



# Understanding Bushfire Risk in New South Wales - A Homebuyers Guide

# Australia and the climate crisis

*"The 2019-20 Black Summer Bushfires were some of the worst in the world and in recorded history. We should expect fire seasons like 2019-20, or potentially worse, to happen again.....Climate change, as a result of increased greenhouse gas emissions, clearly played a role in the conditions that led up to the fires and in the unrelenting conditions that supported the fires to spread"*



## Dave Owens APM and Mary O’Kane for the NSW Bushfire Inquiry

Our country is in the frontline of climate change - there are few countries in the world that are as severely affected by extreme weather events as ours. And this is having real and lasting impacts on our communities across the country, and especially in New South Wales.

We are locked into a loop of flooding and wet weather that increases vegetation, which then provides fuel for aggressive bushfires as we cycle through the seasons each year. This leaves more and more properties vulnerable and ill-prepared for climate risks.

This guide focuses on bushfire risk - one of the main physical climate risks - how it is determined, what you need to ask of your conveyancer about identifying the risk and what you need to consider in order to live with the risks into the future.

Climate change is real and it’s happening - it’s time to understand and to adapt.

## The impact of the Black Summer Bushfires

We all vividly remember The Black Summer bushfires of 2019-2020. Fires erupted at the same time across the north, south and central regions of NSW, rather than the traditional north to south movement. Its ferocity and scale saw them evolve into “mega-fires” which took on their own unique behaviour, igniting the air even without fuel from tinder-dry vegetation, as this quote from the [\*NSW Final Inquiry Report into the Black Summer Bushfires\*](#) so clearly describes:

# The impact of the Black Summer Bushfires

## (continued)

*"I witnessed fires burn through open paddocks with no grass, through areas which had hazard reductions two years earlier, through areas where wildfire had passed only one year previous and watched ancient Gondwana rainforest which has never burnt reduced to blacked debree [sic]. I saw houses burn in open paddocks with no fuel around them for hundreds of metres. Nothing could have changed the outcomes due to the dryness of the landscapes and the prevailing weather conditions."*

These were the largest bushfires experienced in terms of their severity, area of land affected and the range of forest and property that was burned. Tragically, 33 people died, 25 of them in NSW, while more than one billion animals perished. Around 21% of our broadleaf and mixed forests were burnt. In comparable countries, the figure is nearer 5%.<sup>(1)</sup>

The preliminary assessment, published in the Medical Journal of Australia, found a "substantial" health impact in the fire-hit regions of the ACT, NSW, Victoria and Queensland between October 1 and February 10, 2020. The bushfires also exposed about three-quarters of the population to prolonged levels of smoke, causing 417 excess deaths, over 3,000 hospital admissions for cardiovascular and respiratory problems as well as 1,300 emergency hospital visits for asthma alone.<sup>(1)</sup>



The hit to insurance was huge too. In NSW alone, there were estimated losses of \$1.88 billion and some insurers, including Suncorp and IAG temporarily stopped selling insurance in affected area, effectively embargoing new sales and blocking any future claims, leaving residents exposed.

It is undeniable that this event was driven by climate change. The Bureau of Meteorology said that the preceding year was the hottest and driest on record and created tinder-dry conditions. And with the track that we are on with global warming, now exceeding 1.5C above pre-industrial levels for the globe as a whole in 2023, Australia will continue to be at the extreme end of the spectrum, meaning more ferocious, widespread bushfires will become more likely in the future.

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1) Source - Friends of the Earth Australia re. Summer of Crisis Report:  
[https://www.foe.org.au/australia\\_black\\_summer](https://www.foe.org.au/australia_black_summer)

# The impact of the Black Summer Bushfires (continued)



**\$1.88 Billion**

the insurance losses incurred from the Black Summer Bushfires in NSW



**\$46,000**

to remove debris from a house affected by fire



**\$100,000**

the cost to rebuild a 4 bedroom home



**\$1.2 Billion**

the projected cost of bushfires per year over the next 30 years



**11 Million Hectares**

the amount of land that was burnt by the black summer bushfires



**\$73 Billion**

the annual cost for 30 years to restore the native environment

# How do you recognise bushfire risk?

## Bushfire Prone Land (BFPL)

Local councils across NSW have established areas within the boundaries that they identify as being particularly sensitive to starting bushfires. They classify the type and thickness of vegetation that combusts easily and creates embers that can be blown on the wind and move the fire over a wider area.



