United States Government Accountability Office

Report to the Ranking Member, Subcommittee on Indian and Insular Affairs, Committee on Natural Resources, House of Representatives

June 2024

FOREST SERVICE

Fully Following Leading Practices for Agency Reforms Would Strengthen Prescribed Fire Program

GAO-24-106239

GAO Highlights

Highlights of GAO-24-106239, a report to the Ranking Member, Subcommittee on Indian and Insular Affairs, Committee on Natural Resources, House of Representatives

June 2024

FOREST SERVICE

Fully Following Leading Practices for Agency Reforms Would Strengthen Prescribed Fire Program

Why GAO Did This Study

Wildfire severity has increased across the U.S., causing loss of life and property and damage to ecosystems. To mitigate wildfire risk and improve forest health, the Forest Service uses prescribed fire to reduce fuels. The agency reports that less than 1 percent of prescribed fires escape control and become wildfires, but escapes can have significant effects.

GAO was asked to review the Forest Service's efforts to improve its prescribed fire program following two escapes in New Mexico in 2022. This report addresses, among other things, (1) steps the agency has taken to reform its prescribed fire program and (2) the extent to which it has followed selected leading practices for effective agency reforms. GAO reviewed relevant Forest Service documents; interviewed officials from agency headquarters, regional offices, and national forests; interviewed stakeholders and Tribes; and conducted in-person site visits and interviews in Idaho and New Mexico.

What GAO Recommends

GAO is making four recommendations to the Forest Service related to its prescribed fire efforts: (1) develop outcome-oriented goals and performance measures; (2) develop and implement a strategic workforce plan; (3) develop an implementation plan for its reform efforts; and (4) assess the appropriate level of resources to maintain day-to-day management of reform efforts. The Forest Service generally agreed with the report and recommendations, and plans to develop and implement a corrective action plan to address the findings.

View GAO-24-106239. For more information, contact Cardell Johnson at (202) 512-3841 or JohnsonCD1@gao.gov.

What GAO Found

The U.S. Forest Service plans to increase its use of prescribed fire—deliberate burning in specific areas under managed conditions—to mitigate wildfire risk. The agency reviewed its prescribed fire program in 2022 and recommended reforms to enhance the program's safety. Since then, the agency has implemented some of the reforms and taken steps to address others.

In undertaking these reforms, the Forest Service generally followed the leading practice for involving employees and key stakeholders, and partially followed four other selected leading practices, leaving gaps.

Extent to Which the Forest Service Has Followed Selected Leading Practices for Effective Agency Reforms

Practice	Extent followed
Establishing goals and outcomes	◒
Involving employees and key stakeholders	●
Strategic workforce planning	◒
Managing and monitoring	◒
Leadership focus and attention	◒

● Generally followed—addressed most or all aspects of the selected key questions GAO examined for this practice ◒ Partially followed—addressed some, but not most, aspects of the selected key questions GAO examined for this practice ○ Not followed—did not address the selected key questions GAO examined for this practice

Source: GAO analysis of Forest Service documents and interviews with Forest Service officials and stakeholders. | GAO-24-106239

Specifically, GAO identified gaps in these areas:

- **Establishing goals and outcomes.** The agency has ongoing efforts to develop outcome-oriented performance measures and goals, such as reducing risk in areas most susceptible to wildfire damage, but has struggled for years to develop these measures and goals, which are critical for evaluating success.
- **Strategic workforce planning.** One official told GAO the agency formed a committee in 2024 to help address challenges with maintaining adequate and trained staff. However, the official noted that the effort is in its infancy and did not provide details, documentation, or a time frame for completing the plan.
- **Managing and monitoring.** The agency has established time frames and is tracking progress for some reforms it identified for its program, such as expanding training and developing a resource mobilization strategy. However, it does not have an implementation plan that outlines next steps and future milestones for other reforms it intends to undertake.
- **Leadership focus and attention.** The Chief of the Forest Service has consistently articulated the need to reform the agency's prescribed fire program, but the agency risks not dedicating sufficient staff resources for day-to-day management of reform efforts.

According to agency documents, the Forest Service recognizes the reforms it is making will require major changes to agency practices and culture. By fully following leading practices, the Forest Service would have better assurance that its efforts to safely expand its use of prescribed fire will succeed.

Contents

Tables

Figures

Abbreviations

NEPA	National Environmental Policy Act
NWCG	National Wildfire Coordination Group
PODs	Potential Operational Delineations

U.S. GOVERNMENT ACCOUNTABILITY OFFICE
441 G St. N.W.
Washington, DC 20548

June 5, 2024

The Honorable Teresa Leger Fernández
Ranking Member
Subcommittee on Indian and Insular Affairs
Committee on Natural Resources
House of Representatives

Dear Ms. Leger Fernández:

In recent decades, wildfire severity has increased across much of the U.S., resulting in the loss of life, homes, and businesses, and damage to ecosystems. To help mitigate wildfire risk and improve the health and resiliency of forests, the U.S. Forest Service—within the U.S. Department of Agriculture—conducts hazardous fuels reduction projects (or treatments) to reduce or modify the distribution of vegetation—such as trees, shrubs, needles, and leaves—that can fuel wildfires. One type of hazardous fuels treatment is the deliberate or "prescribed" use of fire in specific areas under specified conditions.[1]

While prescribed fire is an important forest management tool, its use entails inherent risks. Most notably, a prescribed fire can escape control and become a wildfire. Of the 4,500 prescribed fires the Forest Service ignites each year on average, the agency reports that about seven of them (less than 1 percent) escape control.[2] However, impacts from the few prescribed fires that escape may be significant. For example, in April 2022 two separate prescribed fires in the Santa Fe National Forest in New Mexico escaped control and merged, resulting in the largest and most destructive wildfire in the state's history, known as the Hermit's Peak/Calf Canyon Fire. The wildfire burned more than 340,000 acres and destroyed at least 160 homes and more than 900 other structures.[3]

In response to those escapes and the resulting wildfire, in May 2022 the Forest Service paused all use of prescribed fire nationwide for 90 days

[1]For more information on prescribed fire and other hazardous fuels treatments, see GAO, *Wildland Fire: Federal Agencies' Efforts to Reduce Wildland Fuels and Lower Risk to Communities and Ecosystems*, GAO-20-52 (Washington, D.C.: Dec. 19, 2019).

[2]Forest Service, National *Prescribed Fire Program Review* (Washington, D.C.: September 2022).

[3]88 Fed. Reg. 59730, 59732 (Aug. 29, 2023).

while the agency conducted a review of its prescribed fire program.[4] That review, issued in September 2022, resulted in seven recommendations identified as necessary for the Forest Service to implement immediately before it resumed conducting prescribed fires.[5] The review also outlined five other actions the Forest Service committed to taking to improve the safety of its prescribed fire program, as well as more than 40 other actions the agency could consider taking to improve the program. We refer to these recommendations and actions collectively as reforms.[6]

Congress, the Forest Service and other land management agencies, and interested stakeholders have long recognized the need for significantly increased hazardous fuels treatments to reduce wildfire risks. In its 2022 Wildfire Crisis Strategy and with additional resources provided by the Infrastructure Investment and Jobs Act and the Inflation Reduction Act in 2021 and 2022, respectively, the Forest Service has established a goal of treating up to an additional 20 million acres across the National Forest System and up to 30 million acres of other federal, state, tribal, and private lands over the next 10 years, working in partnership with these land managers and other stakeholders.[7]

You asked us to review the Forest Service's efforts to improve its prescribed fire program following the Hermit's Peak/Calf Canyon Fire. This report addresses (1) factors the Forest Service has identified as contributing to the escape of prescribed fires ignited by the agency over

[4]The Forest Service also conducted a review of one of the escaped prescribed fires in New Mexico. See Forest Service, *Gallinas-Las Dispensas Prescribed Fire Declared Wildfire Review* (Washington, D.C.: June 2022).

[5]Forest Service, *National Prescribed Fire Program Review*. The program review report is available at https://lessons.fs2c.usda.gov/incident/usda-forest-service-national-prescribed-fire-program-review-2022. The recommendations and actions from the program review are listed in Appendix A of the report.

[6]Based on our past work, we use the term "reforms" to broadly include any organizational changes—such as major transformations, mergers, consolidations, and other reorganizations—and efforts to streamline and improve the efficiency and effectiveness of government operations. GAO, *Government Reorganization: Key Questions to Assess Agency Reform Efforts*, GAO-18-427 (Washington, D.C.: June 13, 2018).

[7]Forest Service, Confronting the Wildfire Crisis: A Strategy for Protecting Communities and Improving Resilience in America's Forests, FS-1187a, (Washington, D.C.: January 2022). For more information on the Wildfire Crisis Strategy, see https://www.fs.usda.gov/managing-land/wildfire-crisis. Infrastructure Investment and Jobs Act, Pub. L. No. 117-58, 135 Stat. 429 (2021); Inflation Reduction Act, Pub. L. No. 117-169, 136 Stat. 1818 (2022).

the last decade, (2) steps the Forest Service has taken to implement the recommendations and other actions identified in its 2022 review of its national prescribed fire program, and (3) the extent to which the Forest Service has followed selected leading practices for effective agency reforms in its efforts to improve its prescribed fire program.

To describe the factors the Forest Service identified as contributing to the escape of prescribed fires conducted by the agency over the last decade, we reviewed information on escapes from 2012 through 2021—the most recent 10 years for which complete data were available.[8] Specifically, we reviewed Forest Service annual summary reports to identify and compile a list of escapes over that period. For each escape, we analyzed the agency's escape review documents to identify the factors contributing to the escape.[9] Our ability to identify factors contributing to individual escapes largely depended upon information in the escape review documents, which varied in format and content. Two analysts reviewed and agreed upon the contributing factors identified in each document, and then grouped the factors into agreed-upon categories.[10]

In addition, we reviewed information from a non-generalizable sample of four escapes, selected to represent Forest Service regions with relatively higher numbers and rates of and acres burned by escaped fires from 2012 through 2021.[11] For each case example, we reviewed Forest

[8]We focused our review on prescribed fires for which a wildfire declaration was made, which we refer to in this report as an escape. A wildfire declaration may be made for prescribed fires for several reasons, including if the fire has spread outside the project boundary. A declared wildfire is any fire that occurs in vegetation or natural fuels, and originates from an unplanned ignition, such as lightning or volcanos, unauthorized and accidental human-caused fires, or prescribed fires that are declared wildfires.

[9]These review documents included declared wildfire review reports required for prescribed fire escapes that are declared a wildfire, facilitated learning analyses that are often developed to document lessons learned from the experience, and the Forest Service's 2022 prescribed fire program review report. We used contributing factors and definitions identified in the 2022 program review report to conduct our analysis, and added several factors based on our review of the documents.

[10]One analyst reviewed and identified contributing factors based on reading of the escape review documents, and a second analyst reviewed the first analyst's selections of factors contributing to escapes, reaching full agreement.

[11]We selected the following four escapes, out of 43 that occurred from 2012 through 2021, in the following national forests and Forest Service regions for closer review: (1) 2018 Redondo prescribed fire escape in the Cibola National Forest, Region 3; (2) 2018 Lodgepole prescribed fire escape in the Boise National Forest, Region 4; (3) 2019 Caples prescribed fire escape in the Eldorado National Forest, Region 5; and (4) 2021 Lennox prescribed fire escape in the Ouachita National Forest, Region 8.

Service documents such as prescribed fire plans and escape review documents. We also interviewed Forest Service officials from the respective national forests and regions where the escapes occurred (which we refer to as selected national forests and regions), one to two local stakeholders for each case example (e.g., state forestry agencies, local governments, nongovernmental organizations), and Tribes with lands located near the selected national forests to learn more about events leading up to the selected escape, perspectives on factors contributing to escapes, and practices related to use of prescribed fire.[12] As part of our work, we conducted site visits and in-person interviews in Idaho and New Mexico. The views of Forest Service officials, local stakeholders, and Tribes we interviewed are not generalizable but provide examples of perspectives from each of these groups.

To describe steps the Forest Service has taken to implement the recommendations and other actions identified in its 2022 review of its national prescribed fire program, we reviewed Forest Service documents, such as its prescribed fire mobilization strategy and the strategic plan for the National Interagency Prescribed Fire Training Center.[13] We also interviewed Forest Service officials from headquarters and selected regions and national forests for perspectives on the program review process and recommendations, including challenges to implementing the recommendations. In addition, we interviewed local stakeholders and Tribes for the selected national forests and national stakeholders about their perspectives on the program review process, findings, and recommendations.[14] These views illustrate employee and stakeholder

[12]We identified and spoke with local stakeholders who interact with the Forest Service on prescribed fire projects in the selected national forests. Specifically, we spoke with the following local stakeholders: Boise County (Idaho), California Department of Forestry and Fire Protection, Cibola County Fire Department and Emergency Services (New Mexico), Idaho Department of Lands, New Mexico Forestry Division, Oklahoma Forestry Services Division, and Sierra Nevada Conservancy (California). We also contacted one or more Tribes with lands near the selected forests for interviews, and two Tribes located near two of the forests agreed to speak with us.

[13]Forest Service, National Prescribed Fire Program Review; Forest Service, National Prescribed Fire Resource Mobilization Strategy (Washington, D.C.: June 2023); and National Interagency Prescribed Fire Training Center, National Interagency Prescribed Fire Training Center Strategic Plan 2023-2028 (Apr. 21, 2023).

