

TRANSCRIPT

LEGISLATIVE COUNCIL ENVIRONMENT AND PLANNING COMMITTEE

Inquiry into Ecosystem Decline in Victoria

Melbourne—Thursday, 26 August 2021

MEMBERS

Ms Sonja Terpstra—Chair

Mr Clifford Hayes—Deputy Chair

Dr Matthew Bach

Ms Melina Bath

Dr Catherine Cumming

Mr Stuart Grimley

Mr Andy Meddick

Mr Cesar Melhem

Dr Samantha Ratnam

Ms Nina Taylor

PARTICIPATING MEMBERS

Ms Georgie Crozier

Mr David Davis

Dr Tien Kieu

Mrs Beverley McArthur

Mr Tim Quilty

WITNESSES (*via videoconference*)

Mr David Packham, OAM, and

Mr John Cameron.

The CHAIR: I declare open the Legislative Council Environment and Planning Committee's public hearing for the Inquiry into Ecosystem Decline in Victoria. Please ensure that mobile phones have been switched to silent and that background noise is minimised.

I would like to begin this hearing by respectfully acknowledging the Aboriginal people, the traditional custodians of the various lands we are gathered on today, and pay my respects to their ancestors, elders and family. I particularly welcome any elders or community members who are here today to impart their knowledge of this issue to the committee or all who are watching the broadcast of these proceedings. I would also like to welcome any members of the public who may be watching these proceedings via the live broadcast as well.

At this point I will take the opportunity to introduce committee members to you. My name is Sonja Terpstra. I am the Chair of the Environment and Planning Committee. Also appearing with me via Zoom are Ms Nina Taylor, Ms Melina Bath, Dr Sam Ratnam, Dr Matthew Bach and Mrs Bev McArthur.

Mr CAMERON: I cannot see Bev on my screen.

The CHAIR: That is okay. She has got her camera off at the moment, but she is definitely with us.

All evidence that is taken today is protected by parliamentary privilege as provided by the *Constitution Act 1975* and further subject to 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 this hearing, but if you go elsewhere and repeat the same thing 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 evidence is being recorded, and you will be provided with a proof version of the transcript following the hearing. Transcripts will ultimately be made public and posted on the committee's website.

Now, what I will ask each of you to do in turn is to please state your name and the organisation you are appearing on behalf of, if any. John, we will start with you.

Mr CAMERON: John Cameron, and I am just representing myself as a citizen and a volunteer contributor and someone with a bit of expertise.

The CHAIR: No worries. Thanks, John. David?

Mr PACKHAM: I am David Packham. I am a private citizen, retired—very retired.

The CHAIR: Okay, wonderful. Thank you both for joining us. What I will do now is I will invite each of you to make a short opening statement—about 5 minutes approximately—and that way that will leave plenty of time for committee members to ask questions of you. So perhaps, John, we might start with you, and then after that we will throw to David—about 5 minutes or so.

Mr CAMERON: Okay. Thank you, Chair. I think you have all got the four-pager. I will just quickly walk through that. My main concerns are that I think the *Safer Together* policy and the forestry plan actually represent significant threats to the ecological sustainable development of Victoria. I have done quite a detailed study of the fire losses over the last 20 years, and I think a fair amount of it is attributed to poor policy and ineffective strategy. I have had quite a detailed look at the forestry plan and also looked at how easy it would be to establish the plantation area to replace the 1 million cubic metres of wood that will be lost, and I think there are some huge issues and challenges associated with that. The fires over the last 20 years have had an obviously undesirable impact on biodiversity and our ecosystems. They have caused billions of dollars of damage; 183 lives have been lost. And these high-intensity large fires were predictable and they were avoidable. In the

graph that I have presented it shows that the proportion of area burnt by wild bushfires can be related to the proportion of the area burnt by prescribed fire. And this is something that is based on 60 years of data. In WA they have been focusing on trying to achieve about 8 per cent of their forest prescribed burned with low-intensity fires, and they have been very successful at controlling wildfires.

The other important point I would like to make is that it is fire intensity that kills and it is fire intensity that damages the environment. And that is related more to the fuel level than it is to climate or weather. And if you examine that figure 2, that should be quite clear, that if you keep the fuel levels below about 10 tonnes per hectare you will have relatively low fire intensities, but if you let the fuel levels get above that then you can have difficulty suppressing bushfires.

