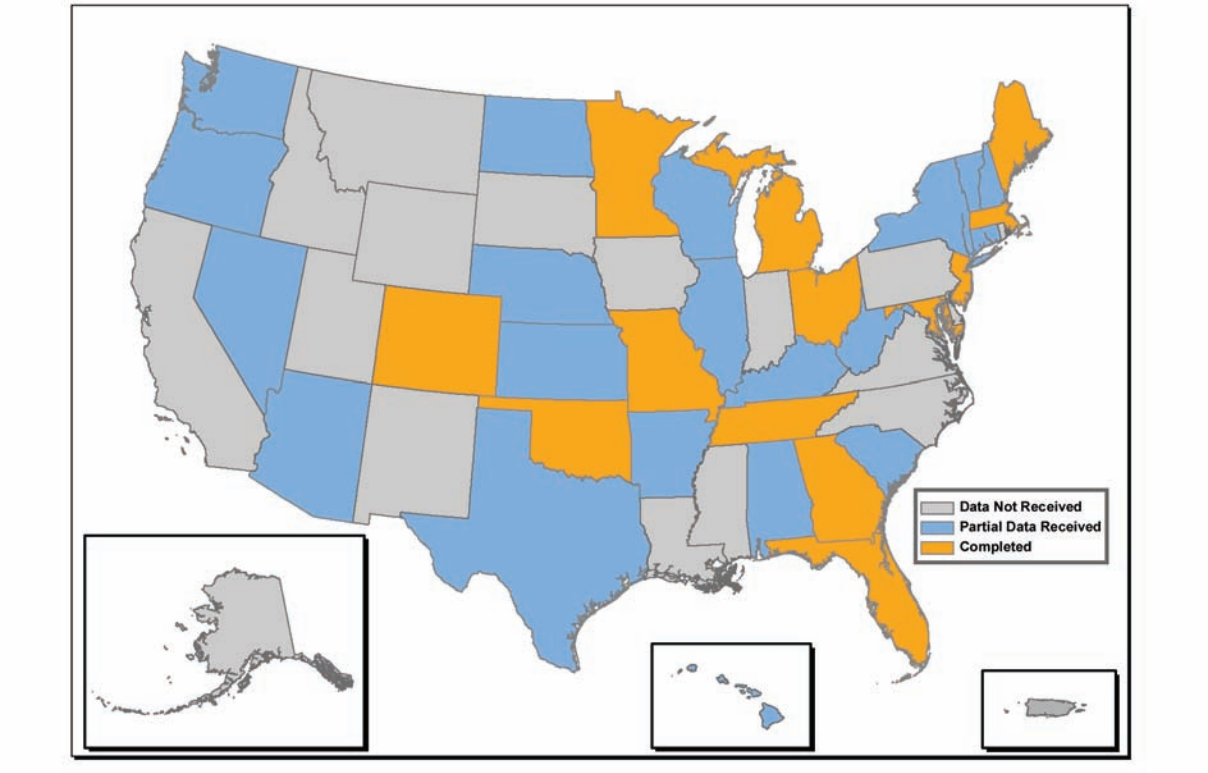
Description: The DOT maintains geospatial transportation data in multiple datasets that correspond to forms of transportation. Each modal administration within the DOT may be in charge of collecting and maintaining data for one or more transportation geospatial databases related to its mode of transportation. These data collection efforts are packaged into a single transportation data resource called the National Transportation Atlas Database (NTAD). The current release of the NTAD can be found online at www.bts.gov/programs/geographic_information_services/.

The National Transportation Atlas Database is a set of nationwide geographic databases of transportation facilities, transportation networks, and associated infrastructure. These datasets include spatial information for transportation modal networks and intermodal terminals, as well as the related attribute information for these features. Metadata documentation, as prescribed by the FGDC, is also provided for each database. The data support research, analysis, and decisionmaking across all modes of transportation.

In 2008, nine transportation databases were either created or updated. These databases are Airports, Alternative Fueling Facilities, Amtrak Stations, Freight Analysis Framework, Metropolitan Planning Organization, National Bridge Inventory, Railroad Grade Crossings, Railway Network, and Waterways.

