

**THE STANDING COMMITTEE ON PUBLIC ACCOUNTS MET IN COMMITTEE ROOM 2, PARLIAMENT HOUSE, HOBART, ON TUESDAY 2 JUNE 2009.**

**FOX ERADICATION PROGRAM**

**Mr CHRISTOPHER OLDFIELD**, TASMANIAN FARMERS AND GRAZIERS ASSOCIATION WAS CALLED, MADE THE STATUTORY DECLARATION AND WAS EXAMINED.

**CHAIR** (Mr Wilkinson) - Chris, thank you very much for coming along. As you know, we have an inquiry into the efficiency and effectiveness of the fox eradication program in Tasmania. We believe the Farmers and Graziers has an important role to play in getting all the facts, so I will leave it to you to talk to your submission.

**Mr OLDFIELD** - Thank you very much for the opportunity. The TFGA wishes to reiterate its strong position that we believe there are foxes present in Tasmania. We base this on the logic that you either have to accept that there is an organised conspiracy or that there are foxes. We do not think there is much in the middle. With the evidence of scats that have been found and continue to be found they are either genuine or they form part of a conspiracy and, quite frankly, we find that difficult to believe. So using that logic, we accept that there are foxes present in Tasmania and as such, as representatives of the farmers, that causes us grave concern.

As we have said in our submission, I think it goes without saying that it is acknowledged that the European red fox is one of Australia's greatest predators on the mainland in terms of damage to farm income and native wildlife. Foxes have been known to decimate populations of native wildlife and are very damaging to farmers. It is estimated that foxes on the mainland cost more than \$200 million in lost earnings to farmers and on top of that would be the environmental impacts. Figures generated by the Tasmanian Nick Mooney in 2006 identified that foxes could cost Tasmania \$20 million annually, and with an estimated cost to the sheep industry alone of \$3 million. We believe those figures alone justify the ongoing funding of the Fox Task Force.

An economic evaluation of the Outfox Fox Program in New South Wales, undertaken by Jones and others in 2006, concluded - and I quote:

'The change in annual economic surplus due to the Outfox Program was \$3.4 million. The benefit cost analysis showed that the program provided a significant return on the public investment, with a mean net present value of \$9.8 million and a mean benefit cost ratio of \$13.1 million.'

We again would argue this helps justify why we need to spend money to keep foxes out of Tasmania.

When we come to the question of what could be done better in Tasmania, we happily acknowledge we are not experts in fox control or feral animal control but we know that there are experts available. We believe that we must ensure that we have the best

practices possible in eradicating foxes but it's very difficult for us to determine the effectiveness of what is really a young program at this stage because we haven't the knowledge and we are not experts in those areas.

One of the areas that we do have some experience in is communications and we think that one of the things that the Fox Task Force could do is better communicate with the broader constituency. Every agricultural show I go to, or gatherings of farmers, we see fox people there and that's positive but I don't believe they are necessarily the target audience. I think there is still a large degree of scepticism in the public in general and we believe that perhaps improved communication would be a way of dealing with that issue.

While not having the skills or wisdom to comment on the effectiveness of fox control, we are very concerned with the announcement last week that 15 field staff have not been given a chance to have their contracts renewed. We understand the government process is that those positions will remain but will now be advertised initially within the newly-combined DPIWE and, if unsuccessful, then into the broader State public service. Whilst we understand the process, we find that a rather bizarre way to manage fox control. There is no doubt that 15 field staff with two years' experience are going to offer a lot more benefit for the public dollar than recruiting people internally. It may well be that there won't be sufficient internal applicants with that skill and then they have to go back and try to recruit those 15. The other thing that concerns us is that those 15 staff members were told initially that they would be able to reapply for their positions and that situation changed rather dramatically.

In terms of future funding, our concern at the moment is - and this is our understanding - the Australian Government's component to fox eradication in Tasmania is just that - it's for eradication. If foxes do become established in Tasmania, our understanding is that some of the Australian Federal Government money may not be available because we are then into a containment phase as opposed to an eradication phase. We would believe that our best chance of keeping foxes out of Tasmania would be during this eradication phase. Whilst we cannot comment on the ability of the program at the moment, what we can comment on is that we note that there are foxes in Tasmania and it will be devastating to the Tasmanian farming industry to see them become established.

I think the rest of the points we wish to make are the same as in the submission

**CHAIR** - Any questions?

**Mr DEAN** - I have a couple of questions at this stage on the 1080 poisoning program that is currently in place. Do you have a position on that, first of all?

**Mr OLDFIELD** - Farmers still maintain the position that 1080 is effective in a range of controls. So we do support the use of 1080, but clearly under controlled circumstances. In talking to farmers to date, they tend to believe that the 1080, the way that has been done, in the main has been effective. There have been a couple of farmers who have suggested aerial vapours might be better. But, in the main, those farmers who have been approached have been happy to have their properties used for 1080 baiting.

But in terms of its effectiveness, as I said, it is very hard for us to judge as non-feral animal control experts. But, in the main, I only know of two farmers who have expressed concerns and one of those was really saying, 'I think aerial baiting would be better than burying 1080 baits.'

**Mr DEAN** - The question that follows on from that is, currently the fox eradication branch does not have the ability to access properties unless it is with the support of the farming fraternity. So, do you believe that is a position that we should continue with or do you believe that they ought to have the ability to access any property where they believe, on reasonable grounds, that there are foxes present?

**Mr OLDFIELD** - Issues of access to private land are always going to be complicated issues. Our basic position as a starting point, on all these occasions, is that we like to have the landowner in agreement that someone is working on his land. History can prove, in this case, that I only know of one farmer who has had some concerns. In the main, farmers understand full well the issue of damage the fox can cause and therefore are happy to make the land available. But in terms of whether there should be compulsory ability, that I would have to take on notice because, as I said, as an opening position, we do not like anyone telling people who can come onto their land and who cannot. We would hope that it would never come to that and I do not think it will because the level of cooperation we have experienced to date.

**Mr DEAN** - It would seem that with the money that has been spent on the program, there ought to be easy access to properties for the purpose of baiting?

**Mr OLDFIELD** - I am not aware, perhaps with one possible exception, of anyone who has not had access because I think the understanding is the devastation that foxes cause.

**Mr HIDDING** - On the question of access. We have, in various submissions and discussions with people, had the view expressed that the farming community has been, in some circumstances, less than useful and, in fact, there appears to be proof that the fox that was found on the Glen Esk Road, was in fact killed by a large truck tyre and large trucks do not go on the Glen Esk Road. So, it was more than likely a highway event and that somebody then rang up - it was a secret caller - who said, 'It was hit on the highway, outside such and such a property, but he did not want people all over his property so he picked up the carcass and transferred it to the Glen Esk Road.' Subsequent pathology suggests that that is probably about right - other than the motivation of the farmer that did that. That suggests that there is a degree of unhelpful interaction between farmers and the Fox Task Force.

**Mr OLDFIELD** - With fairness, that indicates one example. I do not think that endemic across the farming community.

**Mr HIDDING** - If it was endemic, that would be an unhelpful situation between farmers and the Fox Task Force. I wonder, has your organisation considered in its publications to farmers, bringing the Fox Task Force and the farmers closer together so that they understand what each other is up to and what they need to do? Has there been any of that interaction?

**Mr OLDFIELD** - Yes there has, at two major levels. Certainly to board level: in my time at the TFGA, we have had the Fox Task Force coming to the board twice, and there has also been more regular interaction with our Game Management Committee. Our Game Management Committee is fairly actively involved in fox control and State members of the department have also attended those committees on a fairly regular basis. That game committee reports to the TFGA board but it does represent a range of issues relating to feral animal control, so I can only really talk on behalf of TFGA members and, as I said, I am not aware of anyone coming to me complaining about the behaviour of the Fox Task Force.

I think there was one issue, as I said, and that was more to do with technique as opposed to availability. In the broader farming community, again I am not aware of any concerns, but I am not saying there is not. Certainly with TFGA members we represent 3 000 landowners in the State, I would be surprised if there is any objection to the activities of the Fox Task Force.

**Mr HIDDING** - When you say 3 000 landowners, you are the most significant stakeholder for the Fox Task Force. We are operating in an environment of hoaxing. People are playing up and somebody the other day called it 'tomfoolery'. It is damned expensive tomfoolery and could actually result in our not actually finding foxes when we should be finding them. The 3 000 property owners, because of what they are, would not participate in the tomfoolery but it would be handy if they were actually, in their own environments, being very positive about the Fox Task Force and saying, 'This is bloody serious. This is going to cost us, as a community, a fortune just in land production, let alone the biomass of Tasmania'. Once they start talking like that perhaps then farm workers and what have you would not be as likely to participate in tomfoolery.

**Mr OLDFIELD** - We were encouraged by the department a few weeks ago to make some public statements. Whilst we have had the Fox Task Force coming to see the board and our Game Management Committee, they do keep in touch with me on regular basis. A few weeks ago, because of the influence we have, we were asked to make some public statements, which we did. We received a couple of letters from people saying, 'Rubbish, there are no foxes in Tasmania. What are you guys doing?', but in the main it was the reverse, particularly from people who actually work on the task force in the field saying, 'It's nice to see somebody coming out and supporting us'. We have had that at ministerial adviser level down to field officer level. I do not think they really have received a lot of credit for what they have done. We do want to be seen to be supporting them so we would actively encourage our members to support them. I would be disappointed if someone was not.

**Mrs BUTLER** - Chris, my understanding of the situation with the officers is that they are able to apply for those jobs, that they are a third stage. There are two other priorities and then they can.

**Mr OLDFIELD** - If the vacancies still exist and if they are still looking for work.

**Mr BUTLER** - I spoke to the minister about it on behalf of -

**Mr OLDFIELD** - It has to go through that combined department first and they said they are going to speed that up. They reckon they could do that within 10 days - good luck - and

then the second round into the broader public service would be another 10 days, so it could be 20 or 30 days before those positions are readvertised again. I guess it really depends on whether those people were still available.

**Mrs BUTLER** - And there is still Commonwealth funding up in the air.

**Mr OLDFIELD** - Yes, there is and I understand that fully as well. We understand that we work in a world of financial constraint. I understand that the Government has to go through these processes but on this occasion, though, I just do not think this is the best outcome if we are really trying to control foxes.

**Mrs BUTLER** - No, because of that corporate knowledge that is there.

**Mr OLDFIELD** - Yes, correct, and the people I have spoken to who are directly involved share pretty much the same view, even those senior bureaucrats who really have their hands tied as well. This is not an ideal outcome.

**Mrs BUTLER** - I take your point.

**Mr HIDDING** - On that matter, what are you basing your 15 on? I had someone from the inside suggest that they have managed to talk to their colleagues around the State and it would appear that of the 44 current employees of the task force, some 30 are contracted to finish over the next few months. They have all been advised so, this could be 30 out of 44.

**Mr OLDFIELD** - My understanding is that there are various trigger points for people on short-term contracts where statutorily they have to be advised. The first 15 have been in that process so they finish on 30 June. You are quite right; I do not know what the other termination dates are but the documentation provided to us shows that the first 15 have, so you are quite right.

**Mrs BUTLER** - That is my understanding, too. What sort of communication strategy would you envisage? Do you have some ideas about that or is the TFGA is working on that?

**Mr OLDFIELD** - I have and I start with the logic of it. You either have to accept there is an organised conspiracy or that there are foxes: to me that is quite a compelling argument. I have not seen that argument run publicly. It has to be one or the other. The incidence of scats and the way they have been initially discovered and then identified, if that is part of the conspiracy then it is a pretty organised conspiracy and that is just hard to believe, quite frankly. When you start to explain that logic you start to win over people who were doubtful, because how do you explain it? I would like to see that message put a little bit more strongly, not just talking about the fact that we have found scats or whatever but making people think that there are one or two things going on here.

**Mrs BUTLER** - Get more conversations on country radio stations?

**Mr OLDFIELD** - Get the message right first of all and then get that message out there - 'I will let you draw your own conclusion, but here is some evidence'. That is either, to put it bluntly, planted evidence or there are foxes. Then let people decide themselves. If you put it that way, it clicks with people.

**CHAIR** - There is one other aspect as well, which I think is a ridiculous aspect. It is, one, as you say, planted evidence or, two, there is a conspiracy which ranges not only from people who make the allegations that there are foxes but also right through the department and also right through their scientific investigations. That is the other conclusion, which is pretty well hard to believe.

**Mr DEAN** - Do you see it as interesting, though - and I am not saying whether it is true; I do not know - that that is happening and scat finds are occurring but there is no other evidence at all to identify that there are foxes in those areas? In other words, the farmers are not seeing them. The farmers are not shooting them. Nobody is shooting them and nobody is photographing them and nobody is providing any other tangible evidence. Do you see that as an issue?

**Mr OLDFIELD** - I find that interesting. It was something that I did not understand because, like you, I expected that they would have found more hard evidence. When members of the task force came and saw the TFGA board initially, they started to explain the level of density you need of foxes in a population before you start to see them, based on their evidence elsewhere in the country. The bottom line is that once you start to observe them and see them, then they have become an established population. I have forgotten the density figures, but if we think there are about eight foxes in the State now, the expectation would be that you would never see them. When you do start to see them they are at a density where you are no longer in eradication mode. They explained to us what those numbers were and how many foxes per square kilometre you need before you would see them. This is only my memory but I think at the moment they are saying one every 400 square kilometres, and evidence on the mainland suggests it is one every 80 or 40 square kilometres before you see them. Again, I tend to take that from those experts as genuine. I cannot argue against that. That makes sense to me now - the reason you cannot see them is that there are not many of them at the moment.

**CHAIR** - Is there any evidence at all, Chris, of killings which they state have been caused by foxes - chickens or sheep or lambs?

**Mr OLDFIELD** - Not that I am aware of.

**Mrs BUTLER** - There are plenty of other things for them to eat.

**Mr DEAN** - There are no reports of lamb kills in mass numbers?

**Mr OLDFIELD** - There are for dogs but not for foxes. If you take the argument that there may be eight or 10 in the State, then you really would not expect that anyway.

