



# Do Insurance Policies and Rates Influence Home Development on Fire-Prone Lands?

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## INTRODUCTION

The dangers and costs associated with wildfires are rising and predicted to escalate rapidly in decades to come, primarily because of continued home development on fire-prone lands and the effects of climate change.<sup>1</sup>

Those interested in reducing wildfire risk have asked whether insurance can play a role in making new and existing homes safer. In this briefing paper we explore two questions:

- Do insurance rates and policies steer new development away from fire-prone lands?
- Do insurance rates and policies reduce the risk from wildfires to existing development?

We answer these questions by reviewing studies and news articles, examining trends, and interviewing insurance industry experts.

### **Wildfire Risks and Costs Are Escalating**

Growing, amenity-driven populations in the West and elsewhere are expanding cities and towns into rural and forested areas—the wildland-urban interface (WUI)—that have a high risk of wildfire.<sup>2</sup> The costs and dangers associated with defending homes in the WUI are likely to increase as these scenic areas continue to be developed and as climate change accelerates the severity, scale, and frequency of fires in many areas.<sup>3</sup>

In 2015, a record-setting wildfire season saw 68,151 fires burn 10,125,149 acres in the United States, primarily in the West, according to the National Fire Information Center.<sup>4</sup> More acres burned than in any previous year on record and more than 4,500 homes and other structures were destroyed.<sup>5</sup> Concurrently, federal firefighting costs rose to more than \$2.1 billion in 2015—more than two-and-a-half times greater than a decade ago.<sup>6</sup> Federal appropriations for wildland firefighting for the U.S. Forest Service and Department of the Interior have

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<sup>1</sup> See Ray Rasker, *Reducing Wildfire Risks to Communities: Solutions for Controlling the Pace, Scale, and Pattern of Future Development in the Wildland-Urban Interface* (Bozeman, MT: Headwaters Economics, 2014)

<http://headwaterseconomics.org/wphw/wp-content/uploads/paper-reducing-wildfire-risk.pdf>. For a slide show showing trends and solutions, see: [http://headwaterseconomics.org/wphw/wp-content/uploads/wildfire\\_homes\\_solutions\\_presentation.pdf](http://headwaterseconomics.org/wphw/wp-content/uploads/wildfire_homes_solutions_presentation.pdf).

<sup>2</sup> Roger B. Hammer, Susan I. Stewart, and Volker C. Radeloff, “Demographic Trends, the Wildland-Urban Interface, and Wildfire Management.” *Society and Natural Resources* 22 (2009): 777-782.

<sup>3</sup> “Is Global Warming Fueling Increased Wildfire Risks?” *Union of Concerned Scientists*, accessed March 3, 2016, [http://www.ucsusa.org/global\\_warming/science\\_and\\_impacts/impacts/global-warming-and-wildfire.html#.Vtiin5MrJBw](http://www.ucsusa.org/global_warming/science_and_impacts/impacts/global-warming-and-wildfire.html#.Vtiin5MrJBw).

<sup>4</sup> “Total Wildland Fires and Acres (1960-2015),” *National Interagency Fire Center*, accessed Feb. 3, 2016, [https://www.nifc.gov/fireInfo/fireInfo\\_stats\\_totalFires.html](https://www.nifc.gov/fireInfo/fireInfo_stats_totalFires.html).

<sup>5</sup> “Agriculture Secretary Tom Vilsack Announces 2015 Wildfires Burned Record Acres, Urges Congress to Pass Wildfire Funding Fix,” *U.S. Department of Agriculture*, Jan. 6, 2016, <http://www.usda.gov/wps/portal/usda/usdamediafb?contentid=2016/01/0006.xml&printable=true&contentidonly=true>.

<sup>6</sup> National Interagency Fire Center. “Federal Firefighting Costs (Suppression Only).” Accessed Feb. 22, 2016. [https://www.nifc.gov/fireInfo/fireInfo\\_documents/SuppCosts.pdf](https://www.nifc.gov/fireInfo/fireInfo_documents/SuppCosts.pdf).

tripled in the last decade, from an average of \$1 billion per year in the 1990s to \$3 billion per year in the 2000s.<sup>7</sup> In 2015, the appropriation was \$3.4 billion.<sup>8</sup>

### ***Building Homes in Fire-Prone Areas Drives Up Costs***

When the U.S. Department of Agriculture’s Office of Inspector General asked land managers what portion of firefighting costs were attributable to the defense of private property, estimates ranged from 50 to 95 percent.<sup>9</sup> Recent detailed comparison of wildfires with and without homes in the California Sierras, in Montana, and in Oregon by Headwaters Economics resulted in estimates of at least 30 percent of the cost of fire suppression attributable to the defense of homes. In some wildfires, the cost of defending individual homes was as high as \$400,000 to \$600,000 per home.<sup>10</sup>

The U.S. Forest Service pays for much of the federal firefighting costs. In 1995, fire suppression made up 16 percent of the Forest Service’s annual appropriated budget. By 2015, wildfire suppression consumed more than 50 percent of the agency’s budget.<sup>11</sup> The Forest Service estimates that as a result of continued home building and climate change, by 2025 firefighting costs could represent 67 percent of the agency’s budget.<sup>12</sup>

One of the principle reasons for the rising costs and dangers associated with wildfires is the need to defend private property, in particular homes in at-risk communities. For instance, from 2000 to 2014, 4,276 communities nationwide experienced wildfires of more than 100 acres in size within 10 miles. Of those, 379 experienced a wildfire within 700 feet from town, a distance where airborne burning embers can easily reach homes.<sup>13</sup> Importantly, only 16 percent of the WUI in the West is currently developed with homes, leaving 84 percent open for continued development.<sup>14</sup>

### ***Is Insurance the Solution?***

Since exponentially growing costs for wildfire suppression cannot be sustained, what can be done to control the pace, pattern, location, and type of home development in fire-prone areas in the future? Can the insurance industry play a role?

Several solutions to ease the wildfire budget problem have been widely discussed, including educating landowners about mitigation strategies, reducing forest fuels, and using land-use planning and zoning to guide development in wildfire-prone areas.<sup>15</sup> Some suggest that market forces—particularly property insurance—could discourage building in the WUI and ultimately reduce firefighting costs.

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<sup>7</sup> Ross Gorte, *The Rising Cost of Wildfire Protection* (Bozeman, MT: Headwaters Economics, 2013) <http://headwaterseconomics.org/wphw/wp-content/uploads/fire-costs-background-report.pdf>.

<sup>8</sup> “Federal Funding for Wildfire Control and Management,” *Congressional Research Service*, accessed June 13, 2016, <http://nationalaglawcenter.org/wp-content/uploads/assets/crs/R43077.pdf>.

