



United States Department of Agriculture

# THE RISING COST of WILDFIRE OPERATIONS:

*Effects on the Forest Service's  
Non-Fire Work*



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# **The Rising Cost of Fire Operations: Effects on the Forest Service's Non-Fire Work**

## **Overview**

Over 100 years ago, President Theodore Roosevelt established the U.S. Forest Service to manage America's 193-million acre national forests and grasslands for the benefit of all Americans. Today, that mission is being consumed by the ever-increasing costs of fighting fires.

This report documents the growth over the past 20 years of the portion of the Forest Service's budget that is dedicated to fire, and the debilitating impact those rising costs are having on the recreation, restoration, planning, and other activities of the Forest Service.

In 1995, fire made up 16 percent of the Forest Service's annual appropriated budget—this year, for the first time, more than 50 percent of the Forest Service's annual budget will be dedicated to wildfire.<sup>1</sup> Along with this shift in resources, there has also been a corresponding shift in staff, with a 39 percent reduction in all non-fire personnel. Left unchecked, the share of the budget devoted to fire in 2025 could exceed 67 percent, equating to reductions of nearly \$700 million from non-fire programs compared to today's funding levels. That means that in just 10 years, two out of every three dollars the Forest Service gets from Congress as part of its appropriated budget will be spent on fire programs.

As more and more of the agency's resources are spent each year to provide the firefighters, aircraft, and other assets necessary to protect lives, property, and natural resources from catastrophic wildfires, fewer and fewer funds and resources are available to support other agency work—including the very programs and restoration projects that reduce the fire threat.

The depletion of non-fire programs to pay for the ever-increasing costs of fire has real implications, not only for the Forest Service's restoration work that would help prevent catastrophic fires, but also for the protection of watersheds and cultural resources, upkeep of programs and infrastructure that support thousands of recreation jobs and billions of dollars of economic growth in rural communities, and support for the range of multiple uses, benefits and ecosystem services, as well as research, technical assistance, and other programs that deliver value to the American public.

The Forest Service has continually worked to do more with less, seeking to provide for the forests' multiple uses with fewer resources and staff. The Forest Service has also worked to appropriately allocate firefighting resources and improve risk management to use those resources safely and efficiently.

However, the agency is at a tipping point.

Climate change has led to fire seasons that are now on average 78 days longer than in 1970. The U.S. burns twice as many acres as three decades ago and Forest Service scientists believe the acreage burned may double again by mid-century. Increasing development in fire-prone areas also puts more stress on the Forest Service's suppression efforts.

While the Forest Service and its firefighting partners are able to suppress or manage 98 percent of fires, catastrophic mega-fires burn through the agencies resources: 1–2 percent of fires consume 30 percent or more of annual costs. Last year, the Forest Service's 10 largest fires cost more than \$320 million dollars. The cost of fire suppression is predicted to increase to nearly \$1.8 billion by 2025. This trend of rising fire suppression costs is predicted to continue as long as the 10-year average serves as the funding model and presents a significant threat to the viability of all other services that support our national forests.

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<sup>1</sup> Preparedness, Suppression, FLAME, and related programs.

This unsustainable problem is made worse because in many years, fighting fires costs more than was planned for that year, requiring mid-season transfers of additional dollars from already depleted accounts to pay for firefighting: a practice referred to as “fire transfer.” In some cases, the agency is forced to divert money away from the same forest restoration projects that prevent or lessen the impacts of future wildfire. While Congress typically provides supplemental resources to replenish the Forest Service budget after fire transfers, transfers remain extremely problematic as they disrupt seasonal work, frustrate partners, and delay vital work.

## **The Escalating Cost of Fire Suppression**

Wildland fire suppression activities are currently funded entirely within the U.S. Forest Service budget, based on a 10-year rolling average. Using this model, the agency must average firefighting costs from the past 10 years to predict and request costs for the next year. When the average was stable, the agency was able to use this model to budget consistently for the annual costs associated with wildland fire suppression. Over the last few decades, however, wildland fire suppression costs have increased as fire seasons have grown longer and the frequency, size, and severity of wildland fires has increased.

Changing climatic conditions across regions of the United States are driving increased temperatures—particularly in regions where fire has not been historically prominent. This change is causing variations and unpredictability in precipitation and is amplifying the effects and costs of wildfire. Related impacts are likely to continue to emerge in several key areas: limited water availability for fire suppression, accumulation at unprecedented levels of vegetative fuels that enable and sustain fires, changes in vegetation community composition that make them more fire prone, and an extension of the fire season to as many as 300 days in many parts of the country.

These factors result in fires that increasingly exhibit extreme behavior and are more costly to manage. The six worst fire seasons since 1960 have all occurred since 2000. Moreover, since 2000, many western states have experienced the largest wildfires in their state’s history.

In addition, more and more development is taking place near forests—an area referred to as the Wildland-Urban Interface (WUI). Increasing densities of people and infrastructure in the WUI makes management more complex and requires more firefighting assets to ensure an appropriate, safe, and effective response that protects lives and property.

Funding for non-fire programs has not kept pace with the increased cost of fighting fire. The growth in fire suppression costs has steadily consumed an ever-increasing portion of the agency’s appropriated budget. Between last fiscal year and this year, for example, the suppression budget grew by \$115 million and non-fire programs were reduced by that amount, requiring the agency to forego opportunities to complete vital restoration work and meet public expectations for services. Those non-fire activities are often those that improve the health and resilience of our forested landscapes and mitigate the potential for wildland fire in future years.

Over the last few decades, wildfire costs have increased as a percent of the Forest Service’s budget as fire seasons have grown longer and more costly. The projected continued growth in the 10-year average cost of fire suppression through 2025 is rising to nearly \$1.8 billion. This amounts to a nearly \$700 million decrease in non-fire program funding in the next 10 years.

