

Report Digest: Fire Fighting Costs in Oregon
Home Building, Higher Temperatures Driving Price Tag Ever Higher
January 2012

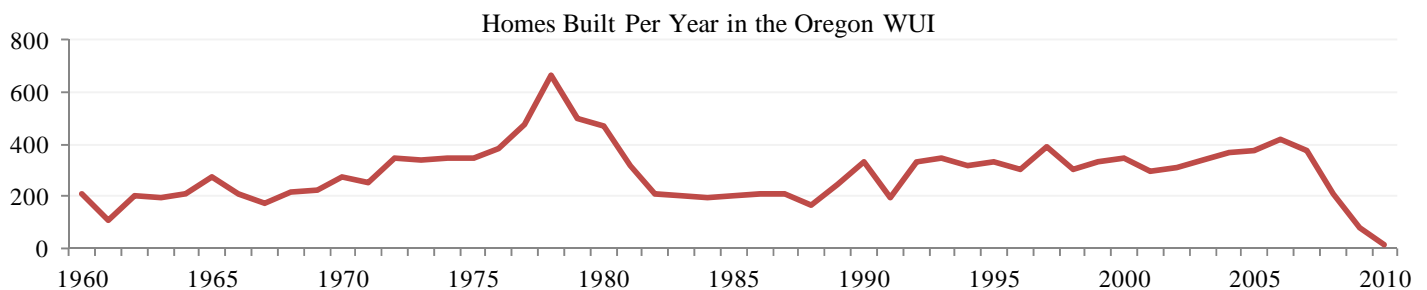


OVERVIEW: This digest summarizes recent research on how growing residential development in Oregon has led to increases in fire suppression costs. The research focused on 33 wildland fires during 2006-2010. The full paper, PowerPoint, and other wildfire research can be found at <http://headwaterseconomics.org/wildfire>.

HIGHLIGHTS:

(1) Rising average summer temperatures are strongly associated with an increase in the number of wildfires. In Oregon, an increase in average summer temperature of 1° F is associated with an increase of 420 wildfires. This is a large effect given that, on average, 1,800 wildfires burn in Oregon per year.

(2) Based on data for 19 Oregon counties, home construction in the WUI was most rapid from 1977-1980, when an average of 529 WUI homes were built per year. The next highest rate occurred in 2006, just prior to the recession, when 418 WUI homes were built.



(3) Of the 33 Oregon wildfires studied, the average cost to protect a home within 6 miles of the fire was \$56,614, but ranged significantly, in some fires costing more than \$200,000 per home. The estimated cost related to housing for the 33 study fires ranged from none to 42 percent, and averaged 17 percent. This added up to almost \$42 million spent to protect homes (out of a total firefighting bill of more than \$250 million).

(4) Building new homes in otherwise undeveloped areas has the greatest potential to increase firefighting costs. Conversely, lower firefighting costs are associated with individual homes in densely developed areas. This is likely because when large numbers of homes are present, fire managers are already investing all available resources to stop the fire. For example, using the average daily firefighting cost within our sample (\$700,911), the model predicts an increase in suppression costs of \$31,545 if two homes instead of one were within 6 miles of the wildfire. By comparison, the model predicts an increase of only \$319 if 100 homes instead of 99 were within 6 miles of the wildfire.