Comparing Victoria and south-west WA, there are slight differences in the forests, but there are also a lot of similarities. Their best practice—they have lost two lives over 60 years and in Victoria we have lost 312. We had the opportunity after the royal commission in 2009 to do more prescribed burning or other forms of fuel reduction. The royal commission recommended 5 per cent; Victoria achieved less than two. With the bushfire in 2019–20 there was a two-week window of opportunity when the forest fire danger index was low enough for that fire to be suppressed, and it was not. And I think that there is probably cause for a coronial inquest and class action with respect to that.

I attribute a lot of the issues that we have got with fire protection to issues associated with organisational structure, systems, staffing and skill. I think there are a lot of talented people in DELWP and Parks, but I think that they need to be released from the shackles of an unfocused mega-department and also they need to be empowered with process-complete roles. I think we need a single forest fire management organisation reporting to one minister and that organisations should not be embedded in a conglomerate like DELWP.

Currently the DELWP secretary reports to four ministers, and I think that violates the Westminster system of ministerial accountability. I think DELWP has too many functions, which means that it lacks focus, which is one of the cornerstone strategies of successful organisations. I would also like to say that it is basically a conglomerate, and conglomerates were proved to be ineffective and discarded by business in the 1980s.

I read DELWP's last annual report. They make mention of a management committee to look after governance. I think that probably leads to protracted decision-making. A better approach would be an independent board. With Parks Victoria, they report to a minister with a very broad portfolio, which perhaps does not provide sufficient focus on Parks. And I think that those organisational structural issues have led to greater threats to life, property and ecosystems.

I think government funding is probably generally adequate. However, I think outcomes and deliverables are below par because of poor organisational efficiency and effectiveness. And in DELWP—the annual report before last—52 per cent of the staff are in the CBD and 11 per cent were field staff.

The CHAIR: John, you have got about a minute left, just to let you know.

Mr CAMERON: Okay. I will take some of the things as read and move on to the forestry plan. I think the continuation of harvesting of some of the native forest makes a lot of sense from an economic point of view and also delivers a range of age classes and also ensures some genetic recombination, which are desirable for adaptive ecosystems. I think that if we try and replace the 1 million cubic metres of wood that is currently harvested from the native forest with plantation, it will have an adverse impact on the scale economies in agriculture.

There have been lots of people that have tried to expand the plantation estate in Gippsland over the last 50 years. They have not been very successful. Also there have been lots of people that have tried to beef up the planting of trees on farms. I personally was involved in it in the 1970s and 80s, and in the 1990s I also led the Gippsland Private Forestry organisation, which also tried to do it. We did not have much success in increasing or establishing large areas of plantation. Also one of the challenges with establishing more plantations in the region that it is mainly smallholdings. We have only got 1.2 million hectares of clear farmland in the region and only a small proportion of that is suitable for eucalypt plantations. In fact if you get rid of the land that is too expensive, too steep, too poor or likely to adversely impact water catchments, you are down to about 30 000 hectares that would be suitable for eucalypt plantation.

The CHAIR: Okay, John. We are going to have to move on. Like I said, you will get plenty of opportunity to come back when we ask you questions. I am sure the committee members will have questions for you around some of the things that you are putting. I will go to David now for his opening statement and then we will throw to questions. It is just that you have run out of time on your opening statement, but we will come back to you. So, David, over to you now for your opening statement. Please keep it to about 5 or so minutes, and then there will be some ample opportunity for questions.

Mr PACKHAM: I have a master of applied science and a diploma of applied chemistry, so I am sort of an applied scientist, which is equivalent to a general practitioner—we apply science to solve problems. This has taken place over about 60 years, so in the 5 minutes I need to deal with 12 years of research in 1 minute. This is quite the task for me, and for you as well. I have published 50 scientific papers, so this is going to come pretty fast.