Figure 1: The Cost of Wildland Fire (Preparedness, Suppression, FLAME, and related programs) as a Percentage of the Forest Service's Annual Budget

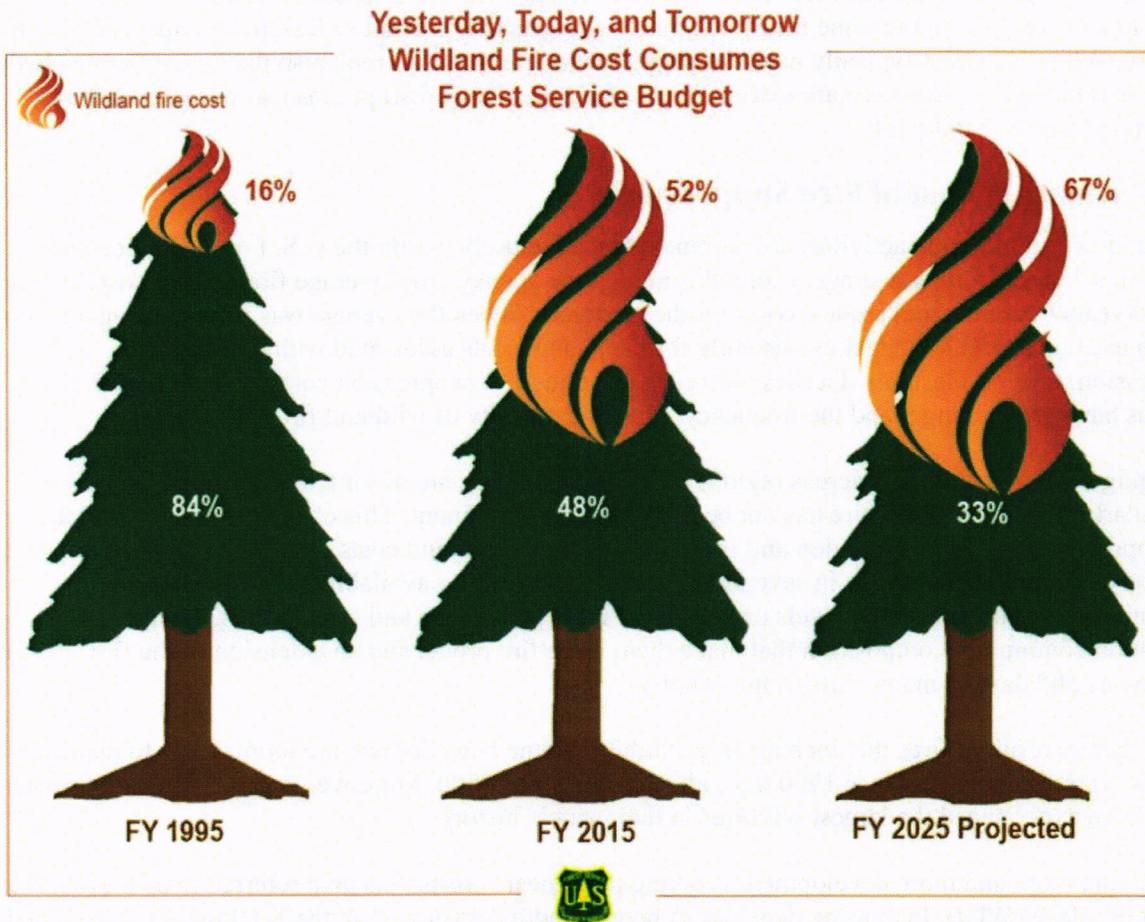
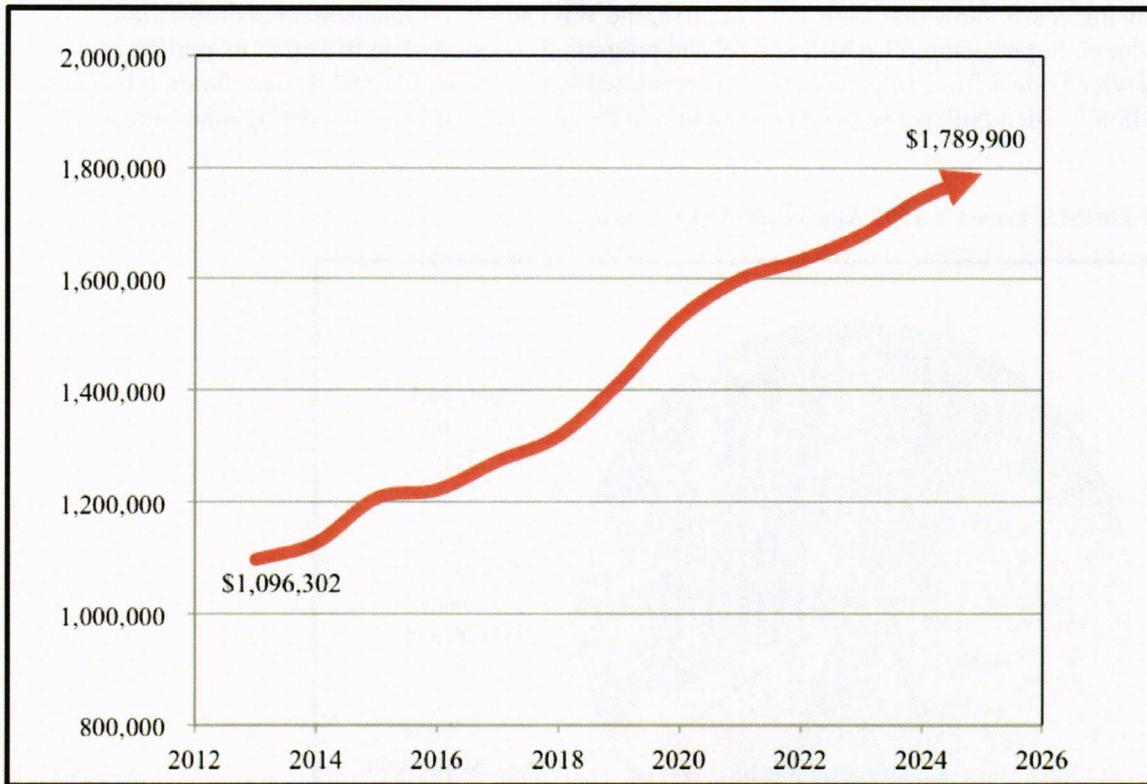