**Mr DEAN** - Is that what they are telling you, there are eight or 10 in the State?

**Mr OLDFIELD** - Some of the evidence I have read identified eight at the moment, I believe. I do not know how many there are. On the DNA analysis they have done through the University of Western Australia, the latest is that they can identify eight foxes.

**Ms FORREST** - Some males and some females, so the risk of breeding is there if they get together?

**Mr OLDFIELD** - Correct. How many there are I do not know, but I think there is evidence, if I remember correctly, of about eight so far. There could be a lot more.

**Mr DEAN** - While it might not be a critical issue for the farmers, we know that there are feral cats out there, causing horrendous problems with native wildlife et cetera. Do you believe that there is a case or an argument for the Fox Eradication Branch to use that also as a part of their program moving forward?

**Mr OLDFIELD** - My personal belief on that is yes, but I don't know enough about fox management to understand whether that would impinge upon the role of the Fox Task Force. To me, that would make logical sense; if you could also help eradicate another feral species in the process that would make sense and I believe would have support. I don't know about the technical activities of the Fox Task Force to see whether that would impinge upon their broader job, but to me that would make sense.

**Mr DEAN** - Is the feral cat problem a problem to the farmer as well?

**Mr OLDFIELD** - It can be. Toxoplasmosis is the major issue.

**Mr DEAN** - And that obviously can be passed onto other animals?

**Mr OLDFIELD** - I think it can be passed on to lambs. In terms of damage to native wildlife - and whilst we represent farmers we also represent Tasmanians - I think most people would support the eradication of feral cats. You don't find many feral cat supporters out there.

**CHAIR** - They are bigger than the normal house cat.

**Mr OLDFIELD** - Yes, they are, and they are fairly devastating. Again, mainland evidence would suggest that they have had quite an impact, particularly where they compete actively against -

**CHAIR** - Chris, you are saying that if there is a possibility that you can do the two things at the one time then it would be good for the fox eradication task force to also spread their wings and encompass the feral cat problem.

**Mr OLDFIELD** - That is very much a personal view. The caveat on that is that their prime role is to eradicate foxes. If they can eradicate something else in the process that doesn't affect their prime role, to me that would be a sensible use of what are limited resources.

**CHAIR** - Chris, it seems to me that we're at a situation where there is evidence, as you say, that foxes are, or have been, in Tasmania. There is evidence to say there are between five and eight presently. As I understand, summarising your evidence, because of the limited amount here you don't expect to see them because, based on evidence that you have from interstate, there have to be a number of foxes before you start to see them. If you start to see them, then it means they are here and have got a hold and you can't do eradication. It is more a containment?

**Mr OLDFIELD** - Correct.

**CHAIR** - So your argument would be that eradication by the task force should continue and they should be funded to the same extent that they have been in the past, or should they be funded to a greater extent?

**Mr OLDFIELD** - That is where it is very difficult for us to know because we're not experts in feral animal population control, but we know people who are. Having established the first premise that they exist, we need to rely on somebody telling us that the current expenditure and methods are correct, because we are not experts in feral animal control. We do know they exist but whether you need the funding you have now, half that or double that, really does require some expert advice. It's very hard to know what you need to do when you're not an expert in this area.

**Ms FORREST** - Do you think that there is enough resourcing put into the potential entry points, such as Burnie wharf where we have seen irrefutable evidence that a fox got off a boat? There is always going to be that risk while there is still a fox population at Webb Dock. Do you think enough is done? Do you think more money should be spent in that area?

**Mr OLDFIELD** - I don't know how much is spent there at the moment. You are quite right that point of entry is absolutely critical. There are issues relating to quarantine into this State that I don't fully understand. That doesn't mean they are wrong, but I don't fully understand them. I don't understand, for example, the way we vet vehicles coming on and off the ferry. To me that seems an unusual method.

**Ms FORREST** - Off the *Spirit*? Vehicles come on Brambles boats as well.

**Mr OLDFIELD** - Yes, but then I also see golfers arriving at Launceston Airport having their golf shoes scrubbed by the quarantine officer, so we tend to take a lot of effort in cleaning up golf shoes but we do not seem to worry about some other matters. I cannot really comment on quarantine matters except that point of entry is absolutely critical. Coming off the ferry is an interesting issue and, as you say, there are other vessels that come here regularly. I have some views on quarantine on the ferry that I would be happy to share with you.

**Ms FORREST** - More broad issues, I would imagine.

**Mr OLDFIELD** - More broad issues also linked to tourism. It is kind of strange how that happens at the moment. Your first entry point into Tasmania can mean sitting in the car park at Devonport for an hour. That is not the way to start somebody on a holiday experience of Tasmania and there are better ways to do that. I would be happy to expand on that some time in the future.

**Mr HIDDING** - Do it while they are on the boat.

**Mr OLDFIELD** - Before they get on the boat. Get them fit for quarantine checks in Melbourne as they are boarding the boat.

**Mr HIDDING** - So they feel really bad about Melbourne and really good about Tasmania.



**Mr OLDFIELD** - No, because you wait in a queue at Melbourne anyway.

**Ms FORREST** - That is right and you have to have your car on the boat sometime before the boat is due to leave.

**Mr OLDFIELD** - You have the vehicle checked in Melbourne. The vegetables and food on board the boat should be basically Tasmanian, so that is not an issue. You lift the on-the-spot fines getting off the ferry to something into the thousands, not the hundreds. We would then give people a much better initial experience in Tasmania in terms of tourism, because at the moment if you have ever been stuck in that queue getting off the boat you will know that that is not the way to start a holiday in Tasmania.

**Mr DEAN** - You are saying the TFGA are not able to determine the effectiveness of the program and there should be better communication. At one stage, I think it was two years or 18 months or so ago, we were told that there were probably up to 300-odd foxes in this State. Have there been discussions between the TFGA and the Fox Eradication Program in relation to exactly what they are doing, how they are doing it, how the program runs, where they are and the areas they are in? Have they had that communication with you with a view to getting you on side?

**Mr OLDFIELD** - Absolutely. They have done three things. They have given a presentation to our board, to our Game Management Committee and to me personally. I tend to believe experts in this field but whether my faith is well placed or not, I do not know because I am not an expert. From what I have seen, they appear to be extremely professional. How that measures up on a benchmark worldwide on feral population controls, I do not know, and I think that is really for someone else to comment. Certainly the information they bring to us seems thorough. It appears to us that they are doing a very detailed job and they understand what they are doing, but it is really difficult for us to make a judgment on that when you are not an expert in that field. Certainly they are very open with us in what they have been doing. There is regular communication and we are happy with that but whether that is world's best practise - and we have not gone out and benchmarked it - I just do not know.

**Mr DEAN** - So you have not consulted with your mainland equivalent organisation, say in Victoria?

**Mr OLDFIELD** - Only what we have read. Do not forget, Victoria and whatever is different because you are not into an eradication program.

**Mr DEAN** - True.

**Mr OLDFIELD** - There must be third-party experts who can talk about the effectiveness and design of programs better than us. We believe there are foxes and there needs to be sufficient funding determined by that process to control them.

**CHAIR** - Chris, thanks for coming along.

**THE WITNESS WITHDREW.**

**Mr KIM EVANS, Mr ALAN JOHNSTON, Mr NICK MOONEY AND Mr JOHN WHITTINGTON**, DEPARTMENT OF PRIMARY INDUSTRIES AND WATER WERE CALLED, MADE THE STATUTORY DECLARATION AND WERE EXAMINED.

**CHAIR** (Mr Wilkinson) - Thank you very much, gentlemen, for giving your time today. We have just spoken, as you know, with Chris Oldfield from the TFGA who gave us some good evidence. I know there are a couple of questions that members want to ask in relation to your evidence previously. Would you like to expand on your evidence?

**Mr EVANS** - We have a couple of documents that we wanted to table further to our evidence on the last occasion. I would like Alan to explain what those pieces of evidence relate to.

**Mr JOHNSTON** - As you are aware, the last time there was quite a bit of discussion about the Glen Esk fox, or the Cleveland fox or the Conara fox - it goes by all those names. We are taking the opportunity to provide you with a couple of documents that have been sitting on our web site for quite some time. The first one is headed 'Comments on a time line - Glen Esk Fox Incident, August 2006'. Quite a lot of people examined that fox carcass. One of the people we got to do it was Dr Tony Ross, who is a consultant veterinary pathologist and highly thought of in his field. He examined all the evidence and the reports that had been done up to that time and produced this report. The key bits of the report are that he concluded that the most likely thing was that the fox had been killed between 12 and 24 hours prior to the laboratory work. He disagreed with the suggestion that it had been dead for three to four days. He also made the comment that he believed the government staff had done an excellent job in collecting and interpreting an extensive amount of information in the field and the laboratory. The other document, with some photos, is the report that is on our web site of the time line of the whole incident, which Nick wrote about on 13 February 2007. It gives the complete story of what took place.

**CHAIR** - Alan, there was an interesting point brought up by Chris when he was saying that people have said to him that farmers are the ones at greatest risk here and they have to start speaking out and letting people know what their fears are and whether they believe the department is doing good work. They are more than satisfied, it would seem, that the department is doing good work and keeping them up to date with everything they are doing. As a result of what has been in the press from time to time and the conspiracy arguments, what effect does that have on the department? How does it affect the work you do?

**Mr JOHNSTON** - Thanks for asking the question because I think it's a really important issue. It affects us in a number of different ways. I have been in this program for roughly two-and-a-half years and I came from no involvement in it. I guess in the early days it was relatively easy for me to ride with all the criticism and acknowledge that that is what happens, but I quickly became aware that the impact on staff who had been there for a while was pretty dramatic. To pick up the newspaper and see criticism suggesting they were involved in fraud and so forth had quite an emotional impact on them. A couple of years later I find myself getting into that field a bit and find that it does become pretty draining to have to bear that.

The other aspect, of course, is what impact it is having on our ability to successfully do the job. If we go to Agfest or any of the shows, you can be sure that several times a day someone will come up to you and say, 'I saw a fox on such and such a day.' You will say, 'Did you report it?' 'No, I did not want to be subject to the criticism and abuse I have seen in the newspapers.'

So, without any proof of it, I guess we get a feeling that it does have that negative impact on the community in terms of reporting things to us and, of course, any evidence or any information that does not come through to us impacts on our ability to do the job.

**CHAIR** - There was also some comment about feral cats and I did mention how big those feral cats are growing. Ivan was saying that he saw one a couple of days ago and his wife thought it was a fox. Are feral cats getting to that size now where they could be mistaken for foxes?

**Mr MOONEY** - They could always be because not all foxes are big. A fox pup is only a little thing like this. So there is certainly an overlap and, in fact, oddly enough, the average cat is only a bit lighter than the average fox. The average cat is about 3.5 kilos and the average fox of South Eastern Australia is only a bit over 4 kilos. They are a much bigger, lankier animal and a cat is very compact. So, yes, it is a fair mistake and most of us have had those heart-stopping moments over the years. The cats are literally everywhere, so you can never presume it is not a cat.

**CHAIR** - In relation to the fox eradication process that is going on at the moment, can the wings be spread a bit and encompass feral cats as well? If so, is that going to affect the work you do with the eradication of foxes?

**Mr MOONEY** - Yes, I have had to deal with this and I think it is chalk and cheese. This might sound like an odd claim, but we do not know that cats have exterminated anything in southern Australia. Their impact is on much smaller animals which tend to be much more abundant, whereas, the fox is known to be a key driver in the extinction of a whole list of small- to medium-sized marsupials on the mainland. So, somewhat chalk and cheese, although the equation is changing now with the demise of devils, which complicates matters.

We have the devils going down - this beautiful graph - and the cats creeping up in a beautiful inverse relationship and you do not see those coincidences very often in nature. It is probable that the devils were suppressing cats. So, although cats may not have had a dramatic impact from a wildlife conservation point of view, that may change if they double or triple in number or whatever happens. So, a proper control program and getting rid of cats would be as hard as getting rid of foxes from mainland Australia. I would say with great confidence that it would be impossible to eradicate cats from anything but very small areas. We have done so on a few islands. Many other people have done it on islands. But by shifting emphasis, you would simply burn yourself out on cats with no appreciable impact. As soon as you stopped doing whatever you were doing, those areas would be reinvaded from adjacent areas. It is just like the foxes on the mainland with their control program. All that furore years ago with the fox bounty paid on the mainland came to absolutely nothing, simply because of reinvasion. The techniques you are using are fundamentally different. Occasionally cats will take baits and we have killed cats. In fact, the only wild animals we know we have killed for sure are cats.

Sometimes you get cats eating a lot of carrion, even they can find a bait if they are desperate, so to speak.

So, if you are serious about cat control, it is a different technique. There would be a lot more trapping and shooting and a different type of poisoning operation. They are experimenting with a new toxin and a new baiting operation but they are doing it from the air. It is something we just cannot do here and one of the main problems with aerial baiting here is that, because of the small property sizes, we can easily have permission to bait here but not here and with a bait that is lying on the surface, a raider can move it to the neighbour's place where we have no permission to be, kill a dog and then we have to deal with that.

Personally, when I was trying to drive any of this policy, I would say, we have to get this fox thing sorted out quickly while we can eradicate them. If we cannot eradicate them and things get out of hand, we will have to switch to a control method where you reduce particular impacts. That well might have to happen with cats in some form or another. There are people experimenting with it and often people who own lots of land are doing it themselves but there are also community projects doing it, but the reality of those is that as soon as you walk away the cats just reform themselves. It cannot be done lightly and we have to know the impacts really. In many rural areas they are eating lots of rabbits, in fact, they were released in Tasmania deliberately to control rabbits in the rabbit years so in a way the farmers are winding back what was done as a good idea at the time many years ago.

I think it would compromise the fox thing completely by diverting. We did a bit of that in the early days simply to try to remove cats as a noise, as a complication, but it was distracting and you actually teach animals not to look at spotlights because of the bang and the fright and you do not want to educate animals. Professional pest controllers say that you do not do that, you keep your eye on the ball.

