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Wildfire Management: Federal Funding and Related Statistics

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March 5, 2014

Congressional Research Service

7-5700

www.crs.gov

R43077

Summary

Wildfires can have beneficial and harmful impacts on ecosystems (e.g., by reducing fuel loads, or by damaging communities and timber resources). These impacts are generally measured and discussed based on the priorities of humans in these ecosystems. Federal resources are typically deployed during wildfire season—an annual occurrence of intense wildfire activity—to help manage wildfires and potentially minimize some of the impacts, including the loss of life and property. Approximately 4.3 million acres burned during the 2013 wildfire season, which was less than half of the 9.3 million acres burned in 2012. The acreage burned in 2012 was the third-largest acreage burned annually since 1960.

Federal funding for wildfire management (WFM) is provided in the annual Interior, Environment, and Related Agencies appropriations bill. It funds wildfire management at the Forest Service and the Department of the Interior, which are the two principal entities tasked with federal wildfire management. Federal wildfire response activities involve preparedness, suppression, fuel reduction, site rehabilitation, and more.

More than \$3.9 billion was appropriated for wildfire management for FY2014, including some \$600.0 million for the Forest Service to reimburse wildfire transfers that occurred in FY2013. The total WFM appropriations for 2013 (post-sequester) were more than \$3.3 billion, and included \$395.4 million appropriated in FY2013 to repay accounts in FY2012 for wildfire suppression. WFM appropriations have increased over the last two years relative to earlier years, even with the fairly new implementation of a wildfire suppression reserve fund established under the Federal Land Assistance, Management, and Enhancement Act of 2009 (P.L. 111-88; FLAME). This leads some to question whether federal resources for wildfire management are being used efficiently.

This report provides WFM appropriations for the last ten years, and provides general wildfire management statistics (e.g., number of wildfires, acres burned, select state wildfire activity, firefighter personnel).

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Introduction

In 2013, wildfire was the cause of approximately 4.3 million acres burned. This was less than half of the 9.3 million acres burned during the 2012 wildfire season. The acreage burned in 2012 was the third-largest annual acreage burned, based on the reporting of fire statistics from 1960 to the present.¹ Some predict conditions that could lead to more severe wildfire activity potentially occurring in 2014 in certain regions, and possibly an earlier start for the 2014 wildfire season in certain regions due to ongoing drought conditions in the western half of the nation.² Wildfire (or wildland fire),³ an unplanned and an unwanted fire, is a concern to some because it can lead to loss of human life,⁴ damage communities and timber resources,⁵ and impact soils, watersheds, water quality, and wildlife.⁶ On the other hand, wildfire can also reduce fuel loads, increase ecosystem health, and restore fire-adapted ecosystems.

There are several ongoing concerns regarding wildfire management (WFM). These include the total federal costs of wildfire management, the strategies and resources used for wildfire management, and the impact of wildfire on both the quality of life and the economy of communities surrounding wildfire activity. Many of these issues are deliberated by Congress, with annual WFM appropriations being a good indicator of how Congress prioritizes and addresses certain WFM concerns. More than \$3.9 billion was appropriated for WFM in FY2014, including approximately \$600.0 million for the Forest Service to reimburse wildfire transfers that occurred in FY2013.

This report briefly describes WFM appropriations for the last 10 years, and provides some general wildfire statistics.⁷

¹ The largest fire year on record for acres burned is 2006 (9.8 million). The second- and third-largest fire years are 2007 and 2012, and the acres burned are relatively equivalent. National Interagency Fire Center, *Current Year-to-Date by State (2012)*, December 20, 2012; http://www.nifc.gov/fireInfo/fireInfo_stats_YTD2012.html, National Interagency Fire Center, *Total Wildland Fires and Acres (1960-2009)*.

² National Weather Service, *U.S. Seasonal Drought Outlook February 20 – May 31*, February 20, 2014; National Interagency Fire Center, *National Significant Wildland Fire Potential Outlook Period—February, March, and April through May 2014*, February 1, 2014.

³ The terms wildfire and wildland fire are often used interchangeably. However, each term has a distinct definition. The National Wildfire Coordinating Group (NWCG) defines wildland fire as any non-structure fire that occurs in the wildland, defined as an area in which development is essentially nonexistent, except for roads, railroads, power lines, and similar transportation facilities, and where structures, if any, are widely scattered. NWCG defines wildfire as an unplanned, unwanted wildland fire including unauthorized human-caused fires, escaped wildland fire use events, escaped prescribed fire projects, and all other wildland fires where the objective is to put the fire out. National Wildfire Coordinating Group, *Glossary of Wildland Fire Terminology*, July 2012. This report will use the term wildfire for both.

⁴ An example is the 2013 loss of 19 firefighters of the Granite Mountain Interagency Hotshot Crew assigned to the Yarnell Hill fire. For more information, see CRS Report R43129, *Wildfire Management: Hotshot Crews*.

⁵ For more information on wildfire damages to homes and resources, see CRS Report RL34517, *Wildfire Damages to Homes and Resources: Understanding Causes and Reducing Losses*.

⁶ For more information, see CRS Report RL30755, *Forest Fire/Wildfire Protection*.

⁷ Additional appropriations data and statistics prior to 2008 are available in CRS Report RL33990, *Federal Funding for Wildfire Control and Management*.

What Is Wildfire Management (WFM)?

