

TRANSCRIPT

LEGISLATIVE COUNCIL ENVIRONMENT AND PLANNING COMMITTEE

Inquiry into Ecosystem Decline in Victoria

Melbourne—Thursday, 3 December 2020

(via videoconference)

MEMBERS

Ms Sonja Terpstra—Chair

Mr Clifford Hayes—Deputy Chair

Dr Matthew Bach

Ms Melina Bath

Mr Stuart Grimley

Mr David Limbrick

Mr Andy Meddick

Mr Cesar Melhem

Dr Samantha Ratnam

Ms Nina Taylor

PARTICIPATING MEMBERS

Ms Georgie Crozier

Dr Catherine Cumming

Mr David Davis

Dr Tien Kieu

Mrs Beverley McArthur

Mr Tim Quilty

WITNESSES

Dr Scott Rawlings, Director of Science and Reporting, and

Dr Gillian Sparkes, Commissioner, Commissioner for Environmental Sustainability Victoria.

The CHAIR: Good morning, everybody. My name is Sonja Terpstra, a Member for the Eastern Metropolitan Region, and I will be chairing this committee inquiry today. I declare the Environment and Planning Committee public hearing into the Inquiry into Ecosystem Decline in Victoria open.

If I could ask you all to please ensure that mobile phones have been switched to silent and that background noise is minimised. Perhaps if you are not speaking at any particular time, if you could make sure that your microphone is on mute.

I would also like to welcome any members of the public that are watching from home this morning via the live broadcast. Having got those formalities out of the way, I would also like to introduce the committee members who are participating in the hearing today. But before I do that, I would like to acknowledge that I am Zooming in to this public hearing today on the lands of the Wurundjeri people of the Kulin nation, and I pay my respects to their elders past, present and emerging.

I would just like to introduce participating committee members today. So of course, Sonja Terpstra, I am the Chair of the committee. Also appearing with us today is Mr Clifford Hayes, who is the Deputy Chair. Also we have Ms Melina Bath. David is not here. There is Andy Meddick and also Dr Samantha Ratnam. We also have Mrs Bev McArthur and Stuart Grimley. I do not think I have missed anyone or left anyone out there. Fantastic. Beautiful. All right. I just want to acknowledge my colleagues that I have just introduced and also thank those colleagues who have provided apologies for not being able to attend the hearing today.

Now, for the witnesses, I just want to remind everybody that all evidence taken at this hearing 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 today is protected by law; however, any comment repeated outside the hearing may not be protected. 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.

Just before we get underway, I thank Dr Gillian Sparkes for attending and also Dr Scott Rawlings for attending today. What we would welcome is perhaps some opening comments from our witnesses today but ask that they be kept to perhaps a minimum of 10 minutes, and that will ensure that the committee members have plenty of time to ask questions of you and plenty of time for discussion. So again, I will just remind members and witnesses to please make sure that your microphones are muted when you are not speaking. That will help obviously minimise any interference or background noise, and if you have technical difficulties at any stage, please disconnect and reconnect or contact committee staff using the contacts that you were provided with. But fingers crossed that we have no internet issues today. Hopefully it is all working well.

All right. So our first witnesses on our list today of course are Dr Scott Rawlings and of course Dr Gillian Sparkes, who has the office of the Commissioner for Environmental Sustainability Victoria. So I will hand over to you both.

Dr SPARKES: Thank you, Madam Chair. I will take the lead and thank you. Welcome to all panel members today. Thank you for the opportunity to present to this important inquiry. Can I also acknowledge the traditional owners of the lands on which I am coming from, which are the Boon Wurrung people—I am based down on beautiful Western Port—and pay my respects to elders past, present and emerging and any elders or emerging leaders that are joining us today.

Now I do have a PowerPoint to share, Madam Chair. It is longer than 10 minutes, so what I am going to do is get through the beginning, and I have put stuff there that we can then go back and refer to if we need to to support some answers. So I am not going to go too long with the PowerPoint, but I think it will help the conversation. I will share that now.

Visual presentation.

Dr SPARKES: So I will start by acknowledging Scott Rawlings, my colleague, who is on with me today. Scott is the Director of Science and Reporting in my office, and he leads a small team of scientists who, with me, work to prepare our science reports on the environment. And the findings of a key report, the 2018 state of the environment report, which was tabled in the Victorian Parliament in March 2019, are what I will be focusing on mainly today.

So an objective of my role as Commissioner, for those who are unaware, is to encourage decision-making that facilitates ecologically sustainable development, and a key function—the way we do that—is to provide independent and objective scientific reporting on Victoria’s environment and advise government. So as Commissioner I lead a small team that prepare many reports; there are three in front of you that were released in March 2019. I will draw your attention to the report on the left. I do believe, Madam Chair, that you would have received some background information on the state of the environment report as part of preparation for this hearing, and as recently as yesterday we sent the secretariat a summary of the indicator report card for the 170 indicators as well as the 20 recommendations, and the tables were circulated. So if committee members have not received them, we can ask the secretariat to forward them so you have got a very easy summary to refer to in your deliberations.

