



The Wildland Urban Interface is growing in line with Idaho's residential growth, bringing residents closer to potential wildfire risks. Photo credit: Adobe Stock.

# Understanding the Wildland Urban Interface: Protecting Idahoans from Wildfires

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Summer wildfires have become an unsettling seasonal reality in Idaho.

Recently, summers have brought not only long, sunny, warm days and all the adventures that come with them, but also smoky skies, watery eyes, and hope for rain (without lightening). However, this fire season marks an unsettling departure from years past. As of the time this article was written, in 2021, fires in Idaho have occurred at a rate that is 161% of the 20-year average and the number of acres burned is 578% of the 20-year average.<sup>1</sup>

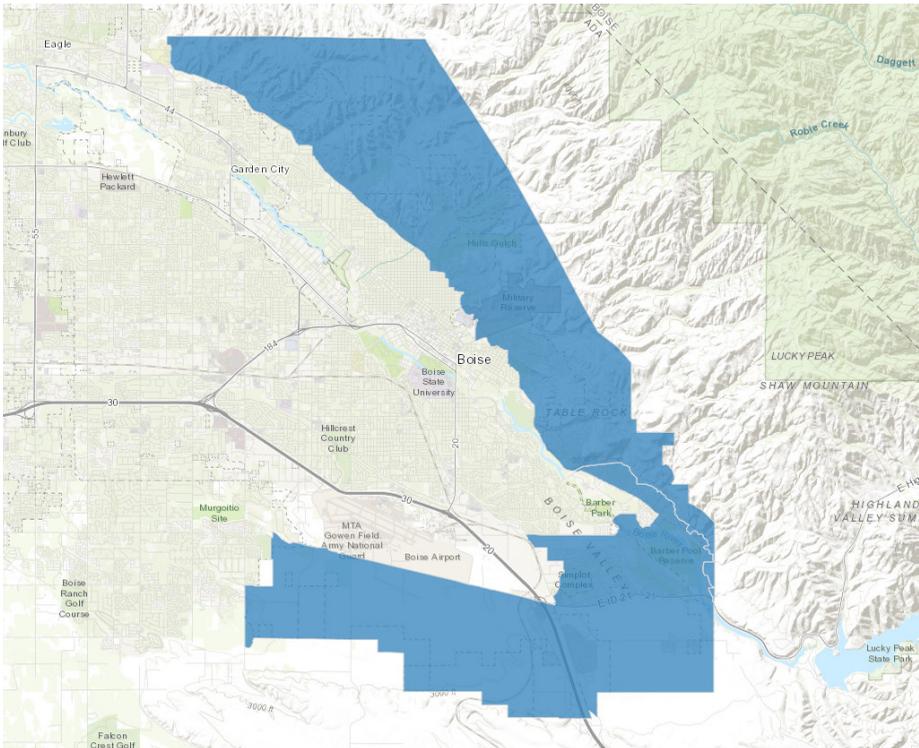
Both the intensity and length of fire season in Idaho appear to be trending upwards across recent years, not just 2021. In 2007, the Murphy Complex Fire burned over 653,000 acres—the largest blaze Idaho has experienced since 1910.<sup>2</sup> In 2013, a

lightning strike ignited the Beaver Creek Fire which raged for over a month and burned 114,000 acres around Fairfield, Hailey, and Ketchum.<sup>3</sup> The Sun Valley Resort even transformed its snow-making machines into water cannons to prevent the ski area from burning.<sup>4</sup> Though comparatively small, Boiseans will remember the Table Rock Fire of 2016. While only 2,600 acres in size, this fire came dangerously close to dozens of homes located in the Boise Foothills.<sup>5</sup> With all hands-on-deck expending every resource, the Boise Fire Department was heroically able to fight back the flames, but not before one home had been completely engulfed.<sup>6</sup>

This year's fire season appears to be continuing in the same, but worse pattern. In mid-July, Governor Little made an emergency declaration authorizing mobi-

lization of the National Guard, warning that the upcoming months could be the state's worst wildfire season in years.<sup>7</sup> State officials urged the public to take caution, noting "unprecedented" wildfire conditions and extremely limited fire management resources.<sup>8</sup> As of the time this article was written, there were 20 active wildfires burning across the state,<sup>9</sup> the largest of which, the Snake River Complex, had burned 109,444 acres south of Lewiston and had been active for over a month.<sup>10</sup>

In addition to affecting the quality of day-to-day life and our enjoyment of Idaho's wilderness, wildfires are enormously expensive and significantly burden public health and public resources. Up to half of the fine particulate matter in the air in some western parts of the U.S. can be attributed to wildfires,<sup>11</sup> and fine particulate



A map of the areas designated by the City of Boise as Wildland-Urban Interface (WUI). Map courtesy of the City of Boise's GIS mapping system.

matter is one of the most deadly forms of air pollution in the U.S.<sup>12</sup> Increased levels of particulate matter in the air has been linked to adverse health outcomes ranging from the mundane, like sore eyes and throats, to the more serious, such as asthma-related hospitalizations, chronic and acute respiratory and cardiovascular health outcomes, and premature death.<sup>13</sup> This burden on public health is especially acute when medical systems are already stressed, as they have been during the COVID-19 pandemic.

