

Conference Proceedings – Speaker Transcript

What is Community Bushfire Adaptation?

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[Link to Slides](#)

I'm from southern Victoria and I'm a research leader of bushfire urban design at CSIRO. Which really means that I've spent my research career looking out, from the house and the community's perspective. I've been asked to speak about community adaptation and what that really means.

My background is 24 years of focussing on how a house and its occupants experience bushfire, and building a supporting evidence base for informing building design and landscaping related regulations and advice (Slide 2). I have also focussed on trying to understand how people perceive bushfire and how they behave in a bushfire event.

I'm going to change this presentation from what I usually present, as I usually use a lot of images and graphs and speak more from the head than the heart. In this presentation I'll speak more from the heart as it is a plea to head in a new direction. So I guess I have a confession to make (Slide 3). I've spent the vast majority of my research career supporting and enhancing a system that is inevitably destined to fail. The system we currently have is predicated on the idea that we fear and suppress all of our unplanned fire. Then if the weather becomes too severe, we evacuate with the obvious prospect that the houses we leave when we evacuate could go up in smoke. But it's okay for now because it's not really likely to happen to me.

What is community adaptation (Slide 4)? Well, it's really acknowledging that bushfire is an inevitable and welcome part of our landscape, and living our lives with that as an inherent assumption. What does this look like (Slide 5)? It's building houses that can't burn down. We're talking about regulation that improves our performance. If you look at the axes on Ross Bradstock's graphs, they were talking about improving our chance from 80% chance of burning down to 20%. Regulation is not talking about building houses in our bushland environments that can't burn down.

Regulation, at best, is putting a safety net in that provides some improvement. It doesn't solve the issue of us losing houses and other assets at the interface. We need to think more about aiming for best practice, aiming for ultimate survival, rather than simply patching and improving a fairly flawed ideology about how we put houses together.

We need to create gardens that need fire to be at their best. Often, people build gardens and then complain when their retaining walls burn out, our fences burn down or our vegetation's destroyed in our backyards. Why aren't we thinking about our backyards and the vegetation within them as needing fire and embracing fire as one of those inevitable processes?

Fences - do we really need them? Most of the fences that we put up burn down and bring more risk to our interface. What about using fences that aren't affected by fire, if we really need them, fences that allow fire to pass unhindered? We need to rethink that whole concept.

We need to build sheds that are sealed and protect the things within them. It is very rare to come across a shed that can effectively protect its contents. We need cars that filter out the smoke if you happen to drive past a bushfire. And cars that can see through smoke. I actually drove one last week. It's called a Tesla Model S. We need to think outside the square.

Broader landscapes can be shaped by our use of fire. I can see, in the conference program to come, that this is an obvious and integral part of most of your thinking already. But let's not think of the landscape as a disjunct at the urban interface. We can also consider fire that is initiated and managed by our local communities.

What have we been missing (Slide 6)? Well, we focus on exclusion of fire rather than inclusion. Fire's been typically the domain of experts and practitioners, rather than the community itself. I think our laws and ideologies have taken fire use away from the individual. In Victoria, the amount of paperwork you need to do to burn a pile of leaves is quite incredible.

We need to have the confidence to design and build houses in bushfire prone areas that don't burn down. It's not that difficult to do. Current advice and guidelines aren't that well aligned to show the path to an ideal best practice outcome, but it's not that hard to do. People blame our agencies for not burning enough in the landscape, and then we blame them for not putting the fires out well enough when they do happen. In essence, it would take a fire agency the size of the entire community to actually tackle that task effectively.

We don't really need fire experts to tell us about what a non-combustible material is, or how to measure a gap that could let an ember into a house (Slide 7). Or, in fact, the rationale for not just building a house with a non-combustible façade, but one where all of its building cavities, if it's got any, can't burn either. And recognise that a car or a wheelie bin or a pile of wood is a substantial fuel load that you shouldn't put anywhere near your house.

Recognise that a bushland interface that you can walk through is ideal. We've seen plenty of pictures of idealised interfaces that we can transition through. We need to also recognise that the tree canopy itself isn't the problem, it's what we allow to grow under it. If we design our houses correctly, then it won't matter if leaves fall on it from an overhanging or nearby tree.

We're potentially thinning our tree canopies out a lot more than we need to, which is letting a lot more sun reach the fuel on the ground and giving ourselves bigger challenges and workloads to maintain and clean up that understory fuel. Bringing fire as a tool back into the community

is probably one of the most efficient and effective ways to manage that fuel at a relatively high frequency close to our homes.

This approach manages the intensity of the next fire, so then all we're left with is dealing with lower intensity surface fire. So we'll get low level surface fuel and ember attack, which are relatively easy to design against. We can then have our nice big windows and our houses are more than adequate to survive that low intensity fire.

