# T R A N S C R I P T

# LEGISLATIVE COUNCIL ENVIRONMENT AND PLANNING COMMITTEE

## Inquiry into Ecosystem Decline in Victoria

Melbourne—Wednesday, 21 April 2021

**MEMBERS**

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Mr Clifford Hayes—Deputy Chair
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Ms Melina Bath
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Mr Tim Quilty

**WITNESSES**

Dr Bek Christensen, President, and

Dr John Morgan, Co-chair, ESA Policy Working Group, Ecological Society of Australia.

**The CHAIR**: I declare open the Legislative Council Environment and Planning Committee 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 traditional custodians of the various lands which each of us are gathered on today and pay my respects to their ancestors, elders and families. I particularly welcome any elders or community members who are here today to impart their knowledge of this issue to the committee or 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 today.

At this point in time I will just take the opportunity to introduce the committee members to you. I am Sonja Terpstra; I am the Chair of the committee. Mr Clifford Hayes is the Deputy Chair. This is Dr Samantha Ratnam. Joining us via Zoom we have Ms Nina Taylor, Mr Stuart Grimley and Dr Matthew Bach. Back in the room we have Mr Andy Meddick, Ms Melina Bath and Mrs Bev McArthur.

All evidence taken during these proceedings 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 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 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. So for Hansard, if I could please get you to just state your names and the organisations that you are appearing on behalf of today.

**Dr CHRISTENSEN**: My name is Dr Bek Christensen, and I am appearing on behalf of the Ecological Society of Australia.

**Dr MORGAN**: I am Dr John Morgan, also appearing on behalf of the Ecological Society of Australia.

**The CHAIR**: Great. Thank you very much. And with that I will invite you to make your opening comments and if you could please just keep them to about 5 minutes. As you have seen, we have lots of questions, so it really benefits us if we have maximum time to ask you. Over to you.

**Visual presentation.**

**Dr MORGAN**: Sure. Thank you. We would also like to first acknowledge the traditional owners on whose lands we meet today, the Wurundjeri people of the Kulin nation, and we pay our respects to their elders past, present and emerging. Ecosystem decline threatens our biological heritage and threatens our future as all Victorians. Native species like the ones you can see in front of you—the pygmy possum, the regent honeyeater and even some cool orchids like the basalt rustyhood—all have intrinsic value, but they are also crucial to the ecosystem services that underpin our society. For example, biodiversity can benefit farming, like native grasslands being more resilient to things such as drought and being able to capture lots of carbon in the soil, and biodiversity also helps to stabilise the flows of water from our high mountain catchments, as you can see here. This is what is at stake when we lose lots of species. The question for this inquiry is: is the decline grim enough for governments to change their behaviour and actions? And we might ask: how bad do you think the ecosystem decline actually is? Is it catastrophic and worth acting on? The ESA—our organisation—submits that far from being incapable of acting or ignorant of the approaches that we need to improve the situation, ecosystem scientists have a really good understanding of some of the solutions that are necessary to bring about change, but it requires a will to implement them.

At the state level we have done a really good job of saving the crown jewels—places like national parks, both on land and in the ocean. But it is pretty clear to us that we are not investing enough in their care and the species that they contain. We might ask: why is this? One clear hurdle is obviously resourcing. If we take, for

example, the 2037 biodiversity strategy, the budget allocated to that strategy in 2017–18 was an $86 million commitment for four years and then just $20 million per year ongoing to deliver on the plan. It is a pretty modest investment given the magnitude of the problem that has been identified in this inquiry. Importantly there are relatively few hard targets to be delivered upon in the strategy, and where there are targets it is probably unlikely they will be able to be delivered because the budget has been earmarked. Upscaling existing initiatives and investments is clearly one of the biggest opportunities to arrest the consistent decline in Victoria. It is further illustrated in the threatened species action statements, which you have just been talking about. We understand that these are the blueprint for recovery of species, but the funding is not there to ensure they are implemented at the scale necessary to recover those same species. It is the upscaling issue again.