## Near to populations

It goes without saying that risks are greater where bushfire prone land is close to neighbourhoods and communities. But it depends on the size of your community and its resources to defend against fires breaking out. Larger centres will have well rehearsed fire and evacuation plans, while out in the Bush, there may be more sparsely located.

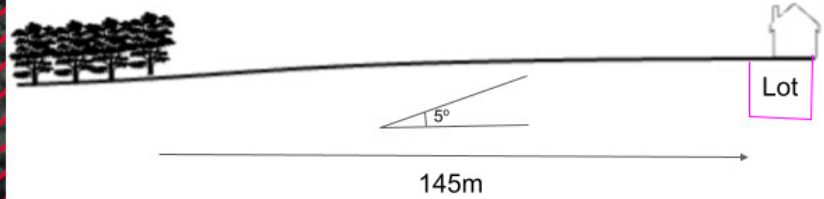
It is important to stress that if an area is not in a designated prone area, it doesn't mean it won't have bushfires in the future.

## Profile of the Land

Lesser known is the fact that fire and heat wants to rise and so can become more aggressive as it travels uphill. Therefore, settlements on hills are more prone to fire damage as thermals and the wind created by the bushfire propels it up the slope. The steeper the slope, the quicker the fire can travel onwards and the greater the risk.

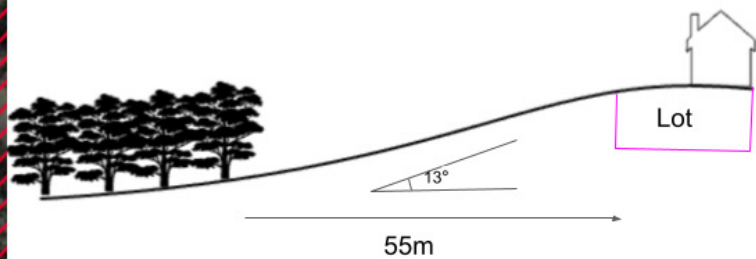
The graphs below show how a nearby area of bushfire prone land and the slope profile can work together to heighten the risk with elevation.

## How do you recognise bushfire risk? (continued)



### Low

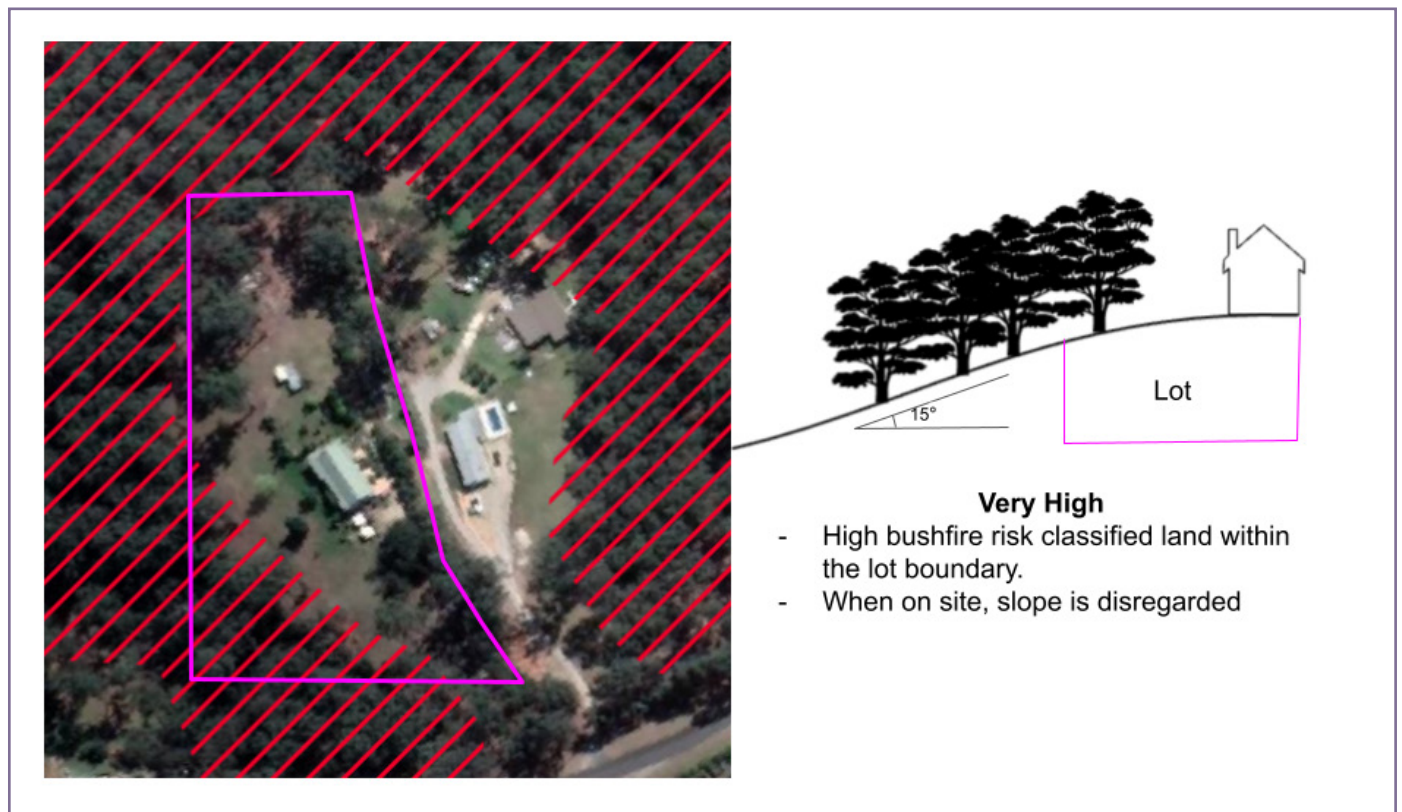
- High bushfire risk classified land within 750m, but further than 140m away.
- Low slope angle of 5° between the BFPL and the lot outline