<sup>9</sup> Office of Inspector General – Western Region, *Audit Report: Forest Service Large Fire Suppression Costs*, Report No. 08601-44-SF (Washington, DC: U.S. Department of Agriculture, 2006).

<sup>10</sup> Headwaters Economics studies on cost of defending homes can be found here: <http://headwaterseconomics.org/wildfire/fire-research-summary>. See also Ray Rasker, *Reducing Wildfire Risks to Communities* (Bozeman, MT: Headwaters Economics, 2014).

<sup>11</sup> “The Rising Cost of Wildfire Operations: Effects on the Forest Service’s Non-Fire Work,” *USDA Forest Service*, Aug. 4, 2015, <http://www.fs.fed.us/sites/default/files/2015-Fire-Budget-Report.pdf>.

<sup>12</sup> *Ibid.*

<sup>13</sup> See <http://headwaterseconomics.org/dataviz/communities-wildfire-threat/> for an interactive map, methods, and data sources.

<sup>14</sup> Ross Gorte, *The Rising Cost of Wildfire Protection* (Bozeman, MT: Headwaters Economics, 2013) <http://headwaterseconomics.org/wphw/wp-content/uploads/fire-costs-background-report.pdf>.

<sup>15</sup> Anna M. Scofield, Benjamin S. Rashford, Donald M. McLeod, Roger H. Coupal, Scott N. Lieske, and Shannon E. Albeke. *Residential Development Effects on Firefighting Costs in the Wildland-Urban Interface*, December 2015. University of Wyoming Extension Publication B-1268. [http://www.uwyo.edu/haub/ruckelshaus-institute/\\_files/docs/open-spaces/2015-residential-firefighting-costs.pdf](http://www.uwyo.edu/haub/ruckelshaus-institute/_files/docs/open-spaces/2015-residential-firefighting-costs.pdf).

Our investigations indicate that property insurance availability, cost, and requirements can make some developments safer, but on the whole these actions will not significantly discourage development of scenic “lifestyle landscapes.” Insurance costs have risen and more and more companies are requiring adherence to fire-safe standards, yet home-building on fire-prone lands continues. According to one estimate, since 1990, 60 percent of new single-family homes in the United States have been built in the WUI.<sup>16</sup>

## THE IMPACT OF WILDFIRE ON THE INSURANCE INDUSTRY

Historically, about 1 in 265 insured homes has a property damage claim related to fire and lightning each year, according to the Insurance Information Institute. (This figure includes all types of fires that damage homes, of which wildfire claims are a fraction).<sup>17</sup> This compares to about 1 in 30 with a damage claim related to wind or hail and 1 in 55 with a claim caused by water damage or freezing. However, fire and lightning cause the most severe property damage and highest insurance claims. Between 2010 and 2014, the average homeowner’s loss caused by fire and lightning was \$39,791 compared to \$8,041 for wind and hail and \$7,958 for water damage and freezing.

As of September 2015, California alone saw wildfires destroy more than 2,000 homes with insurance losses of more than \$1.2 billion.<sup>18</sup> According to *Insurance Journal*, wildfires resulted in \$7.9 billion in insured losses between 2002 and 2011.<sup>19</sup> On the other hand, according to the Insurance Information Institute, from 1995 to 2014 all fires (of which wildfires are a subset) accounted for only 1.5 percent of insured catastrophic losses.<sup>20</sup>

The impact of wildfires on insurance policies and rates is therefore a mixed story. Compared to other large catastrophes such as hurricanes and tornadoes, or even when compared to smaller weather events like hail, wildfires are not one of the largest concerns for insurance companies. Yet, in some locations, especially in the arid West and densely populated areas, wildfires can be a large and growing concern resulting in billions of dollars in insured losses. According to one estimate, insured losses from wildfire rose from \$600 million in 2006 to \$1.4 billion in 2015.<sup>21</sup>

### **Insurance Companies Are Monitoring Increasing Wildfires**

Because of rising risk from wildfires, insurance companies are updating their risk portfolios. While wind and hail have been bigger threats in the past, wildfire and climate change effects (rising temperatures, altered precipitation patterns, prolonged drought, etc.) are gaining more attention.

A 2015 analysis by global property-information expert CoreLogic identified more than 1.1 million residences in 13 western states that fell into its highest wildfire risk category.<sup>22</sup> This ranking considered risk factors within property boundaries (terrain, fuel, and vegetation characteristics) as well as proximity to outlying areas of high

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<sup>16</sup> International Code Council (ICC), *The Blue Ribbon Panel Report on Wildland Urban Interface*, April 4, 2008, <https://inawf.memberclicks.net/assets/blueribbonreport-low.pdf>. The figure cited does not include estimates of WUI development since 2008. In 2008, 115 million single-family homes existed in the U.S., of which 46 million are in the WUI. From 1990 to 2008, 17 million homes were constructed, of which 10 million were in the WUI, according to ICC.

<sup>17</sup> “Homeowners and Renters Insurance,” *Insurance Information Institute*, accessed Feb. 3, 2016, <http://www.iii.org/fact-statistic/homeowners-and-renters-insurance>.

<sup>18</sup> “Global Catastrophe Recap: September 2015,” *Aon Benfield Analytics | Impact Forecasting*, <http://thoughtleadership.aonbenfield.com/Documents/20151007-if-september-global-recap.pdf>.

<sup>19</sup> Matt Haldane, “Insurers, Government Grapple with Costs of Growth in Wildland-Urban Interface,” *Insurance Journal*, Aug. 15, 2013, <http://www.insurancejournal.com/news/national/2013/08/15/301833.htm>.

<sup>20</sup> “Wildfires,” *Insurance Information Institute*, accessed June 13, 2016, <http://www.iii.org/fact-statistic/wildfires>.

<sup>21</sup> *Ibid.*

<sup>22</sup> Howard Botts, Thomas Jeffery, Sheila McCabe, Bryan Stueck, and Logan Suhr, *Wildfire Hazard Risk Report* (Irvine, CA: CoreLogic, 2015).

or very high risk. The total reconstruction value of these residences was more than \$268 billion. This statistic has been recognized by the Insurance Information Institute,<sup>23</sup> which also noted that Harvard researchers have predicted that the number of wildfires in the West could increase by 50 percent by 2050.<sup>24</sup> Researchers have long predicted that climate change will cause warmer, drier summers for much of the West and increase fire risk.<sup>25</sup> Research on California wildfires and global warming concluded in 2015 that climate change will likely exacerbate the extent and frequency of extreme fire risk.<sup>26</sup> A study by Headwaters Economics showed that in California's Sierras, a one degree F increase in average summertime temperatures was associated with a 35 percent increase in acreage burned. A similar study in Montana showed that a one degree F increase was associated with doubling the cost of defending homes from wildfire and a 125 percent increase in acreage burned.<sup>27</sup>