WFM is a series of coordinated activities undertaken by federal, state, and local authorities to resolve wildfire events when they occur. Resolution may involve immediate and aggressive measures to quickly suppress a wildfire (e.g., large air tanker response for a wildfire moving quickly toward a populated area), or may involve immediate but less intense measures (e.g., monitoring a grassland wildfire where there is no immediate threat to humans and weather conditions are favorable for natural suppression of the fire within a short time period).

WFM activities are generally categorized into four areas: preparedness, suppression, fuel reduction, and site rehabilitation. Preparedness is any activity that leads to a safe, efficient, and cost-effective fire management program, and includes the range of tasks necessary to build, sustain, and improve the capability to protect against, respond to, and recover from domestic incidents.⁸ Suppression is all of the work associated with extinguishing or confining a fire.⁹ Fuel reduction is manipulation (including combustion) or removal of fuels to reduce the likelihood of ignition and/or to lessen potential damage and resistance to control.¹⁰ Site rehabilitation includes efforts undertaken, generally within three years of a wildfire, to repair or improve fire-damaged lands unlikely to recover to a management-approved condition, or actions taken to repair or replace minor facilities damaged by fire.¹¹

A number of federal, state, and local agencies can and do respond to wildfire.¹² It is sometimes necessary for more than one agency to respond, depending on where the fire occurs, the potential threats, and the expertise required. In these instances, the National Interagency Fire Center (NIFC)¹³ coordinates the national mobilization of resources for wildfire and other incidents throughout the United States.¹⁴

WFM Statistics

Wildfire statistics help to illustrate past U.S. wildfire activity. Most of the statistics provided in this section are national in scope. The number of wildfires reported and acres burned for 1983 to 2013 is shown in **Figure 1**. The data indicate that the number of wildfires reported has stayed about the same over time. The amount of acres burned has increased steadily over time. **Table 1**

⁸ National Wildfire Coordinating Group, *Glossary of Wildland Fire Terminology*, July 2012.

⁹ Ibid.

¹⁰ Ibid.

¹¹ U.S. Department of the Interior, *Interagency Burned Area Emergency Response Guidebook*, February 2006.

¹² For more information on federal assistance, see CRS Report R41858, *Federal Assistance for Wildfire Response and Recovery*.

¹³ NIFC is comprised of eight agencies and organizations: the Bureau of Land Management, the Bureau of Indian Affairs, the U.S. Fish and Wildlife Service, the National Park Service, the U.S. Forest Service, the National Oceanic and Atmospheric Administration, the National Business Center, and the U.S. Fire Administration. Also, a National Association of State Foresters representative is located at NIFC. Additional information about the role of each agency is available in the NWCG *Communicator's Guide for Wildland Fire Management: Fire Education, Prevention, and Mitigation Practices*.

¹⁴ The National Interagency Mobilization Guide identifies standard procedures that guide the operations of multi-agency logistical support activity.

gives the corresponding number of wildfires and acres burned for 2009 through 2013. **Table 2** lists the three states with the largest number of wildfire acres burned for 2009 to 2013.

NIFC reports that in 2013 there were 47,579 wildfires and 4.3 million acres burned (data compiled for federal and state agencies).¹⁵ Less than 2% of the wildfires reported in 2013 were classified as large or significant wildfires.¹⁶ Approximately 71% of the number of wildfires reported occurred on state or other land, but approximately 68% of the acres burned were on federal land. Of all the land management agencies, the FS had the largest percentage (15%) of wildfires, in terms of number of fires occurring on federal land. The FS and Bureau of Land Management (BLM) had the largest percentage of acres burned on federal land, at 32% and 23%, respectively.

Both the FS and Department of the Interior (DOI) keep statistics on hazardous fuels treated: a measure that may help to prevent wildfire activity.¹⁷ Hazardous fuel treatment includes prescribed burning, thinning, and more. Acres treated for FS and DOI lands are provided in **Table 3**.

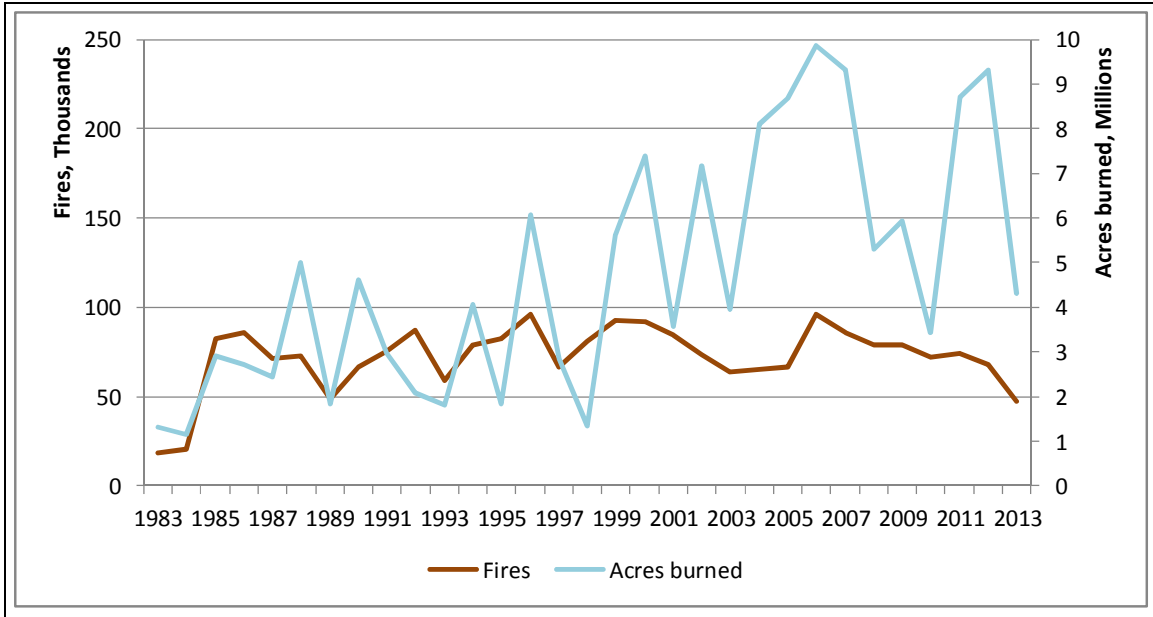
Wildfires can have a devastating impact. Therefore, statistics showing the level of destruction a wildfire can cause can be useful. Some more easily quantifiable measures include acres burned, lives lost (firefighters and civilians), structures destroyed, and suppression costs for a specific wildfire. There is no clearinghouse for this type of “destructive” data. Multiple federal and state organizations collect different data. Therefore, the data can usually be found, but in a piecemeal fashion. Firefighter personnel data for the FS and DOI, firefighter fatalities, and structures burned are provided in **Table 4**.