The DOT is moving ahead on several fronts to better geo-enable its data and processes. The Highway Performance Monitoring System (HPMS) is a database maintained by the Federal Highway Administration (FHWA) that depicts the condition and use of the Nation's highway system. HPMS is a collection of highway data that FHWA collects from the States each year; it has been a significant resource to the transportation community and forms the basis for such reports to Congress as the Status of the Nation's Highways, Bridges, and Transit: Conditions and Performance report. The HPMS database was started in the late 1970s as a tabular dataset. Today, the FHWA is in the process of linking this information to geography to allow for more robust spatial analysis and is improving the collection of data from its State partners. The map below shows the progress FHWA has made in collecting data from the States that will allow HPMS to be georeferenced to a national highway network. This project is scheduled to be completed in the spring of 2009.

Federal Highway Administration's



Status of NSDI Data Themes

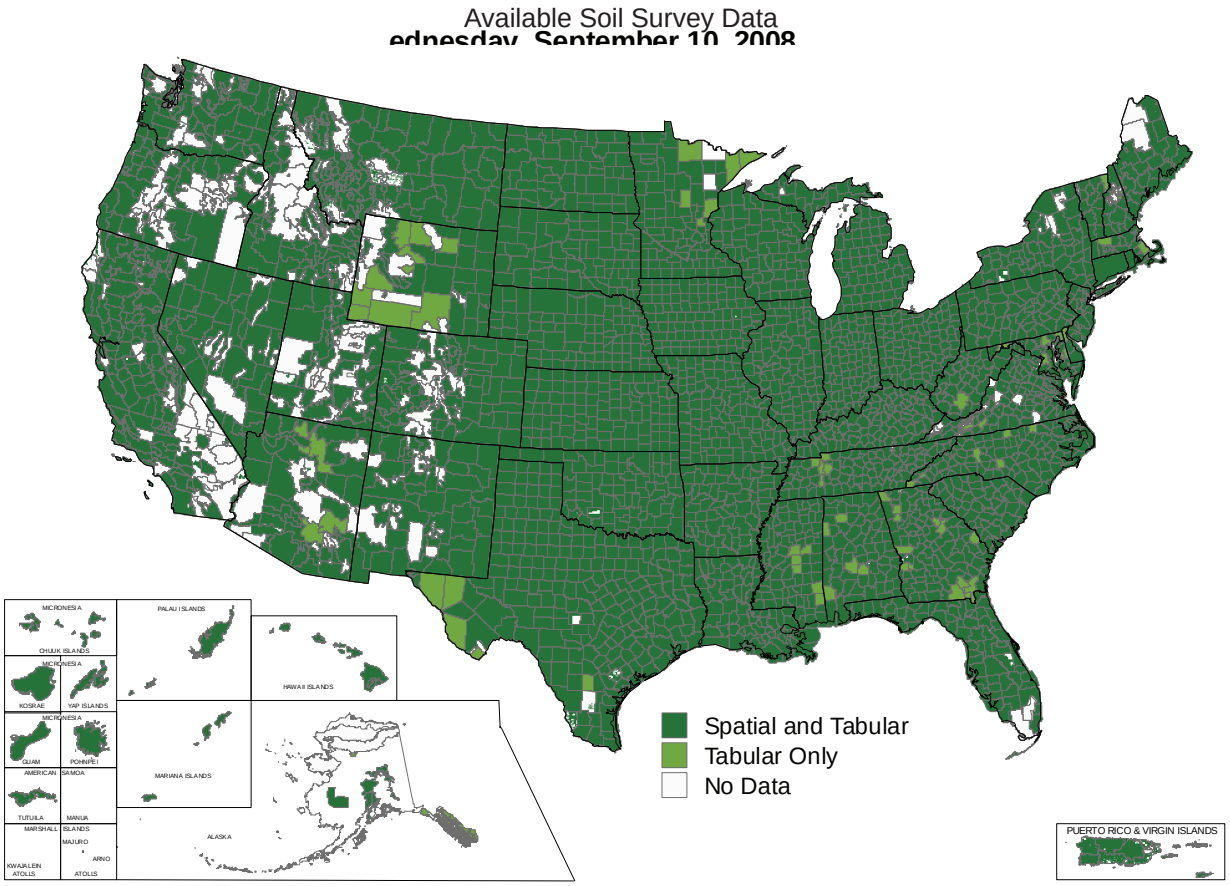
The NSDI recognizes that Federal agencies have a stewardship role for certain themes of data beyond the framework themes. This year, the themes featured in this report are soils, watershed boundaries, and wetlands. A status graphic of a U.S. Census improvement project is also included.