[14]We interviewed representatives of the following national stakeholder groups who interact with the Forest Service on prescribed fire activities: the Coalition of Prescribed Fire Councils, National Association of State Foresters, The Nature Conservancy, and Wildland Fire Leadership Council.

perspectives about the program review and recommendations; however, the views are not generalizable.

To examine the extent to which the Forest Service has followed selected leading practices for effective agency reforms in its efforts to improve its prescribed fire program, we assessed the agency's actions against selected leading practices from our June 2018 report.[15] We reviewed Forest Service documents, such as the agency's Wildfire Crisis Strategy and the prescribed fire mobilization strategy. We also reviewed the Forest Service's national prescribed fire program review reports completed in 2003, 2007, and 2022 to identify ongoing challenges. We interviewed Forest Service headquarters officials about steps they have taken to address the selected leading practices for effective agency reform. We also interviewed Forest Service officials from the selected regional offices and national forests, as well as corresponding local stakeholders, Tribes, and national stakeholders about their perspectives on relevant leading practices, such as those related to involvement of employees and stakeholders in developing reforms and communication about reforms. These views cannot be generalized to other offices, stakeholders, or Tribes that we did not interview.

We focused our assessment on five selected leading reform practices and selected key questions for those practices that we determined were most relevant to improvement efforts being made to the Forest Service's prescribed fire program.[16] An analyst reviewed the evidence related to each practice drawn from the documents and interviews described above, and rated the Forest Service as having either generally followed, partially

[15]GAO-18-427. With respect to these practices, "reforms" broadly includes any organizational changes—such as major transformations, mergers, consolidations, and other reorganizations—and efforts to streamline and improve the efficiency and effectiveness of government operations. We also drew on related GAO products identified in the June 2018 report to elaborate on selected leading practices and cited relevant reports accordingly.

[16]We excluded seven leading reform practices from our June 2018 report because we determined they were less relevant to Forest Service improvement efforts. For example, one of these practices focuses on workforce reduction strategies, but the Forest Service has not undertaken workforce reductions as part of its prescribed fire improvement efforts. For the full list of leading reform practices and their associated key questions, see GAO-18-427.

followed, or not followed each practice.[17] The initial assessment was reviewed by a second analyst to determine if they reached the same conclusions. The two analysts then met to reconcile differing conclusions, and they resolved differences through discussion to reach full agreement on the final ratings for each selected leading practice.

We conducted this performance audit from October 2023 to June 2024 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Background

Wildfire, Hazardous Fuels, and Prescribed Fire

Wildfires play an important ecological role on the nation's landscapes. However, changing climatic conditions and various management practices over the past century—including fire suppression, timber harvesting, and grazing—have altered the frequency of fires and reduced the resilience of many forest and grassland ecosystems.[18] This history of fire exclusion and changes in forest management have resulted in a buildup of vegetation—including dead and dying trees and heavy undergrowth—often referred to as hazardous fuels.

[17]We determined that the Forest Service generally followed a reform practice if the evidence showed that the Forest Service took actions that addressed most or all aspects of the selected key questions we examined for the practice. We determined that the Forest Service partially followed a reform practice if the evidence showed that the Forest Service took actions that addressed some, but not most, aspects of the selected key questions we examined for the practice. We determined that the Forest Service had not followed a reform practice if the evidence showed that the Forest Service took no actions that addressed the selected key questions we examined for the practice.

[18]We previously reported that most lands in the United States evolved with wildfire occurring at different time intervals, intensities, and with different ecological effects. Some forest ecosystems are adapted to infrequent but high-intensity wildfires. On the other end of the scale, other forest ecosystems are adapted to relatively frequent (e.g., up to every 35 years) but low-intensity wildfires to burn surface fuels (e.g., needles, leaves), return nutrients to the soil, and reduce ecological competition. Altering the pattern and frequency of fires can result in degraded ecological conditions that are more susceptible to damage or mortality from fires, insects, or other events. See GAO, *Wildland Fire Management: Better Information and a Systematic Process Could Improve Agencies' Approach to Allocating Fuel Reduction Funds and Selecting Projects*, GAO-07-1168 (Washington, D.C.: Sept. 28, 2007).

Hazardous fuels can significantly affect wildfire behavior. For example, the accumulation of hazardous fuels on or near the ground may contribute to fires igniting more easily, spreading rapidly, and becoming more intense. In addition, an increase in the density of small trees can allow a low-intensity fire spreading across the ground (known as a surface fire) to climb into the forest canopy and become a high-intensity crown fire, which can then spread rapidly and become difficult to contain. To help mitigate wildfire risk and improve the health and resiliency of forests, land managers may use prescribed fire and other methods to reduce or modify the distribution of hazardous fuels on the landscape, as shown in figure 1.[19]

Figure 1: Forest Sites with and without Hazardous Fuels Treatments

The photo on the left shows a treated area that was thinned and burned to reduce the density of trees. The photo on the right shows an adjacent untreated site with a higher density of trees with branches extending to the ground—conditions that can contribute to higher-intensity wildfires.

Source: GAO. | GAO-24-106239

Prescribed fire is most effective in reducing smaller surface fuels (e.g., grasses, leaves, pine needles, twigs) and is not as effective in reducing

[19]Prescribed fire may also be used to achieve other land management objectives, such as minimizing the spread of insects or diseases, removing unwanted species, or improving wildlife habitat. For more information, see GAO-20-52.

larger fuels (e.g., large trees).[20] Because of this, prescribed fire typically works best when combined with other treatment methods that remove, or thin, those larger fuels from a site. For instance, it is often used to remove remaining debris and litter on the ground after mechanical treatment, which involves using equipment (e.g., chainsaws, bulldozers, mowers) to cut or remove the large vegetation. For some areas, multiple treatment methods that span several years are required.

There are two primary types of prescribed fires—broadcast burns and pile burns. Broadcast burns are generally used to reduce surface fuels. Under this method, an area of several acres or more is ignited, and the fire is managed to be confined within a predetermined area. Pile burns are often used to treat larger fuels (e.g., branches, treetops) that remain on a site after a mechanical treatment, timber harvest, or wildfire. Pile burning involves collecting vegetation into piles and burning the piles.

Once a prescribed fire project is completed, the site needs to be maintained as vegetation grows back. Depending on the ecosystem, fuels treatment effectiveness can vary in length from a few years to over a decade. For example, in southeastern U.S. pine forests, fuel reduction projects are generally effective for about 5 years given the fast rate at which vegetation grows in that region. In contrast, in dry conifer forests in the western United States, projects are generally effective for about 10 or more years.

Forest Service's Prescribed Fire Program

The Forest Service ignites about 4,500 prescribed fires each year, reducing fuels on about 1.3 million acres across the National Forest System.[21] As part of its Wildfire Crisis Strategy, the agency has established goals for increasing the pace and scale of its hazardous fuels treatments, including its prescribed fire activities, to mitigate wildfire risk and improve forest health. Specifically, as previously noted, the Forest Service has established a goal of treating up to an additional 20 million acres across the National Forest System and up to 30 million acres of other federal, state, tribal, and private lands over the next 10 years, working in partnership with these land managers and other stakeholders. To help achieve those goals, the Forest Service prioritized 21 high-risk landscapes in 10 western states located across six of its regions—

[20]James K. Agee and Carl N. Skinner, "Basic Principles of Forest Fuel Reduction Treatments," *Forest Ecology and Management,* 211 (2005): 83-96.

[21]Forest Service, *National Prescribed Fire Program Review*.

referred to as priority landscapes—for hazardous fuels treatments over the next 10 years.[22]

The Forest Service manages the 193 million-acre National Forest System through its headquarters in Washington, D.C., nine regional offices, and 154 national forests and 20 national grasslands; the individual forests and grasslands are referred to as units (see fig. 2).[23] Each regional office is headed by a regional forester, and each unit is headed by a forest supervisor and divided into smaller districts, headed by a district ranger. Under this structure, the primary staff responsible for planning and implementing prescribed fire projects are at the unit and district levels, and regional offices are responsible for providing oversight and support.

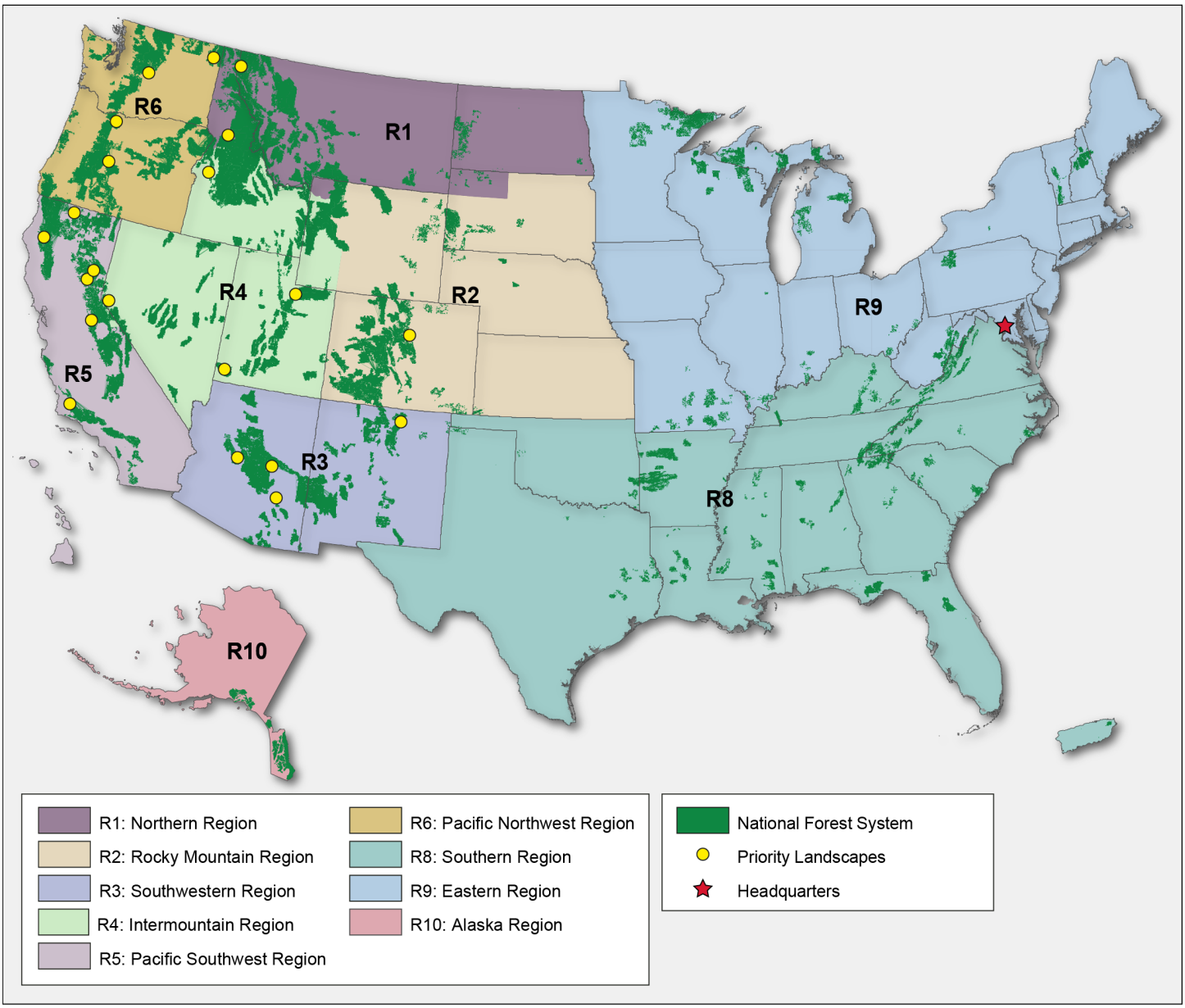
Regional office activities may include allocating funding and performance targets to units and coordinating staffing and equipment across units to facilitate conducting prescribed fire activities. Regional offices may also provide supplemental policy guidance for prescribed fire activities. Forest Service headquarters—primarily through its Fire and Aviation Management Office—is responsible for developing the agency's policies and procedures for prescribed fire.[24]

[22]The Forest Service initially identified 10 areas for prioritized hazardous fuels investment, and later added 11 additional areas. Priority landscapes were selected by considering a range of factors including locations where treatments could reduce the risk of catastrophic wildfires on people, communities, and natural resources. See Forest Service, *Confronting the Wildfire Crisis: Initial Landscape Investments to Protect Communities and Improve Resilience in America's Forests*, FS-1187d (Washington, D.C.: April 2022) and *Confronting the Wildfire Crisis: Expanding Efforts to Deliver on the Wildfire Crisis Strategy,* FS-1187f (Washington, D.C.: January 2023).

[23]Units of the National Forest System may be combined for administrative purposes.

[24]The Fire and Aviation Management office is part of the Forest Service's State, Private, and Tribal Forestry program.

Figure 2: Map of the National Forest System, Forest Service Regions, and Priority Landscapes



Source: GAO analysis of Forest Service Geodata Clearinghouse data; MapInfo (map). | GAO-24-106239

Note: The Forest Service does not have a Region 7.