So as Commissioner the work that we do is looking at how we are performing through the whole system and looking back over what C science is telling us. The 2018 report essentially tells us three things: it gives us an understanding of the health of Victoria’s natural environment and the adequacy of our science and we take the opportunity to make recommendations about where future focus needs to be. The SOE 2018 report is the most comprehensive scientific baseline SOE report produced in Victoria in recent history and includes 20 recommendations to government.

So as I said, on our website is a cover, if you like, of the recommendations in summary. You should have received a document that summarises the recommendations, the challenges that they aim to meet, and we also did a lot of work aligning our 170 indicators with SDG targets, the sustainable development goal targets, as Victoria moves more and more to reporting against the sustainable development goals.

The state of the environment 2018 recommendations are a comprehensive assessment of 170 indicators aligned with 52 UN SDG targets. The recommendations advocate for a shift in how we monitor and protect Victoria’s natural assets, including, as you can see there, better investment and use of digital spatial capability and use of earth observation, data analytics and predictions, citizen science and environmental economic accounts. We are advocating for investment by all levels of government in these capabilities and workforce skills. Obviously our role is to advise the Victorian government, but they are not alone in needing to do this.

A key aspect to responding to and reversing ecosystem decline is knowing what we need to know when we need to know it, and so our recommendations aim to move the system forward, if you like, as a whole to reverse ecosystem decline. We look at everything—the whole gambit—from research, science, policy, tools, management and regulatory impact. The evidence that we accumulate gives us a view about all aspects of the system. As we know, this is a complex issue and requires a comprehensive response.

The principles and criteria that the recommendations can be broadly grouped into include science impact, coordination and governance, delivery, data monitoring and spatial information and analytics and citizen science and education. We did find, as you can imagine, that biodiversity is a big issue. It is one of the big issues revealed in the 2018 state of the environment report, and that is unsurprising and obviously a key driver of this inquiry.

The biodiversity chapter of the state of the environment report assessed 35 indicators, and we can talk about how those indicators are developed if you like, but there are 35 indicators, and we found that three-quarters were either deteriorating or their status was unclear. So only one-quarter were either stable or improving. So it is telling us about the decline as well as about our science.

This is quite a complex diagram, but it gives us a summary and a snapshot, if you like, before I then move into more detail around the recommendations. I might just summarise this slide for you, Madam Chair, and then perhaps move to questions.

This snapshot that you see here reveals the challenge. We had 170 indicators assessed in the state of the environment report. Thirty-five were assessed directly in the biodiversity chapter of the state of the environment report—a total of 52 if you take into account other biodiversity-related indicators across other chapters of the report, such as forest, fire and land. Twenty-nine per cent were assessed as low performing and 40 per cent had poor quality data. If we look at where spatial information can improve our understanding and management of biodiversity, 30 of the 170 indicators could be improved through investment in spatial information and earth observation, with 37 per cent of those 30 relating to biodiversity indicators.

Madam Chair, would you like me to continue on to recommendations, or given that you were handed out information, would you prefer that I stop now and we discuss the science?

The CHAIR: It is up to you. There is still some time left if you want to quickly go through. We still would have plenty of time for questions. So, yes, it might be worthwhile.

Dr SPARKES: Okay. Thank you, Madam Chair. There are 20 recommendations, and we have just picked a snapshot of the key recommendations related to biodiversity to share with you. A major recommendation is that we need science leadership across the portfolio in how we are managing our science program, because there is a lot of investment. There is a heap of work going on. Making sure it is well coordinated across the various departmental divisions as well as across the portfolio more generally would help. So what we are saying is that a strategic science leader, a chief biodiversity scientist, would be a very good starting point for having a view about the capability of our science and where the investment is and how we can improve them. Sometimes with these things you do not need new money, you just need better coordination and higher impact, and I know the department have been doing work around impact for science programs and bringing that together since our work was tabled.

The other recommendation relates to private land. As the committee would be aware, around 67 per cent of Victoria is private land. We talk often about public land, but actually private land has a huge role to play and private landholders have a huge role to play in ecosystem decline and stopping the ecosystem decline. So we are saying that the department should improve the biodiversity outcomes by accelerating private land conservation. This is a key area that I would recommend the committee look at, because of two-thirds of Victoria being privately owned.

Recommendation 7 relates to land, and this recommendation really looks at soil. There is not a sufficiently coordinated and systematic approach to the collection, consolidation, reporting and assessment of land data across the state, and there is only a basic understanding of the effect of land use and land use change on soil and land in Victoria. So we have already begun work with Victoria's soil science network to improve reporting in line with this recommendation and are getting really good collaboration with Agriculture Victoria in that regard.