Data Theme: Soils

Responsible agency: U.S Department of Agriculture (USDA), Natural Resources Conservation Service Soil Survey Division

Description: The National Cooperative Soil Survey (NCSS) is a nationwide partnership of Federal, State, regional, and local agencies, and private entities and institutions. This partnership works together to cooperatively investigate, inventory, document, classify, interpret, disseminate, and publish information about soils of the United States and its trust territories and commonwealths.

During fiscal year 2008, NCSS created 38.9 million acres of Soil Survey Geographic Database (SSURGO) data, as well as 66 new soil survey publications and approximately 35.2 million acres of initial and updated soil survey mapping. This status map shows where detailed digital maps and associated attribute data are available. In some areas, only attribute tables are available and, in others, no soil surveys have been completed.



Data Theme: Watershed Boundaries

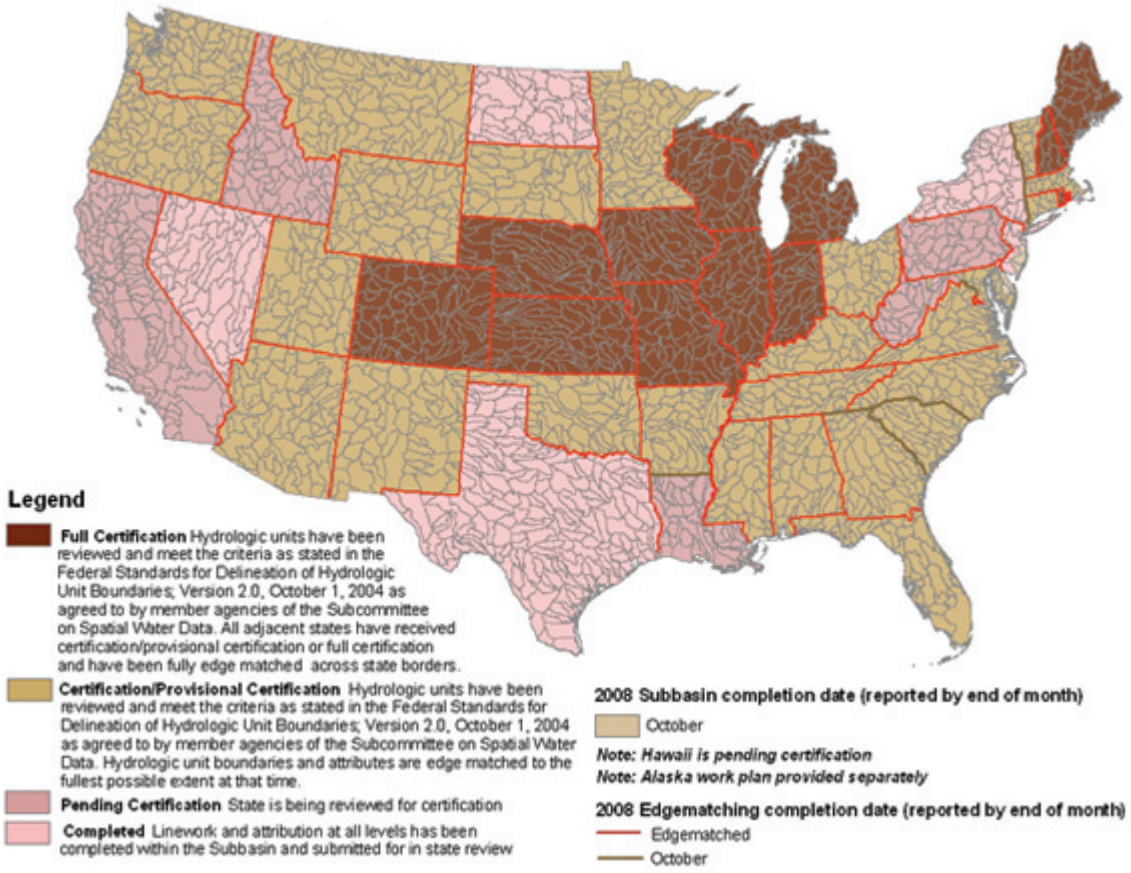
Responsible agency: U.S. Department of the Interior, U.S. Geological Survey (USGS), and U.S. Department of Agriculture, Natural Resources Conservation Service (NRCS)