¹⁵ NIFC, *Wildland Fire Summary and Statistics Annual Report 2013*.

¹⁶ Significant fires are defined as fires that are a minimum of 100 acres in timber fuel types, or 300 acres in grass and brush fuel types, or are managed by a Type 1 or 2 Incident Management Team. An incident management team consists of the incident commander and appropriate general and command staff personnel assigned to an incident. Type refers to resource capability. A Type 1 resource provides a greater overall capability due to power, size, capacity, etc., than would be found in a Type 2 resource.

¹⁷ Additional information on hazardous fuels removal is available in the “WFM Appropriations” section of this report.

Figure I. Total Number of Wildfires and Acres Burned (1983-2013)



Source: NIFC.

Table I. Total Number of Wildfires and Acres Burned, 2009-2013

	2009	2010	2011	2012	2013
No. of Fires (in thousands)	78.8	72.0	74.1	67.8	47.6
Acres Burned (in millions)	5.9	3.4	8.7	9.3	4.3

Source: NIFC, Wildland fires and acres.

Table 2. Top Three States for Wildfire Acres Burned, 2009-2013

(acres in millions)

2009	2010	2011	2012	2013
AK – 2.95	AK – 1.13	TX – 2.72	ID – 1.67	AK – 1.32
TX – 0.75	ID – 0.61	NM – 1.29	OR – 1.26	ID – 0.71
NM – 0.42	NM – 0.23	AZ – 1.02	MT – 1.22	CA – 0.58

Source: NIFC, Historical year-end fire statistics by state.

Table 3. Total Hazardous Fuels Acres Treated by FS and DOI, FY2009-FY2013

(in millions)

	FY2009	FY2010	FY2011	FY2012	FY2013
FS	3.60	3.26	2.77	2.62	2.63
DOI	1.50	1.30	0.99	1.00	0.64

Source: Email from FS on April 25, 2013 and February 24, 2014. DOI data are from the National Fire Plan Operations Reporting System. DOI agency budget justification and email from DOI on February 24, 2014.

Table 4. FS and DOI Firefighting Personnel, Fatalities, and Structures Burned, FY2009-FY2013

	FY2009	FY2010	FY2011	FY2012	FY2013
FS firefighters ^a	10,480	10,480	10,480	10,480	10,480
DOI firefighters ^b	3,664	3,664	3,664	3,447	3,447
Firefighter fatalities ^c	15	8	12	15	34
Structures burned ^d	1,899	788	5,246	4,244	2,135

Source: Agency budget justifications. Firefighter fatalities for FY2008 through FY2011 from NIFC, Historical Wildland Firefighter Fatality Reports; Firefighter fatalities for FY2012 and FY2013 from NWCG, Fatalities, Entrapments and Serious Accident Summary Safety Gram; Structures burned year-end totals provided by NIFC in an email on May 7, 2013 and the NIFC Wildland Fire Summary and Statistics Annual Report 2013.

- FS firefighter data include personnel for hot shot crews, other firefighters, smoke jumpers, and prevention technicians.
- DOI firefighter data include firefighters, smoke jumpers, and Type I crews. Although provided in the DOI justification, CRS omitted fire program and support staff from the DOI firefighter total. DOI reports that the personnel data do not include administratively determined (AD) emergency firefighters that are hired for short durations, often for a single incident. AD firefighter data can fluctuate significantly based on need. Source: Email from DOI on May 2, 2013.
- Corresponds with calendar year.
- Structures include primary residences, commercial buildings, outbuildings, and seasonal dwellings. Corresponds with calendar year.

WFM Appropriations by Account

Some WFM has been a responsibility of the federal government for over a century. WFM appropriations are funded in the annual Interior, Environment, and Related Agencies appropriations bill. Both the FS and DOI receive WFM appropriations.¹⁸ WFM appropriations for both agencies combined have averaged \$3.5 billion from FY2008 to present, with a peak of \$4.5 billion in FY2008 (**Figure 2**).¹⁹ An increase in WFM appropriations occurred after 2000, partly in response to the severe 2000 fire season (**Figure 3**).²⁰

A majority of WFM appropriations goes to the FS. From FY2008 to FY2014, the FS received on average 75% of the total WFM appropriations. In addition, FS WFM appropriations constitute a large portion of the FS overall discretionary funding total. For example, in FY2014 FS WFM appropriations were nearly 56% of the total discretionary funds appropriated to the FS (**Figure 4**). Under certain circumstances, the FS may transfer funding from other accounts to pay for fire suppression if the fire suppression funding appropriated for that year is exhausted.²¹ This may lead some to question whether the FS is able to carry out all aspects of its mission.