In 2018–19 targeted threatened species funding was just $11 million in this state. By some calculations we would need to increase this to a minimum of $300 million per year to adequately resource the actions, and they have to be consistent. Invasive species management, for instance, cannot be effective if it has got stop-start investment. It is like emptying rubbish bins—you have got to keep doing it. In the 2020–21 budget there was around $300 million allocated to conservation management activities that apply across the entire state, and that is a very broad funding sort of spectrum. Is this enough to address an ecosystem decline crisis? Are you convinced there is a crisis? For simple comparison, the government committed $2.4 billion in the 2015–16 budget to remove the first 20 of the level crossings of railways. It puts into perspective just how little we actually spend on conservation in this state. But the good news is if we spend money on conservation and threatened species management, it can work. There are numerous examples in the USA and elsewhere in Australia indeed where threatened species protection and management has had very positive outcomes.

So I want to now talk about: how can we claw back these losses and perhaps minimise future losses? There are a few things we might consider, and as ecosystem ecologists we would agree on these five things. One potential game changer is ecological restoration, and that is the repair of damaged ecosystems. Restoration can improve native habitats where they have been lost or compromised, but there is a catch: it takes time, and we do not have time really, do we? In many Victorian landscapes restoration needs to be the fundamental starting place for recovery. In this example, at Spring Plains near Heathcote, goldmining and forestry from over a century ago have changed the way these box ironbark forests function to the detriment of many species that are incapable of regrowing in this landscape. It just sheds water every time that it rains. So what would we do about that? Well, simple interventions in ecological systems can actually bring about improvements to their function, and we need systems to improve for them to function. The 2037 biodiversity strategy recognises the importance of restoration and has set some targets. You might be aware that 200 000 hectares of the state of Victoria is targeted for revegetation by that date. But to meet these targets we have to do ramp up our current efforts by 20 to 40 times what we are currently doing. We need to invest in an industry of seed growers and restoration practitioners, which we currently do not have.

Here is another idea. A really neat paper came out recently that says we need 20 per cent of native habitat retained in landscapes for them to persist. Now, the working landscapes of this title are agricultural landscapes. That is a target we can aim for, and we need to include agricultural landscapes in the plan if we are going to recover species. How might we achieve this target? Well, there is a really interesting thing happening in Victoria, and it is happening because of changes in population, where people live and economic drivers.

In this example here, or this slide here, I just want you to focus on the land uses that are predicted to occur in Victoria into the future. You can see the really important one I want you to home in on is rural amenity—areas that are currently, or were currently at the time of this study, agricultural that are transitioning to rural amenity, which is like the tree change environment. That offers some opportunities for how we plan for biodiversity recovery in these landscapes that are transitioning out of agriculture into some other land use.

Much of Victoria is actually forecast to fall into this category, so I think there are great opportunities in these marginal landscapes for agriculture to be improved for their biodiversity. Indeed I have been involved in a little bit of work near Heathcote that shows this is actually already happening. This is a paddock, and you can see how degraded it is. It has been taken out of agriculture—it is now owned by a person who is just running it as a tree change place—and you can see it is starting to recover by its own means. This is a great potential game-changing future for us.

Third: we need to support some really good strategies that have already been proposed in Victoria, and this is one of them. It is called biolinks, and it achieved policy recognition by the Victorian government in 2009 but has since lapsed. The plan has lots of merit as a means of identifying important habitats that are refuges from climate change as well as improving ecological connectivity to allow species to move through that landscape in

response to climate change. It underpins some fantastic initiatives, like what is called Habitat 141°, which is trying to link up habitat from basically the Murray River all the way down to the coast in what is largely an agricultural landscape. It seems to me we need to support these visionary ideas.

Fourth: it is clear that we need to make our landscapes more resilient to future changes. The obvious example is if species are going to respond to climate change in the future, they need to deal with the immediate threats that they face today. Here is an example of an alpine grassland that has been turned over in one night by feral pigs. They are hunting for this particular little tuberous plant here. That ecosystem is already not going to respond to climate change because it has now been destroyed by the pigs.

