

LEGISLATIVE COUNCIL ENVIRONMENT AND PLANNING COMMITTEE

Inquiry into the 2026 Summer Fires across Victoria

Melbourne – Friday 1 May 2026

MEMBERS

Ryan Batchelor – Chair

David Ettershank – Deputy Chair

Melina Bath

Gaelle Broad

Jacinta Ermacora

Wendy Lovell

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**Necessary corrections to be notified to
executive officer of committee**

WITNESS (*via videoconference*)

Professor David Lindenmayer, Fenner School of Environment and Society, Australian National University.

The CHAIR: Welcome back to the proceedings of the Legislative Council Environment and Planning Committee's Inquiry into the 2026 Summer Fires across Victoria, coming to you from rooms in the parliamentary precinct in Melbourne.

For our witness in this session, all evidence taken is protected by parliamentary privilege as provided by the *Constitution Act 1975* and the provisions of the Legislative Council standing orders. Therefore the information you provide during the hearing is protected by law. You are protected against any action for what you say during the hearing, but if you go elsewhere and repeat the same things, those comments may not be protected by this privilege. Any deliberately false evidence or misleading of the committee may be considered a contempt of Parliament.

All the evidence is being recorded. You will be provided with a proof version of the transcript following the hearings. Those transcripts will ultimately be made public and published on the website.

Welcome. My name is Ryan Batchelor. I am the Chair of the Environment and Planning Committee and Member for the Southern Metropolitan Region in the Legislative Council. I will ask my colleagues to introduce themselves.

Gaelle BROAD: Hi. I am Gaelle Broad, Member for Northern Victoria Region.

Melina BATH: Melina Bath, Eastern Victoria Region.

Wendy LOVELL: Wendy Lovell, Northern Victoria Region.

John BERGER: John Berger, Member for Southern Metro.

Sarah MANSFIELD: Sarah Mansfield, Member for Western Victoria.

Rikkie-Lee TYRRELL: Rikkie-Lee Tyrrell, Member for the Northern Victoria Region.

The CHAIR: And online we have –

David LINDENMAYER: My name is Professor –

The CHAIR: Hang on, Professor. I am just waiting for Jacinta to introduce herself.

David LINDENMAYER: Okay. Sorry.

The CHAIR: That is all right. Well, she is there anyway. Sorry, Professor. If you could just state your name and the organisation you are appearing on behalf of for the Hansard record, please.

David LINDENMAYER: Yes. My name is David Lindenmayer, professor of ecology and forest ecology at the ANU, the Australian National University, in Canberra.

The CHAIR: Wonderful. Thanks for joining us today. The format of this session is pretty straightforward. We will invite you to make an opening statement, then the committee will begin asking you questions. I will hand it over to you.

David LINDENMAYER: Yes, thank you. I have worked in the forests and woodlands of Victoria and New South Wales for more than 43 years. Those include woodland areas and forests, some of which have been subjected to extensive logging, extensive thinning and in some cases extensive prescribed burning. What some of our more recent research indicates is that some activities, like thinning and even prescribed burning and certainly past logging operations, make forests significantly more flammable, and they are more flammable for up to 70 years after previous disturbance.

We have just won a major international award for identifying what happens in these ecosystems. It is called ‘disturbance stimulated flammability’ – hardly a barbecue-stopping term, but it is actually what happens. After a system has been disturbed and then regenerates there is a pulse of additional flammability that can last for several decades after those disturbances. I am happy to provide any background scientific articles that you might want to follow up on on these issues around thinning, around logging and more recently about prescribed burning and its implications for the flammability of vegetation.

The CHAIR: Thank you. Is that the extent of the statement you wish to make? Professor, is that the extent of your opening statement?

David LINDENMAYER: I think another key issue here is that much of what happened in the past few months in the fire space has actually been on agricultural land, from the analysis that we have looked at. In those cases, issues to do with things like fuel loads and fire spread are not connected to what we would normally see in a normal forest setting or a plantation setting. It is reminiscent of what we saw in the fires in the Canberra district in 2003, where extensive fires were carried across areas that had almost no vegetation cover as a consequence of prolonged drought. In those cases more recent work indicates that one of the key issues in those environments, which are largely agriculture dominated, is to do with wind speed and the potential value of approaches like establishing shelter belts to reduce wind speeds and make fires more suppressible – if we can use that term – in those kinds of settings. I will leave it there.