Just because of the terms of reference for the committee I wanted to touch on two tangential recommendations. Recommendation 1 of the report recommends that we develop cultural landscape health and management indicators and transition from a singular focus on Aboriginal cultural heritage reporting to a new approach which incorporates the social, economic, spiritual, cultural, environmental and health and wellbeing values of Victorian traditional owners, registered Aboriginal parties and Aboriginal Victorians. We are yet to have a response to this, but we know that there is work going on across the portfolio in this regard and we are hoping that in our 2023 report we will have a program that has developed indicators for us to start more comprehensively reporting on cultural landscape, health and management.

And finally, recommendation 2 looks at climate change impacts. Climate change impacts go across the board in affecting our environment. We know that. That is well established. One of the key responses to adapt at a local level is to understand at a finer spatial resolution and more accurately what our localised climate and rainfall projections are, for example. So we are advocating strongly for more local and more detailed climate projections at a regional or catchment scale. Thank you.

The CHAIR: Thank you very much, Dr Sparkes. Thank you very much for that presentation. It is fantastic. What we will do now is move to questions, and perhaps if I can ask committee members if you would like to virtually raise your hand on the screen so I can see who would like to kick off. I do have an order, but rather

than go through that I will just see if anyone has any questions. I will go to the Deputy Chair first, perhaps, and then Melina. So, Mr Hayes, any questions from you?

Mr HAYES: Yes. Thanks, Dr Sparkes. Just talking about the state of the environment report, and I have read it a few times when it has come out previously too, it seems like the ecosystems are in decline and there has not been any real turnaround since we started reporting on them—it must have been about 10 or 12 years ago. I was just wondering: do you see any way or any possibility that ecosystem decline can be halted? I also just wanted you to comment in general on these ideas if you could. Also, I am very concerned about the decline of ecosystems in suburbs, and we have got more and more residential development putting pressure on country areas as well. We talk about sustainable development, and development means talking into the future, and I know we have got very ambitious population growth targets for Victoria. Do you think that we can turn the ecosystem around and still be able to double the population over the next 20 or 30 years?

Dr SPARKES: Thank you, Deputy Chair. That is a very big, broadbrush question—

Mr HAYES: It sure is, yes.

Dr SPARKES: I will dissect it for you.

Mr HAYES: I suppose you would have to say: how are we looking into the future and can we do that with those sorts of plans?

Dr SPARKES: I might answer in three ways. One is to talk about what tools and policies we have in place in Victoria—there is also a national and global aspect to your question of course—and then we can also talk about why we are moving to reporting against the sustainable development goals, because that is a key response to your concerns, as you have raised.

In Victoria we have the policy frameworks in place to respond to biodiversity decline to the extent that we control what we can. So we have a very strong *Climate Change Act* and targets. We have a very strong commitment to transition to a low-carbon economy. We have a very ambitious biodiversity plan, which we will report against in 2023. So we have those sorts of tools in place. We have investment. We have seen in the budget even the investment now in an area that we have been advocating for—Digital Twin Victoria has been announced, where we will look at developing digital infrastructure to monitor across the state what is happening in a much more comprehensive, spatially resolved way. We are investing in environmental economic accounts.

I suppose what I would say to you is: if policy frameworks and tools and investment in tools and science are a part of our equipment to reverse the decline, we are doing a lot in Victoria. I would say that we all know, and it is beyond my remit to discuss it, that affirmative climate action is really important, and it is a key driver of biodiversity decline—

Mr HAYES: Absolutely.

Dr SPARKES: and that goes well beyond Victoria's ability, but we are taking a leadership role there.

In terms of the urbanisation and population, one of the areas that we looked at in our state of the environment reporting frameworks was at the traditional condition reporting, which is the requirement under my act—so the condition of the environment against various indicators such as the indicators you have been handed out, the 170 indicators. But with the advent of the sustainable development goals we saw an opportunity to adopt that framework, both to track our progress against the sustainable development goals, so that looks more broadly at socio-economic issues, and also to start looking at interlinkages between those goals. The science for sustainable development framework that we tabled in June 2020 in the Victorian Parliament, again available on our website, is ambitious. It builds on the work that we did for the 2018 state of the environment report and further leans into applying and operationalising the sustainable development goals for Victoria and for state of the environment reporting.

Ultimately the rubber hits the road for our reports when we make recommendations to government and particularly when they are accepted, so we are always looking for better frameworks to create better recommendations. The 2023 state of the environment report, under the science for sustainable development

framework and associated reports that will be also developed under that framework, such as the inaugural state of the marine and coastal environment report, which is now underway and will be released at the end of next year, will have three levels of scientific synthesis, if you like, that will then create the recommendations to government.