Munich RE, one of the largest reinsurers in the United States, refers to wildfires as “a natural hazard of major insurance relevance” in parts of the United States. It recommends that the risk of wildfire should be considered in property and casualty policies.<sup>28</sup> It further notes that wildfire losses are likely to increase in the future as a result of continued development in the WUI and climate change.<sup>29</sup> CoreLogic's 2015 *Wildfire Hazard Risk Report* concluded similarly: “As property development continues to expand outward from urban areas and into the wildland-urban interface, the number of homes exposed to the risk and the amount of damage realized each year could continue to increase.”<sup>30</sup>

According to global industry advisor PriceWaterhouse Coopers International, climate change and catastrophes will significantly impact the insurance industry in the next decade. In its 2012 report *Insurance 2020: Turning change into opportunity*, PriceWaterhouse suggests to the insurance industry that improved risk-modeling technology and innovative “risk-sharing and risk transfer deals” will alleviate these impacts.<sup>31</sup> It further cautions: “Insurers who fail to keep pace with this increasing sophistication might be forced to exit markets in certain coverage areas, such as those prone to flooding or forest fire.”<sup>32</sup>

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<sup>23</sup> “Wildfires: Issue Update,” *Insurance Information Institute*, June 2016, <http://www.iii.org/issue-update/wildfires>.

<sup>24</sup> Caroline Perry, “Wildfires Projected to Worsen with Climate Change,” Aug. 28, 2013, *Harvard School of Engineering and Applied Sciences*, <https://www.seas.harvard.edu/news/2013/08/wildfires-projected-to-worsen-with-climate-change>.

<sup>25</sup> William S. Keeton, Philip W. Mote, and Jerry F. Franklin, “Climate Variability, Climate Change, and Western Wildfire with Implications for the Urban-Wildland Interface,” *Advances in the Economics of Environmental Resources* 6 (2007): 225-253.

<sup>26</sup> Jin-Ho Yoon, S.-Y. Simon Wang, Robert R. Gillies, Lawrence Hips, Ben Kravitz, and Philip J. Rasch, “Extreme fire season in California: A glimpse into the future?” in “Explaining Extremes of 2014 from a Climate Perspective.” *Bulletin of the American Meteorological Society* 96 (2015) 12: S5-S9.

<sup>27</sup> Studies on the cost of defending homes and the relationship to temperature for the Sierras, Montana, and Oregon are summarized here: <http://headwaterseconomics.org/wildfire/fire-research-summary/>. The Montana study is also published as: P.H. Gude, K.L. Jones, R. Rasker, M.C. Greenwood, “Evidence for the Effect of Homes on Wildfire Suppression Costs,” *International Journal of Wildland Fire* 22, no. 4 (2013): 537-548.

<sup>28</sup> “Weather Resilience and Protection: Wildfire,” *Munich RE*, accessed Feb. 3, 2016, <http://www.munichre.com/us/weather-resilience-and-protection/rise-weather/weather-events/wildfire/index.html>.

<sup>29</sup> Munich RE. *Focus On: Growing Wildland-Urban Interface Increases Wildfire Risk*, June 2015, [https://www.munichre.com/site/mram-mobile/get/documents\\_E1663459522/mram/assetpool.mr\\_america/PDFs/3\\_Publications/Research\\_Spotlight/FS\\_FOn\\_Wildland\\_Urban\\_Interface\\_072014\\_v1.1.pdf](https://www.munichre.com/site/mram-mobile/get/documents_E1663459522/mram/assetpool.mr_america/PDFs/3_Publications/Research_Spotlight/FS_FOn_Wildland_Urban_Interface_072014_v1.1.pdf).

<sup>30</sup> Howard Botts, Thomas Jeffery, Sheila McCabe, Bryan Stueck, and Logan Suhr, *Wildfire Hazard Risk Report* (Irvine, CA: CoreLogic, 2015).

<sup>31</sup> Pricewaterhouse Coopers International, *Insurance 2020: Turning Change into Opportunity*, January 2012, <https://www.pwc.com/gx/en/insurance/pdf/insurance-2020-turning-change-into-opportunity.pdf>.

<sup>32</sup> *Ibid.*, p. 7

## QUESTION 1:

### DO INSURANCE RATES AND POLICIES STEER NEW DEVELOPMENT AWAY FROM FIRE-PRONE LANDS?

**In Brief:** *Insurance rates and policies currently do not appear to consistently drive decisions about whether or not to build homes in wildfire-prone areas. Insurance costs are increasing, but those who can afford it and who value the amenities of living on forested mountainsides with sweeping views of the valley below will continue to build. Insurance carriers are denying homeowner insurance in a few high-risk areas, but homeowners can still find insurance on the alternative market, albeit at a greater cost.*

In the West, only 16 percent of the wildland-urban interface is developed with homes.<sup>33</sup> A critical concern is the development of new homes on the remaining 84 percent of the WUI. In this section we ask whether the policies and pricing of insurance companies influence whether a home is developed on at-risk, fire-prone lands.

#### ***The Risk to Homes From Wildfires Is Being Documented***

The federal government developed and maintains detailed risk maps for flooding.<sup>34</sup> However, there are no standardized maps to calculate wildfire risk for localized areas, not to mention specific parcels. There is no federal “wildfire risk rating” system similar to the federal flood mapping system.<sup>35</sup>

In lieu of a national mapping and rating system, private companies use proprietary methods to compile and analyze data about wildfire risk for corporate and governmental clients.<sup>36</sup> The insurance industry reviews these analyses as it develops its own guidelines for rating homes and underwriting risk for wildfires.

Insurers are crunching data from many sources to predict fire risk at a much finer scale than in the past. The result is that in fire-prone areas of California, for example, insurers are “demanding more, insuring less,” according to a 2014 news report.<sup>37</sup>

#### ***Rates Are Rising, But Not Enough to Discourage Development***

Colorado recently experienced several large wildfires. In 2013, the state Division of Insurance reported about a 15 percent increase in homeowners insurance premiums driven by a “cycle of catastrophes” including hail storms and wildfires over several years, according to an *Insurance Journal* article describing the effect of natural disasters on homeowners insurance. The state has taken steps to ease the burden of rising rates and tighter underwriting standards for consumers by passing the Homeowners Insurance Reform Act of 2013 that requires biennial policy updates, gives wildfire victims more time to make claims, allows for increased living expenses, and requires plainer language in policies. There is concern, however, that additional requirements of

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<sup>33</sup> For a county-by-county and state-by-state interactive map, including definitions and data sources, see <http://headwaterseconomics.org/dataviz/wui-development-and-wildfire-costs/>. In this instance the WUI is defined as private land within 500 meters of forested federal land.

<sup>34</sup> “FEMA Flood Map Service Center,” *Federal Emergency Management Agency*, accessed Feb. 3, 2016, <https://msc.fema.gov/portal>.