Description: The National Watershed Boundary Dataset (WBD) is a nationally consistent, seamless, dataset that provides a consistent framework for programmatic planning, implementation, and reporting at the national, regional, and local levels. It is defined by topographic and hydrologic criteria that delineate an area of land upstream from a specific point on a river, stream, or similar surface waters. The WBD consists of a series of nested multi-level, hierarchical drainage systems.

The WBD is also used for multiple analytical and statistical purposes and applications across Federal, State, and local governments as well as non-governmental organizations. These uses include: watershed management, water-quality initiatives, watershed modeling, resource inventory and assessment, fire assessment and management, total maximum daily load calculations of pollutants, floodplain management, non-point source management planning, wetland loss mitigation, aquatic species conservation strategies, and land use management.

Efforts to complete a 1:24,000 scale WBD to 12 digits (6th level), averaging 10,000 to 40,000 acres in size, have been ongoing since the early 1990s. This level of detail has been cooperatively determined as the necessary level required to plan, implement or report protection and restoration activities. In fiscal year 2006, the USGS, the NRCS, and the U.S. Environmental Protection Agency (EPA) launched an initiative to expedite the completion of this critical dataset.

National Status Plan for Completion of the Water Boundary Dataset



September 2008

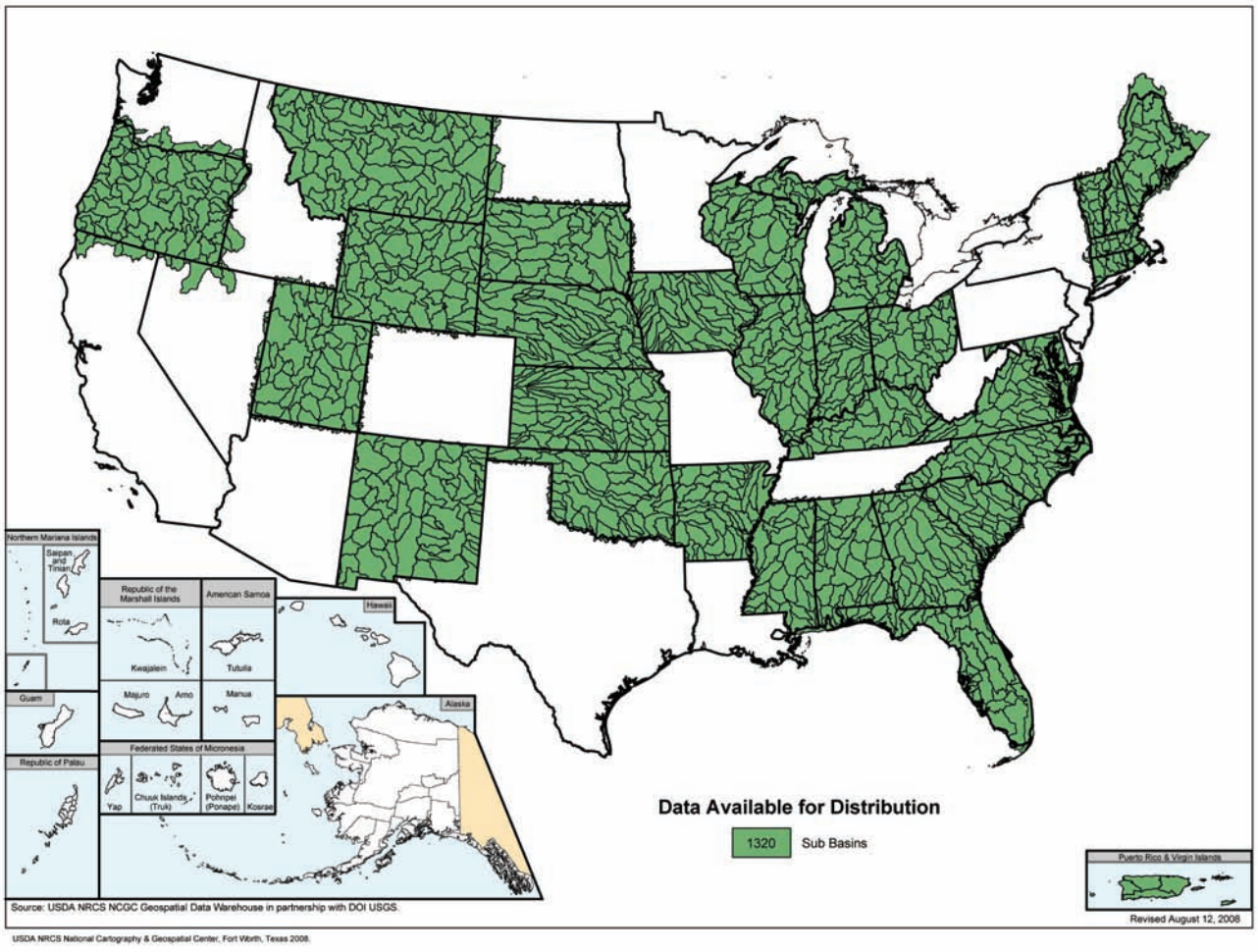
Data Theme: Watershed Boundaries (continued)

Over the last 2 years, the WBD Steering Committee and the National Technical Team jointly worked with hundreds of partners nationwide to complete the WBD. This national partnership includes six additional Federal agencies, multiple departments within all 50 States, coastal management organizations, and universities. The six Federal agencies are: the National Park Service, the National Weather Service, the U.S. Bureau of Land Management, the U.S. Bureau of Reclamation, the U.S. Fish and Wildlife Service, and the U.S. Forest Service.

The WBD for the 48 conterminous States and Hawaii will be complete in early fiscal year 2009 and will be made available through the NRCS Geospatial Data Gateway. Plans are in place to complete Alaska by the end of FY 2009. The project focus will migrate from a development activity to a maintenance and integration phase in late 2009. Future plans are to integrate the management WBD with the National Hydrography Dataset within a single geodatabase which will be managed by the U.S. Geological Survey.

NRCS will continue maintenance and integration in fiscal year 2009, and data services will be available via the Geospatial Data Gateway. This status graphic shows the availability of WBD as of August 12, 2008.

Watershed Boundary Dataset (12 Digit by Sub Basin)



