Application No.: A.22-04-008 et al.
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Witnesses: R. McCann



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(U 338-E)

CoreLogic 2019 Wildfire Report

Before the

Public Utilities Commission of the State of California

September 2022

CoreLogic®



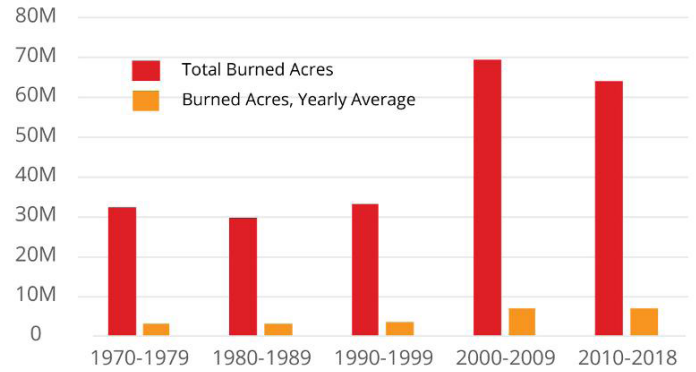
2019 Wildfire Risk Report

Executive Summary

Over the past several years, the United States has experienced record-breaking wildfires. In 2018 alone, 8,767,492 acres burned, roughly equivalent to the area of 74 of the 75 largest cities in the United States combined. This is the sixth highest total since modern historical records began in the mid-1900s.

2004 was the first time over 8 million acres burned in one year. During the next 14 years, more than 8 million acres burned annually another eight times, making nine of the last 14 years the highest annual totals of burned wildfire acreage. A decadal comparison of burned acreage shows that over the last 20 years there has been a shift towards increased burned acreage. In that same timeframe, larger and more devastating wildfire events have occurred.

Chart 1: Acres burned by decade, 1970 through 2018



Source: National Interagency Fire Center, 2019

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Wildfire is a unique peril because the level of damage is often binary – a home is either left untouched by the fire or a total loss occurs. A patchwork of devastation occurs as fires pass by some properties indiscriminately while surrounding homes are reduced to ash. Unlike flooding or hail, it can and often does result in a 100% loss of the structure. Post-event studies have shown that structural hardening increases a home's resistance to fire, but all too often luck seems to play a part, too.

There is no state that is completely free from wildfire risk, but historic wildfire data indicates that the 13 Western states are the most commonly affected and have an expectation of property losses due to wildfire.

The 2019 CoreLogic Wildfire Risk Report provides insights into single-family and multifamily residential properties at risk of damage from wildfires in the United States. The 13 states in this report not only experience the greatest amount of acreage burned but also the most severe and devastating wildfire events when loss of life and property damage are considered. They also possess the highest probability of property loss due to wildfire. These states are also notable for having substantial wildfire acreage burned in both 2018 and previous years (Tables 2 and 3).

Table 2: Top 15 states based on wildfire acreage burned in 2018

State	Acres Burned
California	1,823,153
Nevada	1,001,966
Oregon	897,262
Oklahoma	745,097
Idaho	604,481
Texas	569,811
Colorado	475,803
Utah	438,983
Washington	438,833
Alaska	410,683
New Mexico	382,344
Wyoming	279,242
Arizona	165,356
Florida	138,820
Montana	97,814

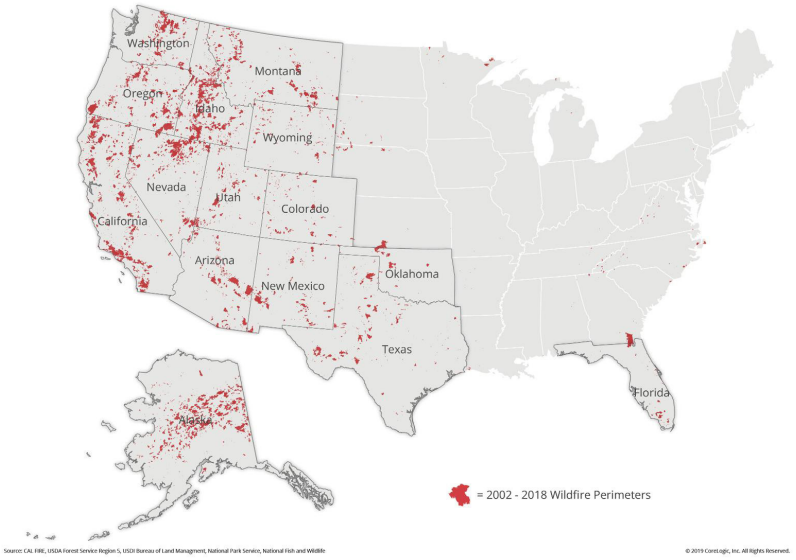
Source: NIFC, 2019



Table 3: Rank order of top 15 states based on average acres burned per year 2002-2018.

State	Rank	Average Acres/Year
Alaska	1	1,620,882
California	2	710,268
Idaho	3	586,513
Texas	4	546,415
Oregon	5	486,803
Nevada	6	437,316
Montana	7	385,187
Arizona	8	317,602
New Mexico	9	304,999
Washington	10	268,762
Oklahoma	11	235,044
Utah	12	193,414
Colorado	13	160,322
Florida	14	147,753
Wyoming	15	108,174

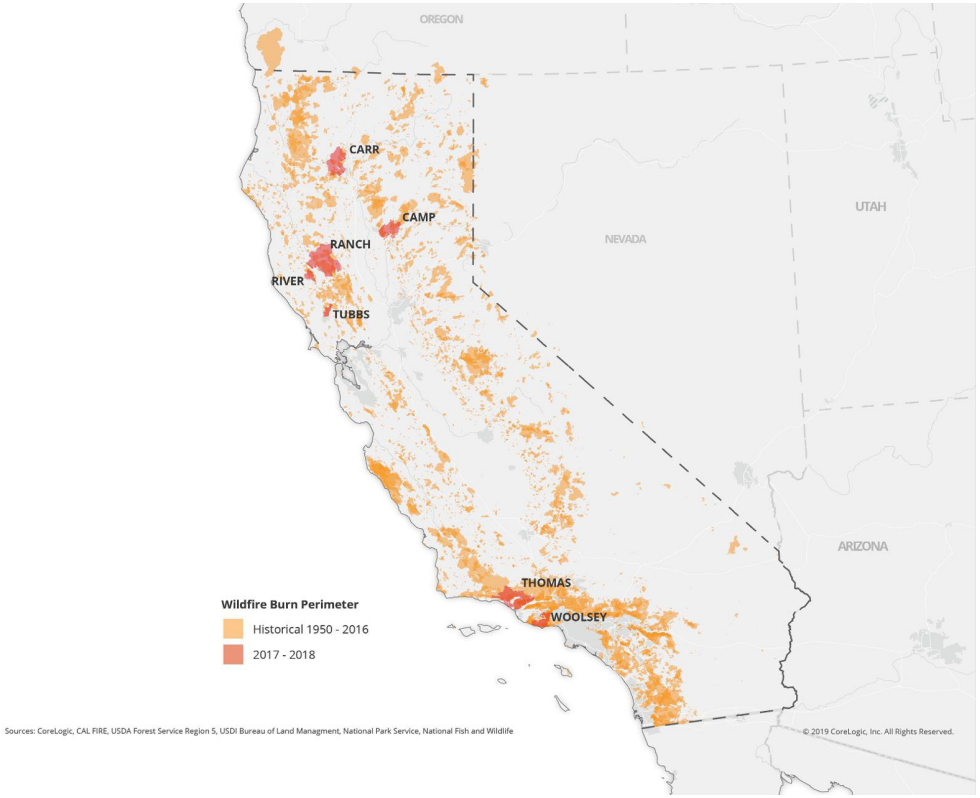
Source: NIFC, 2019



This report provides an analysis of the properties at risk of a destructive wildfire event and the associated reconstruction cost value (RCV) for homes in the 13 Western states. The high density of homes located in areas that are susceptible to wildfires and the continuing expansion of development into lands prone to wildfires only increases the threat of future catastrophic events and the possibility of billion-dollar losses.

The 2019 CoreLogic Wildfire Risk Report evaluates:

1. The combined number of single-family residences (SFRs) and multifamily residences (MFRs) at risk of wildfire damage by state.
2. The reconstruction cost value (RCV) for these homes.
3. Notable wildfires of the past few years and their associated losses.

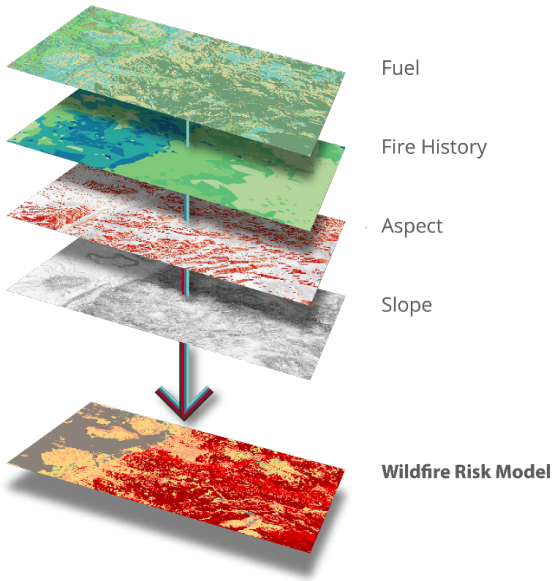


A review of the past few years reveals not only a continuation of the intense fires and associated destruction in the United States but an escalation of these events. Looking specifically at California, 2017 and 2018 were responsible for more wildfire-related property damage than the state has experienced in any two consecutive years of its history.

Looking to the future of wildfire activity in the United States, the continuing presence of the factors responsible for recent wildfires are an ominous indicator that the coming years could see more of the same.

How Does Wildfire Work?

There are four factors that affect wildfire risk:



Fuel: Vegetation species type and density affect the threat of fire differently as certain species are more apt to carry wildfire and thus develop into intense fire events.