Figure 2: Projected Growth of the 10-Year Average Cost of Fire Suppression (in \$1000s) Through 2025<sup>2</sup>



<sup>2</sup> This projection was developed by Forest Service researchers and is based on similar methodologies currently used for suppression cost expenditures that are required within FLAME Act provisions.

## Impacts to Forest Service Program Areas and Staff

The following charts show that from 1995 to 2015, the Wildland Fire Management appropriation (Preparedness, Suppression, FLAME, and related programs) has more than tripled in its portion of the Forest Service budget from 16 percent to 52 percent, reducing National Forest System funding by nearly \$475 million in 2015 dollars (32 percent reduction in real dollars), and also impacting other program areas.

Figure 3: Forest Service FY 1995 Appropriations by Fund

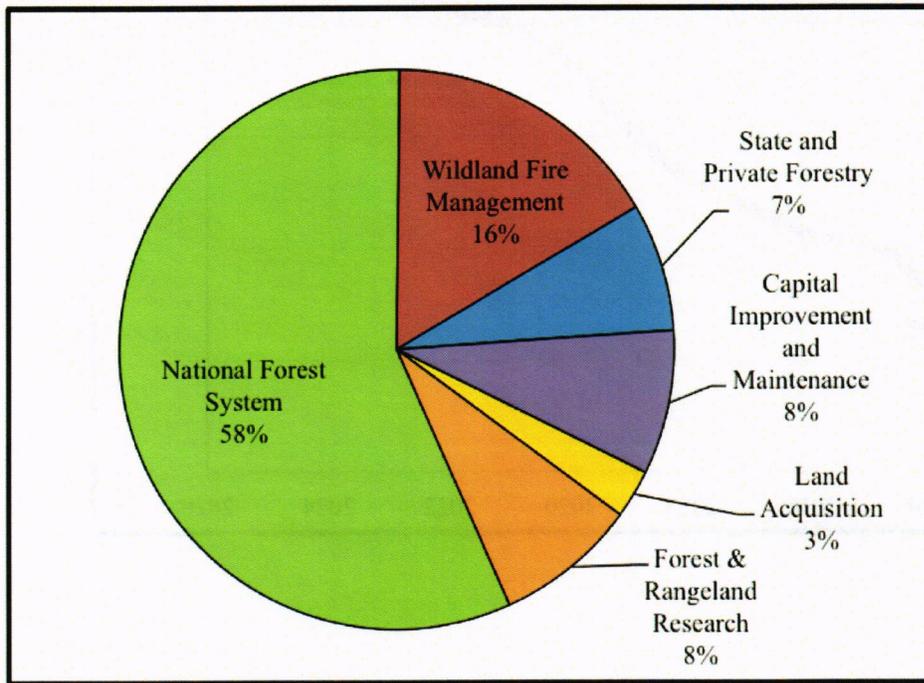
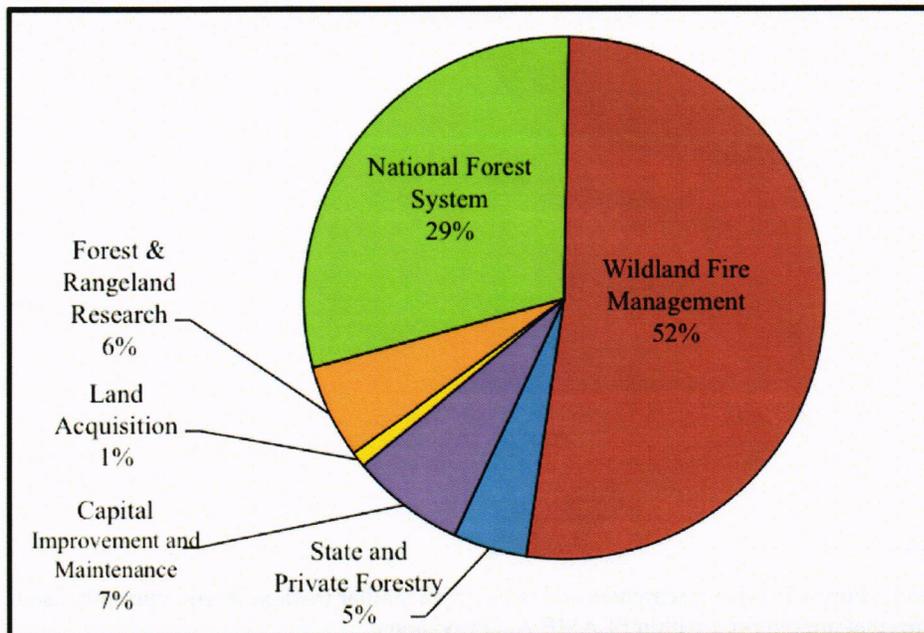


Figure 4: Forest Service FY 2015 Appropriations by Fund



At the same time, increasing the portion of the budget dedicated to fire has reduced the Forest Service's ability to sustain staffing in vital non-fire program areas, which negatively impacts the Forest Service's ability to deliver work on the ground, including forest restoration and management, recreation, research, watershed protection, land conservation, and other activities.