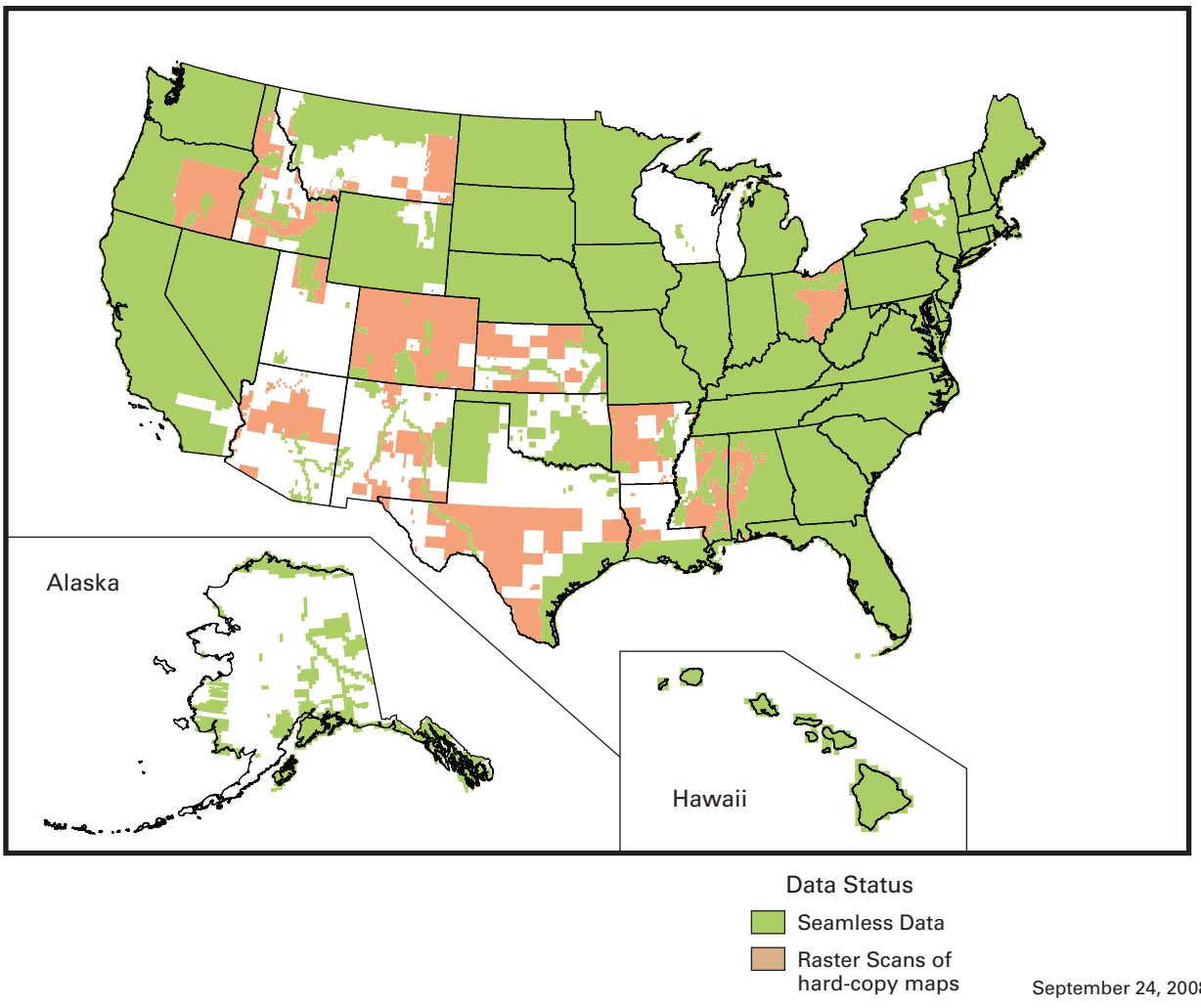
Data Theme: Wetlands

Responsible agency: U.S. Department of the Interior, Fish and Wildlife Service (FWS)

Description: Wetlands data provide the classification, location, and extent of wetlands and deepwater habitats. The FWS, in partnership with the U.S. Geological Survey, has made these data available via the Internet (wetlandsfws.er.usgs.gov). All digital wetlands data are provided in a seamless format for the conterminous United States and its territories. The FWS wetlands data are also accessible via the Geospatial One-Stop portal.

Currently, the FWS Wetlands Geodatabase contains more than 35,600 7.5-minute map areas in a seamless database. This represents wetland map data for approximately 64 percent of the conterminous United States; 29 percent of Alaska; 100 percent of the windward islands of Hawaii; 76 percent of Puerto Rico and the U.S. Virgin Islands; and 100 percent of Guam and Saipan in the Pacific Trust Territories.