Fire history: Areas of recurrent fires present long-term threats as they often support ongoing fire risk.

Aspect: The cardinal direction a slope faces can also affect wildfire risk. Southern slopes tend to hold less moisture than northern facing slopes, and this can lead to increased fire intensity and easier ignitions.

Slope: This factor is often responsible for faster moving and more intense fires as flames can be in closer contact with fuels on steeper slopes.

Ember ignition is also an important factor to consider in a property's risk level. There are many homes, the number of which is rapidly increasing due to new construction, in areas known as the Wildland-Urban Interface (WUI) and Wildland-Urban Intermix. Both of these areas are susceptible to ember ignitions even though individual property parcels may not contain any high risk fuels.

The relationship between wildfires and the WUI is similar to that of hurricanes and the coast; just as hurricanes often build in strength as they move over the open ocean towards the coast, wildfires build in intensity as they roll through the wildlands and enter the WUI.

The WUI is defined as an area where urban development lies adjacent to undeveloped or very minimally developed wildland areas that are prone to wildfire. The relationship between wildfires and the WUI is similar to that of hurricanes and the coast; just as hurricanes often build in strength as they move over the open ocean towards the coast, wildfires build in intensity as they roll through the wildlands and enter the WUI.

An evaluation of residential development within the WUI may appear similar to traditional urban properties that do not contain high risk fuels or the appearance of wildfire risk. However, the close proximity of these homes to the wildland puts them in an area where burning embers can be carried by wind and deposited on structures a mile or farther from the fire source. Exposure to embers (also referred to as firebrands) has been proven to pose a risk similar to direct flame contact. As a result, many homes each year are destroyed due to ember-related ignitions.

Using location information and the power of PxPoint™ geospatial technology, CoreLogic incorporates fuel (vegetation), terrain and fire history to determine the risk to any given property, sorting residences into four categories of risk: extreme, high, moderate and low.

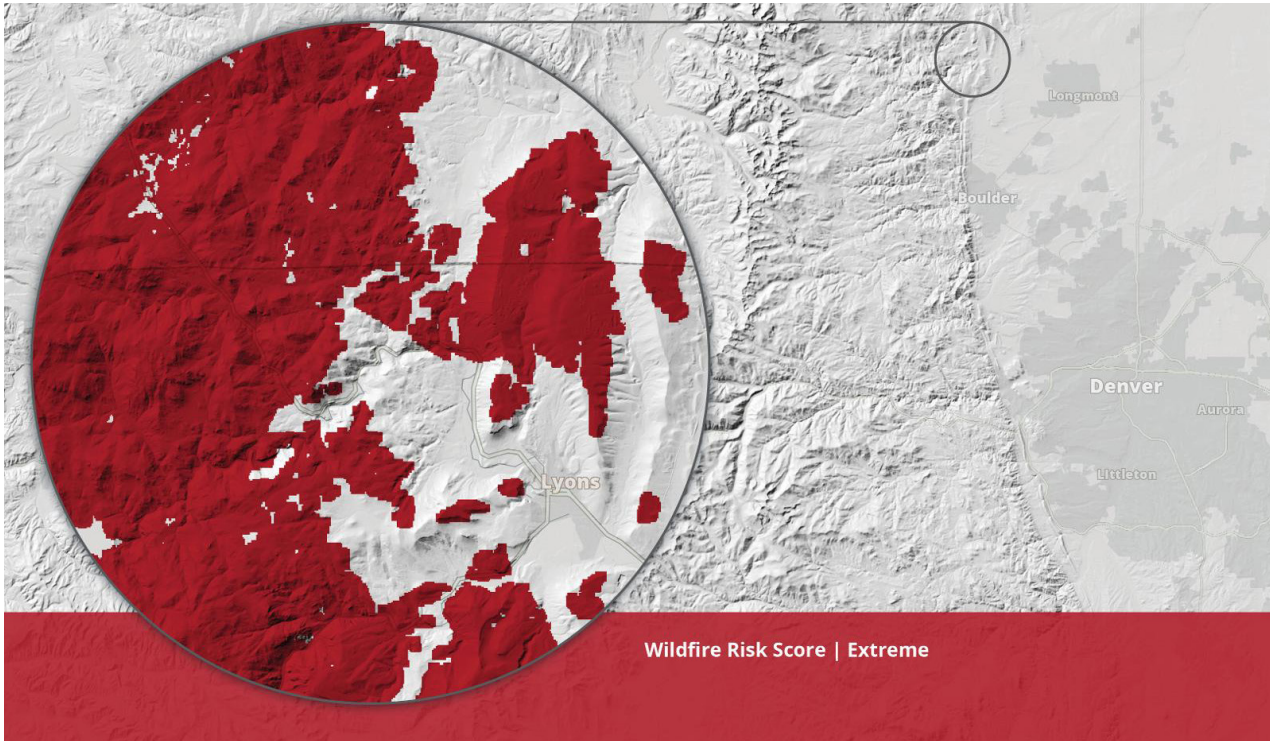
EXTREME: Homes in the extreme risk category are the most likely to sustain damage or be destroyed during a wildfire event. Often, these homes are within or immediately adjacent to areas of high-risk fuels in locations where high intensity wildfires have a tendency to reoccur.

Table 4: Wildfire Risk in the United States

Risk	Total Residences	Total Estimated RCV in Billions
Low	28,716,516	$7,888.00
Moderate	326,838	$108.95
High	924,623	$318.38
Extreme	775,654	$220.20

Source: CoreLogic, 2019

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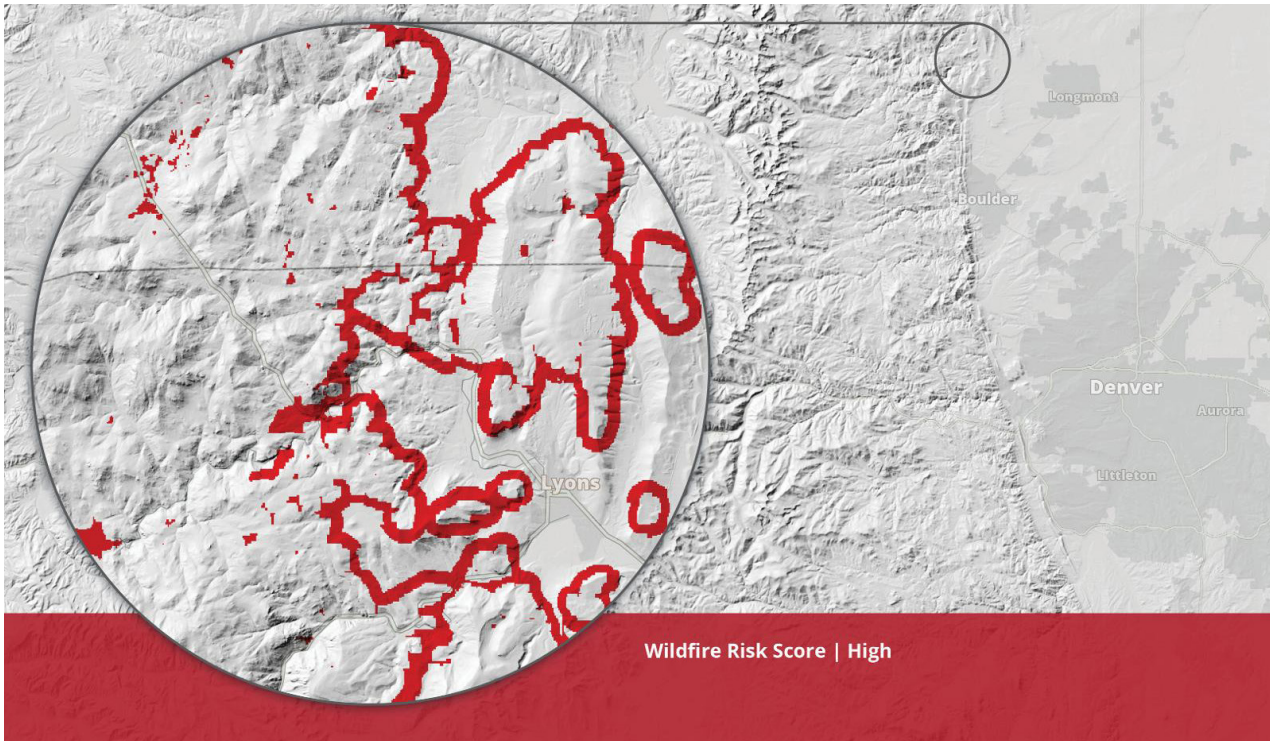
HIGH: While these homes are slightly less likely to be destroyed, they are still likely to be affected by wildfire events. High-risk properties are often found in or near fuels and terrain that are conducive to catastrophic wildfires. Some homes in this category may not be located in or among wildland fuels but have an increased potential for loss due to ember ignitions.

