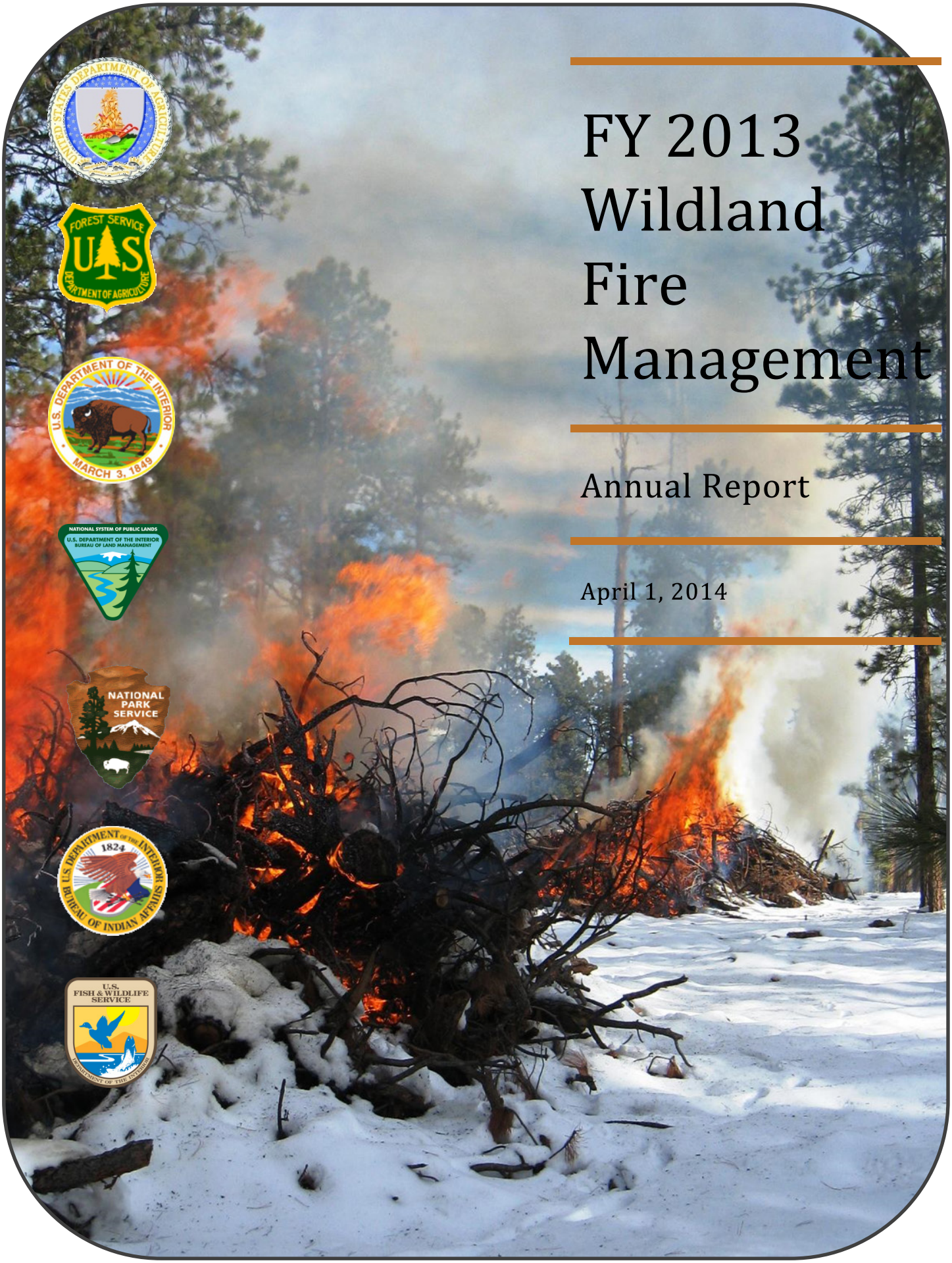

FY 2013 Wildland Fire Management

Annual Report

April 1, 2014

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Letter from the Directors

In 2013, the interagency wildland fire family lost 34 firefighters in the line of duty defending communities and protecting our cultural and natural resources from wildfire. These fatalities will go down in history as the third greatest number of wildland firefighter deaths since we began keeping these statistics in 1910. Our hearts go out to the families, co-workers, and friends of these brave men who gave the ultimate sacrifice while doing their jobs.

Every wildfire season millions of good decisions are made by thousands of good people. The events of this past season highlight the need for us to refocus; they underscore the need for continued, constant vigilance in our work; and for continued learning, continued after action reviews, and continued attention to doctrine, policy, and risk management. We must learn from these tragedies to ensure they are not repeated. We owe it to those who have gone before us, to ourselves, and to our families who wait at home for our safe return at the end of each shift!

In this Fiscal Year 2013 Wildland Fire Management Annual Report, we, the USDA Forest Service and the Department of the Interior wildland fire management bureaus (the Bureau of Indian Affairs, Bureau of Land Management, Fish and Wildlife Service, and National Park Service), provide an overview of the fire season, outline the challenges faced, and the successes accomplished to meet our diverse missions. We also take a look forward to 2014.

Each year brings with it new challenges and every year, our employees and partners rise to the occasion to meet the expectations of the American people.

We are proud of our employees; applaud their dedication to work. We could not be successful without them. It is our hope that this report will illustrate the good work we have done throughout the year.

Tom Harbour, Director
USDA - Forest Service
Fire and Aviation Management

Jim Douglas, Director
U. S. Department of the Interior
Office of Wildland Fire

Irrespective of whether we work for the local fire department, the State, or Federal government, when a death or serious accident occurs within our firefighting family, it is devastating and takes its emotional toll on each and every one of us.—Tom Harbour, Director, Fire and Aviation Management

Each year brings with it new challenges and every year, our employees and partners rise to the occasion to meet the expectations of the American people—Jim Douglas, Director, Office of Wildland Fire

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The Year in Review

Fire Season Summary

The first three months of 2013 were colder than normal across most of the southwestern quarter of the nation while the rest of the United States was warmer than normal. Winter precipitation was generally below normal in the West and above normal in the East. The West Coast states and parts of the northern Rockies were mainly drier than normal with a few areas of Oregon, Montana and the Dakotas much below normal. Drought conditions east of the Mississippi River were greatly reduced, leaving only patches of moderate to severe drought from the Carolinas to Florida. Most of the western two-thirds of the U. S. remained in moderate to severe drought with extreme to exception drought conditions over much of the Plains and parts of the interior West.

Extreme temperatures and precipitation across the nation were experienced in March through May. Late season snows were seen in the Plains and Midwest, while dry and warm conditions continued in the West. Frequent winter storms crossed the Northwest along the Canadian border before dropping south through the Midwest and Mississippi Valley, bringing wet spring conditions from much of the central part of the nation.

Record precipitation fell in Iowa, Wisconsin, Illinois, North Dakota, Michigan, and Minnesota. In the West, storms largely bypassed much of the region, leaving dry conditions. New Mexico experienced its second driest spring, while California recorded its eighth driest. Snowpack conditions painted a very stark picture for water supplies across the West. Except for the Cascades and the northern and central Rockies, much of the West had less than 50 percent of normal to above normal snowpack at the start of May. Large areas of the Southwest, the Great Basin, and most of California had less than 25 percent heading into the summer months. Arizona, eastern New Mexico, and much of Nevada were snow-free by May 1.

The spring of 2013 saw significantly drier fuel conditions develop in New Mexico, Arizona, Utah, Colorado, and southern California; and the Energy Release Components[1] reached above the 90th percentile. Exceptional dryness developed in the finer vegetation of the southern and central Great Basin which led to less dense and less continuous vegetation that hampered the ability of the landscape to carry fire.

The summer pattern over the U. S. was largely dominated by above-normal temperatures over the West and below normal over most of the East. Twelve (12) states experienced their warmest summers in 119 years, including Idaho, Utah, Oregon, Massachusetts, California, Nevada, Wyoming, New Mexico, Connecticut, Washington, Rhode Island, and Delaware.

The West started very dry but a very active monsoon quickly brought significant rains to the Southwest. Meanwhile, wet conditions remained firmly entrenched across the East. Only pockets of below normal rainfall occurred in parts of the central Rockies, the

2013 Fire Season Facts

The 2013 fire season was well below normal for the number of reported wildfires and number of acres burned.

Based on the annual 10-year average, three Geographic Areas reported above-average fire occurrences in 2013 including Alaska, Northern California, and the Northwest.

Southern California was the only Geographic Area with above-average acres burned (138 percent). All other Geographic areas were below average.

Over 2,100 structures were destroyed by wildfires in 2013. This number is below the annual average of nearly 2,700. California accounted for the highest number of structures lost.

Thirty-four wildland firefighters lost their lives in the line of duty during 2013. This number is double the 10-year average of 17.

[1] The Energy Release Component (ERC) is an NFDRS (National Fire Danger Rating System) index related to how hot a fire could burn. It is directly related to the 24-hour, potential worst case, total available energy (BTUs) per unit area (in square feet) within the flaming front at the head of a fire.

central Plains, the Midwest, and the central western Gulf states; most of the remainder of the nation experienced near normal, to above-normal precipitation.

Drought continued across much of the central and western states. The area affected by the worst drought conditions decreased significantly across the central and southern Plains and the southern Rockies. Rainfall from Tropical Storm Andrea in early June effectively mitigated all drought conditions along the East Coast, but hot, dry weather over the Midwest produced moderate to severe drought conditions across most of the upper Midwest. Conditions worsened over much of the northern Rockies, the Great Basin, and California.

Fuel conditions across southwest Oregon and northern California approached historic conditions reminiscent of 2002 and 2008 fire seasons setting the stage for a significant fire outbreak resulting from dry lightning storms on July 26. Significant dry conditions persisted in Alaska creating a much later than normal fire season which continued well into August. The Black Forest Fire in Colorado claimed two lives and destroyed nearly 500 homes.

In August dry air moved into interior portions of the west including eastern Oregon, Washington, Idaho, and western Montana which amplified the already dry fuel conditions. The condition set the stage for significant fires to occur throughout August in these areas.