### Moderate to High

- High bushfire risk classified land between 50m and 100m of the lot boundary.
- Slope angle of 13° between the BFPL and the lot outline

## How do you recognise bushfire risk? (continued)



The direction that the land faces can also affect how fires burn. This also influences the kind of plants that grow there and the amount of moisture they contain. In NSW, west-facing slopes are the hottest and driest. The vegetation is more flammable, but the plants are also more fire tolerant. South-facing slopes are usually cooler and wetter with less flammable vegetation. However, these plants are less fire tolerant and fires in these areas can be devastating.

### Weather Conditions

The Forest Fire Danger Index (FFDI) was developed in the 1960s as a way of measuring the degree of risk affecting Australia's forest to bushfire. It looks at the trends and weather records - the temperature, rainfall, humidity and wind speed. A number up to 11 is considered a low risk, 12-50 high or very high; 50-100, severe or extreme, while 100+ is catastrophic or "code red".

The Black Summer bushfires on 7th February 2020 exceeded well above 100 but became almost meaningless as a measure once an uncontrollable burn took hold. Since then, the Index has been revised so that "Catastrophic" specifically relates to danger to life.

# How do you recognise bushfire risk? *(continued)*

By combining areas of Bushfire Prone Land, a High Fire Danger Index and the angle of slopes, you can start to build a picture of where the most likely areas for bushfire risk can occur and whether they could develop wider.

## Lightning

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Probably the biggest single cause of natural ignition comes from lightning. And even if there is rain that accompanies a storm, the initial strikes are usually enough to overcome the amount of water in the locality, usually due to the previously very dry conditions.

## Wildfire history

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If an area has burned in the past, it is likely to burn again, unless there has been significant development which has cleared the vegetation away that could create the fuel for the bushfire.

The National Parks & Wildlife Service (NPWS) Fire History dataset & the Department of Planning and Environment (DPE) Fire Extent and Severity Mapping (FESM) show what has happened in your area. If there's been a bushfire in the last 5 years, then you are at greater risk.

## Prescribed burns

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Equally, if the local council has undertaken a regular series of prescribed burns in the area and removed vegetation to act as a "fire brake", then this can potentially reduce the risk of fire spreading to your local area.

The success of this is down to whether Councils' have maintained their programme of prescribed burns for the year. In 2024, there have been some examples where this has not been the case and therefore it has left some communities vulnerable.<sup>(2)</sup> Equally, these actions have to be carefully managed so that a new bushfire isn't created from good intentions from trying to create a fire break.<sup>(3)</sup>

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(2) RFS falls short of target for hazard reduction burns ahead of bushfire season:

<https://www.abc.net.au/news/2024-09-21/bushfire-preparation-hazard-reduction-target-rural-fire-service/104364368>

(3) NSW RFS respond to out of control fire in Oxford Falls:

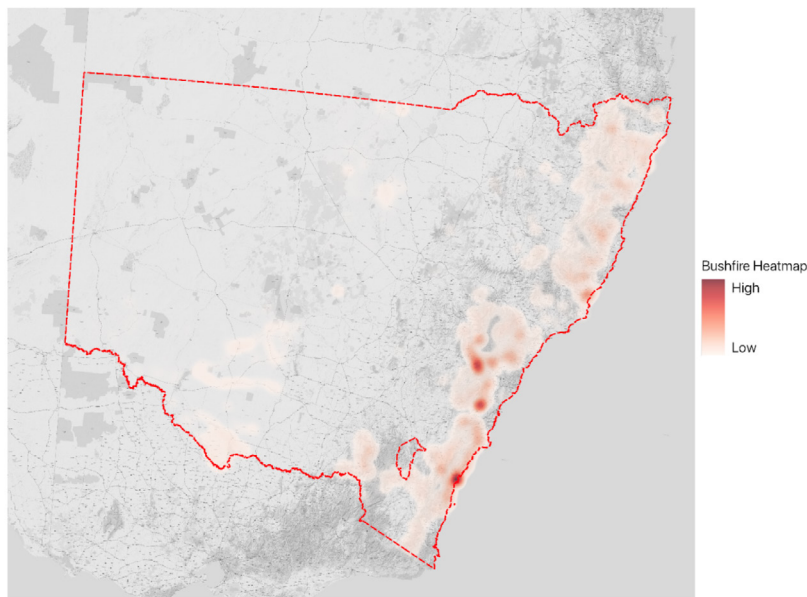
<https://www.news.com.au/national/nsw-act/nsw-rfs-respond-to-out-of-control-fire-in-oxford-falls/news-story/6ccfa92823b724823351fafee13c559b>



# What are the most bushfire prone residential areas?

As you can see from the heat map below, bushfire risk is particularly concentrated along the north, central and south coasts. In part this is due to more dense vegetation along hill slopes, compared to the interior Bush, but also that the risk is directly related to where more than 80% of the population live.

## New South Wales - Bushfire Risk Heatmap



Given this, we have identified the most bushfire prone residential suburbs in New South Wales, using the Groundsure **ClimateIndex™** analysis model for both today, in 5 and in 30 years time.

The Blue Mountains have the most properties at risk, followed by the Central Coast, Sutherland Shire, Wollongong and Wollondilly.

# Top 20 NSW Suburbs effected by Bushfires

			Today Risk		30 Year Risk				
30 Year Rank	Suburb	Count of Lots	Count of Lots with Very High Assessment	Percentage of Lots with Very High Assessment	Count of Lots with Very High Assessment	Percentage of Lots with Very High Assessment	Today Rank	30 Year Rank	Change in Rank
1	Blue Mountains National Park	2188	1068	48.81%	1068	48.81%	1	1	▲ 0
2	Colo Vale	1488	715	48.05%	715	48.05%	2	4	▼ -2
3	Booligal	1152	488	42.36%	488	42.36%	3	7	▼ -4
4	Howes Valley	489	472	96.52%	459	93.87%	4	10	▼ -6
5	Deniliquin	5999	466	7.77%	481	8.02%	5	8	▼ -3
6	Kurrajong Heights	612	426	69.61%	426	69.61%	6	13	▼ -7
7	Moama	4995	400	8.01%	442	8.85%	7	12	▼ -5
8	Nymboida	492	392	79.67%	424	86.18%	8	14	▼ -6
9	Cooplacurripa	536	355	66.23%	362	67.54%	9	15	▼ -6
10	Comara	359	338	94.15%	350	97.49%	10	16	▼ -6
11	Maude	1035	330	31.88%	330	31.88%	11	17	▼ -6
12	Putty	324	320	98.77%	320	98.77%	12	18	▼ -6
13	Bilpin	375	314	83.73%	314	83.73%	13	19	▼ -6
14	Blackheath	4435	270	6.09%	270	6.09%	14	28	▼ -14
15	Ebor	418	260	62.20%	260	62.20%	15	30	▼ -15
16	Lower Creek	291	256	87.97%	260	89.35%	16	30	▼ -14
17	Chambigne	329	249	75.68%	249	75.68%	17	33	▼ -16
18	Bellbrook	612	243	39.71%	466	76.14%	18	9	▲ 9
19	Lower Portland	418	242	57.89%	242	57.89%	19	36	▼ -17
20	Yarrowitch	596	226	37.92%	226	37.92%	20	38	▼ -18

## What are the most bushfire prone residential areas? *(continued)*

Several South Coast locations that aren't at risk today will be in the next 30 years. The Forest Fire Danger Index (FFDI) data from CSIRO, indicates a worrying trend: the types of weather that could create bushfires are expected to become more frequent and severe in southern coastal areas.