Since 1998, fire staffing within the Forest Service has increased 114 percent, from around 5,700 employees in 1998 to over 12,000 in 2015. Over the same period, staffing levels for those dedicated to managing National Forest System lands has decreased by 39 percent—from approximately 18,000 in 1998 to fewer than 11,000 in 2015.

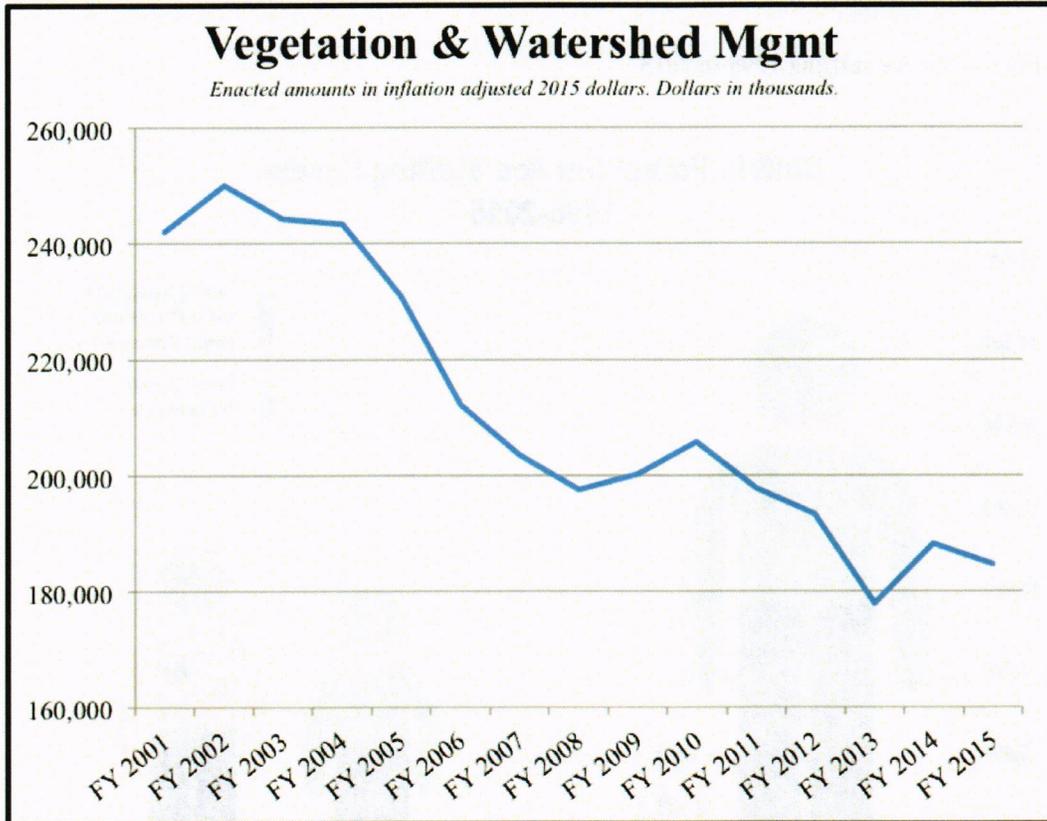
Figure 5: Forest Service staffing 1998 to 2015



## Impacts on Individual Programs

Funding trends for the past 15 years for individual programs used to manage the National Forest System are shown below.<sup>3</sup> This section illustrates the significant declines in these programs and describes the resulting impacts as a result of the shift of financial and human resources away from management of the National Forest Systems and to the Wildland Fire Management accounts, within the agency's constrained annual budget.<sup>4</sup>

### Vegetation & Watershed Management—24% Reduction



The Vegetation and Watershed Management Program is the cornerstone for forest, rangeland, soil and water restoration and enhancement activities on National Forest System (NFS) lands and plays a key role in post-fire restoration. These programs are necessary for the agency to effectively support resource restoration projects that achieve multiple values, develop external partnerships to sustain healthy watersheds and ecological communities, and provide an array of benefits for current and future generations.