Firstly, we will do the traditional condition reporting, as you saw in 2018 reporting, we will do a tracking against our progress against the sustainable development goals at the target level and, thirdly, we are now—and Scott is leading this work—working on a method to look at the interlinkages between targets, picking key targets and seeing, ‘If we do this, what happens there?’. Because we know that at the end of the day this is a system. It is a systems approach that is required and it is a systems approach that is creating ecosystems decline, and we are trying to look at all aspects of the system, from population to urbanisation to climate change et cetera and all those pressures.

Mr HAYES: All those are interlinked, yes.

The CHAIR: Thank you, Dr Sparkes. We might move to Dr Ratnam now.

Dr RATNAM: Thank you very much, Chair. Thank you, Dr Sparkes and Dr Rawlings, for appearing before us and for the incredible work your office does as well. I think the state of the environment report is such an important piece of work for us to get a sense of what is actually happening and, you know, was the antecedent of us thinking about an inquiry like this being really, really important.

I wanted to ask first—so from what we know, from what your report presents, the situation is very dire. In many ways we are going backwards very significantly, and we know that timing is key. We have to act quite quickly. We have got some great ideas, and you have outlined some of those kind of really cornerstone ideas and plans that we have got. Some of them on paper seem ambitious. We have even had some funding announcements that all sound very good and sound like they are taking action. However, collectively, if you put this together, we still seem to be moving backwards. So my question was: why do you think this action does not seem to be turning things around? What are the key barriers to us moving and progressing forward?

Dr SPARKES: Well, I might take that, Dr Ratnam. In 2017 the biodiversity plan was developed and released. So the first reporting against the targets—the targets are now in development—we will do our first reporting against the targets in 2023. That piece of work, that policy framework, was visionary in many ways—20 years. Stakeholders across the board were very supportive of that policy framework in galvanising the whole community—government, community, NGOs—in pushing forward. In fact tomorrow we are having the second or third of our round tables with all stakeholders where we continue to assess the progress and talk about the actions.

I think it is a bit early to look yet at how that policy framework is creating results. As I said, we will report against the targets in 2023, and we will have a lot better understanding of whether we are, as you say, reversing the decline and at what pace we are going. Just anecdotally we are seeing a lot of investment in the pillars and planks we need to implement that policy. We are not seeing any backing off of energy for delivering the policy, and so we are confident that this policy framework, if everyone continues to stay committed, will achieve its targets.

Of course there are pressures that go beyond what anyone can do, which are related to other things, as you know. So I think our position on climate change, our *Climate Change Act*, is very progressive and our biodiversity plan is very progressive. And I would say that even to the extent that after the 2019–20 fires this year—because it was so soon after we had released the 2018 state of the environment report—and the significant impact on biodiversity through the black summer fires, my office has underway a review of the biodiversity chapter. So we are doing an update so that in 2022, when the biodiversity plan is refreshed next year and the year after and we are continuing to monitor and improve, we will have an updated baseline based on those 2019–20 fires.

So yes, I am seeing a lot of work going on and the boat is—everyone is rowing in the one direction around the bio plan 2037, if that makes sense.

The CHAIR: Thank you, Dr Sparkes. Sam, do you have anything further?

Dr RATNAM: I have a few follow-up questions. Maybe just one follow-up question in this theme, and I am happy to come back later after everyone else has had a go.

The CHAIR: Sure. Yes.

Dr RATNAM: Thanks so much for that, Dr Sparkes. Can you talk to us about ongoing funding for the implementation of the biodiversity strategy? Is it adequate? And the other question was: 2023 seems a long way off for reporting, given the precariousness of the situation we are facing, so do you have any comments about that? Should we bring forward some of that reporting, so we can get a better assessment of other things we have put in place actually working and do we have to accelerate it?

Dr SPARKES: The state of the environment report every five years is the sort of big report that looks backward at what has happened, but there are other reports going on beneath that. We are working on the marine and coastal environmental report now, so that is a sub area of the biodiversity story—on the coast, if you like—which is very important in the marine environment. So we will have a much better understanding of how that is tracking at the end of next year, and that will build on the State of the Bays report that we did in 2016.

As I said, we are doing the biodiversity update chapter, so we are going to have a look at our baseline. It is very hard to assess, if the baseline is moving. So it is very timely for the first round. The department will be speaking to you, and witnesses today will be able to go through the various levels of funding. But there is significant funding, and the funding for my office has increased to support all this work.

The CHAIR: Thank you, Dr Sparkes. We might move to Mr Meddick now.

Mr MEDDICK: Thank you very much, Chair. And thank you, Dr Sparkes and Dr Rawlings. I am happy to have either of you answer. I have got a couple of questions, and I will keep them very short if I may.

