

# **ENVIRONMENT, NATURAL RESOURCES AND REGIONAL DEVELOPMENT COMMITTEE**

## **Inquiry into the control of invasive animals on Crown land**

Dunkeld — 30 November 2016

### Members

Ms Bronwyn Halfpenny — Chair

Mr Bill Tilley

Mr Tim McCurdy — Deputy Chair

Ms Vicki Ward

Mr Simon Ramsay

Mr Daniel Young

Mr Tim Richardson

### Staff

Executive officer: Dr Christopher Gribbin

### Witness

Dr Clive Carlyle.

**The ACTING CHAIR (Mr Young)** — Welcome, Dr Carlyle. There are a couple of formalities that I am just going to get out of the way first before we kick off. This is the Environment, Natural Resources and Regional Development Committee inquiry into the control of invasive animals on Crown land. Please remember that all evidence taken is protected by parliamentary privilege. Therefore you are protected against any action for what you say here today, but if you go outside and repeat the same things, those comments may not be protected by this privilege. All comments made today will be recorded, and they will be provided to you as a proof in the next week or so for you to make any changes that you may need to make. That information will eventually be published on the committee's website. You have a bit of time to make a presentation and give your spiel on what you want to present to us today, and then we will follow up with some questions. Go for your life.

**Dr CARLYLE** — Sounds good. Firstly, thanks for the opportunity to present some views on this. My wife and I gave a joint submission, and I am here to represent that today. Unfortunately Catherine cannot be here and sends her apologies. She is a GP on call at Stawell in accident and emergency today.

Just as a bit of background, we both think this is a pretty important inquiry, with significant potential to reduce the economic and environmental impacts of feral species on public land. One thing that did occur to me while driving down is whether the terms of reference should be broadened to include private land as well, given that effective integrated pest management really needs to be conducted as a whole-of-landscape approach, so singling out one category of land ownership may not allow you to reach your desired objectives.

**The ACTING CHAIR** — Not wishing to interrupt, but we are happy to hear your views on that as well if it is something that you think is important. Do not feel like you are restricted because of the terms of reference.

**Dr CARLYLE** — Okay. That is a comment, if you like, that I would make. I suppose just briefly I should say that in terms of who we are, we are landowners. We have a property that abuts the Grampians National Park up near Halls Gap. We are managing that primarily from a biodiversity perspective, so we undertake some feral animal control ourselves to try and meet some of those biodiversity objectives. As I said my wife is a GP. My background, which gives me some interest in this, is a research background. I used to work with CSIRO and ended up as a senior principal research scientist and assistant chief of CSIRO forestry and then sustainable ecosystems, so I do have some background in complicated natural resource management issues across diverse organisations, states and also countries.

It is probably not useful if I just simply reiterate what we put in our written submission, so I will just make a few other general comments. From my perspective it seems to me that it is generally accepted that Victoria has multiple feral animals which cause varying degrees of both environmental and economic impact, and they occur, of course, on both public and private land; they do not discriminate between the two. So I think any approach really ultimately needs to consider both landownerships.

The situation is complex, I think, in that there is reasonable quantitative information on the numbers and also the impact of some of those species — and of course the numbers and impact do not necessarily equate to one and the same thing. So while there is reasonable information for some species and also a pretty good idea on how to control some species, that is not something that can be generalised. In many cases the information is not available on either of those — the numbers and also the best strategies for control.

Because of the complexity I think it is pretty important and there needs to be a fairly well-structured, strategic approach to the whole issue, with clearly defined goals for each target species. I firmly believe that one size will not fit all, both in terms of the individual species and also the landscape in which they operate, because some species operate across quite a broad range of landscapes. With the same sort of logic I suggest caution in trying to extrapolate control strategies that may have worked elsewhere with particular species in particular situations. So, for example, I would not imagine that the approach used in South Australia for feral goat control in the Gammon national park would necessarily work effectively for red deer in the Grampians.

I think the whole process could probably be improved, or at least it requires a sort of hierarchy of decision-making to be effective. That could be something along the lines of, firstly, what are the feral species that we are interested in; what is their current economic and environmental impact and how does that link to numbers; and then some sort of ranking in terms of where the control strategy would deliver the biggest bang for the buck; which species do we perhaps focus on other than trying to have a shotgun approach with a number of different species? At some point in time there probably needs to be some sort of attractiveness feasibility matrix analysis of that, because it is quite likely that some species may be very attractive to control in terms of minimising environmental or economic impact, but it may turn out that it is actually not particularly feasible based on current available control strategies.

So some idea of the species and their impact, attractiveness feasibility, then an analysis of what are the extant control options available, and I think it needs to be pretty strongly evidence based rather than a feeling that it may be effective. For example, it is my understanding that for certain species like, say, deer or fox, diffuse, recreational-style shooting is actually most unlikely to deliver any significant impact in terms of reducing numbers to a level that would have any effect on the impact of that species. You need an approach like that adopted in South Australia for feral goat control, where national parks or large parts of parks are actually closed for a period of time to the public and then there is quite concentrated shooting of a sort that is not really recreational in character. It is carried out specifically to achieve a targeted objective.