Victoria faces its greatest threat of disaster fires to the total environment for about 30 000 years, and that hazard has really occurred especially during the 20th century. It is due to government interference with Indigenous and grazier practice of natural, patchy but frequent fuel fires and suppression of fire season lightning fires. This policy of zero fire has resulted from political activity led by misinformation, distortion, lies and very bad science. In fact the science could really be called politics by a different name. It is necessary for important and critical policy formulation that bushfires are understood and that postmodern ignorance is removed. Bushfires have been predictable since the 1960s—that is 60 years ago—when Alan McArthur produced his fire danger index, formed from hundreds of experimental fires and verified by George Peet in the dry and wet forests of south-western Australia. I had some exposure to those experiments myself in 1958. The McArthur fire danger index is accurate enough for most purposes, except precision prescribed burning, where the West Australian fuel reduction tables work superbly. The fire danger indicates the difficulty of suppression of bushfires and quantifies the fire danger at 3.00 pm on any particular fire day. The fire danger index is calculated from drought, rainfall, fuel moisture and wind. It does not include fuel in its calculation. To obtain the estimated rate of spread of the fire front, the average flame height and the distance of spot fires, a separate fuel measurement has to be added in and is in a separate calculation.

It is fundamental and necessary to understanding bushfire behaviour—which I can honestly say that most people do not—to be familiar with the following relationship: the rate of spread is equal to 0.0012 multiplied by the fire danger index multiplied by the fuel weight in tonnes per hectare. Fuel is leaves and bark and other sorts of things that hang around on the forest floor. Then you can calculate the intensity—as John said, it is the intensity that kills—and you do that by multiplying three figures together. Most people can actually do that. With those figures, the intensity is equal to 17 times the weight of the fuel by the rate of the spread, but the rate of the fuel is in kilograms per square metre and the rate of spread is in metres per second.

Now, some examples of what this means. The maximum intensity for a fuel reduction burn—which we see quite a lot, I am afraid to say—is 0.5 megawatts per metre. Forget the units, just stick to the numbers. The limit for firefighting is between 1 and 4 megawatts per metre. This has been proved. The limit to survival—you will not survive if you are involved in any form of fire that is 10 megawatts per metre. Bear in mind you can only put it out at 1 to 4. A serious bushfire goes from about 10 to 17 megawatts per metre. A disaster fire—and we have seen a few of these in the last decade—is between 70 and 80. Eighty is about Black Saturday or the Kilmore fire.

Now, you can get relationships in here if you are an applied scientist and you do this sort of stuff, and the relationship for the number of deaths that you can expect from a particular fire is 0.66 times the fire intensity minus 11, but the correlation coefficient there is only 0.5, so it is only explaining half the data. The other half of the data comes from the exposure, the number of people you have in that area. Nobody has done that research to get these simple but useful and truthful relationships. We have a big problem.

Now, the intensity depends, because the rate at which a fire spreads depends upon the amount of fuel; the intensity depends upon the square of the fuel concentration. That means that if you can decrease the fuel from 36 tonnes per hectare to 8 tonnes per hectare, as recommended by the person who started the anti-burning propaganda that we have many, many, many years ago, Malcolm Gill—he said, ‘Fires will not be an issue if your fuel is less than 8 tonnes per hectare’. This has been shown in Western Australia, especially by Rick Sneeuwjagt. Rick Sneeuwjagt—

The CHAIR: You have 1 minute left, David.

Mr PACKHAM: One minute will do it. Rick Sneeuwjagt is the originator, based on actual experience and measurement from Western Australia that John referred to before, of what is known as the Sneeuwjagt curve. How do you spell Sneeuwjagt? S-N-E-E-U-W-J-A-G-T. I will ask you to spell it back to me later. And that is why it has worked in Western Australia. That is why we do not kill people, we do not destroy things, in Western Australia but we do here. In the last 200 years there have been about 800 bushfire deaths in Australia—600 in Victoria. That sounds like COVID figures, doesn't it? Now, the failure to reduce fuels to less than 8 tonnes per hectare means destruction to the environment, loss of water supplies, death and injury to humans and fauna and loss of homes and infrastructure. It will almost certainly occur again within the next 30 years unless we deal with it, which can be done cheaply and quickly. Failure to manage fuel is a crime against the environment. Did I make it?