The 2018 report was very extensive, and I think as a committee we could keep you here all day with the amount of questions we could ask about that. But I wanted to just touch on one of the recommendations, which was that the Department of Environment, Land, Water and Planning appoint a biodiversity officer. Would you be able to tell me if that has actually happened, and if it has not to your knowledge, the reasons why it has not.

But then outside of that, I am just wondering if the data collection that you have done on biodiversity loss has specifically targeted any given area such as, for instance, animal agriculture—the effect that animal agriculture has had at all levels on biodiversity, so from initial land clearing to the effect of poisons, to the effect of loss of volcanic grasslands, all those sorts of things—what effects that has had, but not necessarily limited to that. And then also have you looked into—in terms of the biodiversity and returning some of our land to previous incarnations—the effects that returning apex predators might have to that? So, for instance, getting rid of 1080 poison and returning dingoes for instance in familial groups to return biodiversity, because they take care of so-called invasive species. I know there is a lot there to unpack.

Dr SPARKES: Yes, thank you, Mr Meddick, for your question. I will respond to the question regarding recommendation 5 in relation to the chief biodiversity scientist, and then I will hand over to Scott, who leads our science team, to go into more detail about our approaches.

So in regard to the process, there is a process, as you can imagine. We table our report in Parliament, and government then has 12 months to respond. We have been very encouraged by the leadership of the department and the very thorough work that they have been doing and did do to develop a response to our recommendations.

The recommendations response is tabled in Parliament, and that is the first time we get to see the actual response, and due to COVID and the delays we have not had the tabling. So we have not seen the government's response yet, but we are aware that the process has been very thorough and well considered, and we are led to believe that the tabling is going to happen soon. It is just a matter of getting through the backlog due to the COVID issue.

In relation to the specifics around our data, I will throw to Scott for that.

Dr RAWLINGS: Thanks, Commissioner. Thanks for your question, Mr Meddick. So look, as the Commissioner presented and as our report clearly shows, biodiversity is an area in our reporting which does have overarchingly poor data, significant gaps in our data. One of the critical reasons that we are doing this update following the 2019–20 fires, as the Commissioner said, is it gives us an opportunity to bring forward and continue to update that biodiversity reporting. So what I can say and what I have witnessed this year in our work with both the department, the Arthur Rylah Institute and Parks Victoria in the development of this update report is a really strong coordination effort following the fires. And you would have seen in some of the reports that have been released by the government online and the work that the Arthur Rylah Institute has put into developing those reports that there is unfortunately a real opportunity after a tragic circumstance to really look at how we can coordinate better. And in terms of you raising the issue around pests, we have now seen a very strong pest eradication program undertaken by Parks Victoria and other agencies following the fires. So there is real opportunity now to see what impact some of those measures will have on a more medium- to longer-term basis, which is what we will report on next year and then following that in the 2023 report.

Mr MEDDICK: I just have one follow-up question then, if that is all right, Chair. On the recovery of biodiversity after the fires specifically I am reminded of the report from the fires that happened in Kangaroo Island, the significant biodiversity loss there. But the report that came out that was around that, prior to and after, was that, for instance, 1080 poison baits were distributed on Kangaroo Island. The reports through camera capture and all those sorts of things showed that over 90 per cent of those baits were not taken by the introduced species; they were actually taken by native animals, and certainly some of the reporting that I have seen in that area here in Victoria backs up that data. Given that it is such a non-target poison, that basically any animal that consumes it is doomed, really, and its effects down the chain then of biodiversity, would you look into that as part of that recovery from bushfires so that at least for the moment that program is stopped so that the animals from all levels—at a microbial level and upwards—have a chance to recover without a risk of dying from baiting?

Dr SPARKES: So you raise some really interesting observations, Mr Meddick, and certainly I know you are spoilt for choice today with the people coming onto the panel—our esteemed colleagues from the department can perhaps give you some more information in this regard, and also I know Jenny Gray from Zoos, who has been incredibly active in the bushfire response too, will be speaking, so they may be able to answer this better—but we will certainly take your observation on notice and follow that up with how we develop further reports.

Mr MEDDICK: Wonderful, thank you so much.

The CHAIR: Okay, thank you, Dr Sparkes. Ms Bath.

Ms BATH: Thank you, Dr Sparkes and Dr Rawlings, for being with us today. I have multiple questions, and it is where to begin, so I will just begin simply with a conversation around invasive species. The CSIRO put out a recent review on invasive species, and that was identified as the most significant threat to vulnerable species nationally, and I am sure it would relate specifically still to Victoria. We see feral animals like goats, pigs—you know, I can list them—feral cats, dogs and foxes, and then competition with rabbits and the like, and then we have weed species. So I would like to drill down and understand more about—and I know Parks and DELWP are coming up—how good a monitoring system exists across the public tenure in relation to how we are or we are not combating these very much invasive species that threaten our vulnerable species.

