

Make better decisions about bushfire risk in our changing climate



Chair: Malcolm Hackett OAM

Presenters: Dr Kevin Tolhurst, University of Melbourne

Michael Vermeulen, CFA

The Q&A process

Members of the audience submit questions during the Q&A sessions. The Moderator passes a selected question to the Chair who asks for a response from the presenter.

Transcript of Q&A session 1. Responses by Kevin Tolhurst

1. Ember proofing Vs Fuel reduction

People constantly focus on fuel reduction burns as a panacea in social media. Would many more houses be saved if the focus could be switched to ember proofing houses?

Kevin Tolhurst

I don't consider this an either-or question, it's actually both. From an environmental point of view, we don't want high intensity fires occurring across large areas of the landscape anyway. They're quite damaging from an environmental point of view. So, there's been a lot of reluctance to undertake prescribed burning in the landscape because of the smoke and because of the risks associated with it. But there are all sorts. It's not just human life and property but also to environmental impacts. So, that's one reason to do. But, we also then need to be looking at the defendable space around our property and as well how defendable our house is, and some of that is about how well we screen out embers, for example, and perhaps even the nature of the species of plants that we have within a hundred or a couple hundred metres of our house, as to how many embers we might get. And, even down to the effect of having some vegetation to actually screen out some of those embers, to reduce the ember load on the house. All of those things, there's no simple one-steps going to be the ultimate answer to all of this. It has to be an integrated, comprehensive treatment of the bushfire risk and the hazards.

2. Planting around the house

I've seen some comments about how many houses with a surrounding European garden fared better during a bushfire. Could you explain why that's the case, and steps that we can do to improve the passive bushfire measures around our house? How effective are these measures within 50m of the house?

Kevin Tolhurst

The characteristics of many of the introduced plants are that they will have hard bark, for example, so you're not going to get many embers being produced from the bark burning on the trees. So, whether that's a conifer or a deciduous tree, they tend to have hard bark which doesn't burn readily. When you're talking about deciduous trees, they tend to have less flammable foliage, whereas conifers tend to have more flammable foliage. And, if you've got a European-type garden,

you probably also have a higher level of maintenance in terms of mowing the grass and breaking leaves and that sort of thing, compared with a natural bush setting.

Having said all of that, a well managed natural bush setting can also significantly reduce a lot of those hazards. So, the flame exposure, the ember loads that you might get, and also just protection from the wind. So yes, I guess some of the associated things with a European type garden naturally make it less flammable, but a lot of that still can be achieved and maintain the bush-type setting, but again, you have to actually put some work into maintaining it in that sort of fashion. And I guess, yes, native vegetation tends to be more flammable, but it doesn't necessarily mean you can't have defensible space around your house and native species. So, you need to actually weigh up "Why am I living here?" "What are the values that I really value in terms of environmental considerations?" and I guess "How can I achieve those?" And planting European trees, and so on, might be one way of doing it. But that might then defeat the purpose of why actually living in the area.

3. Reforesting Vs clearing

How can we balance reforestation to slow climate change with clearing the understory and planting less flammable exotics -so it's about the balance I suppose?

Kevin Tolhurst

I would say a starting point there is sometimes there's a perception that more is better in almost anything, so more money in your bank account seems to be better than having less money in your bank account. In the bush setting, I think it's a little bit more akin to your body weight. Having more body weight doesn't necessarily make you a healthier person, and so having more vegetation in a natural bush setting doesn't necessarily make a better habitat, doesn't necessarily make it a more viable environment. You need elements of diversity in the understory, so you need shrubs and you need understory, and so on. And that can be achieved by having lower intensity patchy fires in the landscape, or partial clearing and so on. We shouldn't be trying to get in fact, a lot of the shrubby forests and a lot of the dense regeneration forests we have here are artifacts of over disturbance, too many hot fires, and so we really need to be a little more careful about what we think is natural or desirable.