We do need experts to teach us how to read and re-engage with the land and re-imagine our interfaces (Slide 8). We need to convince authorities to give fire back to the communities and re-enable us, in a shared responsibility model, to use and share fire. We need experts to teach us the old Indigenous ways of using fire as a tool in our landscape in our interfaces. And we need experts to provide confidence and evidence to support our transition to that way of embracing fire.

So how do we know when we have adapted as a community (Slide 9)? Well, if a neighbour rang you up and said, 'oh, a bushfire turned up today', and it actually gave you a nice grin inside. That's when you know you're there.

If we don't adapt, as you've seen from the last two presentations, it's pretty clear that nature is going to do it for us (Slide 10). Fire frequency is ramping up in Victoria and NSW. What we see with people thinking, 'it's not really happening often enough' and 'it's not really going to happen to me'; the problem of that thinking is going to be solved fairly shortly by our changing climate. By 2050, we're probably going to see major loss fires in the six to seven year frequency range. Which is a short enough timeframe for people to remember. By 2050, it will be pretty clear. The challenge is for us to think about and proactively plan and adapt for that now.

Questions from audience – (combined question time) Justin Leonard & Ross Bradstock

Question: It's a question for both of you. I'm a bush regeneration contractor. Frank Gasparre is my name. We do a lot of work on asset protection zones. The first few times we did them, we were thinning out native shrubs that I've loved all my life and trees. It was actually quite a cultural challenge to do that for me and my staff. Then when we'd go back to them a year or two later, we'd see that a lot of ground layer plants that were perhaps locally threatened were now coming back and doing really well in the increased light and thinned vegetation. So the question is why are we so biased towards shrubs and trees and we're not chaining ourselves to some of the groundcovers and smaller things that are also rare and threatened in Sydney's areas that can survive quite well in that interface that you're talking about, Ross, and be of positive benefit for local habitat and biodiversity as well?

Ross: (Comments from Ross Bradstock are not appearing in the public transcript)

Justin: The role of low groundcover and shrubs is key to an aesthetic urban interface. There are just different distance scales that you play with proximal to houses and the way you build those up as patch mosaics. This can do a very good job of not only bringing lower intensity fire into the interface, but also acting as radiant heat shielding from any larger, unmanaged fuel loads that are much further out.

Question: I'd like a clarification about the hazard reduction burning around assets up to 1km out in comparison to doing it 5km or 10km. The biggest bang for the buck is definitely doing the hazard reduction closer to the asset than out in the middle of nowhere.

Ross: (Comments from Ross Bradstock are not appearing in the public transcript)

Justin: If you want to significantly impact the cost to actually instigate interface burning, once you modify the backyard landscapes and the houses to respond effectively to low intensity fire, it's actually really cheap and easy to do that interface burning. So you get low cost and very high risk reduction at the same time.

Question: Justin, you noted that a 2mm gap creates a risk, can you suggest what to do with corrugated iron roofing? Having put on a corrugated iron roof with more than 2mm gap, how do you protect it?

Justin: Two millimetres is the magic gap size that a viable ember can get through and find something like a rat's nest inside a building cavity and start burning inside your house. I'm assuming it's a corrugated roof over a timber truss frame roof? So it's a combustible roof space? (Yes). I guess the main challenge is you've already got a problem because your roof space is combustible. Ideally, if you're building from scratch, you avoid that completely by using a non-combustible framing approach, like steel trusses. But with your current situation, you can take off all your ridge capping and put some fibreglass insulating batts down and then screw your ridge capping back down. That can block the entry of embers through that path.

Question: My name's Melinda, I'm from Port Macquarie Hastings Council. When we talk about strategic burning on the interface and they get mapped in risk plans as strategic fire advantage zones, how do we re-engineer structure and vegetation types when we've got limited fire regimes for the existing vegetation? We can do APZs that burn out of regime. I just wanted to flag that, with the code on public exhibition as well, over the next month, is how we re-imagine the re-engineering of those urban interface areas to allow us to change structure for low intensity with the current guidelines around vegetation types. Whether we need to proactively change those into the future and say these areas actually need to be re-engineered while maintaining environmental values of a different structure or vegetation community.

Ross: (Comments from Ross Bradstock are not appearing in the public transcript)

Justin: I'd encourage that discussion to follow along the lines of, how you can very cleverly articulate how you transition through all those processes, rather than saying I'm going to clear to this point and then I'm going to have unmanaged or some other regime from that point on.

You can have larger zones that have higher biodiversity value closer to a building because you've got staged transitioning between it. So it actually acts like a windbreak, a radiant heat buffer, an ember filter and all at the same time between you and a more severe fire regime that may exist beyond that.