**Mrs McARTHUR**: Not the horses, the pigs.

**Dr MORGAN**: This is feral pigs in this example.

**Mrs McARTHUR**: Yes. Good.

**Dr MORGAN**: Finally, we need a much stronger evidence base to understand what is going on and to inform our actions. We need systematic monitoring of threatened species in communities so we understand which need our attention. For just about all of our threatened species and ecosystems in Victoria we struggle to report on the numbers and how they are faring.

In closing, the ESA thinks there is a strong need to prosecute the value of nature and ecosystems to all Victorians, more than we have done so to date. We need to start thinking of ecology and environment not as outside of the economy and society and wellbeing but actually as central to underpinning it. It is the basis for all of these things.

Finally, the World Economic Forum places environmental risks to the economy in the top 10 risks to the global economy. It is crucial we start to understand ecosystems and the science that underpins their management and long-term recovery. It is not a new problem at all, as you have probably become aware of in this inquiry, but it is one we can begin to fix now. Thanks for your time today, and we are more than happy to attempt to answer your questions.

**The CHAIR**: Right. Thank you very much. Dr Ratnam?

**Dr RATNAM**: Thank you so much for your presentation and your submission. It has been really insightful, and it is good to get the overview perspective as well. I just want to ask a question about one of the things firstly you presented in your slides, which was that general title: in working landscapes 20 per cent needs to be native habitat. Can you expand on that a little bit more and what that means—the public versus private land conservation stuff?

**Dr MORGAN**: So we take a landscape, and a landscape can be defined as perhaps a water catchment or a region. So this is land across tenures, private and public, and we are talking about the native vegetation that is required across that landscape, so it is a big-scale thing we are looking at. This particular work suggests that we need a minimum of 20 per cent of the native habitats if we are to support those native species in that landscape. Beyond that, if we get less than 20 per cent, we start getting into the crisis management of: what do we do? So that is reconnection and habitat area augmentation. In Victoria it is actually likely for some species you need more than that, maybe 30 per cent habitat. Woodland birds are a really good example. That is not going to be a catch-all for every single species, but it points to the idea we have a minimum amount of habitat that is necessary to support nature in landscapes, and we are starting to put numbers on that through 50 years of understanding of what those minimum areas might be.

**Dr RATNAM**: So does that speak into the kind of discussion we have been talking about in this inquiry in terms of, for example, habitat loss as one of the key drivers of biodiversity decline? Often there will be an argument used, saying, 'Oh, it's such a small percentage of the land, this habitat loss from human intervention, so therefore it's not comparable to all this other land that is therefore available for that species'. You are saying it is kind of situation specific and you have got to look at what is available in that locality in terms of that percentage.

**Dr MORGAN**: Indeed. So what we should be clear about is we are talking about agricultural landscapes, so working landscapes. We are not talking East Gippsland, where we might say there is a lot of forest cover, or the

Alpine National Park, which is ostensibly 100 per cent native. So we are really talking the western half, from Melbourne west and north—

**Dr RATNAM**: Right.

**Dr MORGAN**: which is a substantial suite of Victoria, and it is where many of our threatened species lie because of exactly this problem of loss of habitat.

**Dr RATNAM**: Yes, great. Another question that I have—and your submission makes it quite clear from the outset in terms of some of the key things you think we should take action on if we are going to stop this decline in biodiversity: you talk about managing key threatening species, climate change action, the governance of the administration and the legal frameworks around environmental protection needing to be strengthened and the restoration of critical habitat. I am not sure that you can comment on this. We have been talking a bit about it today in terms of landscape-based approaches versus individual species recovery-led approaches and heard throughout the inquiry that we are doing more of the landscape-based approach than the individual species recovery approach, and I wonder whether you have any commentary on what we could be doing more of in Victoria.