These regions already carry a 'High' fire risk rating, and with the anticipated increase in adverse fire weather conditions, we're seeing a substantial shift of hundreds of properties into the highest risk category. It's this combination of existing risk factors and the projected exacerbation due to climate change that makes these areas particularly vulnerable to bushfires in the future.

## Getting advice on Bushfire Risk when you buy a property

Conveyancers and lawyers are acting in their clients' best interests and should advise where decisions that could be made are exposed to significant risk, such as climate change. For this reason alone, the homebuyer has a right to know what could lie ahead as they make the most expensive financial decision of their lives.

Your lawyer or conveyancer has an automatic duty of care to you – it is a fundamental principle of their contract with you. Guidance is also in operation now from the Law Society of NSW for its members on how they should approach climate risks with their clients.



# A simple way to understand climate risks on your property

The ClimateIndex™ report provides a clear, simple way to support you in deciding whether the property you want to buy is at risk from bushfire risks, as well other major risks, such as flooding or coastal erosion. It looks at your property specifically, rather than the general area like other data.

Your lawyer or conveyancer is able to access this for you as part of their usual required paperwork. Because it covers the three main risks, it is a quick and efficient way to identify risks and, crucially, it includes predictive modelling that looks up to 30 years ahead on whether the risk could become greater. It also provides guidance on whether there may be impacts on getting a mortgage or insurance cover as a result.

This makes this more useful than the existing 10.7 Certificates that are provided as standard. The information varies from council to council and is only based on past events.

Download a sample report ClimateIndex™:



Ask your conveyancer or lawyer today about getting a ClimateIndex™ report before you sign a purchase agreement!



# Preparing for a fire

<https://www.fire.nsw.gov.au/>

According to the New South Wales Rural Fire Service, Bushfires are a part of life and homeowners need to live ready to expect them.

The first step is to find out if your property is at risk. The most simple way to do this is to obtain a [\*ClimateIndex™ report\*](#).

The next steps are to ensure you are fire prepared. The NSW Rural Fire Service suggests 4 key actions:

1. Discuss what to do if a bush fire threatens your property;
2. Prepare your home and get it ready for bush fire season;
3. Know the bush fire [\*alert levels\*](#);
4. Keep up to date with all bush fire information numbers, websites and apps.

A simple [\*guide\*](#) is available from the NSW Rural Fire Service.

## How to prepare your home

Even if you plan to evacuate, the more you prepare your home, the more resilient it will be to attack. There are some basic maintenance activities to help with this:

- Clean your gutters of leaves and twigs
- Install metal gutter guards
- Repair damaged or missing tiles on the roof
- Install fine metal mesh screens on windows and doors
- Fit seals around doors and windows to eliminate gaps
- Enclose the areas under the house
- Repair or cover gaps in external walls
- Attach a fire sprinkler system to gutters
- Keep lawns short and gardens well maintained
- Cut back trees and shrubs overhanging buildings



## How to prepare your home *(continued)*

- Clean up fallen leaves, twigs and debris around the property
- Have hoses long enough to reach around your house
- If you have a pool, tank or dam, put a Static Water Supply (SWS) sign on your property entrance, so firefighters know where they can get water

Most importantly, **checking and maintain adequate levels of home and contents insurance.**

If you live close to the Bush, you may be eligible for the [10/50 Vegetation Clearing Scheme](#). Whilst no home is 100% fire proof, there are additional ways to make your home more resilient, particularly if you are building or even things to check during the conveyance.

Metal, cement and brick are low combustible materials making the house more resistant. Check that windows and doors are airtight to help keep the smoke out and ensure all electricity cables run underground. It is also helpful to have an underground water tank and pump system to help ensure residents don't run out of water when fighting fires.

It's also wise to ensure your home has a sprinkler system. 85% of houses are destroyed without experiencing direct exposure to flames or heat. Ember attacks and low level surface fires ignite the majority of houses.

## Get in touch

We are on hand to help you with any query you may have about bushfire risk and how it could affect your future home or you are concerned about where you live today.

Either speak to your lawyer or conveyancer and they will handle the query for you, or get in touch to discuss your situation with our customer support and climate modelling consultants.

**Tel: +61 2 7812 0117**

**Email: [info@groundsure.com](mailto:info@groundsure.com)**





Groundsure is a leading environmental and climate data authority. We give land and property professionals expert information on risks including land contamination, flooding and ground stability, as well as forward guidance on potential climate risks, to advise their clients in the transaction. We provide high value, property-specific opinions and analysis of land use, turning data into practical, actionable insight.



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