In these decisions, we have our own knowledge and my expertise is not actually in foxes but in trying to interpret the complications of wildlife here. We do get a lot of advice and we get a lot of very professional advice from the mainland and that is why we have our technical advisory panel. To a measure, we apply their advice through a filter of what we know of local conditions. It is complicated, but these things are always complicated.

**CHAIR** - It would seem that you are saying while we are looking at eradication of foxes we cannot be doing the two things at the one time in our division.

**Mr MOONEY** - Basically with the eradication but we are actually collecting an awful lot of information on cats as we are doing it. It assists the systematic survey of carnivore scats - and what we are doing is completely unprecedented in the world. If we get some money to look at cats on another program we can review all of that information to see which are cat scats and then work out a bit more about impacts. The farmers have a particular worry with cats because of the disease that they carry - toxic plasmosis - which can cause miscarriages in stock and arguably in people, so cats have another layer of problem with animal health. It is a serious problem and it is a problem for wildlife, too, but it is just degrees of problem here.

**CHAIR** - What I will ask you at the end is if you were sitting in our position what recommendations would you make? I will let you think on that while I open up the questions. I know Ruth had some questions.

**Ms FORREST** - I want to go back to the female fox that was in Burnie. It had ovulated but had not had any cubs. Was there an assessment done of the stomach contents of that particular fox?

**Mr MOONEY** - Yes, there was. There was very little in it and in fact just a bit of fur and some toenails in the intestine, from memory. I have the pathology report, which is not light reading.

**Ms FORREST** - In that case, the -

**Mr MOONEY** - Excuse me, I will finish.

**CHAIR** - Do you wish to table that?

**Mr MOONEY** - It can be tabled. I just brought it along for my own reference, but it is on file and there is nothing confidential about it. It was a species of rat - a hydromys - a water rat which is found in Victoria, found here and all along the coast of southern Australia.

**Ms FORREST** - It is found in Burnie?

**Mr MOONEY** - Yes, it is very common around all the coastline of south-eastern Australia so that did not tell us anything.

**Ms FORREST** - If this was a fox that had been obviously living in Burnie on its own for some time hence not breeding, would you not expect there to be more in its stomach than that?

**Mr MOONEY** - Foxes have a very high metabolism. They have a small stomach so they have to eat often. They are a very wired animal and they can only eat 300, 400 or 500 grams at a gorge, which is not much, and they are probably eating that amount several times a day. Yes, you would perhaps expect more but I have learnt to temper my expectations because sometimes we post-mortem a Tasmanian Devil and it is completely empty or an eagle or something like that. Animals are not eating all the time and, for all we know, that fox just had not eaten for a few hours. That high metabolism and small amounts of eating just mean they turn over a lot of food.

**Ms FORREST** - Okay. I am just trying to quickly scan the findings in this. The findings say that the cranial bones had multiple fractures with great displacement and there was no structural brain present within the cranium. It has been alleged that this fox was probably in a container and hit over the head to kill it. I haven't had a chance to read the whole -

**Mr MOONEY** - It's possible. I think we have had that report on the web site that someone came up and hissed in our ear, as people often do, that the fox was killed on the boat and dumped on the road because they didn't want us interfering with the shipping, as

happened in 1998 when we wanted to search the ship. But, as usual, the person wouldn't give their name and that is all we were left with.

**Ms FORREST** - It had other injuries to its legs, left hip, the skin of its neck, jaw, abdominal wounds and intercostal muscles on its chest. If it was just hit over the head with a blunt instrument you would expect it to have just head injuries, but this fox appeared to have other injuries.

**Mr MOONEY** - That list is typical of road kill. It was in the gutter. A cyclist reported it to the police and the policeman who went to pick it up unfortunately didn't photograph it. He just picked it up and stuck it in a box, so we lost that opportunity.

**Ms FORREST** - I know the guy who found it, but he didn't photograph it either. He probably didn't have a phone with him.

**Mr MOONEY** - No. The person dealing with that was Chris Emms - I didn't deal with it.

**Ms FORREST** - When was that fox killed?

**Mr MOONEY** - It was very early October. It should have had pups but it might have been pregnant; either way it should have been pretty obvious. When I am confronted with a pathology report like that often there are parts of it I don't understand so I just ask a vet what it means. So my interpretation has come from that.

It could be the case that that animal was caught on the ship and brained, but it doesn't seem like it. All the pieces we have in front of us say that it was run over on the roadside.

**Ms FORREST** - With the other carcasses that you have, there has generally been more in their stomachs when they've been examined?

**Mr MOONEY** - No, it is somewhat consistent with the scats. Often you have a scat that has one or two items in it - rabbit, lizard tail or whatever it may be. The fox that was reportedly shot at Symmons Plains in 2001 is the most substantial piece of evidence we have because that had an endemic species in it - a long-tailed mouse, which is found only in Tasmania. That lifts that piece of evidence right up. There has been lots of scuttlebutt about that but it still stands. The person, with his companion, who claimed to have shot it still sticks with story and there are no dents in it.

**Ms FORREST** - Was there much in that fox's stomach?

**Mr MOONEY** - There was a foot of a bird, some berries and that sort of thing. The fox from Cleveland just had rabbit in it and the one from Lillico was just mashed into the road, so who knows. There were bits of penguin feather there, but it might have been under it.

**Mr JOHNSTON** - We can provide various reports on all of this if you want the real detail behind some of these questions.

**Mr MOONEY** - There is a very interesting claim about the fox at Lillico that is relevant to one of your questions about breeding and establishment. I was saying it was a young fox and it should have been a mother and all the rest of it. We did receive a claim from a person - and I do not want to give his name in public. I do not know what my rights are there because he did not come forward because he did not want to be part of the controversy and media scuttlebutt. But he has given us his name and one of our people has interviewed him.

**Ms FORREST** - We should have received this in camera because it has his name on it.

**Mr MOONEY** - Yes, I know. That is why I did not say it.

**CHAIR** - That is good, thanks. We will receive this document in camera because of the name. The evidence is fine because you did not say his name.

**Mr MOONEY** - This gentleman claimed to have been shooting rabbits nearby and he is known for being a rabbit shooter in that area. He said he saw two fox pups and shot one of them. Anyway, that is his claim. I came across this years later via someone who knows him. Oddly enough, the gentleman did report seeing two foxes at the time but he did not say any more, simply because he said he did not want to be part of any furore. The story goes that he moved the fox down where it would be found.

**Ms FORREST** - For that same reason, that he did not want to be identified?

**Mr MOONEY** - Yes, to me that is the biggest problem. Public derision makes people keep their heads down. We Tasmanians are fairly conservative, so people usually do not want to get up and be chipped at in public, so we end up with a lot of anonymous reports. Often we know the person but they insist on public anonymity and that itself at times feeds scuttlebutt because you end up in this loop. We are just stuck with that.

**Ms FORREST** - If you shot a fox - and I am not sure what kind of gun a person would use - would you expect to see fragments, even it was not a whole carcass? This was the one that was all mashed into road, wasn't it?

**Mr MOONEY** - Yes, most of the fox was there. I have looked at an awful lot of animals that have been shot, X-rayed and whatever and sometimes with a small animal the bullet goes straight through it and there is no evidence whatsoever, particularly small animals that have soft bones. As I say, a rifle bullet can go clean through without any evidence at all. That is quite common in birds because they are so fragile. But if you are lucky you get a chip of something or, if it was a shotgun at a useful range, you will get lead shotting. I would expect 50 or 60 per cent of the time to find lead in something like that. I did not interview the chap and on the report the type of firearm is not mentioned. Obviously we can re-interview him and do that. Essentially it is inconclusive. What do you do if someone like that makes this claim and sticks to their story? It is not that easy to unravel.

Most of the stories have an adjunct chapter which is not always convenient for us. We would prefer that all those bits were added in to settle the issue either way because these unresolved issues, if you want to call them that, go on and on. These are photos that

someone claimed and still claims to have taken at Wynyard back in 2001. They have been in the press -

**Mr HIDDING** - How would you know?

**Mr MOONEY** - Yes. It is certainly a fox but how would you know whether that is in Tasmania. They refuse to tell us where it is because they were having a dispute with a senior manager in the past and did not want that senior manager to get any kudos for finding it. So life gets very complicated for us as well. It is not just our trying to interpret this, I can assure you.

**Mr HIDDING** - Tomfoolery has many forms.

**Mr MOONEY** - So we just call that 'unresolved'.

**CHAIR** - But your job is fox eradication. You get this evidence. If your job is to eradicate foxes then you have to act on the evidence, otherwise you would not be doing your job?

**MR JOHNSTON** - In the absence of anything more definitive we take the evidence on face value and respond accordingly.

**CHAIR** - If you did not, you would be classed as being negligent in your duty, I would imagine.

**Mr HIDDING** - I want to explore what your duty is. We call it a fox eradication program, but there are a number of stages, a bit like people dealing with the swine flu now. You go from this stage to this stage to this stage, much like the Tasmanian devils. We got a briefing on Tasmanian devils recently, which tells us we are in this phase and this phase and then we will go to that phase. You people appear to be in a multilevel phase. You are still trying to identify the number of hits around the place. When I look at the map it certainly shows that you have a fair bit to work with - a lot of blue dots are there. The other thing that you people appear to be finding is this feeling in the community that you are an idiot if you report a fox and you will get into all sorts of problems in the pub or whatever if, having run over a fox you are not seen to be definitely holding it by the tail and calling the police and saying, 'Look what I've run over'. Anything other than that appears to be treated with great scepticism.

What would it prove if we were to have, say, 10 bait traps? In some of the material I read they were doing tests in New South Wales with the sand traps and every afternoon they rake out and smooth out the sand and put in a fresh bait. They go back and assess what took the bait from the footprints. If we had 10 of those in hot spots around Tasmania, how long would they have to be there before we actually saw a fox at one of them or is it possible that we would never see a fox?

**Mr JOHNSTON** - We probably do not want to overplay this issue of community support. We get fantastic community support, both in terms of landowner access and also in terms of information to us. While we talk a bit about this other stuff that is going on I do not want to overplay it and paint a picture that the community is actually not onside. We actually believe that we have made giant strides in terms of community support.



**Mr HIDDING** - But we have members of parliament who doubt whether -

**Mr JOHNSTON** - I am not suggesting that we have total support but we believe we have made very significant strides forward.

**Mr HIDDING** - What about a photograph on the front page of the three newspapers that said, 'A trip wire set an infrared camera off, which proves there is a fox in Tasmania at this point'?

**Mr MOONEY** - I would suggest there would be a lot of people saying, 'Prove that photo was taken in Tasmania'. I have also picked up evidence that a lot of people do not believe me so once we enter that general community sceptical phase -

**Mr HIDDING** - Do you reckon they would not fix it? What would that tell you?

**Mr MOONEY** - It would tell us much of what we know. We have a couple of apparent road kills, depending on your point of view - males and females - so getting some technology that gives us male and female scats, for instance, is not news to me. I am pretty sure that we have had male and female foxes here for a long time but it is a confirmation of a new technology, if you like, and independent of us, so in my opinion it is irrelevant. It is actually just a measurement.

What you are talking about with cameras, we have that and a lot more in the landscape. What many people have not realised, and most Tasmanians do not, is that we are actually trying to get rid of an animal that is rare. It would be a critically endangered species if it were a native animal. There is an extraordinary lack of experience in trying to deal with that and what we are doing has not been done anywhere in the world. The largest areas that foxes have been exterminated from are a couple of hundred square kilometres. These are islands that have radically severe winters so all the animals are forced to live on the water's edge in winter so it is actually easy to get at them. That is why we are flying blind and a bit clumsy sometimes because we're trying to do really new stuff. A key part of that is working out what we call 'detection probabilities'. If there is a fox scat out in the landscape or a fox to be photographed, how much effort do you have to put in to find that? If you put in 1 000 hours do you get a 50 per cent chance or whatever? That is really important because it lets us decide how much effort to put into an area to get a set result - a surety. With the cameras it is not known but we have done some work. We got a masters student in New South Wales in Governor Arthur's old property - Arthursleigh - and we created what we call a 'virtual rarity'. We caught a few foxes, put tags and whistles and bells on them and then saw what effort had to go into finding those foxes. It was an extraordinary exercise because they weren't rare.

**Mr HIDDING** - When was this?

**Mr MOONEY** - Four years ago.

**Mr JOHNSTON** - It's documented in the submission.

**Mr MOONEY** - We had four or five foxes with radio collars on and all these bells and whistles. We went spotlighting and put cameras out. You could go out every night and find the foxes with the radio tracker but we never saw them when spotlighting. The only

clear sighting by a person was a fellow who was building fence and one walked past him - just as we would get a sighting report. And they weren't even rare - five foxes marked in amongst dozens of foxes over about 10 square kilometres. We realised that we have to have many more cameras to be sure of getting results. We hope to undertake some work on Phillip Island where we know how many foxes there are, how big the place is and then mark a couple of foxes to try to refine that. Most of the research is done where you can find lots of foxes, simply because people want lots of results for their work. This work on a very rare animal is very difficult. We can't say we have to put 100 cameras out there for four weeks to have a 90 per cent chance of photographing a fox if there are 10 foxes there.

**Ms FORREST** - Is that then potentially a waste of money because capturing them in a photo might help to prove them or otherwise but at the end of the day it doesn't do anything towards eradication, except to get people to accept that maybe there are foxes here. How else could the money be spent?

**Mr MOONEY** - That is an extremely good point. It does tell us that a fox was there at that time on that day, whereas a scat could have been there for three months.