The Forest Service conducts wildland fire work, including prescribed fire, within an interagency and intergovernmental framework, coordinated through the National Wildfire Coordination Group (NWCG).[25] The Forest Service adheres to NWCG standards and agency-specific guidance for determining the qualification requirements for positions involved with prescribed fire.[26] These positions have minimum education, training, and experience requirements that determine the types of prescribed fire projects for which they are qualified. For the purposes of this report, we focus on two key positions:

- A burn boss, who is the Forest Service staff member responsible for preparing and implementing the prescribed fire plan and who serves as the on-site staff lead during a prescribed fire.[27]
- A forest manager, who is the Forest Service official (e.g., district ranger, forest supervisor) authorized and responsible for approving and overseeing implementation of prescribed fire projects.[28]

Prescribed fire projects are planned and primarily implemented by Forest Service staff. The Forest Service staff that work on prescribed fire projects are typically wildland firefighters who also work on wildfire suppression operations. The Forest Service also partners with cooperating agencies to implement projects, including other federal and state agencies, tribal governments, local fire departments, non-governmental organizations, and contractors with the required skills and training.

[25]The National Wildfire Coordination Group (NWCG) is an assembly of the relevant federal agencies and representatives that establishes nationwide standards for wildland fire operations, including minimum standards for conducting prescribed fire and workforce qualifications. Member agencies include the Forest Service, four Department of the Interior agencies (Bureau of Indian Affairs, Bureau of Land Management, Fish and Wildlife Service, and National Park Service), Intertribal Timber Council, and National Association of State Foresters.

[26]National Wildfire Coordinating Group Standards for Wildland Fire Position Qualifications, PMS 310-1; Forest Service Fire and Aviation Qualifications Guide, Ch. 2 (updated Jan. 20, 2023).

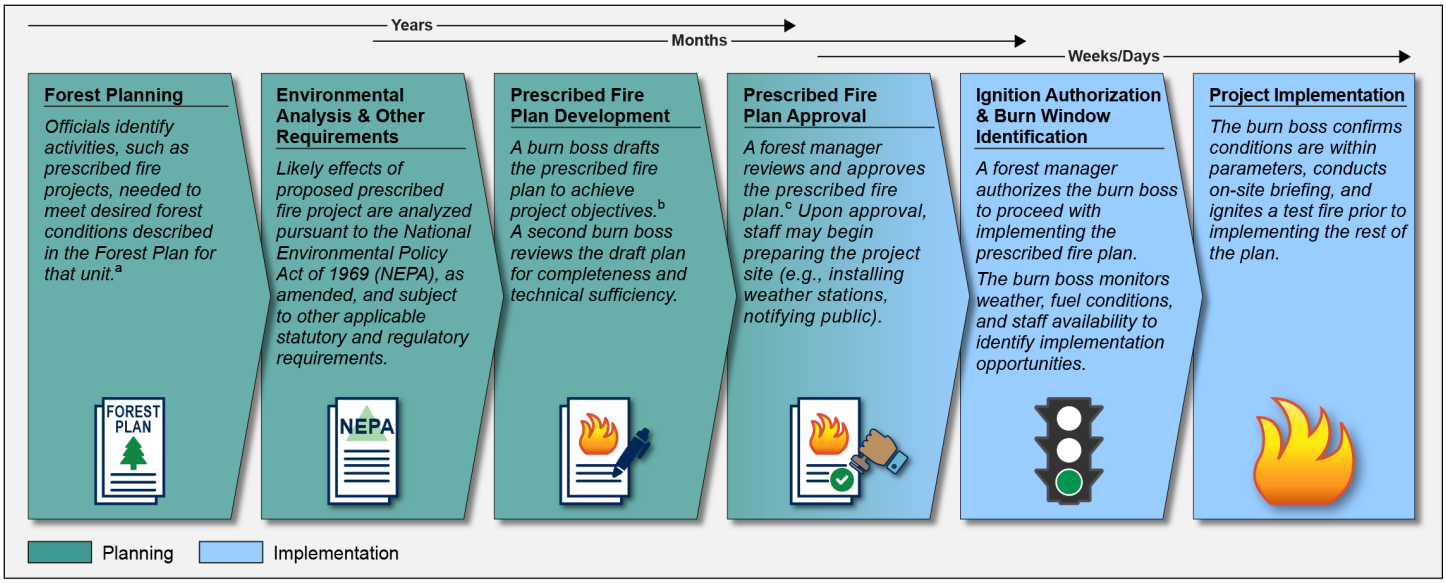
[27]The burn boss is supported by a range of staff positions on-site during a prescribed fire, which will vary based on the type and size of prescribed fire and other factors. These positions are subject to minimum education, training, experience, and physical fitness requirements.

[28]NWCG standards refer to this position as the Agency Administrator.

Planning and Implementing Prescribed Fire

The Forest Service's process for determining when, where, and how to use prescribed fire is a multi-stage process that can extend over many years (see fig. 3).[29] The process is informed by three planning phases—forest planning, environmental analysis, and prescribed fire planning—each at successive levels of detail, before moving into implementation phases. The decision-making process also may be informed by other planning efforts, including those conducted by other agencies, such as wildfire risk assessments or community wildfire protection plans.

Figure 3: The Forest Service's General Processes for Prescribed Fire Planning and Implementation



Source: GAO analysis of Forest Service documents and interviews with Forest Service officials; GAO (icons). | GAO-24-106239

[a]Forest plans establish the land and resource management objectives and guidelines for each national forest, as required by Forest and Rangeland Renewable Resources Planning Act of 1974, as amended.

[b]A burn boss must be qualified at the level commensurate to the complexity of the prescribed fire project to prepare and implement the prescribed fire plan.

[c]The forest manager must be qualified at a level commensurate to the complexity of the prescribed fire project to approve and oversee implementation of the project.

[29]This section presents a general description of the Forest Service's processes for prescribed fire planning and implementation. Following its September 2022 program review, the Forest Service made several changes to how it executes its processes, which are described later in this report.

The process begins with identifying the need for prescribed fire. The Forest Service establishes long-term forest management objectives for each Forest Service unit in a land and resource management plan, commonly known as a forest plan, which is to be revised at least every 15 years.[30] Based on the management objectives outlined in the forest plan, forest officials identify projects—such as reducing hazardous fuels through prescribed fire—that are needed to meet the desired forest conditions. The forest planning process may take several years and requires opportunities for participation from the public.[31]

Once the need for a prescribed fire project has been identified, the next phase of the process is to conduct an environmental analysis to examine the likely effects of a prescribed fire project in a specific area and to comply with other applicable statutory and regulatory requirements.[32] The Forest Service analyzes a project's likely effects pursuant to the National Environmental Policy Act of 1969, as amended (NEPA).[33] The NEPA process for a project may take from a few months to several years, depending on the size, complexity, and potential effects of the project,

[30]The Forest and Rangeland Renewable Resources Planning Act of 1974, as amended, requires the Forest Service to develop forest plans for each national forest system unit and revise those plans at least every 15 years. Pub. L. No. 93-378, § 5, 88 Stat. 476, 477 (codified as amended at 16 U.S.C. § 1604). The Forest Service's regulations governing the development, amendment, and revision of forest plans are at 36 C.F.R. Part 219. According to agency officials, many forest plans have not been revised on schedule, and it is possible the forest plan may have been adopted more than 15 years prior to the implementation of a prescribed fire project. Annual appropriations laws since 2001 have generally included a provision specifying that the Secretary of Agriculture is not considered to be in violation of the statutory requirement to update a forest plan within 15 years solely because more than 15 years have passed without revision, unless the Secretary is not acting expeditiously and in good faith, within the funding available, to update such plans. *See, e.g.*, Pub. L. No. 118-42, div. E, tit. IV, § 407, 138 Stat. 25, 285 (2024) (classified at 16 U.S.C. § 1604 note).

[31]Forest Service regulations governing public participation in the forest planning process are at 36 C.F.R. § 219.4.

[32]When planning forest projects, the Forest Service must comply with other laws and regulations, such as the Endangered Species Act of 1973, as amended, and the National Historic Preservation Act of 1966, as amended.

[33]NEPA requires federal agencies to evaluate the likely environmental effects of proposed projects using an environmental assessment or, if the project likely would significantly affect the environment, a more detailed environmental impact statement evaluating the proposed project and alternatives unless the proposed project is within a category of activities the agency has already determined has no significant environmental effect. Pub. L. No. 91-190, 83 Stat. 852 (1970) (codified as amended at 42 U.S.C. §§ 4321-47).

and generally requires the agency to involve the public.[34] Project approval occurs when the appropriate Forest Service official has signed the NEPA decision document.[35]

After the NEPA process has concluded, the next phase of the process determines how to implement the prescribed fire project to meet the desired objectives. To do this, the Forest Service must prepare a site-specific prescribed fire plan in accordance with NWCG standards and agency-specific guidance.[36] A burn boss drafts the prescribed fire plan, and then another burn boss conducts a technical review for completeness. A forest manager approves the plan after reviewing it to ensure the plan reflects the conditions specified in the project's NEPA decision document and conforms with agency and NWCG policies. The burn boss drafting the plan, the burn boss reviewing the plan, and the forest manager approving the plan must all be qualified at a level commensurate to the project.

In accordance with NWCG standards, prescribed fire plans consist of 21 elements,[37] including:

- **a complexity analysis**, which identifies the project's risk factors and the difficulty of steps required to mitigate those factors. Project complexity—rated as low, medium, or high—informs most aspects of the plan's elements, including determining the staff qualifications required to prepare, review, approve, and implement the prescribed fire plan.

[34]The regulations implementing NEPA require federal agencies to solicit comments from the public before preparing a final environmental impact statement and provide the environmental assessment for public review for 30 days before the proposed action can begin. In addition, Forest Service regulations establish a process for individuals and entities to file objections to certain proposed projects and activities, including hazardous fuel reduction projections, before the agency makes a decision on the project or activity. 36 C.F.R. Part 218.

[35]The type of documentation required will vary depending on the type of NEPA analysis conducted for the project. 36 C.F.R. §§ 220.5(g), 220.6(e)(25)(i)(C), 220.7(c).

[36]National Wildfire Coordinating Group, Standards for Prescribed Fire Planning and Implementation PMS-484, May 2022; Forest Service Manual 5140 – Hazardous Fuels Management and Prescribed Fire, April 2, 2020.

[37]The elements of a prescribed fire plan also include a description of the project area (including the site's vegetation and fuels), project objectives, scheduling considerations, communication protocols, safety and medical procedures, and monitoring activities.

- **the prescription**, which establishes the range of environmental and weather conditions (e.g., temperature, wind direction, relative humidity) under which the prescribed fire may occur. The prescription may be developed using analytical tools for modeling the expected fire behavior based on a description of the site's vegetation (fuels) under different weather conditions.
- **a plan for igniting the fire (i.e., ignition plan) and other plans for managing the fire after ignition (i.e., holding plan, monitoring plan)**, which identifies the areas and actions that are critical for keeping the fire within the project area boundaries and outlines procedures for monitoring the site to ensure the fire does not reignite or spread.
- **a contingency plan** for responding to foreseeable but uncommon problems. The contingency plan identifies the staff, equipment, and actions needed should conditions change unexpectedly or if the fire's behavior begins to change beyond the parameters specified in the plan.
- **the process for declaring a prescribed fire a wildfire**, or an escape, which specifies who is responsible for the decision and the conditions under which a declaration should occur.[38]
- **a plan for managing smoke and complying with air quality requirements**, including identifying smoke-sensitive populations and locations (e.g., hospitals, airports), modeling smoke outputs, developing mitigation strategies, and coordinating with air quality regulators to obtain any permits that may be required.[39]

After the prescribed fire plan has been approved, a forest manager formally authorizes the project's ignition.[40] Concurrently, the burn boss

[38]For the purposes of this report, we refer to prescribed fires that were declared wildfires as escapes. NWCG and Forest Service policy require escapes to undergo a declared wildfire review. The purpose of the review is to identify learning opportunities intended to improve the planning and implementation of prescribed fire projects. The review should contain specific information, including a description of the setting and prescribed fire objectives, prescription, and outcomes; maps and photos; chronology and narrative of the events; and lessons learned identified by those participating in the prescribed fire and those who were part of the review team.

[39]For more information about wildfire smoke and air quality impacts see GAO, *Wildfire Smoke:* Opportunities *to Strengthen Federal Efforts to Manage Growing Risks*, GAO-23-104723 (Washington, D.C.: Mar. 13, 2023).

[40]At this step, the forest manager, burn boss, and other staff as needed should discuss key items, such as if conditions have changed since the prescribed fire plan was approved and if there are circumstances that could affect implementation.

and other staff also begin certain implementation activities, such as monitoring the weather and fuel conditions to identify a “burn window”—a period when parameters are forecast to be conducive to implementing the prescribed fire project. The burn boss also should ensure that the appropriate number and type of staff and equipment will be available to conduct the prescribed fire project, including those identified as part of the contingency plan.

After a burn window has been identified, implementation activities continue. Leading up to ignition, the burn boss makes the required public notifications and prepares the project site. For each day that ignitions are to occur, the burn boss must complete several tasks. To facilitate and document these tasks, the burn boss completes and signs a “go/no-go” checklist. These tasks include obtaining a weather forecast and verifying that the weather, fuel conditions, staff, and equipment specified in the prescribed fire plan are in place. The burn boss also must conduct an on-site briefing to ensure all staff on the implementation team understand the project objectives, safety hazards, site conditions, weather, expected fire behavior, and other components specified in the ignition, holding, and contingency plans.

Upon completion of the tasks on the checklist, the next step is to ignite a “test fire” in a representative location to observe if the fire behavior and smoke dispersal patterns are consistent with those specified in the plan. If the test fire is favorable, the burn boss may proceed to ignite the prescribed fire and begin implementing other steps of the prescribed fire plan.