¹⁸ FS traditionally carries out wildfire response in national forests and national grasslands. WFM funding for DOI is given to the department, which then gives the funding to the agencies (e.g., BLM). DOI traditionally carries out wildfire response in national parks, wildlife refuges and preserves, and Indian reservations, and on public lands.

¹⁹ This includes emergency funds (e.g., supplemental appropriations).

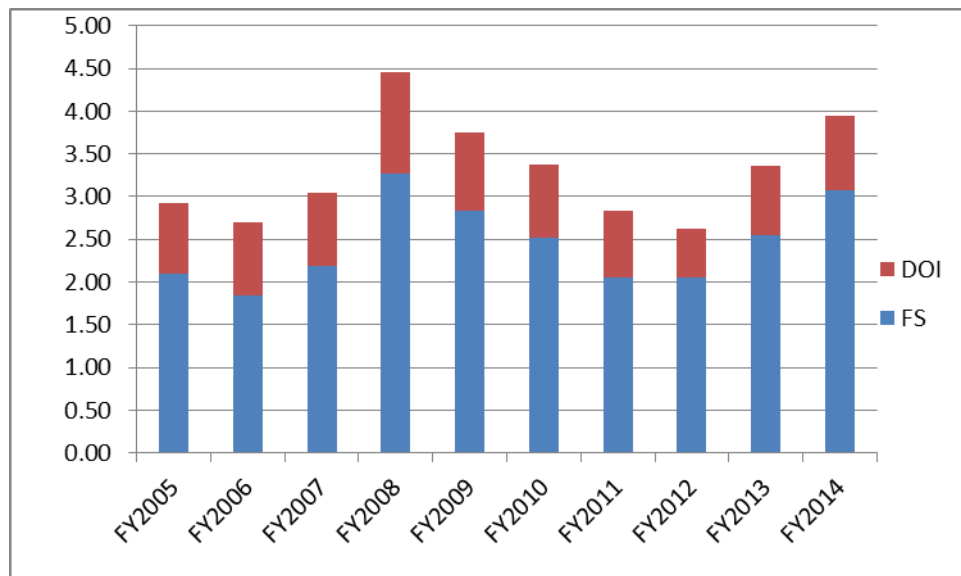
²⁰ For more information, see CRS Report RL33990, *Federal Funding for Wildfire Control and Management*.

²¹ Such transfers of funds have an impact on the ability of the FS to fulfill its other responsibilities. For example, the FS Chief stated that “Each time the agency transfers money out of accounts to pay for fire suppression there are significant (continued...)”

Each agency's WFM appropriations are distributed into several subaccounts. Two subaccounts—preparedness and suppression—receive the bulk of the WFM appropriations, followed by hazardous fuels, which is a category of the other operations subaccount. Additionally, emergency funds are an aspect of WFM appropriations that gain attention, as they can have a dramatic impact on the total WFM appropriations spent in one year. **Table 5** contains WFM appropriations, listed by agency, for the preparedness and suppression subaccounts, as well as for hazardous fuels, rehabilitation, FLAME, and emergency appropriations, with 10-year change in current and constant dollars.

Figure 2. WFM Appropriations for FY2005-FY2014

(billions of dollars)



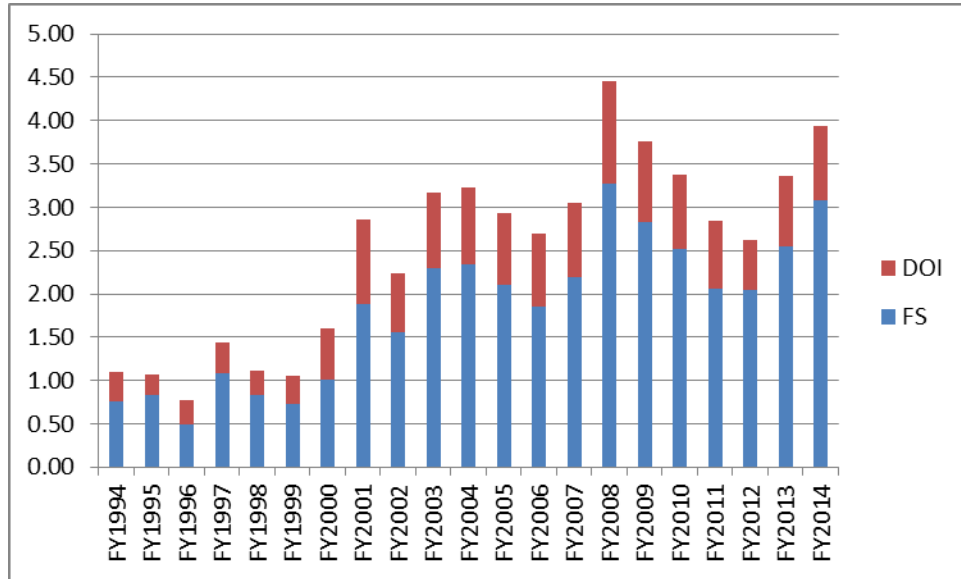
Source: CRS. Data compiled from detailed funding tables prepared by the House Committee on Appropriations.