Status of Online Wetlands Data

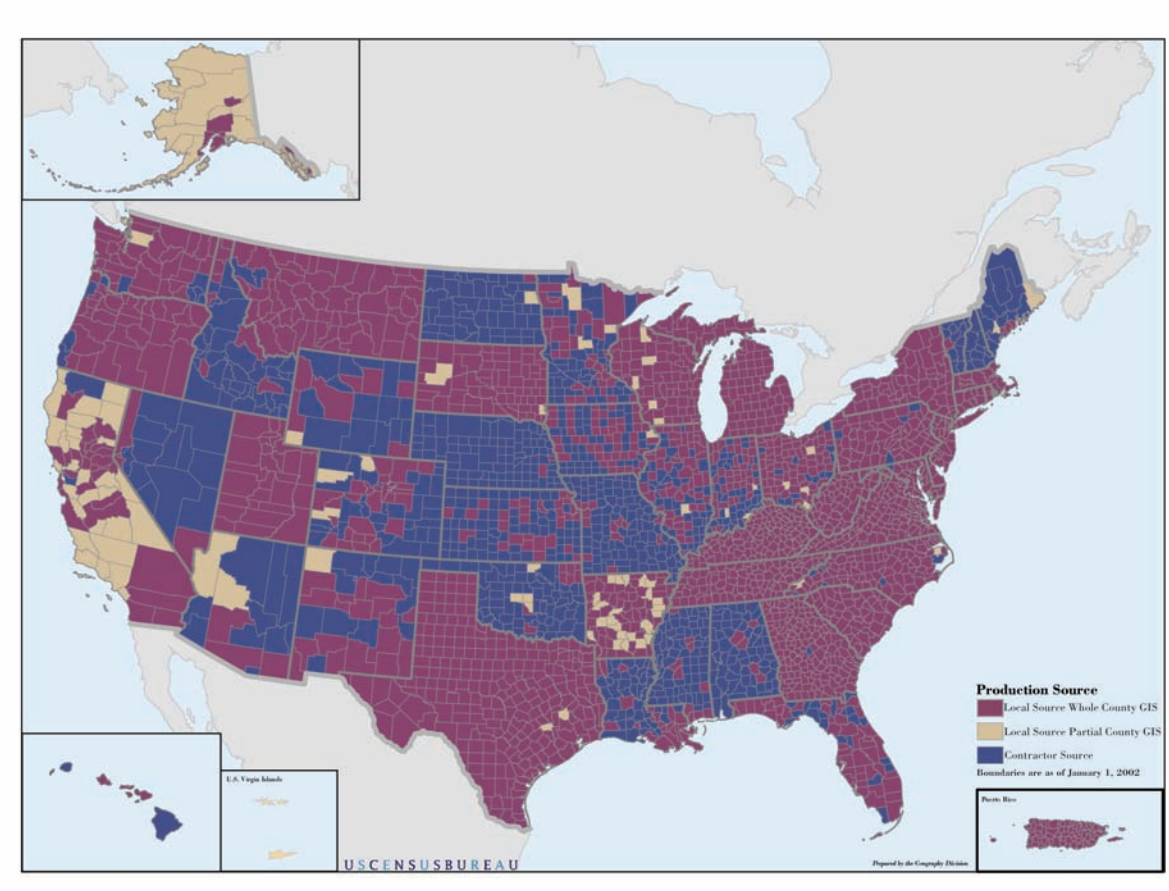


Special Theme: Census Modernization

Responsible agency: U.S. Department of Commerce, U.S. Census Bureau

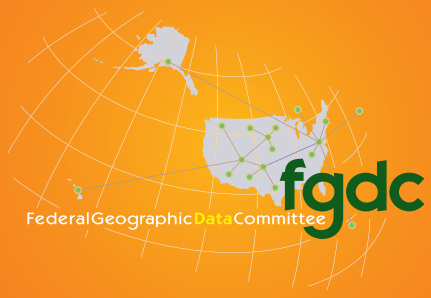
Description: The Master Address File/Topologically Integrated Geographic Encoding and Referencing (MAF/TIGER) Accuracy Improvement Project was a multiyear effort to, in part, improve the horizontal positional accuracy of the road centerlines in the U.S. Census Bureau's nationwide seamless geospatial database, called TIGER. The MAF/TIGER database is used to support the mapping, geographic analysis, and geographic information system (GIS) activities of the Census Bureau in meeting the statistical data needs of the agency. This status map shows the sources of the data used to update the feature base of the United States, Puerto Rico, and the U.S. Virgin Islands. More than 2,000 files were obtained from Federal, State, Tribal, and local partners and used in the update process. Areas updated using local sources (whole or partial county) are indicated by the two categories called "Local Source" as shown on the status map. Areas where the contractor provided the source are now available in the public domain.