Agency Staffing, Pressure, and Other Factors Contributed to Prescribed Fire Escapes

Through its reviews of 43 prescribed fires that escaped from 2012 through 2021, the Forest Service has identified various factors that contributed to those escapes.[41] (See app. I for a list of the escapes over this period.) On the basis of our analysis of Forest Service documents, we identified factors and grouped them into five categories: prescribed fire plan development, weather forecasting, implementation, staff and equipment, and pressure to achieve prescribed fire goals (see table 1).

[41]During this time period, the Forest Service reported a total of 43 escapes out of almost 50,000 prescribed fire projects (less than 1 percent).

Table 1: Factors the Forest Service Identified as Contributing to Prescribed Fire Escapes, 2012 through 2021

Category	Description and examples
Prescribed fire plan development	*Includes factors related to the information contained in the prescribed fire plan.* For example: • Plan contained inaccurate information, such as wrong vegetation type or condition, or did not sufficiently consider potential drought impacts, reducing the accuracy of predicted fire behavior. • Plan did not contain site-specific information about the project and surrounding area (e.g., fuel type, adjacent private land). • Plan underrated the complexity of the project and specified that fewer staff or different types of equipment were needed. • Plan did not describe specific response actions in the contingency plan should the prescribed fire begin escaping control.
Weather forecasting	*Includes factors related to obtaining accurate information on weather.* For example: • Weather forecasts or readings were not specific to the site or were interpreted incorrectly. • Inability to accurately forecast wind events and other weather—such as in mountainous terrain—generally more than 7 days in advance.
Implementation	*Includes factors related to implementing the project according to the parameters established in the plan.* For example: • Altering some part of the plan during implementation without consideration of the impacts of that change on other parts of the plan. • Incorrectly implementing the prescribed fire plan, such as igniting more frequently than specified in the plan or failing to measure on-site fuel moisture levels, resulting in increased fire intensity. • Failing to monitor the project site according to the prescribed fire plan to ensure the fire remained inactive or did not spread beyond the project boundary. Contingency resources did not respond within the time frame specified in the plan.
Staff and equipment	*Includes factors related to having enough equipment and trained, experienced, and rested staff to implement the prescribed fire.* For example: • Insufficient availability of trained and experienced staff to develop, review, approve, and implement prescribed fire projects at increasing scales and levels of complexity. • Insufficient equipment available for implementation without a wildfire declaration. • Staff assigned to a burn were later reassigned, leading to less capacity to implement the project or delays while staff transitioned. • Not having agreements with partners that would enable those partners to provide staff and equipment to support the prescribed fire or serve as contingency resources.

Category	Description and examples
Pressure to achieve prescribed fire goals	*Includes factors related to the pressure some Forest Service staff describe feeling to accomplish prescribed fire projects, including within certain time frames and financial constraints.* For example: • Feeling pressure to implement a prescribed fire despite concerns about weather, vegetation conditions, or staff availability, because otherwise the project could be delayed until the next burning season. For example, staff may decide to implement a prescribed fire when weather or vegetation conditions are at the upper limits of the range of parameters established in the plan's prescription. While allowed, implementing a prescribed fire under such conditions increases the potential for more severe fire behavior and should be carefully considered. • Feeling pressure to implement a prescribed fire before the source of funding for the project expires.

Source: GAO analysis of Forest Service documents and interviews with Forest Service officials. | GAO-24-106239

Note: A prescribed fire that is declared a wildfire is referred to in this report as an escape.

There is rarely a single cause underlying a prescribed fire escaping, and several factors often contribute, according to Forest Service documents and officials we interviewed from selected national forests and regions. For example:

- Forest Service documents and officials identified implementation, weather, and staffing as some of the factors contributing to one escape that occurred when a pile burn spread and burned a larger area, and for a longer time, than expected. For example, the moisture levels recorded before the prescribed fire was ignited suggested the fuel was wetter than actual conditions, according to agency documents, which could have contributed to the escape. In addition, agency documents and national forest officials we interviewed identified high winds as spreading the fire beyond the piles and contributing to the escape. Agency documents and officials also noted that their efforts to keep the prescribed fire from spreading further were delayed when two firefighting crews left the fire while it was still underway because they had been assigned to other projects. Ultimately, national forest officials declared that the prescribed fire

had escaped, which allowed them to order additional firefighting resources to contain the fire.[42]

- Weather, staffing and equipment, and pressure were some of the factors that contributed to another escaped prescribed fire, according to agency documents and officials we interviewed. Stronger-than-forecast winds caused the prescribed fire to spread and made it more difficult for firefighters to work safely to try to contain it, ultimately contributing to the fire escaping. Also, officials changed the location where the fire was to be ignited to avoid an area where timber was being harvested. Officials prepared the new location before igniting the fire, but said that it was possible the new location—which was at the top of a hill rather than at the bottom—may have contributed to the fire being more difficult to suppress once the strong winds picked up, because the wind may have carried embers down the slope and into areas of unburned vegetation.

  Officials also said that an equipment malfunction slowed their progress when initially igniting the prescribed fire. According to the officials, the slower progress led to crews igniting and burning less of the area than intended, which meant there were more unburned fuels than initially planned when the winds picked up and the fire began to spread. Officials and an agency document also reported that their attempts to keep the prescribed fire from escaping were hindered by the reassignment of several firefighting crews to respond to newly ignited wildfires in the area. The document and officials also noted that national forest officials felt pressure to move forward with the project to help the Forest Service meet its prescribed fire performance targets.

- Forest Service documents and officials identified planning, along with staffing and equipment factors, as contributing to an escaped prescribed fire that was burning within the intended project boundary, but for a longer time than was expected. It was declared an escape to allow Forest Service officials to mobilize additional firefighting resources to help keep it from spreading. The burn plan relied on rock features, snow cover, and other natural barriers to prevent fire spread.

[42]Forest Service officials from the national forest who were involved in implementing the prescribed fire told us that this prescribed fire, although an escape, resulted in some positive outcomes. In particular, officials told us that a few years later when a large wildfire reached the treated area (including where the escape occurred), the wildfire slowed down and changed direction, which gave firefighters more options to manage the wildfire and ultimately protected a nearby community and the headwaters of an important water source.

The prescribed fire did not spread beyond the natural barriers, but it burned for several weeks and raised concerns about smoke impacts on a nearby community, which led the Forest Service to take steps to suppress the fire. However, national forest officials said the planned project boundary for the prescribed fire was small, with steep slopes and uneven terrain, which caused safety concerns when firefighters began to suppress the fire. As a result, officials determined that aircraft were needed for suppression operations. The officials noted that declaring the prescribed fire a wildfire allowed them to mobilize, support, and pay for the additional firefighting resources—including aircraft—they believed were needed to safely suppress the fire.

- Several factors related to planning, implementation, and pressure to achieve goals contributed to an escaped prescribed fire in an area that was experiencing drought conditions, according to the agency's review of the escape. Specifically, according to the review, fire staff inaccurately measured fuel moisture levels and used a limited characterization of fuel types across the project area to develop its prescribed fire plan—factors which may have led to the fire burning at a higher intensity and spreading faster than anticipated. Another factor identified in the review was that officials changed the sequencing of ignitions across the project site to facilitate the use of aircraft, rather than firefighters on the ground, for igniting the prescribed fire. This would allow them to burn a larger area, but resulted in changes being made to the holding plan shortly before the prescribed fire was ignited.

  The review indicated that staff raised concerns about implementing the project following the changes, but that they felt pressure to do so to meet goals for reducing wildfire risk in the area. Once the prescribed fire began to spread, the firefighters also experienced challenges in mobilizing contingency resources to help them contain the fire. For example, the Forest Service did not have an agreement to allow it to use one of the resources identified in the contingency plan to help with prescribed fire projects, and some other contingency resources responded the next day, rather than the 1-hour time frame specified in the contingency plan.

Forest Service Has Implemented Reforms Identified for Immediate Action, and Has Taken Steps to Address Some Other Reforms

The Forest Service has implemented the reforms identified for immediate action in its September 2022 review of the prescribed fire program, and it has taken steps to address some other reforms. Specifically, the agency has implemented all seven recommendations the review identified as necessary for it to resume conducting prescribed fires. It has also taken steps toward implementing each of the five actions it committed to taking to improve the safety of the program, including developing a national strategy for mobilizing resources for prescribed fire activities. In addition, the Forest Service has taken steps toward implementing some of the more than 40 other identified actions the agency could consider taking to improve its program. While these are positive steps toward improving the prescribed fire program, the Forest Service has not determined the extent to which it will implement the remaining actions, including how or when. Later in the report, we discuss how an implementation plan with deliverables and time frames for the Forest Service's various reform efforts—in accordance with leading practices for agency reform—would help ensure the success of the reforms. Collectively, the recommendations and actions—which we refer to as reforms—are intended to address the factors the Forest Service has identified as contributing to prescribed fires escaping, according to the program review.

Forest Service Implemented Seven Recommendations Its Program Review Identified as Necessary to Resume Conducting Prescribed Fires

As of January 2023, the Forest Service had implemented all seven recommendations its national prescribed fire program review identified as being necessary for the agency to resume conducting prescribed fires. After the incidents in New Mexico in May 2022, the Chief of the Forest Service suspended all use of prescribed fire for 90 days and ordered the program review. To conduct the review, the Forest Service established a national team to examine four thematic areas: (1) the Forest Service's prescribed fire culture; (2) climate and weather factors related to prescribed fire; (3) agency prescribed fire tactics, policy, and training; and (4) agency capacity to conduct prescribed fires. The agency issued the program review report in September 2022.

As a result of the program review, the Forest Service implemented several of the reforms to its prescribed fire processes through interim guidance and an updated prescribed fire plan template.[43] As of March

[43]The program review directed the Forest Service to follow procedures outlined in a prescribed fire plan quality assurance checklist as interim guidance included in the review for up to 1 year, after which it was to incorporate the final changes into the Forest Service Manual. In December 2022, the Forest Service directed agency staff to continue to use the interim guidance and an updated prescribed fire plan template.

2024, the agency was continuing to evaluate the interim guidance and did not have a time frame for determining any permanent changes it would make to its policies. The seven recommendations and steps the Forest Service has taken to implement each are described below.

1. **Evaluating and updating** all prescribed fire plans using a quality assurance checklist. The agency directed its Forest Service units to ensure that all existing prescribed fire plans had been reviewed and updated using the quality assurance checklist included with the program review, given an updated technical approval by another qualified burn boss (in the case of a change), and re-certified by a qualified forest manager before those plans could be implemented. According to the program review, this step is intended to validate the complexity analysis and rating determination of prescribed fires and help ensure existing plans—some of which may have been prepared years earlier—reflect current site conditions and incorporate the process reforms.[44]
2. **Expanding staff involved in briefings and standardizing key communication points.** In its interim guidance, the Forest Service expanded the staff positions that need to be involved in briefings to discuss prescribed fire ignition. Under this guidance, these briefings are to include the forest manager authorizing the ignition, the forest manager for the unit where the prescribed fire is located (if different), the burn boss responsible for the fire, and the fire management staff responsible for mobilizing contingency and wildfire response resources. Previously, only the forest manager authorizing the ignition and the burn boss or fire management staff needed to be involved in these briefings. In addition, other key communication points through the duration of the project were standardized. For example, the burn boss is expected to communicate directly to the relevant forest managers or through dispatch (organizations that can help coordinate mobilization of firefighting resources) at certain points throughout project implementation to ensure that the forest manager and relevant fire staff are kept informed of conditions and project progress. More specifically, the burn boss is expected to communicate the results of the test fire, status of actions taken to put the fire out, status of monitoring activities, and use of contingency resources, if any.
3. **Conducting daily authorizations to ignite a prescribed fire.** In its interim guidance, the Forest Service directs forest managers to

[44]Forest Service officials told us they relied on the regions to track implementation of prescribed fire plan updates.

approve prescribed fire ignitions on a daily basis—within a 24-hour operational period of when they are to occur. For prescribed fire projects that require multiple days of ignition, daily authorizations help ensure forest managers receive current information and authorize activities each day. Previously, forest managers could authorize burn bosses to ignite prescribed fires for longer periods of time, sometimes up to a year, according to Forest Service officials. In addition, the interim guidance contains a new element for the burn boss to report on drought conditions as a reminder to forest managers to consider and discuss this factor before authorizing ignition.

4. **Verifying availability of new contingency resource specifications and evaluating factors affecting staff prior to ignition.** The Forest Service updated its prescribed fire "go/no-go" checklist to emphasize certain factors and reflect new ones. For example, the updated checklist now specifies that contingency resources are to be available to respond within 30 minutes for moderate- or high-complexity prescribed fire projects. Previously, as part of the development of the prescribed fire plan the burn boss was to determine and specify the maximum acceptable response time for contingency resources located off-site. The Forest Service also added a question on the checklist for burn bosses to verify they have evaluated factors like staff experience, fatigue, and pressures on staff to achieve targets or complete critical work that may influence decision-making and taken steps to mitigate any identified concerns.[45] Forest Service headquarters officials told us that they have always counted on fire staff to assess and mitigate such factors, and adding the question to the checklist helps ensure these factors are considered.