**Mr WHITTINGTON** - It is probably useful coming back to the start of your question about what the fox program is, what its shape is and what it does. I believe we gave you a copy of our project business plan. That outlines the shape of the program and how we are allocating funding to the various components. The major outputs from the program are the eradication operation, essentially the baiting program, and that is where the lion's share of our funding is directed. We have a significant investigation and monitoring program which includes responding to individual sightings we get from the public and others, plus also the strategic monitoring program. We have a small research and development part of the program, which is looking at improved ways of eradication, and also having better understanding of the species that will be affected by foxes should they establish. There is a significant community engagement program and that works with individual stakeholders such as the TFGA and others, but also more broadly to the community through shows and the like. We have a link into our biosecurity division in the agency for a biosecurity component to the program. Clearly a program of this size needs to be project managed and that is where Alan comes in. That is the shape of the program and the project plan shows you how we have allocated resources against those activities.

**Mr HIDDING** - I have a question of the secretary because this gets into policy. Due to the changes in the administrative arrangements by this Government, inherited agencies are now underneath your purview.

**Mr EVANS** - From 1 July.

**Mr HIDDING** - But at this point you appear to be making management decisions based on the fact that that is happening, I would have thought. I understand that there are some 44 people employed in the operation and that these include expert dog handlers, expert marksmen and people who have bush skills and hunting skills. They have developed good skills with public information - as you say, the community integration stuff - and up to 30 of them are contracted. Could you tell this committee, particularly given the evidence we have just received that experience and qualification form a very important

part of the whole task, how many of these 30 contracted people have been advised that their contracts are coming to an end and that they are no longer required?

**Mr EVANS** - Thank you for the question and I had anticipated that given some of the public comment about this -

**Mr HIDDING** - I would be disappointed if you did not.

**Mr EVANS** - I would like to walk you right through exactly what the staffing situation is, if I can. First, a comment about the amalgamation of DPIW and DEPHA. That takes effect from 1 July but obviously there is planning under way as to how we will set up the new agency post 1 July and the current secretary of the DEPHA, Scott Gadd, and I, meet regularly and we are planning the transition, particularly as it relates to corporate services staff.

Specifically, on the question of fox staffing, as of yesterday, 1 June, the Fox Eradication Branch has a total of 60 staff, 17 of those are permanent staff and 43 are what we call 'fixed term' staff.

**Mr HIDDING** - What does that mean 'fixed term' - contract?

**Mr EVANS** - Essentially, yes. Fifteen of those fixed-term staff are coming to the end of their contracts in June and July, not 20 as has been discussed in the media. They were employed as part of an intake of field staff in June 2007 on two-year contracts. The use of two-year contracts at that time was chosen because there was some uncertainty about the ongoing nature of Australian government funding and, secondly, because as the program was still being developed we needed the flexibility to adjust the staff mix over time as we got more information about the fox issue and how best to respond. Therefore it made sense to put a certain proportion of our staff on fixed-term contracts and that was consistent with the two-year project plan that was developed at the time.

The project plan had a review scheduled for the first half of 2009, which is now under way, and it was always envisaged that the review would assist in forming what future staffing skills mix we needed. The 15 staff that are completing their two-year contracts comprise 12 field officers, two technical officers and one hunter liaison officer. Their key roles are as follows: the field officers undertake field activities associated with baiting and monitoring; the technical officers are involved in planning and coordination of statewide scat surveys; and the hunter liaison officer leases with the hunting community, rural landowners, et cetera.

I have to say that under that current State Service rules, established through the local Public Sector Management Office and the commissioner, we are not allowed to extend fixed-term employees beyond two years without some sort of new recruitment process. So we are at that point where their contracts are coming to an end, and we have to embark on a new recruitment process and that recruitment process is now under way for the vacant field officers and technical officer positions.

**Ms FORREST** - Can they reapply for those positions?

**Mr EVANS** - I will come onto that, if I can. Because of the current circumstances - and this does not relate specifically to the amalgamation of the two agencies, but just because of the broader budgetary circumstances that we find ourselves in - in the first instance we have decided to provide an opportunity for current permanent employees in DPIW and DEPHA, to apply for those 15 positions through an internal redeployment program, what we call the vacancy referral process. Any staff recruited through that process, however, will need to meet a suitability assessment. So it is not true that we will be taking clerks in the finance branch and setting them loose in the field to become fox experts. They will have to go through an assessment to make sure that they are able to do the job.

**Mr HIDDING** - So it is not unattached people you are seeking to put in, it is still a recruitment process and they have to apply?

**Mr EVANS** - Yes, but you will appreciate that we do need to reduce our staffing levels both within DEPHA and DPIW and this in, in my view, a prudent measure to ensure that if there are permanent staff who might potentially be able to be redeployed into those jobs and have the skills necessary to do the job, they will be given first preference.

**Mr HIDDING** - Will they be tapped on the shoulder and asked to apply, so to speak because, if somebody is currently in Parks and has bush skills and wants to stay in Parks, they could make a good officer in the Fox Task Force? Are you counselling those persons?

**Mr EVANS** - We might do some of that, yes. So that is an internal process and then, if we are not successful with that, the Government has in place - and this has been announced by the Premier - a State Service-wide vacancy referral process where with every job that becomes vacant within the State Service, we allow permanent staff in other agencies an opportunity to see whether they are suitable for the job. So there will be a two-step process. We will look firstly at our own internal staff, then we will look at State Service-wide opportunity.

**Mr HIDDING** - What kind of people would they be? Are they unattached people?

**Mr EVANS** - I do not know. We will make the vacancies known to other agencies. They can refer staff to us if they believe that have staff who are suitable to fill those vacancies. I would stress again, they will go through a suitability assessment.

**Mr HIDDING** - They still have to be suitable?

**Mr EVANS** - Absolutely. Our overall objective is the eradication of foxes and we are not going to put square pegs in round holes and compromise the objective of the program.

**CHAIR** - While we are continuing, because there are still a number of questions to go - I know you have kindly given us your time until 12 p.m. - there is some morning tea. So, while you are answering questions, if people want to get up in dribs and drabs and get a cup of tea, please feel free to do so and we will keep going with the evidence.

**Mr EVANS** - I want to stress here that with that process we are allowing five days within the department and five days for the whole-of-government approval process, which totals two weeks. So, the whole recruitment process is delayed, potentially, by a maximum of two weeks. If, at the end of that time -

**Mr HIDDING** - Is it happening now?

**Mr EVANS** - It is happening now. If, at the end of that time, we have not been able to place permanent public servants who are suitable to fill vacancies in those roles, those jobs will then be opened up in terms of the broader market and the current officers who are the contracted staff will be free to apply at that point.

**Mr HIDDING** - Fifteen, you tell us, will have their contracts expire in June and July. When is the next tranche, because you have 43 on contract? When does the next lot go? Is it over the next couple of months?

**Mr EVANS** - We have another 23 field officers whose contracts have recently been extended through till 30 September, so we have the capacity to ensure our field opportunities are maintained. Any staff who at the end of this time have been employed for two years will not under the current rules be able to have their contracts extended and will have to go through a fresh recruitment process at that point.

**Mr HIDDING** - Can you explain that again?

**Mr EVANS** - At 30 September 21 staff will have to have through a fresh recruitment program.

**Mr HIDDING** - Under the same basis?

**Mr EVANS** - I don't know what arrangements will prevail at that point.

**Mr JOHNSTON** - There are four staff who will be completing two-year contracts in September and then a significant number in February next year will come to the end of the two-year period.

**Mr HIDDING** - We were just told 21.

**Mr EVANS** - Yes, 21 have had their contracts extended until September, four of whom can't be extended beyond September and the remainder can't be extended beyond February without a fresh recruitment program.

**Ms FORREST** - The process you describe is that if they are not filled internally then they will go out to the public process -

**Mr EVANS** - The State Service-wide vacancy referral process.

**Ms FORREST** - Which takes 10 days.

**Mr EVANS** - Five days - five days for the first round and five days for the statewide process and then we can advertise externally.

**Ms FORREST** - After the 10 days, if the positions aren't filled with suitable people and you have to go to the more public open process, how long will that take bearing in mind appeals and all that sort of thing?

**Mr EVANS** - They won't be appealable and we'll do that straight away.

**Mr HIDDING** - Just to go back to the first 15, if you successfully appoint half a dozen - say 10 - and there are five vacancies, can they reapply?

**Mr EVANS** - Yes.

**Ms FORREST** - Once it gets to the public open process?

**Mr EVANS** - Yes.

**Mr HIDDING** - There's no process by which you're going to reduce the overall number of positions in the Fox Task Force?

**Mr EVANS** - No.

**Mr HIDDING** - You currently have 60 FTEs, are you going to maintain that?

**Mr EVANS** - I think I should add that the only uncertainty is the nature of the ongoing funding.

**Mr HIDDING** - Can you tell us about that?

**Mr EVANS** - John has been doing the negotiations with the Commonwealth so I will ask him to explain that.

**Mr HIDDING** - What do they currently fund, John.

**Mr WHITTINGTON** - They currently fund approximately half the program. The way their funding has fallen it is not exactly the financial year, but it is averaged over the last two years at \$2.5 million per year. That is what the Tasmanian Government requested, half - that is actually matching money. What the Commonwealth has been doing is essentially funding us on almost a year-to-year proposition. We get funding through their Caring for Our Country program. The Commonwealth has had an application from us for funding through to the end of Caring for Our Country, which is 2013, for quite a long time now. We worked with them over a period of time to get a funding application that they were happy with. I will just step back a bit. The Commonwealth is on our steering committee for the project, so there are senior Commonwealth officials represented on that project so they are very intimately involved with the program. We have been told that our funding application is sitting with the relevant ministers, Minister Garrett and Minister Burke, at the moment for consideration and we're hoping to get some notification prior to the beginning of the financial year.

**Mr HIDDING** - Clearly, if you don't get it, all bets are off in terms of staffing because that underpins half of your -

**Mr WHITTINGTON** - Absolutely. If we don't get any money then we have half the budget we currently have. If we get something more than zero but less than \$2.5 million, we'll have to cut the suit to match the cloth.

**Mr EVANS** - At the moment, though, we need to plan on the basis that we're doing the program as per the project plan.

**CHAIR** - Would it be fair to say that as a result of this new program - it is a new program and, as Nick was saying, it has not been done anywhere else in the world - that would assist in the funding from the Commonwealth because you could say that Australia has done it and it has done it through Tasmania and that would assist with the moneys to come to Tasmania from the Commonwealth?

**Mr WHITTINGTON** - Yes. One of the things that we have tried to stress to the Commonwealth with this program is that it is a national issue, it is not a Tasmanian issue. From a wildlife perspective, the species that we are trying to protect from this threat are species that are put in incredible peril on the mainland. Until now there has been a fair acknowledgment of that. The previous Government clearly funded the program in the first year and then this Federal Government followed it up in the last year, so I think there is an acknowledgment that it is a national problem that they are addressing.

We have had the program externally reviewed frequently. There is the Invasive Animals CRC Review in 2006 and we are currently going through the review we mentioned at the last hearing with the LandCare research and that is also part of our way of convincing the Commonwealth that not only is the program is well managed but also is addressing a national threat. It is not just a Tasmanian problem.

**Mr MOONEY** - There is a longstanding Federal policy for outstanding threats - in this case nature conservation - of threat abatement plans. There is one for the fox and a major one-liner is 'preventing the establishment of foxes in new places'. Everyone has always had an eye to Tasmania in that respect and here we are playing that out. That is why they have such a continued interest because endangered species are expensive for everyone, the Federals included.

With this New Zealand review, we are actually looking forward to that because they are serious experts, as we noted last time, and it is possible that they might have substantial changes to recommend. They are important reviews and particularly that one, I think, because it is not looking at history and arguing the toss about the past; it is actually looking at what is contemporary as far as evidence is concerned, what the evidence is telling us and whether we can actually cope with that and whether we have overlooked methods. We are often looking at the bottom of the toolbox essentially. There is only a limited number of things we can do.

**CHAIR** - I am lucky enough to do a bit of walking over in New Zealand and I think I stated last time that the stoat population was a real problem around Christchurch, Akaroa and the Banks Peninsula area and there is a huge program over there.

**Mr HIDDING** - Stoats?

**CHAIR** - Yes.

**Mr HIDDING** - British stoat things, is it?

**Mr MOONEY** - Yes, because when Europeans got to New Zealand there were not any land mammals and so they thought, 'There's all this stuff missing' so they tried to introduce everything from giraffes to -

**Mr HIDDING** - What was with these Poms back then?

**Mr MOONEY** - They did it here too.

**Ms FORREST** - They wanted to think they were still at home.

**CHAIR** - I understand the New Zealanders have done an extremely good job in that area with their stoat eradication.

**Mr HIDDING** - We Dutch left it for the Poms on the understanding that they do a good job. But they brought stoats!

**CHAIR** - It has become now in that area not a containment policy, as I understand it, but an eradication policy because they have done so well - first, at containing and now eradicating.

**Mr MOONEY** - Yes. They came up with that famous saying that it takes 10 per cent of your resources to get rid of 90 per cent of your animals and then 90 per cent of your resources to get the last 10 per cent. That is their view of the world and that is not at all reassuring.

**CHAIR** - Ivan, you had a number of questions.

**Mr DEAN** - Just going back to the document that was tabled the last time that we met in relation to the scats and the testing of them, interestingly right through that there is no evidence of Rufus wallaby at all in any of the scat that was analysed -

**Mr MOONEY** - From memory, no.

**Mr DEAN** - Is that not surprising? That is a common animal that is indigenous to Tasmania; there is an abundance them - millions in fact.

**Mr MOONEY** - That surprises me, yes. They fit the profile as something that would be eaten by foxes. I am getting harder to surprise with these things but yes, I would have expected to see that in there.

**Mr DEAN** - It is not in any one scat. There is no Rufus wallaby in any one scat?

**Mr MOONEY** - From memory, no.

**Mr DEAN** - No, not in this document you have provided to us. In devil and the other scat analysis there was Rufus wallaby in those scats, is that right?

**Mr MOONEY** - No, that is a common food in all carnivores but there have not been other species done as part of this program. But you are right, Mr Dean. There are other



species that you would perhaps expect to be in there, but you have rightly picked one that is obviously missing.