Table 4: Wildfire Risk in the United States

Risk	Total Residences	Total Estimated RCV in Billions
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Wildfire Risk Score | High

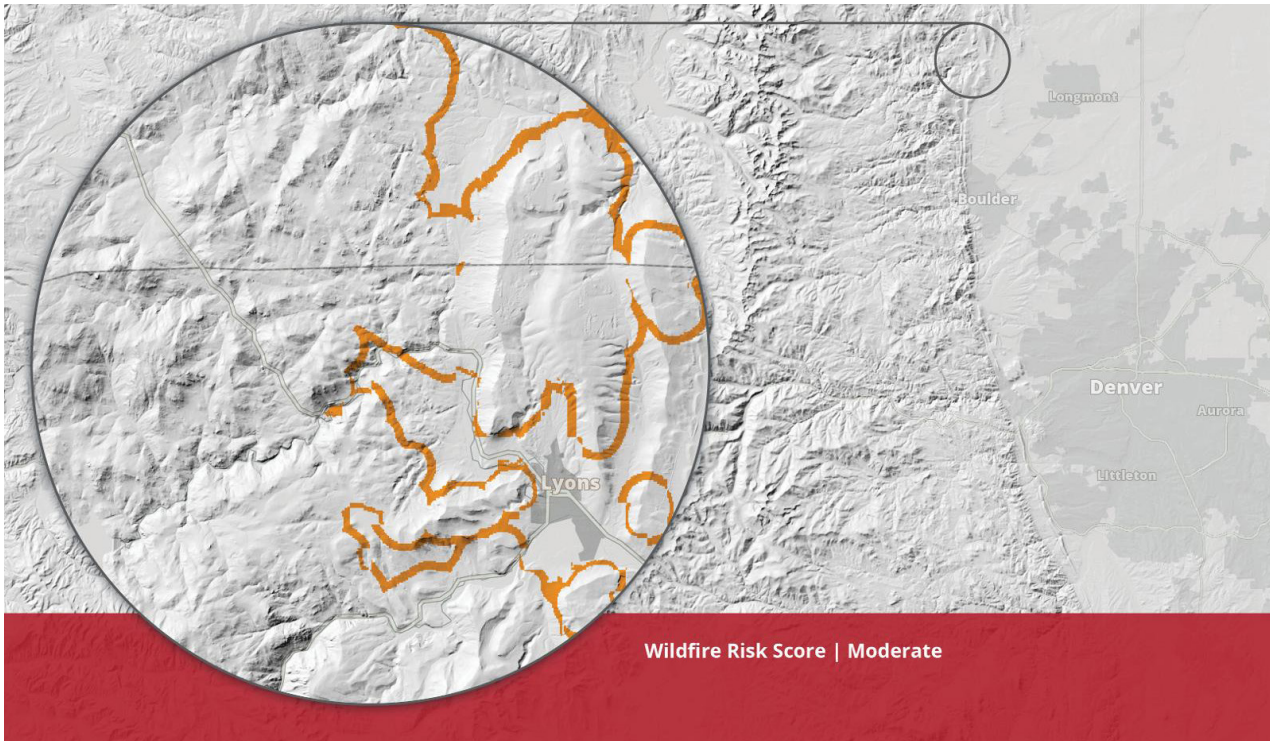
MODERATE: These properties tend to be located farther from high-risk areas. When they are damaged, it is nearly always the result of ember ignitions to the structure or adjacent structures. Far fewer homes within the moderate range tend to be affected by fires, but the risk is still present for these locations.

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Source: CoreLogic, 2019

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Wildfire Risk Score | Moderate

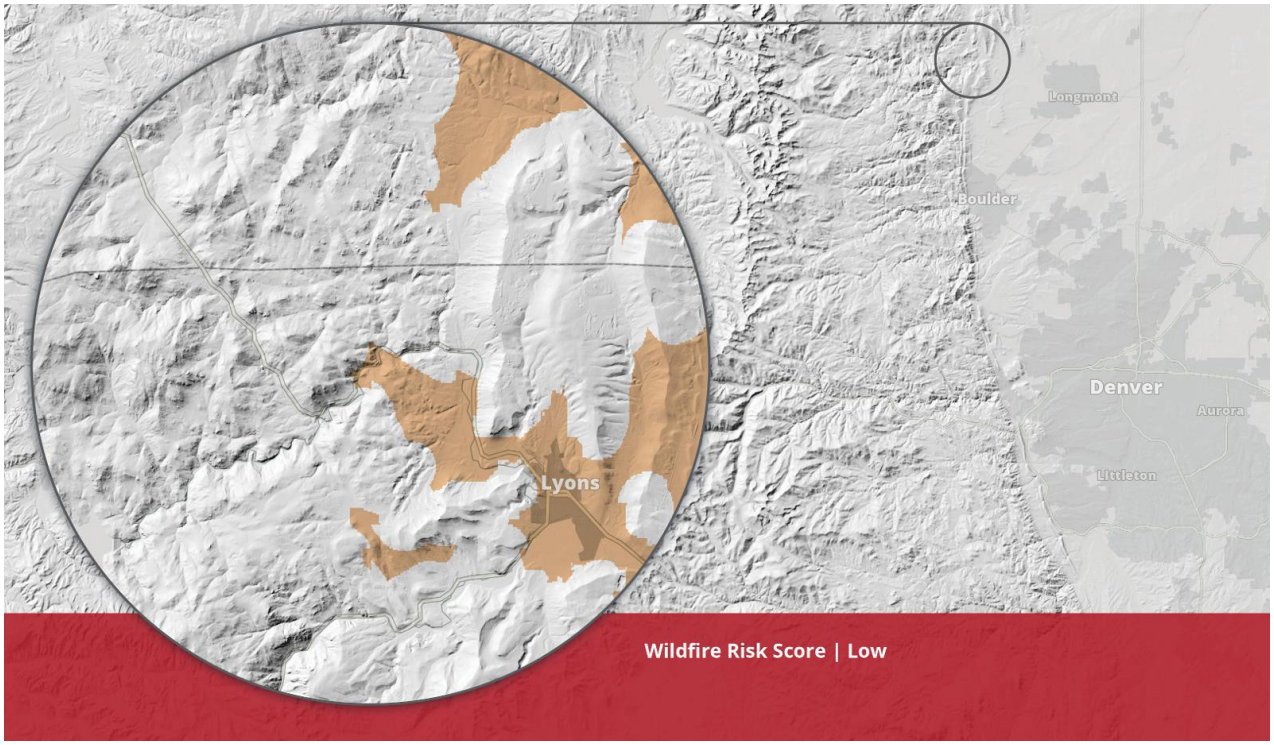
LOW: Homes that are found in the low category tend to be more distant from high-risk areas. As a result, they are seldom affected by wildfires. There are more homes in the low category because dense residential development tends to occur well inside the urban area, with most of these homes at little to no threat of wildfire damage.

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Source: CoreLogic, 2019

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National Analysis

Based on an analysis by CoreLogic for 2019, there are 775,654 residential properties at extreme risk of wildfire damage in the 13 Western states. The total estimated RCV for properties totals just over $221 billion (Table 4).

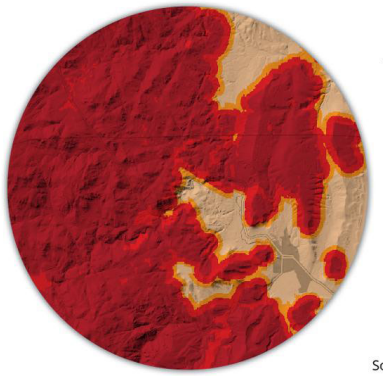


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Extreme	775,654	$220.20

Source: CoreLogic, 2019

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The RCV is calculated based on the total (100%) destruction of the residential structure using the combined cost of construction materials as well as equipment and labor. The number of homes that are categorized as high risk is even greater, with 924,623 residences. The associated RCV is more than $318 billion.

All numbers in the tables in the risk analysis section of this report do not represent the loss estimates for a single wildfire event or even an entire season of wildfires. Instead they reflect the property risk at the present time and are indicative of the risk in these states. The risk to an individual property is directly related to its location in relation to the fuels and terrain that create high risk areas.

Regional Analysis

Evaluating wildfire risk at the regional level reveals the majority of properties at high and extreme risk are located in both the Desert and Pacific Southwest region and Southern Rockies and South Central region of the United States (Table 5). The Desert and Pacific Southwest region contains both California and Arizona while the Southern Rockies and South Central region contains both Colorado and Texas which have each had devastating wildfires during the last 10 years. These continue to have increased numbers of homes at risk of wildfire damage as residential development continues to expand.

The Northern Rockies, along with the Pacific Northwest have lower population totals and fewer total homes, yet still have a high number of homes with extreme risk.

As expected, the regions with the most properties have the highest total RCV (Table 6).

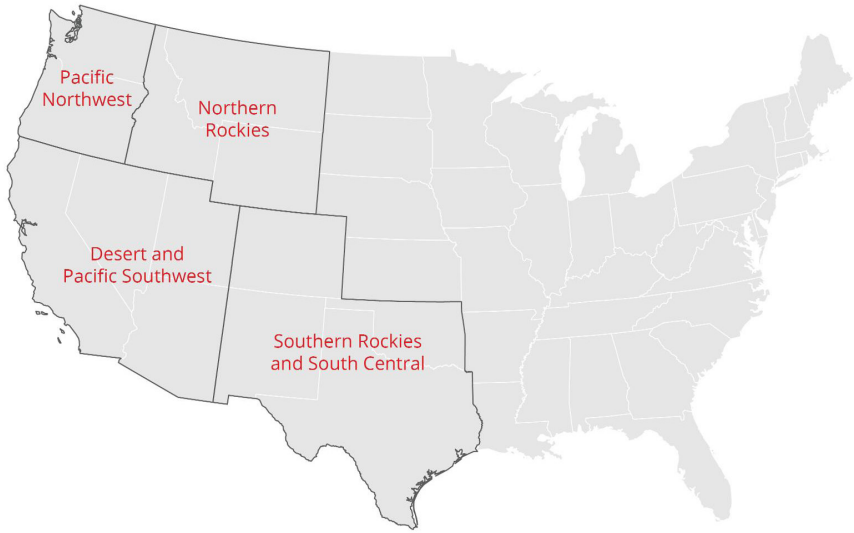


Table 5: Number of Residences at Risk by Wildfire Region

Region	Low	Moderate	High	Extreme
Desert & Pacific Southwest	12,759,214	158,484	464,387	285,623
Northern Rockies	1,030,426	22,033	58,025	71,507
Pacific Northwest	3,550,969	29,332	72,593	93,211
Southern Rockies & South Central U.S.	11,375,907	116,989	329,618	325,313

Table 6: Reconstruction Cost Value of Residences at Risk by Wildfire Region in Billions

Region	Low	Moderate	High	Extreme
Desert & Pacific Southwest	$4,265.32	$67.46	$205.18	$104.46
Northern Rockies	$231.85	$5.38	$14.13	$17.28
Pacific Northwest	$905.48	$7.38	$18.32	$23.25
Southern Rockies & South Central U.S.	$2,485.35	$28.72	$80.74	$75.21

Individual States

Due to both their larger geographic size and large populations, California and Texas lead the United States in the number of residences and RCV in the high- and extreme-risk categories. Both states contain fuels and terrain that contribute to higher risk classifications and have population centers near high-risk areas. Colorado, which has experienced several record-setting fires since 2010, ranks third for the number of homes in both the high and extreme categories. While other states tend to have fewer properties, of the remaining 10 states, half have more than 50,000 residences in the high- and extreme-risk categories combined.