<sup>35</sup> For a thorough discussion of the difference between federal approaches to fire vs. floods, see Carolyn Kousky and Ray Rasker, *Lessons for Wildfire from Federal Flood Risk Management Programs* (Bozeman, MT: Headwaters Economics, 2014) <http://headwaterseconomics.org/wphw/wp-content/uploads/Paper-Lessons-For-Fire-From-Floodrisk.pdf>.

<sup>36</sup> Headwaters Economics is working with one company to produce detailed wildfire risk maps for Taos County, New Mexico, and Missoula County, Montana. Contact Ray Rasker for more information ([ray@headwaterseconomics.org](mailto:ray@headwaterseconomics.org)).

<sup>37</sup> Cody Drabble, “California Wildfires Drive Up Insurance Costs for Homeowners,” Sept. 17, 2014, *Capital Public Radio | News*, <http://www.capradio.org/articles/2014/09/17/california-wildfires-drive-up-insurance-costs-for-homeowners>.



insurers combined with years of high losses will drive away insurance carriers.<sup>38</sup>

Wildfire risk certainly increases the cost of homeowners insurance, as explained in detail by many insurance companies.<sup>39</sup> However, the rates depend on more than whether or not homes are directly at risk from wildfire. A community's fire suppression system also may be a factor in insurance costs for individual homeowners and could increase or decrease costs. As insurance policies are written, emergency communications, water supply, and local fire department preparedness are taken into consideration,<sup>40</sup> as well as a home's proximity to a fire department and access roads. Theoretically, insurance costs for a housing development in the WUI could be discounted if a well-equipped fire department and a reliable water source are readily accessible.

A recent analysis indicated that home insurance practices do not discourage development in high-risk areas. More specifically, insurance was not a disincentive to rebuilding after losing a home to wildfire. Limited insurance payouts and confusion about insurance and mortgages led homeowners to rebuild rather than move away from wildfire-prone areas. The researchers suggested that education would help homeowners understand that rebuilding after home loss is not required to receive insurance compensation.<sup>41</sup>

### ***Some Insurance Companies Have Denied Homeowner Insurance in High-Risk Areas***

News reports suggest that some insurance companies are starting to balk at providing homeowners insurance in some high-risk areas. According to the *Wall Street Journal*, some insurers will not issue policies for homes on steep slopes or homes located too far from a fire department. Further, they are requiring documentation of prevention measures such as fire-resistant roofing and they are capping payouts to 25 to 50 percent "to help curb losses."<sup>42</sup> Even before California's devastating 2015 wildfire season, drought conditions led insurance experts to caution brokers and agents about insuring new home construction on the edges of urban areas "in close proximity to wildfire risk."<sup>43</sup> Insurance rates have risen—up to 30 percent or more in California—for homes in high-risk areas such as the WUI.<sup>44</sup>

After its 2006 proposal to raise homeowners insurance premiums in California by 12.2 percent was questioned by state regulators, Allstate quit writing new homeowner policies altogether in fire and earthquake "catastrophe-prone California" in 2007, according to a CNN news report.<sup>45</sup> For a while, State Farm had also stopped writing new policies in high-risk areas of California.<sup>46</sup> However, recently, they announced they have

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<sup>38</sup> Don Jergler, "Wildfires, Hail Take Toll on Colorado Homeowners Insurance," July 11, 2013, *Insurance Journal*, <http://www.insurancejournal.com/news/west/2013/07/11/298234.htm>.

<sup>39</sup> For example, Homesite Home Insurance, "What Affects the Price of Homeowner's Insurance?" Sept. 9, 2010, <https://www.homesite.com/insurance-resources/home-insurance-articles/what-affects-price-of-insurance.htm>; American Advantage Insurance Group, "The 3 Biggest Factors that Influence your Homeowners Insurance," accessed Feb. 3, 2016, <http://www.insurance-greenbay.com/the-3-biggest-factors-that-influence-your-homeowners-insurance/>.

<sup>40</sup> Insurance companies may consider ISO Ratings in setting rates. See ISO Mitigation ([http://www.isomitigation.com/?\\_ga=1.176332837.1225931651.1452099454](http://www.isomitigation.com/?_ga=1.176332837.1225931651.1452099454)) and the National Fire Protection Association's "ISO Fire Suppression Rating Schedule Resources" (<http://www.nfpa.org/iso>) for details.

<sup>41</sup> Miranda H. Mockrin, Susan I. Stewart, Volker C. Radeloff, Roger B. Hammer, and Patricia M. Alexandre, "Adapting to Wildfire: Rebuilding after Home Loss," *Society & Natural Resources* 28, no. 8 (2015): 839-856.

<sup>42</sup> M.P. McQueen, "Where Wildfires Burn, Insurers Get Cold Feet," Aug. 14, 2008, *Wall Street Journal*, <http://www.wsj.com/articles/SB121867195558038891>.

<sup>43</sup> "Here's What the California Drought Means for Insurance Professionals," May 6, 2015, *Insurance Business*, <http://www.ibmag.com/news/catastrophe/heres-what-the-california-drought-means-for-insurance-professionals-22411.aspx>.

<sup>44</sup> Samantha Masunaga, "Homeowners in high fire-risk areas are upset over soaring insurance rates," Sept. 9, 2015, *Los Angeles Times*, <http://www.latimes.com/business/la-fi-fire-insurance-20150909-story.html>.

<sup>45</sup> D. Ellis, "Allstate: No New Homeowners Policies in Calif.," updated April 13, 2009, *CNN Money*, <http://money.cnn.com/2007/05/11/pf/insurance/allstate/>.

<sup>46</sup> Ivan Natividad, "Wildfire risks continue to affect home insurance," May 18, 2015, *The Union*, <http://www.theunion.com/news/15934224-113/wildfire-risks-continue-to-affect-home-insurance#>.

returned to the California homeowners insurance market.<sup>47</sup>

Other insurers are still writing policies in California but they are becoming more discriminating about where, according to a 2015 article in *Insurance Journal*.<sup>48</sup> Insurance Market Source concurs that “standard market carriers have been hesitant to insure homes located in areas prone to wildfires.”<sup>49</sup> Certain home and landscape features such as a wood-shingled roof or woody vegetation crowding the home can make residences “practically uninsurable” in wildfire-prone areas, according to Bankrate.<sup>50</sup>

Anecdotal evidence indicates that homeowners in high-risk areas of Colorado and California—especially homeowners with previous claims—may have difficulty finding insurance in the standard markets. They are being forced to turn to wholesalers for more expensive “substandard” insurance.<sup>51</sup> California homeowners whose policies are canceled are moving to specialty policies that often cost twice as much as standard policies.<sup>52</sup> However, insurers have not pulled out altogether and there is still “a very healthy, competitive, private homeowners insurance market,” according to an insurance consumer advocacy group in California in 2015.<sup>53</sup>