Notes: **Figure 2** includes the additional funding to repay previous year wildfire accounts for FY2013 and FY2014 (e.g., \$395.4 million appropriated in 2013 to repay 2012 FS and DOI WFM wildfire suppression accounts; \$600.0 million appropriated in 2014 to repay 2013 FS wildfire accounts).

(...continued)

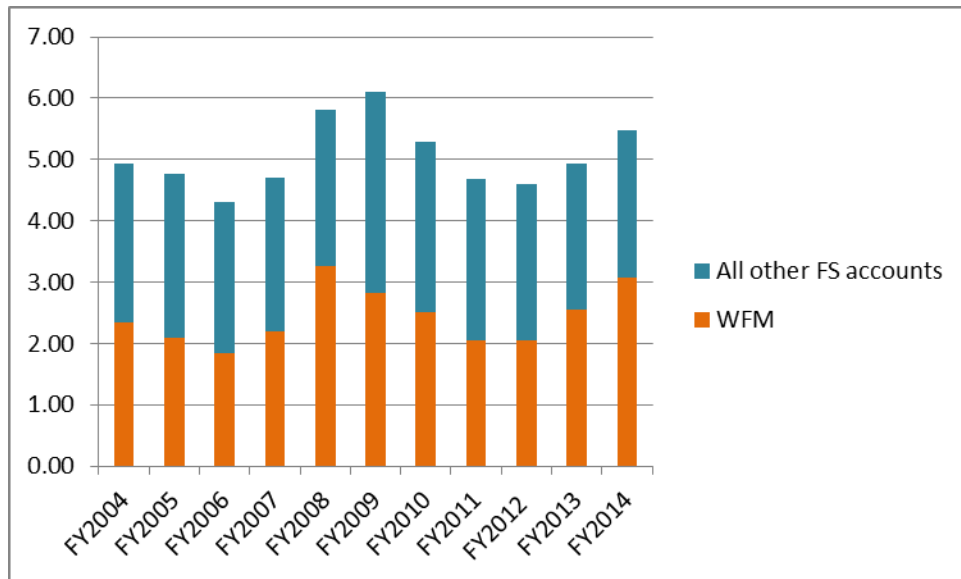
and lasting impacts across the entire Forest Service. Not only do these impacts affect the ability of the Forest Service to conduct stewardship work on national forests, they also affect our partners, local governments and Tribes.” U.S. Congress, Senate Committee on Energy and Natural Resources, hearing to explore ways to improve federal wildland fire management, 113th Cong., June 4, 2013.

Figure 3. WFM Appropriations, FY1994-FY2014
(billions of dollars)



Source: CRS. Data compiled from detailed funding tables prepared by the House Committee on Appropriations for FY2005 through FY2014, and CRS Report RL33990, *Federal Funding for Wildfire Control and Management*.

Figure 4. FS Appropriations, WFM Account and All Other Accounts
(billions of dollars)



Source: CRS. Data compiled from detailed funding tables prepared by the House Committee on Appropriations.

Notes: All other FS accounts include appropriations for Forest Rangeland and Research, State and Private Forestry, National Forest System, Capital Improvement and Maintenance, Land Acquisition, and Other.

Table 5. Wildland Fire Management Enacted Appropriations, FY2005-FY2014, by Account

(millions of dollars)

Agency/ Account	FY2005	FY2006	FY2007	FY2008	FY2009	FY2010	FY2011	FY2012	FY2013 ^a	FY2014	10-year Change Current Dollars (% change)	10-year Change Constant 2013 Dollars ^b (% change)
Forest Service												
WFM ^c	2,098.5	1,846.1	2,193.6	3,269.5	2,831.6	2,516.7	2,058.5	2,050.2	2,547.6	3,077.3	978.8 (47%)	650.6 (27%)
PRE	676.5	660.7	665.4	665.8	675.0	675.0	673.7	1,004.4	948.7	1,057.6	381.1 (56%)	275.3 (35%)
SUP	648.9	690.2	741.5	845.6	993.9	997.5	995.5	538.2	509.8	680.5	31.6 (5%)	-69.9 (-9%)
HAZ	262.5	280.1	301.3	310.1	328.1	350.3	349.6	317.1	301.1	306.5	44.0 (17%)	2.9 (1%)
REH ^d	12.8	6.1	6.2	10.8	11.5	11.6	11.5	—	—	—	—	—
FLAME	—	—	—	—	—	413.0	290.4	315.4	299.0	315.0	—	—
EMG	395.5	100.0	370.0	1,326.0	700.0	—	—	—	379.9	600.0	—	—
Department of the Interior												
WFM	831.3	855.3	853.4	1,192.1	924.5	855.9	778.9	575.4	810.2	861.5	30.2 (4%)	-99.8 (-10%)
PRE	258.9	268.8	274.9	276.5	281.8	290.5	290.5	276.5	264.8	281.9	23.0 (9%)	-17.5 (-6%)
SUP	218.4	230.7	249.2	289.8	335.2	383.8	399.0	270.5	276.7	285.9	67.4 (31%)	33.3 (13%)
HAZ	201.4	208.1	199.8	199.6	203.1	206.2	183.3	183.0	137.7	145.0	-56.4 (-28%)	-87.9 (-38%)
BAR	24.0	24.1	22.8	24.2	20.3	20.3	33.2	13.0	12.3	16.0	-7.9 (-33%)	-11.6 (-42%)
FLAME	—	—	—	—	—	61.0	60.9	91.9	91.7	92.0	—	—
EMG	98.6	100.0	95.0	384.0	65.0	—	—	—	15.5	28.5	—	—
Total (FS & DOI)												
WFM	2,929.8	2,701.4	3,047.0	4,461.5	3,756.1	3,372.6	2,837.4	2,625.7	3,357.8	3,938.8	1,009.0 (34%)	550.7 (16%)
PRE	935.4	929.5	940.2	942.3	956.8	965.5	964.1	1,281.0	1,213.5	1,339.5	404.1 (43.2%)	257.8 (24%)