August also continued with very dry conditions across California and more significant fires began to develop. Fuels across the state continued to dry enough to support large fires into the fall but did not necessarily have the weather conditions to promote rapid fire growth.

In early September fuels made a rapid transition to a much more moist state across the northwestern quarter of the United States. This led to greatly reduced significant fire potential and changed the focus of fire concern to southern and central California into October. Weather events necessary to create significant events, however, were rare.

All-Hazards Incident Support

The 2013 Atlantic hurricane season was relatively quiet compared to 2012. There were 12 named storms in the Atlantic basin as of October 25, 2013. Two storms, Humberto and Ingrid, reached hurricane strength and were both a Category 1 on the Saffir-Simpson scale[2]. One tropical storm, Andrea, made landfall on June 5 in the United States, while Tropical Storm Dorian briefly skirted the southeastern coast of Florida in July. No Type 1 or Type 2 incident management teams were assigned to hurricane incidents in 2013.

A Type 1 incident management team was assigned in September to the search and rescue of a missing wildland firefighter on the Holiday Incident in New Mexico.

Two Type 2 incident management teams were assigned to provide assistance to several Colorado counties following severe flooding in September.

Member of the Colorado National Guard assisted the Incident Management Team with evacuations in Boulder County, Colorado, during floods of 2013

[2] The Saffir-Simpson Hurricane Wind Scale is a 1 to 5 rating based on a hurricane's sustained wind speed. This scale estimates potential property damage.

Financial Highlights

FY 2013 Wildland Fire Management Appropriation

The United States Department of Agriculture (USDA), Forest Service (FS) and United States Department of the Interior's (DOI) wildland fire management programs were funded for fiscal year (FY) 2013 by the Consolidated and Further Continuing Appropriations Act, 2013, signed into law on March 26, 2013, as Public Law 113-6.

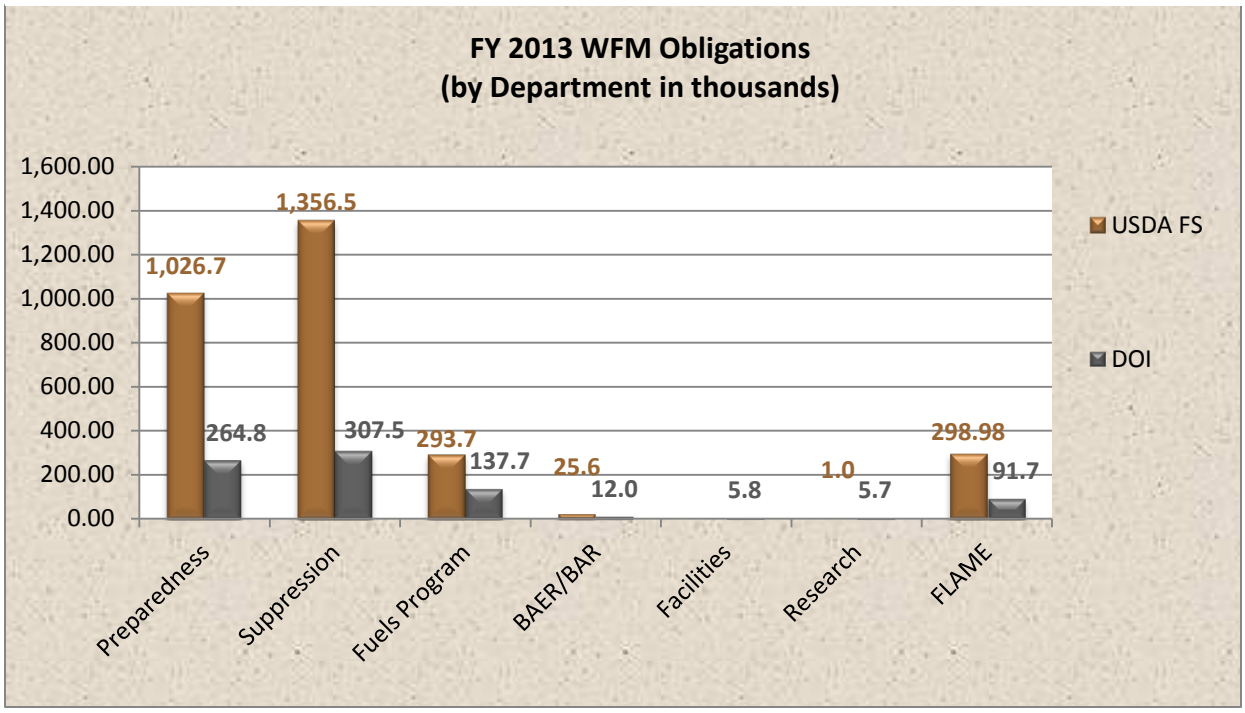
The FY 2013 Wildland Fire Management Appropriation provided funding to maintain sufficient wildland firefighting resources for the wildfire season, including over 13,500 firefighters, 400 firefighting aircraft, 700 engines, and 200 other pieces of heavy equipment including dozers, water tenders, etc.

The Appropriation funding was based on the 10-year suppression average and included funding for preparedness activities such as the fuels program, fire prevention programs; post-fire rehabilitation and restoration programs; and other program components that meet the mission of the federal wildland fire management program.

The Federal Land, Management and Enhancement (FLAME) Wildfire Suppression Reserve Fund was established in the 2010 Appropriations Action to fund more severe or complex fires. The fund serves as a contingency to suppression funds. In 2013, $91.7 million was transferred to the suppression account for the Department of the Interior and $298.98 million for the Department of Agriculture.

FY 2013 Wildland Fire Management Obligations[3] (in millions)

Figure 1: FY 2013 Wildland Fire Management Obligations (by Department in Millions)



[3] In Figure 1, Research obligation for Forest Service reports the combined Research and Development and Joint Fire Science Program obligations rounded to the nearest thousands.

Distribution of Interior Obligations (in millions)

Bureau	Preparedness	Suppression	Fuels Program	BAR	BAER[4]	Facilities
BIA	49.3	63.6	26.1	.5	(1.3)	2.0
BLM	153.3	268.2	66.1	9.0	(25.8)	2.8
FWS	26.1	14.1	20.1	1.4	(.1)	.1
NPS	31.0	53.1	21.0	1.1	(1.5)	.6
OS	6.5	.2	4.3	0	0	0
Total	**266.2**	**399.2**	**137.6**	**12.0**	**(28.7)**	**5.5**

Distribution of Agriculture Obligations (in millions)

Agency	Preparedness	Suppression	Fuels Program	BAER	Research/Development	JFSP
USFS	1,026.7	1,356.5	293.7	25,600	.7	.2

Fiscal Year Comparison of Obligations (in millions)

Fiscal Year	Agency	Preparedness	Suppression	Fuels Program	BAER/ BAR	Facilities	Research & Development	Joint Fire Science
2013	USFS	1,026.7	1,356.6	293.7	25.6	0	.7	.2
	DOI	264.8	307.5	137.7	(28.7[5])/12.0	5.8	5.7	
2012	USFS	1,013.2	1,436.6	295.3	48.2	0	21.9	4.7
	DOI	276.5	373.8	183.0	36.8	6.1	6.0	
2011	USFS	698.7	1,414.4	343.6	48.1	0	23.5	4.6
	DOI	282.7	399.0	183.3	33.2	6.1	6.0	
2010	USFS	702.4	897.7	348.2	10.8	0	24.4	5.6
	DOI	290.5	258.8	206.2	20.3	6.1	6.0	
2009	USFS	685.9	1,018.3	541.6	13.8	0	24.4	4.8
	DOI	281.8	335.2	203.1	20.3	6.1	6.0	
2008	USFS	632.7	1,458.8	364.5	33.7	0	21.4	1.3
	DOI	276.5	289.8	199.6	24.2	6.1	5.9	
2007	USFS	681.2	1,374.0	310.6	28.8	0	26.9	
	DOI	274.8	249.2	199.8	22.8	7.7	4.0	
2006	USFS	632.2	1,501.0	274.3	13.1	0	22.6	
	DOI	268.8	230.7	208.1	24.1	7.7	5.9	
2005	USFS	676.1	690.0	294.5	9.6	0	21.7	
	DOI	259.0	218.4	201.4	24.0	12.2	7.9	
2004	USFS	759.3	726.0	284.2	25.6	0	12.7	
	DOI	254.1	193.0	183.9	24.2	12.2	7.9	

[4] DOIs BAER costs of $28.7 million for FY 2013 are included in the total Suppression Obligations reported.
[5] The BAER program for DOI is included in the total Suppression Obligation figure.

2013 Wildland Fire Statistics

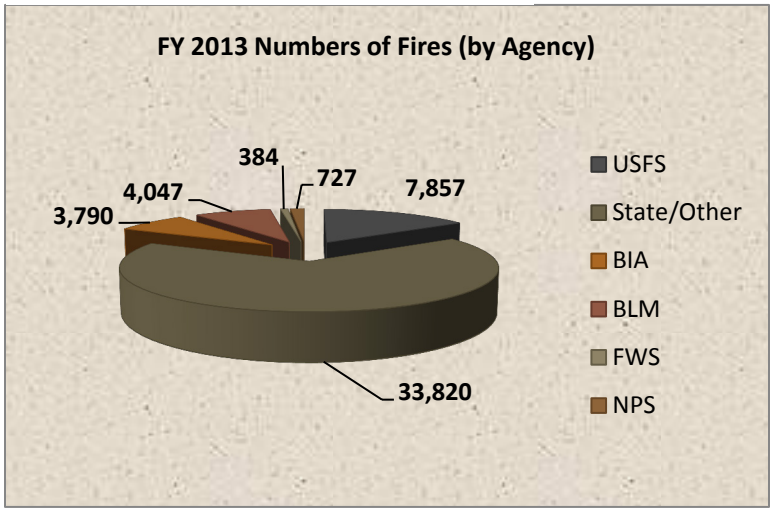
Photo Credit: Tami Heilemann

The magnitude of a wildfire season has historically been measured against the 10-year average for numbers of wildfires reported and acres burned across the United States. In 2013, wildfires reported, acres burned, and structures burned all remained below the 10-year average. Firefighter fatalities however exceeded the 10-year average of 16 by more than double, when 34 wildland firefighters lost their lives in the line of duty.