Yes, recently I've been in a couple of areas where koalas have largely disappeared, and it's because they can't move across the ground. Yes, they live in trees, but they have to go from tree to tree. But if the understory's dense, they can't move from tree to tree easily. That is a real impediment to their presence. And a lot of the evidence we have from pre-European conditions is a lot of the forests were a lot more open, and that actually means that the ecological values are actually being maintained better too.

So, we just need to be a little careful about what we think is "natural". Obviously, in wetter forests and rainforest areas, yes, there's a lot of dense understory. But in a lot of our drier forests, a lot of our eucalypt forests, they're a lot denser now than they ever used to be, and we need to actually get back to that more natural and sustainable level of understory that will also reduce the bushfire risk.

4. Stay or go

Since 2009, the official advice has changed from “stay or go” to “leaving early”. A large number of houses are unnecessarily being destroyed as a result of this policy that could have been successfully saved if defended?

Kevin Tolhurst

I think the answer's certainly yes, and we should see that reflected in the statistics before too long. I can understand the government's policy saying, “well, if you're not in the area when the air is burning, then your life is a lot less at risk.” So, from a government policy point of view, I can understand where they're coming from. However, in a lot of areas, and Nillumbik's one of them, evacuating from an area is not always the best thing to do, and it's not always a possible thing. What I don't like about that policy is it's possible for now one of the fire scenarios is a fire that impacts your property within an hour or two of it starting. So, it could still be lethal, it could still burn your house down, and if you're not prepared for fire coming into your property, that relatively small fire could still be lethal to you and destructive to your property.

So, I'm not a great fan I can understand why there's this policy of leave early, but we are going to see a lot more houses lost, and we're actually seeing that already. I mean, a lot of houses being lost at relatively low Fire Danger Indices in Western Australia, Queensland, and so on. FBI is around 25. And our data that we have showing most of the house losses used to start around a Fire Danger Index of 50.

So, there's significantly more house loss already occurring because of this policy. You can argue, “You can always replace a house, it's harder to replace your life.” I guess if people are well informed, well prepared, and well practised, have the capacity and capability to defend their place, and understand what their trigger levels are, when they choose to stand and defend and when they choose to leave early, that needs to be an informed decision, not one just done on bravado. It needs to be actually an intelligent, informed decision, and I guess what the government is saying, “We can't be sure that people have taken the time to make their own evaluation, and understood the information adequately for them to be able to make that decision in a reliable and a consistent way. So, better to have people out of there.”

You can fully understand where they're coming from, but I think there's an argument for others to take more responsibility for their own welfare and their own property.

5. Triggers

Chair: I guess it depends an awful lot on the kind of fire. Personally, I can imagine local fires, which I think an obvious one that starts in someone's paddock down the road, then even people who aren't terribly skilled might be able to do something about it. A Black Saturday type fire that comes with incredible force and winds and whatever else, then if you aren't really well prepared and able to survive all your plans failing along the way, then it is a quite different situation.

Kevin Tolhurst

And that's where you need to understand what your triggers are. So, in the first couple of hours of that fire, there were a lot of people that defended their houses near Kilmore, so, the fire wasn't that scary. So, you have a couple of hours, but you've only got a couple of hours to make that decision, and if you're not well prepared, and you don't realize that your triggers are well passed then you're going to get potentially caught out. So, that's where I say the bravado comes into it saying, “Yes, I'm going to defend my house.” Yes, but where are your trigger points? What are your thresholds that you're not prepared to go beyond? Where you say, “This is beyond any capability that I have of defending the property, so I'm going to leave.” As distinct from another occasion where, if you're

well prepared, you can be confident in both being safe and defending your property. So, it has to be a well informed decision.

Transcript of Q&A session 2. Responses from Michael Vermeulen

6. Information

It seems that a relatively small proportion of the population try to be better informed about what might occur. Is there a role for authorities to address this problem in a way that reaches people who currently avoid or have missed being informed or are pretty complacent?