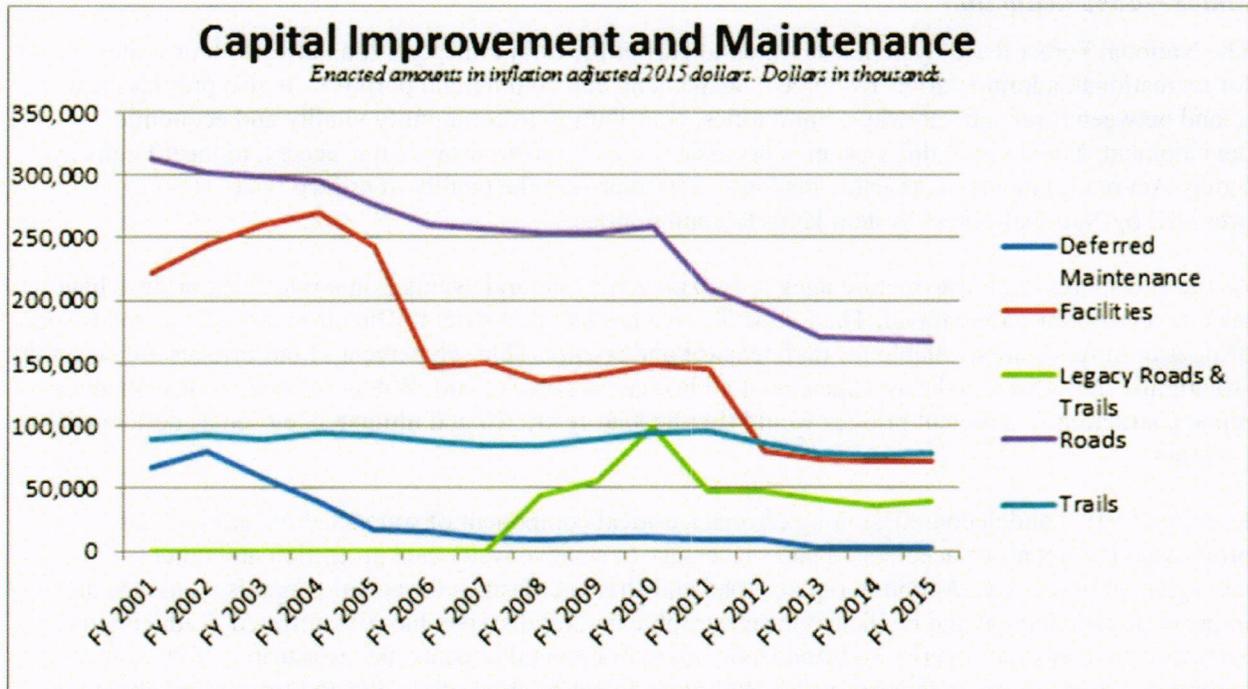
<sup>3</sup> These charts start at 2001 rather than 1995 because many of the programs (BLIs) have changed over the years, and FY 2001 to FY 2015 represents a time period over which the following programs remained consistent and therefore provide for an analogous comparison year over year.

<sup>4</sup> Appropriation numbers were adjusted for inflation to constant FY 2015 dollars. The deflators are from the [Office of Budget and Management Fiscal Year 2015 Historical Tables, Table 10.1](http://www.whitehouse.gov/sites/default/files/omb/budget/fy2015/assets/hist.pdf) (<http://www.whitehouse.gov/sites/default/files/omb/budget/fy2015/assets/hist.pdf>).

Benefits include: improved water quality and quantity, healthy forests and rangelands that provide a variety of products, a reduction of risks associated with wildfires, and greater resistance to establishment and spread of invasive species.

Reduced funding since 2001 has decreased the rate of restoration that the agency could have achieved across all NFS landscapes had funding levels been maintained. The agency has been less able to engage in watershed improvement activities as well as overall restoration activities occurring within priority watersheds. The reductions have limited the agency’s ability to prevent and limit the spread of invasive species; to decrease the backlog of deforestation and young stand management needs; and to lessen the severity and extent of insect, disease, and fire-prone forest stands.

**Capital Improvement and Maintenance**



**Facilities—68% Reduction**

The facilities program supports maintenance and capital improvement on approximately 21,600 recreation sites and 23,100 research and other administrative buildings. More than half of all administrative facilities need improvement, with approximately 41 percent in poor condition needing major repairs or renovation, approximately 12 percent in fair condition needing some minor repair, and 47 percent of the facilities in good condition.

Due to the significant decrease in facilities funding, the agency has had to scale down or defer most decommissioning and disposal projects that would reduce our square footage. Projects that implement sustainability best practices to conserve energy and water have been deferred. Reduced funding has jeopardized the agency’s ability to address basic facility operational and maintenance needs and many of our safety issues such as those associated with water and septic systems. The overall effect is an increase in public health and safety concerns, and liability for the federal government. The only action national forests can take to reduce the government liability is to close recreation facilities, thereby impacting the outdoor recreation opportunities that drive many rural tourism economies.

Because of a lack of funding, the Forest Service has lost opportunities for new office construction to replace administrative facilities at the end of their design life, resulting in office closure and moves into leased facilities. Deferred maintenance has increased resulting in more expensive future repairs or possible loss of facility investments. Projects to decommission buildings and reduce the square feet have been deferred. Projects that would have helped the agency make its buildings more sustainable and reduce the costs of maintaining recreation facilities have also been deferred.

Concurrently, additional fire facilities have been added to meet increased suppression needs. This has required a shift in spending from capital improvements for national priority projects to projects critical for fire readiness. For example, Air Tanker Bases need pavement improvements to handle the newer aircraft which are being added to the fleet, these projects will be phased in over several years, increasing costs.

### ***Roads—46% Reduction***

The National Forest Road System is an integral part of the rural transportation network. It provides access for recreational, administrative, resource management, and commercial purposes. It also provides access to and between rural and gateway communities, contributing to community vitality and economic development. Maintaining this system is necessary to continue to provide this access, to meet Highway Safety Act requirements, emergency response, and to protect the quality of critical water supplies provided by National Forest System lands to communities.

As our transportation infrastructure ages or is damaged by natural events, some roads and bridges have become unsafe for public travel. The Forest Service has had to restrict traffic on or close those roads and bridges until funds are available for maintenance and repairs. Thirteen percent of our bridges are currently structurally deficient and the average age of all bridges is 50 years old. Without needed replacement or repairs, structurally deficient bridges would first be load-restricted and ultimately closed as deficiencies progress.

Road restoration and decommissioning efforts, a critical component of watershed restoration, has progressed but not at the accelerated pace necessary to achieve watershed protection and other management objectives. Action to replace road and stream crossings for aquatic organism passage and to improve aquatic habitat and resilience to catastrophic natural disasters has also suffered. Reducing these activities increases the severity and frequency of environmental impacts like catastrophic failure from natural disasters, adverse effects to water quality, and deterioration of aquatic and terrestrial habitat. Our ability to support accelerated watershed restoration continues to be severely affected.