Then after those sorts of two tiers of consideration, I think it is at that stage that some analysis needs to be undertaken of the type of implementation strategy, and it is at that stage that consideration needs to be given to the impact on other users and safety issues. I think when we first gave our submission we initially focused somewhat on that end of the hierarchy — you know, how would you conduct the shooting of feral animals in a national park, which is obviously a multi-use facility, but I think that is probably several stages down in the decision-making process, and you do not even go there until you are sure what the most effective strategy would be for the control of particular feral species.

Really, just reiterating, I think all the evidence I have ever come across suggests quite strongly that feral animal control really needs to be considered on a whole-of-landscape basis, and that does include both public and private land. I know that from time to time in the media one reads reports of landowners complaining that national parks are basically a hotbed of feral species. That may or may not be true in some cases, but equally there are large areas of private land, mine included, that harbour feral species. I can imagine that if there was a major feral animal control campaign at my end of the Grampians National Park and I did nothing on my property, that would basically just undermine any efforts in the national park.

I think it would be good to see the terms of reference broadened to include private land, and I would be concerned about any strategy that did not have very specific quantifiable targets and did not have some form of rigorous ongoing monitoring protocol in place to track target against objective. Basically if something was shown not to be working, then you would just drop it. I think probably that is really all I need to say.

**The ACTING CHAIR** — Thank you for that. I will kick off just by drawing on your local knowledge. You said you do some control on your property. Can I just ask what kind of control you do for what species and what experience you have had, and can I ask you to give some examples of invasive species you have had involvement with on your property.

**Dr CARLYLE** — Okay. Well, the main invasive species that we have on our property would be foxes, and with foxes we have been implementing a 1080 baiting program. We have a relatively small number of rabbits, and the intention is to also 1080 bait those and also hope that the forthcoming release of the new calicivirus helps knock those on the head. We have quite large numbers of both red deer and fallow deer, which move across the property on a fairly regular basis. We do not have a specific intent at this stage to control those ourselves. I do not have a firearms licence. I have talked to some neighbours who do have a firearms licence. They might consider spotlighting on their property on that basis, but I suspect that the impact we can make on our property would be minuscule compared to the overall population that is resident within the region.

**The ACTING CHAIR** — You have given us a good sort of overview of how the process should work: you know, we have an end goal, we decide on a process to get there, we see if it is working, we change it if

we have to, and that is great as a sort of overall approach, but do you have any information you want to provide to us about knowledge of what is going on out here? Are there any specific programs you know of, what you have experienced is working and what is not working — anything you can provide to us?

**Dr CARLYLE** — Okay. Well, firstly, I do know that as far as feral goat control is concerned, in South Australia, particularly in the Flinders Ranges and Gammon Ranges national parks, there is a program called Bounceback, which is quite large. It was a well-thought-out program, and it included both public and private ownership of very large land areas. That has reduced feral goat populations quite dramatically in the target areas. That has been in part through having targeted and supervised recreational shooters coming to parks in a fairly intensive and focused way to shoot goats, so typically a park or proportion of the park would be closed for a week to the public. I am aware that that has been effective.

In the Grampians National Park, for example, there are significant feral goat populations. I think that parks has been radio tracking some of those animals with a view to control, but I am not aware of what the specific control measures are at the moment. I can imagine, just using the Grampians as an example, that any feral animal, goat or deer control there would be very difficult compared to, say, the Flinders, simply because the topography is similar but the vegetation is so much denser in the Grampians. Moving through it is difficult, so it is unclear to me how shooting in that particular national park could be implemented in a sufficiently intense way to impact on populations, unless it was something that involved spotlighting perhaps or even baiting to attract animals and then shoot them on that basis.

One other thing I had meant to mention but temporarily forgot is that obviously the focus is on feral animal impact. I am aware, from having talked to a range of individuals, that kangaroo or macropod grazing and browsing in large parts of Victoria is having quite a detrimental impact on native vegetation. It is not something I would claim to be an expert on or have detailed information on, but anecdotally and visually there are large populations. I guess there are far more artificial watering points. Talking to people from Trust for Nature and Bush Heritage, I know that they do have concerns that macropod grazing is an issue. I am not suggesting that the terms of reference for this are expanded to include non-feral animals, but it is not just feral animals that are impacting on environmental values.

**The ACTING CHAIR** — Yes, and that is something that has come up a number of times. You would understand that we have had witnesses from the pet food processing space talking about kangaroos, so it is something that has been flagged with us, and we have had a bit of a look into it.