**Mr DEAN** - Because of the comment made by Mr Hidding, I need to make my position clear here again and I have done it many times - I have never doubted the fact that there aren't foxes in this State. What I have doubts on is the evidence that is used. I will say that again to make it perfectly clear. That is the position of Mr Obendorf, which he has stated and I think some others have as well.

**Mr HIDDING** - That view is supported by more than one parliamentarian. So it was not necessarily pointed at you.

**Mr DEAN** - That is right. The reptile scales that were found, were they snake?

**Mr MOONEY** - Just reptile scales.

**Mr DEAN** - So you cannot determine what it was from?

**Mr MOONEY** - Mostly not. On a snake there might be one scale on the head that is species specific and if you are lucky you get that, but probably you are not going to get that. We have had that problem before because often it is the reference material you have. When you are talking to the reptile experts they say, 'We cannot do anything with it; it is just a few scales.' A lot of the insect remains would provide lots of other ancillary evidence, but mostly they are crunched up and powdered. So our next phase with that information, if you like, is to try to run it through a finer filter to get that information. It is a perfectly sensible question and it is an obvious thing to do.

**Mr DEAN** - On that evidence there is nothing there to identify any animal remains found in any of that scat that is absolutely indigenous and only found in Tasmania?

**Mr MOONEY** - No. The nearest thing you have to it is the bandicoot -

**Mr DEAN** - But that is still on the mainland as well. Going back about three years ago it was estimated at one stage that we probably had about 300 foxes in the State?

**Mr MOONEY** - I made that comment on ABC Radio. People love numbers, of course and it is one of the most common questions asked - how many are there? This is, again, where science has a failing at low densities and low samples. Whenever I mention any number, I put caveats on it because the error bars are spectacular. When you have lots of animals you can have an accurate measure. We have very few, to the point that any recording is almost good luck or bad luck if you missed it. For instance, with foxes it is well researched that once they drop to a density of about one per 40 square kilometres, your chance of finding them, using conventional means, is zero. What is interesting here is that no-one has ever tried to find foxes using scats like this, never in the world. So we have some result of scats and everybody says, 'That is interesting, I would expect more of this or less of that', but we do not know because we are on new ground here.

**MR JOHNSTON** - Irrespective of the fact that the comment was made about the 300, the reality is that we do not claim to know. We have done a bit of work looking at Phillip

Island and trying to extrapolate from there but we certainly do not hang our hat too heavily on our claims of knowing what the number is.

**Mr MOONEY** - Phillip Island, oddly enough, has a very similar road density and person density to rural Tasmania and their research team knows how many road kills they get a year for a population of 150 foxes. So you can extrapolate then and say that if our three apparent road kills are genuine then that might indicate we have a couple of hundred foxes, based on the Phillip Island experience, with huge error bars. If only two of those are genuine then it is less but if there is only one genuine it is even less.

**Ms FORREST** - The foxes on Phillip Island would be breeding, though, so that is where your error bars would go out of control, wouldn't they?

**Mr MOONEY** - No, the error bars are because of the tiny samples.

**Ms FORREST** - But in Tasmania if we only have a small number and they are not living together and they are not breeding -

**Mr MOONEY** - The other way is that you can look at putting a certain amount of, let us say, spotlighting time in an area of known fox densities - in Victoria or New South Wales or whatever and there is lots of that research. Then you come over to Tasmania and you use the same technique, put in a 100 hours, so what would you expect to see if there were so many foxes in that area? So we can put a cap on it and that is why we think we can't have any more than a few hundred foxes because they should be turning up in all sorts of ways. But if we come to that conclusion then we have a fox expert saying, 'Don't kid yourself, you could have a thousand here and you wouldn't have a clue'. Unfortunately the statistics let us down as far as those accurate measurements go. Everybody working on essentially a critically endangered species - something we want to make even more critically endangered - has a very similar problem.

The technology, of course, leaps ahead in these novel fields. Scientists get a grip on some of this and get very obsessed with teasing out the information. Once you get enough scats with enough different animals, and maybe you start getting repeats, then you are starting to enter more conventional ways of measuring numbers - a 'capture, mark, recapture technique'. It is catching animals and marking them. Essentially the scats have a marker on them so it is -

**Ms FORREST** - Have you actually got scats from the same fox at different times?

**Mr MOONEY** - No, but if that starts happening then it suddenly opens up opportunities for measuring numbers.

**Mr JOHNSTON** - We do not have confirmed information. The 34 fox-positive scats have gone for genetic testing but only eight of them could successfully be done and those eight were also individuals. We do not actually know about the other 26 so we just make the point that there is still a degree of uncertainty.

**Mr MOONEY** - You can make some commonsense judgments on the distribution of some of this evidence. You can hardly have the same scats at Wynyard and Gladstone; the odds of that happening and our finding them are just ridiculous, so there are some

commonsense judgments you can make. Those commonsense judgments are what occasionally give me a near heart attack, when a piece of evidence turns up well away from where we were expecting - on the east coast or in the south - and that is very alarming because it extends your sphere of operations. It almost doubles it each time it happens and that dilutes our effort and it creates confusion because people think, 'What is going on here?'

**CHAIR** - How would I know it was a fox scat as opposed to a wallaby?

**Mr MOONEY** - We do not either. Early in my career I used to be very confident of what was what and now I am not at all, so that is why we have DNA. In fact after that Cleveland fox incident I was looking at railways as a means of getting onto properties where we did not have permission. There was a large property right next door that would not let us on, but a railway cuts straight through these properties, which is very convenient because railways are often wildlife corridors. They have scrub and all sorts of things and in fact in many places the wombats are digging under the railways, which is not very useful. I picked up scats as I went, bagged them, tagged them, GPS and all of that, and one of those turned out to be a fox scat. I did not know what it was. No-one knew I was going there. I suppose that is why I have strong opinions on some of this - because I have had personal experience. As it turned out I picked up one of those that tested positive.

**CHAIR** - And that was in the area near Cleveland?

**Mr MOONEY** - Yes. We did extensive searching of that area and found five scats out of about 100 carnivore scats that turned out to be fox.

**CHAIR** - Were they all from the same fox?

**Mr MOONEY** - No, they were old. You have to have quite a fresh scat to have DNA of a sufficient quality to match. There has been work done elsewhere, just simple research projects on the mainland, that have only picked up fresh scats because they have had the privilege of picking and choosing and that works fine there.

**Mr JOHNSTON** - One thing we did not bring to your attention is that since our last meeting we have had another fox-positive scat result back from analysis.

**Mrs BUTLER** - Where from?

**Mr JOHNSTON** - From Wesley Vale.

**Mrs BUTLER** - Do you go back to a spot like that? Do you go back every so often?

**Mr MOONEY** - Yes, it is just like search and rescue, in a way. We work a grid around where we found that one, looking for another. If we find another one we grid around that. It is not really different from a police evidence search in some respects. You do not do an emu prey patch (?), but you grid it out and the dogs are particularly useful for that, simply because they can cover a lot of ground quickly. Ideally and theoretically, you can trace down a line of evidence and maybe find something.

But what we are really interested in is seeing if the evidence of foxes is clustered around the State because, if things are clustered and in separate little populations just hanging on there, just making a start, like a seed, then, obviously, the opportunities for eradication are much better than if you have animals spread through the landscape. That is why we are moving from an emergency phase into a more systematic phase and those graphs of evidence, sighting reports or whatever, largely follow where people live. You cannot see a fox if you are not there to see it, so to speak. That has been a great distraction and can easily drift our attention to places at the expense of other places. There are huge gaps where no-one lives and who knows what is happening there. So we could fail in our objective simply because we were so focused in one place and not looking in another.

The origin of this scat DNA project was to look across the whole potential fox landscape, looking in odd spots. That is why we have picked up scats at Gladstone because otherwise we would not have looked there. The systematic survey is nail-biting stuff because you never quite know what is going to turn up.

The other point that I think is fair to make with the scats is that we have had 21 different staff members pick up scats that have turned out to be fox-positive. So the opportunities for collusion and skulduggery somewhat pale a bit. Another half a dozen staff members have been involved with other bits and pieces of evidence. My expertise with the evidence is to do with footprints. Oddly enough, that is what I am an expert in, and I occasionally become unpopular by running a hard line over footprints. It is very easy to get a footprint that might be a fox but it also might be this and it might be that. Some big cats have a very flexible foot and they can be very similar. Some dogs can be a bit similar but, oddly enough, not as similar as some cats and there are ways of telling dogs and foxes apart, from the feet if you have a decent quality footprint. But, if we put out a bait or a sandpat and leave it there for too long, it can be damaged by wind or rain, but also completely covered in devil footprints and so you have nothing. So, it has turned out, for actually detecting something, footprint pads are not as good as I had always assumed. You need to run a very tight filter over your evidence - and that is certainly something that scepticism has helped us with; it has made us look harder and harder. I am constantly rejecting what the troops think might be a fox and not getting very popular for it.

In Victoria there are not many options. In fact, I have often been with them when they are doing their research, and I think they make their calls very lightly, but they are not under forensic scrutiny, so to speak, they are just recording yes or no and it does not really matter. It is just another number in the notebook.

**Mr DEAN** - Have we ever brought any scats from the mainland over here for any purposes?

**Mr JOHNSTON** - Yes. We have our three scat-detector dogs and it is a requirement for their ongoing training that they have access on a daily basis to fox scat. So we do bring fox scats in for that purpose. We have a very managed system for recording what we bring in and recording its use and disposal.

**Mr DEAN** - Are foxes territorial? In other words, do they live in a similar area or do they simply roam off all over the place?

**Mr JOHNSTON** - One of the critical problems we face here is not quite knowing what they do in this environment. We can go to Victoria and look at how they behave there -

**Mr DEAN** - How do they behave on the mainland?

**Mr MOONEY** - They are a classic territorial animal; they mark their territories - scent mark, particularly the males. The males and females have slightly different territories. Nobody has any experience of what they do in a novel landscape - if they don't have neighbours.

**Mr DEAN** - With some evidence that they could be territorial, what other practices do you put in place where you find these scats that are identified as containing fox DNA? What else do you do in that location when you find a scat and it is identified?

**Mr MOONEY** - It depends if we are welcome on the site, have free access to the site.

**Mr DEAN** - On how many occasions have you not welcomed onto a farming property in Tasmania? How many knock-backs have you had?

**Mr JOHNSTON** - If I can perhaps divide it into two things, one is for baiting - baiting is the slightly more contentious bit because it involves the use of 1080 -

**Mr DEAN** - Can you cover that first?

**Mr JOHNSTON** - We would say in excess of 90 per cent of property owners allow us access onto their farms for baiting.

**Mr DEAN** - So about 10 per cent don't?

**Mr JOHNSTON** - I would say probably closer to 5 per cent, so it is in that 5-10 per cent range. In terms of things such as monitoring activities, for instance the scat survey that is under way at the moment and general things such as being able to go in with our scat-detector dogs, I think the answer is very close to zero knock-backs.

**Mr DEAN** - Meaning that you have had none? I think Mr Mooney said you had had one.

**Mr JOHNSTON** - I wouldn't necessarily like to give a definitive statement that we have had none without talking to the people on the ground, but I am not aware that it is an issue of concern to us. I'm not hearing any regular feedback, 'We couldn't do what we wanted to do around that scat because of ...' I wouldn't like to say it is absolutely zero, but it is certainly not a significant issue.

**Mr DEAN** - What else is done in these areas where scats have been identified as having fox DNA in them?

**Mr MOONEY** - We are given a free choice to look for other evidence. A scat could have been there for months but other scats may well be there, so we search a grid pattern around it.

**Mr DEAN** - Have you done that on each case where these scats have been found and where they have been reasonably fresh enough to DNA-test? Have you been welcomed on that property to do the things you need to do?

**Mr JOHNSTON** - Again, I wouldn't like to say absolutely we have done it on every one, but certainly in recent history. Over the last couple of years we have developed our practices a bit more and have a much better standard operating procedure for how we respond. Since we have had the scat-detector dogs, which now goes back probably 18 months, that has changed the way we operate. If we look at that time frame, I would say I am not aware that we've had any difficulty.

In answer to your question, yes we have done that type of work in response to all scats. The only limitation I'd place on that is perhaps a few urban scats because our ability to do this type of work in a really urban area is a bit limited, but if we look at the more rural ones, certainly.

**Mr MOONEY** - Occasionally we have used camera technology, which is a lot better now than it was even five years ago.

**Mr DEAN** - I was going to get onto that in a moment.

**Mr JOHNSTON** - The other part was has it been a problem getting onto properties - certainly not in any rural or semi-rural areas. The urban ones are a bit of a problem, not necessarily because people don't welcome us but just because of the physical problem. We are finding that the scat-detector dogs aren't very effective in the urban environment simply because there are too many distractions, there are too many other dogs around and too many people. We are finding that they are not too useful in that situation.

**Mr DEAN** - Just getting on to the camera situation, there was a camera in situ at Old Beach - and I think you would be aware of this - which I suspect had been misplaced perhaps, I do not know, which had been set up by the Fox Eradication Branch for a long period of time. It was located and found several months later and when the film was developed it contained photographs of anything and everything except foxes. Are you aware of that position?

**Mr MOONEY** - I do not know about that camera but there were a couple used there after that incident.

**Mr DEAN** - Yes, after that incident and I was going to ask a question about that in a moment as well. The cameras that you have had in use around the State, have you any now?

**Mr JOHNSTON** - We have just over 100 in total and, again, as you can imagine with cameras and so forth, technology is progressing pretty rapidly so some of the cameras that we had two or three years ago perhaps are not quite as effective as they were and over time we are getting the new technology in place.

**Mr DEAN** - Have any of those cameras picked up anything at all that might even look like a fox?

**Mr MOONEY** - Yes, we have got ears and bits and pieces but nothing - I just reject it because you just cannot tell.

**Mr DEAN** - When you say 'ears', do you mean ears that have been positively identified as a fox?

**Mr MOONEY** - No, part of an ear of an animal sniffing a camera or those sorts of things. It is ambiguous, so it is not good enough. It is like a footprint that is not clear.