5. **Ensuring forest manager presence for more complex prescribed fires.** In its interim guidance, the Forest Service directed forest managers to be on the Forest Service unit for certain prescribed fire projects. Specifically, for all high-complexity prescribed fires, the forest manager authorizing the ignition is to be present on the Forest Service unit and visit the fire's front line. In addition, for 30 to 40 percent of moderate-complexity prescribed fires, a forest manager—either the unit forest manager or a forest manager from another unit familiar with the project area—is to be present on the unit. Forest Service headquarters officials told us these new directions will help ensure forest managers are readily available to provide input on prescribed fire implementation decisions, as needed. In addition,

[45]The agency directs its staff to use available tools to aid evaluation of these factors, such as the Forest Service Risk Calculator Mobile Application, Incident Response Pocket Guide Risk Management Process, and Tailgate Safety Sheet.

according to the program review, forest managers new to their roles will benefit from time spent observing fire behavior together with prescribed fire personnel.

6. **Communicating the findings and recommendations of the program review to relevant staff prior to resuming prescribed fire activities.** As of January 2023, all relevant Forest Service units (112 administrative units) had communicated the findings and recommendations of the program review to all prescribed fire staff in their respective units prior to resuming prescribed fire activities, according to agency documents. According to the program review, communications are part of agency efforts to increase emphasis on learning from experiences from across the agency.
7. **Designating a staff member to oversee and report on progress.** In October 2022, the Chief of the Forest Service appointed a staff member to oversee and report to the Chief on the implementation of program review recommendations.

Forest Service officials from the four selected national forests and corresponding regions told us they faced challenges implementing some of the program review recommendations and noted that in some cases they were taking steps to help mitigate those challenges. For example, Forest Service officials we interviewed from all four of the selected national forests told us there are generally not enough forest managers with the qualifications and experience to meet the new direction for daily ignition authorizations or on-site presence. To help address this challenge, three of the four regions have set up a virtual "desk" to help identify qualified forest managers in the region available to authorize or be on-site for prescribed fire projects.[46]

In addition, officials from all four of the regions said they offered training to help forest managers and staff build their prescribed fire skills and knowledge.[47] To further address the lack of qualified staff, one of the selected regions told us they hired on-call contractors to provide technical assistance and training to staff.[48] Moreover, in February 2024,

[46]Some regional officials told us they also use the desk to match forest managers seeking additional qualifications with on-the-ground experiential training opportunities.

[47]Training topics included writing prescribed fire plans, using fire behavior analysis software, and sharing lessons learned.

[48]According to region officials, the contracted assistance was the result of a region-level review that identified a need for more staff expertise in fire behavior to help with interpreting fire conditions and informing prescribed fire decisions.

headquarters officials told us that another region is developing a proposal for reducing the requirement for daily ignition authorizations for pile burns.

Officials from three of the four selected national forests identified other challenges—or anticipated future challenges—including having access to sufficient staff to meet the new direction that contingency resources be available to respond within 30 minutes for moderate- and high-complexity prescribed fires. To help address this challenge, officials from all four selected regions said they conduct weekly meetings to coordinate staff and equipment, including contingency resources, across their regions for upcoming prescribed fire projects.

Officials from the four regions also told us that they are developing region-wide agreements with their interagency partners, such as the Bureau of Land Management, National Park Service, and state forestry agencies, to allow those resources to support Forest Service prescribed fire projects. In addition, officials in one region said they had received permission from headquarters to pilot a risk-based approach for authorizing longer response times for contingency resources (e.g., 60 minutes or 90 minutes) for low-risk projects. Region officials said given the large number of prescribed fires conducted in their region, the 30-minute requirement could unnecessarily affect their ability to meet their prescribed fire goals, and that the revised approach has been useful in meeting needs for relaxed requirements in lower risk situations.

Forest Service headquarters officials told us they were aware of the challenges the field was facing implementing the recommendations and that they were continuing to evaluate them. As noted above, the Forest Service implemented the program review's recommendations through interim guidance. As of March 2024, headquarters officials told us they are still evaluating the recommendations and had convened a team to consider results of pilot projects along with feedback from field staff before adopting changes outlined in the interim guidance into national policy.

Forest Service Is Taking Steps toward Implementing Five Actions It Committed to Taking, Including Developing a Strategy for Mobilizing Resources

As of March 2024, the Forest Service was in various stages of implementing or evaluating the five actions that it committed to taking to improve the safety of the program, as described in the following sections.

National Resource Mobilization Strategy

The Forest Service committed to developing a strategy for mobilizing resources for its national prescribed fire program that outlines its approach for assigning staffing and equipment for prescribed fire activities. The Forest Service finalized and publicly released this strategy in June 2023.[49] The mobilization strategy included several recommendations to help the Forest Service achieve its goal of increasing the pace and scale of its prescribed fire program. As of March 2024, the agency had begun taking steps to address several of these recommendations and evaluate the outcomes. For example:

- **Regional implementation teams.** The mobilization strategy recommended establishing prescribed fire implementation teams in the six regions where the Forest Service had identified priority landscapes. These teams are intended to provide planning, logistical, and other support to regions as they implement high-priority projects. The Forest Service had begun piloting the use of National Incident Management Organization (NIMO) teams on priority landscapes in three regions prior to the release of the mobilization strategy in June 2023.[50] In February 2024, Forest Service headquarters officials told us they had completed their review of the effectiveness of these pilots and were in the process of compiling a list of potential actions for further consideration. Officials also said that they plan to issue a

[49]Forest Service, *National Prescribed Fire Resource Mobilization Strategy*.

[50]The Forest Service's NIMO program consists of four teams with wildland fire and emergency management expertise and skills that are available to support a range of initiatives. This includes increasing capability and capacity for wildfire response, supporting leadership training and development, and assisting with special nationally directed projects. For more information, see https://www.fs.usda.gov/nimo. The three areas with pilot projects were the Boise and Payette National Forests in Idaho, the Shasta-Trinity and Six Rivers National Forests in northern California, and the Stanislaus National Forest in central California.

summary document highlighting lessons learned that can be shared with other priority landscapes in spring 2024.

- **Improved integration of prescribed fire into the overall wildfire coordination system.** The strategy also recommended expanding the existing system for mobilizing staff and equipment for wildfires to include prescribed fire needs by adding designated prescribed fire coordinators to the system. According to the strategy, placing prescribed fire coordinators in coordinating bodies at all levels, from national down to local levels, would help the agency consider prescribed fire resource needs when faced with resource constraints.[51] Forest Service headquarters officials told us that they recognized the benefits of this approach but that adding coordinator positions would be dependent upon the availability of agency funding.
- **Expanded staff and equipment for prescribed fire.** The strategy and national prescribed fire program review noted barriers to using non-Forest Service firefighting resources (i.e., resources from other agencies and contractors) on prescribed fire projects and envisioned the agency expanding the availability of such resources to support prescribed fire. The Forest Service has revised its processes to allow available resources to also be used to support prescribed fire, according to agency documents and officials.[52]

Piloting Innovations in Priority Landscapes

The Forest Service committed to identifying a strategy for having dedicated crews to support the highest priority hazardous fuels work, including prescribed fire projects, across the country. As noted above, the Forest Service has piloted the use of NIMO teams in three areas with priority landscapes to examine the impact of having dedicated crews and plans to issue a summary document highlighting lessons learned in spring 2024.

Western Prescribed Fire Training Curriculum

The Forest Service committed to work with its interagency partners to establish a training curriculum for conducting prescribed fires in the

[51]The National Wildfire Coordinating Group (with membership from the Forest Service, five Department of the Interior agencies, United States Fire Administration, National Association of State Foresters, and others) oversees multi-agency coordination of staff and equipment for national wildland fire operations. Coordination is conducted through the National Interagency Fire Coordination Center located in Boise, Idaho, and 11 Geographic Area Coordination Centers across the U.S.

[52]For example, in December 2022 the Forest Service updated agreements to enable wildfire suppression contracted resources (e.g., engines, water tender, logistical support) to be used for prescribed fire projects under certain circumstances when no agency resources or cooperator resources are available.

western U.S. as part of expanding training opportunities in western regions. The agency and its partners reviewed its existing curriculum and found the existing principles and learning concepts were generally applicable for any location in the country, including the western U.S., and did not revise its curriculum. In addition, the Forest Service and its partners completed an update of the 5-year strategic plan for the National Interagency Prescribed Fire Training Center in April 2023.[53] The plan outlined commitments for expanding the availability of experiential prescribed fire training in the western U.S., where there are differing fuel types and terrain.

According to Forest Service headquarters officials, they plan to offer training at five new locations in the U.S. in 2024: Tulsa, Oklahoma; Flagstaff, Arizona; Rapid City, South Dakota; Boise, Idaho; and Bend, Oregon. Forest Service officials told us they selected locations with landscapes and weather where there would be consistent and frequent opportunities for prescribed fire work, and also considered factors such as local staff expertise and availability to support training. The Forest Service with its partners also committed to hiring up to seven new positions to support the expanded training.

Investment in Potential Operational Delineations (PODs)

The Forest Service committed to continuing to invest in the development and use of fire management and planning units known as PODs. PODs combine information about forest conditions and fire potential with features, such as roads and ridge tops, that can help with both wildfire response and fuels management planning. For example, according to a Forest Service document, PODs can help the agency prioritize where to conduct hazardous fuels reduction projects.[54] Using funding from the Infrastructure Investment and Jobs Act and Inflation Reduction Act, headquarters officials reported that the agency has completed PODs for approximately 70 of the most fire-prone national forests and another 10 are under development. Officials also noted that the agency has provided training on the development and use of PODs and has recently

[53]National Interagency Prescribed Fire Training Center, National Interagency Prescribed Fire Training Center Strategic Plan 2023-2028.

[54]Forest Service, Rocky Mountain Research Station, *Factsheet: PODs at a Glance* (Fort Collins, CO: Jan. 13, 2022).

proposed adding training on PODs to the Interagency Fuels Academy curriculum.[55]

Standardized Declared Wildfire Review Process and Tracking for Escapes

The Forest Service committed to using a standardized approach for reviewing escaped prescribed fires and tracking results of the reviews to help firefighters learn from previous escapes. Whenever a prescribed fire escapes and is declared a wildfire, a review report—referred to as a declared wildfire review—must be completed. As outlined in Forest Service policy and interagency guidance, a declared wildfire review is to include several common elements, including analysis of weather and on-site conditions leading up to the escape, analysis of the prescribed fire plan and implementation for consistency with agency policies, and staff qualifications and experience. The Forest Service developed a draft template with instructions to help standardize these reviews. For example, the draft template includes a section to capture information on factors contributing to the escape. As of March 2024, the draft template was being piloted in one region. Forest Service headquarters officials said that feedback from the pilot will be incorporated in a final template but did not provide a time frame for doing so.

The agency also plans to expand its existing database to help track prescribed fire escapes. The database includes information on the location, project details (e.g., complexity, original planned acres), and general impact of escapes on and off Forest Service lands. The Forest Service plans to add fields to its database, if needed, to include information on factors contributing to escapes gathered from the updated declared wildfire review reports. As stated in its program review, analyzing information from previous escapes would help the Forest Service improve its analysis of risks and inform decision-making for implementing prescribed fires.

Forest Service Has Taken Steps to Address Some of the Remaining Actions Identified for Its Consideration

The Forest Service has taken steps to implement some of the more than 40 actions to further improve the program the prescribed fire program review identified for the agency's consideration. The Forest Service has not determined the extent to which it will implement these actions or how or when it will do so. In March 2024, headquarters officials told us that they were in the process of identifying staff to assist with this effort but did not identify a planned approach or time frame. Later in the report, we

[55]The Interagency Fuels Academy is a structured, 3-year training and development program for new or recently hired fuels specialists in the Forest Service and Bureau of Land Management. The program was developed to attract, develop, and retain employees for fuels management positions.

discuss how developing an implementation plan—in keeping with leading practices for agency reforms—that outlines planned reforms and time frames for achieving a broad range of reforms could help ensure the success of the Forest Service's reforms.

Examples of the actions identified for consideration and steps the agency has taken for some of these actions are below.

- **Improving information, tools, and technology.** Several potential actions identified in the program review related to improving the information, tools, and technology the Forest Service uses to support prescribed fire planning and implementation. For example, the review noted the agency could create a national prescribed fire website that would be regularly updated (weekly or biweekly) with drought information, develop applications that identify optimal burn windows based on historical weather and climate data, and improve fire behavior modeling tools to better predict how intensely a prescribed fire will burn and how it may spread. The review also noted the agency could increase investment in technologies such as infrared to improve monitoring of prescribed fires, uncrewed aircraft systems to aid the ignition and monitoring of prescribed fires, and virtual reality to enhance its training curriculum. One action the Forest Service has taken in this area is related to developing a national prescribed fire website with regularly updated drought information. As of December 2023, Forest Service headquarters officials reported that they had identified existing websites where it could include this information and had requested funding for the effort in the agency's fiscal year 2024 budget request.
- **Increasing workforce expertise and capacity.** Potential actions related to expanding the agency's prescribed fire expertise and capacity included creating a technical review board to assist burn bosses with writing prescribed fire plans; improving its training curriculum and opportunities, including for entry-level positions; and developing positions focused on prescribed fire. According to Forest Service officials, it can take many years—up to 10 years or more—to master prescribed fire skills for larger, landscape-scale projects and that increasing the number of trained, experienced staff is critical if the agency is to expand its prescribed fire program as it envisions.
- **Expanding access to resources.** Several potential actions focused on steps the agency could take to expand its access to staff and equipment to conduct prescribed fire work. For example, the program review noted the Forest Service could change its procedures and expand agreements with other entities to allow it to more easily

mobilize resources from other national forests and interagency partners to assist with prescribed fire projects, similar to how they are able to use such resources to assist with wildfire suppression. The Forest Service has taken some action in this area. For example, in December 2022, the Forest Service expanded its ability to use contracted resources to help with prescribed fire projects by enabling staff to order firefighting resources for prescribed fire projects through the interagency resource ordering system it uses to order resources for fire suppression. In addition, in November 2023, the Forest Service entered into regional and nationwide agreements with The Nature Conservancy to provide funding for staff and equipment to support mutual priority prescribed fire projects.[56]

- **Increasing public involvement and awareness.** Other potential actions pertained to increasing public involvement and awareness about use of prescribed fire—for example, by implementing an education campaign highlighting the importance of prescribed fire in reducing wildfire risk. Officials from many of the Forest Service regions and national forests and stakeholders we interviewed noted that they faced resistance from the public when implementing prescribed fire projects, and that public education efforts could help increase support for the practice.