The CHAIR: You did. Thank you very much, David. We will open it up to committee members for questions now, and it will be to either of you. Members, feel free to direct your questions to whoever. Ms Bath, we will start with you.

Ms BATH: Thanks, Chair, and thank you, gentlemen. I will not try and spell it, because I certainly would have to look it up if I did, Mr Packham. But it is interesting: the last time we spoke to DELWP, which was a couple of weeks ago, I did mention the comparison with the south-western section of WA and the fact that they had been conducting over a period of time significant preparatory or cool burns and that their mega-fires had been far less, and DELWP said to me—I am quoting them from memory—'No, the forestry system is different down there. The trees are different. It's a different situation, and *Safer Together* is better here'. John, do you want to start off with your response to that? Are they right, or what is going in terms of the comparison?

Mr CAMERON: I think they are not right. I worked in the forests in WA for three years, in the south-west forests, and I am familiar with them. I also saw the type of burns that they undertook and the results. I think that there are a lot of similarities between the forests in South West WA and the foothill mixed-species forests in Australia. Also I think it is possible to prescribe burn the alpine ash forests on the high plateaus where we get the lightning strikes and make us safer, and possibly the snow gum and certainly the mixed-species foothill forests. Also in DELWP's annual report in 2019 they indicated that they were able to extend prescribe burn into June, and I have spoken to lots of people that suggest that there are many forests that can be prescribe burnt at times that people might not have considered possible, such as well into June.

Ms BATH: Mr Packham?

Mr PACKHAM: John is absolutely right. I was the person who with George Peet in Western Australia originated the aerial burning program there in the 1960s, and there are a few things in my experience that would verify what he says. Firstly, the first aerial ignitions that were done in Australia were done at the back of Heyfield in Victoria, so that is where it started. Later on there was this argument about, 'You can't do it over here in the east'. Something must happen on the Nullarbor Plain as you go across; I do not know what it would be. With Phil Cheney, who is one of the doyens of Australian fire research, I, with the help of the Snowy Mountains aviation group, burnt very successfully out the back of Nowa Nowa and in the Goodradigbee valley, which is just to the west of Canberra—very, very steep country, allegedly impossible to do. They were both extraordinarily good burns—well, except the one in Nowa Nowa did smoke up Canberra and cause a bit of trouble around the airport, but that was something that we learned with smoke management we can manage the smoke. We have done it. We have done the research: for 10 years five top chemists in CSIRO worked on smoke. It was a group that I was leading at the time, and it was world leading. Even the Americans admitted it was world-leading research which led them along their way to start to understand smoke, which even now is not thoroughly understood. So John is absolutely right. It is just a furphy to say you cannot do it here.

Mr CAMERON: If I could add one point too, in my report I quote numerous published examples of where prescribed burns in Victoria have been extremely effective, and in the 2019–20 fires Nowa Nowa, Waygara and Bruthen were saved by prescribed burns. A forester wanted to do the same thing north of Sarsfield and was prevented from doing it, and Sarsfield burned.

Ms BATH: Thank you for that, and it is interesting that you say that, because when I was down at Sarsfield and spoke to people who had their homes totally burnt out, one in particular said, 'Our neighbours are the state

government', in that they had forest across the way from them and it came from that forest. You know, that was their reality. And the other point from the last fires: around Nowa Nowa there were preparatory burns, and it petered out coming to that town. I guess we have heard on this committee from some that the whole solution to the degradation and our decline in ecosystems lies with the native timber harvesting situation. We have heard that if we remove that from the equation, then it will be a much better situation. Why isn't it possible just to stop native timber, in your position, and move to plantation? Why isn't that just the answer?

Mr CAMERON: Well, look, I can provide some answer to that. Currently there is about 1 million cubic metres of wood sourced from native forests, and about 20 years ago it was 2.5 million cubic metres. To replace the 1 million cubic metres we are currently sourcing from native forest, I calculate, would require somewhere between 70 000 and 140 000 hectares of new plantation, depending on the growth rate, and that would require a total investment over 30 years of about \$1 million to \$1.5 million. Just to put the 70 000 to 140 000 hectares into perspective, the plantation area in the region at the moment is approximately 100 000 hectares. So we are looking at trying to double it. Obviously, purchasing and converting that amount of land would have impacts on scale economies for agriculture. Also, I think it is a huge investment, and it would probably result in planting up many sites that are marginal, which would lead to not necessarily complete failure of the trees but what you might call a financial disaster. With respect to eucalypt plantations, I have looked at a lot of the eucalypt plantations all around the country and I have looked at them overseas, and it would be fair to say that in Australia and in Victoria you could probably cite more failures than successes, particularly if you take into account the economics and the ecological sustainability of them.