**Mr JOHNSTON** - To be very clear, we make no claim that we have anything on camera which we could say is a fox. We have a couple of things that we have had a look at -

**Mr MOONEY** - Cameras have a lot more limitations than people realise. You were critical about their usefulness in the field, how many days they are deployed when they are actually working. Modern cameras are much better than the old ones. The film ones were incredibly unreliable - they would break down, the batteries go flat because you have to leave them on flash and all this stuff - but the modern ones are better. However, most of them still have a three-second delay between triggering and taking so it forces you to use a lure or some attraction to try to hold an animal there for a period which is then more interference that you cannot just put them out there and something walk in and out like James Bond sort of thing.

If you are going to do that you will end up with big piles of batteries and it is just not practical. We have trialled all sorts of things on the mainland with foxes and you find the most extraordinary things and it is a bit daunting. The sort of thing that can happen is you have a fox trail, where foxes are regularly going to, say, a rubbish tip or a farm dump so you have foxes trotting up and down the fence every night and you put a camera there and they simply start cutting around the camera. It is something new in their environment. If you get down on the ground at fox level and look around and the camera is standing up like this, of course it is obvious. It is like when we attempted making very large traps as big as this room for foxes. A fellow used to catch them accidentally in this big cage because he had research foxes in it and he could not keep the wild ones out so we thought we would imitate that and it actually acted as a fox deterrent. The foxes moved away from the area of the trap because it was such a novel thing. The real fox experts tell us now that probably those things might have to be in for a generation before they actually start becoming effective so all of these things are just another layer of difficulty in there.

**Ms FORREST** - What is the generation of a fox then?

**Mr MOONEY** - Two years. That does not apply to all cameras of course and you can photograph some foxes but when we did that work at Arthursleigh what we found was you would often get one photograph of a fox but we certainly could not photograph any of the foxes we had marked. That may be because of chance or it may be because they had a collar on them and did not like it.

The cameras have been less reliable as a tool but the technology is such now that they are just that much better that we can afford to invest a bit more heavily. If we can figure out how many we need on what sort of pattern - do you put them a kilometre apart as a block or not -

**Ms FORREST** - It still does not eradicate them, though, does it?

**Mr MOONEY** - No, but it lets us direct our effort. But also we have to service something very serious as well and that is a decision on when we cannot cope any more because -

**Mr JOHNSTON** - Or when we have succeeded.

**Mr MOONEY** - Which is a much harder one to do. It is like finding thylacines. We have to have a mind about when we change tactics and what the trigger point is for something else.

**Ms FORREST** - Containment rather than eradication?

**Mr MOONEY** - Yes. We're hoping the New Zealanders will give us another bite of that issue. I've been hoping that cameras will do a bit more but some of my early expectations are somewhat of a reflection on my lack of experience and naivety with that stuff. The people who live with it and use it all the time don't have the expectations we have.

**Mr DEAN** - I want to touch very quickly on the number of spotlights we currently have operating in this State. I think it was something like 20 000-odd. Does it not surprise you that somebody out there who is continually spotlighting, the professional spotlighthouse, hasn't seen, shot or brought back evidence of foxes?

**Mr MOONEY** - Bosworth was a spotlighthouse and he shot one.

**Mr DEAN** - I'll touch on that in a moment because there is evidence to suggest that that is not accurate. We have had evidence given to this committee on that.

**Mr MOONEY** - I haven't seen that evidence. We have had a number of professional shooters who reported seeing foxes but were not able to shoot them. I don't take all those reports; occasionally I hear of one. One was a guy driving his four-wheel motorbike and had his rifle on the rack and the animal ran across in front of him and he couldn't shoot it. There have been a number of professional shooters, but I couldn't give a proportion because I don't deal with that.

**Mr DEAN** - With the amount of money that we're spending on this program - and I'm not saying it is not justified - do you think it would be a reasonable position to have a bounty introduced on foxes in this State? There is already a bounty out there - I think it is offered by Mr Obendorf - of \$1 000 on the head of a genuine Tasmanian fox being shot in this State. Do you believe there is an opportunity to expand that or have that program in place officially?

**Mr MOONEY** - I think all we would end up with is a nightmare of bits and pieces of foxes coming from the mainland and being claimed for bounties.

**Mr DEAN** - But if we have our processes in place in relation to the control of aircraft, shipping and so on, it ought to be fairly difficult for that to occur. I know we have



fishing boats coming in regularly - I understand all of that - but we have our processes in place so there ought to be less opportunity for that to occur.

**Mr MOONEY** - Less opportunity but if someone is serious, let us face it, it's not hard if you want to smuggle something in, as distinct from bringing something in and hoping it will be missed.

**Mr JOHNSTON** - It increases the risk of doing that, with probably little potential for it to be successful.

**CHAIR** - If that was the case there might be a concern with people bringing the foxes across to shoot them here and saying, 'We shot this fox here today', as opposed to a couple of days ago.

**Mr MOONEY** - It was very interesting contemplating Dr Obendorf's offer, and there have been other ones but not as well thought out. There is probably a threshold where it is too low and not worth the trouble. With respect to Dr Obendorf, I suggest that \$1 000 to undergo his style of scrutiny wouldn't be worth it. There is a point where it's high enough that it is worth a risk of some other sort. I have publicly admitted before that, given enough trouble, you can almost hoax anything.

**Mr JOHNSTON** - It is a valid thing for us to consider and keep considering. At this point we would say we are not in favour of it, but it's not something that we ignore for ever and a day.

**Mr MOONEY** - It's a common suggestion and the more thought given to better protocols and rigour in testing that incident the better it would be. If the protocols were watertight I think something could work. There are lots of professional shooters out there who would like to rub our noses in it by shooting one and saying, 'Look what I did; you couldn't do it.' There is almost a social bounty there, in a way. For a period there was certainly an unhealthy competition because firearms were a big part of our early emergency set-up. I have little doubt that aggravated some of the shooting fraternity.

**Mr JOHNSTON** - We have to go back to what we are trying to do. We are trying to eradicate a population of foxes. While, on the surface, finding a body might seem a very positive step forward, in the strategy of achieving what we are trying to achieve, it may well not be a significant event. So, if a shooter goes out tomorrow and shoots one, okay it might get some media attention and do all those things, but it may have very little relevance in terms of the broader strategy of what we are trying to achieve.

**Mr DEAN** - I would have thought it was a big impact. Is there any evidence at all to demonstrate that the baiting program has been successful in eradicating foxes?

**Mr JOHNSTON** - From anywhere?

**Mr DEAN** - Anywhere in Tasmania.

**Mr MOONEY** - Where and when we have baited we have driven a number of evidence indices down. If we relate our material evidence to the amount of baiting we are doing, there a good inverse relationship. We are not talking about individuals here. I have

graphs that can show that. If you look at sighting reports from areas we have baited - not in all areas we used to call hot-spots - mostly those sighting reports also decreased. But sighting reports are soft evidence and it is hard to make sense of them. If you can correct for effort, our hard evidence has gone down and it is closely related to baiting. That is not a surprise because baiting is well researched as an excellent control method for foxes, but that is different to eradication. Baiting on its own cannot eradicate, unless you get incredibly lucky and we cannot count on being incredibly lucky. Perhaps that is where you are going.

Baiting alone has only eradicated some species on small islands and things like that, and at the most extraordinary density of baiting, something we could not even dream about. Our baiting at the moment is really aimed as a strategic method to fragment the population, prevent establishment and drive it down but it cannot eradicate foxes in Tasmania on its own without some bizarre lucky break.

**Mr DEAN** - So apart from the fact that there have not been as many reported sightings in those areas, that is the only evidence that you have?

**Mr MOONEY** - No, the rate of finding material evidence, such as scats and bits and pieces, has gone down in those areas we have baited, when you correct for effort.

**Mr DEAN** - How long ago did we find the first scats?

**Mr MOONEY** - We were testing some scats before for fox-grooming hairs.

**Mr DEAN** - Since the scat sightings and baiting on those properties where the scats have been found? Is that what you have done?

**Mr MOONEY** - But also we are not finding carcasses at a rate you would expect if the population was, let us say, not being killed.

**Mr DEAN** - Fox carcasses?

**Mr MOONEY** - Yes, like road kills or anything.

**Mr DEAN** - There is some suspicion, and I think you agree with that, in some of those instances in relation to those road kills.

**Ms FORREST** - You did offer to give us that information regarding the post-mortems so that we could look at it in more detail.

**Mr DEAN** - I'm just getting back to the scats and the baiting program. How many baits have been taken? How frequently are the baits taken?

**Mr MOONEY** - About 10 per cent of baits are taken. It depends a lot on the bait type because the original bait type we used, the dried kangaroo meat, they soak up water and rot and smell. They are delicious and attractive to anything once they are rotten. Once those baits are left in the ground past several weeks they rot and you lose most of them because anything can find them. The other slightly less attractive baits such as the compound baits - that is the fox-off bait Mr Dean was referring to -

**Mr DEAN** - Where a bait is taken it would be very obvious, the ground would be dug out?

**Mr MOONEY** - Not necessarily so. Often the guys have to have a good dig around to make sure it's not there. They are not big baits and it is not that obvious sometimes. It depends on the soil type.

**Mr JOHNSTON** - It could have been several days since it was taken, of course.

**Mr DEAN** - How often do you go back? Once you set a bait, how frequently do you go back and test it?

**Mr MOONEY** - These days only to see if the bait has been taken and retrieve it.

**Mr DEAN** - How long would you leave it there?

**Mr MOONEY** - Depending on the rostering, the idea is to leave it there between two and three weeks. After that period the 1080 has degraded so much. What you don't want out there is sub-lethal doses for foxes because you don't want foxes to learn the baits are bad news. In the early days we used to visit them every day. Like most Tasmanians we were a bit paranoid about 1080 so we used to put sand pads on them and visit them every day. In early 2003-04 we had 14 baits taken in a typical fox style, not to say that other animals can't do that sort of thing sometimes. The sand-pad philosophy of footprints at a bait station is really inaccurate because you can have six, seven, eight species visit a bait station because there is a bit of sand there or a hole, something interesting. It can be a cow, a rabbit, a devil, it can be anything.

**Mr DEAN** - What evidence is there of other animals having taken the baits? What impact has it had on other native wildlife?

**Mr MOONEY** - I am glad you asked that.

**Mr JOHNSTON** - The figure so far this financial year is that 11.8 per cent of the baits have not been found at retrieval.

**Mr MOONEY** - In the early days when we used only these baits, or occasionally fresher meat, a bit of liver, if you left them in for a month you would lose nearly all the baits, but that is of no consequence because there is almost no 1080 left at all. Degradation of 1080 is too rapid for our liking, oddly enough. These sorts of baits that don't degrade do not become more attractive over time. They do not start off highly attractive but they don't degrade so much physically, although the 1080 still degrades with bacteria intruding. We tend to lose 10 per cent, 12 per cent, 15 per cent if they are left in for a little bit longer. There is a long list of animals that will visit bait stations and a shorter list that will look for baits. It is a shorter list that will find baits and a shorter list that will dig up baits and an even shorter list that will eat baits. We have some instances of cameras recording different animals taking baits, and a lot more instances of cameras with an animal with its back to the camera so you do not know what it is doing. There is a restriction: you simply have a frame and an animal can pop out of the frame and you do not know what has happened. Some animals will visit a bait station long after the bait

has gone and just dig bigger and bigger holes looking for something interesting. It is not a simple matter to have very definitive work on that.

We can look at the risks to individuals like that and most of the people here probably realise that 1080 is found as a plant defence in the gastrolobium - that is big group of plants in Australia so most Australian fauna has a resistance to it. It has been exposed for probably millions of years to 1080 in one form or another and that makes it, from a species selection point of view, a very useful toxin for us. Animals such as dogs, cats, foxes that are coming from Europe have no historic exposure. For instance pound for pound a dog is about 36 times as sensitive to 1080 as the devil would be. The native carnivores are very tough and there are huge amounts of research. It just goes on and on and lots of stuff has been done, particularly with the iconic species of spotted-tail quoll on the mainland to show that the baiting there, which is far more aggressive than ours because they are also trying to poison dingoes and they use about three times the amount of 1080 in each bait, does not affect the populations of spotted-tail quoll.

So knowing the rate of degradation of 1080, knowing the physical susceptibility of a species and knowing how long your bait has been in the ground, you can, at a certain degradation of 1080, work out quite an accurate risk assessment table -

**Mr DEAN** - What I am trying to find out is have there been other native animals found near the baiting stations?

**Mr MOONEY** - No.

**Mr DEAN** - Is there any evidence at all that it has killed other native animals?

**Mr MOONEY** - No, none.

**Mr DEAN** - None at all?

**Mr MOONEY** - No, there is no evidence of it. What I have done is study populations before and after baiting at baited sites and controlled sites of the obvious suspects and we could find no difference whatsoever between control sites and baited sites.

**Mr DEAN** - I asked that question because of an earlier question I asked in Parliament, I think about two or three years ago, and I was told yes, there was some evidence of some other animals falling foul of this.

**Mr MOONEY** - There is evidence of some animals eating baits but none of them being killed.

**Mr DEAN** - I need to get the evidence.

**Mr MOONEY** - I am not saying there have not been. There are some species that have an oddly high susceptibility - almost an aberration - to 1080 and if they take baits they could be killed, but that is different to an impact on a population. Ultimately we can look at individuals so you can work out the risks to an individual and even record, as Mr Dean says, individuals eating baits. You can look at the local population, such as I studied, and you can look at a statewide population - and there are some maps in the submission

we made - look at where we have baited and then look at the total distribution of the species and none of these species have we baited in more than 10 or 11 per cent of their statewide distribution.

So putting that argument rather brutally, if you killed every animal in that group it is still a small impact on the statewide population. That is as we have baited so far, but that is consistent pretty well with all the research on the mainland. As a rule of thumb, our friends on the mainland tell us that a single baiting operation should kill 60 to 70 per cent of foxes and if you do it again timed carefully to hit them when they are hungry or vulnerable you should kill a similar proportion of what is left. So a baiting program, which is usually two or three repeats, should kill 80 per cent of the foxes.