As a lack of funds forces the Forest Service to delay needed maintenance and improvements on many roads and bridges, access will become more restricted, environmental impacts will increase rapidly, and vulnerability to catastrophic failure from natural disasters will greatly increase. It will become more difficult for the public to access communities reached only by traveling through NFS lands, as well as recreational areas, and other natural resource areas. Firefighting ability could also decline significantly as road access restrictions increase, putting our resources and the public at risk.

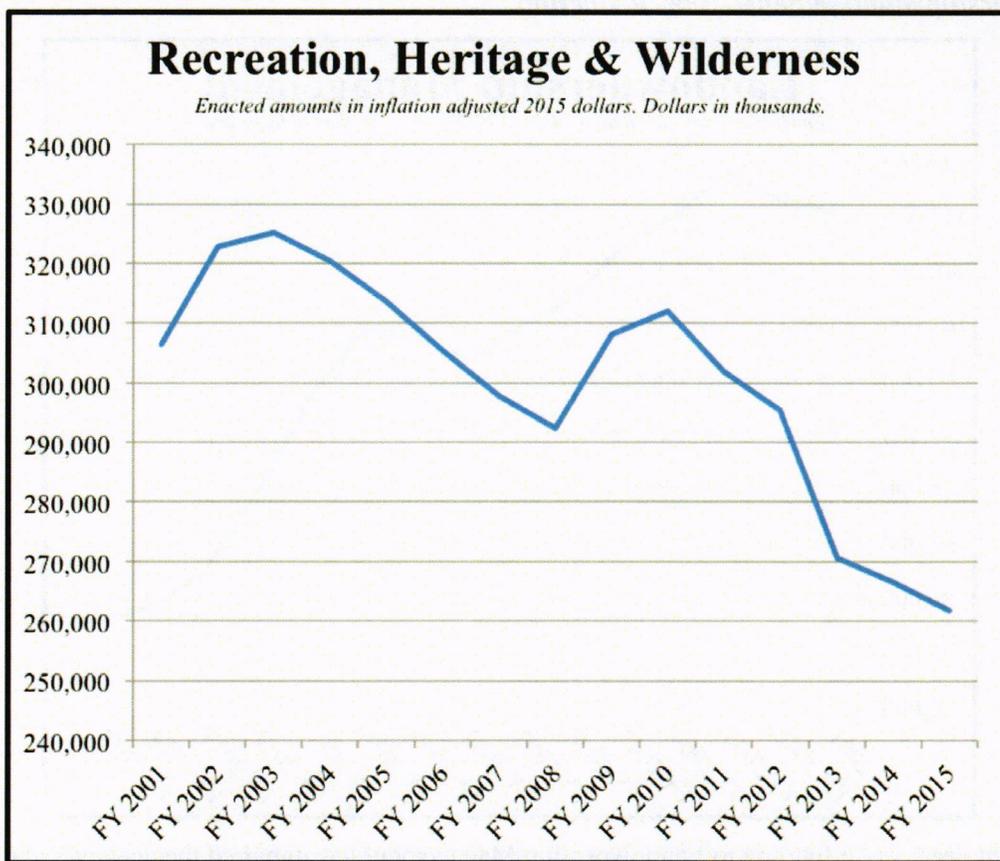
### ***Deferred Maintenance—95% Reduction***

The Deferred Maintenance and Infrastructure Improvement program addresses serious public health and safety concerns associated with the agency's backlog in maintenance needs. This program funds high-priority national projects, focusing on areas that are heavily used by the public and agency employees. These projects include critical maintenance and repairs to dams; correcting health and safety deficiencies in buildings, campgrounds, and water and wastewater systems; and renovating recreation structures.

In FY 2001, the Deferred Maintenance funding supported approximately 400 major projects. In FY 2014 the funding supported three major projects. In FY 2013 and FY 2014, 21 projects were deferred to future years, including sewer system repairs, water system improvements, dam repairs, and wastewater system rehabilitation.

Forest Service assets currently have a deferred maintenance backlog of over \$5.1 billion and many are 30 to 50 years old or more. The near elimination of funding for this program has prevented the Forest Service from making a dent in this backlog and has forced the agency to shift more of the deferred maintenance work to other capital improvement programs, further reducing our ability to improve the long-term sustainability of our facilities, roads, and trails.

**Recreation, Heritage and Wilderness—15% Reduction**



The Recreation, Heritage and Wilderness programs offer a diverse range of recreational opportunities across NFS lands, connecting people with nature in an unmatched variety of settings and activities. The decrease in funding resulting from increased fire costs has limited the agency’s ability to provide vital recreational opportunities on NFS lands, which jeopardizes the thousands of jobs that are part of a growing recreational economy.