Numbers of Fires and Acres Burned[6]

The 2013 fire season was well below normal for number of wildfires reported. In 2013, nearly 51,000 wildfires were reported nationally or 65 percent of the 10-year average. In 2012, there were just under 68,000 wildfires reported.

Figure 2: FY 2013 Numbers of Fires (by Agency)



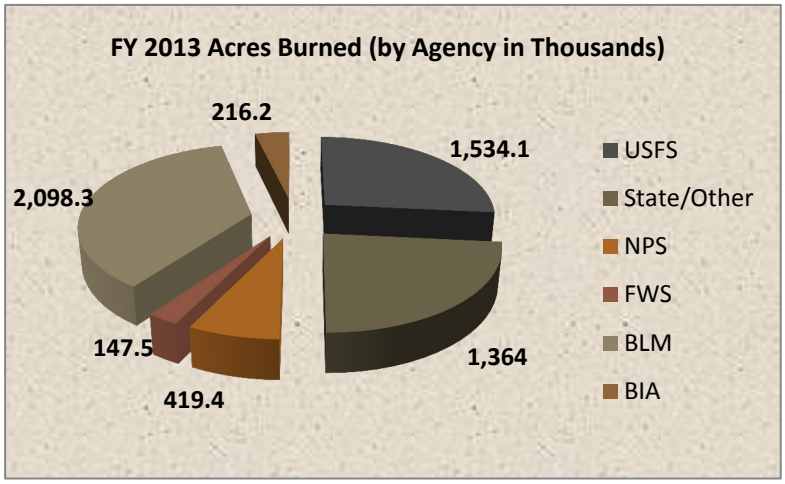
[6] Numbers of fires and acres burned statistics cited in this section of the report were obtained from the WFMI for BIA, BLM, and NPS; from FMIS for FWS; Firestat for USFS, and the NICC 2013 Wildland Fire Summary and Statistics Annual Report for State/Other data.

10-year Comparison of Numbers of Fires (by Agency, by Fiscal Year)

Fiscal Year	BIA	BLM	FWS	NPS	STATE/OTHER	USFS	TOTAL
2013	**3,790**	**4,047**	**384**	**727**	**33,820**	**7,857**	**50,625**
2012	6,412	4,543	430	755	51,129	7,566	70,835
2011	4,897	4,201	408	911	59,527	7,970	77,914
2010	4,311	3,729	292	688	58,324	6,697	74,041
2009	5,116	4,159	339	775	63,307	8,145	81,841
2008	5,463	4,024	376	751	64,140	7,603	82,357
2007	5,490	6,757	481	896	69,128	9,186	91,938
2006	8,695	7,143	556	1,013	74,305	11,429	103,141
2005	6,306	5,400	549	771	50,727	7,490	71,243
2004	5,121	5,152	466	949	49,413	9,076	70,177
10-Year Avg.	**5,560**	**4,915**	**428**	**824**	**57,382**	**8,302**	**77,411**

The number of acres burned in 2013 was over 4.3 million or 59 percent of the national 10-year average. Alaska led the nation with 1.3 million acres burned. The Eastern Great Basin burned the most acres in the lower 48 states (nearly 768,000).

Figure 3: FY 2013 Acres Burned (by Agency in Thousands)



10-year Comparison of Numbers of Acres Burned by Agency (in Thousands, by Fiscal Year)

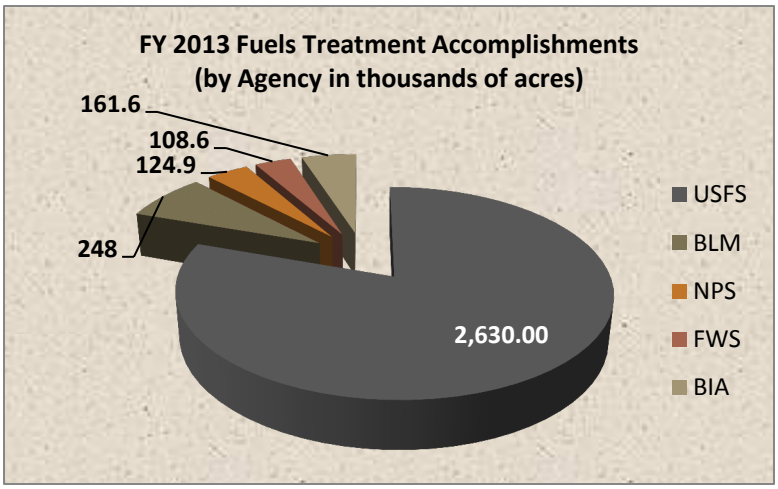
Fiscal Year	BIA	BLM	FWS	NPS	State/Other	USFS	TOTAL
2013	**216.2**	**2,098.3**	**147.5**	**419.4**	**1,363.8**	**1,534.1**	**5,779.3**
2012	901.7	5,026.3	96.4	316.1	2,205.7	3,328.5	11,874.7
2011	483.9	1,847.5	455.9	1,015.7	5,387.7	1,965.9	11,156.6
2010	659.3	1,908.2	248.4	192.4	1,803.4	378.9	5,190.6
2009	764.3	3,503.9	612.0	386.8	3,012.6	883.4	9,163.0
2008	234.7	1,187.4	123.4	172.8	3,373.7	2,228.6	7,320.6
2007	260.7	3,536.2	606.2	166.5	3,601.4	3,319.9	11,490.9
2006	577.0	3,977.8	243.9	678.9	4,883.9	2,748.9	13,110.4
2005	1,866.3	7,010.5	1,957.3	707.7	2,150.8	1,151.6	14,844.2
2004	78.3	6,698.0	1,828.5	542.6	4,030.1	1,230.9	14,408.4
10-Yr Avg.	**604.3**	**3,679.4**	**631.9**	**459.9**	**3,181.3**	**1,872.1**	**10,433.9**

2013 Fuels Program

The purpose of the Departments' fuels management program is to improve the integrity and resilience of our forests and rangelands, contribute to community adaptation to fire, and improve the ability to safely and appropriately management wildfire. The agencies' programs are aligned with the three goals of the National Cohesive Wildland Fire Management Strategy that support healthier, resilient ecosystems, provide many benefits to society, including clean water, scenic and recreational values, wood products, and biodiversity, and assist in the safe and effective response to wildfire.

The fuels management program funds fuels treatments for the highest priority projects, in the highest priority areas, with an emphasis on protecting communities and their values.

Figure 4: FY 2013 Fuels Treatment Accomplishments (by Agency in thousands of acres)



10-Year Comparison of Fuels Treatment Accomplishments (by Agency in thousands)[7]

Fiscal Year	BIA	BLM	FWS	NPS	BOR	USFS	TOTAL
2013	**161.6**	**248.0**	**108.6**	**124.9**		**2,630.0**	**3,273.1**
2012	166.6	468.0	206.9	158.5		2,620.0	3,620.0
2011	232.4	400.8	155.9	201.0	.100	2,780.0	3,770.2
2010	293.9	436.0	379.4	195.5		3,260.0	4,564.8
2009	280.1	533.4	432.9	252.7	.055	3,600.0	5,099.2
2008	239.1	452.2	431.0	137.0		3,040.0	4,299.3
2007	214.4	495.9	413.3	209.9		3,030.0	4,363.5
2006	187.7	419.4	373.9	116.6		2,550.0	3,647.6
2005	193.6	503.0	415.6	154.0		2,720.0	3,792.6
2004	191.9	492.2	445.0	131.8		2,560.0	3,820.9
10-yr Avg.	**216.1**	**454.9**	**337.3**	**173.2**	**.016**	**2,879.0**	**4,025.1**

[7] Fuels Treatment Accomplishment information was obtained from the National Fire Plan Operations and Reporting System (NFPORS)

Fatalities and Non-fatal Serious Accidents

In calendar year (CY) 2013, there were a total of 34 wildland firefighter fatalities in the line of duty. This figure is double the 10-year average of 16, and the third highest number of wildland firefighter fatalities reported since 1910. Nine of the 34 deaths occurred in support of federal incidents.

Photo Credit: Kari Greer Granite Mountain Hotshots

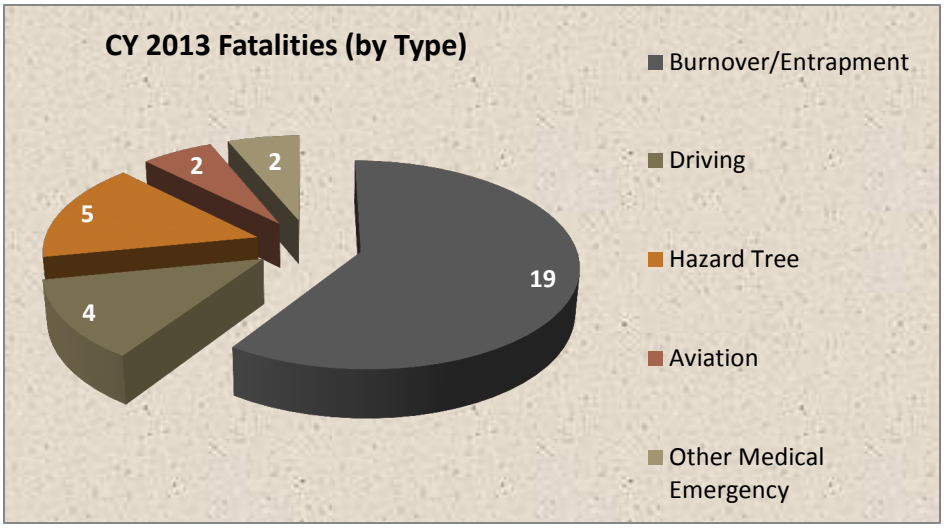
The grimmest numbers show the greatest impact. In calendar year (CY) 2013, the wildland fire community lost a total of 34 firefighters in the line of duty—more than doubles the 10-year average of 16; and the third highest number reported since 1910.