The CHAIR: Sure. All right, we might go to some –

David LINDENMAYER: I am happy for people to –

The CHAIR: Yes, we might start with some questions. The committee spent the last week travelling around regional Victoria and visited a number of different firegrounds. The fires that we are looking at over the 2026 summer period here in Victoria included forest fires, sort of cropland fires, and then agricultural private land – sort of bushier settings – fires. One of the things we were spoken to about by Forest Fire Management Victoria in the Otways was the difference of intensity between the fire in parts of a forest that had had controlled burns undertaken through it four or five years ago I think it was, and an area where it had not. Their view was that the controlled burning lowered the intensity of the fire as it spread and potentially lessened its impact. Do you have any views about or any perspectives on whether you think that controlled burning operations in forest fires do reduce the impact and intensity of fires as they travel through the forests?

David LINDENMAYER: Yes. That is a complicated question, and it is associated with some significant limitations of a lot of the research that is done on prescribed burning. There is some evidence that prescribed burning will have some effect for the first couple of years after it is done. What we see with longer-term work is that after that initial period, there is actually an increase in the flammability of the system as it starts to regenerate after those fires. Fire stimulates germination, resprouting – those kinds of activities that have been going on in forests for at least 180 million years. What happens then is that we see a pulse of regrowth, and that regrowth can then become more flammable. That is actually something that has been known since the 1939 Stretton royal commission inquiry, and that is actually what we have seen in empirical work done in Western Australia. Western Australia is the mecca, so to speak, for prescribed burning in Australia. Interestingly, when there is a longer-term perspective on the efficacy of prescribed burning, it suggests that there is a limited initial period where it is effective, and then there is a prolonged period after that where prescribed burning makes the system more flammable. This is relating to this idea of disturbance-stimulated flammability that we have seen.

The CHAIR: When you say longer term, what would a longer-term period be, roughly, in your evidence?

David LINDENMAYER: In Western Australia we see that that elevated flammability lasts for about 20 to 30 years after you go through that initial phase. That is the pulse that we see. We also see it after thinning operations in some forest types where there is a pulse of flammability, and we also see it after logging, where a forest is logged and regenerated. In Victoria that pulse of flammability lasts for about 40 years. In New South Wales it is about 70 years. In Tasmania it is about the same. There was a paper published just in the last couple of weeks indicating the same outcome. It is the same kinds of processes that are leading to it – there is a disturbance, there is a recovery after disturbance, there is a period when the system is more flammable, the trees are growing quickly and they are taking a lot of soil moisture out of the soil. The architecture of the forest is set

in a way that is more likely to carry ladder fuels. It is drier, it is windier and there are a lot more fine fuels in the system.

The CHAIR: All right. Thank you. I will now go to Ms Bath.

Melina BATH: Thank you. Professor, you contend that broadscale prescribed burning is often ineffective and/or counterproductive, yet every major Victorian bushfire inquiry and royal commission, after hearing evidence on sworn oath from scientists, from land managers, from firefighters and from impacted communities, has concluded that fuel reduction lowers fire intensity and improves probability of control, reduces suppression costs and reduces wildfire damage, without claiming it eliminates bushfires. Can you point to which bushfire royal commission hearings or independent inquiry evidence supports your recommendations to scale back prescribed burnings, rather than refine or expand them?

David LINDENMAYER: Yes, I can: Zylstra et al. 2022, Zylstra et al. 2024, Zylstra and Lindenmayer 2025. These are long-term empirical studies. Previous studies have not looked at long-term outcomes. For example, the study by Boer in Western Australia is supposed to be one of the key papers showing the efficacy of prescribed burning. When that work was looked at in detail, it was discovered that the so-called effectiveness of prescribed burning included prescribed burning that had taken place after the wildfires. When those flaws were removed from the analysis, it was shown that there was actually no effect of prescribed burning. There are other datasets looking at the things that are important in terms of what is the key thing to be looking at, which is property loss. That is work by Phil Gibbons, Gibbons et al. in 2025 and Gibbons et al. in 2012. There is an effect of prescribed burning, but the effect size is small and the effect size is dependent on three things: how close the prescribed burning was done to houses, how recently it was done and the fire weather. What we see is that with increasingly difficult fire weather conditions, the efficacy of prescribed burning actually declines, and declines quite dramatically.