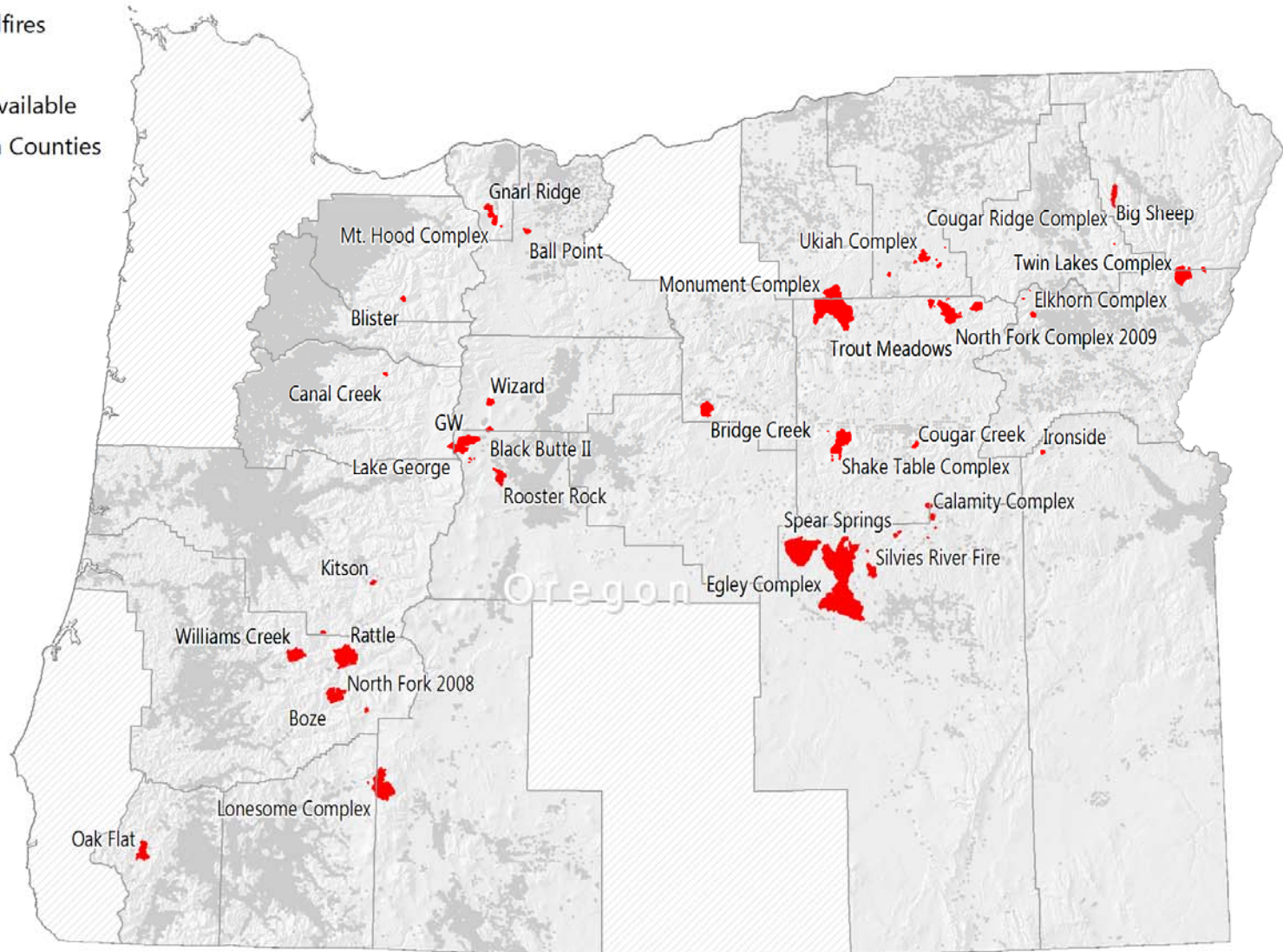
POLICY IMPLICATIONS:

- Keeping new housing within denser residential areas would reduce future firefighting costs by millions of dollars. Leaving land undeveloped saves the most taxpayer dollars.
- Today federal and state taxpayers pay a large portion of the cost of wildfires. If costs instead were borne in part by those who build at-risk homes, or by local governments who permit them, it would help pay for rising costs and may discourage new home development in high risk areas.

FULL REPORT: A research paper was submitted to the *Society and Natural Resources* in January, 2012: http://headwaterseconomics.org/wphw/wp-content/uploads/ORfire_Manuscript_Jan12.pdf.

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-  Study Wildfires
-  Homes
-  No Data Available
-  Study Area Counties



Summary data per fire for each of the 33 Oregon wildfires studied.