**Dr MORGAN**: I might answer that first and see if Bek has got something she wants to add. So it is not a dichotomy, it is not one or the other; it is both. So for the landscape approaches, and particularly if you think of that biolinks approach, that is a vision for the future. *Biodiversity 2037* is a vision target. So in the meantime those species need something to happen today. So I think landscape approaches are great because they are telling us where we are going to be at some future point—let us say 2037. So we have some targets, and can we make them? But the day-to-day extinction crisis and processes are happening, as we saw in the pig damage example. These things are happening today, so they threaten individual species. So we need both approaches. What that mix is is probably a change in conservation from the 1980s, where it would have been a very threatened species perspective, as we have understood more about the importance of landscape. One of the reasons we have gone to a landscape approach is that we actually understand that some of the processes that threaten species occur at landscape scales—no greater than things such as climate change or invasive animals that are actually across the entire landscape. So until you deal with that problem it is very difficult to deal with a single species. So I would argue that you need both approaches and they are targeted. A threatened species focus might be really, really important in the Alpine National Park, where the landscape is already the landscape. I mean, it is all national park, it is all native. So just because—and you know this—we create a national park, we know that that is not the end of the story. We know that in fact there are many things that need to be done. The targeted approach may well be in those agricultural landscapes where to get the species through the short term we have absolutely got to invest in their future.

**Dr RATNAM**: Do you think we are doing enough of that?

**Dr MORGAN**: Victoria is a really good example. Like, it is great to have all these action statements and threatened species listed, because the alternative is we do not have those. So then it becomes implementation and on-ground action and monitoring and reporting on success. So I think it is the latter half we have been not so good about.

**Dr RATNAM**: Thank you.

**The CHAIR**: Ms Taylor.

**Ms TAYLOR**: Thanks for your contributions—incredibly interesting actually. Obviously it is vital as well. What are some of the practical mechanisms—obviously funding is part of it—in order to do that sort of mass-scale planting et cetera if I have understood you correctly in terms of restoration of species?

**Dr MORGAN**: Thank you for that question because it is a really fundamental one. If you were to say to me today, 'Let's do it', let us click our fingers and say, 'We're going to do this', then you are left with okay, well where are the bottlenecks? The bottlenecks—and sorry for being a little bit sort of focused on this, but where do we get all the seed from? Historically we might collect seed from wild populations, so remnant trees on roadsides or in farmland. That is not going to give us enough seed. It is actually staggering to think of how many seeds you need to restore an ecosystem, even just 100 hectares of an ecosystem, because seeds are really valuable resources. In fact we could build an industry: seed production.

Restoration practitioners—clearly we need to scale this up. There are lots of really good people out there who do this already, if you think of some organisations like Greening Australia, but they need support. It is not that there are not enough people to do this: there is not enough money in the system to support the people to do that—there are probably not enough people actually. I teach at a university. Students come out at the other end and this is the stuff they want to do, but where is their career pathway? I think if we invest in seed production, and then there is seed cleaning—a whole seed industry—and if we invest in a restoration, which is all the science of 'how do you put systems back?'. It is not that we do not know how to do it; I think we do not have the capacity to do it at this current time.

That is why I said the target in the 2037 biodiversity strategy of 200 000 hectares of revegetation is about 20 to 40 times more than what we are currently doing. Over the last 16 years we might have, generously, on back-of-the-envelope calculations, restored maybe 10 000 to 15 000 hectares—in 16 years. If we are going to get to 200 in the next 16—200 000, that is—we need to ramp that activity up significantly. It cannot take us 16 years to get to that point because that is another 16 years that we have lost kind of thing. They would be the general things I would say in relation to that kind of question of yours.

**Dr CHRISTENSEN**: And I would just add to that if I could. John has pointed to some bottlenecks there and some good opportunities as well, but you could think of this as akin to a major infrastructure initiative. I mean, Australia has done major things at big scale in the past, and that kind of thinking can be applied to this challenge as well. I do not think it is an insurmountable barrier. I also think restoration out in regions, on country is a really good way to engage the community. We have seen over the last year and a half, particularly in response to the catastrophic bushfires, a lot of people in the community that are really willing to get out there and do things to try to take care of their patch. So I definitely think this is a challenge that we can take on and deal with.

**The CHAIR**: I will not ask too long a question, but just on the point you were making, you were projecting if we wanted to restore hectares of land, it would take 16 years, and we do not have 16 years. Isn't there an assumption there that things will not change? Do you know what I mean? It cannot be static and you say, 'Oh, it's all bad'. I do not know; maybe I am wrong. I am interpreting what you are saying as a bit all or nothing.