Sources used for the MAF/TIGER Accuracy Improvement Project



Appendix D.
Glossary of Abbreviations and Terms

AAG	Association of American Geographers
ACSM	American Congress on Surveying and Mapping
ACWI	Advisory Committee on Water Information
ANS	American National Standard
ANSI	American National Standards Institute
BLM	Bureau of Land Management
BPA	Blanket Purchase Agreement
BRD	Biological Resources Discipline
BTS	Bureau of Transportation Statistics
CAP	Cooperative Agreements Program
CIO	Chief Information Officer
COP	Community of Practice
CSWG	Common Services Work Group
CUAC	Cartographic Users Advisory Council
DFO	Designated Federal Officer
DHS	U.S. Department of Homeland Security
DOC	U.S. Department of Commerce
DOI	U.S. Department of the Interior
DOT	U.S. Department of Transportation
EPA	U.S. Environmental Protection Agency
FEA	Federal Enterprise Architecture
FEMA	Federal Emergency Management Agency
FGDC	Federal Geographic Data Committee
FIPS	Federal Information Processing Standard
FSA	Farm Service Agency
FWS	U.S. Fish and Wildlife Service
GCWG	Grants and Contracts Workgroup
GDM	Geospatial Data Model
GEAR	GEospatial Application Registry
GEBWG	Geo-Enabled Business Work Group
GEO	Group on Earth Observations
Geospatial LoB	Geospatial Line of Business
GIS	Geographic Information System
GITA	Geospatial Information and Technology Association
GNIS	Geographic Names Information System
GOS	Geospatial One-Stop
GSA	General Services Administration
GSDI	Global Spatial Data Infrastructure
HSWG	Homeland Security Working Group
ICMA	International City/County Management Association
IFTN	Imagery for the Nation
INCITS	International Committee for Information Technology Standards
ISO	International Organization for Standardization
LCWG	Lifecycle Management Work Group
MMS	Minerals Management Service
NACo	National Association of Counties
NAIP	National Agriculture Imagery Program
NAP	North American Profile
NARA	National Archives and Records Administration
NASA	National Aeronautics and Space Administration
NASCIO	National Association of State Chief Information Officers
NCSS	National Cooperative Soil Survey
NDOP	National Digital Orthophoto Programs
NED	National Elevation Dataset
NGA	National Geospatial-Intelligence Agency
NGAC	National Geospatial Advisory Committee
NLC	National League of Cities
NOAA	National Oceanic and Atmospheric Administration
NRCS	Natural Resources Conservation Service
NSDI	National Spatial Data Infrastructure
NSGIC	National States Geographic Information Council
OGC	Open Geospatial Consortium, Inc.
OMB	Office of Management and Budget
PLSS	Public Land Survey System
PMWG	Performance Managment Work Group
REST	representational state transfer
ROI	return on investment
SAOGI	Senior Agency Officials for Geospatial Information
SCI	Stratified Cost Index
SDI	spatial data infrastructure
SOA	service-oriented architecture
SSURGO	Soil Survey Geographic Database
SWG	Standards Working Group
TAWG	Technical Architecture Work Group
UCGIS	Univeristy Consortium for Geographic Information Science
URISA	Urban and Regional Information Systems Association
USCB	U.S. Census Bureau
USDA	U.S. Department of Agriculture
USGS	U.S. Geological Survey
WBD	Watershed Boundary Dataset
WFDSS	Wildland Fire Decision Support System
WGA	Western Governors' Association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