The way in which you talk about how we approach these things is very scientific and very well laid out in a certain sequence. Your submission, however, comes across as though you do not see shooting as being an option at all. That may be unfair to say, and you can correct me if that is not the case, but if it were to be figured out that shooting by recreational means was the most effective means — for example, it may not be in these areas where you have smaller national parks and you need to be more targeted and more specific, but there are other national parks, state forests and state parks that are quite large and it would just be unreasonable to suggest that a targeted approach could be done on such a large scale to have an impact. If that was the case, and the only way to get such a scaled approach was through the use of recreational shooters, would it be something that you would — I will not say ‘change your views’ but at least assess?

**Dr CARLYLE** — Firstly, we did not mean to give the impression that we were against recreational shooting as a control methodology. I guess I would step back from that and ask: what would the point be of recreational shooting if there were no good evidence it was going to be an effective strategy for control? I think some analysis should be done, looking at existing information and expertise, like the CRC for feral animal control, for example, and other bodies, firstly, to ask the question: is shooting likely to be effective to control the species in question, and if so, what is the nature of the shooting required?

This goes back to having a good idea of the numbers and current impact of the species and where you would like to go with that — so, what do you want to reduce it to to minimise impact? — and then you need to look at the most effective way of doing that. I do not know, but I suspect in many cases what I would refer to as diffuse low-intensity shooting is highly unlikely, in my understanding, to deliver that.

No, I would be more concerned about not just simply recreational shooting but any approach that is suggested or floated by someone. It needs to be looked at rigorously and be evidence based. In many of

these cases you are never going to have 100 per cent certainty, and if you wait for it you will not do anything, so clearly that is not an option. But keeping in mind the fact that you are unlikely to have in some cases good evidence for pursuing a strategy, then it is really essential that you have good monitoring in progress, that you actually track whether it is having the desired impact and especially if it is a situation where that approach — let us say shooting — has significant potential impacts on other users of public land, and obviously there are also safety aspects involved.

**The ACTING CHAIR** — And that is obviously recognised by you in comments made around certain methods, such as South Australia employing certain methods to control goats. It has been brought up in this inquiry before that New Zealand does a lot of control with aerial shooting —

**Dr CARLYLE** — Yes.

**The ACTING CHAIR** — which you simply cannot apply to some of the species here that we need to control. They do aerial shooting for deer over there. However, sambar deer cannot be controlled that way because of our high-density landscape of tree canopy cover and things and the type of terrain that deer want to be in. So those methods do vary quite a bit.

Just in terms of the way we go about doing more in the space of pest control, a lot of people have been talking about the budgets and the restraints on money being put into this area. Do you have any opinion or thoughts on how that is being approached and, if you do, whether they have got the right balance in terms of money being provided to government bodies such as Parks Victoria as well as CMAs, local councils, Landcare groups et cetera, and what you think of how that is split up?

**Dr CARLYLE** — Firstly, I have no idea what the actual total available budget is in Victoria across different organisations. I imagine, as in most of these cases, everyone would say it is inadequate and they want more. Again I think it goes back to having a good handle on the impact of the species in question and then some form of cost-benefit analysis. For instance, I am well aware visually that there are a lot of feral deer around in the Grampians. I do not have such a good feeling for what their impact is environmentally.

There is some limited impact that you can see. There is some sort of native cherry — it is a small tree, the *Exocarpos cupressiformis* — and deer love it. So you can see any of those in the area are browsed off to just a bit over head height by deer. That may or may not be a major issue for the species, but beyond that I do not really know whether deer are significantly impacting on biodiversity values or not. My guess would be yes, they are, but how much I do not know.

I think any feral animal control strategy that did involve private shooting would have to be done in very close consultation with, and I would like to see it basically directed by, the responsible individuals in national parks and CMAs. Yes, it probably would be nice to see more money in feral animal control in Victoria but only in a sort of targeted manner, on a project basis, rather than just putting more money into it. I think you would want some strategy around it first.

**The ACTING CHAIR** — That is a pretty pragmatic approach considering the impacts and if there is enough of an impact to even worry about putting money into it, I suppose.

**Dr CARLYLE** — There is good information on fox impact, particularly the economic impact and also the environmental impact. I guess it is ditto for rabbits. I am aware — this is personally — of the difficulty of controlling those two species even on quite a small area of land, and it is relatively expensive as well. I think more money, if it is properly targeted, is I guess likely to deliver better outcomes, but then ultimately there needs to be some overall analysis of that in terms of just cost benefit.

**Ms WARD** — I think you have covered a lot.

**Mr RAMSAY** — I think the submission is very much self-explanatory, as was your presentation.

**The ACTING CHAIR** — The submission was very good. That was nice and easy then. Thank you very much for coming in. If we do have any more questions, would you welcome us writing to you and asking those?

**Dr CARLYLE** — Yes, that is fine.

**The ACTING CHAIR** — We may be in contact if we can think of anything more that we need to ask. Thank you very much for your time.

**Dr CARLYLE** — I hope it works out well. I do not think I envy you the process.

**The ACTING CHAIR** — It has been a long process.

**Committee adjourned.**