**Dr MORGAN**: Sorry, no. What I meant was if we continue on at the same rate, we just will not get anywhere near to 200 000 in the next 16 years. We might get another 16 000 hectares.

**The CHAIR**: But you have got to acknowledge there are increments. You cannot just say it is all or nothing. That is why I am just wondering, though, if there are changes in the landscape because we have been able to restore, then that is a gain clearly. In the scheme of things it is still a big problem, but we are working on that and making progress.

**Dr MORGAN**: I would like to make it really clear: what is happening is really good. The work that is happening is demonstrating improvements—really good improvements. I do make the point it takes time. That is the thing. If we start now and we really ramp up our activities, by 2075, for argument's sake, those things are going to be really, really valuable. It is the investment now that actually is really important for the future. We cannot get to 2037 and not have invested in it very much and say, 'We're going to do it in the future'. We just keep getting further and further behind the eight ball if the target is for 200 000 hectares. Now, I am not sure what that is based on. It is a really good target. That slide I showed that demonstrated revegetating from the Murray to the coast—I mean, even to do that that would be really awesome, just to achieve that. We are really saying that is not the only one you would do. You would do several of these.

**The CHAIR**: But you would likely see, as well—and I agree, I think that *Biodiversity 2037* in that context sets out the broad brushstrokes for where we need to fill in, right? But in restoring those landscapes, what you would then see hopefully is the return of species as well. So by doing one thing you would hopefully see the return of insects, other animals, plants, seeds, grasses whatever.

**Dr MORGAN**: Yes.

**The CHAIR**: And, yes, we have to take positive action to kickstart that, but things then come back that are reliant on those things. Would you agree with that?

**Dr MORGAN**: Absolutely. It is basically creating the habitat or it is creating the space for these things to move back into.

**The CHAIR**: And then being able to catalogue that as well. We are hearing throughout this hearing as well there is a lack of data around some of these things. But then having a point in time to say, 'Okay, whilst we are restoring it we need to document and actually see what's coming back and how it's coming back and whether the landscape is able to support it', 'What do we need to do to support it?' and then see those things grow. So I think the lack of data has been a little bit problematic in this space as well.

**Dr MORGAN**: I think so, and as an academic I work in that space a little bit. It is fantastic when you start working in this to see what is possible, and that is the quantification of recovery. I think all ecosystem ecologists would say we know the types of things we need to do and we know it could, and probably will, work in most circumstances—there will always be places where it won't—and we need to be doing it now because it does take time. You know, a tree does not grow overnight, for argument's sake.

If I can use just an analogy, I do not want to take up too much of your time, but it is why we use nest boxes in revegetation planning. It is because hollows will not form for more than 100 years, so we have got to supplement that habitat in the meantime. If you use that analogy, we have got to create something in the interim so that in the future that habitat will be suitable.

**The CHAIR**: Sure, thanks. Ms Bath.

**Ms BATH**: Thank you. Thank you for your presentation this afternoon. I am interested, Ecological Society of Australia. In your contribution here, 1200 members across states and territories. You have been going since 1959. That is a long time, and I am sure you have got a really good reputation as an organisation. I want to talk to you a little bit differently about scientific evidence and rigour, because I think it is really crucial. And I want to refer to you a recent issue that was reported in the ABC only I think earlier this week. It quotes two ecologists, and the ecologists were claiming that VicForests was engaged in, and I am going to quote the article:

> … 'systemic' illegal logging on steep slopes …

and it is degrading Melbourne's water supplies. Stick with me for a minute. This is also a repeat of an allegation back from I think it was the *Conversation* back in 2019. On both occasions the Office of the Conservation Regulator, so the OCR, which was set up in 2019, dismissed the claims and they said, and this is getting to my point, there was less precise terrain mapping and insufficient field studies. So the science around the reports, the OCR felt, was not sufficiently rigorous, and other things like terming it—this is my concern—'illegal logging' when it is actually in a VicForests coupe, which is a state government-ordained workplace. You know, it is legal.