The RCV follows the same pattern with California, Colorado and Texas containing the largest values due to the large number of homes in the high- and extreme-risk categories.

Table 7: Number of Residences at Wildfire Risk by State

State	Low	Moderate	High	Extreme
Arizona	2,143,760	9,590	36,811	34,491
California	8,896,509	138,821	405,715	240,580
Colorado	1,674,723	33,461	91,026	113,002
Idaho	531,676	10,752	31,195	37,624
Montana	304,960	9,820	24,147	28,955
New Mexico	553,918	9,287	42,843	38,101
Nevada	939,019	1,104	7,998	6,989
Oklahoma	1,310,426	284	383	172
Oregon	1,191,803	21,642	57,083	74,703
Texas	7,836,840	73,957	195,366	174,038
Utah	779,926	8,969	13,863	3,563
Washington	2,359,166	7,690	15,510	18,508
Wyoming	193,790	1,461	2,683	4,928

Table 8: Reconstruction Cost Value of Residences at Risk by State in Billions

State	Low	Moderate	High	Extreme
Arizona	$448.74	$2.04	$7.95	$7.73
California	$3,381.07	$61.92	$189.00	$92.62
Colorado	$401.65	$9.55	$27.05	$33.66
Idaho	$122.70	$2.65	$7.52	$9.05
Montana	$65.55	$2.38	$5.94	$6.96
New Mexico	$116.66	$2.27	$10.66	$9.23
Nevada	$247.89	$0.39	$3.21	$2.92
Oklahoma	$249.75	$0.05	$0.06	$0.03
Oregon	$297.22	$5.46	$14.33	$18.64
Texas	$1,717.30	$16.86	$42.97	$32.30
Utah	$187.62	$3.11	$5.02	$1.19
Washington	$608.26	$1.92	$4.00	$4.61
Wyoming	$43.60	$0.36	$0.67	$1.27

Top 15 Metropolitan Areas with Wildfire Risk

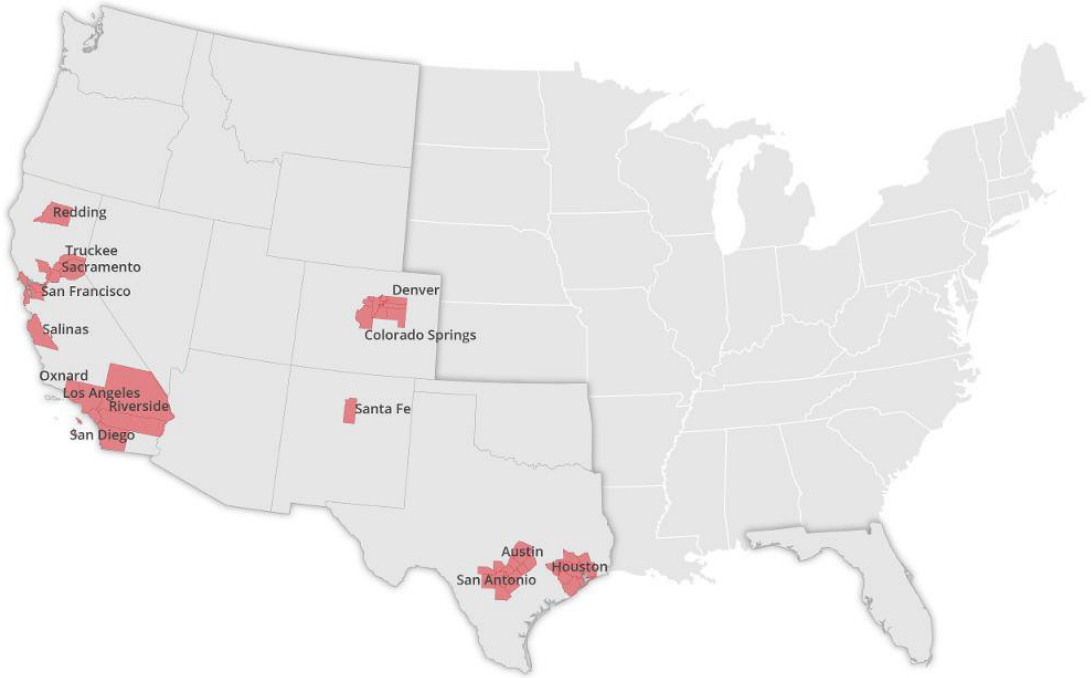
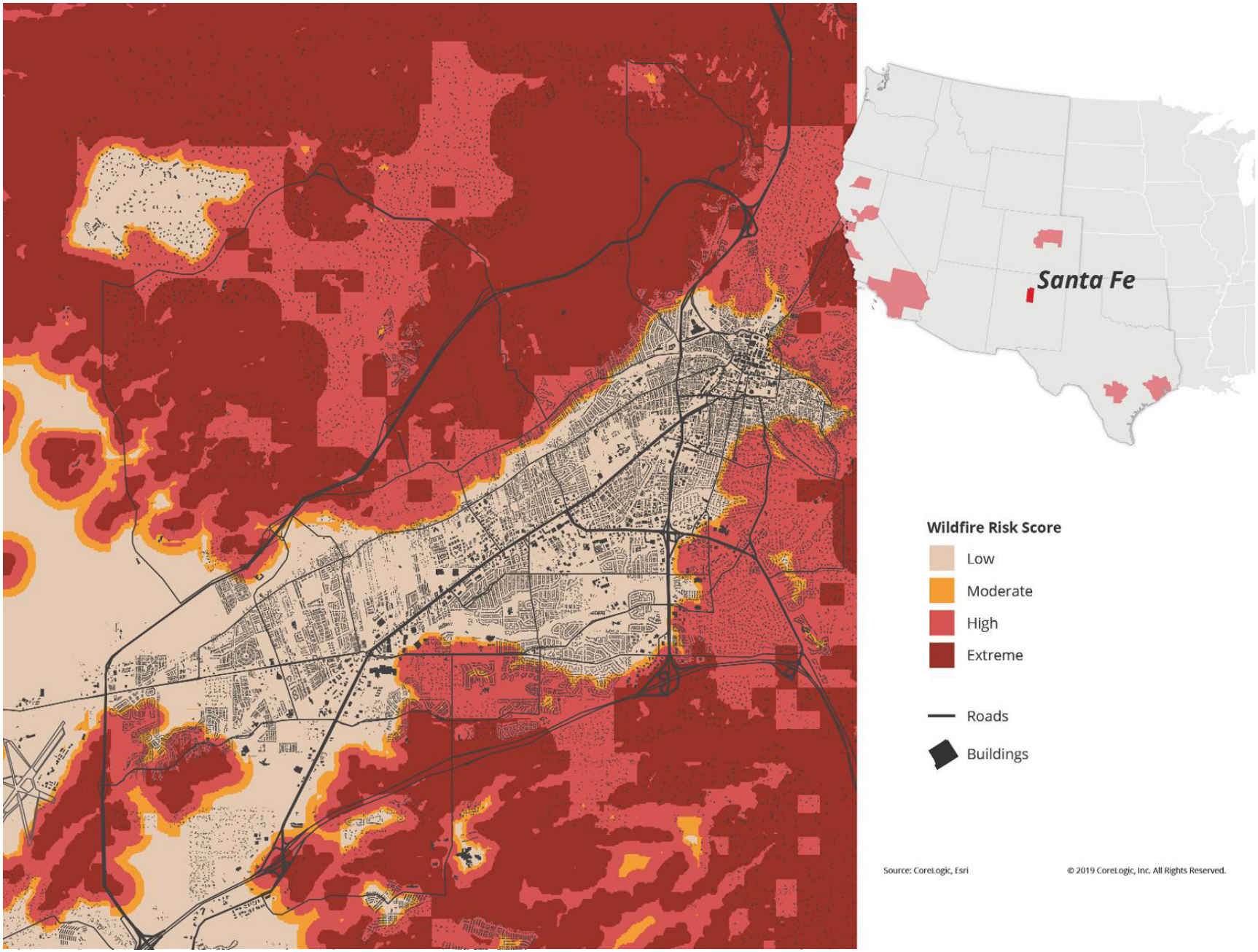


Table 9: Top 15 Metropolitan Areas for Wildfire Risk
Ranked by Reconstruction Cost Value in Billions.

Metropolitan Area	Rank	High - Extreme-Risk Residence Count	High and Extreme Risk RCV
Los Angeles, CA	1	121,589	$71.00
Riverside, CA	2	108,787	$40.94
San Diego, CA	3	75,096	$35.81
Sacramento, CA	4	68,056	$27.50
Austin, TX	5	53,984	$16.35
San Francisco, CA	6	32,174	$16.32
Denver, CO	7	49,734	$15.32
Truckee, CA	8	31,987	$10.85
Oxnard, CA	9	19,555	$10.17
Colorado Springs, CO	10	31,323	$9.36
San Antonio, TX	11	30,696	$8.43
Santa Fe, NM	12	23,546	$7.28
Redding, CA	13	21,057	$6.44
Salinas, CA	14	11,314	$6.39
Houston, TX	15	36,004	$6.27

The cities identified in this report represent major metropolitan areas but may also contain additional unlisted urban areas. These represent the top 15 urban metropolitan areas in the Western United States based on combined high- and extreme-risk properties along with the RCV values for each. The rank is based on the RCV values.