Agency/ Account	FY2005	FY2006	FY2007	FY2008	FY2009	FY2010	FY2011	FY2012	FY2013 ^a	FY2014	10-year Change Current Dollars	10-year Change Constant 2013 Dollars ^b
											(% change)	(% change)
SUP	867.3	920.9	990.7	1,135.4	1,329.1	1,381.3	1,394.5	808.7	786.5	966.4	99.1 (11%)	-36.6 (-3.7%)
HAZ	463.9	488.2	501.0	509.7	531.1	556.5	532.9	500.1	438.7	451.5	-12.4 (-3%)	-85.0 (-16%)
REH	36.8	30.3	29.0	35.0	31.8	31.9	44.7	13.0	12.3	16.0	-20.7 (-56%)	-26.5 (-62%)
FLAME	—	—	—	—	—	474.0	351.0	407.2	390.6	407.0	—	—
EMG	494.1	200.0	465.0	1,710.0	765.0	—	—	—	395.4	628.5	—	—

Source: Information in this table is derived from detailed funding tables prepared by the House Committee on Appropriations.

Notes: Figures generally reflect supplemental appropriations and rescissions, but do not reflect scorekeeping adjustments. The account abbreviations are: WFM=Wildland Fire Management account total; PRE=Preparedness; SUP=Suppression; HAZ=Hazardous Fuels (FS) or Hazardous Fuel Reduction (DOI); REH=Rehabilitation (FS); BAR=Burned Area Rehabilitation (DOI); and EMG=Emergency appropriations. Subaccount values provided will not equate to total WFM value provided because there are other WFM line items not included in the table (e.g., joint fire sciences program).

- a. FY2013 reflects post-sequester appropriations.
- b. Current dollars were adjusted to constant 2013 dollars using the GDP index published by the Bureau of Economic Analysis in National Income and Product Accounts Table I.1.9, available at <http://www.bea.gov/iTable/iTable.cfm?ReqID=9&step=1#reqid=9&step=3&isuri=1&903=13>. An index for 2013 was also used for FY2014 constant dollar computations as a 2014 index was not available.
- c. Does not include state fire assistance or volunteer fire assistance funding under the FS State and Private Forestry account.
- d. The FS proposed to terminate this line item in FY2012 stating, "The type of work previously accomplished through this line item will continue to be carried out by the Integrated Resource Restoration line item."

Preparedness

Appropriations for preparedness are used to support efforts that assist with fire prevention and detection, equipment, training, and baseline personnel. The FS reports that the preparedness program “ensures agency capability to protect life, property, and natural resources while assuring an appropriate, risk informed and effective response to wildfires that is consistent with land and resource management objectives.”²² Examples of items funded under the FS preparedness subaccount include Web-based decision support tools, central management of aviation assets, and predictive service analysis.

For the last five years, both the FS and DOI preparedness subaccounts have received the largest or second-largest share of their total WFM appropriations during the annual appropriations process. There was an increase of close to 50% in the FS preparedness funding amount from FY2011 (\$673.7 million) to FY2012 (\$1,004.4 million). This was mostly due to a restructuring of the preparedness and suppression subaccounts which included shifting aviation charges and other charges to the preparedness subaccount. The funding level for the DOI preparedness subaccount has seen little fluctuation over the last five years.

Suppression

There are three tiers of WFM suppression funding: appropriations to the suppression subaccount (annual appropriations process), appropriations to the FLAME wildfire suppression reserve account (annual appropriations process), and emergency suppression (emergency appropriations legislation). This section of the report focuses on appropriations to the suppression subaccount. FLAME and emergency suppression appropriations are discussed in the emergency funding section. Annual suppression estimates contained in the President’s budget consider the 10-year suppression average. The 10-year suppression average is more fully explored in the “Related Issues” section.

Suppression subaccount appropriations are used primarily for wildfire response. The FS reports that funding from this subaccount is used to “efficiently suppress wildland fires on or threatening National Forest System lands and other Federal and non-Federal lands under fire protection agreements.”²³ DOI reports that wildfire response activities range from “intensive suppression when wildfires on public lands threaten communities, high value resources, or critical ecosystems, to monitoring wildfires in areas where burning accomplishes resource benefits or where it is too dangerous to place firefighters.”²⁴

From FY2008 to FY2011, the suppression subaccount received the greatest level of funding compared to all other FS subaccounts. However, the amount of FS suppression appropriations is now second to preparedness appropriations, due to the budget restructuring that occurred in FY2012.²⁵ Some items covered by the FS suppression subaccount are firefighter salaries, aviation asset operations, incident support function, and suppression resources for DOI incidents on a

²² U.S. Forest Service, *Fiscal Year 2014 Budget Justification*, April 2013.

²³ Ibid.

²⁴ U.S. Department of the Interior, *Budget Justifications and Performance Information Fiscal Year 2014 Wildland Fire Management*.