Dr SPARKES: Thank you, Ms Bath. I will start the response and then defer to my esteemed colleague, Dr Scott Rawlings, to give more detail. If you do look at the report card for biodiversity, you will notice that the very first indicator of the SOE 2018 chapter is invasive freshwater plants and animals. It goes on to trend in carp distribution, invasive terrestrial plants, invasive terrestrial animals et cetera—deer populations. You will notice that there are quite a few ‘reds’ and there are quite a few data quality issues, but we do have some good data quality on some of them. Scott can talk to you a bit more about both the data quality and the programs for monitoring.

Dr RAWLINGS: Thanks, Commissioner. What we found in our 2018 reporting was that the information on invasive plants was quite good, and we were able to report with confidence regarding that. The information on animals, however, was not so good, and it is obvious that plants are much more straightforward in terms of monitoring than the animals. Unfortunately, though, what we also found was that the status was poor. Similar

to the CSIRO report, in alignment with the CSIRO report, invasive plants and animals are probably the number one threat to biodiversity.

Ms BATH: Thank you. Thanks, Chair. I am seeking to understand in relation to our parks and public spaces—our public forests—an audit process. You said there were some gaps particularly around animal species and pests. If we know it is the biggest problem, how are we going to address how public land management is actually managing that and therefore be able to provide specific recommendations to halt it and to draw back? Because if it is the biggest threat, how are we going to stop that biggest threat on public land spaces?

Dr SPARKES: Thanks, Ms Bath. I think coming up next is the department and the deputy secretary who looks after public land. They have a very strong role to play in the monitoring and operational policy response area. Our role is to report on the information against indicators in more of a longer term view looking back. So I think that question that you are asking, which is really important and we have certainly signalled this is an issue, is worthy of a policy response from the department in the next session.

Ms BATH: Thank you. I guess it was in relation to: would you see an audit program for the likes of Parks Victoria or DELWP in our state forests? Would you see an audit program for them so that they can be that assessment? Would that be something that you would recommend?

Dr SPARKES: We will take that question on notice, but I would make the observation that there are very active programs ongoing with Parks and the department through the forest fire group. So it would be very useful to ask that question of the department, and we will take it on notice, but I do believe there are programs such as that going.

The CHAIR: Thanks for that, Dr Sparkes. Now, I am just conscious of time. We have got two more committee members who have not had a go yet. If we have got extra time, then I will come back around. So we will go to Mrs McArthur.

Mrs McARTHUR: Thank you, Chair, and thank you, presenters. Now, you say your job is to provide independent and objective scientific reporting. How can we be assured that you are independent and objective?

Dr SPARKES: The best way we can explain that to you probably is to take you through how we develop science indicators and do the science program for reports, to demonstrate the scientific efficacy of our process.

Dr RAWLINGS: Thanks, Commissioner, and thanks for your question too, Mrs McArthur. So yes, we have a very collaborative approach to developing the indicators and developing our approach to the baseline for our reports. We do work with government, because the government are by and large the largest data provider for our reporting. So we work with the technical experts within government. We also work with stakeholders. We have a strong engagement strategy, and we work with stakeholders across the board. And of course we work with academic institutions and with researchers. So through that process we work with a broad range of experts and develop the indicators that tell us the most meaningful stories about the environment. So that is through a consensus approach, a co-creation approach if you like.

We then work on developing, ‘Well, what are the key questions regarding those issues?’, which of course leads to our indicators. Our indicators are basically questions. They are an attempt by us to answer the critical questions for the scientific baseline.

And then once that has been established, and once we have established what the key priority questions are, we then begin a data acquisition process. We do a lot of research around where the data might be found. That is an engagement process as much as a research process. We work with our stakeholders. We work with the academics. We work with the technical experts within government to work out where the data to answer those questions are. And as you will see, Mrs McArthur, in our latest report and the presentation that the Commissioner gave at the start of this hearing, that does not mean that there are not a lot of gaps. And identifying gaps, identifying where information and data and spatial information can help us improve our reporting is part of our process and an important reason for why we are independent as well—to be able to bring that accountability and transparency to the data acquisition process.

Mrs McARTHUR: Okay, so moving to some of your stakeholders, one of the recommendations of the 2018 state of environment report was to:

... improve biodiversity outcomes on private land by accelerating private land conservation.

What is your progress on this, and what feedback have you had from private landholders?

Dr SPARKES: So I will just expand, Mrs McArthur. Thank you for the question. In addition to our science program, where we bring a whole lot of people together—from across Australia, I should say, not just from across Victoria—to develop our indicator program, as Commissioner I also have a reference group which is represented from stakeholders across the board, from people such as Landcare, the Wilderness Society, Environment Victoria, the VFF, the Local Jobs First Commissioner, the chair of Vic catchments, a whole raft of people, and we report regularly, quarterly, to them on our work. So that is another area that we have for constant engagement and constant feedback to us on the efficacy of not only our science but also the recommendations as they are forming—or the ideas, we do not share the recommendations per se.