CY 2013 Federal Fatal Accidents (by Agency)[8]

Date	Incident Name/Jurisdiction	Activity	Agency	Type of Accident	Number of People
6/10	Saddle Back Fire/Modoc NF, CA	Initial Attack	FS	Hazard Tree; Firefighter was struck by a falling limb	1
7/08	Pardee Fire/BLM-ID	Dozer Operation	BLM	Medical Emergency; Heart Attack	1
7/24	Northern Pueblos Agency/Ohkay Owingeh, NM	Training/Work Capacity Test	BIA	Medical Emergency; Heart Attack	1
8/01	Fire 398/Deschutes NF, OR	Felling Operation	FS	Firefighter struck by top of tree	1
8/06	Big Windy Complex/BLM-OR	Driving	BLM	Water tender rollover accident	1
8/10	Grassy Mountain Fire/BLM-OR	Dozer Operation	BLM	Medical Emergency; Heart Attack	1
8/25	Nabob Fire/Siskiyou NF, CA	Rehab Operation	FS	Medical Emergency	1
8/30	Fire Report/Santa Fe, NM	Driving	FS	ATV crash responding to incident	1
9/27	Jump Spot/Smith's Prairie, ID	Smoke Jumping	BLM	Parachute failed to deploy	1
Total			**USDA–4 DOI–5**		**9**

[8] Statistics for Fatality and Serious Non-Fatal Accident charts and tables were obtained from the respective year's National Wildfire Coordinating Group (NWCG), Risk Management Committee Annual Safety Gram.

Table6: CY 2013 Fatalities (All Agencies and Types)

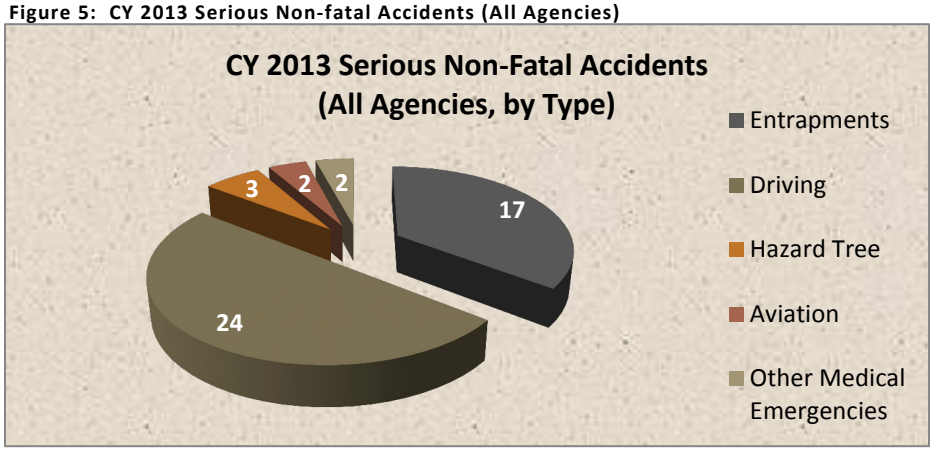


Fatal Accidents (All Agencies, by Type)

Fiscal Year	Agency	Burnover/ Entrapment	Driving	Hazard Tree	Aviation	Other Emergency	Total
2013	USFS	0	1	2	0	1	4
	Interior	0	1	0	1	3	5
	State/ Other	19	3	0	0	3	25
2013 Total		**19**	**5**	**2**	**1**	**7**	**34**
2012	USFS	0	0	0	0	1	4
	Interior	0	1	1	2	0	4
	State/ Other	0	1	0	4	5	10
2012 Total		**0**	**2**	**1**	**6**	**6**	**15**
2011	USFS	0	0	0	0	0	0
	Interior	0	0	0	0	2	2
	State/ Other	4	2	1	0	2	9
2011 Total		**4**	**2**	**1**	**0**	**4**	**11**
2010	USFS	0	0	0	0	0	0
	Interior	0	0	0	0	0	0
	State/ Other	0	3	0	0	5	8
2010 Total		**0**	**3**	**0**	**0**	**5**	**8**
2009	USFS	0	0	0	4	0	4
	Interior	0	0	1	1	0	2
	State/ Other	0	3	0	1	5	9
2009 Total		**0**	**3**	**1**	**6**	**5**	**15**

Fatal Accidents (All Agencies, by Type) – Continued							
Fiscal Year	Agency	Burnover/ Entrapment	Driving	Hazard Tree	Aviation	Other Emergency	Total
2008	USFS	0	1	0	9	0	10
	Interior	0	0	1	1	0	2
	State/Other	1	5	0	4	3	13
2008 Total		**1**	**6**	**1**	**14**	**3**	**25**
2007	USFS	0	2	0	1	0	3
	Interior	0	0	0	0	0	0
	State/Other	0	2	1	0	3	6
2007 Total		**0**	**4**	**1**	**1**	**3**	**9**
2006	USFS	5	0	0	6	1	12
	Interior	1	0	0	0	0	1
	State/Other	1	4	1	8	4	11
2006 Total		**7**	**4**	**1**	**8**	**4**	**24**
2005	USFS	0	0	0	3	0	3
	Interior	0	0	0	0	0	0
	State/Other	1	3	1	0	4	9
2005 Total		**1**	**3**	**1**	**3**	**4**	**12**
2004	USFS	0	1	0	1	1	3
	Interior	0	0	1	1	0	2
	State/Other	1	5	0	1	8	15
2004 Total		**1**	**6**	**1**	**3**	**9**	**20**
10-yr Avg.		**4**	**4**	**1**	**4**	**5**	**17**

Figure 5: CY 2013 Serious Non-fatal Accidents (All Agencies)



Serious Non-Fatal Accidents by Agency (2004 – 2013)

Fiscal Year	Agency	Burnover/ Entrapment	Driving	Hazard Tree	Aviation	Other Emergency	Total
2013	USFS	0	4	1	0	2	7
	Interior	0	2	0	0	4	6
	State/Other	1	0	0	0	0	1
2013 Total		**1**	**6**	**1**	**0**	**6**	**14**

Fiscal Year	Agency	Burnover/ Entrapment	Driving	Hazard Tree	Aviation	Other Emergency	Total
2012	USFS	9	0	1	4	1	15
	Interior	7	1	3	0	1	12
	State/Other	18	11	3	0	3	35
2012 Total		**34**	**12**	**7**	**4**	**5**	**62**
2011	USFS	13	11	1	0	3	28
	Interior	2	3	0	0	0	5
	State/Other	24	2	0	0	0	26
2011 Total		**39**	**16**	**1**	**0**	**3**	**59**
2010	USFS	5	0	0	0	5	10
	Interior	2	0	2	0	4	8
	State/Other	12	4	2	0	4	22
2010 Total		**19**	**4**	**4**	**0**	**13**	**40**
2009	USFS	1	9	2	0	4	16
	Interior	12	0	2	0	3	17
	State/Other	24	13	1	0	6	44
2009 Total		**37**	**22**	**5**	**0**	**13**	**77**
2008	USFS	4	10	2	4	3	23
	Interior	0	0	4	0	3	7
	State/Other	18	35	0	0	13	66
2008 Total		22	45	6	4	19	96
2007	USFS	21	22	3	0	2	48
	Interior	1	5	0	0	1	7
	State/Other	33	9	0	0	5	47
2007 Total		55	36	3	0	8	102
2006	USFS	13	16	0	0	0	29
	Interior	22	11	0	0	6	39
	State/Other	23	6	0	0	0	29
2006 Total		**58**	**33**	**0**	**0**	**6**	**97**
2005	USFS	5	0	0	0	0	5
	Interior	3	0	0	0	0	3
	State/Other	6	7	0	0	0	13
2005 Total		**14**	**7**	**0**	**0**	**0**	**21**
2004	USFS	0	1	0	1	1	3
	Interior	0	0	1	1	0	2
	State/Other	1	5	0	1	8	15
2004 Total		**1**	**6**	**1**	**3**	**9**	**20**

Major Agency Program Initiatives

Joint Programs (USDA and USDOI)

National Cohesive Wildland Fire Management Strategy

The National Cohesive Wildland Fire Management Strategy (Cohesive Strategy), including *The National Strategy: The Final Phase in the Development of a National Cohesive Wildland Fire Management Strategy,* builds off of three years of effort and public input, and is built entirely on existing authority.

The National Strategy, as strategic national direction, sets into motion collaboration in the context of existing programs, policies, and prioritization of resources. The national strategy is not prescriptive in deciding which options to apply locally or regionally, instead it provides a set of spatially explicit national thematic priorities and guidance intended to provide consistent national direction for the cascade of decisions that occur at multiple scales.

The completion of *The National Strategy* and the companion National Action Plan represent completion of the entire Cohesive Strategy effort initiated in 2009. The completion of the planning, analyses, and reporting is a significant accomplishment, though this accomplishment represents more of a beginning than an endpoint as implementation toward the vision begins.

Quadrennial Fire Review

The purpose of the Quadrennial Fire Review (QFR) is to project likely conditions 10 to 20 plus years in the future that will present the greatest challenges for wildland fire management; then, set a long-term strategic course to address those future conditions and threats. The 2014 QFR will focus on completing three main objectives: (1) a thorough review and documentation of actions and outcomes that have occurred as a result of the previous QFRs; (2) identifying the most significant long-term wildland fire management challenges through assessing emerging issues and future threats the nation faces; and (3) through projecting potential future scenarios, the QFR will highlight areas to consider realignment of programs, strategies, capabilities and the work force to address those challenges, and threats. The QFR will also set the stage for the next mandated revision of the National Cohesive Wildland Fire Management Strategy (CS). The QFR is the long-term vision; the CS is the roadmap to help us achieve that vision.

Work on the QFR began during FY 2013 and will continue into FY 2014.

Wildland Fire Information and Technology

The Department and its bureaus have combined with USFS to provide a unified interagency oversight for wildland fire management information and technology projects, programs, and data sources. This interagency IT coordination allows staff skills and expertise to be shared across multiple projects and results in less duplication in staff and duplicative IT systems, leverages shared funding, and results in better coordination of desired business needs across agencies.

Aviation Program

The Forest Service had no reportable aviation accidents in FY 2013. This marks three consecutive years where the Forest Service Aviation program met its goal of zero accidents.