Forest Service Has Partially Followed Most Selected Leading Practices for Agency Reforms, Leaving Gaps in Some Key Areas

The Forest Service's actions to implement reforms to its prescribed fire program partially addressed aspects of most of the five selected leading practices for effective agency reforms we examined, but gaps in key areas remain (see table 2). According to agency documents, the Forest Service has recognized that these reforms—which are critical to expanding the scope, scale, and safety of the prescribed fire work the agency believes is needed to help reduce wildfire risk—will require major changes to agency practices and culture, which may be resisted by some staff. Fully following these selected leading practices could help the Forest Service ensure that it will successfully implement the program changes it desires and achieve its goals.

[56]The Nature Conservancy is a non-governmental conservation organization. As part of its work, The Nature Conservancy leads its own prescribed fire projects and assists others, including the Forest Service, with implementing prescribed fires on almost 350,000 acres annually.

Table 2: Assessment of the Extent to Which the Forest Service Followed Selected Leading Practices for Effective Agency Reforms in Its Efforts to Improve Its Prescribed Fire Program

Selected leading practice	Selected key questions associated with the practice	Extent followed
Establishing goals and outcomes	• To what extent has the agency shown that the proposed reforms align with the agency's mission and strategic plan? • To what extent has the agency established clear outcome-oriented goals and performance measures for the proposed reforms?	◒
Involving employees and key stakeholders	• How and to what extent has the agency engaged employees and employee unions in developing the reforms (e.g., through surveys, focus groups) to gain their ownership for the proposed changes? • How and to what extent has the agency consulted with Congress, and other key stakeholders, to develop its proposed reforms? • Is there a two-way continuing communications strategy that listens and responds to concerns of employees regarding the effects of potential reforms? • How will the agency publicize its reform goals and timeline, and report on its related progress?	●
Strategic workforce planning	• To what extent has the agency conducted strategic workforce planning to determine whether it will have the needed resources and capacity, including the skills and competencies, in place for the proposed reforms or reorganization? • How has the agency assessed the effects of the proposed agency reforms on the current and future workforce, and what does that assessment show? • What succession planning has the agency developed and implemented for leadership and other key positions in areas critical to reforms and mission accomplishment?	◒
Managing and monitoring	• Has the agency developed an implementation plan with key milestones and deliverables to track implementation progress? • Has the agency put processes in place to collect the needed data and evidence that will effectively measure the reforms' outcome-oriented goals?	◒
Leadership focus and attention	• Has agency leadership defined and articulated a succinct and compelling reason for the reforms (i.e., a case for change)? • Has the agency designated a leader or leaders to be responsible for the implementation of the proposed reforms? • Has the agency established a dedicated implementation team that has the capacity, including staffing, resources, and change management, to manage the reform process?	◒

● Generally followed—the Forest Service took actions that addressed most or all aspects of the selected key questions we examined for this practice

◒ Partially followed—the Forest Service took actions that addressed some, but not most, aspects of the selected key questions we examined for this practice

○ Not followed—the Forest Service took no actions that addressed the selected key questions we examined for this practice

Source: GAO analysis of Forest Service documents and interviews with Forest Service officials and stakeholders. | GAO-24-106239

Note: We assessed the agency's actions against selected leading practices for effective agency reforms from our June 2018 report. We focused our assessment on five selected leading reform practices and selected key questions for those practices that we determined were most relevant to improvement efforts being made to the Forest Service's prescribed fire program. GAO, *Government Reorganization: Key Questions to Assess Agency Reform Efforts*, GAO-18-427 (Washington, D.C.: June 13, 2018).

Establishing Goals and Outcomes

The Forest Service has partially addressed the leading practice for agency reforms related to establishing goals and outcomes. Our previous work has shown that agencies should establish clear outcome-oriented goals to help identify what they are trying to achieve with their reform efforts and performance measures to assess the extent to which they are meeting their goals.[57] Agreement on specific goals can help decision-makers determine what problems need to be fixed and how to balance competing objectives.

The Forest Service has continued to develop and refine its goals and corresponding performance measures for its hazardous fuels program, which includes prescribed fire activities. For example, in *its Wildfire Crisis Strategy* and subsequent implementation planning documents, the Forest Service established the goal of undertaking 50 million additional acres of hazardous fuels treatment over the next 10 years to help reduce wildfire risk and selected 21 areas to prioritize.[58] Toward this end, the agency measures its performance on the basis of the number of acres receiving a fuels treatment, where the metric for acres treated includes those treated with prescribed fire. In fiscal year 2023, the Forest Service exceeded its target for hazardous fuels treatment of 4 million acres, with prescribed fire activities contributing nearly half of the target.

However, the Forest Service's performance measures focus on outputs (e.g., acres treated) and do not assess outcome-oriented goals, such as reducing risk in the areas most susceptible to damaging wildfires. We have previously reported that the agency's focus on measuring acres treated may lead staff to prioritize projects that are easier or cheaper to complete (thus allowing them to treat more acres) over smaller or more expensive projects that may have a greater effect on reducing wildfire risk.[59] In addition, according to Forest Service documents using performance measures that track acres treated may also contribute to

[57]GAO-18-427.

[58]The Forest Service identified 10 initial areas for prioritized hazardous fuels investment and later added 11 areas. See Forest Service, *Confronting the Wildfire Crisis: Initial Landscape Investments to Protect Communities and Improve Resilience in America's Forests* and *Confronting the Wildfire Crisis: Expanding Efforts to Deliver on the Wildfire Crisis Strategy*.

[59]GAO-20-52.

agency staff feeling pressure to implement a project under conditions that could make it more likely for the prescribed fire to escape control.[60]

The Forest Service has ongoing efforts to develop new performance measures. For example, in 2021 the agency—partly in response to a recommendation by the Department of Agriculture Office of Inspector General—began piloting a measure that tracks wildfire risk by fireshed.[61] Headquarters officials told us the intent of this measure is to help assess the agency's effect on reducing overall wildfire risk. However, officials also noted that measuring risk at the fireshed scale is too large to effectively measure annual progress.[62] Agency officials said they are working to refine the measure so they can track progress at a smaller scale within firesheds, which they believe may help them more effectively measure their progress in reducing risk of damaging wildfires. Officials said they expect to pilot this measure in fiscal year 2024 and that they may be able to fully implement it in fiscal year 2025.

While it is too early to know the outcome of these efforts, the Forest Service has struggled for years with developing outcome-oriented

[60]To help relieve this pressure, officials from one national forest we interviewed told us that they are using alternative measures to evaluate their prescribed fire activities. Specifically, officials said they have set a goal on their national forest to never miss a burn window. In practice, this means that the national forest aims to conduct burns based on existing conditions, rather than focusing on treating specific acres at a given time. These officials said that this revised approach has allowed them to burn more effectively and more efficiently than many surrounding national forests.

[61]In its 2016 report, the Department of Agriculture Office of Inspector General recommended the Forest Service implement a new measure to report acres treated for hazardous fuels reduction as an accomplishment only after the entire project has been completed and the desired condition is achieved. The Forest Service agreed with the recommendation and reported that the agency would add an additional field in the reporting system to record whether a particular treatment is the final treatment that achieves the project objective of mitigation of hazardous fuel conditions. Forest Service officials told us that in fiscal year 2021, the agency took another step to developing an outcome-based performance measure focused on tracking the number of firesheds that have been reduced to low wildfire risk. Firesheds are a way to delineate where fires ignite and are likely to (or not to) spread to a community, and spatially describe exposure of a community to wildfire. Department of Agriculture Office of Inspector General, *Forest Service Wildland Fire Activities: Hazardous Fuels Reduction*, Audit Number 08601-0004-41 (Washington, D.C: July 29, 2016).

[62]According to Forest Service officials, most firesheds are about 250,000 acres in size and it takes treatment of 20 to 40 percent of the fireshed—50,000 to 100,000 acres—to reduce the overall wildfire risk. With the large size of each fireshed, it will take many years to observe progress on risk reduction goals at a fireshed level. Consequently, officials said that progress over an annual basis is difficult to observe.

performance measures.[63] According to headquarters officials, measuring wildfire risk reduction is difficult because of the complexity and uncertainty involved. For example, long-term factors such as drought, changes to forest composition, and development (e.g., houses and infrastructure) affect the locations most at risk of damaging wildfires, while variations in weather affect where the agency can safely conduct prescribed fires in any given year. We recognize the Forest Service faces challenges in developing outcome-oriented goals and performance measures. However, in light of the risks of prescribed fire and the Forest Service's plans to increase its use, establishing clear outcome-oriented goals and performance measures would help the agency better assess the extent to which its prescribed fire program (and its broader hazardous fuels program) is achieving its goal of reducing wildfire risk.

Involving Employees and Key Stakeholders

The Forest Service generally followed the leading practice for agency reforms related to involving employees and external stakeholders. Our previous work has shown that it is important for agencies to directly and continuously involve their employees and other key stakeholders in the development of major reforms, listen and respond to concerns regarding the effects of potential reforms, and continuously communicate with employees and stakeholders about goals and progress.[64] Involving employees and stakeholders helps the agency with the development of reform goals and objectives, incorporation of insights from field officials and others engaged in implementation, and acceptance of the reforms.

In conducting its program review and developing its mobilization strategy, the Forest Service involved staff from across the agency, including prescribed fire staff, forest managers, and research scientists. They also involved external stakeholders, such as representatives from other federal agencies, state forestry agencies, nongovernmental organizations, and universities.

Moreover, the agency has also established ongoing two-way communication with employees facilitated through two sets of regular meetings—weekly meetings between the headquarters office and the nine regions, and weekly or biweekly meetings between each region and their respective fuels staff. Headquarters and region officials told us the meetings focus on facilitating sharing of staffing and equipment resources to support prescribed fire projects nationwide. In addition, headquarters

[63]Department of Agriculture Office of Inspector General, *Forest Service Wildland Fire Activities: Hazardous Fuels Reduction* and GAO-20-52.

[64]GAO-18-427.

officials said these meetings are used to share information to and from the headquarters office and fuels staff, such as feedback on program changes and steps headquarters is taking to address any challenges. For example, officials from one region told us that national forest staff were unsure whether the new direction for forest managers to be present on the Forest Service unit for moderate- and high-complexity prescribed fires meant that the manager could be located anywhere in the national forest or needed to be in the specific district where the prescribed fire was being conducted. When this question was raised, headquarters provided written guidance clarifying that forest managers could be located anywhere in the national forest.

Strategic Workforce Planning

The Forest Service has partially followed the leading practice for agency reforms related to strategic workforce planning. We have previously reported that agencies should conduct strategic workforce planning to ensure that an agency's human capital program aligns with its current and emerging mission and programmatic goals, and that the agency is able to meet its future needs.[65]

Availability of sufficient and trained staff is among the greatest challenges to the Forest Service's goal of expanding its prescribed fire program, according to agency documents and officials and stakeholders we interviewed. Generally, the agency relies on the same firefighting staff and equipment for prescribed fire activities as it uses for wildfire suppression, according to Forest Service documents and officials.

The Forest Service has not determined how it will balance staff support for both prescribed fire and suppression activities. For example, both the national prescribed fire review and the mobilization strategy envision expanding the use of firefighting staff to help achieve the agency's prescribed fire goals. However, the mobilization strategy also identified several barriers to increasing the role of staff and equipment normally used in suppression to also support prescribed fire projects. Specifically,

[65]GAO-18-427 and GAO, *Human Capital: Key Principles for Effective Strategic Workforce Planning,* GAO-04-39 (Washington, D.C.: Dec. 11, 2003).

the strategy noted that staff get paid more for suppression work than for prescribed fire work.[66]

Moreover, we reported in 2022 that the agency has recognized that many firefighters are already overextended from the demands of wildfire suppression activities.[67] For example, the mobilization strategy cited a Forest Service review of its "hotshot" firefighting crews that found those crews already experienced physical and mental fatigue and that both firefighters and forest managers expressed concern about expanding their role in prescribed fire.[68] As a result, the strategy noted that forest managers and other supervisors might be reluctant to make fire suppression personnel available for prescribed fire activities.