So once we have made those recommendations and the report is tabled, we then await the government response. We anecdotally have had very positive feedback from all of our stakeholders across the board on the work as such and the recommendations, and we now await the government response.

The CHAIR: Okay, thanks, Mrs McArthur. I might just go to Mr Grimley, because I am watching the time, but I will come back around, as I said. So Mr Grimley?

Mr GRIMLEY: Thank you, Chair. Thank you, Dr Sparkes and Dr Rawlings, for your information today. I just have one question, because I am conscious of the time. Just expanding on Mrs McArthur's question in relation to private land conservation, what is your view on the adequacy of the legislative framework protecting this type of environment which forms part of the terms of reference for this inquiry?

Dr SPARKES: I should actually add we have Trust for Nature on our reference group, too. In terms of the framework, I might defer to Scott to answer that question.

Dr RAWLINGS: Well, starting with the science, Mr Grimley, we have one indicator in our biodiversity chapter which is high-performing and with good strong data, and that is the one around private land conservation and the work that Trust for Nature do. So that was one of the positive things that came out of our chapter on biodiversity, and I know Trust for Nature are also speaking at a hearing during this process, so they might be able to speak more authoritatively about the work that they do, but the data that comes from Trust for Nature is very strong and very good quality, so the scientists there are doing very good work.

Regarding the legislative framework, well, we had a recommendation in the 2013 SOE around the review of that legislative framework. I am very glad that that was a recommendation that was picked up in the previous cycle, which led to the review and the work that was done in 2017 and the changes which were more in line with the recommendation that we made in 2013 along with other independent agencies as well and other stakeholders.

The CHAIR: Thank you, and I see Mr Melhem has now joined us as well, so I might just throw to Mr Melhem to see if he has any questions before I come back around.

Mr MELHEM: No, I have got no questions. Dr Sparkes and Dr Rawlings, thank you for the outputs. Sorry I am joining late. Good to see you again. I have got no questions. Good job.

The CHAIR: Thank you. All right, I might quickly throw to Dr Ratnam—I think you had a couple of follow-ups there—and I will come back to you shortly. I know there are a lot of hands up, but we literally have 9 minutes left, so what I might do is get Dr Ratnam to ask a question, and then if any of you have got any other questions, if you could ask them and we will have them on notice for Dr Sparkes and Dr Rawlings. Perhaps that might be the best way.

Dr RATNAM: Thank you, Chair. So alongside invasive species that we have talked a little bit about, we know that both climate change and habitat loss are the biggest threats to biodiversity loss. You have already spoken, Dr Sparkes, a little bit about climate. Can I ask what you think the impact of native forest logging is on the loss of plant and animal species in Victoria?

Dr SPARKES: I would say that we welcome the phase-out of native forest logging by 2030. We also, as well as doing state of the environment, do *State of the Forests*. That was produced last year, and I might turn to Scott to talk about that.

Dr RAWLINGS: Yes, I do not really have anything to add there, Dr Ratnam. Obviously it is a commitment the government has made recently. I do not have anything to add from a science perspective.

Dr SPARKES: I would draw the committee's attention to the major event review of the regional forest agreement, which there was a media release about yesterday. You may or may not have seen that. We welcome that, and as Commissioner I will be a panel member for that regional forest agreement major event review over the next six months. That is going into consultation too, so there will be a consultation period and plenty of time for people to get involved with that.

The CHAIR: Okay, thank you, Dr Sparkes and Dr Rawlings. I am reminded too that if we run out of time, we can potentially get witnesses back for another hearing later in the inquiry if there are more questions or other things that come up. But do feel free—we will continue on; we still have some time. I might go to Mr Hayes in the first instance and then keep coming back around, but I am conscious of time because we do have other witnesses who are appearing.

Mr HAYES: Thanks very much, Dr Sparkes, Dr Rawlings. You talk in the report about the impact of suburban development and you talk of sustainable cities, and I think that these are very crucial. I am also concerned about losing biodiversity in suburban areas. But I really want to see if there is anything in the report that addresses the economic issues behind continued expansion of construction and development in cities and on the fringes of cities and out into the countryside and what the drivers are of that, on biodiversity from that particular sector of the economy, especially since it is something that the government very much encourages and collects land taxes from too. It is a sort of self-sustaining system itself, but to what extent is it damaging our biodiversity and what can we address there?

Dr SPARKES: We might take that question on notice, Mr Hayes.

Mr HAYES: Thank you. I would appreciate that.

The CHAIR: Thank you, Mr Hayes. I might go to Mrs McArthur.