However, some homeowners in high-risk areas of California have received non-renewal notices that their coverage will cease at the end of the policy period and will not be renewed. Homeowners may find coverage on the alternative market through independent brokers but the insurance typically costs more, offers less coverage, and has more exclusions.<sup>54</sup> *Insurance Journal* noted that purchasing specialty insurance (that covers, for example, “unusual risks such as major construction projects, kidnapping or rare art collections”) is an alternative option. Driven largely by fires, specialty insurers such as Lexington Insurance (an arm of AIG), Lloyd’s of London, and Foremost (Zurich Insurance Group AG) wrote 23,120 homeowners policies in California in 2014, a 91 percent increase from two years earlier.<sup>55</sup>

When all else fails, the insurance of last resort is FAIR (Fair Access to Insurance Requirements). FAIR plans are offered in 32 states (including California, Oregon, and Washington in the West) and the District of Columbia.<sup>56</sup> FAIR insurance serves as a safety net for homeowners who have been turned down for insurance and generally those with high-risk properties who are unable to find standard coverage. This insurance tends to be very focused (i.e., not very comprehensive). The California FAIR plan insured fewer than 1.25 percent of residential properties in the state as of 2011, according to the Insurance Information Network of California.<sup>57</sup> In

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<sup>47</sup> “Allstate Returns to California Homeowners Market With 12.6 Percent Reduction,” June 14, 2016, *Insurance Journal*, <http://www.insurancejournal.com/news/west/2016/06/14/416950.htm>

<sup>48</sup> Nichola Groom, “Californians Pushed by Wildfires into High-Risk Insurance Market,” Sept. 21, 2015, *Insurance Journal*, <http://www.insurancejournal.com/news/west/2015/09/21/382337.htm>.

<sup>49</sup> “Wildfires: 5 Things All Brokers and Agents Need to Know,” Aug. 13, 2015, *Insurance Market Source*, <http://insurancemarketsource.com/personal/wildfires-five-things-all-brokers-and-agents-need-to-know/>.

<sup>50</sup> Terry Sheridan, “Wildfires Spark Home Insurance Preconditions,” June 25, 2012, *Bankrate*, <http://www.bankrate.com/finance/insurance/wildfires-spark-home-insurance-preconditions.aspx>.

<sup>51</sup> Don Jergler, “Wildfires, Hail Take Toll on Colorado Homeowners Insurance,” July 11, 2013, *Insurance Journal*, <http://www.insurancejournal.com/news/west/2013/07/11/298234.htm>.

<sup>52</sup> Nichola Groom, “Californians Pushed by Wildfires into High-Risk Insurance Market,” Sept. 21, 2015, *Insurance Journal*, <http://www.insurancejournal.com/news/west/2015/09/21/382337.htm>.

<sup>53</sup> Samantha Masunaga, “Homeowners in high fire-risk areas are upset over soaring insurance rates,” Sept. 9, 2015, *Los Angeles Times*, <http://www.latimes.com/business/la-fi-fire-insurance-20150909-story.html>.

<sup>54</sup> Cody Drabble, “California Wildfires Drive Up Insurance Costs for Homeowners,” Sept. 17, 2014, *Capital Public Radio | News*, <http://www.cpradio.org/articles/2014/09/17/california-wildfires-drive-up-insurance-costs-for-homeowners>.

<sup>55</sup> Nichola Groom, “Californians Pushed by Wildfires into High-Risk Insurance Market,” Sept. 21, 2015, *Insurance Journal*, <http://www.insurancejournal.com/news/west/2015/09/21/382337.htm>.

<sup>56</sup> Barbara Marquand, “FAIR Plans: Home Insurance for Risky Properties,” Feb. 5, 2015, *Insure.com*, <http://www.insure.com/home-insurance/fair-plan.html>.

<sup>57</sup> “More Than 2 Million California Homes Exposed to High Wildfire Danger,” *Verisk Atmospheric and Environmental Research*, accessed Feb. 3, 2016, <https://www.aer.com/news-events/press-releases/more-2-million-california-homes-exposed-high-wildfire-danger>.

states where FAIR plans are available, those with enough resources will be able to build and get a mortgage for homes in the WUI.<sup>58</sup>

### ***Amenities Are a Powerful Motivator for Living on Fire-Prone Lands***

A case study in Colorado Springs, Colorado, indicated that amenities such as a ridgetop location or densely wooded lot outweighed the negative effect of wildfire risk on housing prices.<sup>59</sup> After homeowners were educated about wildfire risk related to their parcel, positive amenities effects (ridgetop views, wooded areas, etc.) were offset by concern for increased wildfire risk to the parcel as well as reduced home prices, at least temporarily. More recent research in Colorado indicated that homes in areas that had burned saw more than a 21 percent decline in sale price.<sup>60</sup> This confirms research in northwestern Montana that suggested that views of burned areas had a large negative effect on the price of homes.<sup>61</sup>

In short, rates are going up in some places and coverage is being denied in a handful of others, in particular in California, but for the most part it is still possible to find insurance if a homeowner wishes to live on fire-prone land. To date, with rare exceptions, it is unlikely insurance rates and policies will significantly discourage whether or not a home is built in the WUI.

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<sup>58</sup> For a longer discussion of the potential impact of FAIR plans on development within the WUI, see: Ray Rasker, *Solutions to the Rising Costs of Fighting Fires in the Wildland-Urban Interface* (Bozeman, MT: Headwaters Economics, 2009).

<sup>59</sup> Geoffrey H. Donovan, Patricia A. Champ, and David T. Butry, "Wildfire Risk and Housing Prices: A Case Study from Colorado Springs," *Land Economics* 83, no. 2 (2007): 217-233.

<sup>60</sup> K. Kiel, and V.A. Matheson, "*The effect of natural disasters on housing prices: An examination of the Fourmile Canyon Fire*" (draft - 2015) (Worcester, MA: College of the Holy Cross, Dept. of Economics Faculty Research Series, Paper #15-03).

<sup>61</sup> Kyle M. Stetler, Tyron J. Venn, and David E. Calkin, "The effects of wildfire and environmental amenities on property values in northwest Montana, USA," *Ecological Economics* 69 (2010): 2233-2243.



## QUESTION 2:

### DO INSURANCE RATES AND POLICIES REDUCE THE RISK FROM WILDFIRES TO EXISTING DEVELOPMENT?

**In Brief:** *Insurance rates and policies, as well as education, are having a positive influence on the application of fire-safe building and landscaping practices.*

People will continue to build on fire-prone lands. Can the rates and policies of insurance companies influence practices such as the use of fire-retardant building materials, creation of defensible space around homes, fire-smart landscaping, and other practices that make existing or future home development safer?

