Bushfire Resilience Inc. Webinar 5 2022. Q & A Session

Understand your bushfire risk

Chair: Malcolm Hackett OAM

Panel members: Dr Kevin Tolhurst AM
Dr Justin Leonard
Dr Ian Bennetts
Jeff Emmerton

Chair

Modelling at such a fine scale is useful to insurers, and a proactive response by homeowners is therefore likely. If I spend money upgrading my house to a five-star rating what are the chances of me achieving a lower insurance premium?

Jeff Emmerton

BBCA have been actively engaging with both the insurance and banking industries. In fact, part of the grant to BBCA insisted that we have some sponsorship and support from those industries and they would understand what we were doing.

We are told that there will be offers of discounts for people who either have a high star rating to begin with or are able to move their star ratings from where they are now. We trust that the insurance industry will do the right thing by that and not purely use it to take a negative approach i.e. low stars potentially would lead to higher insurance policies. But we have to understand they have a lot of very highly paid actuaries who are doing this stuff already but probably with either incorrect science or some poor datasets. So, we would hope this will help them actually achieve a better result for everybody.

Chair

In Kevin's map, how would southern property owners be better off moving to the urban area because the 10km radius still has heavy vegetation.

Kevin Tolhurst

I'm not necessarily saying that they should move. I think it's more of an option for them to go to that urban area if they needed to. But they would still have to go through the same process as to whether or not that's their best option. But it's more of an option than the person further up the valley at Strathewen in a sense because the vegetation isn't as heavy or the distance as far. The roads are a bit more open and major, but it's not without risk and it's not necessarily the most acceptable solution either. So that's where there has to be a personal decision made on an assessment beforehand but also update that assessment at the time based on the circumstances that you might find yourself in. But it does mean that you probably have a little more time to make that decision than perhaps a person further north in the Strathewen case for example. That would be my point.

Chair

The whole thing of being caught on a road and when you're there your risk goes up the longer you leave it.

Here's a great question. I want this answered for me. I have a lithium battery mounted on an external wall connected to a solar system. Is this considered in the star rating system app? And is the lithium battery a risk?

Ian Bennetts

Yes, lithium batteries can burn very badly as we know. The answer is no we don't consider it at the moment. One of the reasons for testing the model out is to make sure that we're picking up things that we should be picking up.

It depends on the situation. If it was for example too close to an object that could burn and provide significant radiation I'd be very worried about it. If that's the case probably windows are going to break anyway.

I think PV systems mounted on the roof, and I'm sure Justin's probably going to comment on this, to my way of thinking don't really present a great risk from an ember attack. What do you think Justin?.

Justin Leonard

Lithium batteries can handle reasonably high heats - you can get them up to 80 or 90^{o}C without them going unstable - even a bit hotter than that. If you're discharging or charging them while they're at those temperatures they'll be starting to get damaged so you want to use them at temperatures below 60^{o}C.

It really does come down to not having significant fuel loads around stored materials. If you're in a high BAL rated location like BAL-29 or BAL-40 and that lithium battery was facing the fire approach side I'd also be concerned that might be enough in itself to present a risk.

Jeff Emmerton

I'd just add one comment that in the model external gas cylinders were considered and they're probably in the same realm that once they actually get enough heat to catch fire there could be a problem. But I think the home would already have had some other issue occur such as a broken window or ember attack and another method. That means that your lithium batteries and gas cylinders are probably not the prime problem that you need to be concerned about.

Chair

One observation I can make about solar panels. The last time I cleaned mine Indian miners had been dragging all sorts of building materials underneath them. I'm going to have to continually clean out under them just to make sure they aren't building up stuff on the roof.

Justin Leonard

I can add one more thing about solar panels it's not about the risk of the solar panels themselves but if solar panels are involved in a construction in a fire so that heat damage is going to move on to the laminating they'll actually become quite toxic and need to be disposed of in a toxic landfill. Because the chemicals that are pretty much locked into the solar panel which are benign if they're not damaged they can put them in the landfill if they're not delaminated.

If they are it's quite a significant problem after bushfires. It's an interesting concern that actually caused a lot of problems in the New South Wales fires because they couldn't find enough landfill sites for so many solar panels that had been involved or implicated in houses that had been burnt.