Wildfires also carry a substantial financial cost. In recent years, the U.S. government has spent approximately \$3 billion per year on wildfire suppression<sup>14</sup> and the wildfire season cost insurers \$7–\$13 billion in 2020<sup>15</sup> — costs that were surely passed on to citizens.

There is no doubt that wildfires have been and will continue to be an ever-present force in our country, region, and state. So, it is imperative that Idaho real estate professionals, attorneys, developers, and citizens bear wildfires in mind and strive to mitigate their incidence and effects as Idaho grows and evolves so that our state remains an exceptional place to live and work. One of the most important ways to

do this is by understanding the wildland urban interface.

### What is the “WUI”?

The wildland urban interface (“WUI”) is the area of transition between wildland and human development.<sup>16</sup> Wildland is defined as an area in which development is essentially non-existent, except roads, railroads, power lines, etc.<sup>17</sup> The WUI is where human development and wildland meet and mix.

There are two types of WUI: intermix WUI, which is the area where houses and wildland vegetation directly intermingle, such as Wilderness Ranch in Boise County, and interface WUI, where human-settled areas abut wildland vegetation, like much of the foothill development around Boise.<sup>18</sup> WUI is created either when new houses are built in or near wildland vegetation, which is the main cause of growth in WUI areas, or when wildland vegetation regrows in or near settled areas.<sup>19</sup>

As the country’s population grows, human presence in the WUI is also growing. From 1990 to 2010, there was a 41% growth of houses in the WUI and a 33% growth in the land area of the WUI, making it the fastest-growing land use type in

the conterminous U.S.<sup>20</sup> In fact, in that same time period, the WUI across the U.S. grew by 12.7 million houses and 25 million people.<sup>21</sup> As of 2018, one in every three homes was situated in the WUI. While exact data for Idaho is hard to come by, according to FEMA, 30.1–40% of houses in Idaho are in the WUI.<sup>22</sup>

It is clear why many people want to live in the WUI – it offers proximity to public land and open space, the beauty of Idaho’s landscape, and recreational opportunities. These qualities are often at their best in the WUI. But both developing real estate and living in the WUI come with challenges, perhaps none greater than the threat of wildfires.

### Increased wildfire risk and associated costs

Increased development in the WUI comes with clear risks: as more homes are built in the WUI, the risk of human-caused wildfire, which often occurs closer to residential areas than fires of other origins,<sup>23</sup> increases, as does the likelihood that homes and communities will be damaged or destroyed by wildfires.<sup>24</sup> Fires in and near the WUI pose a greater risk to life and property and are harder to fight because more resources have to be devoted to defending structures and human lives instead of just the environment. Moreover, these fires are impossible to let burn because of increased home density, even though controlled burns are good for the environment and long-term fire management.<sup>25</sup>

While less visible, increased wildfires will also cause higher costs for homeowners, municipalities, and developers. From 1991 to 2000, the U.S. Forest Service spent an annual average of \$580 million on national fire suppression measures.<sup>26</sup> This amount more than doubled from 2001 to 2010, when the agency expended an average of \$1.2 billion annually.<sup>27</sup> The most recent data indicates that the U.S. Forest Service spent \$3 billion in 2018 alone.<sup>28</sup> These numbers do not include costs incurred by local fire departments, which respond to an estimated 36,700 wildfires per year and are spread increasingly thin as wildfires become more common and more severe.<sup>29</sup>



Aerial panorama of the footprint of the Table Rock Fire scar from June 2016. Photo credit: Idaho Airships, Inc., <https://www.idahoairships.com>.

This summer, firefighters have already responded to more than a dozen fires burning in North and Central Idaho.<sup>30</sup> The Idaho Legislature allocated \$30 million to firefighting efforts this year and as of August 11, 2021, emergency fire suppression costs had surpassed the budget at \$51.8 million.<sup>31</sup> Wildfire season can last into September<sup>32</sup> and some wildfires can continue to burn until snow falls so, with many active fires still burning across the state, that number is sure to grow.