#### ***Proper Construction and Landscaping Techniques Can Reduce Risk and Rates***

The biggest impact of insurance rates and policies can be seen in the construction and landscaping of homes in high-risk areas. Property owners are being encouraged by insurance companies, local fire departments, community education programs, and others to reduce the risk of wildfire damage. Most commonly, homeowners are incentivized or required to create “defensible spaces” clear of debris and overhanging branches around their homes and move potential fuels away from their homes.<sup>62</sup> Virtually all homeowners comply, according to State Farm.<sup>63</sup>

Insurance discounts may be available to homeowners who take prescribed mitigation actions such as installing a non-combustible roof, according to Bankrate, a web-based aggregator of financial rate information.<sup>64</sup> The Rocky Mountain Insurance Information Association<sup>65</sup> and many insurance companies may provide homeowners with specific safety guidelines, for example:

- Safeco suggests creating a 30-foot non-combustible, defensible zone around a home and stacking wood at least 30 feet from buildings;<sup>66</sup>
- State Farm reminds customers to keep the roof and gutters clear of debris and overhanging branches and fill three to five feet around the base of the house with rocks, gravel, or fire-resistant plants;<sup>67</sup>
- Farmers Insurance suggests enclosing the underside of decks with fire-resistant materials; boxing eaves, fascias and soffits with fire-resistant materials; and installing spark arresters in chimneys.<sup>68</sup>

In at least one case, an insurance carrier is providing discounts to customers who live within communities that have taken fire safety precautions. USAA, a company that provides insurance to current and former military members, offers discounts to its policy owners who live in “Firewise Communities” in California, Colorado, and Texas.<sup>69</sup> Firewise is a national program administered by the National Fire Protection Association that

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<sup>62</sup> Matt Haldane, “Insurers, Government Grapple with Costs of Growth in Wildland-Urban Interface,” *Insurance Journal*, Aug. 15, 2013. <http://www.insurancejournal.com/news/national/2013/08/15/301833.htm>.

<sup>63</sup> Ibid.

<sup>64</sup> Terry Sheridan, “Wildfires Spark Home Insurance Preconditions,” June 25, 2012, *Bankrate*, <http://www.bankrate.com/finance/insurance/wildfires-spark-home-insurance-preconditions.aspx>.

<sup>65</sup> “Wildfire,” *Rocky Mountain Insurance Information Association*, accessed Feb. 3, 2016. [http://www.rmiia.org/catastrophes\\_and\\_statistics/Wildfire.asp](http://www.rmiia.org/catastrophes_and_statistics/Wildfire.asp).

<sup>66</sup> “Wildfire Preparedness,” *Safeco Insurance*, accessed Feb. 3, 2016, <http://www.safeco.com/prepare-for-a-wildfire>.

<sup>67</sup> “State Farm and NFPA Urge Property Owners to Plan Ahead for Wildfires,” April 29, 2014, *State Farm*, <https://www.statefarm.com/about-us/newsroom/2014/04/29/wildfires>.

<sup>68</sup> “Wildfire Defense for Your Home,” *Farmers Insurance*, accessed Feb. 3, 2016, <http://www.farmers.com/catastrophe/wildfire-defense/>.

<sup>69</sup> “USAA Provides Policyholder Discounts in Three States,” *NFPA Firewise Communities*, accessed Feb. 3, 2016, <http://www.firewise.org/usa-recognition-program/usaa.aspx?sso=0>.

provides basic guidelines and certifies communities for wildfire safety at the neighborhood level. Communities must conduct a wildfire risk assessment, create an action plan, conduct outreach events, and commit financial resources for a year.<sup>70</sup>

### **Education Efforts Can Pay Off**

Educational campaigns and social interactions have been shown to positively affect mitigation and prevention behaviors of homeowners, according to a 2009 study of three homeowner associations in Colorado and Oregon<sup>71</sup> and more recent research conducted in fire-prone areas of Colorado.<sup>72</sup>

An earlier study in New Mexico also recognized the value of homeowner education, noting that accurate information about wildfire risk resulted in more efficient resource allocation—that is, homeowners were better able to determine an appropriate amount of insurance to purchase and mitigation activities to conduct.<sup>73</sup>

Education and outreach materials have been produced by many agencies and organizations in the West. For example, a coalition of Colorado-based insurance interests, federal agencies (BLM and U.S. Forest Service), Colorado State University, and others published *Wildfire & Insurance*, a basic information guide for homeowners.<sup>74</sup>

Wildfire mitigation also has spawned new business angles for insurers. AIG, which provides insurance to “high net worth individuals and their families,” was the first insurance company to offer Wildfire Mitigation and Protection services.<sup>75</sup> This service provides on-site consultation to determine vulnerability, application of fire retardant if warranted, and on-site property protection in the face of impending wildfire.<sup>76, 77</sup> Nationwide Private Client offers policyholders enrollment in its Wildfire Solutions program that includes wildfire education and consultation to develop defense strategies, monitoring, and “response services by professionally trained wildland firefighters.”<sup>78</sup>

### **Landowner Behavior Is Difficult to Predict**

A 2006 behavioral study in New Mexico found that nearly all participants who chose to purchase homeowners insurance for wildfire also chose to invest in mitigation activities even though they had 100 percent coverage for tangible losses.<sup>79</sup> The same year, a study conducted in Nevada found that the probability of homeowners

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<sup>70</sup> “Firewise Communities USA / Recognition Program,” *NFPA Firewise Communities*, accessed Feb. 24, 2016,

<http://www.firewise.org/usa-recognition-program.aspx>.

<sup>71</sup> Wade Martin, ngrid M. Martin, and Brian Kent, “The role of risk perceptions in the risk mitigation process: The case of wildfire in high risk communities,” *Journal of Environmental Management* 91 (2009): 489-498.

<sup>72</sup> Katherine Dickinson, Hannah Brenkert-Smith, Patricia Champ, and Nicholas Flores, “Catching fire? Social interactions, beliefs, and wildfire risk mitigation behaviors,” *Society & Natural Resources* 28, no. 8 (2015): 807-824.

<sup>73</sup> John Talberth, Robert P. Berrens, Michael McKee, and Michael Jones, “Averting and Insurance Decisions in the Wildland-Urban interface: Implications of Survey and Experimental Data for Wildfire Risk Reduction Policy,” *Contemporary Economic Policy* 24, no. 2 (2006): 203-223.

<sup>74</sup> “Wildfire & Insurance,” *Colorado Department of Regulatory Agencies*, accessed Feb. 3, 2016.

[http://www.dora.state.co.us/taskforce/Documents/DOI/Wildfire\\_Insurance.pdf](http://www.dora.state.co.us/taskforce/Documents/DOI/Wildfire_Insurance.pdf).