The CHAIR: Right, we are going to have to move on to other questions, so I will throw to Dr Ratnam.

Dr RATNAM: Thank you, Chair, and thank you, Mr Packham and Mr Cameron, for appearing before us today. I find your evidence quite challenging because I think in many ways it presents a very simplistic model of what is occurring in our environment regarding bushfires. It seems to also appear to be clouded with some interests and vested interests in the forestry industry, in terms of regarding where your work experience has come from. So I just think that needs to be declared, if that is the case, in terms of your speaking on behalf of a forestry industry that you worked in previously. We have heard these kinds of lines from the industry before, in terms of protecting their industry. And look, all industries want to protect themselves, but we have a greater threat before us in terms of the decline of our ecosystems. I feel like the science and the models that you have presented have actually been superseded over the last decade by climate science, by ecological science. We have had quite compelling evidence presented to us about the latest research that basically supersedes the model you have presented, which is about fuel load and intensity of bushfire, when we know that climate change is increasing the intensity and severity—also because of dryness and all the preconditions of what happens to fuel loads because of climate change. It is not just about the fuel loads, and that is why I think it is quite simplistic. So I wanted to ask, and this inquiry is about: how do we protect against greater biodiversity loss and conserve our environment? We have heard just in the last couple of weeks that there are now over 2000 species in Victoria that are threatened and on the brink of extinction, so I wanted to ask you: what are the solutions to stopping the decline of our biodiversity and the extinction of over 2000 species that our state faces?

Mr PACKHAM: The first thing that must be done—

Mr CAMERON: My short answer would be to do a better job of protecting the forests from wildfire and also probably focusing the investment in the management of our parks and native forests for wildlife on proactive management of the resource specifically for the wildlife rather than trying to lock up more forest. Just do a better job of management.

The CHAIR: David, would you like to respond to that as well?

Mr PACKHAM: Yes, I would. It is very difficult to respond in seconds to a subject that is extremely complex, including climate change and everything, and the assertion that this McArthur work and the Peet work has been superseded is absolutely incorrect. It is an example of the misinformation that is being spread around at the moment, because even the latest so-called model—which is a bit of a mess actually, that particular model—the Phoenix model, relies deep underneath on the McArthur relationships. So how can the McArthur stuff be wrong? I have simplified it of course, because the most complex model in the world is the coupled meteorological model of Terry Clark. I have a paper of Terry's amongst my attachments there. I worked with Terry for a month or two on this paper in the National Center for Atmospheric Research in

Boulder, Colorado. It is such a complicated and accurate model that there are only about four places in the world that can actually run this model, and right in the middle of that model, which is the most accurate in the world—one of the few places that can do it is the Los Alamos laboratory, which is the biggest laboratory in the world—are the McArthur relationships. I know because I put them in there. So this is typical of this propaganda-type nonsense that is going around, and when you—

Dr RATNAM: Could I just respond really quickly, Mr Packham? I was referring to what I heard both you and Mr Cameron present as the model for protecting—well, I am not sure whether it was an argument for protecting forests or for just greater felling and fuel reduction, so actually limiting our forests, which are the habitat for our threatened species. That is the contradiction I experienced from your evidence. It was the assertion—from what I heard from both of your evidence—that it is a simple equation between fuel load and risk of fire, when actually the models say there are many more factors that contribute to the threats of bushfire, or bushfire threats becoming intensified, which is the climate science, which tells us about the preconditions, the dryness of fuel load. Fuel load—yes, there is a factor in that, but it was a very simplistic model that was presented by your evidence, which I have heard before from the forest industry, because it is a deflection from the actual things that we need to do, which is to actually act on climate change. So I did not hear anything about a reference to climate change and taking climate change action, when we have heard over eight months now in hearings that that is one of the most significant actions we can take to reduce biodiversity loss. That was my assertion.