Michael Vermeulen

One of the things I haven't actually talked about, which is actually another four risks that face us. First is the risk of complacency, and that's that whole attitude of, "Oh, look, you know, I did it last year. But I just can't be bothered about it this year. Nothing ever happened, nothing happened the last five years, so I'm not going to worry about it." For some of the audience here, there's the risk of procrastination. That whole, "I'm going to wait and see what happens before I make my decisions" or "I know I said that I was going to leave on a day where these sorts of criteria was met, but you know what? I'm just going to sit back and relax. I'm not going to worry about that, it was too much trouble." Where we start thinking about the audience you're referring to, Malcolm, is of course those in ignorance, which is the people who really don't appreciate the fact that the area they live in is a bushfire risk, and then there's the denial people, who actually don't think that a fire is ever going to come through because a fire has never happened in the last 20 years. Or they've come into a situation or lived where nothing's ever happened. So, therefore, "It's not going to happen."

And for us, we spend a lot of time and effort trying to get through to these people, and we may do things like knock on their doors or do letter drops or make circumstances like this become available, promoted on Facebook pages and community pages, put up posters in milk bars and other places where people may frequent, and we certainly try to make it as accessible and as easy as possible and, in fact, even a situation like today where you do not even have to leave your home to come and listen to a conversation about it. But, how much effort can you put in to actually try and get those people on board? And the only thing that will actually happen, the only thing that really registers in their minds and they think, "I must do something about it," is if an incident occurs in their area which somehow had an impact on them. And suddenly that little like, "Oh my God, I can be affected, I need to do something about it."

7. Bunkers

Considering the increase in high fire danger days, is installing a private bunker a good idea?

Michael Vermeulen

As I mentioned previously, these places of last resort or these shelter-in-place options, again, it's going to depend on the circumstances on where you live and how high the risk is. And that may be what the fuel load is like where you live, directly outside your house and in the direct area. What the exit routes are like as well and if they're limited to really having one exit route, where, 800 residents are going to try and get out of there at the same time, and all it takes is one accident to block it. You know, they're the sort of things you've got to sit there and bring together and think, "You know what? Maybe in a situation where I have very little chance of surviving a bushfire because of where I live, and because of the fuel load around me, and because the house I live in is tender dry made of wood. Maybe that might be an option that I'm going to use as an extra level of protection. And the thing is it's at that place of last resort, not the first place you go running to at this first sniff of smoke, or the first ember you see landing on your back doorstep. Well again, we're

still we're trying to encourage people that the safest place to be is not be there at all, and those sorts of last options are *last options* when all other avenues have basically been extinguished.

Chair: And we do know from previous webinars that they need to be certified because people have died in homemade bunkers that were not effective.

Michael Vermeulen

And other people have perished on their way to trying to get from the house to the bunker, because of the time they left and the fact that they stepped outside and became completely disorientated by the smoke, the embers, the heat, the noise, all those sorts of things and never actually made it to the bunker in the first place.

Chair: And Kevin has also responded here saying that bunkers can be a great backup, but they need to be well sited and well installed. If you're in an area where evacuation is problematic, then it might be a good idea. But don't use it as an excuse to turn off.

8. Sprinkler systems

How important is it to have a sprinkler system and what type is best? And someone did ask, but we couldn't fit them in before: what's the ideal or best pattern sprinkler?

Michael Vermeulen

I can't actually make any recommendations in the particular types of brands of sprinkler systems and such. What I think you need to consider if you're thinking of installing it is: have a look at what someone else has done in the area, and actually get them to demonstrate it and, if possible, can they demonstrate it in a position where you'd have the type of high winds you're getting should a bushfire and look at the effectiveness of the sprinkler. A lot of sprinkler systems, the spray is too fine and the wind just picks it up and basically, it's wetting the lawn behind the house and offering the house no protection. Another consideration, if you have a sprinkler system, is how much water does it consume? Because when you switch it on and let it run, the last thing you want is you start switching on when you start getting embers come in, and then it runs out of water when the actual fire front comes in as well. Because once the sprinklers stop, the evaporation will be pretty quick, as you can tell by the amount of heat coming off fires. And what I recommend the people when it comes to having sprinkler systems is: why don't you actually test to see how much water it consumes over 30 minutes. Do it over winter when you're not going to be concerned about your tanks going down, and they'll fill up with the next rainfall, and have an idea, "Okay, about half a tank gets consumed in an hour." So, therefore, I've got two hours' worth of sprinklers running full stop.