<sup>75</sup> “Wildfire Mitigation and Protection,” AIG, accessed Feb. 3, 2016, [http://www.aigprivateclient.com/wildfire-how-it-works\\_1338\\_483163.html](http://www.aigprivateclient.com/wildfire-how-it-works_1338_483163.html).

<sup>76</sup> “Wildfire Protection Unit,” AIG, accessed Feb. 3, 2016.

[http://www.aig.com/Chartis/internet/US/en/WildlifeProtectionUnit\\_tcm3171-443394.pdf](http://www.aig.com/Chartis/internet/US/en/WildlifeProtectionUnit_tcm3171-443394.pdf).

<sup>77</sup> “Uniquely Qualified to Serve You,” AIG, accessed Feb. 3, 2016.

[http://www.aig.com/Chartis/internet/US/en/WPU\\_Key%20Differentiators\\_tcm3171-443596.pdf](http://www.aig.com/Chartis/internet/US/en/WPU_Key%20Differentiators_tcm3171-443596.pdf).

<sup>78</sup> “Nationwide Private Client Wildfire Solutions,” 2013, *Wildfire Defense Systems*, <http://wildfire-defense.com/nationwide-wildfire-solutions/>.

<sup>79</sup> John Talberth, Robert P. Berrens, Michael McKee, and Michael Jones, “Averting and Insurance Decisions in the Wildland-Urban interface: Implications of Survey and Experimental Data for Wildfire Risk Reduction Policy,” *Contemporary Economic Policy* 24, no. 2

taking fire-safe action in the yard and house increased with the value of the residence. Attitude toward risk management on public lands and social connection with the surrounding community were also associated with taking action. On the other hand, those who valued pristine nature were less likely to mitigate.<sup>80</sup>

A 2009 study found anecdotal evidence that homeowners may rely on insurance as “a hazard adjustment strategy” rather than spend time or money on mitigation such as altering landscaping.<sup>81</sup> This attitude, however, may be changing as wildfire increases in area and frequency and insurance companies begin to require mitigation strategies in wildfire-prone areas.

There are some compliance and social equity challenges behind risk reduction requirements. Landowners may prevent renters from physically changing their living situations (i.e., mitigating) and therefore may be more vulnerable to hazards. New mitigation rules for renters in higher-risk areas may also be prohibited. This difficult situation is compounded by renters’ typically low incomes, fewer assets, and lack of fire insurance.<sup>82</sup>

Considering residents of the White Mountains of Arizona, a University of Texas researcher suggested in 2008:

*“The collective environmental values of affluent ex-urbanites—in tandem with the facilitating machinations of state and market institutions—have produced lifestyle landscapes amidst attractive and hazardous ponderosa pine forests. Development pressure has driven up property values in the land market, and it has excluded working class locals. Within such lifestyle landscapes, acute wildfire hazards are minimized by generous provisions of socialized fire insurance and public fire suppression resources. These mechanisms...enable amenity migrants to materialize their desires to consume nature and externalize risks.”*

In other words, the Forest Service and Department of the Interior’s payment for the bulk of the firefighting costs could be interpreted as an unintended subsidy for the wealthy, who can afford to live on high-risk lands. In short, insurance companies are involved in risk reduction through landowner education and by requiring fire-safe building and landscaping practices as conditions for insurance or reduced rates. Insurance companies have an important role to play, therefore, in making existing development safer, in spite of the unpredictable nature of homeowner behavior.

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(2006): 203-223.

<sup>80</sup> Mimako Kobayashi, Nikolaos Ziropiannis, Kimberly Rollins, and M.D.R. Evans, “Estimating Private Incentives for Wildfire Risk Mitigation: Determinants of Demands for Different Fire-Safe Actions” (paper presented at the Agricultural & Applied Economics Association’s 2010 Joint Annual Meeting, Denver, CO, July 25-27, 2010), [http://ageconsearch.umn.edu/bitstream/61867/2/AAEA\\_fire%20safe\\_final.pdf](http://ageconsearch.umn.edu/bitstream/61867/2/AAEA_fire%20safe_final.pdf).

<sup>81</sup> Greg Winter, Sarah McCaffrey, and Christine A. Vogt, “The Role of Community Policies in Defensible Space Compliance,” *Forest Policy and Economics* 11 (2009): 570-578.

<sup>82</sup> Timothy W. Collins, “The political ecology of hazard vulnerability: marginalization, facilitation and the production of differential risk to urban wildfires in Arizona’s White Mountains,” *Journal of Political Ecology* 15 (2008): 21-43.

## FINDINGS

A review of studies, anecdotal evidence, news articles, conversations with insurance industry experts, and analysis of trends indicates it is unlikely that insurance rates and policies alone will determine whether or not a landowner decides to build a new home on fire-prone land. Examples exist where wildfire danger has risen to the extent that it is difficult to obtain insurance, but these are exceptions rather than the rule.

The most likely area where insurance companies play a role in reducing wildfire risk is by developing financial rewards, such as lower rates, that are tied to fire-safe practices such as the use of flame-retardant building materials, creation of defensible space, and reducing flammable fuels near homes.

To that end, insurance companies have significantly increased their activities in recent years. For example, the industry has at times been a close partner in community-based collaborative efforts to reduce wildfire risk such as in the Wildfire Partners program in Boulder, Colorado.<sup>83</sup> The insurance industry helps to fund the Insurance Institute for Business & Home Safety that conducts research on mitigation of wildfires and other disasters, and issues reports and resources such as a “Wildfire Home Assessment & Checklist.”<sup>84</sup> These efforts, in turn, help the insurance industry partner with groups such as the National Fire Protection Association that suggests fire-safe building codes, and through its Firewise program educates landowners.<sup>85</sup> Throughout the country, the insurance industry is playing an increasingly pro-active role in educating landowners on ways to reduce wildfire risk.

Those who consider private insurance as a tool to reduce wildfire risk—in particular a landowner’s decision of whether or not to build on fire-prone lands—have several challenges to consider:

- Wildfire risk is not yet on the order of other catastrophes, accounting for less than 1.5 percent of insured catastrophic losses.
- For risk reduction to be effective, it has to be accomplished at a landscape or neighborhood scale, yet numerous providers sell insurance policies on a home-by-home basis. Since it is illegal for insurance companies to collude, rates and policies will continue to vary. One landowner’s insurance provider may require risk-reduction measures as a precondition for approval while a neighbor’s insurer does not.
- Landowners’ desire to live in a scenic setting may skew their perception of risk. For some, the benefits of living on fire-prone land may outweigh the increased risk from wildfire.
- Measuring the exact nature of wildfire risk, especially in areas that have not received frequent wildfire impacts, is imprecise. It is difficult for insurance actuaries to tie rates to risk in a defensible fashion.
- Despite the risks, in the highly competitive world of property insurance, it is possible there will always be at least one company in either the admitted or specialty lines market that will be willing to write coverage if the price is right.
- The wealthy will always either be able to find insurance, pay for private firefighting services, or forego coverage.