Santa Fe
Wildfire Risk Score
Low
Moderate
High
Extreme
Roads
Buildings
Source: CoreLogic, Esri
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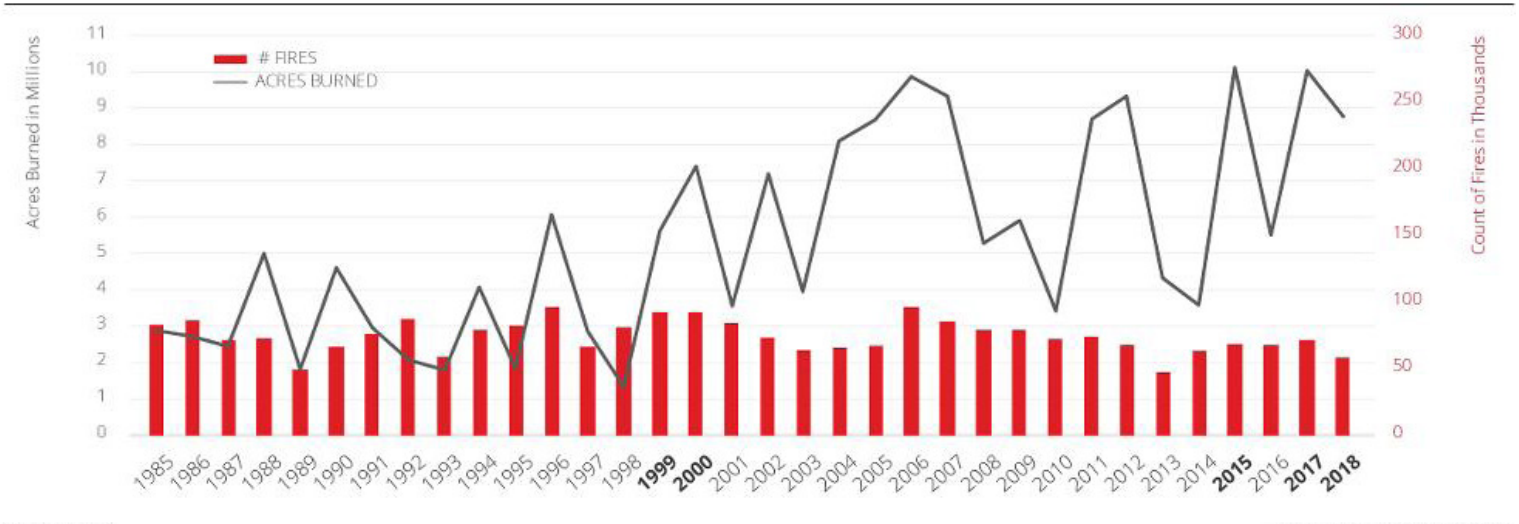
Looking Back

No more than 7 million acres were lost annually to wildfires between 1964 and 1999. However, since 2000, 11 of the last 19 years ended with more than 7 million acres burned. In 2015 and 2017, the United States lost 10 million acres to wildfires. All but four (Oklahoma, Colorado, Utah and Wyoming) of the 13 Western states have experienced at least one year with over 1 million acres burned since 2010.

While these numbers can't help to predict the wildfire season of the future, they show a disturbing trend of increasing wildfires across the country, with the majority of increase acreage occurring specifically in the Western states.

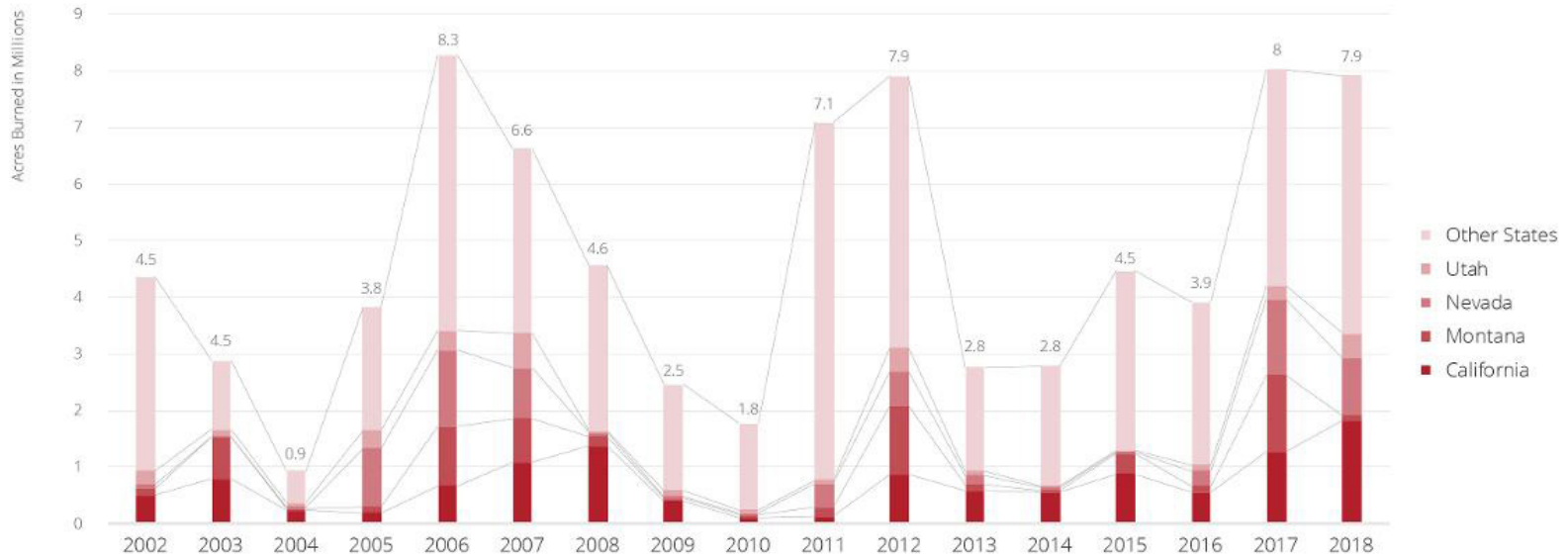
During 2017 and 2018, an increasingly large amount of burned acreage and destructive fires occurred in certain parts of the Western United States. In 2017, Montana led the nation in wildfire acreage with 1.36 million acres burned. During that same year, Nevada (1.32 million) and California (1.26 million) each lost more than 1 million acres to wildfire activity. In 2018, California topped the list with over 1.8 million acres burned and Nevada again had just over 1 million acres burned.

Chart 2: Total fires and acres burned in the United States 1985 - 2018



When looking at the destructiveness of recent years, 2018 represents an increase of nearly 800% in Utah. 49 structures are lost in the state on average as compared to the 370 lost in 2018 in the state. Meanwhile, Montana lost more than 140 structures in 2017. However, no state compared to the wildfire devastation experienced in California over the past two years.

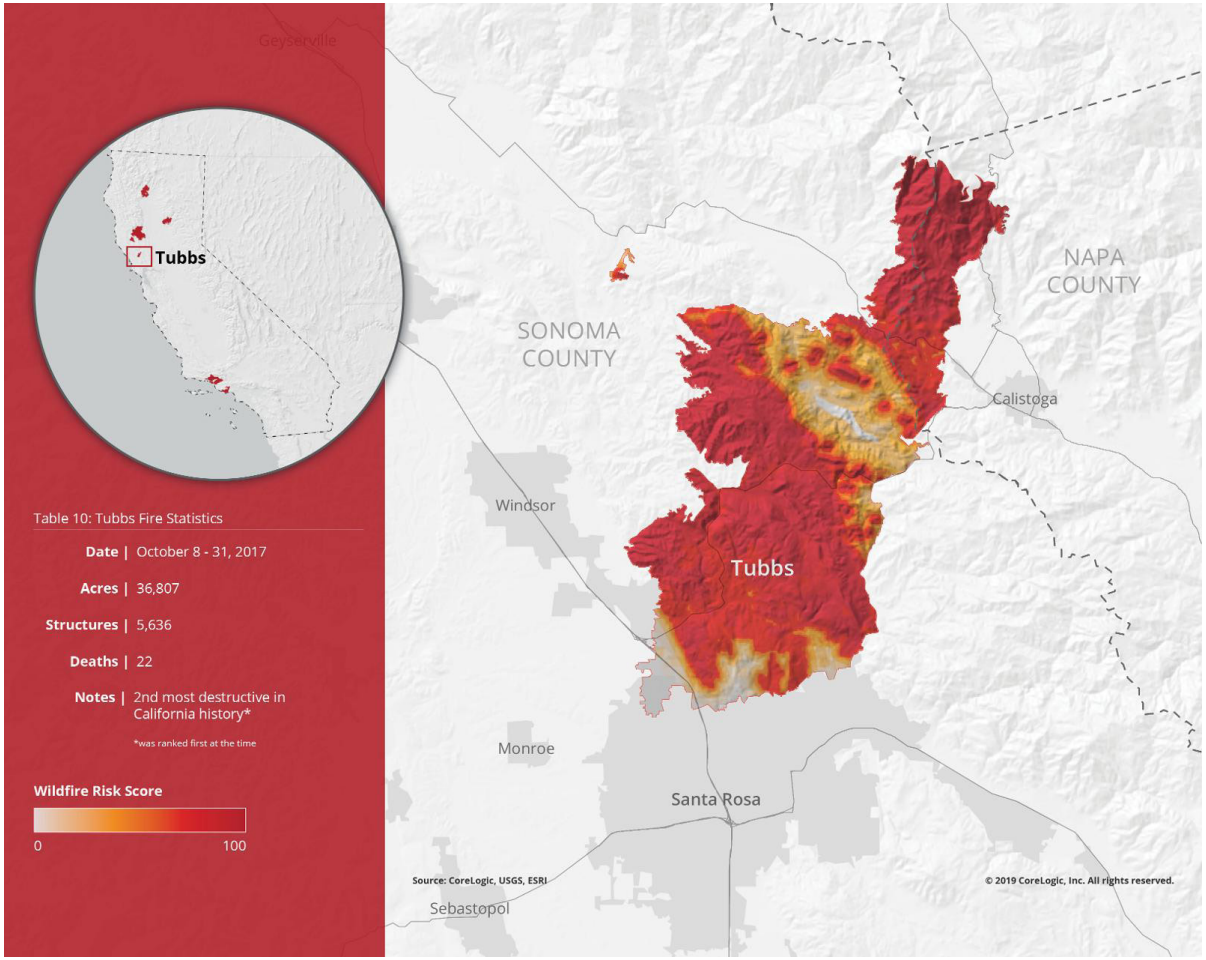
Chart 3: Total acres burned in the United States 2002 - 2018



In 2017, California's wildfires dwarfed previous records for both the size of the fires and the amount of destruction. In 2018, new records were set again for both categories, along with the number of deaths for a single wildfire event.