Mr CAMERON: If I can just provide a brief answer, of course there are a number of factors, but from a management point of view you look at the ones that have the most impact and you concentrate on those and you ensure that you manage them well. One of the things that amazes me is that with the *Safer Together* policy, people are prepared to accept a 70 per cent residual risk of wildfire in our native forests. Seventy per cent—it is a huge risk. And I know that when that was debated with experts, they were told that they were not to be involved in that decision. It was not made by experts, and it should be substantially lower.

The CHAIR: Okay. We will have to move on because there are other members that have questions. Dr Bach, I will throw to you.

Dr BACH: Thanks very much, Chair. And thank you both for coming along and being with us today. I might ask you perhaps first, Mr Cameron, just to pick up where you left off there. In reading your submission I was very interested by your remarks about *Safer Together*, which obviously the department has a particular view about and both of you have a different view, and in particular the point you were just making, Sir, about the 70 per cent residual fire risk. Would you mind unpacking that for us and explaining in a little bit more detail why it is you think that that target is so inappropriate and in your view what you think it should be. I would welcome a response from you, Mr Cameron, and then, if we have time, also from you, Mr Packham.

Mr CAMERON: Well, first of all, it relies on a lot of modelling and it relies on a lot of mapping of the fuel load and so on, and the Auditor-General had a detailed look at that and found a number of issues associated with it—so many issues in fact that I think it proved that it was not fit for purpose. And the other issue is that in the calculation of residual risk and trying to achieve less than 70 per cent they include the area burnt by wildfire. Now, including the area burnt by wildfire is first of all a nonsense, and secondly, the subsequent fuel that develops after a wildfire is very different to the fuel that develops after a low-intensity prescribed fire. And there has been good research done by people from the University of Melbourne in the forests in Gippsland that have shown that the elevated fuel or the ladder fuel was six times higher after intense wildfire compared with low-intensity prescribed fire.

Mr PACKHAM: Okay. Let me make a slightly trivial answer to this question. Could you imagine you have just got into the aircraft at Tullamarine, you are going to Sydney and you are told that you have a 70 per cent chance of not getting there. Would you be happy with that? So it is an absolute nonsense. The other difficult thing about it was that in the scientific community we tried to find out how this developed, how the 70 per cent came, how you calculated it, how the model works and also what the fuel concentrations are in Victoria. We were told by the government, ‘We can’t tell you that; it might encourage terrorists’. So the secrecy about the threat to Victoria at the moment is just kept under the table, and climate change is totally irrelevant to the problem we have now.

What happens in New South Wales, which is warmer than Victoria—so if Victoria warms up a couple of degrees, then the fuel concentrations in New South Wales are half of what they are in Victoria, and we are about half of what they are in Tasmania. So the intensity of the fires in New South Wales are about one quarter of what they are down here. They do not believe it, but that is a fact. Now, if you go to the other limit and you really warm up and you get drier instead of drier and wetter, you end up with what you have in the centre of Australia: you have no fuel. You have a very hot, dry, burnable environment, but you do not have fires, because you do not have fuel. Turn up the gas on your cooker and you get more intensity. It is unbelievable that so much—

Mr CAMERON: If I could make just one more point. Figure 8 in my submission—

The CHAIR: John, I will just stop you. I am just conscious of time. We have got about 6 more minutes left, and I have got Ms Taylor and myself who have not had a question yet. Dr Bach, is there anything briefly further from you—

Dr BACH: Yes, very briefly.

The CHAIR: Very quickly.

Dr BACH: Thank you. Just to clear up a simple matter, gentlemen, about who you are representing. It was asserted in Dr Ratnam's lengthy soliloquy that you are here on behalf of the forestry industry, but in fact you have said that you are private citizens representing yourselves. Are you private citizens representing yourselves or are you both dupes of the forestry industry?

Mr PACKHAM: In my case, absolutely not. I have been totally independent. All the time I have been paid through government service for Monash University. In fact, the forest industry has not helped themselves and are not helping themselves at the moment, because their industry has been removed from them. I have no sympathy for the forest industry at all. There are some nice people there—

Dr BACH: Thank you.

