GAO Highlights
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GEOSPATIAL INFORMATION

Technologies Hold Promise for Wildland Fire Management, but Challenges Remain

Why GAO Did This Study

Over the past decade, a series of devastating and deadly wildland fires has burned millions of acres of federal forests, grasslands, and deserts each year, requiring federal land management agencies to spend hundreds of millions of dollars to fight them. GAO was asked to assess opportunities to improve the way agencies manage fires through the use of geospatial information technologies, specifically, to (1) identify key geospatial information technologies for addressing different aspects of managing wildland fires, (2) summarize key challenges to the effective use of geospatial technologies in managing wildland fires, and (3) identify national opportunities to improve the effective use of geospatial technologies.

What GAO Recommends

GAO is making a series of recommendations to address specific challenges in effectively using geospatial information technologies and to improve the management of information resources and technologies in the interagency wildland fire management community.

Commenting on a draft of this report, the Departments of Agriculture and the Interior agreed with the report's conclusions and recommendations.

Note: The graphics in this report are in color and are best viewed electronically.

What GAO Found

Geospatial information technologies—sensors, systems, and software that collect, manage, manipulate, analyze, model, and display information about locations on the earth's surface—can aid in managing wildland fires by providing accurate, detailed, and timely information to federal, state, and local decision makers; fire-fighting personnel; and the public. This information can be used to help reduce the risk that a fire will become uncontrollable, to respond to critical events while a fire is burning, and to aid in recovering from fire disasters.

However, there are multiple challenges to effectively using these technologies to manage wildland fires, including challenges with data, systems, infrastructure, staffing, and the effective use of new products. The National Wildfire Coordinating Group—composed of representatives from the five land management agencies and from other federal, state, and tribal organizations—has several initiatives under way to address specific challenges, but progress on these initiatives has been slow, and not all of the challenges are being addressed. A root cause of many of these challenges is the lack of an overall strategy guiding interagency management of information resources and technology. To improve interagency management of information resources and technology, different teams within the Coordinating Group plan to establish an interagency geospatial strategic plan, a strategy for information resources management, and an interagency enterprise architecture—a blueprint for operational and technical change in support of wildland fire management. However, these efforts lack the senior-level endorsement and detailed plans and milestones necessary for success. Until effective interagency management of information resources and technology is a priority, the wildland fire community will likely continue to face challenges in effectively using geospatial information technologies.

Effectively using geospatial information is of interest beyond the wildland fire management community. Detailed, accurate, and accessible geospatial information is critical in addressing homeland security and national preparedness, supporting our transportation infrastructure, and managing natural resources, among other activities. For decades, the federal government has tried to reduce duplicative geospatial data collection by coordinating activities inside and outside the federal government. Most recently, Geospatial One-Stop, one of 25 high profile e-government initiatives sponsored by the Office of Management and Budget, was initiated to develop national geospatial data standards and an Internet portal for locating geospatial data. While this and other initiatives hold promise, achieving a nationwide network of geospatial data remains a formidable challenge.

GAO focused on the five federal agencies that are primarily responsible for wildland fire management: the Department of Agriculture's Forest Service and the Department of the Interior's National Park Service, Bureau of Land Management, Fish and Wildlife Service, and Bureau of Indian Affairs.

_____ **United States General Accounting Office**