



## HEADWATERS ECONOMICS

### **Cost of Fighting Fires on Public Lands**

Protecting homes is the most expensive part of fire fighting costs:

A recent study by the Office of Inspector General found that the majority of the Forest Service's fire suppression costs were related to protecting private property on the wildland urban interface. According to Forest Service managers the estimated total cost of fighting large forest fires to protect private homes adjacent to Forest Service lands accounted for 50 to 95 percent of all costs, ranging from \$547 million to \$1 billion in 2003 and 2004.<sup>1</sup>

The cost of federal land fire management has more than tripled in the first half of this decade:

A June 2007 report by the U.S. Government Accountability Office showed that appropriations for federal agencies to prepare and respond to wild fires rose from an average of \$1.1 billion per year in fiscal years 1996 through 2000 to an average of more than \$2.9 billion per year from fiscal years 2001 through 2005. Adjusted for inflation, this is the same as an increase of \$1.3 billion to \$3.1 billion.<sup>2</sup>

According to the GAO there are three reasons for the increase costs of fighting fires:

1. Increased fuel buildup due to past fire suppression
2. Severe weather and drought
3. A growing number of homes built in or near wildlands

According to the BLM's Office of Fire and Aviation:<sup>3</sup> (all figures adjusted for inflation)

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<sup>1</sup> Office of the Inspector General, Western Region. Audit Report: Forest Service Large Fire Suppression Costs. Report No. 08601-44-SF, November 2006. U.S. Department of Agriculture.

<sup>2</sup> U.S. Government Accountability Office. Wildland Management: A cohesive strategy and Clear Cost-Containment Goals Are Needed for Federal Agencies to Manage Wildland Fire Activities Effectively. GAO-07-1017T. June 2007.

<sup>3</sup> Fire suppression expenditures data from Jennifer Smith, Public Affairs Officer, External Affairs, National Office of Fire and Aviation BLM – NIFC. (208) 387-5456.

- The Forest Service and BLM pay for 75 percent of the fire suppression costs on public lands (the remainder is borne by the Bureau of Indian Affairs, Fish and Wildlife service and National Park Service).
- Nation-wide the average annual cost of fighting fires on federal lands, from 2000 to 2005, was \$1.3 billion. During four of those six years the costs were over \$1 billion.
- The average annual cost of fighting fires on Forest Service lands, from 2000 to 2005, was \$750 million. For the BLM it was \$186 million.
- Nation-wide fire suppression cost on federal lands have increased, on average, 11 percent per year.

**Fire suppression costs**

Adjusted to 2005\$

Year	Bureau of Land Management	Forest Service	Total All Agencies
2006	NA	1,501,000,000	NA
2005	161,403,000	690,000,000	875,713,000
2004	152,151,003	750,597,141	920,394,415
2003	161,222,273	1,086,356,250	1,407,580,171
2002	222,186,047	1,388,486	1,803,527,650
2001	211,858,043	753,324,261	1,012,119,368
2000	204,789,402	1,220,341,463	1,545,123,549
Average 2000-2005	185,601,628	750,334,600	1,260,743,025
Total 2000-2005	1,113,609,769	4,502,007,602	7,564,458,151
Net increase 2000-2005	(43,386,402)	(530,341,463)	(669,410,549)
Change 2000-2005 per year	37,120,326	150,066,920	252,148,605
% Change per Year	16%	11%	11%

Percent of costs borne by the Forest Service 60%  
 Percent of costs borne by BLM 15%

Other agencies include Bureau of Indian Affairs, Fish and Wildlife Service, National Park Service

If the GAO estimates are correct 50 to 95 percent of the costs of fighting forest fires on Forest Service lands are associated with protecting private property on the wildland urban interface (WUI). Assuming the same is true for BLM lands, the average annual fire fighting costs on the WUI to protect private property on federal land, from 2000 to 2005, ranged from \$630 million to \$1.2 billion. This is the cost of protecting homes every year from forest fires for these two agencies alone.

## Fire suppression costs

Adjusted to 2005\$		Fire suppression costs assuming:	
Year	Total All Agencies	50% due to WUI	95% due to WUI
2005	875,713,000	437,856,500	831,927,350
2004	920,394,415	460,197,207	874,374,694
2003	1,407,580,171	703,790,085	1,337,201,162
2002	1,803,527,650	901,763,825	1,713,351,267
2001	1,012,119,368	506,059,684	961,513,399
2000	1,545,123,549	772,561,774	1,467,867,371
Average 2000-2005	1,260,743,025	630,371,513	1,197,705,874

## How bad could it get?

Fighting fires to protect private structures in the WUI (on BLM and forest Service lands) costs an estimated \$630 to \$1.2 billion per year, with only 14% of the WUI developed. Another 86% of the WUI that can be built on has not yet been developed. If the trend in WUI development continues the costs could be significantly higher.

If 50% of the WUI is developed the average annual cost of fighting fires to protect private structures could range from \$2.3 billion to \$4.3 billion.

If 100% of the WUI is developed the average annual costs could range from \$4.5 billion to \$8.6 billion.

Adjusted to 2005\$		Average annual fire suppression costs, (2000-2005) assuming:	
Percent of WUI developed	50% due to WUI	95% due to WUI	
14	630,371,513	1,197,705,874	
50	2,251,326,831	4,277,520,978	
100	4,502,653,662	8,555,041,957	

## How does this compare?

By comparison, the Forest Service's annual budget is over \$4.5 billion and the BLM's annual budget is over \$1.5 billion

[http://www.blm.gov/nhp/news/releases/pages/2005/pr050610\\_goldbook.htm](http://www.blm.gov/nhp/news/releases/pages/2005/pr050610_goldbook.htm)

## **Cost of fuels reduction in the WUI**

“WUI per acre activity costs were estimated to be 139% higher than those of activities in non-WUI areas.” (page 77)

Berry, Alison H., Geoffrey Donovan, and Hayley Hessel. 2006. The economic effects of the wildland-urban interface on Forest Service and BLM prescribed burning costs in the Pacific Northwest. *Western Journal of Applied Forestry*, 21(2):72-78.

“For mechanical treatments, WUI activity costs were estimated to be more than three times as much as for non-WUI activities.” (page 36)

“For fire treatments, WUI per-acre activity costs were estimated to be 43% higher than those of non-WUI activities.” (page 36)

Berry, Alison H., and Hayley Hessel. 2004. The effect of the wildland-urban interface on prescribed burning costs in the Pacific Northwestern United States. *Journal of Forestry*, 102(6):33-37.