Melina BATH: Professor, just to hold you up there, my question was about royal commission findings or independent inquiry evidence. You have just related references that refer either to yourself with another scientist or that other scientist. Have they been part of and inserted into independent inquiry evidence?

David LINDENMAYER: That is my understanding, yes.

Melina BATH: You might need to take it on notice, but could you provide where your own papers have ended up on independent inquiry evidence or royal commission findings and recommendations, please?

David LINDENMAYER: Absolutely. I am more than happy to do that. I contend that extensive prescribed burning in remote areas, far from where people are living, far from where there is property, is probably leading to that pulse of flammability that we talked about, that we see in a number of areas around south-eastern Australia and south-western Australia. If we are going to continue with prescribed burning, then we need to think about where it is done, probably bring it closer to where people live, do it frequently and do it repeatedly. But there is a serious health issue with it, and the health issue is associated with the effects of bushfire smoke on people's health. That is increased rates of dementia, increased rates of some forms of Parkinson's disease, reduced rates of childhood IQ and other respiratory illnesses. So there are important health trade-offs that are associated with this that are well documented in the international peer-reviewed literature and well documented in the national medical literature.

The CHAIR: All right. Dr Mansfield.

David LINDENMAYER: There are deeper issues here that need assessment, because there are other impacts on human health.

The CHAIR: All right. Thank you, Professor. I will go to Dr Mansfield now.

Sarah MANSFIELD: Thank you. Thank you for appearing today. We have heard a lot, and had a lot of evidence submitted to this inquiry, that points to fuel load management as being the problem, particularly on roadsides and on public land and in some of the forests, as being concerns and contributing factors to this, and calls to go back to per-hectare prescribed burning or have targets around prescribed burning, potentially. What you are suggesting is that the evidence does not support that. How do you think we can ensure that policies around things like fuel load management are informed by evidence but can also meet those community

expectations? There seems to be a gap between what people think needs to be done on the ground and what potentially the evidence is showing.

David LINDENMAYER: Yes, I think there is a gap between the two. I think you need to look at the quality of the evidence as well. I think you need to look at the cost-effectiveness of the action. So if you bring in a target, say 5 per cent of the state every year being prescribed burnt, often the only places that you can meet that target is distant and remote areas, like the massive burn that has just been taking place in the Snowy national park, which is very distant from where people live. What I would say is that if you are going to burn those areas frequently, they are going to have limited effectiveness in relation to what you want to do, which is protect people and property. And so you are better off from a cost-effectiveness perspective to bring those activities closer to where people live. A key outcome from the work that was published by Gibbons et al – I was not a co-author on that – showed that in most cases the amount of prescribed burning that would be needed to have effective risk reduction is not feasible and that you are better off to create a physical barrier through strategic slashing of vegetation, and that has the benefit of not creating large amounts of smoke, which has a major human health impact.

Sarah MANSFIELD: That moves on to what I was going to ask: what are the alternatives to prescribed burning, and what does the evidence show is effective?

David LINDENMAYER: Well, that was one of the outcomes of that paper that was published late in 2025, that thinking strategically about where you do slashing, and how close to houses, is likely to have more effect. That was a conclusion of the authors – again, I was not a co-author on that – in relation to house loss. I think in many cases that is one of the important things we are thinking about. It is also important to understand what sorts of fires we are mostly dealing with in the context of what has just happened in Victoria, and in many cases they were agricultural areas where things like fuel loads actually relate to pasture grasses, which you want to feed your livestock. In those cases the rethink there is not about fuel loads, it is about thinking about what is driving fire behaviour in those cases, and a lot of it has got to do with wind speeds. The agricultural literature indicates that wind speeds and things like shelter belts are important when you place them strategically. And there are other issues there that we work on around availability of water – farm dams. How do you ensure that? Well, there are ways to restore farm dams to increase water persistence and reduce evaporation, and again, that involves the strategic use of shelter belts and trees around those water bodies so that farmers have got access to the water to be able to do suppression on their properties, including during drought periods.