The Forest Service also faces challenges related to training and qualifications, according to agency documents and officials. For example, the mobilization strategy noted that many staff who are highly qualified for fire suppression activities are not as qualified for important prescribed fire roles, such as burn bosses.[69] Forest Service officials from most (three of four) national forests and most (three of four) regions we interviewed told us the agency needs to do a better job of supporting staff seeking the qualifications needed to conduct prescribed fire work. For instance, one national forest official described being too busy and fatigued to complete training that could help with prescribed fire planning, such as using

[66]For wildfire suppression work, federal wildland firefighters may earn additional hazard pay and routinely work overtime, which can increase their overall pay. For work on prescribed fires, employees do not receive hazard pay and exempt employees do not receive full overtime. To help address wildland firefighting pay issues, including those related to prescribed fire, legislation has been introduced in recent years. For example, the Wildland Firefighter Paycheck Protection Act of 2023—introduced in the Senate on July 12, 2023, and in the House on August 8, 2023—would establish increased pay rates for all wildland firefighters and premium pay for firefighters who are deployed to respond to a prescribed fire or wildfire or are prepositioned to an area in which conditions indicate there is a high risk of wildfires. S. 2272, 118th Cong. (2023); H.R. 5169, 118th Cong. (2023). As of May 2024, neither bill had been enacted into law.

[67]GAO-23-105517.

[68]Interagency Type 1 crews, commonly called hotshots or hotshot crews, are highly trained, specialized crews that perform some of the most demanding and hazardous tasks in wildland firefighting. For more information see, https://www.fs.usda.gov/science-technology/fire/people/hotshots.

[69]The strategy also identified barriers to mobilizing staff for prescribed fire work, including lower pay, hiring delays, and an agency culture that prioritizes other activities.

advanced fire modeling tools to better predict fire behavior.[70] In addition, some national forest and region officials noted that fire suppression training that firefighters are required to complete is often offered in the spring when many firefighters are beginning their season, but which also reduces the availability of firefighters to support prescribed fire activities during the spring burn window. Other officials and stakeholders we interviewed said that the Forest Service should consider developing alternative pathways for staff to become qualified to serve in burn boss or other prescribed fire roles.

The Forest Service has long recognized the challenges it faces in mobilizing sufficient staff to achieve its prescribed fire goals.[71] To help address those challenges, one Forest Service headquarters official told us in March 2024 that the agency had established a committee in early 2024 to examine its workforce for wildfire response and prescribed fire activities as part of development of a national preparedness plan for wildland fire. The official noted the effort was in its infancy and would be useful to help with implementation of the mobilization strategy, but did not provide details, documentation, or a time frame for completing the plan. Developing a strategic workforce plan that identifies prescribed fire staffing needs and addresses relevant workforce issues such as training would help the Forest Service ensure that changes do not inadvertently produce skills gaps or other adverse effects, and that they have a sufficiently skilled workforce to support its prescribed fire program goals over the long term.[72]

[70]Another national forest official told us they recently taught themselves how to use the Interagency Fuel Treatment Decision Support System, an advanced modeling tool with strong mapping and analysis capabilities. Since learning how to use the tool, this official now uses it exclusively and said they wished they had taken the time to learn how to use it sooner. According to Forest Service officials, the modeling tool has been available for more than 5 years but, given other demands placed on staff, learning how to use the tool is not a priority.

[71]Forest Service reviews of its national prescribed fire program in 2003 and 2007 identified similar issues related to capacity and training as the 2022 national program review. See Forest Service, *The National Prescribed Fire Program Review and Action Plan* (Washington, D.C.: May 2003) and *Draft Prescribed Fire Program Review* (Washington, D.C.: March 2007).

[72]We have previously examined barriers the Forest Service and other federal agencies face in recruiting and retaining wildland firefighters. See GAO-23-105517. For more information on leading practices on workforce planning, see GAO, *Human Capital: Strategies to Help Agencies Meet Their Missions in an Era of Highly Constrained Resources,* GAO-14-168 (Washington, D.C.: May 7, 2014) and GAO-04-39.

Managing and Monitoring

The Forest Service has partially followed the leading practice that agencies should manage and monitor efforts to implement reforms. We have previously reported that organizational transformations can span several years and must be carefully and closely managed by developing an implementation plan with key milestones and deliverables to monitor and demonstrate progress is being made, among other actions.[73] Developing and tracking implementation goals with a timeline can help agencies pinpoint performance shortfalls so that midcourse corrections can be made, helping assure success over the long term.

In its 2022 program review and prescribed fire mobilization strategy, the Forest Service identified many actions that it would or could take to improve its prescribed fire program. The agency has established time frames and is tracking progress for some of these actions. For example, the program review established time frames for developing the mobilization strategy and for working with its interagency partners to develop a prescribed fire training curriculum for the western U.S. As of June 2023, the Forest Service had completed the mobilization strategy, and, as of October 2023, the Forest Service and its partners had determined the existing fire training curriculum was sufficient to meet this requirement. The agency is also tracking its progress on implementing recommendations and commitments—for example, by briefing and providing a written report to the Chief of the Forest Service in December 2023 on the status of implementing the reforms.

However, the next steps and future time frames for continued work on the Forest Service's prescribed fire program reforms are not clear. Agency headquarters officials said they will evaluate the results of some of the reforms they have begun implementing and expect to continue to take steps to assess and refine other potential actions but did not provide a plan or time frames for implementing these steps. For example, as noted above, the Forest Service does not have a time frame for finalizing the interim changes it made to its prescribed fire processes following the 2022 program review into national policy, for implementing aspects of its resource mobilization strategy, or for conducting strategic workforce planning. Moreover, the agency has not determined the extent to which it will implement the more than 40 other actions the program review

[73]GAO-18-427 and GAO, *Results-Oriented Cultures: Implementation Steps to Assist Mergers and Organizational Transformations*, GAO-03-669 (Washington, D.C.: July 2, 2003).

identified for the agency's consideration, or identified the deliverables and time frames for these actions.

The Chief of the Forest Service has recognized that the reforms the agency is undertaking involve fundamental shifts to agency practices, may be resisted by some employees, and will take time to implement. As discussed above, the Forest Service has also recognized it faces specific challenges in achieving its goal of increasing the pace and scale of its prescribed fire program.

Addressing these challenges is important. Officials from one national forest we interviewed told us that the agency's goals for increasing use of prescribed fire were clear, but there was no clear plan on how the goals would be achieved. However, headquarters officials told us that, to provide flexibility to address differing conditions and staffing needs at the regional and local levels, they were not planning to develop a national-level implementation plan but that they might develop regional-level plans. As of March 2024, headquarters officials said they had not directed regions to develop such plans because conditions to support implementation of the plans, such as funding for new prescribed fire positions, were not in place.

We recognize that conditions vary across the country and that some flexibility is important. However, the transformation the Forest Service is trying to make will require fundamental changes to practices and culture across the agency. Developing a clear implementation plan that includes deliverables with specific time frames needed to implement its mobilization strategy and other intended reforms would help ensure the Forest Service is successful in achieving the long-term transformation of its prescribed fire program.[74] Such a plan would help guide the agency's broad-ranging reforms while allowing flexibility for adjustments as needed over time.

Leadership Focus and Attention

The Forest Service partially followed the leading practice for agency reforms that addresses leadership focus and attention. Our previous work has shown that this practice involves several elements—including making a succinct case for proposed changes to help employees understand and take ownership in expected outcomes and designating leaders and a team for implementing the reform to help institutionalize accountability.[75]

[74]GAO-18-427 and GAO-03-669.

[75]GAO-18-427.

Because organizational reform and transformation entails fundamental and often radical change, leadership focus and attention that sets the direction, pace, and tone is indispensable.[76]

The Chief of the Forest Service has consistently articulated the need for the agency to reform its processes and prioritize prescribed fire work to safely increase the use of prescribed fire to reduce the risk of future wildfires.[77] Following the prescribed fire program review in 2022, the Forest Service had also designated leaders and established a team to help with implementing the reforms identified in the review. Specifically, in October 2023, a full-time staff person was appointed to oversee the agency's progress with implementing program review recommendations. According to the program review coordinator, the role reported to the Chief and coordinated activities that supported implementation of program review recommendations. The program review coordinator told us he also drew upon the expertise of the agency's NIMO staff as needed.

In addition, the agency established a coordination and advisory team comprising the program review coordinator and representation from different program offices (e.g., Fire and Aviation Management; State, Private, and Tribal Forestry; National Forest System), as well as other staff, such as budget staff, communications staff, and a union representative. The team met regularly (weekly and later biweekly) from November 2022 until December 2023 and reported to the National Fire Director. During meetings, team members shared information about challenges in the field and helped with problem-solving as the agency implemented changes to its prescribed fire program. According to headquarters officials, the group decided by consensus how to best address an issue and the best approach for communicating the response to prescribed fire staff.

With staff changes and retirements at the end of 2023, the program review coordinator role was reassigned to the new Branch Chief for Fire Use as part of their assigned program duties. In addition, the Forest Service decided not to reconvene the advisory team in 2024. Though the new Branch Chief has broad responsibilities across the program, Forest

[76]GAO-03-669.

[77]See, for example, Forest Service, Wildlife Letter of Intent 2023 (Washington, D.C.: June 15, 2023), *National Prescribed Fire Program Review, and National Prescribed Fire Resource Mobilization Strategy*.

Service headquarters officials told us they did not see the need for additional resources to work on prescribed fire program changes and reforms. Officials said that a majority of the work on recommendations and commitments had been completed, staff already regularly coordinate across most areas, and the agency draws on surge staff to accomplish tasks as needed.

However, the Forest Service faces ongoing and long-term steps to achieving its vision of safely expanding its prescribed fire program. These steps include continuing to implement its resource mobilization strategy and evaluating and prioritizing the more than 40 other actions the program review identified for the agency's consideration. Our previous work shows that fully implementing major transformations can take years and requires focused, full-time attention to ensure that initiatives are sequenced and implemented in a coherent and integrated way.[78] By assessing the appropriate level of resources needed to maintain day-to-day management of its prescribed fire program reforms—and taking actions accordingly—the Forest Service would have greater assurance of continuing to institutionalize accountability in its reform efforts and ensuring their long-term success.

Conclusions

The Forest Service has long recognized the need for elevating the priority of its prescribed fire program as a critical component of its hazardous fuels reduction activities. Increasing the use of prescribed fire is essential for improving forest ecosystem resiliency and helping mitigate the escalating wildfire risk observed across the U.S. in recent decades. However, the Forest Service's planned increased use of prescribed fire also increases the likelihood of escapes. The Forest Service understands that safely increasing the pace and scale of prescribed fire activities will require fundamental changes to the agency's practices and culture. To this end, the agency has identified and begun implementing reforms to improve its prescribed fire program.

Notably, the Forest Service has generally followed the leading practice for involving employees and stakeholders in developing and implementing its reform efforts. We encourage the agency to continue this important practice that will be necessary to achieve the change in practices and culture envisioned.

[78]GAO-18-427 and GAO-03-669.

However, while the Forest Service has taken steps to address aspects of four other selected leading practices for effective agency reforms, important gaps remain. For example, establishing outcome-oriented goals and performance measures would help the Forest Service track and report on progress with meeting its goals for reducing wildfire risk both internally and to the public. And completing the workforce planning efforts it has begun would help ensure the agency has the sufficient, trained staff essential for implementing its vision of safely increasing the pace and scale of prescribed fire work.

Critically, developing an implementation plan with milestones and deliverables for continued reforms—for example, by identifying the steps with time frames needed to implement its mobilization strategy and address the gaps in leading practices identified above—would help the agency monitor its progress and identify and adjust to issues as they arise, better assuring the agency stays on track with meeting its goals. Finally, because implementing significant agency reforms, such as the Forest Service envisions for its prescribed fire program, is a complex undertaking with many interconnected pieces, assessing the appropriate level of resources needed to ensure leadership focus throughout the reforms would provide greater assurance of their success over the long term. By more fully following leading practices, the Forest Service would have better assurance that its efforts to safely expand its use of prescribed fire will succeed.

Recommendations for Executive Action

We are making the following four recommendations to the Forest Service:

The Chief of the Forest Service should ensure the agency develops outcome-oriented goals and establishes performance measures to help assess the effectiveness of its hazardous fuels program, including its prescribed fire activities, in reducing wildfire risk. (Recommendation 1)

The Chief of the Forest Service should ensure the agency develops and implements a strategic workforce plan for its prescribed fire program. (Recommendation 2)

The Chief of the Forest Service should ensure the agency develops an implementation plan for its prescribed fire program reform efforts with key milestones and deliverables, and tracks implementation progress. (Recommendation 3)

The Chief of the Forest Service should ensure the agency assesses the appropriate level of resources needed to maintain day-to-day

management of its prescribed fire program reform efforts, and takes steps accordingly. (Recommendation 4)

Agency Comments

We provided a draft of this report to the U.S. Department of Agriculture for review and comment. In its written comments, the Forest Service, responding on behalf of the Department of Agriculture, stated that it generally agreed with the report findings and recommendations (see app. II). The agency noted it plans to develop and implement a corrective action plan to help with reforming its prescribed fire program. The Forest Service also provided technical comments, which we incorporated as appropriate.

As agreed with your office, unless you publicly announce the contents of this report earlier, we plan no further distribution until 30 days from the report date. At that time, we will send copies to the appropriate congressional committees, the Secretary of Agriculture, and other interested parties. In addition, the report is available at no charge on the GAO website at https://www.gao.gov.

If you or your staff have any questions about this report, please contact me at (202) 512-3841 or JohnsonCD1@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. GAO staff who made key contributions to this report are listed in appendix III.