The Forest Service Aviation program logged more than 70,000 hours in flight during FY 2013 which is slightly above the 10-year average of 69,648 flight hours. The primary mission of the program is to support natural resource program through a variety of means, including, but not limited to:

- aerial delivery of firefighters by parachute, rappel rope, or on site landing;
- air tactical command and control;
- surveillance, reconnaissance, and intelligence gathering;
- infrared detection and mapping;
- aerial delivery of fire retardant and water;
- passenger transport for firefighting and resource missions;
- administrative flights;
- research;
- forest rehabilitation;
- forest health protection (aerial surveys, application and photography);
- law enforcement support; and
- aerial photography.

The Forest Service utilized approximately 500 aircraft in FY 2013. These included both government-owned and leased aircraft but mostly, contracted aircraft. The Forest Service owns and operates 23 aircraft (20 fixed-wing and 3 helicopters) and leases/operates 14 aerial supervision fixed-wing aircraft.

In FY 2013, the Forest Service contracted for 7 Next Generation Airtankers, which provided increased performance and abilities for aerial firefighting. Next Generation airtankers fly faster and carry more fire retardant than the airtankers in the existing fleet. They are turbine powered, can carry over 3,000 gallons of retardant, and have a cruise speed of at least 300 knots when fully loaded.

Cooperative Fire Program

The Cooperative Fire Program has two main components, the State Fire Assistance (SFA) program and the Volunteer Fire Assistance (VFA) program. The SFA program assists several national initiatives such as Firewise and the Smokey Bear campaign. The program also provides funding to the state agencies for a variety of activities such as wildfire response, coordination and delivery, compliance with national safety and training standards, deployment to Federal wildfires and other emergency situations, hazard assessments and fuels treatments projects, and public education. In FY 2013, nearly 12,000 communities received SFA grants from the Forest Service to build firefighting capacity.

The Volunteer Fire Assistance (VFA) program is administered by the state forestry agencies through the distribution of 50/50 cost-sharing grants to local fire departments in rural communities. The program's main goal is to provide Federal financial, technical and other assistance for the organization, training and equipping of rural fire departments with a population of 10,000 or less. In FY 2013, the Forest Service provided grants to over 10,000 communities.

Federal Excess Personal Property Program

The Federal Excess Personal Property (FEPP) program is a Forest Service sponsored program that allows the loan of Forest Service-owned property, including much-needed equipment and supplies, to state foresters to assist state and rural agencies and volunteer firefighters in preparedness for suppression and pre-suppression missions on Federal, state, and community lands. The program provides items from fire hoses to heavy equipment, thereby, allowing substantial savings to the taxpayers. State foresters and the Forest Service have mutually participated in the FEPP program since 1956.

Cloquet Area Fire District, Cloquet, Minnesota, Mobile Training Tower is the only one of its kind in the state and one of only ten units nationwide. The training trailer and tower enable CAFD to provide a fire training academy environment for all aspects of basic and advanced firefighter training.

Currently, the inventory property value exceeds $1 billion with over 130 operable aircraft and more than 30,000 items on Federal inventory, including close to 20,000 vans, trucks, and trailers. In FY 2013, over 29 million dollars of property items were acquired by 37 state cooperators. The most commonly acquired items were trucks, trailers, tanks, generators, and pumps to assist firefighters on wildland and brush fires. Many states also acquire tools, building and office supplies, clothing, boots, and field gear to help support their firefighting program.

Vehicles are often modified and used as tenders, tankers, first response vehicles, or command vehicles. Smaller trailers are normally issued to fire departments while large trailers are used to transport equipment to and from the state facilities. Heavy equipment is a popular item for road maintenance and for constructing fire line. Forklifts are acquired to support the state warehouses and load and unload conveyances. Several states have Fire boats for the purpose of surveillance but they can be used for search and rescue when needed. Common durable items such as pumps, tanks, and small generators (with a value less than $5,000) are typically acquired to be placed onto vehicles or trailers. Consumable, low-dollar property items include vehicle and aircraft parts, blankets, boots, gloves, hoses, hand tools, office equipment, and construction materials. Currently, all 50 States and five territories participate in the FEPP program.

Department of Defense Firefighter Property Program

To Federal Firefighter Property (FFP) program was started in March of 2006. Through the FFP program states are afforded the opportunity to acquire title to excess military equipment; then, assign that equipment to rural fire departments. The Department of Defense (DOD) authorized the Forest Service FEPP program to manage the transfer of DOD property through a Memorandum of Agreement.

The major difference between the FFP program and the FEPP program is the ownership of the items acquired. All items acquired through the FEPP program remain the property of the Forest Service and are loaned to the recipient agency, while items acquired through the FFP program belongs to the recipient. The FFP program's assets are screened at a higher level, therefore, making better quality and larger quantities of property available to the firefighting agencies. The program also acquires items for emergency services such as search and rescue, hazardous material spills, and emergency medical services in addition to firefighting, making it of more benefit to participating agencies. These functions often fall within the firefighting agencies' responsibilities but are not applicable to the FEPP program.

Nicknamed the "Beast" by the Huntington (AR) Fire Department, this 1985 M-936-A2 military truck was converted into a 2,000 gallon tanker (brush truck), with a front nozzle. This truck can also supply two attach lines to be used as a pumper. All controls are mounted inside the cab so when arriving on the scene the driver can begin spraying water without stopping the truck or leaving the cab.

Currently, 39 states participate in the FFP program—participants include the states of Alabama, Alaska, Arkansas, Colorado, Connecticut, Florida, Georgia, Hawaii, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maine, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Montana, Nebraska, Nevada, New Jersey, North Carolina, North Dakota, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, South Carolina, South Dakota, Texas, Virginia, Washington, West Virginia, and Wyoming.

In 2013, over $60 million in equipment was distributed to 32 states. Through FFP, state cooperators acquired more than 500 vehicles in 2013 with an original acquisition cost of over $35 million. Vehicles are refurbished and equipped with pumps and generators to assist in rural and wildland firefighting. Heavy equipment, trailers, all-terrain vehicles, vehicle and aircraft parts, tools, blankets, and hose are common items acquired in this program.

Department of the Interior

The Department of the Interior Risk-Based Fuels Management Program

The Department of the Interior's hazardous fuels program has been redefined as the Department's Risk-Based Fuels Management Program. The purpose of the fuels program is to improve the integrity and resilience of the forests and rangelands, contribute to community adaptation to fire, and improve the ability to safely and appropriately respond to wildfire. The agencies' programs are aligned with the three goals of the National Cohesive Wildland Fire Management Strategy. Fuels treatments do not eliminate fire from our landscapes; however, they do result in better outcomes on the land. More resilient, healthier ecosystems provide many benefits to society, including clean water, scenic, and recreation values, wood products, and biodiversity. Communities are better able to withstand wildfire and treatments provide safer conditions and more strategic options for firefighters.

Prescribed burn is conducted to manage fuels

Goals of the Program

The Fuels Management Program has three goals:

1. Manage fuels to reduce spread, intensity, frequency and/or severity of wildfire in order to protect values at risk and meet land use plan objectives.
2. Restore and maintain resilience of natural systems to wildfire; so that when wildfire occurs, ecological impacts are positive or neutral.

3. Provide strategic opportunities to increase our capability to manage wildfire for resource benefits and increase public and firefighter safety.

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Look Ahead to FY 2014

Joint Initiatives

National Cohesive Wildland Fire Management Strategy

The completion of *The National Strategy* and companion document *National Action Plan* represent completion of the Cohesive Strategy effort initiated in 2009. The conclusion of the planning, analyses, and reporting is a significant accomplishment and represents more of a beginning than an endpoint as implementation toward the vision begins.

The National Action Plan is a framework for detailed implementation plans developed by agencies and organizations, coordinated with stakeholders. The actions should provide a consistent approach and focus for agencies, organizations and stakeholders, based on their individual roles, responsibilities, and activities.

Coordinated engagement of all stakeholders will provide the best opportunity to realize the goals of the National Cohesive Wildland Fire Management, to restore and maintain landscapes; adapt communities so they are prepared to withstand the effects of wildfire; and effectively respond to wildfires when they occur. The reduction of risk requires engagement by all stakeholders.

2013 -2014 Quadrennial Fire Review (QFR)

The purpose of the Quadrennial Fire Review (QFR) is to forecast likely conditions that may present the greatest wildland fire management challenges over the next 10 to 20 plus years, then, set a long-term strategic course of action to address them. The 2014 QFR will focus on completing three main objectives:

1. conduct a thorough review and documentation of actions and outcomes that have occurred as a result of the previous QFRs;

2. identify the most significant long-term wildland fire management challenges by assessing emerging issues and future threats facing the nation; and

3. project future scenarios to highlight areas of consideration for realignment of programs, strategies, capabilities, and the work force that will assist in addressing the identified challenges and threats.

The QFR will set the stage for implementation and future updates of the National Cohesive Wildland Fire Management Strategy and the long-term vision. The Cohesive Strategy is the roadmap to help us achieve that vision.

Integrated Reporting of Wildland-Fire Information (IRWIN)

The Integrated Reporting of Wildland-Fire Information (IRWIN) service is a Wildland Fire Information and Technology (WFIT) affiliated investment that is intended to provide an "end–to–end" fire reporting capability. This investment will streamline incident business processes and improve the quality of data for collecting and reporting incidents and events. The IRWIN Core team is tasked with providing integrated data exchange capabilities between the existing applications used to manage incidents related to wildland fire. IRWIN is focused on the goals of reducing redundant data entry, identifying authoritative data sources, and improving the consistency, accuracy, and availability of operational data.

The financial benefits associated with implementing an end-to-end reporting capability with IRWIN are estimated based on different workloads that comprise a significant portion of fire reporting operations and total approximately $394 million in cost savings over a 15-year period, with cost benefits beginning to be realized in Year 5 (estimated to be FY 2018). Workload costs are based upon the time it takes for dispatchers to enter fire incident data, the number and types of fire incidents, and dispatcher labor rates. This data was obtained from the *Interagency Wildland Fire Dispatch and Related Services report, Data Records (October 23, 2008).*

Evidence to Date: Integration testing incorporated in five applications and allowed approximately 70 data elements to be entered once and dynamically shared with the wildland fire business incident environment. The test was conducted in Boise, Idaho, with business representatives from the interagency wildland fire community (including Federal, state, and local participants). The test proved a time savings of 600 percent in fire business processes. Currently, IRWIN is on target to "go live" in the spring of 2014 and continue on an annual cycle of increasing data exchange by approximately 5 systems per year.