The CHAIR: All right. I might go now to Ms Ermacora.

Jacinta ERMACORA: Hello. Thank you for appearing today. I just want to understand if you have reviewed First Nations scientific evidence around landscape management, including cool burns. Have you had a look at that body of scientific knowledge and reviewed it against your work?

David LINDENMAYER: I was at a three-day cultural burning workshop on Wiradjuri country in Young earlier this week. We have a five-year Australian Research Council project associated with burning on Ngunnawal, Onerwal and Wiradjuri country in New South Wales, and that was preceded by a New South Wales resilience grant that went with those same groups. I think it is really important to understand that cultural burning is very, very, very different to hazard reduction burning. They are very different kinds of fires applied for very different kinds of reasons in very, very different ways. There is a whole body of different kinds of knowledge that is associated with cultural burning, which is not the same as hazard reduction burning. I think it is important not to conflate the two, and most First Nations mentors of mine and others that I have worked with closely are deeply concerned that it is being conflated, yet they are very different kinds of fire. Now, having said that, there were also substantial parts of country that were what is called no fire country by some groups and by others it is called piece country. The tall, wet forests and foothill forests of Victoria are generally regarded by most First Nations people that I have worked with, including the Wurundjeri, the Taungurung and the Gunaikurnai, as no fire country, and the scientific data shows that quite strongly as well.

Jacinta ERMACORA: Is there no alignment between what is known about presettlement landscape management and the work that you have done around fire risk reduction?

David LINDENMAYER: There is a strong alignment in the sense that we understand that there were different kinds of fire in different kinds of country, and fire management for some First Nations people in some

of their areas included no fire. The generalist populist literature at the moment is that huge areas of Australia were burnt all the time by everybody, and the data do not show that. They show it was much more nuanced. There were extensive areas that were not burnt, and the fire that was used was nearly always very low intensity fire with flame heights often no higher than about shin height that were very patchy burns and applied in very specific circumstances that were not associated with asset protection, except immediately around where people camped. They were women's fires for food crops, men's fire for green pick. These were often very constrained areas. For example, green pick, you do not want to be burning over large areas because you are going to disperse your potential prey over massive areas. You want to bring the animals to you, not drive them away.

The CHAIR: All right. Thank you.

Jacinta ERMACORA: Thank you.

David LINDENMAYER: Much of this fire was very constrained, very localised and very specific for particular purposes.

The CHAIR: Mrs Broad?

Gaelle BROAD: Yes, thank you. Could you clarify: do you believe in the benefits of firebreaks on infrastructure such as roads and railway lines?

David LINDENMAYER: The benefits of firebreaks immediately in those areas probably have some value, deep within forests probably very little. If you look at the spotting distances, average spotting distances for most of these fires under high fire-risk conditions, you are going to see spotting distances of 500, 600, 700 metres and sometimes significantly further. So the current firebreaks I cannot see as being particularly effective under those conditions, frankly.

Gaelle BROAD: Okay. Do you believe tracks should be maintained in public forest to support bushfire efforts?

David LINDENMAYER: In some cases, yes, but that is a double-edged sword, because if you look at the prevalence of arson as a major form of fire, not just in Australia but in Europe and North America, what the data show is that the more roads you have in particular places, the more likely you are going to have human-based ignitions. So you need to think that through very carefully about what is involved in those kinds of circumstances.

Gaelle BROAD: We heard from volunteers with the CFA that wire rope barriers and road barriers did present an issue. It inhibited them from getting to the fire. One of the councils called for an analysis of the risk posed with that to enable better access. Would you support a review?

David LINDENMAYER: I would support a review, but I think it needs to be a deeper review, following on from Owen Price's work and Collins's work in 2015 looking at the prevalence of ignitions in relation to road networks.

Gaelle BROAD: We also heard about the importance of farmers that are often at the forefront, or can be, with private vehicles attending and private units attending. There have been calls for government support to better equip farmers to respond, because obviously putting fires out as quickly as possible is the aim. Would you support that kind of initiative?