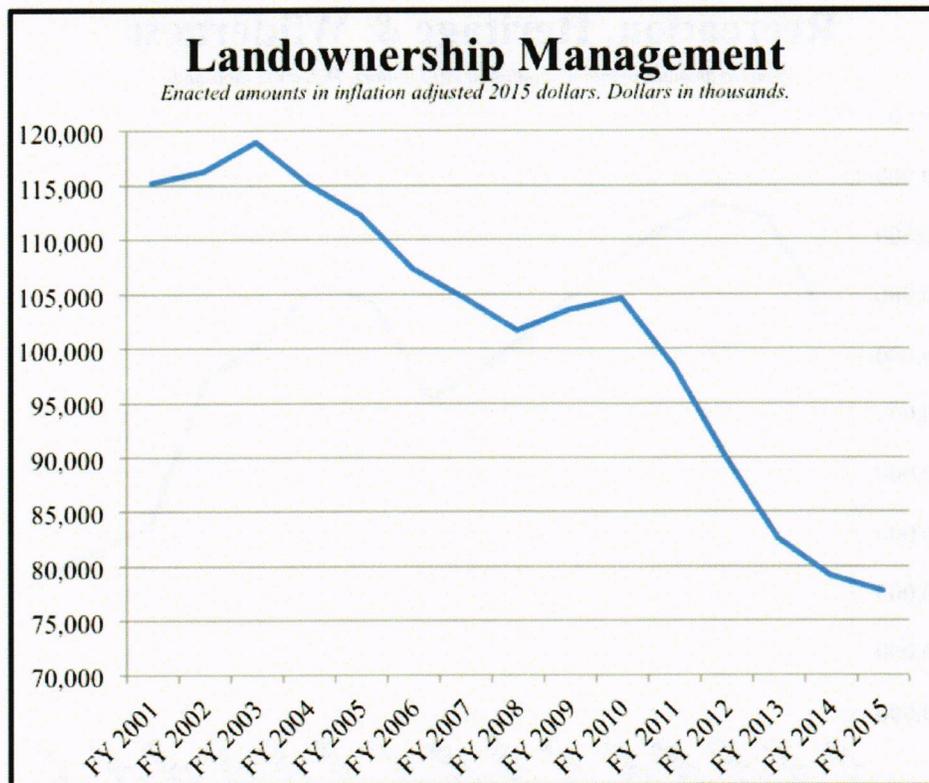
The agency has been unable to more fully implement sustainable Recreation, Heritage, Volunteer Services and Wilderness and Wild & Scenic Rivers programs to provide consistent, quality recreation opportunities to the public. Reductions in recreation funding have a direct impact on local economies supported by these activities, including many small outfitter and guide businesses that depend on recreation sites and programs on NFS lands. Additionally, the Forest Service’s ability to leverage funds

and implement projects with partners and volunteers is constrained by the reductions in funding and staff, substantially affecting services.

The reductions in funding have also affected the Forest Service's capacity to manage the permits needed for outfitters and guides and other recreation-focused small businesses to use the public land. This impacts the presence and stability of permittees and small business in nearby tourism-oriented communities.

Services to youth have also suffered. A higher sustained level of funding would increase the capability of the Forest Service to engage youth in the outdoors and support increased employment opportunities for youth and veterans through programs such as the 21<sup>st</sup> Century Conservation Service Corps.

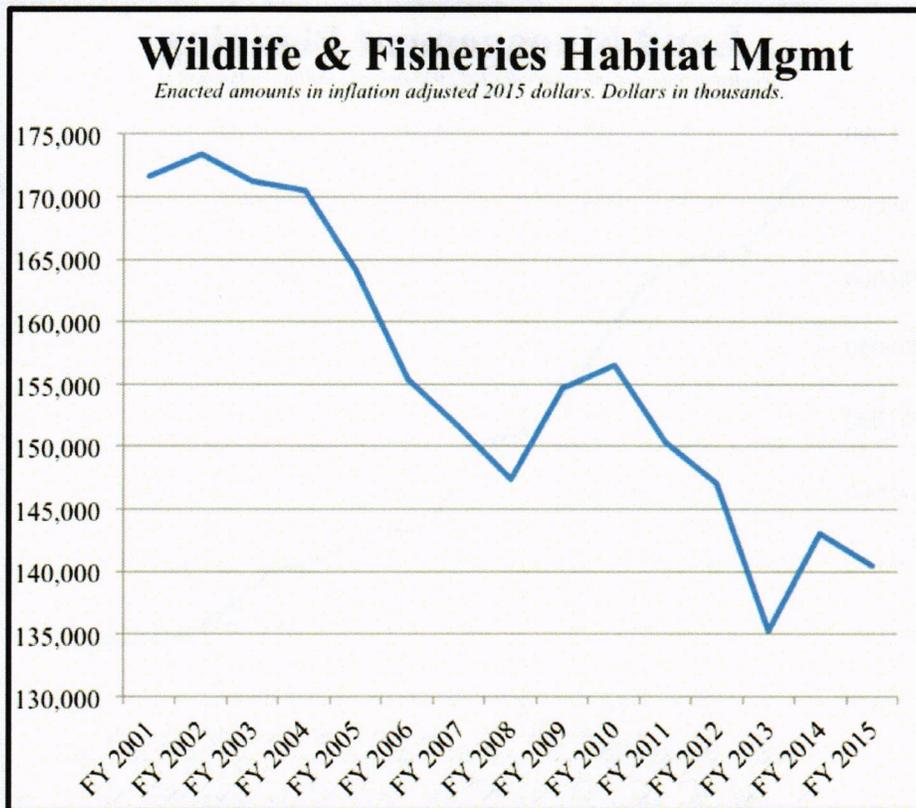
### **Landownership Management—33% Reduction**



A 33 percent decrease in funding to Landownership Management has impaired the agency's ability to respond to demands that are growing in number and complexity in the lands special use permits program, which supports critical projects involving energy pipelines, geothermal, electric transmission, hydropower, telecommunication infrastructure, including cellular towers and traditional line service and broadband facilities.

These special use projects provide community development and growth that directly supports job creation. Reductions in funding have limited the agency's ability to keep up with title claims and encroachments, each of which can cost the agency thousands of dollars to investigate and resolve, or can lead to even more costly lawsuits.

### Wildlife & Fisheries Habitat Management—18% Reduction



The reduction in funding to Wildlife and Fisheries compromises, for example, recovery efforts for threatened and endangered species (TES). The Forest Service has been unable to fulfill all of the required monitoring associated with previous Endangered Species Act (ESA) consultation commitments, reducing the agency's ability to implement projects in the future and jeopardizing current projects because ESA consultation requirements cannot be met. The agency has had to forego many projects critical to TES recovery and conservation efforts and offsetting the impacts of climate change.