Chair

This person's interested in a situation like three consecutive drought years that could drastically alter the data. Does it take that sort of thing into account, how agile is the mapping program?

Justin Leonard

There's two mapping approaches. One is a really long-term projection of what reasonable worst case is. So that's looking way into the future and saying aim for this bar. That's the long-term planning objective.

The short-term process is pretty much a month on month report on how the fuel status is changing and evolving. So that's certainly agile enough up to pick up those shorter-term processes and planning for the coming fire seasons and how those droughts play.

Chair

Back to the star rating app. Does it take sprinklers into account?

Jeff Emmerton

At the moment we don't have any inputs for active safety. We've used the term worst case or scenario where there is no one in attendance.

As we know there are systems now that are remotely started and potentially able to run on their own. But again, we want to give people the worst-case scenario - power's out, you've run out of water, whatever else might be the reason that your active systems aren't running. At the moment the star rating looks at the home in its standard state and then offers you only passive upgrades to improve the resilience of that home. I think potentially in the future we will see more of these active systems, and we'll have to consider whether to give you, for instance, extra stars because that system exists at the time.

Chair

Because we're well prepared and knew what to do under the previous fire danger rating system - we used to stay at Severe with an index of 50 to 74 and leave at Extreme with an index of 75 to 99. Now that the new Extreme encompasses both of these with an index of 50 to 99 is there a risk many people who used to stay at severe will now stay at extreme?

Kevin Tolhurst

I think that there are a lot of people who have done a lot of thinking about at what point their trigger for leaving or taking certain action will be and what that will be based on. And I'm an advocate that more of the fire behaviour index should be made available rather than necessarily just the rating. If you're in a forested area the numbers will match up pretty much with the old Fire Danger Rating system. Where it's going to be a big improvement is areas where you're perhaps more in grassland crop land semi-arid areas and so on.

But at the moment the fire agencies aren't prepared to give us those indices which I think is a major problem, especially for people who are trying to prepare themselves the best they can. And if all you've got to go by is the rating I think that's a major limitation of the new system. I'm hopeful that in time the index will also be released. I don't know whether Justin's got a comment on that as well, but I think it is making it more difficult in a sense, because you used to be able to almost calculate your own fire danger index based on the weather forecast. Now it's much too complicated for an individual to be able to do that.

Chair

Justin you want to add anything?

Justin Leonard

No, I think Kevin’s nailed that one.

Chair

An article advised that fire reduction burning had no significant reduction of bushfire impact under extreme conditions. Could you comment on that?

Kevin Tolhurst

We’re getting quite political here aren’t we. The reality is that if you've had low intensity fire in the landscape there's less fuel in the landscape and if you've got less fuel in the landscape then the scale and severity of fire will be reduced.

That's not to say that you're going to necessarily stop potentially life threatening and house losing fires. Because even if you've reduced the severity of the fire by a factor of 10 that may not be enough to make it non lethal or non-destructive. What it does do though is extend the period of time where the fire is controllable or tolerable in the sense of perhaps being survivable either for a house or a life. The number of hours in a day or the number of days in a week where it's survivable is increased.

So, it's just a simple physical sort of calculation. If there's less fuel the intensity of the fire will be less, and the scale of the fire will be less. So, it's true probably to say that it's not necessarily going to put the fire out. It's not going to stop the fire. But it will reduce the severity and the period of time when that severity is tolerable. So, the misinformation out there is based often on the principal of saying “Well this area was fuel reduced and it didn't stop the fire.” Well, it doesn't need to stop the fire to reduce the risk. It only reduces the risk it doesn't remove the risk. That's the thing. And so that's why everyone has to take some responsibility for their own level of risk and work out what's acceptable. Because it's not going to be achieved just through something like prescribed burning or aircraft for that matter. There's no one single factor which is going to remove bushfire risk and we don't really want it or need it to. But we've got to live in this fire environment accepting a certain level of risk and the important thing is that acceptable risk is something that we can be resilient to and cope with.

The prescribed burning debate has been politicized to an extent that it's not useful. And in fact, more low intensity prescribed fire in the landscape would be very beneficial in terms of reducing the severity and improving the recovery time after fire. But it's not a silver bullet as sometimes it’s being portrayed.