2017 Tubbs Fire

The Tubbs Fire was one of several fires which occurred in the wine country of Northern California in October 2017. These fires were collectively known as the October firestorm. After years of drought, record-setting precipitation occurred in the winter of 2016 and spring of 2017 in parts of California. The resulting fuel load and conditions set the stage for a dry autumn and prime conditions for the ignition that occurred on the morning of October 8. The fire grew rapidly due to winds measuring in excess of 70 mph and at least 20-30 mph at various times and locations.

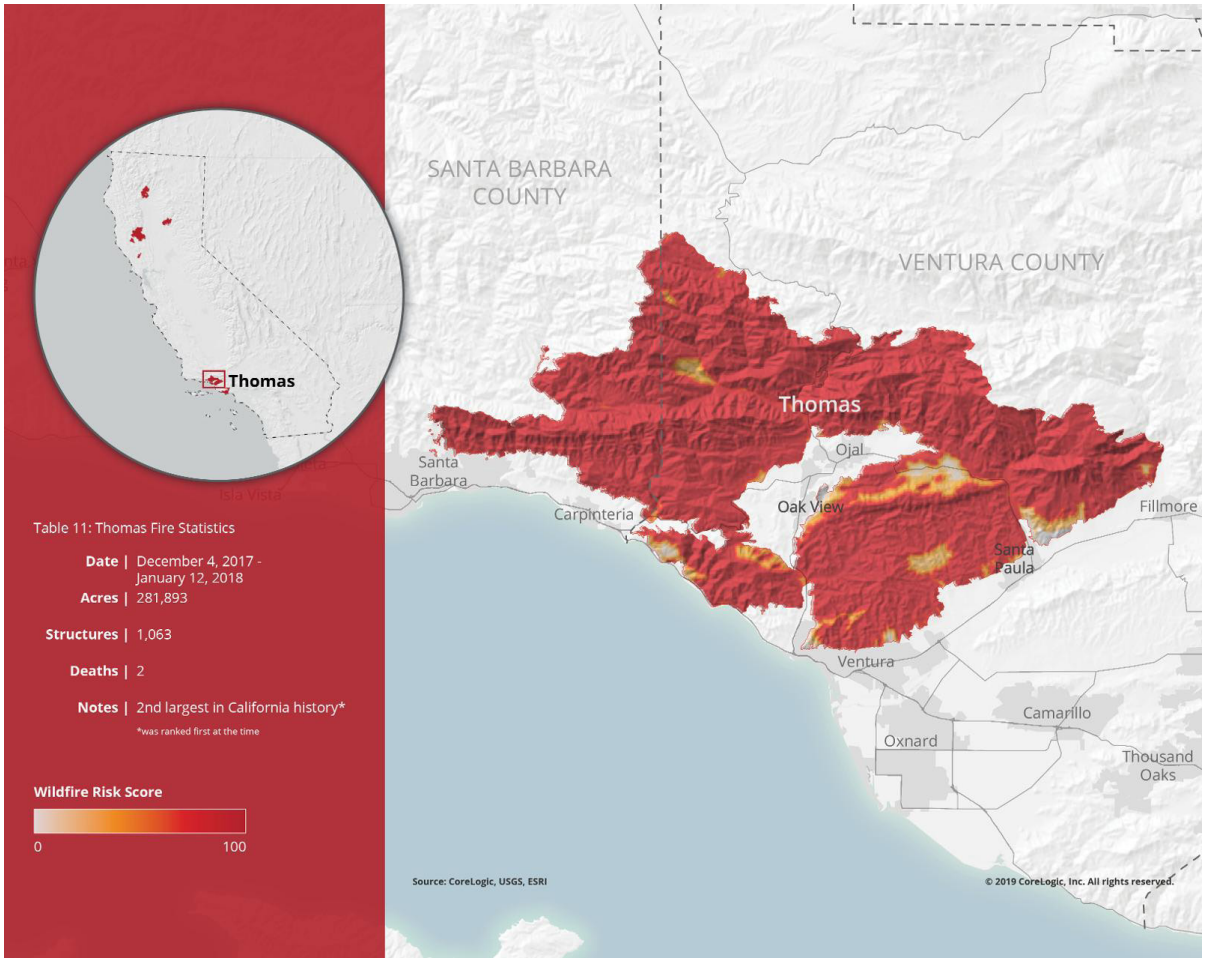


The fire moved southwest rapidly and was on the outskirts of Santa Rosa in less than 24 hours. High wind speeds continued to push the fire into the city. As homes began to burn, the fire was no longer a wildfire as much as it was an urban conflagration. Flames and embers from the burning homes ignited adjacent structures, and entire neighborhoods were destroyed. The wind speeds along with densely-packed dwellings and flammable construction materials enabled the fire to move much farther into the urban development than is likely for fires in California wildfire areas.

At the time, the Tubbs fire became the most destructive in California history. While it only burned 36,000 acres, a total of 5,636 structures were destroyed and 22 deaths occurred. The 1991 Tunnel Fire set the previous record with 3,280 structures burned. CoreLogic estimates losses from the Tubbs Fire at $5 billion.

2017 Thomas Fire

The Thomas Fire was not part of the October firestorm nor was it located in Northern California. However, the development and progression of the Thomas Fire occurred due to the same drought conditions that plagued most of the state leading up to the 2017 fires. Seasonal precipitation also contributed to the fuel load leading up to and beyond heightened fire activity in Southern California.



The fire began on December 4 at two separate ignition locations in Ventura County. It grew quickly, pushed by strong gusts and sustained by the Santa Ana winds. Dense chaparral fuels and wind pushed it quickly to the south and west into Santa Barbara County. The strength of the wind hindered emergency air response efforts to put out the fire at various times. This enabled the fire to expand more quickly and effectively despite the volume of emergency response that was directed towards the fire. The area burned by the Thomas Fire experienced 34 fires from 1985 to 2016.

The size of the fire caused a distinct weather pattern which resulted in a cloud formation above the fire, in addition to numerous fire whirls generated by the blaze.

The Thomas Fire burned for nearly a month and eventually succumbed to the suppression efforts of emergency responders. This fire became the largest fire in California history, surpassing the 273,000 acres consumed by the 2003 Cedar Fire. A total of 1,063 structures were destroyed and two people were killed as a result of the Thomas Fire. CoreLogic estimates the losses for this event to total $1.6 billion.

While rainfall can help to reduce fire spread, it can also lead to water-related damage and destruction following a severe wildfire event. After the Thomas Fire, mudslides and debris flow activity destroyed numerous homes and took additional lives. This type of destruction is not uncommon in areas where wildfires remove the vegetation that holds the soil in place.

2018 Carr Fire

The Carr Fire was a massive wildfire event that burned into both Shasta and Trinity Counties in Northern California in 2018. The 2018 fires were the result of the same conditions that supported the wildfire destruction in the state in 2017. The ignition sources for historic wildfires vary widely and include both human and natural causes. In the case of the Carr Fire, the rim of a blown car tire scraped against the pavement of the road and created sparks which ignited roadside fuels. This eventually resulted in a massive 229,000 acre fire that burned for approximately one month. The Carr Fire destroyed 1,614 structures and was responsible for eight fatalities.

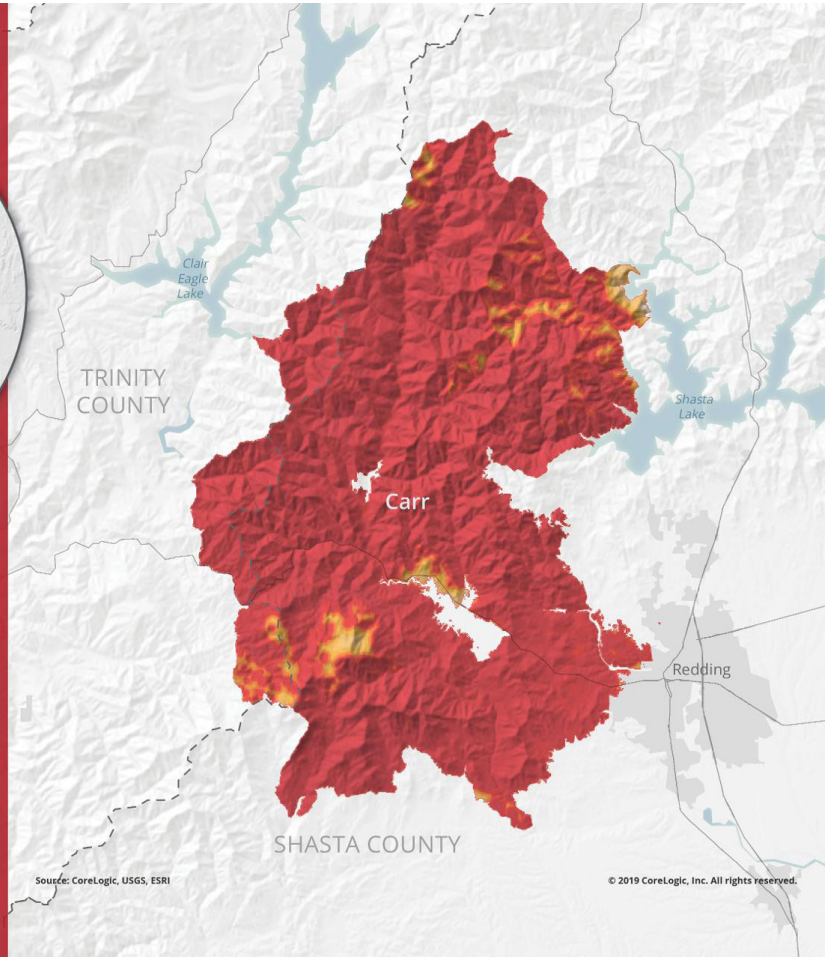


Table 12: Carr Fire Statistics

Date |	July 23 - August 30, 2018
Acres |	229,651
Structures |	1,614
Deaths |	8
Notes |	7th largest in California history 8th most destructive in California history