The CHAIR: Okay. Sorry, we are going to have to move on. So, John, do you want to just quickly respond to that?

Mr CAMERON: Yes. I am just representing myself. I have done a number of submissions and have probably put in about a person-year over the last couple of years, and it has been solely my own work and no funding from anybody else.

The CHAIR: Okay, great. Thanks. All right. Ms Taylor, question.

Ms TAYLOR: Yes. So I think the issue that I am finding a little troubling is that there is a chicken-and-egg question here. But fundamentally with climate change—and we know the climate is always changing—the human-induced element, we know, is exacerbating extreme weather conditions and reducing the time in which you can do some of those critical burns. But you are shaking your head. So what are you saying? You do not believe in human-induced climate change? What do you say?

Mr PACKHAM: Yes, there is, but it amounts to such a little, small, minute figure that it is totally impossible to measure it. So there is an absolute massive nonsense here. Because carbon dioxide, for example, is not the major greenhouse gas; it is water vapour. And without the greenhouse effect, there would be no life as we know it on earth. And 95 per cent of the greenhouse effect comes from water, 5 per cent from carbon dioxide, of which 93 per cent comes from natural activities—plants grow, algae in the sea, all sorts of things like that—and then Australia is 1.3 per cent of that in that. So if you stopped all of Australia's greenhouse input, you would change the temperature by about one-ten-thousandth of a degree, and you cannot measure it. It is an absolute nonsense.

The CHAIR: Okay. John, would you like to respond to that?

Mr CAMERON: I would just like to add that DELWP's 2019 annual report indicates that the window has moved to winter for prescribed burning.

Mr PACKHAM: Yes.

Ms TAYLOR: Let us agree to disagree on some of those points, but thank you.

The CHAIR: All right. I might just ask a final question, because we have 3 minutes to go. Some of the evidence that we have heard throughout the course of this inquiry, particularly from our First Nations peoples, points to perhaps fire being used to reduce fuel loads but at the wrong time and the wrong type of fire and that perhaps that might contribute to the flammability, or the increased flammability, of some of the areas that are being burned.

I personally have lived in Canberra, and I was personally affected by the catastrophic bushfires that came through—and after the time that you talked about, where you said the previous burning was quite successful. And I can say that, you know, having lived in Duffy, in Canberra, that suburb was pretty much destroyed by the catastrophic bushfires that came through there. So I kind of am also struggling a little bit with some of the concepts that you talk about, having had direct personal experience of being affected by catastrophic bushfires.

So what do you say, then, in response to some of the evidence that has been given by our First Nations peoples about the wrong type of fire and the fact that when it grows back it can be more highly flammable, as a direct response to your claims about, you know, burning, fuel management, being the key way to stop catastrophic bushfires?

Mr PACKHAM: Well—

Mr CAMERON: I think if the prescribed fire is too intense, you will end up with the problem that I mentioned before.

The CHAIR: Sorry, we will start with you, John, and then we will go to David, okay?

Mr PACKHAM: Is that John? Yes, go John.

Mr CAMERON: I think with prescribed fire it is very important to manage the intensity, and you do that by choosing the right conditions and the right lighting pattern and using highly skilled people. And it is probably a skill that has slid.

The CHAIR: Right, okay. David?

Mr PACKHAM: Now, I absolutely agree with the Indigenous people, and that can be summed up most easily. There is far too much hot burning going on because the ignorance of the people who are doing it is catastrophic. John has said, ‘You have to know what you’re doing’. And to illustrate that there are two beautiful phrases from Victor Steffensen, who you probably know of. Two of his phrases, which I just love:

Do not hurt the canopies, do not scorch the canopies of the trees up the top of the leaves, because that is where our ancestors live, and that is where the native birds and animals live.

That is so correct. And the second thing he says, which is beautiful, absolutely beautiful:

Fire, like water, should trickle gently over the surface.

That is what good prescribed burning does, and we have seen that. I have spent time with people who know how to do it, and it is beautiful.

The CHAIR: Okay. Fantastic. Well, look, thank you. That is a great way to end this session. So I would just like to thank John and David for your contribution at today’s hearing.

Witnesses withdrew.