The project discovery and prototyping started in 2011 with a budget of $1.5 million and continued in 2012 with an additional $1.5 million. Annual budget requirements are currently approved at $3 million annually.

USDA Forest Service

National Wildland Fire Risk Assessment

The USDA Forest Service, Fire and Aviation Management will complete in 2014 a National Wildland Fire Risk Assessment mapping key resources at risk from wildfire, the latest estimates of wildfire likelihood and intensity, and an assessment of the expected impacts of wildfire to these resources.

Forest Service and Natural Resources Conservation Service (NRCS) Collaboration

The Forest Service will initiate 13 landscape scale restoration projects in collaboration with the NRCS in 2014. These projects will allow the Forest Service to coordinate work on the National Forest System lands with work on adjacent lands which will measurably improve the health and resiliency of forest ecosystems where public and private lands meet.

Fire and Aviation Management's Priorities for FY 2014

Fire and Aviation Management lists 11 priorities for FY 2014. They include the Chief of the Forest Service's top five which are:

1. Safety
2. Inclusion
3. Community
4. Restoration
5. Fire

And, six as identified by the Director, Fire and Aviation Management:

6. Cohesive Strategy
7. Land Management Alignment
8. Taking Our Right Place on the World Stage
9. Doctrine/Risk Management
10. Workforce of the Future
11. Quality Quadrennial Fire Review

Department of the Interior

Wildland Fire Management Priorities for FY 2014

1. Budget
2. Integrated Fuels Management Program
3. Governance
4. Partnerships and Communication

5. Wildland Fire Information and Technology
6. Policy Development and Oversight
7. Fire Season Readiness and Support
8. Science and Technology

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Reviews and Recommendations

USDA – Forest Service

The Forest Service has eight open Government Accountability Office reports with open recommendations and one Office of Inspector General report. The following is a list of reports and the status of the associated open recommendations:

GAO-13-684, Wildland Fire Management – *Federal Fire Aviation: Improvements Needed in Information, Collaboration, and Planning to Enhance Federal Fire Aviation Program Success* (August 2013)

Retardant drop in support of firefighting efforts on the Beaver Creek Fire in Idaho

Recommendation: *To help the agencies enhance their abilities to identify their firefighting aircraft needs and better ensure they obtain aircraft that meet those needs, we recommend that the Secretaries of Agriculture and the Interior direct the Chief of the Forest Service and Deputy Assistant Secretary for Public Safety, Resource Protection, and Emergency Services, respectively, to take the following three actions:*

Management Decision(s) and Associated Corrective Action Milestones:

Expand efforts to collect information on aircraft on aircraft performance and effectiveness to include all types of firefighting aircraft in the federal fleet.

Corrective Action Milestones:

The Forest Service Aerial Firefighting Use and Effectiveness Study (AFUE) will be expanded to include helicopters and water scoopers as well as large airtankers. AFUE will continue to analyze the effectiveness of aerial firefighting aircraft, using data collected from the broad spectrum of sources, including dedicated ground crews, ground and aerial resources observation forms, aircraft infrared/color camera sensors, aircraft data collection sensors such as Operational Loads Monitoring Systems, Additional Telemetry Units, Automated Flight Following, and other technology as it become available.

Enhance collaboration between agencies and with stakeholders in the fire aviation community to help ensure that agency efforts to identify the number and type of firefighting aircraft they need reflect the input of all stakeholders in the fire aviation community.

Corrective Action Milestones:

An executive level planning session is being coordinated to develop senior executive leaders' (FS and DOI) intent, determine strategic aviation requirements, identify additional stakeholders and establish a timeline for building a plan which identified the number and type of firefighting aircraft on an interagency basis. Additionally, the Forest Service will offer to include stakeholders in the collection and analysis of stakeholder aerial firefighting aircraft to develop interagency use and effectiveness parameters.

Subsequent to the completion of the first two recommendations, update the agencies' strategy documents for providing a national firefighting aircraft fleet to include analysis based on information on aircraft performance and effectiveness and to reflect input from stakeholders throughout the fire aviation community.

After collecting and analyzing effectiveness data and collaborating with the DOI and other stakeholders, the agency will update its strategy documents accordingly.

GAO-12-73 Arizona Border Region: Federal Agencies Could Better Utilize Law Enforcement Resources in Support of Wildland Fire Management Activities (November 8, 2011)

Photo Credit LA Times

GAO report stated, in part, the presence of illegal border crossers has complicated fire suppression activities in the AZ border region

Recommendations: To ensure agencies have the data needed to identify wildland fire prevention activities and to ensure resources are effectively targeted, the Secretaries of Agriculture and the Interior should direct the Chief of the Forest Service; the Directors of the Bureau of Land Management, Fish and Wildlife Service, and National Park Service, and the Assistant Secretary for Indian Affairs to:

(1) Re-examine the policy that all human-caused wildland fires be investigated;

Corrective Action Milestones/Status of Corrective Action:

Review existing policy, completed on March 22, 2012. Forest Service requested closure from GAO by email on September 11, 2012.

(2) Once the agencies have determined the appropriate level of investigations, develop a strategy for determining which fires to investigate, including specific criteria to help select and prioritize those fire incidents that should be investigated;

Corrective Action Milestones/Status of Corrective Action:

Border Fire Investigation document was completed on March 22, 2012. Request for closure submitted to GAO by the Forest Service on September 11, 2012.

(3) Develop a systematic process to use the information identified in the investigations to better target fire prevention activities and resources.

Corrective Action Milestones/Status of Corrective Action:

Border Fire Investigation document was completed on March 22, 2012. The Forest Service requested closure from GAO on September 11, 2012.

GAO-12-155 Station Fire: Forest Service's Response Offers Potential Lessons for Future Wildland Fire Management (December 16, 2011)

Station Fire as seen over Los Angeles, California

Recommendations:

(1) To improve the Forest Service's response to wildland fires, we recommend that the Secretary of Agriculture direct the Chief of the Forest Service to clarify the Forest Service's intent and to reduce uncertainty about how its assets are to be used relative to those of other agencies, issue guidance describing when it expects its own firefighting assets to be used instead of contract or state and local agency assets.

(2) To improve the Forest Service's response to wildland fires, we recommend that the Secretary of Agriculture direct the Chief of the Forest Service to document the steps it plans to take and the associated time frames to implement the lessons it identified in its review of the Station Fire.

Status of Corrective Action:

The Pacific Southwest Region of the Forest Service is gathering proof of implementation for Recommendations 1 and 2.

GAO-09-277 Federal Land Management: Additional Documentation of Agency Experience with Good Neighbor Authority Could Enhance Its Future Use (February 25, 2009)

Recommendation: The Secretaries of Agriculture and the Interior should direct the U. S. Forest Service and BLM, in collaboration with their state Good Neighbor partners, to document how prior experiences with Good Neighbor projects offer ways to enhance the use of the authority in the future and make such information available to current and prospective users of the authority. Specifically, the U. S. Forest Service should collaborate with Colorado and Utah, and BLM should collaborate with Colorado, to document information such as:

(1) the types of projects that have proven to be successful uses of the authority;
(2) how differences in the authority's scope within each state have affected project selection;
(3) how project planning and implementation responsibilities have been divided among federal and state project partners; and

(4) the costs and benefits associated with using the Good Neighbor authority to conduct projects, including any project efficiencies and cost savings that have resulted from the authority's use.

In addition, to ensure that this information is available to current and future users of the authority, the agencies should develop a strategic approach for disseminating it—for example, through agency websites, handbooks, training, or other means.

Status of Corrective Action:

This recommendation is closed.

GAO-09-68 Wildland Fire Management: Interagency Budget Tool Needs Further Development to Fully Meet Key Objectives – FPA (November 24, 2008)

Recommendation 1: To improve the FPA model's ability to identify needed firefighting assets and the best locations for these assets – and recognizing that developing FPA will be an iterative process that will require the agencies' continued effort to improve – we recommend that the Secretaries of Agriculture and the Interior direct the agencies to develop a strategic plan for the continued development of FPA, which would:

(1) include an evaluation of FPA's ability to meet its key original objectives;
(2) identify ways to improve the model to better meet these objectives;
(3) clearly state whether the agencies believe any of the original objectives are no longer appropriate and why; and
(4) identify the steps the agencies plan to take to improve FPA and the expected time frames and associated budget needs for completing these steps.

Recommendation 2: The Secretaries of Agriculture and the Interior report annually to Congress on (1) their progress in completing the steps outlined in the strategic plan for the continued development of FPA, and (2) FPA's ability to meet each of its key objectives.

Recommendation 3: To increase agency transparency in using FPA to develop their budget requests and allocate funds, GAO recommends that the Secretaries of Agriculture and the Interior report annually to Congress on FPA's role in budget development and allocation process.

Status of Corrective Action:

These recommendations remain, "Open." The Forest Service and DOI prepared a document that showed the evolution of the FPA project and sent the document to GAO on December 3, 2012, requesting closure. On February 4, 2013, GAO responded with a request for more information before they are able to close the audit. Forest Service and DOI are working together to prepare the additional information.

GAO-07-1168 Wildland Fire Management: Better Information and a Systematic Process Could Improve Agencies' Approach to Allocating Fuel Reduction Funds and Selecting Projects (September 28, 2007)

A fuels reduction project on the Routt National Forest, outside the community of Steamboat Springs in Colorado

Recommendation 1: Secretaries of Agriculture and the Interior should direct their agencies to develop information to support this systematic process. Development of the information should include using information on risk and fuel treatment effectiveness, once available, in concert with information on the cost of treatments, to assess the cost-effectiveness of various potential fuel reduction treatments.

Status of Corrective Action on Recommendation 1:

This recommendation remains "Open." GAO says, "Although the Forest Service expects to implement this recommendation in the future, it has not yet done so because the agency must first collect more data on treatment effectiveness. Information was submitted by the agency to GAO; however, GAO requested additional information. Agency continues to work on acquiring additional information.