Wildfire Risk Score

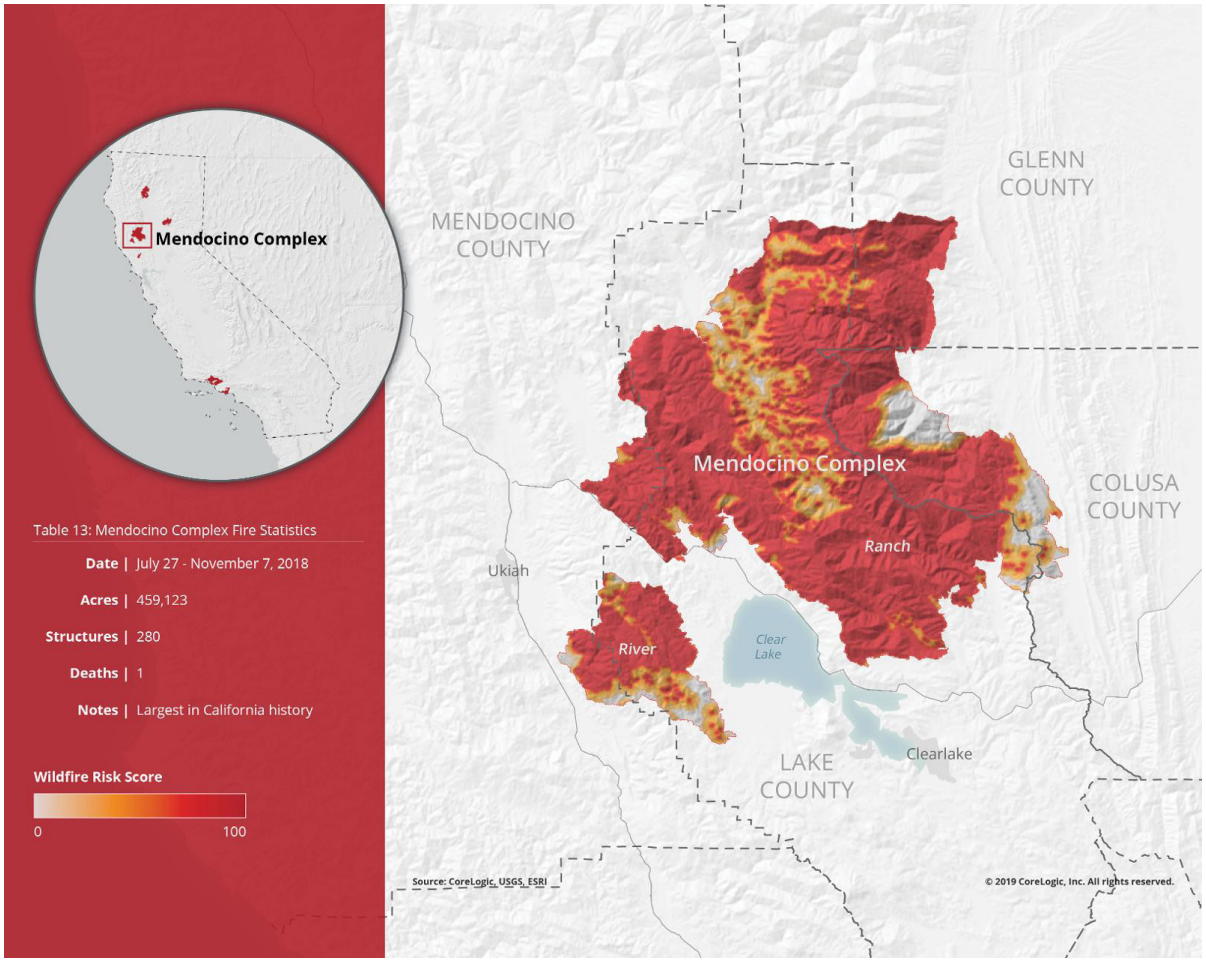
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In addition to its huge size and massive destruction, the Carr Fire is also known for its large fire whirl or "firenado" which spawned on July 26. The rotating column of smoke and flame reached a maximum speed of 143 mph, equivalent to an EF3 tornado, and caused wind damage to some properties. While fire whirls are not unique to the Carr Fire, they seldom achieve this level of intensity.

2018 Mendocino Complex Fire

The Mendocino Complex Fire was one of the many California fires in 2018. According to the USDA Forest Service Fire Terminology, “complex” refers to the combination of two or more individual incidents in the same area which are assigned a single incident commander or unified command. In this case, there were two fires located across four counties in Northern California. The River Fire covered parts of Lake and Mendocino Counties and burned nearly 50,000 acres. The larger Ranch Fire covered parts of Lake and Mendocino as well, but also burned through a portion of Glenn and Colusa Counties.

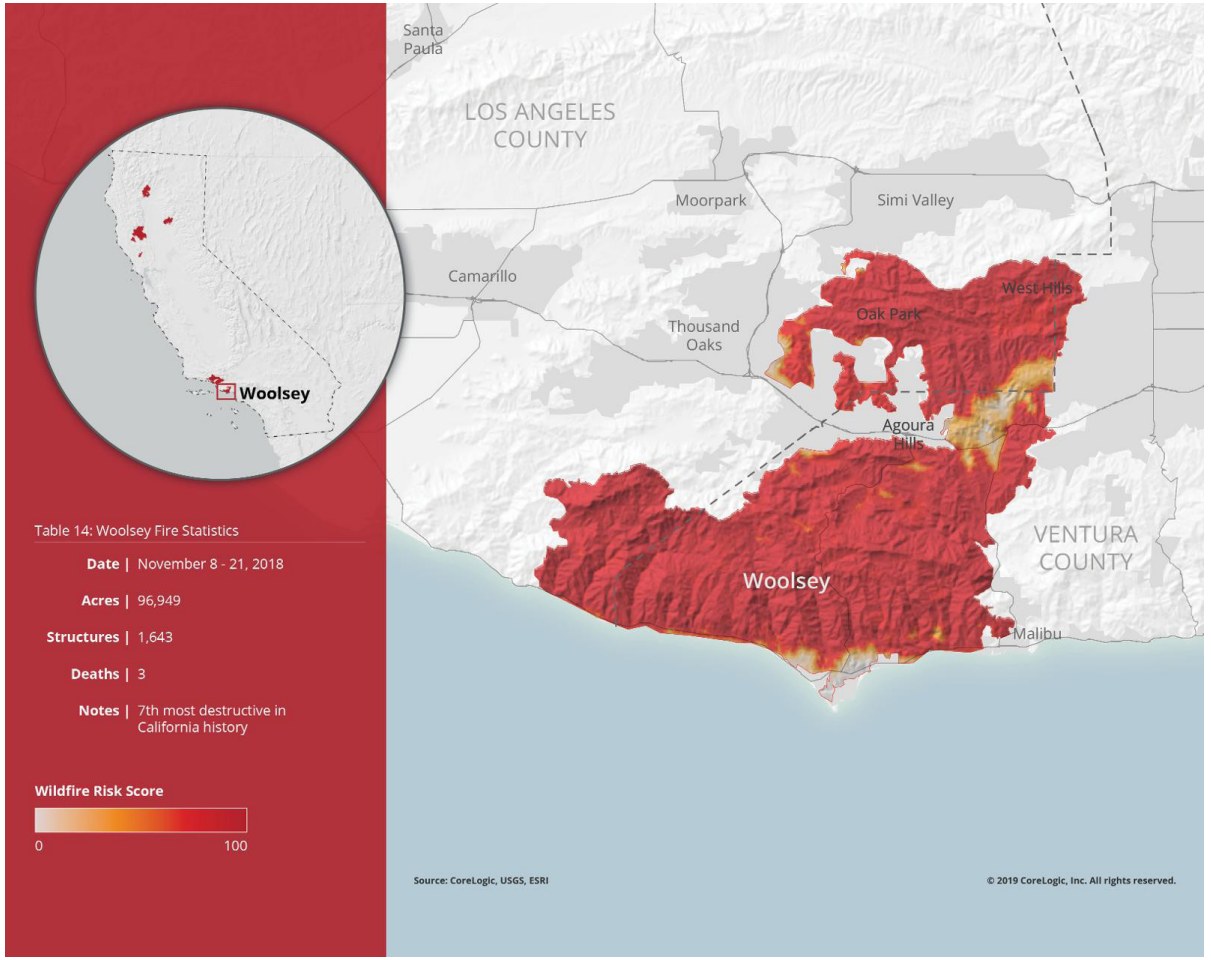


While these fires did not do as much structural damage as other fires during the 2017-2018 period, they are notable for the sheer size of the area burned. The Thomas Fire became the state’s largest fire in 2017. Less than a year later, the Mendocino Complex Fire surpassed that record by more than 180,000 acres. If based on single events, the Ranch Fire burned 410,000 acres and would still be the largest fire in California.

Fortunately, since the Mendocino Complex Fire burned in sparsely-populated areas, the total amount of destruction and loss of life was not commensurate with the size of the fire. However, the fires still managed to destroy 280 structures.