²⁵ A similar budget restructure was not found for DOI.

reciprocal non-reimbursement basis. The FS suppression subaccount also covers personnel and resources for the Burned Area Emergency Response (BAER) program.²⁶ For four of the last five years, the DOI suppression subaccount has received the largest share of appropriations for DOI WFM. Items covered by the DOI suppression subaccount include select personnel expenses above what is covered by the preparedness subaccount, temporary emergency firefighters, and aircraft flight operations and support.

Hazardous Fuels

The Forest Service's hazardous fuels appropriation and the Department of the Interior's hazardous fuel reduction appropriation are used to decrease fuel loads, or alter the arrangement of fuel loads, on federal lands to make fires less intense and more controllable. Appropriations for this subaccount are used for fuel reduction on federal lands and to treat high-priority areas in the wildland-urban interface (WUI).²⁷ More specifically, DOI reports that the hazardous fuel reduction program "removes or modifies vegetation to restore and maintain healthy, diverse ecosystems; reduces wildfire risks to communities and their values; reduces the risk of severe and potentially dangerous wildfire behavior; lessens post-wildfire damage; and limits the spread and proliferation of invasive species and detrimental pathogens."²⁸ Since 2008, the hazardous fuels subaccount has received the third-largest share of WFM appropriations for both agencies.

Emergency Funding

Emergency funds for WFM are typically appropriated through legislation that supplements the annual appropriations law. WFM emergency funds have usually been provided at the end of the fiscal year or at a time of severe wildfire activity. In general, bill or report language specifies how the emergency funds are to be used (e.g., for suppression, for state and private forestry activities). WFM emergency funds, including FLAME funds, have at times been at the same level or higher than some of the top-funded WFM subaccounts (e.g., preparedness, suppression) funded under the regular annual appropriation bills. A breakdown of emergency funds since 2008 is provided in **Table 6**.

For the purposes of this report, funding appropriated under the Federal Land Assistance, Management, and Enhancement (FLAME) Act of 2009 (P.L. 111-88) is considered a type of emergency funding.²⁹ FLAME is a reserve fund for suppression activities and is not technically listed as an emergency fund line item for WFM appropriations. However, FLAME funds may

²⁶ The objective of the BAER program is to determine the need for and to prescribe and implement emergency treatments on Federal Lands to minimize threats to life or property resulting from the effects of a fire or to stabilize and prevent unacceptable degradation to natural and cultural resources.

²⁷ For more information on WUI, see CRS Report RS21880, *Wildfire Protection in the Wildland-Urban Interface*.

²⁸ U.S. Department of the Interior, *Budget Justifications and Performance Information Fiscal Year 2014 Wildland Fire Management*.

²⁹ FLAME funds are to be used to cover the costs of large or complex fires, when amounts provided in the FS and DOI WFM accounts for suppression and emergency response are exhausted. The requirements are the same for the two accounts. Each Secretary may transfer funds from the FLAME fund into the respective WFM account, for suppression activities, upon a secretarial declaration. The declaration may be issued if the fire covers at least 300 acres or threatens lives, property, or resources, among other criteria. The conferees on the FY2010 bill stated their intent that the money in the FLAME funds, together with appropriations through the Wildland Fire Management accounts, should fully fund suppression needs and prevent borrowing funds from other programs.

only be used under certain conditions. DOI reports that the “FLAME fund is used for the most severe, complex, and threatening fires, and as a contingency reserve if the agencies exhaust their regular suppression funding due to an active fire season.”³⁰ The Secretary of the Interior declared that DOI conducted suppression operations on 19 wildfires on Interior land that were eligible for FLAME funding in FY2012.³¹ The FS reports the Secretary of Agriculture signed two declarations covering 61 fires that met the criteria required to be eligible for FLAME funds in FY2012.³² FY2014 and FY2013 may suggest that FLAME was not working as intended because Congress provided emergency appropriations for wildfire management in addition to amounts provided under FLAME. However, significant portions of emergency appropriations from FY2014 and FY2013 were used to repay accounts from previous years, which shift the timescale as to when the funding was needed. Additionally, the severity of the 2012 fire season would fall beyond most expectations for typical emergency wildfire management appropriation needs.

Table 6. WFM Emergency Funds, FY2008-FY2014
(millions of dollars)

	FY2008	FY2009	FY2010	FY2011	FY2012	FY2013	FY2014
FS Total	1,326.0	700.0	413.0	290.4	315.4	678.9	915.0
Emergency appropriations	1,326.0	700.0	—	—	—	379.9	600.0
FLAME	—	—	413.0	290.4	315.4	299.0	315.0
DOI Total	384.0	65.0	61.0	60.9	91.9	107.2	120.5
Emergency appropriations	384.0	65.0	—	—	—	15.5	28.5
FLAME	—	—	61.0	60.9	91.9	91.7	92.0
Total	1,710.0	765.0	474.0	351.3	407.3	786.1	1,035.5

Source: Annual agency budget justifications, conference agreements for select Interior appropriations laws, and detailed funding tables prepared by the House Committee on Appropriations.

Notes: FY2013 reflects post-sequester appropriations. Emergency appropriations for FY2013 and FY2014 include the additional funding to repay previous year wildfire accounts.

Related Issues

Wildfire Suppression Appropriation Calculations

WFM suppression appropriations are of considerable interest to Congress. This is partly because of the amount of funding allocated for WFM suppression, but also because of scrutiny about the accuracy of annual WFM suppression estimates provided to Congress. When WFM suppression estimates for a fiscal year provided by federal land management agencies fall short of what is needed, additional funds may have to be issued via emergency appropriations, or funds may have to be transferred from non-WFM suppression accounts, which may impact the performance outcomes of those non-WFM suppression accounts.