**CHAIR** - It would seem, am I right in saying, that 1080 is not enough in itself to eradicate foxes?

**Mr MOONEY** - We do not regard it as enough and that is why I made the comment earlier that we are often looking at the bottom of the toolbox because in Australia we are extremely experienced in controlling animals but not that experienced in eradicating them. That is why we are happy to have lots of advice, enthusiastic and/or educated, it does not matter because we are scratching a bit. The earlier comments about perhaps more professional shooting or professional trapping or whatever are always useful. We have increased our skills in trapping using professional trappers from the mainland, more training and those sorts of things because we are particularly concerned about what to do in urban areas where, of course, we cannot use 1080.

**Mr JOHNSTON** - It is still worth noting that the advice we have is that we need to keep going with broadscale baiting. These other things are add-ons rather than replacement.

**Mr DEAN** - I just want to go back to the evidence that was given last time and I am just interested in an answer given by Mr Johnston. The question I put was, 'But surely you would have the ability, wouldn't you, to call in the police if you wished to? You could use other resources, couldn't you, that would be available to you, I would have thought?'. This was a question in relation to the evidence surrounding the Cleveland fox. The *Hansard* recorded the answer to that question: 'Yes, I am not quite sure on what grounds you would do that. These people have found a dead animal, a bit of road kill on the side of the road'. I am just intrigued as to why you would refer to it as 'a bit of road kill'. Here is a fox found killed on the side of the road, and a program that we are spending millions and millions and millions of dollars on, yet you simply refer to it as 'a bit of road kill on the side of the road, so why would you want an investigation?'. I am just intrigued as to why you would make that comment.

**Mr JOHNSTON** - Well, I would just respond by saying that maybe you are making too much of a set of words. I was just trying to describe the reality of what it was in a sort of legal sense. There was nothing illegal about that animal as it lay there. No-one had performed any illegal action in running it over or reporting it or anything. It was a dead animal on the side of the road. For us, of course, it was a very significant piece of road kill and hence we undertook the extensive investigations that we took, both on site and subsequently with the post-mortem work et cetera, so it certainly was not meant to infer that we were not thinking it was a serious or unimportant little incident. We certainly reacted as if it was a very serious incident.

**Mr DEAN** - The original reporting of the Glen Esk fox or whatever you like to call it was of the animal coming up from the left-hand side of the road and across in front of the vehicle and it was run into. The answer given when I asked the question was along the lines, 'It was relatively a new manager and the new manager gave that version' et cetera. I just need to expand on that. What are we saying there? Are we saying that the new manager made that up? Are we saying that the new manager told lies? What can we assume from that?

**Mr JOHNSTON** - There was nothing untoward about the statements that were made in a couple of press releases at that time. There was a press release put out and I would need to go back and refer to all the dates and so on to get all these accurate -

**Mr DEAN** - It was put out where it said 'The fox emerged from the left-hand side, ran across the road and was run into'.

**Mr JOHNSTON** - And I would also say that I was not involved at the time.

**Mr EVANS** - The information that we were using in media releases was based on the information that was coming in at the time from what was a rapidly emerging situation. We had Nick on site providing us with information, as he has already recalled, through a rather dodgy phone connection. We had intense media interest and people wishing for information to be released instantly. We put together information that was at hand at the time to the best of our knowledge. As Alan said, when I have gone back through the press releases there was nothing, as far as I am aware of, that was wrong. As the facts came through the story has emerged and as has been on our web site for the last two years. At any point in time on that morning and then in the subsequent afternoon, the information that was put out was the best information we had at hand at that time. There was certainly no intention by the person who was clearing the information that was leaving the agency to mislead in any way. We were reporting the facts as they were relayed to us at the time. In hindsight, the sum might not look as crisp, as you might put it, but certainly at the time we did our best effort to produce the information that was demanded of us at the time.

**Mr DEAN** - It was indicated that this fox was probably killed down at Epping or somewhere else on a highway and brought up there. Is it right that the driver of that vehicle, who allegedly rang and said that they had run over it et cetera and had replaced it, was also at the site at the time you attended there on that morning?

**Mr MOONEY** - I do not know who the driver was who rang up; he was anonymous. I did not take the call. Craig Bester did and he said that the man did not identify himself. He gave him that information and hung up. He did not claim to have run it over. He said the fox was run over a few hours before and shifted, just so you know, and hung up.

**Mr DEAN** - As the TFGA have indicated, and a lot of other people have said it as well, there is a lot of scepticism about what is happening and what is going on out there. If we look at the Old Beach situation, as I understand it the only evidence of a fox being there was this one spot of blood?

**Mr MOONEY** - Two spots. One spot in each place.

**Mr DEAN** - However, as I understand it, some of the chooks were analysed and they were found to have dog saliva on them.

**Mr MOONEY** - Not those chooks. There was a further chook kill two weeks later that was analysed and it had some slobber on it.

**Mr DEAN** - So the chooks that were killed at that time, were they analysed?

**Mr MOONEY** - The first ones?

**Mr DEAN** - Yes, the first ones.

**Mr MOONEY** - No, because at the time, it was nothing special. We go to chook kills fairly regularly and this was dealt with in a frugal fashion, setting up some barbed wire around the place that you would hope an animal might go through and putting a bit of sand there and maybe you will get a footprint and maybe you do not. We only found out there was blood there through the phone call on 21 May. The wire and sand was put there on 17 May and the blood was retrieved on 22 May. I talked extensively with the officer, the person who attended, and he kept a running sheet. He is someone who is a little bit more careful about those things, so he kept a running sheet. He thought, yes, another chook kill. In Tasmania, devils and quolls kill chooks and all sorts of things happen, so there was nothing untoward about that when he arrived there. We had also never done DNA testing before then.

**Mr DEAN** - But for you to be called there would have obviously have been suspicion that this might be fox?

**Mr MOONEY** - People get enthusiastic. We get calls for rabbits dead in hutches, all manner of things. It is not unusual to go to dead lambs or dead chooks. If there is a little bit of press about such things then we tend to get more calls. It is a bit like Elvis appearing. So that was not anything untoward. I was not there but this is what Mark Mackay said and he has been on record as the person attending. He received a call that there seemed to be some blood on the sand and wood under this wire. He collected it and we sent it off and it did not come back until 5 June.

**Mr DEAN** - Fox DNA?

**Mr MOONEY** - Yes, fox DNA in the blood. So there was nothing extraordinary happening until we received that result back and then there was minor local panic, of course, to try to do something more. It seems bizarre. We have often talked about that.

**Mr DEAN** - It was a bizarre situation and I think you would agree with that?

**Mr MOONEY** - I agree. It is not odd that you wouldn't get any more evidence, only odd that you got blood.

**Mr DEAN** - Why wouldn't you have got more evidence off the barbed wire that scratched the animal, for instance?

**Mr MOONEY** - Most of the places I have looked where there are animal runs you don't get hair. There's a common perception, but most wallaby runs I've looked at don't have any hair on the fences at all.

**Mr JOHNSTON** - You are probably right; if you look at it and describe it there are some bizarre things about it, but the reality was that we ended up with a sample of blood on site which had fox DNA in it. In the absence of any clear evidence that it got there any other way, we work on the assumption that it was from a fox.

**Mr DEAN** - Can you satisfy the other question that has been put by a number of people that an attractant was used at that site?

**Mr MOONEY** - Absolutely, I can satisfy that. The blood was collected on 22 May and there was no attractant added until 19 June - nearly a month later. The blood was collected nearly a month before any attractant. You can't have retrospective contamination at all. Certainly the camera you referred to earlier, Mr Dean, was not put in until 14 June. Long delays - yes. We all agree it was an odd thing, but I think what is odd was getting the blood. The place was a typical rundown farmyard with dogs and chooks running everywhere. The dogs were free-ranging over this whole area anyway, interfering and treading on things, what you would expect with dogs in the farmyard.

**Ms FORREST** - I have a concern that there was one word wrong in the *Hansard* here, so, Nick, I'd like to question you again about the Glen Esk fox. You stated that you believed the fox was killed somewhere else and then moved and was possibly run over by the farm vehicle.

**Mr MOONEY** - That's the best fit of the evidence, I think.

**Ms FORREST** - Can I just read you a section of that because I think one word might be wrong here. It says:

'This fox was there. It had a big belly flap ripped off it which was not bleeding, which suggest to me that the fox may have been dead from that injury.'

You said 'before that injury', didn't you?

**Mr MOONEY** - The pin-prick bleeding under the belly flap suggests the animal wasn't alive when that flap was pulled off fresh.

**Ms FORREST** - That's how I read it.

**Mr MOONEY** - So I think the animal was killed by the other injuries. It was typically road kill - it ended up with a broken hip and all sorts of things - and then a large tyre going over it twisted it and further mangled it.

**Ms FORREST** - That's the way I understood your description. 'From that injury' doesn't mean from the skin flap being lifted because there is no bleeding from that, so it would have been dead before that happened.



**Mr MOONEY** - Yes, the pathologists agree that is the obvious thing.

**Ms FORREST** - I just wanted to clarify that because it doesn't read that way.

**Mr MOONEY** - I don't think that tear would have killed the animal. I am very happy to put my name to that report I have on the web. It was written fresh at the time. The only reason it was not immediately after the incident was that I updated it to add in Tony Ross's comments from Dave Obendorf's prompting to revisit the time of death. That was an improved report.

**Mr DEAN** - Just on that point, that animal was X-rayed, wasn't it?

**Mr MOONEY** - Yes.

**Mr DEAN** - Are the X-rays available?

**Mr MOONEY** - Yes.

**Mr DEAN** - Can they be tabled?

**Mr MOONEY** - They are in Launceston.

**Ms FORREST** - The X-rays themselves or the report that is attached?

**Mr DEAN** - The X-rays of the animal that was found on the Glen Esk Road.

This whole thing really started to pick up as a result of the original information that was provided to police about a number of cubs being brought into this State. The information was provided through, I think, Parks at that stage, of a conversation that was overheard in Glenorchy.

**Mr MOONEY** - I had nothing to do with that. I was present when the police talked to people a few times during that early investigation, but unfortunately that whole thing wound up before there was any material evidence to even look at.

**Mr DEAN** - Meaning?

**Mr MOONEY** - The report was written before there was any material evidence to consider so that report from the police only considered the conspiracy. The dates were such that it was just finished before anything happened.

**Mr DEAN** - Is it not a fact that the police inquiry looked at and investigated the authenticity of the information that was overheard second- or third-hand at Glenorchy and the likelihood of that information being correct?

**Mr MOONEY** - Yes. That was not material evidence, though.

**Mr DEAN** - But is it not a fact, though, that the police were looking for material evidence to support it during their investigation?

**Mr MOONEY** - I did not see any evidence of that.

**Mr DEAN** - Did they not visit a number of sites?

**Mr MOONEY** - They probably did.

**Mr JOHNSTON** - Mr Dean, Nick has said quite clearly that he was not part of that investigation.

**Mr DEAN** - No, that is all right.

**Mr JOHNSTON** - You have had tabled the police commander's report at the time, I believe, which you would know a lot about. You are asking Nick to speculate on an investigation that he was not involved in at a time when he was directly involved in the fox management program.

**Mr DEAN** - What I am getting at is that, with the position we are in today, a lot of it harkens back to then and that the evidence initially provided was investigated.

**Mr MOONEY** - I would actually suggest very little of it harkens back to then because most of the people employed by us now would not even know about that alleged conspiracy, because we are so focused on what we have laid out in front of us now.

**Mr DEAN** - But that is irrelevant, isn't it, because the investigation is up and running and the inquiry has been done.

**Mr EVANS** - That is one event in a long history of the program. All the other events and all the other evidence and observations provide the entire context for where we are today and I do not think we should misrepresent the significance of that one investigation.

**Mr MOONEY** - There has been a bit of logic added in, too, in that things have changed in the landscape since then. If Tasmanian devils had not been decreasing like they have been we may not be sitting here having this conversation because that was not something in consideration back in those early days. I am the only continuity, except for Kim, in the program. I came into it at the stage when material evidence started turning up - apparent material evidence, if you like, dribs and drabs. What absolutely fascinated us was what was happening at the time. How it happened almost became irrelevant to the people on the ground. We were dealing with what was happening, trying to figure it out.

**Ms FORREST** - There has been some evidence given to the committee that there may be other methods other than what are currently used by Tasmania for determining the DNA, particularly when related to the sex determination of the foxes.

**Mr MOONEY** - I can describe what has been done but I am not -

**Ms FORREST** - Is anyone able to address their mind to that?

**Mr JOHNSTON** - We seek advice from the appropriate professionals in the field. The process that we are engaged in with getting the analysis done of the scats and then the genotyping is the pathway recommended by professionals in the field.

**Ms FORREST** - If there were professionals in the field that were suggesting there is a more accurate or appropriate model to be used in this particular area, how would that come to you and what would you do with it?

**Mr WHITTINGTON** - We have a technical advisory panel that provides advice to the program. Membership of that technical advisory panel is in the information that was presented to you. It includes the recognised experts in these areas from around Australia. If there are better ways of doing it we would absolutely welcome knowledge of those and we would put them to the technical advisory panel and say, 'What is your opinion of this method; is it better than what we currently do; is it equivalent, is it worse?' and we would make a decision. Through time the techniques that we have been using have improved - two or three years ago we were unable to genotype fox scats now we can.

**Mr MOONEY** - What we do with a fox scat is this: a third of it gets analysed for DNA and sexing, a third goes for dietary stuff and we keep a third - or the lab in Canberra keeps a third - for any advances in techniques and science. So most of that material is available for an advance in techniques and we would not have any problem with that.