Fire	Cumulative Cost	Year	Agency	Firefighting Days	Avg Size of Fire (sq.km.)	Avg Homes within 6 mi	Estimated % of Cost Related to Housing	Estimated Cost Related to Housing	Avg Cost per Home within 6 mi of the Fire
Ball Point	\$3,075,788	2007	USFS	17	5	427	32%	\$974,995	\$2,282
Big Sheep Ridge	\$1,217,673	2009	USFS	10	13	141	25%	\$307,531	\$2,176
Black Butte II	\$3,080,983	2009	USFS	7	3	937	36%	\$1,123,770	\$1,199
Blister	\$5,726,503	2006	USFS	22	2	1	3%	\$183,227	\$183,227
Boze	\$7,019,985	2009	USFS	22	23	0	0%	\$24,957	\$224,614
Bridge Creek	\$4,410,206	2008	USFS	11	19	131	25%	\$1,094,958	\$8,377
Calamity Complex	\$3,652,755	2007	USFS	14	8	22	15%	\$560,979	\$25,118
Canal Creek	\$4,735,060	2009	USFS	11	1	0	0%	\$0	na
Cougar Creek	\$2,544,887	2009	USFS	10	3	593	34%	\$855,357	\$1,444
Cougar Ridge	\$1,657,848	2009	USFS	20	1	1	3%	\$53,045	\$53,045
Egley Complex	\$16,296,760	2007	USFS	19	294	64	18%	\$2,970,854	\$46,347
Elkhorn Complex	\$3,985,253	2006	USFS	15	4	404	31%	\$1,249,754	\$3,095
Gnarl Ridge	\$15,047,477	2008	USFS	28	11	130	25%	\$3,727,722	\$28,738
GW Fire	\$7,917,759	2007	USFS	23	26	700	34%	\$2,691,478	\$3,845
Ironside	\$1,667,362	2007	BLM	9	1	25	16%	\$266,045	\$10,642
Kitson	\$4,302,039	2008	USFS	13	3	44	19%	\$812,339	\$18,462
Lake George	\$12,367,001	2006	USFS	34	13	16	12%	\$1,503,077	\$92,025
Lonesome Complex	\$18,411,841	2008	USFS	55	41	3	3%	\$515,770	\$176,448
Monument Complex	\$11,634,250	2007	USFS	22	167	144	25%	\$2,881,029	\$20,007
Mt. Hood Complex	\$8,514,319	2006	USFS	25	5	14	13%	\$1,107,921	\$80,414
North Fork Complex 08	\$9,274,059	2008	USFS	24	2	9	7%	\$663,799	\$73,755
North Fork Complex 09	\$5,250,859	2009	USFS	59	14	8	10%	\$545,100	\$69,885
Oak Flat	\$18,738,968	2010	USFS	27	17	17	14%	\$2,579,344	\$153,991
Rattle	\$21,057,784	2008	USFS	37	50	18	14%	\$3,014,458	\$167,470
Rooster Rock	\$5,609,299	2010	USFS	9	19	2249	42%	\$2,356,225	\$1,048
Shake Table Complex	\$15,264,142	2006	USFS	24	42	65	19%	\$2,932,932	\$45,023
Silvies River	\$2,531,835	2008	BLM	8	13	13	13%	\$317,572	\$25,406
Spear Spring	\$1,073,010	2007	USFS	6	2	7	10%	\$106,328	\$15,190
Trout Meadows	\$6,569,023	2007	USFS	23	14	1	3%	\$210,185	\$210,185
Twin Lakes Complex	\$4,538,513	2006	USFS	17	35	206	27%	\$1,242,856	\$6,033
Ukiah Complex	\$4,356,664	2007	USFS	11	14	126	24%	\$1,042,398	\$8,306
Williams Creek Fire	\$14,630,640	2009	USFS	21	21	60	20%	\$2,937,497	\$49,017
Wizard	\$3,994,788	2008	USFS	12	5	232	28%	\$1,122,754	\$4,839

Total:	\$250,155,334							\$41,976,256	
Average estimated cost related to housing for the 33 study fires:							17% (ranged from 0% to 42%)		
Average estimated cost per home within 6 mi. for the 33 study fires:								\$56,614 (ranged from \$1,048 to \$224,614)	