Recommendation 2: Secretaries of Agriculture and the Interior should provide guidance that clearly distinguishes the relative importance of the various factors used in allocating funds and selecting projects, including the importance of risk, effectiveness, and cost in comparison with other factors. This guidance should also distinguish the relative priority of different values at risk, especially different elements within the wildland-urban interface, such as homes, power lines, and municipal watersheds.

Status of Corrective Action on Recommendation 2:

This recommendation remains "Open." GAO says, "The Forest Service has not provided additional clarification on the relative importance of various factors considered in allocating fuels reduction funding. In particular, the agency has not clarified the relative importance of different elements within the wildland-urban interface." Additional information was submitted to GAO by the agency; however, GAO requested more information. Agency continues its work to acquire additional information.

GAO-13-250R Federal Disaster Reservist Training

Recommendation: No recommendations for the USDA Forest Service. In this report, GAO looked at how FEMA's training of its reservists compares to the training of other Federal reservists who respond to disasters. GAO did this work in response to a request by the House Committee on Homeland Security and the Senate Subcommittee on Oversight of Government Management, the Federal Workforce, and the District of Columbia. FEMA, the U. S. Coast Guard Reserve, and Small Business Administration were also involved. GAO team performing assignment: Homeland Security and Justice Issues (HSJ).

Status of Corrective Action:

An exit conference was held January 24, 2013, and the Forest Service submitted comments/corrections on the Statement of Facts. Draft report was issued on February 19, 2013, and the USDA and Forest Service responded March 8, 2013. Final report was issued on March 22, 2013.

OIG 08601-0002-41 Firefighting Cost Share Agreements

Objective: This objective began as cost share agreement with the following objectives: To evaluate the adequacy of the Forest Service controls surrounding the administration of cost share agreements. Specifically, the Forest Service will determine whether: (1) agreements were properly established and implemented; (2) firefighting suppression costs were equitably distributed; and (3) reimbursements were properly determined (actual v. estimated) and consistent with the agreed-upon cost share agreements. HOWEVER, after doing initial field work in the Pacific Southwest Region (R5), OIG headquarters told the audit team to change the audit recommendation to: The purpose of our visit is to obtain the regional perspective regarding structure protection and the financial aspects thereof. Second, determine whether protection boundaries were properly adjusted to reflect the grown and expansion of WUI areas.

Notes:

The audit team is behind schedule and the working audit findings need additional development. This basically means that fieldwork continues. The delay will likely push the release of the draft report back to April – May 2014 or later.

GAO – Job Code 540257, Alternative Fuels for Aviation

Objective: Forest Service was notified of this audit on July 31, 2013. The audit began in March 2013 with Agricultural Research Service (ARS) as the lead agency. They are continuing to interview other agencies, Forest Service included. The objectives and key questions are:

(1) What is the current status of the progress in developing commercially-viable alternative aviation fuels in the U. S.?
(2) What is the extent of participation and coordination of these efforts within the U. S. Government?
(3) What, if any, are the expected benefits from and key challenges to developing a commercially-viable alternative to the aviation fuels program in the U. S.?
(4) What additional steps, if any, can be taken by the Federal Government to advance alternative aviation fuels in the U. S.?

Notes:

At this point, it does not look like Fire and Aviation Management will be involved in this audit.

Department of the Interior

OIG Report ER-EV-MOA-00012-2009, Wildland Urban Interface Community Assistance

Recommendation 1: Closed

Recommendation 2: Strengthen the interagency NFPORS WUI community assistance module, including issuance of comprehensive guidelines for users, defined project activity elements, and performance monitoring and tracking tools.

Recommendation 3: Establish consistent WUI community assistance grant policies and guidance addressing program objectives and performance measures.

Recommendation 4: Establish a national methodology for sharing educational and outreach products developed through WUI community assistance grants. .

Status of Corrective Action:

Recommendations 2, 3, and 4 remain "open." The DOI Fuels Management Program is currently being revised to align more fully with the National Cohesive Wildland Fire Management Strategy. The Fuels Management Program budget reductions will impact all components of the program, including community assistance.

GAO-09-68, Wildland Fire: Interagency Budget Tool Needs Further Development to Fully Meet Key Objective

Recommendation: To improve the FPA model's ability to identify needed firefighting assets and the best locations for those assets—and recognizing that developing FPA will be an iterative process that will require the agencies' continued effort to improve—the Secretaries of Agriculture and the Interior should direct the agencies to develop a strategic plan for the continued development of FPA.

Status of Corrective Action:

The recommendation remains, "open." The Department is re-evaluating the approach to meeting this recommendation; a contractor has been hired; and results are expected this fiscal year.

GAO-13-684, Wildland Fire Management: Improvements Needed in Information, Collaboration, and Planning to Enhance Federal Fire Aviation Program Success

Recommendation 1: Expand efforts to collect information on aircraft performance and effectiveness to include all t Enhance collaboration between the agencies and with stakeholders in the fire aviation community to help ensure that agency efforts to identify the number and type of firefighting aircraft they need reflect the input of all stakeholders in the fire aviation community.

Recommendation 2: Subsequent to the completion of the first two recommendations, update the agencies' strategy documents for providing a national firefighting aircraft fleet to include analysis based on information on aircraft performance and effectiveness and to reflect input from stakeholders throughout the fire aviation community.

Recommendation 3: Subsequent to the completion of the first two recommendations, update the agencies' strategy documents for providing a national firefighting aircraft fleet to include analysis based on information on aircraft performance and effectiveness and to reflect input from stakeholders throughout the fire aviation community.

Status of Action:

Efforts are underway to meet these recommendations by the target date (12/31/2014)

GAO-12-73, Arizona Border: Federal Agencies Could Better Utilize Law Enforcement Resources in Support of Wildland Fire Management Activities

Status of Action:

All recommendations are "closed."

Performance Measures

USDA Forest Service, Fire and Aviation Management

Forest Service Strategic Plan

Numeric designation (if appropriate)	Measure	2013 Actual	2013 Target (if appropriate)
1.1b	Number of acres brought into stewardship contracts.	171,767	300,000
1.2	Percentage of fires not contained in initial attack that exceed a stratified cost index (SCI).	36 percent	18 percent
1.3	Percentage of acres treated in the wildland urban interface (WUI) that has been identified in community wildfire protection plans (CWPPs) or the equivalent.	85.4 percent	75 percent

USDA Strategic Plan

Numeric designation (if appropriate)	Measure	2013 Actual	2013 Target (if appropriate)
2.1.1	Annual acres of public and private forest lands restored or enhanced.[9]	4,703,857	4,322,384
2.4.1	Number of communities with reduced risk from catastrophic wildfire.	2,581	7,980
2.4.2	The cumulative number of acres in the National Forest System that are in a desired condition relative to fire regime.	59,784,485	60,568,200
2.4.3	Percentage of acres treated in the WUI that has been identified in CWPPs or equivalent plans.	85 percent	75 percent

[9] Fire and Aviation Management contributes to this measure.

Program Assessment

Measure	2013 Actual	2013 Target (if appropriate)
Percent of fires not contained in initial attack that exceed a SCI.	36 percent	18 percent
Percent change from the 10-year average for (1) number of wildfires controlled during initial attack.	-0.1 percent	0.5 percent
Total acres treated in WUI and non-WUI and also acres treated for other vegetation management activities that achieved fire objectives as a secondary benefit.	2,623,021	1,400,000
Number of acres restored and maintained per million dollars gross investment.	4,490	2,800
Acres moved to a better condition class per million dollars gross investment.	1,018	1,002

10-Year Comprehensive Strategy Implementation Plan (updated December 2006)

Measure	2013 Actual	2013 Target (if appropriate)
Percent change from 10-year average for (a) percent of wildfires controlled during initial attack.	-0.1 percent	0.5 percent
Percent of fires not contained in initial attack that exceeded a SCI.	36 percent	18 percent
Number of acres treated per million dollars gross investment in WUI and non-WUI areas.	4,490	2,800
Percent of collaboratively identified high priority acres treated where fire management objectives are achieved as identified in applicable management plans and strategies.	74.4 percent	N/A
Number and percent of acres treated through collaboration consistent with this Implementation Plan, identified by treatment category (i.e., prescribed fire, mechanical, and wildland fire use[10]).		
Prescribed Fire	1,279,275 or 53.8 percent	
Mechanical Treatments	632,535 or 26.6 percent	
Fire Use	465,914 or 19.6 percent	
Total	2,377,724	
Percent and number of burned acres identified in approved post-wildfire recovery plans as needing treatments that actually receive treatments.	108,000	
Percent of burned acres treated for post-wildfire recovery that are trending toward desired condition	95 percent	

[10] Wildland Fire Use is no longer a term used. These are fires that managed for ecological benefits.

Numbers and percent of communities-at-risk (CAR) covered by a CWPP or equivalent that are reducing their risk from wildland fire. A community is at reduced risk if it has satisfied at least one of the following requirements: 1. recognized as a Firewise community or equivalent; 2. enacted a mitigation/fire prevention ordinance; 3. High priority hazardous fuels identified in CWPP or equivalent are reduced or appropriate fuel levels on such lands are maintained in accordance with a plan.		
Number of CAR	**72,681**	
Number of CAR covered by CWPP or equivalent	**12,434**	
Percent of total CAR covered by CWPP	**17.1 percent**	
Number of CAR at reduced risk	**4,418**	
Percent of total CAR at reduced risk	**6 percent**	
Percent of CAR covered by CWPP at reduced risk	**35.5 percent**	
Percentage of at risk communities who report increased local suppression capacity as evidenced by: 1. The increasing number of trained and/or certified firefighters and crews; 2. upgraded or new fire suppression equipment obtained; 3. formation of a new fire department or expansion of an existing department involved in wildland firefighting.		
Total Firefighters trained	61,204 (State Fire Assistance – SFA 35,815; Volunteer Fire Assistance VFA 25,389)	
Funding provided for upgraded or new fire suppression equipment	$15,826,701 (SFA $6,441,854; VFA $9,384,847)	
Formation of new VFD or expansion of existing department	171	
Total number of communities assisted with increase capacity	12,041	
Total CAR	72,681	
Percent of CAR with increased capacity	16.6 percent	
Number and green tons and/or volume of woody biomass from hazardous fuels reduction and restoration treatments on federal land that are made available for utilization through permits, contracts, grants, agreements, or equivalent.	2,900,000	3,000,000

Forest Service Measures Set

Measure	2013 Actual	2013 Target (if applicable)
Acres of hazardous fuels treated outside the WUI to reduce the risk of catastrophic wildland fire.	886,094	
Acres WUI high-priority hazardous fuels treated to reduce the risk of catastrophic wildland fire	1,736,927	1,100,000
Three-year percent of fires not contained in initial attack that exceed SCI.	27.1 percent	24 percent
Number of communities receiving firefighting capacity building from the SFA.	11,562	13,540
Number of small communities receiving firefighting capacity building from the VFA.	10,429	8,780

Department of the Interior

Strategy #3: Manage wildland fire for landscape resiliency, strengthen the ability of communities to protect against fire, and provide for public and firefighter safety in wildfire response.