So I want to ask, in terms of the ESA, about the concern around when there are environmental degradation allegations being aired in media but there is—I have googled this report, I cannot access it—no evidence in these media reports so that you could go and look it up, ESA could look it up or I could as a normal person in society. So I want to talk about ESA's opinion on that scenario. I know this is a little bit left of centre, but I think it is important because we have been talking about science and rigour, you know—

**Mrs McARTHUR**: Experts.

**Ms BATH**: That is right, and people quote them, but you need evidence.

**Dr MORGAN**: I do not know—I did not read the reports you are talking about, so I cannot speak about the specifics. Bek, do you want to talk just more generally about the ESA?

**Dr CHRISTENSEN**: Yes. I am not across the specifics of that particular case, and I would say as well I guess there is a difference between determining whether something is legal or illegal, and that is a different realm, and then probably the question here of if the logging occurred, is it impacting the water quality? That is where you would want the science to be helping you understand if there is a causal link there.

**Ms BATH**: And the visibility of the science.

**Dr CHRISTENSEN**: The visibility of the science we could have a whole other conversation about, because that is tied up in academic publishing models across the globe. But the basis of, I guess, the scientific process is that we have a question, we have an inquiry, a hypothesis. We seek the data to assess whether or not that hypothesis is true. We get data, we analyse it. We draw conclusions from that based on the statistics and background knowledge and all of these things. And in the academic publishing in our science world, we put that to a group of our peers, and they generally quite brutally pick it apart, actually. So within the world of

science it is actually quite a rigorous process then to test, criticise and tease apart and really see if you have done that work well. And if it stands up to scientific rigour, we only then put it through to actually be published if it passes this kind of group assessment.

Not knowing the specific report here—I mean, if this is a published paper in an academic journal, it will have gone through that process. Reports perhaps that are developed by consultants or in agencies or things like that for specific purposes will not necessarily go through that same process, but the people working on them have been trained in that way so will certainly be working to the scientific process and seeking to meet the standards of that. So that is an exposition of the process.

Transparency to the rest of the world is something absolutely that we have to work on, and as I said, it is often tied up with academic publishing and things being behind paywalls. So I guess that is what I can say on that, but without seeing the report it is hard to comment further.

**Ms BATH**: Thank you. I really appreciate that fulsome answer. I guess the other question I would have is that peer review I think has, for my mind, mixed connotations. At its very highest level there is rigour across the board. We unpick it, and you said that and I appreciate that. But also peer review could be: can you choose your peers? What I am saying is: can you choose to go to X university or Y university but not—I mean, is it open for tender? Can someone come in and actually really rigorously—because at the end of the day we want science to stand up under any circumstance.

**Dr CHRISTENSEN**: In the model of journals, you submit to the journal and there is a chief editor who will allocate your work out to reviewers to look at. So you do not get to say, 'Send it to these people because I think they're going to view it favourably'. It goes into the journal, and the journal decides where it is going to go. They get the reviews back and can choose to reject it outright. They will often choose to say, 'You need to work on this, this and this, then you can come back to us'. It is very rare that anything is actually accepted the first time around. So in academic publishing, you cannot choose who the peer is.

**Ms BATH**: And the chief editor, how do they make their choices?

**Dr CHRISTENSEN**: They are looking for people who have expertise in that area. It is also the pragmatics of: reviewing is volunteer labour for academics as well. So they are looking for people who have expertise in that area and then they would ask them to review it, and if the person says, 'Yes', they will do it, and if the person says, 'No', they have to keep looking for other reviewers. Am I capturing that correctly?

**Dr MORGAN**: Just to add to that, in many journals now we have what is called blind review, so we do not know who the authors are. So you submit a paper to a journal, and I get it to review. I do not know it comes from you. I think that is actually a very useful thing, as opposed to, 'Well, because this is such and such, it must be good'.

**Ms BATH**: And I guess one more just very quick question, Chair, is: in terms of media, it is a conundrum. Because media, we all use it as members of Parliament because it puts our voice out there. Scientists use it because it puts their voice out there, and some can have an agenda or not. What about the scientific rigour, I guess, behind presentations? Like what responsibility should the *Age* take to make sure that they have cited or they can back up their evidence that they are reporting on? Because people can take it as fact, whichever side of the political spectrum. So what is your comment in relation to that?

