

Why GAO Did This Study

In recent decades, managing the nation's public and private forests and rangelands has become increasingly complex, requiring a sound understanding of science and science-based tools to address these complexities. The Department of Agriculture's Forest Service maintains a research and development program (FS R&D) to help provide scientific information and tools. GAO was asked to examine (1) the scope of research and development carried out by FS R&D and some of its resulting accomplishments, (2) trends in resources used in performing FS R&D work and the effects of those trends on its research efforts and priorities, and (3) recent steps FS R&D has taken to improve its ability to fulfill its mission and challenges it faces in doing so. In conducting this review, GAO analyzed FS R&D funding data for fiscal years 2000 to 2009 and staffing data for fiscal years 2006 to 2009 and interviewed officials from FS R&D, other federal agencies, and nonfederal entities.

What GAO Recommends

GAO recommends that the Forest Service assess the effectiveness of recent steps FS R&D has taken to improve science delivery and take steps to ensure that individual performance assessments better balance the various types of science delivery activities. In commenting on a draft of this report, the Forest Service agreed with GAO's findings and recommendations.

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FOREST SERVICE RESEARCH AND DEVELOPMENT

Improvements in Delivery of Research Results Can Help Ensure That Benefits of Research Are Realized

What GAO Found

The scope of FS R&D's work spans a range of research organized into seven strategic program areas: invasive species; inventory and monitoring; outdoor recreation; resource management and use; water, air, and soils; wildland fire; and wildlife and fish. Using funds appropriated to it, as well as funds from authorized external sources such as universities and other federal agencies, FS R&D operates a system of research stations, which in turn oversee laboratories, experimental forests, and other research locations nationwide. According to end users of FS R&D's work, its accomplishments are many and varied, including the Forest Inventory and Analysis program, which provides long-term data on the nation's forests; efforts to identify and control invasive pests; and software applications to quantify the environmental benefits of urban forests. Nevertheless, end users also identified areas requiring additional attention by FS R&D, such as social science research to better understand human interaction with natural resources.

Overall, spending by FS R&D—using both its own appropriated funds and resources from external sources—remained relatively flat during fiscal years 2000 through 2009, with an average annual increase of 3.2 percent, or 0.8 percent when adjusted for inflation; funding from external sources represented a small but growing portion of the total. Trends in spending varied across research stations, with some experiencing increases and others decreases. In response to these trends, many stations reduced their staffing levels and increasingly sought support from external sources. While doing so has had advantages, it has changed the way FS R&D carries out its work and sets research priorities. For example, because external funding is often short term in nature, reliance on this funding may lead FS R&D to address more short-term research issues.

FS R&D has taken steps to improve its ability to fulfill its mission in several areas, including increasing its efforts to deliver knowledge and tools to end users and involving end users in setting research agendas; improving funding allocation processes; and increasing coordination with other federal research agencies. Despite these efforts, challenges persist, particularly in the area of science delivery—that is, how research results are communicated. While FS R&D has created a more formal system for science delivery at multiple levels within the agency, and several research stations have specific programs dedicated to science delivery, numerous officials and end users told GAO that FS R&D places greater emphasis on peer-reviewed journals as a means of science delivery than on other types of science delivery efforts, such as workshops, that are often more useful to end users. According to these officials, the performance assessment system for FS R&D researchers often reinforces this bias. Without improved delivery of research results, land managers and others may be unable to fully benefit from the agency's work. FS R&D officials also reported several challenges that impede their ability to conduct their day-to-day research, including computing and information technology, human capital, and other administrative issues.