Supporting Performance Measure	Type	2013 Actual
Percent of DOI-managed landscape areas that are in a desired condition as a result of fire management objectives (SP[11])	A[12]	35.9 percent (160,788,793 / 447,806,489
Percent of DOI-managed treatments that reduce risk to communities that have a wildland fire mitigation plan. (SP)	A	75.6 percent (1,597 / 2,113)
Percent of wildfires on DOI-managed landscapes where the initial strategy (ies) fully succeeded during the initial response phase. (SP)	A	98 percent (6,330 / 6,482)

Other Significant Fire Program Measures

Supporting Performance Measure	Type	2013 Actual
Number of high-priority acres treated in the WUI	A	471,866
Number of acres in fire regimes 1, 2, or 3 moved to a better condition class (WUI and non-WUI)	A	WUI 191,780 Non-WUI 74,139 Total 265,919
Number of acres in fire regimes 1, 2, or 3 moved to a better condition class per million dollars of gross investment (WUI and non-WUI)	A	WUI 1,393 Non-WUI 583 Total 1,931
Number of acres in fire regimes 1, 2, or 3 moved to a better condition class as a percent of total acres treated (WUI and non-WUI). This is also a long-term measure.	A	WUI 41 percent Non-WUI 43 percent Total 41 percent
Percentage of all fires not contained in initial attack that exceeded a SCI (BUR)	A	9 percent
Percentage change from the 10-year average in the number of acres burned by unplanned, unwanted wildland fires on Interior lands (BUR[13])	A	-49 percent (-1,832,415 / 3,737,390)

[11] SP = Strategic Plan Measure
[12] A = Annual Measurement

Other Significant Fire Program Measures (Continued)		
Number of treated acres that are identified in CWPPs or other applicable collaboratively developed plans (BUR)	A	275,500 / $57.6 million 4,783
Percent of treated acres that are identified in CWPPs or other applicable collaboratively developed plans (BUR)	A	95 percent (262,500 / 275,000)
Number of acres in WUI treated per million dollars gross investment	A	275,500 / $57.6 million = 4,783
Number of treated burned acres that achieved the desired condition (BUR)	A	1,350,000
Percent of treated burned acres that have achieved the desired condition (BUR)	A	90 percent (1,350,000 / 1,500,000)

[13] BUR = Fire Program Specific Measure

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Success Stories

USDA Forest Service

Fuel Treatments Played a Critical Role in Effective Response

Spring Mountain National Recreation Area, Humboldt-Toiyabe National Forest, Nevada

A burnout operation was conducted from a fuel treatment above the Rainbow Subdivision in Kyle Canyon, Nevada, during the Carpenter 1 Fire in 2013

Fuel treatments played a critical role in the effective response to the Carpenter 1 Fire. The Carpenter 1 fire started on July 1, 2013 in the Spring Mountain National Recreation Area of the Humboldt-Toiyabe National Forest, near Las Vegas, NV. It grew to nearly 28,000 acres and impacted two communities—Trout Canyon with roughly 35 homes, and Mt. Charleston/Kyle Canyon, with approximately 335 homes. In both cases, areas in and around these communities had been treated to remove excessive brush and trees using a combination of hand thinning, mastication (shredding), piling, and prescribed burning of cut materials. Projects such as the Kyle Canyon Summer Homes (2003) and the Spring Mountains Fuels Reduction (2007) projects were designed specifically to improve firefighter safety and effectiveness and reduce the risk to surrounding homes from wildfire while conducted by the US Forest Service, these projects were planned in collaboration with the Bureau of Land Management, Nevada Division of Forestry, Nevada Fire Safe Council, Clark County Fire Department, and area home owners. Firefighters used the fuel treatments around the Rainbow Subdivision pictured here to safely perform burn-out operations which resulted not only in the successful protection of all structures threatened, but also reduced the impact of the fire on the surrounding forest by reducing fire intensity and limiting damage to residual trees.

Department of the Interior

National Park Service

Restoring and Maintaining Cultural Landscapes and Defensive Spaces with Fire

Saratoga National Historical Park, New York

For the past two decades, Saratoga National Historical Park has used fire to create defensible space around park facilities while also restoring and maintaining critical cultural landscapes. The park is approximately 3,000 acres of rolling topography and is a mix of forest and grassland. Over two days in early April 2013, Saratoga National Historical Park fire staff conducted prescribed fire operations on four units within the park totaling 55 acres. Their goal was to reduce accumulated fuels and woody growth and restore warm season grasses in addition to maintaining historic battlefields and viewsheds. Staff from Cape Cod National

Prescribed fire operations take place near Visitor's Center

Seashore, New York State Forest Rangers, North Country Fire Staff, Acadia National Park, and the Northeast Region provided assistance. All four units were grass and brush, and have been burned on a rotation with other burn units for many years. The four units were burned successfully with no injuries. During the burn staff capitalized on opportunities for training and the enhancement of firefighter skills, while also building on important interagency relations.

Bureau of Land Management

Post Fire Seeding Saves Dollars, Habitat from Black Mountain Fire

Color Country District, Utah

The Black Mountain Fire was suppressed at 4,566 acres in the 2002 Maple Springs post-fire seeding, under critical drought conditions

On Tuesday, July 2, 2013, the lightning caused Black Mountain Fire generated a large smoke column north of Cedar City and south of Minersville, Utah. The fire, moving primarily south, made a significant run through the rolling hills of Iron and Beaver Counties until it met the Maple Springs fire rehabilitation reseeding from 2002. Firefighters took advantage of the reduced flame lengths in the reseeding by quickly suppressing the head of the fire after establishing a safe place to work. In places, the fire went out when it reach flame-resistant vegetation, seeded to prevent cheat grass invasion and restore a more resilient landscape of perennial vegetation following the 2012 fire.

Sage grouse and mule deer have benefitted from the Maple Springs seeding and similar project in the area for decades. Sportsmen have harvested some of the largest mule deer in southern Utah in this general unit over the past 10 years. It is hard to deny the multiple benefits of prescribed fire and post-wildfire rehabilitation treatments as land management agencies are enjoying great success with diverse seed mixes that include greases, forbs, and shrubs, important to habitat. Partners through the Utah Watershed Restoration Initiative (WRI) provide most of the seed.

> *"The return on the investment from this one wildfire alone potentially saved millions of fire suppression dollars and clearly shows how healthy ecosystems are likely to thrive when post-fire rehabilitation efforts are implemented successfully. Eliminating or reducing funding for these post-fire treatments and pro-active hazardous fuels reduction treatments is not good business as evidenced by the photo"—Paul Briggs, District Fuels Program Manager, BLM Color Country District*

U. S. Fish and Wildlife Service

Cooperative Efforts Provide More Efficient Prescribed Fire

Reggie Forcine of the U. S. Fish and Wildlife Service directs Florida Forest Service personnel during a collaborative prescribed fire on the Okefenokee National Wildfire Refuge

Federal and state agencies work efficiently together on unified teams to fight wildfire in the lightning belt of northern Florida. Fire and natural resource specialists from the U.S. Fish and Wildlife Service, U. S. Forest Service, and Florida Forest Service have come together to work as a team to conduct a large-scale prescribed fire. This planned wildland fire project will provide enhanced wildfire protection by reducing hazardous wildland vegetation over a larger area than could be accomplished separately.

By sharing firefighters and equipment, these cooperators recently burned more than 1,200 acres on the Okefenokee National Wildlife Refuge; 1,000 acres on the Osceola National Forest; and 500 acres on the John Bethea State Forest.

This prescribed burn not only reduced the hazards from wildfire but also afforded each agency the opportunity to enhance wildlife habitat and realize cost savings through these collaborative projects. Additional prescribed fire projects are planned in the near future.

Bureau of Indian Affairs

Success Story: Southwest & Navajo Prevention Team Community Success

Fire Safety presentation to summer school students at Ute Mountain Agency

Each year, 59 percent of all wildfires in Indian Country occur where homes and the wild lands meet. Mitigating risks associated with urban-interface wildfires is a priority to both the BIA and the Tribes. One approach the BIA and Tribes have utilized is to send prevention teams into targeted areas to work with local tribes and communities.

In June, 2013 BIA Southwest and Navajo Regions teamed up for an interregional Prevention and Mitigation effort This was the first time these two regions combined to provide prevention and mitigation outreach to tribal communities. This effort in Indian Country spanned four different states over 2,500 miles and more than 20 reservations. For each reservation the five-person team collaborated with Local fire departments, schools, and law enforcement agencies. Educational programs, outreach and training were targeted to raise awareness of the local wildland fire conditions and to address human caused wildfires in Indian Country.

Throughout their two week assignment the Team delivered eight different character appearances and six educational programs that reached over 400 youth. At one event, the BIA Office of Justice Services Law Enforcement Day and Northern Pueblos Agency, NM wildland fire crews assisted the Team with outreach efforts to over 100 children. The

Prevention trailer, Burt Shield, Name Falls Park, Northern Pueblo Agency

Team employed the use of Facebook. They were able to make announcements and share messages using the BIA Wildland Fire Management – Mescalero Agency Facebook page which has over 500 followers.

Currently BIA and Tribal Wildland Fire Prevention Programs are addressing unwanted human caused wildfire occurrence on 112 reservations across Indian Country.

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