³⁰ U.S. Department of the Interior, *Budget Justifications and Performance Information Fiscal Year 2014 Wildland Fire Management*.

³¹ Ibid.

³² U.S. Forest Service, *Fiscal Year 2014 Budget Justification*, April 2013.

The FS recognizes that “fire suppression costs are skyrocketing and seriously jeopardizing [the FS’s] ability to fund [the FS] natural resource mission.”³³ The FS uses at least two methods to calculate wildfire suppression costs. A 10-year suppression average is used to estimate the outyear budget request for wildfire suppression.³⁴ The FLAME suppression calculation is used to estimate within fiscal year expenditures.

For at least the last two decades, the FS and DOI have estimated annual wildfire suppression outyear costs by using a 10-year suppression average. The FS reports the moving 10-year average calculation based on actual suppression obligations reported at the end of the fiscal year. Each end-of-year obligation is adjusted to constant dollars. Once an average is calculated, \$350.0 million is subtracted to account for an FY2012 budget restructure in which funding was transferred from the suppression subaccount to the preparedness subaccount.³⁵

FLAME requires the Secretaries of the Interior and Agriculture to submit to Congress a report periodically throughout the year that contains estimates of anticipated wildfire suppression costs.³⁶ This estimation is made using econometric models which include weather and climate variables.³⁷ For instance, the FS estimated that fire suppression costs for FY2014 will range from \$745.0 million to \$1.89 billion, with a median forecast of \$1.32 billion.³⁸ Further, the FLAME analysis for March 2013 indicates that from 2000 to 2011 annual observed FS wildfire suppression costs exceeded the FLAME forecasts seven times (2000, 2002, 2003, 2004, 2006, 2008, and 2011).³⁹ The same analysis indicates that from 2000 to 2011 annual observed DOI wildfire suppression costs exceeded the FLAME forecasts five times (2000, 2002, 2003, 2008, and 2011).⁴⁰

Potential Wildfire Suppression Funding Alternatives

Inadequate estimation of annual wildfire suppression funding can be disruptive to the congressional budget process and to the other responsibilities both the FS and DOI are mandated to achieve. Wildfire suppression funding estimates depend on a multitude of factors (e.g., weather, fuel load, nearby dwellings, access to wildfire site), and numerous reasons have been given as to why suppression estimates have at times not accurately forecast the needed suppression appropriations, with estimates typically underestimating suppression spending. Over the years, Congress and the executive branch have explored multiple options that could limit requests for additional suppression appropriations. Some cost-containment options include

³³ U.S. Forest Service, *The U.S. Forest Service - An Overview*.

³⁴ Outyear is the fiscal year following the year covered in a budget.

³⁵ Wildfire 10-year suppression average explanation provided by the FS in emails on April 2, 2013, and February 27, 2014.

³⁶ FLAME already requires the best available climate, weather, and other relevant data, and models and other analytical tools be used to estimate anticipated wildfire suppression costs.

³⁷ Email from the FS May 14, 2013.

³⁸ Forecast provided in an email from the FS on February 26, 2014.

³⁹ DOI. *Federal Land Assistance, Management and Enhancement (FLAME) Act Suppression Expenditures for Interior and Agriculture Agencies: FLAME March 2013 Forecasts for Fiscal Year 2013* (February 7, 2013).

⁴⁰ *Ibid.*; email from FS May 15, 2013.

- using an improved formula to better estimate wildfire suppression costs (e.g., a 5-year average, a weighted 10-year average),⁴¹
- using regression models to better estimate WFM suppression costs and non-biophysical policy remedies that might reduce wildfire suppression expenditures (e.g., guidelines about when it is appropriate not to aggressively suppress wildfires),⁴²
- increasing hazardous fuels reduction projects,⁴³ and
- requiring state and local governments, and private landowners in the WUI, to improve current WFM strategies and bear more of the firefighting costs.⁴⁴

Both Congress and the Administration have voiced concerns about rising wildfire suppression spending.⁴⁵ One wildfire suppression proposal introduced in the 113th Congress would treat larger wildfires as natural disasters, with a different funding structure than what is currently used (S. 1875; H.R. 3992). In general, the companion bills propose certain measures that may better organize the accounting and reporting framework for WFM suppression appropriations. Wildfire suppression is complicated, and the efficiency of resources used currently for wildfire suppression and the federal protocol for wildfire management both have an impact on wildfire suppression funding.

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⁴¹ U.S. General Accounting Office, *Wildfire Suppression: Funding Transfers Cause Project Cancellations and Delays, Strained Relationships and Management Disruptions*, GAO-04-612, June 2004.

⁴² Karen L. Abt, Jeffrey P. Prestemon, and Krista M. Gebert, "Wildfire Suppression Cost Forecasts for the US Forest Service," *Journal of Forestry*, June 2009; Geoffrey H. Donovan, Jeffrey P. Prestemon, and Krista Gebert, "The Effect of Newspaper Coverage and Political Pressure on Wildfire Suppression Costs," *Society and Natural Resources*, vol. 24, no. 8 (2011).

⁴³ S. 1479.

⁴⁴ Headwaters Economics, *The Rising Cost of Wildfire Protection*, June 2013.

⁴⁵ U.S. Congress, Senate Committee on Energy and Natural Resources, *Wyden, Crapo Introduce Bipartisan Wildfire Funding Reform Legislation*, 113th Cong., December 19, 2013; Coral Davenport, "Obama to Propose Shift in Wildfire Funding," *The New York Times*, February 22, 2014.