In addition to fire suppression expenditures, other costs also include restoring burned areas, lost tax and business revenues, and property damage and/or devaluation. For individuals and businesses, higher wildfire risk can cause higher direct costs, such as increased insurance rates and, eventually, higher taxes to cover increased public expenditures.

From a purely real estate perspective, studies conducted in Colorado and Montana demonstrated correlations between

notice of high risk of wildfire in the area and decreased real estate values.<sup>33</sup> Most unfortunately, there are also non-monetary costs of wildfires, such as destruction of communities, loss of natural resources, damage to human health, and loss of life.<sup>34</sup>

### **What can we do to reduce fire impacts in the WUI?**

Wildfires are inevitable but the destruction of homes, ecosystems, and lives does not have to be. Studies show that as many as 80% of the homes lost to wildfires could have been saved if fire-safe practices had been followed.<sup>35</sup> There are numerous management options, policy tools, and actions that can help reduce the risk of wildfires and promote fire-safe practices.

To manage wildfire risk, land management agencies (such as the Forest Service and the Department of Lands) may take actions such as eliminating ignition sources, managing fuel and vegetation, undertaking community education on

individual preparedness, and, of course, suppressing wildfires.

Homeowners can reduce vulnerability by removing vegetation around their homes to create defensible space, reducing flammability of structures by choosing fire-resistant roofing and building materials, and eliminating materials and activities that would generate sparks or embers. By adhering to their jurisdiction's WUI requirements<sup>36</sup> and mandating some or all of the above actions, homeowners' associations can influence physical conditions and resident activities that will help keep their communities safe.

The Boise Fire Department offers free wildfire home safety inspections and organizations like Ada Fire Adapted ([www.adafireadapted.org](http://www.adafireadapted.org)) strive to help communities become more fire-resistant. Municipalities in other parts of Idaho may offer similar services.

Perhaps most relevant to real estate professionals, attorneys, and developers, local jurisdictions can use a variety of



land use planning tools to limit the environmental impacts of housing growth in the WUI.<sup>37</sup> Commonly, local jurisdictions enact specific standards and requirements for building construction in designated WUI areas. These restrictions generally take the form of requirements regarding building construction and materials, the type and location of vegetation permitted, defensible space (to create a barrier of less-flammable materials around homes), removal of deadwood, emergency vehicle access, water supply, and wildfire safety and/or mitigation plans. Ada County, Boise County, and the City of Boise, among others, have WUI zoning code regulations.<sup>38</sup>

Local real estate developers can also play a key role in not only constructing firesafe communities, but also proactively formulating wildfire resilience strategies. Avimor, a 35-square-mile development in the Boise foothills, has been nationally recognized and studied as a model WUI community that prioritizes wildfire plan-

ning.<sup>39</sup> Taking the *it's not if, but when* approach, Avimor Development has worked closely with a professional wildfire consultant and local fire districts to mitigate this risk.<sup>40</sup> This team mapped and classified vegetation across Avimor's 35,000 acres, placed recreational trails and road networks to act as fuel breaks and buffers, and created detailed plans for wildland fires, recreation, noxious/invasive weeds, and wildlife.<sup>41</sup>

As a registered Firewise USA Community, Avimor's buildings also adhere to rigorous safety standards. Structures are built with cementitious siding and class A roofs,<sup>42</sup> and all residential units must have landscaping plans approved by a Firewise USA specialist, with check-in reviews every five years.<sup>43</sup> To aid local fire departments' response, all access points to the community have been pre-identified and fishing ponds were added to act as dipping stations for firefighting helicopters.<sup>44</sup>

Beyond development, Avimor continues to mow surrounding areas to remove

potential fuel sources and residents pay a monthly \$10 fee that funds wildland improvement projects.<sup>45</sup> With Idaho's substantial population growth and development into the WUI zone, real estate developers are encouraged to implement similar measures.

Idaho has gotten lucky; it has been many years since wildfires have caused a significant loss of structures or human life. But, looking at our neighboring states, that luck could run out at any time. Last year, wildfires in Oregon destroyed 4,009 homes,<sup>46</sup> wildfires in California destroyed more than 8,600 homes, wildfires in Washington destroyed at least 377 structures,<sup>47</sup> and wildfires in Montana destroyed 166 homes.<sup>48</sup> Given that development in the WUI is not going to stop, or likely even slow down, understanding best practices in the WUI may help Idaho's communities avert similar disasters.

**For more information, visit:**

<https://idahofirewise.org/>

<https://wildfirerisk.org/explore/0/16/>



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