2018 Woolsey Fire

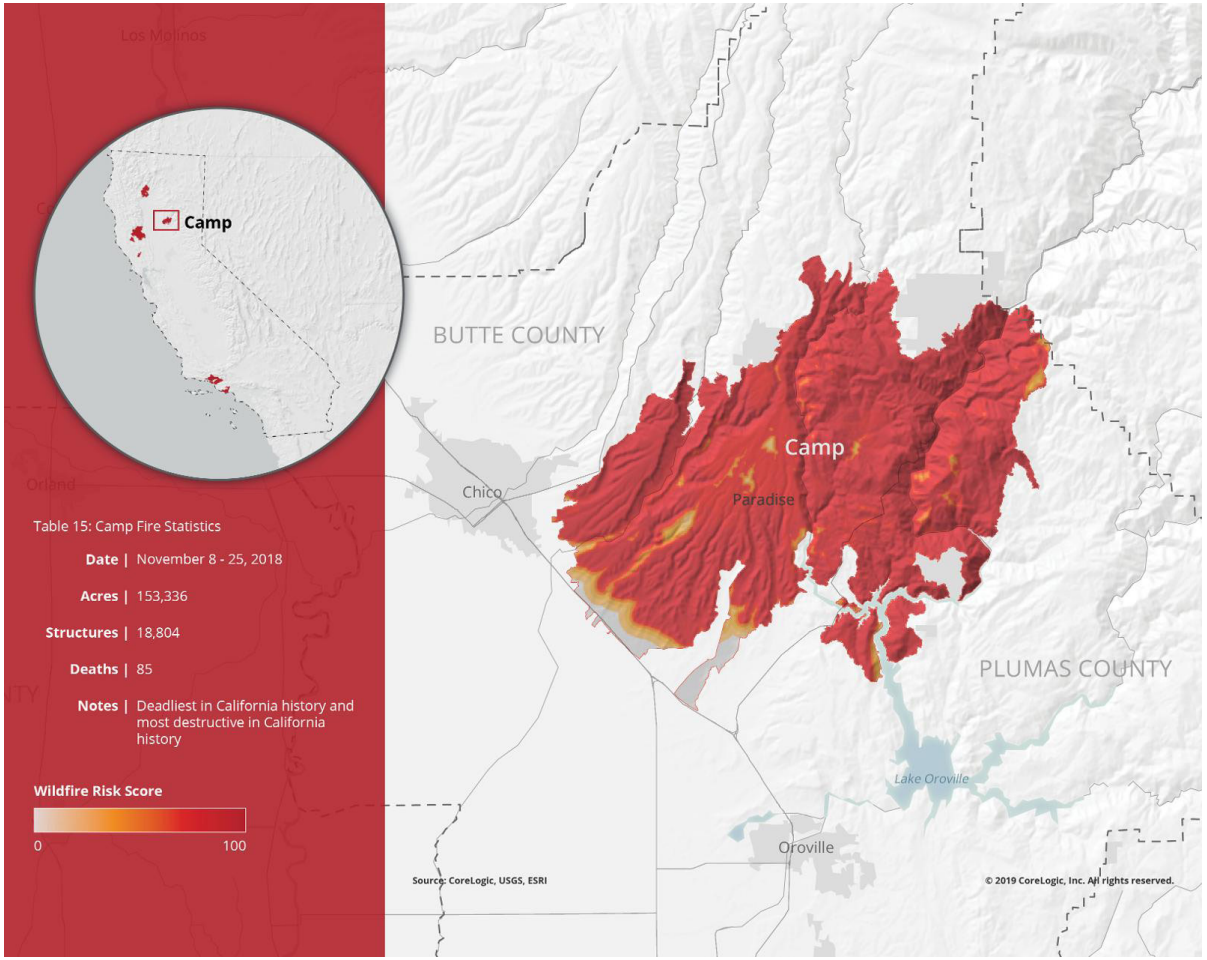
Northern and Southern California can have very different vegetation types, but in one sense they are very similar – both parts of the state, have vegetation with very high-risk fuel for wildfires. In some places wildfire risk can extend right to the ocean edge. The Woolsey Fire that burned into both Ventura and Los Angeles Counties consumed dense clusters of chaparral fuels that are common in Southern California. The fire swept through steep chaparral covered canyons and burned into the densely populated communities of Agoura Hills, Oak Park, Thousand Oaks and West Hills. As with other California fires in 2017 and 2018, strong winds prevented emergency responder aircrafts from flying frequently to contain the fire.



The Santa Ana winds caused wind-driven embers to carry from the main fire and deposit far in front of the fire in canyons containing dense chaparral fuels. The fire eventually burned into the Malibu area and in several locations burned down to the beach. The fire destroyed more than 1,600 structures while burning a total of 96,949 acres in this densely populated area. The potential destruction could have been much worse given the number of homes in and around the burned area. This is a testament to the firefighters who contained and redirected the fire in the face of very difficult conditions. CoreLogic estimates the losses from the Woolsey Fire total $4 billion.

2018 Camp Fire

Under other circumstances, the Carr Fire or Woolsey Fire would have been the most destructive and most discussed wildfires of the year. However, it was the Camp Fire which set the bar of catastrophic wildfires in 2018. Prior to 2018, it would have been nearly unimaginable for two vastly destructive fires to occur in the same year in one state, and that a third would overshadow them.



The Camp Fire began in Northern California on the same day as the Woolsey Fire. It rapidly burned across Butte County, driven by strong winds and dry fuels. The fire began around 6:30 a.m. and after traveling more than 6 miles in 1.5 hours, was threatening Paradise, California. The fast-moving fire and limited road network in and out of Paradise prevented residents from leaving quickly. That deadly combination led to the largest loss of life due to a wildfire in California's history. In addition, the structures consumed by the fire marked an unprecedented amount of destruction. The Camp Fire destroyed 18,804 structures – more than the following 10 most destructive California wildfires combined.

The Camp Fire holds the infamous distinction as both the deadliest and most destructive wildfire in California history. CoreLogic estimates the losses from the Camp Fire to total $9.3 billion

Looking Forward

The primary driver of wildfire-related damage and destruction is the geographic relationship between property development and existing high-risk wildfire fuels. When development and fuels intermix or where they are adjacent to each other, there is always going to be a threat of destruction to property and consequently loss of life.

Wildfires in the Western United States have always been a part of the ecosystems and landscape. Prior to human habitation, lightning strikes often caused naturally-caused ignitions. However, the population of the Western United States now tops 100 million and the potential impacts of wildfires on humans and humans on wildfires are inextricably linked. People are more likely to cause wildfire ignitions by a factor of 4-to-1 as compared to natural causes. While some human-caused ignitions are the result of arson, many are caused by accidental or unintentional ignitions from normal human activity.

As unfortunate as it sounds, there are other communities similar to Paradise where fuels are present and homes are at risk. It only requires the right weather conditions and an errant spark to create the next unwanted record.

As demand for housing grows and development expands outward from large cities, the WUI is often the only location with the space to expand. Very frequently, that edge will border wildfire-prone vegetation. When considering the future of wildfire risk in the Western United States, it will likely expand to more homes and result in the greater property losses than we have seen in the past. As unfortunate as it sounds, there are other communities similar to Paradise where fuels are present and homes are at risk. It only requires the right weather conditions and an errant spark to create the next unwanted record.

Methodology

This report evaluates the potential exposure of residential properties to wildfire within a predefined geographic region of the United States. The analysis encompasses multiple categories of single-family residential structures including mobile homes, duplexes, manufactured homes and cabins, among other nontraditional home types. This report also encompasses multifamily structures, which include apartments, condominiums and multi-unit dwellings.

Year-over-year changes between the number of homes at risk and the reconstruction cost value (RCV) can be the result of several variables, including new home construction, improved public records, enhanced modeling techniques, fluctuation in labor and equipment and material costs. For that reason, direct year-over-year comparisons should be warily considered. To estimate the value of property exposure of single-family residences, CoreLogic uses its RCV methodology, which estimates the cost to rebuild the home in the event of a total loss and is not to be confused with property market values or new construction cost estimation. The figures used as “values” in the tables and graphs

throughout this report reflect the current reconstruction cost value, which is based on the cost of materials and labor and also factors in the pricing variations for both that occur due to different geographic locations in these wildfire states. The values in this report are based on 100% percent (or "total") destruction of the residential structure.

The risk analysis presented in the 2019 Wildfire Risk Report from CoreLogic was developed using the extensive CoreLogic ParcelPoint® database to pinpoint properties located in areas exposed to potential damage or destruction from a wildfire event. A parcel is an individual property associated with an address and is the most granular way to identify properties exposed to natural hazards. To date, CoreLogic has collected or converted (from a boundary on a paper map to a digital outline) data on more than 146 million properties in the United States, representing more than 98% of the total properties in the country.

To determine residential exposure value, CoreLogic parcel-level data is paired with the proprietary CoreLogic Wildfire Risk Score to identify every property contained within each separate wildfire risk category. After matching each residential property to a structure valuation, the values are totaled by risk category within individual geographic areas. The final results illustrate the total number of residential properties at risk, as well as the total current reconstruction cost value of those properties.

This enables us to interpret the risk posed by either direct flame contact or the radiant heat generated by a fire in very close proximity to a structure. The evaluation is also based on distance measurements to nearby patches of fuel (vegetation) and wildland that could generate airborne embers. These embers often originate within the body of the main burn that may be relatively distant from the structure, but due to the nature of ember transmission can land on or near the structure and cause a direct ignition or a spot fire distant from the primary burn. A spot fire is when an ember carried by the wind ignites a new area ahead of the main fire.

Through this multi-step process, CoreLogic is able to determine the risk posed by a comprehensive set of factors critical to the long-term understanding of wildfire risk posed to a property, and present it in a uniform scale across the Western United States and the most active wildfire states.

Armed with a full understanding of hazard down to a 30m grid cell, the probabilistic CoreLogic U.S. Wildfire Model goes further by combining comprehensive agents of damage including ignition sources, spread and suppression with structural vulnerability. Both burn and smoke damage is accounted for, and more than 3.5 million stochastic events are incorporated to simulate every damage and loss event that could possibly happen. The model even accounts for weather conditions including humidity and prevailing winds and allows for adjustments by location to account for higher- or lower-than-average risks in a given year that might be caused by drought, exceptional rainfall or recent burns. Once damage ratios are calculated, the model applies any and all insurance conditions to determine financial loss from fire and smoke.



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