**Dr CHRISTENSEN**: I think that is a question about journalistic standards, which is not a world that I work in. Ideally we would have high standards of rigour, but that is outside my industry so I can only make limited comment.

**Ms BATH**: But you would welcome it? As ecologists, you would welcome it—

**Dr CHRISTENSEN**: Yes.

**Ms BATH**: and endorse it. Thank you,

**Dr MORGAN**: Can I just very briefly add to that?

**The CHAIR**: Very quickly.

**Dr MORGAN**: I mean, our careers are at stake, though, as well. Remember scientists are ultraconservative by and large. You actually have to prod us to get something out of us, and that is actually one of the issues about transfer of information so we are trying to get better at that. On journalistic standards, obviously you have all been in the media and probably been misquoted or selectively quoted. So you also have to take that with a bit of a grain of salt, that maybe that is not exactly what they meant. You do need to be aware of that. But ultimately—and the ESA is a classic example, I mean, the submissions and things we have sent here—all our submissions are evidence-based submissions. We actually try to take the emotion or any personal understanding out of this and say, 'This is what the evidence suggests'. That is our role in society: to provide evidence as best we can and summarise it into a single document and what have you, to allow others to at least get access to that, and so that is another end of that continuum of communication.

**Ms BATH**: I guess a question on notice is around when you are then paid to do research, and we have had questions about that as well. How transparent do you need to be around who is paying, who is funding that investment or that inquiry? Thanks, Chair.

**The CHAIR**: Thank you. Mr Grimley.

**Mr GRIMLEY**: Thank you, Chair, and thank you both for your submissions today. I will continue with the prodding, if I can. An independent environmental watchdog has been called for by many submitters previous to yourselves, and you are advocating for the same, in order to ensure the environmental legislation is enforced and environmental impact assessments for development are sound. Can you elaborate or explain to the committee what form this watchdog should take and specifically what enforcement powers you think it should have?

**Dr MORGAN**: I will start. It is a difficult one because in this space most of the work that gets done is going to be funded by government and in many cases undertaken by government, so it being independent of government is probably quite important as a starting place. We have seen the Auditor-General working in this space to at least ask questions around whether the standards that are being set by the relevant departments are being met on certain projects, and you might be aware of some of those. So I think it is really, really important. We have independence in terms of the state of environment reporting, so some of these things already exist. I think of the accountability in terms of what is the frequency and what are the powers. So we can have reporting, but what does that lead to in terms of outcome? I think it needs to be a different arm in terms of an extension of the capability to empower government to actually act on some of the things they might have said that they were going to do. I have heard previous discussions that you were just having on this same question. It is a hard one to say where it sits, but it clearly has to be outside of the regulatory system that is happening with departments and government. It has to be outside of that, but it actually has to have, as you pointed out, some capacity to affect outcomes. I am not sure I have an answer to that. I mean, that is a really difficult question at one level, but we already have methodologies or methods where that is happening in some respects, so it is: do we build on those strong examples? Bek, do you have anything else?

**Dr CHRISTENSEN**: I agree with John's comments, and I would add I think it is quite important as well to give the community an insight into what is happening, where we have success and when we do not have success, why. If we have years of strategies but the evidence that we have all heard is that ecosystems are in decline, our species are in decline, what are we not getting right? Rather than just continuing on the same track, let us actually explore what did not work so that we can then change it and try to do it better the next time. I think that is an element of this as well.

**Mr GRIMLEY**: So are our current enforcement policies and processes getting it right?

**Dr MORGAN**: Well, look, I think the evidence would be no—I mean, that is the straight answer—because we are still seeing the trajectory, we see in state of the environment reporting the indicators that are being used are in the red, meaning they are not good. So the next step has to be, 'Okay, so what do we do about this? Why hasn't this worked?', rather than in five years doing it again and just highlighting again what we knew from the previous five years. So I think the answer has to be no, we are not getting it right.