The reduction in operating funds has limited the agency's ability to support existing partnerships. These partnerships often bring in as much as four-to-one return in partner contributions. This has resulted in the loss of significant dollars that could have been leveraged and has further reduced the agency's impact on key restoration objectives.

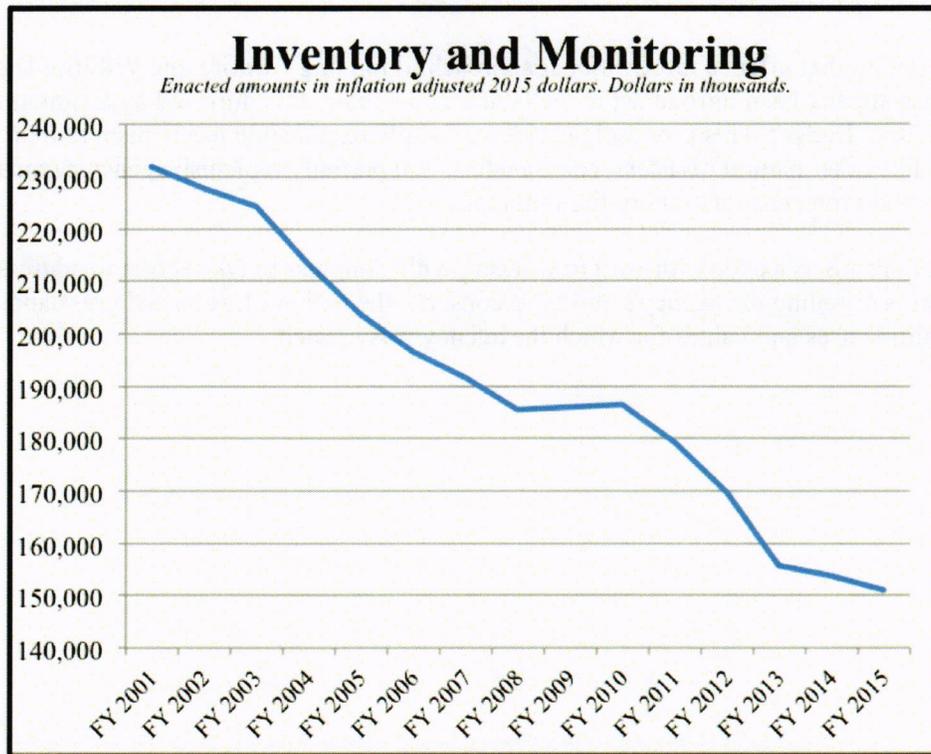
## Land Management Planning—64% Reduction



Reductions in Land Management Planning have had a significant impact on the Forest Service's ability to reduce the backlog of forest plans requiring revision. The National Forest Management Act requires that each unit of the NFS have a Land Management Plan (LMP) that is formally revised every 10 to 15 years to address changing conditions and new information related to natural resources, management goals, and public use. The agency has only been able to meet this revision requirement on about 46 percent of its 125 LMPs.

The updated LMPs are essential for providing current, broad guidance for identifying, prioritizing, and implementing the programs and projects that move an NFS unit towards achieving desired conditions and achieving agency objectives. Reduced funding has had a significant effect on our ability to engage with the public and partners to address management issues and opportunities that have emerged since the original plans were developed. These efforts are essential for garnering public support and reducing appeals and litigations, which impacts our ability to implement key restoration efforts and increases implementation *costs*.

## Inventory & Monitoring—35% Reduction



Reductions in Inventory and Monitoring have reduced the agency's ability to collect essential inventory and monitoring information, which has further delayed our ability to revise forest management plans. This reduced funding has hampered the Forest Service's ability to plan and execute projects for adapting and mitigating the effects of changing climate conditions, including completing watershed condition assessments, developing strategies for addressing needs for specific wildlife species and roadless area evaluations, as well as ensuring abundant clean water, providing recreation opportunities, restoring and maintaining forest and rangeland ecosystems, and improving priority watersheds across larger landscapes. Without current and adequate planning and monitoring, our ability to effectively deliver restoration treatments, recreation and special use permitting, and other economic activities on NFS lands has been adversely affected.

### Conclusion

As documented in this report, the rising cost of fire suppression coupled with the current budgeting model is significantly impacting all non-fire program and staff areas.

The dramatic underlying shift of funding and human capacity from non-fire programs to support fire programs has real implications on the ground, including for restoration work that would help prevent catastrophic fires, protect watersheds that provide clean drinking water to tens of millions of people, protect irreplaceable cultural resources, and provide the infrastructure and programming that supports the \$646 billion outdoor recreation economy and jobs and economic growth in hundreds of rural communities.

To solve this problem, we must change the way we pay for wildfire. Instead of treating catastrophic wildfires as a normal agency expense, we must treat them more like other natural disasters, such as tornadoes or hurricanes. And any solution must confront both parts of the funding quandary: it must limit

or reverse the runaway growth of firefighting costs, and it must address the compounding disruption of fire transfers.

Bipartisan legislation that offers a more rational approach to funding wildfire, the Wildfire Disaster Funding Act, has already been introduced in the House and Senate. It is mirrored by a similar option in the President's 2016 Budget. This proposal provides a fiscally responsible mechanism to treat wildfires more like other natural disasters, end transfers, and partially replenish agency capacity to restore resilient forests and protect against future fire outbreaks.

USDA and the Forest Service look forward to working with Congress to take action to address the growth of fire costs that is crippling the agency's ability to conserve the nation's forests and grasslands and to provide the multiple uses and values for which the agency was created.