Sincerely,

Cardell Johnson
Director, Natural Resources and Environment

Appendix I: Forest Service Prescribed Fire Escapes, 2012 through 2021

From 2012 through 2021, the Forest Service conducted around 50,000 prescribed fire projects, 43 of which resulted in an escape declaration (0.09 percent). These escapes occurred throughout eight of the Forest Service's nine regions and varied in size, impacts, and characteristics (see table 3). Specifically, our review of Forest Service documents found:

- The area burned outside of the planned project boundary ranged from less than an acre to approximately 20,000 acres, with the median escape being 68 acres.
- Of the 43 escapes, 24 (56 percent) remained within Forest Service lands and 19 (44 percent) spread onto non-Forest Service lands.[1]
- Damage was reported for 30 of the 43 escapes (70 percent).[2] The type of damage varied, with 24 escapes reporting damage to natural resources (e.g., trees and other vegetation), seven escapes reporting damage to improvements (e.g., fences, signs, roads), and six escapes reporting damage to structures (e.g., houses, outbuildings).
- Complexity of the escaped prescribed fires varied, with 29 of the escapes (67 percent) occurring from projects rated as moderate complexity in the prescribed fire plan, 12 escapes (28 percent) from projects rated as low complexity, and two escapes (5 percent) from projects rated as high-complexity.
- Twenty-seven of the escapes (63 percent) were from a broadcast burn, whereas 16 of the escapes (37 percent) were pile burns.
- Drought conditions were present for 18 of the escapes (42 percent).[3]

[1]Non-Forest Service lands include privately owned lands, tribal lands, or lands managed by state, local, or other federal government agencies.

[2]There was no damage known or reported for 13 of 43 escapes (30 percent).

[3]This includes instances where the escape's review documents identified drought conditions as being present on the day of ignition or having developed at some point after ignition.

Table 3: Forest Service Prescribed Fire Escapes, 2012 through 2021

State	Fire name (National Forest System unit)	Year	Complexity	Burn type	Acres planned	Acres burned outside planned burn boundary	Burned onto non-Forest Service lands[a]	Damage reported[b]
Region 1 – Northern								
Idaho	Deer Stew (*Idaho Panhandle National Forest*)	2021	Moderate	Broadcast	14	31	○	🌲
South Dakota	Pasture 3B/Pautre Wildfire (*Dakota Prairie National Grasslands*)	2013	Moderate	Broadcast	203	10,679	●	🌲 ▦ 🏠
Region 2 – Rocky Mountain								
Colorado	Foresythe II/Gross Dam Wildfire (*Arapaho and Roosevelt National Forest, Pawnee National Grassland*)	2021	Low	Pile	79	9	●	—
South Dakota	Forest Health Handpiles/Picnic Wildfire (*Black Hills National Forest*)	2012	Low	Pile	4	4	●	🌲
South Dakota	Mystic Pile Burn/Zimmer Ridge Wildfire (*Black Hills National Forest*)	2016	Low	Pile	230	22	○	🌲
South Dakota	Pine Grove Piles/Pine Grove Wildfire (*Black Hills National Forest*)	2018	Low	Pile	146	62	●	—
South Dakota	West 83 Rx/West 83 Wildfire (*Nebraska National Forests and Grasslands*)	2018	Moderate	Broadcast	190	3	●	▦
Region 3 – Southwestern								
New Mexico	Gallinas Rx/Gallinas Wildfire (*Santa Fe National Forest*)	2018	Moderate	Pile	300	350	○	🌲
New Mexico	Redondo Rx/Diener Canyon Wildfire (*Cibola National Forest*)	2018	Moderate	Broadcast	2,261	9,296	○	🌲
Region 4 – Intermountain								
Idaho	Lodgepole Rx/Lodgepole Wildfire (*Boise National Forest*)	2018	Moderate	Broadcast	1,559	68	○	🌲
Idaho	Four Mile (*Payette National Forest*)	2021	Moderate	Broadcast	700	0.25	○	—
Nevada	North Schell (*Humboldt-Toiyabe National Forest*)	2012	Moderate	Broadcast	600	9,331	●	🌲 🏠

State	Fire name (National Forest System unit)	Year	Complexity	Burn type	Acres planned	Acres burned outside planned burn boundary	Burned onto non-Forest Service lands[a]	Damage reported[b]
Utah	Box Creek (*Fishlake National Forest*)	2012	Moderate	Broadcast	461	1,709	●	
Utah	Stump Springs Rx/Stump Springs Wildfire (*Dixie National Forest*)	2013	Moderate	Broadcast	150	23	●	
Utah	Reservation Ridge East Rx/Flat Ridge Wildfire (*Ashley National Forest*)	2015	Moderate	Broadcast	500	29	●	
Utah	Johnson Ridge (*Manti-La Sal National Forest*)	2017	Moderate	Broadcast	205	120	○	—
Utah	Trail Mountain Rx/Trail Mountain Wildfire (*Manti-La Sal National Forest*)	2018	Moderate	Broadcast	4,435	18,080	●	
Wyoming	Pole Creek Rx/Pole Creek Wildfire (*Bridger-Teton National Forest*)	2014	Moderate	Broadcast	270	55	○	
Wyoming	Pole Creek Rx/Pole Creek Wildfire (*Bridger-Teton National Forest*)	2017	Moderate	Broadcast	110	3,600	○	—
Wyoming	Thunderbolt Rx/Lamb Wildfire (*Uinta-Wasatch-Cache National Forest*)	2021	Low	Pile	498	35	●	
Region 5 – Pacific Southwest								
California	Cottonwood (*Cleveland National Forest*)	2012	Moderate	Broadcast	40	14	○	
California	Ponderosa Rx/Needles Wildfire (*Sequoia National Forest*)	2017	Moderate	Pile	233	21	●	—
California	Ponderosa Rx/Ponderosa Wildfire (*Sierra National Forest*)	2017	Low	Pile	25	61	○	—
California	Sims Rx/Grape Wildfire (*Shasta-Trinity and Six Rivers National Forest*)	2018	Low	Pile	282	150	○	
California	Caples (*Eldorado National Forest*)	2019	Moderate	Pile	35	3,158	○	
California	Baseball Pile Burn/ Baseball Wildfire (*Mendocino National Forest*)	2020	Low	Pile	52	68	○	—
California	Ferguson Piles Rx/Round Wildfire (*Sierra National Forest*)	2020	Low	Pile	21	19	○	—

State	Fire name (National Forest System unit)	Year	Complexity	Burn type	Acres planned	Acres burned outside planned burn boundary	Burned onto non-Forest Service lands[a]	Damage reported[b]
California	South Main/South Main Wildfire (*Cleveland National Forest*)	2020	Moderate	Pile	20	12	●	
California	Cranston Reforestation Piles/Bonita Wildfire (*San Bernardino National Forest*)	2021	Low	Pile	30	715	○	
Region 6 – Pacific Northwest								
Oregon	SPAM Biomass/Apple Wildfire (*Fremont-Winema National Forest*)	2013	Low	Pile	Unknown	36	●	
Oregon	Bone Point Rx/Bone Point Wildfire (*Umatilla National Forest*)	2015	Moderate	Broadcast	814	80	○	
Oregon	East Maury #42 Rx/East Maury Wildfire (*Ochoco National Forest*)	2016	Moderate	Broadcast	333	1,112	●	
Oregon	Minam 4 (*Wallowa-Whitman National Forest*)	2016	High	Broadcast	2,000	920	○	—
Oregon	Drum Pile/Drum Wildfire (*Mount Hood National Forest*)	2018	Low	Pile	3	8	○	
Oregon	North II Rx/Meadow Wildfire (*Fremont-Winema National Forest*)	2021	Moderate	Broadcast	3,278	832	○	—
Washington	Chumstick AQ Rx/Chumyons Wildfire (*Okanogan-Wenatchee National Forest*)	2017	Moderate	Broadcast	118	424	●	—
Region 8 – Southern								
Alabama	School House C (*Talladega National Forest*)	2021	Moderate	Broadcast	787	14	●	
Florida	Burn Unit 208/Grand Bay Wildfire (*Apalachicola National Forest*)	2012	Moderate	Broadcast	1,802	793	○	
North Carolina	Compartment 07/Dad Wildfire (*Croatan National Forest*)	2012	Moderate	Broadcast	1,567	20,881	○	
Oklahoma	Lennox (*Ouachita National Forest*)	2021	High	Broadcast	6,566	8	●	
Virginia	Orebank Rx/Mill Mt Wildfire (*George Washington and Jefferson National Forest*)	2020	Moderate	Broadcast	120	70	○	—

State	Fire name (National Forest System unit)	Year	Complexity	Burn type	Acres planned	Acres burned outside planned burn boundary	Burned onto non-Forest Service lands[a]	Damage reported[b]
Region 9 – Eastern								
Michigan	Brittle 20-23 Rx/Brittle Wildfire (*Huron-Manistee National Forest*)	2021	Moderate	Broadcast	1,850	5,781	●	🌲 🏠
Minnesota	Foss Lake Rx/Foss Lake Wildfire (*Superior National Forest*)	2016	Moderate	Broadcast	78	936	○	🌲

● Yes—the fire burned onto non-Forest Service lands

○ No—the fire did not burn onto non-Forest Service lands

🌲 Damage to natural resources was reported.

Damage to improvements was reported.

🏠 Damage to structures was reported.

— No damage was reported.

Source: GAO analysis of Forest Service documents (data); GAO (icons). | GAO-24-106239

[a]Non-Forest Service lands include privately owned lands, tribal lands, or lands managed by state, local, or other federal government agencies.

[b]Reported damage was in three categories: natural resources (e.g., trees and other vegetation), improvements (e.g., fences, signs, roads), and structures (e.g., houses, outbuildings).

Appendix II: Comments from the U.S. Department of Agriculture Forest Service

USDA United States Department of Agriculture Forest Service Washington Office 1400 Independence Avenue, SW Washington, D.C. 20250

File Code: 1420
Date: May 23, 2024

Mr. Cardell Johnson
Director, Federal Lands and Water
U.S. Government Accountability Office
441 G Street, NW
Washington, DC 20548

Dear Mr. Johnson:

The U.S. Department of Agriculture Forest Service appreciates the opportunity to respond to the U.S. Government Accountability Office's (GAO) draft report, *Fully Following Leading Practices for Agency Reforms Would Strengthen Prescribed Fire Program (GAO-24-106239)*. The agency appreciates and generally agrees with the draft report and recommendations and will create and implement a corrective action plan to address the findings that results in achieving the long-term transformation of its prescribed fire program.

In fiscal year 2023, the agency completed a historic achievement of 4.35 million acres of hazardous fuels treatments, including 1.95 million acres of prescribed fire accomplishments. These unprecedented achievements are in large part due to the historic downpayment provided by the Bipartisan Infrastructure Law and Inflation Reduction Act. Prescribed fire is an important tool and the agency conducts an average of 4,500 prescribed fire projects annually. The Forest Service has implemented the seven immediate recommendations from the *National Prescribed Fire Program Review*. Progress has also been made on implementing the review's nine near-term considerations designed to help the Forest Service better use prescribed fire as part of its *Wildfire Crisis Strategy* (WCS). The *Wildfire Crisis Strategy* identified 21 priority landscapes and is actively conducting fuels reduction treatments in 135 of the highest risk firesheds in which the agency can make the biggest impact to values at risk, such as water, infrastructure, and communities.

Notably, the National Interagency Prescribed Fire Training Center is on pace to exceed the targets identified in its five-year strategic plan with the expansion to western training venues. The agency has invested in partnerships that contribute to prescribed fire and fuels accomplishments. For example, through a national agreement between The Nature Conservancy (TNC) and the Forest Service, TNC resources have been mobilized to forests across the nation to conduct prescribed fire and fuels work.

The development of an outcome-based key performance indicator for wildfire risk reduction is critically important. The agency is on track to start shifting in fiscal year 2025 to outcome-based performance metrics for the hazardous fuels program which demonstrate risk reduction. In the first two years of *Wildfire Crisis Strategy* implementation, we have reduced the potential effects of fire severity by approximately 8-11% to critical infrastructure such as homes, commercial property, water source, and power lines. With the $1.6 billion investment into the WCS landscapes to date, we are beginning to reduce risk to a total asset value across the 21 landscapes of approximately $700 billion. The agency is using every tool available to reduce wildfire risk at a pace and scale which will make a difference within our current means.

In fiscal year 2023, 271 temporary wildland fire positions were modified to permanent positions to support the continued effort of transitioning to a more permanent workforce capable of fire response and hazardous fuels mitigation work on a year-round basis. Conversion of the temporary workforce to permanent positions, specifically for the purpose of prescribed fire work, along with agency investment in partnerships that contribute to prescribed fire and fuels accomplishments, will help the agency meet its

goal to have sufficient skilled staff to support its prescribed fire program goals over the long term. In addition, it is important to recognize there is a significant contribution to prescribed fire planning and implementation from non-wildland fire management personal.

Thank you again for the opportunity to review the draft report. If you have any questions, please contact Robert Velasco, Chief Financial Officer, at robert.velasco@usda.gov.

Sincerely,

RANDY MOORE
Chief

Appendix III: GAO Contact and Staff Acknowledgments

GAO contact

Cardell Johnson, (202) 512-3841 or JohnsonCD1@gao.gov

Staff Acknowledgments

In addition to the contact named above, Jonathan Dent (Assistant Director), Swati Sheladia Thomas (Analyst in Charge), Katie Hoover, and Dedrick Moulton II made key contributions to this report. Also contributing to this report were Adrian Apodaca, Xiang Bi, Carole Cimitile, Cindy Gilbert, Hayden Huang, Gwen Kirby, Ying Long, John Mingus, Cynthia Norris, Leslie Pollock, Jeanette Soares, and Sarah Veale.