

## Triggers to take action

Chair: Malcolm Hackett OAM



Panel members: Dr. Raphaele Blanche, CSIRO

Dr. Katharine Haynes, University of Wollongong

Dr. Danielle Clode, Flinders University

Dr. Kevin Tolhurst AM, University of Melbourne

## 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 sessions

### 1. Fire Danger Indexes and triggers

**Often in the Central Weather Forecast District the Fire Danger Rating is dominated by grass-fire danger west of Geelong, where the GFDI can be 60, while the FFDI in Warrandyte/Kangaroo Grounds is only 25. Consequently the Fire Danger Rating for the District is higher, and it unnecessarily activates the leave-early triggers for local residents. One person said they've overcome by accessing the FFDI data on a restricted access section of the Bureau of Meteorology website, but it's not publicly available. Would it be appropriate to make this sort of information more easily available to the general public?**

#### Kevin Tolhurst

I certainly think it should be more available. There are some really good products out there now which basically show a map of those fire-danger ratings across the state. That mapping of those fire-danger ratings ought to be readily available, as the person asking the question says. I have access to them. But everyone should have access to those so they can see what stage their plan needs to be at, what level of activation they should be triggering. So I fully agree that more of that information. But it's available in a mapping form.

#### Danielle Clode

I just wanted to say the research is pretty clear on this, that the more information people have the better in disaster preparation. So, we shouldn't just be tailoring to the lowest common denominator, we need to be providing as much information as possible to people, and that will help them make better decisions.

#### Katharine Haynes

I absolutely agree. And I'm always amazed now when I'm interviewing people. You know, there are so many people out there who have had so much experience of bushfires. They're pretty much experts, in terms of all the information and finding the information they need. So I absolutely agree that we should put all that information out there.

## **Kevin Tolhurst**

I think one of the counter things that's going on is people rely on total fire-ban declarations or code-red catastrophic day declarations, and that's a dangerous thing to rely as well. Because you can have life-threatening situations outside those conditions.

## **2. Agreement on actions and timing**

**Now this next question, I think it's a lay down misere. The person says unless all parties involved agree on the actions and timing of the plan, the plan is effectively of no value. Comment please.**

## **Danielle Clode**

I think Kat probably knows a lot about this as well. We obviously know that there's a lot of differences of opinion, and it does directly lead to fatalities. I don't know if Kat you've got more to say on that?

## **Katharine Haynes**

Yes we see it all the time. Different members of the family have got different ideas. And also, they might agree at the time when they're sitting down at the kitchen table in the middle of winter, thinking about their bushfire plan. But then when it's on and there's a bushfire threatening, suddenly the reality hits and they realize one person's like, "Well, I don't think we should stay and defend anymore." And, "I want to go," or, "I'm not leaving without you." We see that all the time. I think it's really hard for different people even though they're from the same family and different genders to absolutely agree on what the plan should be.

## **Raphaele Balachi**

And people have different values, I suppose, that make a difference in the way they're going to assess situations. And even though, like Kat mentioned, they made a plan before things change and that's really hard to reconcile for them. We see in some other interviews as well.

## **Kevin Tolhurst**

I think one of the strengths of putting a plan together is that at least it allows you to have some discussions over these things. Even though hopefully you can reconcile it. But the planning process is more important than the plan itself.

## **3. Lag time on VicEmergency website and app**

**With the Vic Emergency website and app, what's the typical lag time between a fire emerging and being tagged on the website or the app? The volume of notifications mean that some people will receive the messages much later than others, and perhaps too late. And if any of you don't know the answer to that, perhaps we can ask Rohan Thornton of CFA who is producing this video. Any ideas?**

## **Kevin Tolhurst**

Technically I can't tell you, but it's much better than it used to be. Rohan might be able to give us some specific answers.

## **Rohan Thornton**

To be honest, all the information comes out at exactly the same time. There's a lot of factors that are involved in terms of the level of your internet connection and things like that. But ultimately, at the front end of it, all the information comes out. We've had situations, I guess from a CFA point of view, we were actually seeing the incident reported on the emergency app before we've actually received the page to actually respond the job. So, there's no real pattern. But I agree with Kevin, it's hugely faster than it has been and it's just getting better as each year goes on.