Mrs McARTHUR: Thank you, Chair. Around the world we are learning about the crucial role the pedosphere has in overall ecosystem health and primary production. What progress have you made in this area, which is another recommendation in your 2018 report, considering how important understanding soil is and how important the productivity of farming land is?

Dr SPARKES: Thank you, Mrs McArthur. This is an area that we are very energetic about in terms of soil, and I will turn to Scott, because we are making great progress ahead of our next pieces of work and would like to share with you the insights so far.

Dr RAWLINGS: Thanks, Commissioner. Thanks for a great question, Mrs McArthur. As you make mention, we had a recommendation around the importance of soil health and science—again, another major gap traditionally in our knowledge. So this is something which we hit the ground running with after the report and continue to work in this space, working with the soil science network, which is a national network, but we are obviously working with the Victorian cohort more directly to begin to address some of those gaps and see if we can improve reporting around soil health and the importance of soil health not just for land health and agriculture but also for biodiversity as well.

We are working with partners including Fed Uni and other institutions and importantly looking at the importance of spatial information and earth observation in improving our knowledge of soil health. As the Commissioner said, it is an area of interest for us to address that gap.

Dr SPARKES: Yes. I would just like to add, Mrs McArthur, that we are a small office—myself and eight people—so we can only do so much. But we were so taken by the opportunity here that we have been investing as much as we can in addition to delivering our statutory program in this area, because we think this is a real area that we can make a difference in.

Dr RAWLINGS: Thanks, Commissioner. I will also add, Mrs McArthur, that this has got importance for our upcoming marine and coastal report as well. We are looking at acid sulphate soils in relation to coastal environments. So some of this work that we are doing is directed towards our next SOE report, but some of it is directed very much to the report that we are currently writing and will release next year on the marine and coastal environment and the importance of soils in those ecosystems.

The CHAIR: Okay. Thank you. Ms Bath.

Ms BATH: Thank you. Thank you very much for being so expansive in our short space of time. I am interested to understand: can the commission identify, or the office identify, what, if any—and name—species have met demise, met extinction, specifically in relation to native timber? That is my first question—so can you identify what species has become now defunct because of native timber?

Also I am interested in—and it might be something on notice—you talked earlier about traditional owners. I am interested in the work that you may have been able to do in relation to cool burns, Indigenous burns? We will call them Indigenous cool burns—traditional burns—what work have you done in that space or investigated? Thank you, and you may need to take this on notice.

Dr SPARKES: Yes. Look, for us we can take it on notice, but I think they are excellent questions. And I will defer you to—I think it is the next session—my esteemed colleagues. In relation to the specifics about species, I believe Dr Mark Norman is a witness today, the Chief Conservation Scientist for Parks Victoria, who is just amazingly talented in these areas. So I would recommend you talk to Mark when he comes.

In relation to cool burns, there is an enormous amount of work going on through the DELWP forest, fire and regions group and parks group. The team that are coming into the witness box next will be able to talk much more fulsomely to that, but we will take those questions on notice as areas of interests for our future reports. Thank you.

The CHAIR: Thank you, Dr Sparkes. I am conscious of time, but I will just quickly go to Mr Meddick and Mr Grimley. If you have any questions, can they be short and perhaps on notice for our witnesses because we do have the next witness waiting in the waiting room. Mr Meddick, I will go to you first.

Mr MEDDICK: Thanks, Chair. I am happy for it to be taken on notice. It is widely recognised by biodiversity experts that biodiversity loss is caused by five main drivers, not one. Those are exploitation of species, ecosystem and resources; habitat loss; pollution; climate change; and introduced species. And the only way to tackle the biodiversity emergency is to tackle all five of them and not just one of them. The only explanation for why biodiversity continues to decline in Victoria is that we are not adequately tackling all of these drivers. Do you have a coordinated plan that tackles all of them?

Dr SPARKES: The department coming up next, their job is to do exactly what you have said, and I know Parks are coming too. That is a very good question, and I would argue yes, there is a very comprehensive, coordinated approach to this very complex issue, as you have rightly noted. I am picking up and will take on notice some of the areas of interest for our future reports and how we go about emphasising these in our reports. As I said at the beginning, when we develop recommendations we take a systems approach. We look at all sorts of issues and what the policy frameworks are, what the management regulatory frameworks are and where the greatest impact is. I am taking this on notice to have as an area of interest in the next round of reports. Thank you, Mr Meddick.

Mr MEDDICK: Great, thank you.

The CHAIR: Thank you. Okay, Mr Grimley, just very quickly in 30 seconds, is there anything else?

Mr GRIMLEY: No.

The CHAIR: Okay, fantastic. All right. Well, thank you, everyone. I would like to thank all witnesses for your contribution today and your presentation. It has been very well received by the committee.

Witnesses withdrew.