David LINDENMAYER: I think that is potentially important. I also think, though, that there is a limit to volunteerism and there is a need to really rethink carefully some aspects of firefighting. We are looking at this at ANU in terms of the use of technologies for rapid detection of ignitions and rapid suppression of fire, because that is the best time to extinguish fires, when they are small, and there are roles for new technologies. You do not want to be replacing people with that technology; you want them to be working alongside one another.

Gaelle BROAD: Just the last question with my time, can you please list the different public authorities that need to be consulted to undertake a planned burn?

David LINDENMAYER: I think obviously you need to be thinking about Parks Victoria and Melbourne Water. Melbourne Water is important because of the value of the water catchments for Melbourne's water supply. There are various farmers groups – obviously CFA. There will be others as well, catchment management authorities.

Gaelle BROAD: I am for you to take that on notice. Yes, catchment management authorities. If you could provide a list of the authorities involved, that would be great. Thank you. That is my time.

The CHAIR: Ms Lovell, did you have any questions?

Wendy LOVELL: No. I am happy to cede my time to Ms Bath if she has further questions.

Melina BATH: Thanks. Professor, over recent decades the Victorian government, particularly in the last decade, has shifted away from what would be considered to be a balanced prevention and suppression model towards predominantly an emergency response approach, so the latter end. Your submission advocates for a further move away from mitigation towards technologically enabled detection and suppression. Given the repeated inquiries' findings – I have already mentioned those in my previous question – that suppression fails once fire intensity thresholds are exceeded, what evidence supports pushing this policy even further down the runway, which has already been shown to worsen outcomes?

David LINDENMAYER: I would challenge the last part of what you said. I would also indicate that in Victoria you have now got a legacy of extensive policy that removed large areas of old-growth forest, which is where fire severity is significantly lower than in regrowth forests, which have had previous disturbance. There is very strong evidence for that. I think there is a really important role for technology, for rapid detection and rapid suppression, as I said before. It is not to replace people on the ground. I think we have to strengthen the ability for rapid suppression.

I am not convinced that widespread prescribed burning is actually a successful mitigation tool from the data that I have looked at. If you actually review the literature on prescribed burning in Australia, it is surprisingly thin empirically despite what people say repeatedly at inquiries. When you look closely at empirical data you see that the evidence is actually not particularly strong that it is actually effective. In some cases it is clear that prescribed burning will actually make systems more flammable, not less. I think there is a need for a much more strategic approach than simply burning more and more and more of Victoria. As we can see, it is not effective in terms of what we are seeing in terms of fire behaviour across the state.

Melina BATH: Professor, in 2020 you co-authored a paper which assessed how much disturbance – you had it as fire and logging – had impacted old-growth forests since 1995. In that paper you found that around 75 per cent of the estimated extent of old-growth forests had been impacted by fire between 1995 and 2020, and this was around 600,000 hectares of old-growth forests. My question is: if old-growth forests are supposed to be increasingly immune to fire, how can it be that 600,000 hectares of old-growth forests have been burnt by bushfires in the last 30 years?

David LINDENMAYER: Sorry, but your question does not make sense. What we indicated is that old forests are significantly more likely to burn at lower severity, and what we have seen has been significant removal of old-growth forests across Victoria. That was a deliberate policy of the former Forests Commission and predecessors to it since 1928. That policy went on until well into the 1990s across Victoria. There was a logging-related loss of old-growth forests. Significant areas of forest landscapes were altered and shifted towards younger regrowth forests, which are more fire-prone. In East Gippsland there was a shift towards silvertop ash, which is essentially a fireweed, as part of the Eden woodchip mill concession. So large parts of landscapes have become much more flammable, and as a consequence of that additional flammability at a landscape scale, some of the areas of remaining old-growth forests that were not logged actually burnt – as a consequence of that landscape scale additional fire flammability in the system. I am more than happy to send you the papers on that and interpret them for you.

Melina BATH: Thank you. No, that is fine. I do not think you quite understood my question, but I am happy to let it go.

The CHAIR: Thank you, Ms Bath. Professor Lindenmayer, we are out of time, unfortunately. I want to thank you for the time you have taken today to give evidence to the committee. You will be provided with a proof version of the transcript for review before it is finalised and made public. With that, the committee will take a short break and reset for the next witness. Thank you.

Witness withdrew.