### **4. Direction of threat**

**When making regular checks outside on a high-risk day, is there a certain compass direction that is most of the risk for bushfire threat? In other words, fire spreads from the north due to hot northerly winds.**

## **Kevin Tolhurst**

I might start with that. In Victoria, the main pattern of weather that we're going to get is going to give us winds somewhere between north and northwest ahead of a south-westerly change, which could go around as far as the south. So, that sort of gives us 180 degrees that we need to be concerned about. But that situation changes if you're in New South Wales or Queensland or not so much South Australia, it's fairly similar to here. So, you need to understand what your weather patterns are, associated with those high fire-danger conditions. We saw some fires a few years ago come fairly heavily from the east, down in Gippsland. So, it was driven really by weather conditions off the East Coast. That's pretty unusual, but it's not impossible. So, there is a general pattern, but don't rely on that being hard and fast.

## **Raphaelle Blanchi**

Maybe I would add. When the fires or the embers eventually arrive at your house, it's where you need to look. All, 360 degrees around your house, because everything can catch on fire and everything can spread fire to other parts of your property or probably parts of your house as well. So, at that time it's looking everywhere and looking at what are the most vulnerable parts of your property, the fuel and the combustible material that can help the fire spreading to your house, for example.

## **Danielle Clode**

And there's also a risk of relying too much on prevailing weather conditions. So, people will expect fires to come from one particular direction when, you know, local topography has a big impact. Also, proximity to vegetation. But mainly just the sheer unpredictability of fires. You often hear people my neighbours talk about how they expected it to come from one direction where the weather comes from, but it actually came across the road from another direction because it wasn't windy, and for whatever reasons. And other people who live on hilltops, the fire will come from three or four different directions over the course of a few hours. So, it's just too variable. You can plan for the most common option, but you have to be prepared for it coming from the most unexpected place.

### **5. Bushfire in the suburbs**

**This next person says they're not currently in a bushfire-risk area, and they're aware that a suburban neighbourhood has areas with high fuel loads. Homes are really close together, lots of fuels in timber fences and street trees, and gardens close together, and so on. If a fire is in the outer area it could quickly get into the suburbs. How fast would a fire move in that situation on an extreme fire-weather day. And a bushfire actually hitting the suburbs, this person reckons most of their neighbours wouldn't have a clue about what to do. And, I guess, that comes back very much to the Canberra experience.**

## **Raphaelle Blanche**

I can start talking about the Canberra experience. We've seen houses that were 700m from the fire edge that caught on fire and then were burned down. So that's one of the biggest distances that we've seen in fire where houses were affected by the fire. We also find that in other studies, that houses that were not in Bushfire Prone Area were also under ember attack and were ignited and were catching on fire. And when the house is starting to burn, it can burn for hours and it produces a lot of flame right into it, and embers that can attack other parts of the built environment. And it's become more urban type of fire in this case. So, I'm not sure about how fast it's going to spread. It's going to depend also on some of the wind and the wind direction. But it will definitely spread from house to house if they're close enough, if there is enough fuel to burn in between.

## **Kevin Tolhurst**

I think Raphy's got that. We know that fires can penetrate 700 metres into urban areas. That happened in Hobart in 1967. And it penetrated long distances in Canberra as well. That's without the bushfire. So, the bushfire effectively stopped back at the edge of the urban area. The spread of the fire, perhaps along creek lines or whatever, could still be averaging sort of 10-15km/hr. But for short periods of time, the fire can spread much quicker than that. So, for a couple of minutes, the fire could be spreading as fast as the wind, so what you perceive on the ground may be a fire spreading 200-300m, which is quite a distance when you're standing on the ground in a minute or so. Whilst it may be averaging, say, 10km/hr, what happens in a minute or two can be much faster than that. It can be travelling as fast as the wind. So, I think we need to separate out what the average rate of speed of the fire might be from relatively short distance, if you call 200m or 300m a short distance. So, that's a sort of penetration that you need to be aware of. It's not just the average rate of spread of the fire.

## **Danielle Clode**

And also the spot fires and the capacity to spot into those areas. It's not just the path of the ground fire that's the issue, which does slow down in those areas, but the spot fires remain a risk.

## **Kevin Tolhurst**

That's where the 700m effectively comes from. It's from the spotting process.

## **6. Chance of devastating fire in Diamond Valley area**

**What's the likelihood of a devastating fire on a Code Red day in Hurstbridge, Eltham or Diamond Creek. And then they've taken a stab at it. Is it 70% or higher?**

## **Kevin Tolhurst**

Hurstbridge, Eltham and Diamond Creek are probably a little less fire-prone than somewhere like Warrandyte, Strathewen, St Andrews, and so on. Just because it's more fragmented and a little more densely built up. You could still have quite devastating fires in those areas, but the continuity of the vegetation to carry, ahead of bushfire, is a bit less in those areas because of the density of the houses. So, I'm not quite sure whether 70% it's still a Bushfire Prone Area. Trying to put a percentage on it it's a bit hard, but you could expect significant losses there, but not to the same extent to, say, somewhere like St Andrews and Strathewen, even the Warrandyte area.