**Mr GRIMLEY**: Thank you very much. Thank you, Chair.

**The CHAIR**: Now, I am not sure. Is Dr Bach still with us via Zoom? If he is, it is his turn for a question. Are you there?

**Dr BACH**: I certainly am, Chair.

**The CHAIR**: Okay. Over to you. Sorry, I just could not see you there but that is all right. Go for it.

**Dr BACH**: No, of course. I have no further questions. Thank you, Chair.

**The CHAIR**: Okay. We have got a few minutes left. So Mrs McArthur, over to you.

**Mrs McARTHUR**: Hello. First of all, I actually must get something on the record. I took a previous witness's name in vain—Dr Pascoe—when I suggested he wanted a doubling of government funding into the environmental space. I was misreading my notes. It was the next witness. But I did conclude that an NGO might be better to get the money than government because in my observations governments are actually the worst at spending money productively and effectively in this space. But you have referred to biolinks, and I am particularly interested in the Myrniong biolink, which connects the Lerderderg State Park to the Werribee Gorge State Park. Now, this land was given to the state by farmers, and a lot of man-hours and money were donated to revegetate this biolink, but this biolink is going to be put totally under threat by these enormous transmission lines that are proposed to be built across this entire biolink and across the Lerderderg forest as well and the Merrimu Reservoir. So what would you say to the point that you encourage landholders to be engaged in this space of revegetation and diversity but then have the state effectively move in and wreck the entire project that was done in good faith by good people?

**Dr MORGAN**: All I would say there is that (a) it is great to hear about that biolinks project. I did not know about that one, so it is really nice to hear that that has taken off and has started to do some of the things it does. It engages people and it brings back benefits.

**Mrs McARTHUR**: Wouldn't there have been an ecologist involved?

**Dr MORGAN**: Again, I do not know that one. I have to take that on notice.

**Mrs McARTHUR**: Yes. There is some research for you.

**Dr MORGAN**: This is a broader issue of how does nature interact with the environment. Again, I am not familiar with the exact particular case you are talking about, but if you indulge me, the same thing happens when we put highways in and those other things. What we are looking for is: how do you get biodiversity-friendly infrastructure development? We are all aware of wind farms; that is that same question. So this is going to be the question that we have to raise: how do we improve the capacity for both to exist? In your particular case, I would have to take that on notice because I do not know the example.

**Mrs McARTHUR**: Okay. Well, you have a look at it because it is no good building a biolink and then destroying it.

**Dr MORGAN**: Sure.

**Mrs McARTHUR**: Secondly, you raise the issue of western Victoria agricultural land, and that is my entire electorate through to the South Australian border. When you suggest that farming land should be utilised—20 per cent of it, I think you mentioned—for revegetation of native species, do you propose the state compulsorily acquire farmland for this purpose?

**Dr MORGAN**: No. I think what we are talking about is how do you affect landscape changes—because that is what we are talking about here—by working with farmers to improve biodiversity on their farms, whether that is for the purposes of connectivity or just habitat area. There are some really good initiatives. I am not sure if you are aware, but there is a new one called smart farming, which is actually saying the two are not, again, dichotomous here; they actually integrate. There have been some great demonstration farms in probably your electorate—the Potter Foundation farms and things. How do you actually get that but roll it out at a much bigger scale? What we need to do is work with farmers and show the benefits of doing that, because the benefits can be, depending on what sort of enterprise we are talking about, improved pasture growth, because you change the microclimate and create more shading and less wind and things like that, and improved fattening of lambs, because they are not stressed out by cold winds and all those kinds of things. There are a lot of improvements that we can actually understand. Soil health is a really good one, actually.

**Mrs McARTHUR**: Farmers undertake to do this without any intervention from experts by and large—

**Dr MORGAN**: What we are trying to do—

**Mrs McARTHUR**: They want to be productive and they want to look after the environment.

**The CHAIR**: Sorry. With that we are actually out of time, so if there any other questions you would like to provide to the witnesses, you can perhaps put them on notice to the witnesses. I would just like to thank you both very much for your contribution and presentation today. It has been really, really interesting.

**Dr MORGAN**: Thank you.

**Committee adjourned.**