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<sup>83</sup> Carole Walker, *Rocky Mountain Insurance Information Institute*, personal communication.

<sup>84</sup> “Search Results for: wildfire,” *Insurance Institute for Business & Home Safety*, accessed June 14, 2016, <https://disastersafety.org/?s=wildfire>.

<sup>85</sup> “Search Results for “Firewise,” *National Fire Protection Association*, accessed June 14, 2016, [http://www.nfpa.org/standard\\_items/search\\_results?searchStr=firewise](http://www.nfpa.org/standard_items/search_results?searchStr=firewise).

- The insurance industry, like the landowners, benefits from a federal subsidy that affects their perception of risk—that is, the bulk of the firefighting costs are borne by the U.S. Forest Service, Department of the Interior, and state agencies.

**Possible Trends to Watch Include:**

- In some areas, homeowners will have to purchase more expensive specialty insurance to cover wildfire as the big, national insurance companies move out of the market to limit their liability.
- Fire-safe home construction and landscaping techniques will become more widely accepted or required, in particular for new homes, and community education and outreach programs will become more common. Fire-safe requirements may come from land use regulations implemented by city and county planning departments rather than from insurance policies.
- Continuing increase in homeowners insurance in wildfire-prone areas may push lower-income populations out of the WUI.
- States will take a larger role in educating homeowners.<sup>86</sup> One of the motivators for this is that state governments have to pay more for insurance as risks continue to escalate. Oregon, for example, purchases wildfire insurance through Lloyds of London. In 2015 the policy was to cover up to \$25 million of the cost of fighting wildfires after the state paid its \$50 million deductible and \$3.75 million premium. However, the state expects it will pay more for insurance each year—assuming Lloyds of London agrees to continue the policy. The years 2013-15 were among the most costly wildfire seasons in the history of the Oregon Department of Forestry and the state worries that insurers may refuse to offer policies in the future.
- Insurance companies will continue to innovate. For example, Swiss RE teamed up with Johns Hopkins University to develop ideas for “innovative public-private insurance programs” that could help governments deal with wildfires. Their 2015 study “Fueling resilience: Climate and wildfire risk in the United States” suggests that “transferring risk from catastrophic wildfires to the private market through innovative financing could improve risk management for the states.”<sup>87</sup>

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<sup>86</sup> For example: “Wildfires,” *Oregon Department of Consumer and Business Services*, accessed Feb. 3, 2016, <http://www.oregon.gov/DCBS/insurance/gethelp/homeowner/Pages/wildfires.aspx>; and “Wildfires and homeowner insurance,” *Washington State Office of the Insurance Commissioner*, accessed Feb. 3, 2016, <http://insurance.wa.gov/your-insurance/home-insurance/wildfires/>.

<sup>87</sup> Dong-Thu Caohuu, Gauri Gadgil, Yasmine Jamnejad, and Victoria McBride, *Fueling Resistance: Climate and Wildfire Risk in the United States* (Zurich, Switzerland: Swiss Reinsurance Company Ltd., 2015), [http://media.swissre.com/documents/pub\\_Fueling\\_resilience.pdf](http://media.swissre.com/documents/pub_Fueling_resilience.pdf). The authors suggest that risk reduction strategies could include engaging private markets to develop financial instruments such as a multi-state risk pooling facility; building a base level of funding from diverse sources such as a general fund, landowner fees, and private industry contributions; or using risk transfer instruments such as parametric-based insurance policies that are used for crop insurance, for example, and are ideal for low-frequency, high-intensity losses as in catastrophic perils or weather-related risks.



## CONCLUSION

Homeowners insurance alone is not a strong enough market force today to solve the problem of home development in the wildfire-prone WUI. With a few exceptions, insurance rates and policies will not affect whether or not a home is built on fire-prone land. Rather, the role the insurance industry can play and in which it has already demonstrated success is to make existing developments safer.

Insurance policies and rates are one of many tools to reduce the risk from wildfire. Fuel reduction and landowner education also play a role. And increasingly, communities are becoming interested in improving their land use regulations to protect existing homes and to require fire-safe practices of new developments. For example, county comprehensive plans can be improved by integrating policy language and tools that give local governments the authority and responsibility to reject, re-direct, and re-design subdivision and home site proposals based on wildfire risk, or to require landscape treatments as a pre-condition to subdivision approval. Other techniques may include regulatory tools, such as zoning overlays and subdivision regulations, development and design standards, landscape regulations, transfer of development rights programs, and incentives to encourage future development away from wildfire danger.<sup>88</sup>

Finally, to create a strong incentive for improved land use planning and direct future home building away from fire-prone lands, local governments must bear a higher proportion of the firefighting costs. Even though land use planning—the decision of where to allow the building of homes—is a local government responsibility, the cost of defending the homes from wildfires is often a state and federal burden. Like government-subsidized flood management programs, firefighting policy in the U.S. has an element of moral hazard: Since a significant portion of the costs associated with building in hazardous areas are not borne by the local governments or homeowners, there is little incentive to build on safer lands.<sup>89</sup> To date, no clear policy alternatives have been developed that would lead to negative financial consequences for private land management decisions that increase risk, and positive financial rewards for decisions that reduce risk.<sup>90</sup>

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## About Headwaters Economics

Headwaters Economics is an independent, nonprofit research group that works to improve community development and land management decisions in the West.  
<http://headwaterseconomics.org/>



<sup>88</sup> For examples of innovative and effective planning techniques to reduce wildfire risk, see: <http://headwaterseconomics.org/wildfire/solutions/lessons-five-cities/> and <http://headwaterseconomics.org/wildfire/solutions/summit-county-recommendations-policies/>. A number of communities are receiving land-use planning assistance and wildfire risk-mapping through the Community Planning for Wildfire (CPAW) program which is co-managed by Headwaters Economics and Wildfire Planning International.

<sup>89</sup> For a comparison between floods and fire, see Carolyn Kousky and Ray Rasker, *Lessons for Wildfire from Federal Flood Risk Management Programs* (Bozeman, MT: Headwaters Economics, 2014), <http://headwaterseconomics.org/wphw/wp-content/uploads/Paper-Lessons-For-Fire-From-Floodrisk.pdf>.

<sup>90</sup> For an analysis of this idea, see Ray Rasker, *Reducing Wildfire Risks to Communities: Solutions for Controlling the Pace, Scale, and Pattern of Future Development in the Wildland-Urban Interface* (Bozeman, MT: Headwaters Economics, 2014), <http://headwaterseconomics.org/wphw/wp-content/uploads/paper-reducing-wildfire-risk.pdf>.