## 7. Covid effect on planning

**This questioner wants to know: will Covid-19 make a difference to planning? Anyone want to have a go?**

**Danielle Clode**

I guess, we did see that that was a major issue in other countries with fire events, where issues around evacuation became problematic. And really that overrode, I suppose, Covid concerns. So, yes, it is an issue, and it's probably something that central authorities need to look at. How they're going to manage that situation through these coming summer months, if there are still lockdowns what they do. And it's certainly an added complication that we have to take into account, along with all the other complications with fire preparation.

**Katharine Haynes**

I think it's an issue as well as we go into this next fire season, and all the sort of community meetings and all those things that would normally be happening face to face, where people can ask questions and meet people and discuss all these things just won't be happening.

**Kevin Tolhurst**

North America has sort of been through all of this the last few months, in a sense. And part of the problem is you also have the threat to the fire fighters themselves getting sick, and so on, and being able to work in that sort of strenuous environment. So, it has some impact there. I guess the other side of it, which is perhaps an up or a plus side of the Covid thing, I think we've seen a little more demonstration of science and evidence being used for decision-making process, from a scientist point of view. I think that's been encouraging. But the problem with bushfires is it tends to be a one-in-a-lifetime event, whereas with Covid you can sort of see what happens two weeks after the decisions being made. But, the Covid experience has perhaps heightened people's awareness of evidence-based decision-making, which could be a good thing from a fire point of view. So, that's probably not what the questioner was aiming at, but I think Covid has some upsides to it.

## 8. Pre-determined triggers

**I am concerned for those who have determined triggers. They make panic decisions late at variance to the plan. Could it be that it is necessary to learn that making sudden decisions is itself a trigger to pause and rethink? And I'm pretty sure you're interested in that too Kevin. Kat, was there examples of that in your research?**

**Katharine Haynes**

Oh, for sure. So, people will think they've got a trigger. Which might be, "Oh, it'll be, the high fire-weather danger." And then a day will come and they'll think, "Hmm, there's no bushfires in the landscape, so I think I'm going to wait and see if a fire starts." So then that's the next day and then a fire starts, and they think, "Yeah, but it's not close enough to me and I don't think it's going to reach me today, so I'm not going to leave." And so, I think they'll go through all these all these triggers until, suddenly, because what they're really looking for is certainty. Certainty that their action to evacuate is worth the risk, so that they are going to be impacted by that fire. So, I absolutely think that people will have a whole, you know, selection of triggers that they will go through.

**Kevin Tolhurst**

I think from the last webinar you had, Webinar 3, it's clear that unless, and Danielle was saying this a minute ago, unless you actually practise going through those processes, making those decisions, they won't be cemented in your brain, in a sense. And so, the logical process that you thought you were going through, if they're not ingrained and well-founded, then they're not very useful as

triggers. Because they're just wishful thinking, in a sense, rather than something that's been practised and tested. So, Danielle might be better to answer that than me, but I think it's: when you're under stress, making logical decisions is much more difficult than doing it in clear air.

## **Danielle Clode**

Which is why I think practising as many elements of your plan in non-fire circumstances is a good idea. So see how you go preparing to pack up and get ready to leave on a day, and decide you're going to leave before seven in the morning, and see how that goes. Because most people find it's a lot more difficult than they think. So, just set yourself the goal of practising elements of those things. And once you've done that, it'll become a much more embedded practice. And then that will be the first thing that comes to mind, rather than the alternatives, as Kat was saying about waiting and seeing and seeing, deferring the decision until later. It's not automatic.

## **9. Explanation from Malcolm - his survival in Strathewen**

People want to know what we did that meant we survived. Where did we take cover? And so on.

Our weatherboard house took about 20 minutes to burn. The time that we had once the house caught fire was spent looking for a dog that was actually inside. When we finally got outside (didn't find the dog unfortunately) my utility was on fire, but I drove it down the road to get it away from the sheds and the house. I thought it would be easier to put out. Diana got into her car, except her handbag was inside the house which had burned down, so the keys were there. Someone came and helped me put my ute out, and then we went up and got Diana.

Our place was a grazing property, and so we weren't surrounded by bush. And so, we were safe and that's how we survived. My belief is plans A through to Q will probably fail, and that's why you need to have so many alternatives.