And that's the sort of things you need to think about as well. So there are so many variations in sprinkler systems. People have been running up poles and on a lot of gutters and all over the place, at some point out, some point in, some point down, some point up. Really, just important to go and have a look and see which ones work the best. We have an opportunity where you can contact your local brigade and they can do some property advice visits, and they can also help you out with just what they think would be suitable in those circumstances.

9. Property visits

Do fire brigades provide risk assessments of properties and houses? Well, how do you organize that? You just contact your local brigade?

Michael Vermeulen

Contact your local brigade, ask for a PAVS, which is a Property Advice Visit Service. You may find that they will either have someone who is trained up to be able to offer that advice at the brigade level, or they may ask from someone to come out from another brigade to be able to assist, if there's not someone trained in that brigade. But that's a starting point. Contact your local brigade. Say, "Can you please arrange for that?" And they'll organize coming out. And it can take anywhere from 45 minutes to two hours, depending on the nature of the size of the property and such, and how many questions you have.

10. Safe places to shelter in house

Where are the safest places in a house to take refuge if you have to?

Michael Vermeulen

All I can say in those situations is, you basically stay in the room that's closest to the direction the fire is coming, and as that room is compromised, you seal it off and you move to the next room. And then as that room is compromised, you move to the next room, but you've got to make sure that as you're moving back away from the fire, you're not ending up somewhere like the toilet, where the only way to escape is basically going out a little window that opens up that much or flushing yourself out of it. So, there may be a situation where you may have to exit the house sideways, and if you are in those circumstances, again, you're going to be exposed to that radiant heat. So, make sure you're in your full PPE, and you may have to go around to the front of the house, away from the direction of the fire, to at least try and give yourself some form of barrier and protection away from the radiant heat.

11. Bathrooms as shelter

We know from the coroner's reports that many people who perished were found in bathrooms. And, I don't know whether that has something to do with mixing up what you do in tornadoes or something about going to this smallest room.

Michael Vermeulen

Because you think the smallest room is going to be the strongest, I suppose. But the thing is to always make sure whatever direction you're moving, that you're heading towards an exit. And it may be halfway during the house, it may be very early on, but at least if you are going to have to exit because of very little space to escape afterwards, again, go around to look at some sort of protection.

Chair:

I can tell you from experience it's pretty horrifying being in the house when you can hear the flames above you in the ceiling as well, which is where it's likely to go.

Michael Vermeulen

And this is why we're continually saying do you really want to be put in those circumstances? Which is why we are pushing for the Leave Early as much as we can we can. We know that people lives are safe if they're not in there altogether.

12. Trigger points

How do we decide what our trigger point should be?

Michael Vermeulen

Oh, that's going to be very much based on your risk factors as well. It may be certain situations like: you were certainly always going to have a leave if it's a Code Red or maybe an Extreme day; when it gets to Severe you may have to think about what the risk is in your area, and what you're capable of doing. It may be something as simple as total fire ban days, it may be anything over 35 degrees, whatever. There's a whole gamut of different types of triggers you can use. And having not seen personal circumstances, it's going to be different to people what their triggers can be. It could be a mix of those, it could be just one thing, anything on Severe, Extreme or Code Red. Those days I'm out of there. As simple or as hard as you want to make it, so it depends on what information you have access to, and again, as I say, what the risk is in your area and how extreme it may be if a bushfire comes through.