**CHAIR** - So if we asked who you get that advice from, the answer would be the technical advisory panel.

**Mr WHITTINGTON** - Yes, page 20 of our submission lists the current membership of that.

**Ms FORREST** - Yes I have found it.

**Mr HIDDING** - As this is a committee set up to look into the efficiency and effectiveness of the Fox Eradication Task Force and as we have had no evidence from anybody to suggest that there are no foxes in Tasmania, I want to move on to your program. That is not to say that we cannot come back to all the other questions of how they might have come here or whatever.

I want to use a version of the old debating skill that the barrister among us would know about which is the principle of *reductio absurdiae* - in other words, you reduce something from absurd to consider the proposition. I want to go the other way with that and say to you that if it were -

**CHAIR** - People often say my questioning is absurd from the start.

**Mr HIDDING** - If it were so that Ted Turner sailed his yacht up the Derwent and said, 'Here is \$20 million on the table to use for the next two years and there is a knighthood in it for every person from Kim Evans down', what would you spend the money on? I want you to put aside your natural policy reticence of saying, 'Oh no, we are very grateful of the money we have' and all the rest of it and tell us what you would do if you had the dough.

**Mr EVANS** - That is a really good question and one that would be difficult to give an absolute answer to off the top of my head - and I daresay the same applies to my colleagues. It is the sort of question that you really need to reflect upon. I will ask John or Alan or for that matter Nick whether they could off the top of their heads give you some steerage, but I think my preference would be to take that on notice.

**Mr WHITTINGTON** - There are two points to the way I will start this. One is that when we designed the program essentially on day one - and Nick was in the room as was Kim; it was before Alan came along - we certainly used that scenario: what do we need to do to design a program? It was through that we came up with an approximately \$5.5 million program. So at the onset we went through that exercise.

The program that we have in some way reflects the fact that we had unlimited resources in a mind game sense. Things have moved on. If I had \$20 million tomorrow one thing that I would do concerns the strategic survey that we do. We do a third of the State at a time - we are doing the north-east; last year we did the south; we will do the north-west next year. That is an absolute reflection of resources. In an ideal world we would do all of the State in one go and to do that would require - and Alan will be able to tell me exactly how many staff - probably more than 100 staff in the field, for example. So we would soak up your money fairly quickly.

**Mr HIDDING** - So the question of efficiency is whether you are using the money that we give you efficiently. But effectively if Ted Turner were to sail up the river in 10 years' time- if he were still alive - and the foxes were out of control - it is game over, they are here - and if he were to say, 'You did not have enough money back then? Who were the idiots who did not give you enough money?' -

**Ms FORREST** - Or if they spend the money badly.

**Mr HIDDING** - No, that comes under the first word, 'efficiency', but 'effectiveness' is whether you have enough of it and how much more would it take to make a serious difference so that we do not have the situation where in 10 years time we say, 'Bugger it, they are everywhere.'

**CHAIR** - Before you answer that question can I point out that that comes into line with the recommendations as well? If it is helpful, because it certainly would be helpful to us, can we put that on notice to you and can you reflect on it and get back to us?

**Mr EVANS** - You did ask for some advice at the beginning about recommendations and we have been thinking about it as we have been moving through the discussion, so we do have some thoughts on that. We are happy to come back to you after we refine them, but we are equally happy to give you some feedback today if you want that.

**Mr MOONEY** - I think the types of questions we are being asked are not dissimilar to those we ask each other in the tearoom. Many of the questions Mr Dean has offered, we toss around and have quite robust arguments sometimes about these bits and pieces so none of it is new, with all due respect. I tend to be with John Whittington on this. I think our review of the whole status of foxes in Tasmania is going very slowly. We are doing stuff in series when we should be doing it in parallel. Not only should we ideally do this statewide survey in one year but we should also be doing it at a higher density in one year, a more thorough survey.

**Mr HIDDING** - And we want to hear about that. Let us see that in writing.

**Mr MOONEY** - If you have the resources - and it is not always money. I would offer the opinion that resources are an enthusiastic, trusting community. If you don't have a trusting community - with our scat surveys we think, 'We could probably use hundreds of volunteers but who can we trust?' We are already distrusted ourselves, so it doesn't encourage you to take a chance with an unknown person saying, 'Look what I've found'. You can't dust down everyone in between these sessions. The reality of using volunteers for evidence that you may have to argue on some sort of forensic level is obvious. It is not just scats; a different analysis on those same scats is obviously an advantage to styles of asking the same question. Imagine we have a block of 3 kilometres by 3 kilometres and we have 10 hours to search that using a standard method. We use a standard method so that we can relate what we find to effort and detection probabilities. It is not necessarily in some places a very thorough search, as you can imagine. Ten hours in 9 square kilometres picking up scats and each scat has to be logged and recorded properly, so the people have no proper chance to look for other evidence such as footprints or set up cameras and come back in a month to repeat that. I would love to be in a situation where we had an enthusiastic, trusting community that said, 'We really want to find out what's going on so let's get on with it'. We have the oddest situation - and it is not out of school for me to discuss it - we have a landowner with fox-positive scats from his property and he won't let us on to bait. That is essentially setting yourselves up for failure. It is like having a fox reserve in the middle of the baited area.

**Mr HIDDING** - Have you raised that with the TFGA?

**Mr JOHNSTON** - Yes, and they have raised it with him.

**Mr MOONEY** - We may be suffering because of other disputes within government and between this landowner and the Government over different things. He may not be picking on the foxes.

**CHAIR** - There should be legislation in relation to that, though - that is my view.

**Mr EVANS** - That was one of the things that we were going to suggest that you might want to investigate as part of this inquiry. One of the recommendations that we framed related to that very point and we were going to suggest that you had something along the lines of 'consider ways to strengthen the powers to access land', and going on to the discussion at last week's hearing also dealing with deliberate and mischievous hoaxing and tomfoolery.

**Mr HIDDING** - Some time ago with some farmers we figured out who was allowed to stroll onto a farmer's land and do what they had to do and it is a huge list. All sorts of people are qualified to drive on and say, 'Good day, Bob, I am here to do such and such'. He says, 'There is the gate', and the reply is, 'No, I am here, I am staying; I have a head of power'. Clearly, your guys have not yet got that power.

**Mr WHITTINGTON** - There are certain circumstances where we could but the proof of evidence onus would be on us to demonstrate that there is a fox there. Then under the control act we could go in and do something with that fox.

**Mr HIDDING** - A weeds officer or whatever would not have to find any of that because weeds blow across farms, so he goes on.

**MR JOHNSTON** - The physical evidence is more apparent.

**CHAIR** - I think a strong bit of evidence is that 21 different staff members have picked up scats. You, in turn, Nick, picked up a number of scats near the Cleveland property. Can we ask that be put that on notice in relation to recommendations and the matters that Rene was touching on?

**Mr EVANS** - Yes, we are happy to do that. I just need to correct something that I said earlier with regard to staffing. I talked about 15 fixed-term staff finishing up and gave the impression that all 15 would be filled. What I need to correct is that we only have funding for 11 of those fixed-term staff because four of them were being funded out of moneys provided from the Primary Industries division of the agency, which ends at 30 June. So under the program funding we only have funding for 11. So 15 finish and there are 11 vacancies.

**Mr HIDDING** - But that is your budget. We are not talking about the Feds here. So that is something we do know that is going to be in the budget - a drop of four salaries.

**Mr EVANS** - No, the budget will be the same but we have been funding four positions from moneys out of another part of the organisation.

**Mr HIDDING** - Why were you?

**Mr JOHNSTON** - The scat survey that has been mentioned quite a bit lately has been running for roughly three months and is basically coming to an end. When that started we employed four additional staff to work on it. So while we have 15 staff finishing, we already have a surplus of four staff over and above our normal level. So those four staff will continue, which means there are only 11 vacancies. Does that clarify it?

**Mr HIDDING** - No. In fact you might have contradicted your secretary. You say the four staff continue, but he says the funding is about to dry up.

**Mr EVANS** - The funding for 11 on the Fox Eradication Branch program.

**Mr HIDDING** - That remains?

**Mr EVANS** - That remains.

**Mr HIDDING** - But the subvention of four extra salaries will cease? So 15 bodies go and you will be replacing them with 11?

**Mr JOHNSTON** - But we have four more than we normally have, and they are continuing. So we will still have 15 additional staff: 11 new ones and four who would not normally have continued.

**Mr HIDDING** - That is an interesting way of putting it.

**Mr DEAN** - You said that a report was being done by the University of Tasmania and I think you said you were going to table it when you got it.

**Mr JOHNSTON** - Yes, I still do not have it. They promised it at the start of May and we still do not have it yet.

**CHAIR** - Thanks very much for your time. The recommendations would be helpful and also the matters that Rene was touching on.

**THE WITNESS WITHDREW.**

DISCUSSION WITH Dr MAXINE PIGGOTT, UNIVERSITY OF CANBERRA, BY TELEPHONE LINK.

**CHAIR** (Mr Wilkinson) - Thank you very much for your submission. There are some questions we would like to ask on that, but first of all, could you give us an overview of your submission?

**Dr PIGGOTT** - The main reason I wanted to make a submission is that a number of people contacted me and they wanted to discuss whether I thought that the methods being currently used for the scat DNA analysis in Tasmania were efficient and what I thought of the program.

**CHAIR** - We have two people from the department with us, so if there is anything you want to say in confidence or in camera please let us know and we can close the hearing for that.

**Dr PIGGOTT** - That is fine. The researchers who are involved in the scat analysis are good researchers and I do not want to criticise them at all. They are very good genetic researchers. However, I was getting a lot of questions and there seemed to be a lot of almost public doubt about the methods and results that were coming out. I wanted to suggest that a review of the methods and results we are getting might be worth undertaking, particularly to improve the public's perception of what work was going on. I was a little bit concerned as well with some of the methods I had read about. I'm not exactly sure of what methods they are doing so that is probably something I need to be sure about. All I can comment on is from what I have read and from what they have referred to in their work. If they are using different methods than those they are publishing or discussing, my comments may not be correct or may not be as accurate as I would like them to be. That was the main issue. I thought that maybe it would be a good idea to have a look at what methods they are using. Are they using the best method, particularly for the individual identification? In terms of identifying the species, I don't have any problems with the methods they have been using but once they start doing individual identification and want to know what particular individual left the scat, it is very important to have the very best method possible used.

**CHAIR** - What do you understand is happening in Tasmania? Do you have a good knowledge of what they're doing?

**Dr PIGGOTT** - Initially members of the team who decided to undertake the research in Tasmania visited Monash University laboratory where I was working, so we understood that they were going to be using DNA analysis to try to determine initially if there were foxes in Tasmania. We were aware that they were the methods that were going to be used. We knew that they were thinking of using Chelex as their extraction method; that was something they were quite keen on using. We did say to them, 'That's not a method that we would recommend', but if they were confident that they would get good results with that method that was up to them. They published a paper in 2007, Berry et al., called 'DNA Detection of Invasive Species: The Case of Feral Foxes in Tasmania' and they described the method that up until that date they had been using. If that has changed since then, as I said, that is something I am not exactly sure about. In recent reports by Dr Berry in terms of individual animals that have been identified, he is still



referring to Berry et al. 2007. I am assuming that they are still using that method or that is the basis of the method they are still using; maybe there have been some changes incorporated since then. I know they have identified species and detected foxes and with the scats that have come out as fox-positive, they are now using microsatellites to identify the number of individuals that provided the scats.

**Ms FORREST** - The microsatellite use, is that as described in the Banks method that you refer to in your submission?

**Dr PIGGOTT** - That is just a different DNA extraction method. At Monash University we had a big group of researchers and we were doing a lot of non-invasive research on scats and hairs. The Banks et al. method was the method that we found worked the very best to get the best DNA extraction from scats, particularly for microsatellites. Most of the work we did was for microsatellites. We wanted to get a DNA fingerprint for all the animals we were studying. In terms of direct comparison with Berry et al., the initial Chelex method they were using was for species identification. Their results show that that seemed to work adequately well and I don't have any problems at all with using that method for the species identification. But in terms of individual identification, we have found that the Banks et al. method definitely worked very well for all the species that we studied. We have looked at a big range of species - brush-tailed rock wallabies, wombats, quolls and foxes - and it was a method that worked very well across a number of species and provided very good results for individual identification.

**Ms FORREST** - Having said that, the Chelex method would be reasonable for determining it was a fox. What you're suggesting is that if you want to know more about that fox, whether it was male or female, whether the scat belonged to the sibling of another fox that also had a positive fox scat in the area, you would need to go to that next step and use the Banks et al. method?

**Dr PIGGOTT** - Based on the results that they have provided, they have said that their method does not produce as good results as the Banks et al. method, particularly as in that paper they were doing mitochondrial DNA and they also used a sexing marker to determine gender and the sexing marker uses the nuclear DNA, which is the same as what microsatellites are from - they are both nuclear DNA. They said that Chelex provided a 10 to 25 per cent less robust result and I think that is a little bit of a problem. If they are still using that method, if methods have changed or there has been some adjustment, that might be different. We have tried the Chelex method; we use it for hair extraction but we do not use it for scats. The main difference between the two methods is that with the Banks et al. you are removing a lot of the inhibitors that you find in scats. As you probably know, there is a lot of stuff that comes out and it is very important to remove as many of these inhibitors as possible to try to get the best results. If you are just adding Chelex to your sample you are not really removing those inhibitors and that is probably the main reason you get less robust results from that.

If, for instance, they have introduced a step which removes those inhibitors that might be a different question but based on their paper they have said themselves that the Chelex method was less robust than the Banks et al. method for the nuclear DNA. so basically for using microsatellites.

**Ms FORREST** - You made the point in your submission too that the Chelex method is cheaper and technically easier than others?

**Dr PIGGOTT** - Yes.

**Ms FORREST** - Do you have an idea about the comparative costs of those?

**Dr PIGGOTT** - I am not exactly sure. I agree that is probably a very important point and that is also something that I cannot comment on because if there is a specific amount of funding towards the project then, of course they have to make sure they use the most cost-efficient method. Chelex is very cheap so it could be that in terms of the results it provides it is better value than the Banks et al. method. Both methods are probably fairly labour intensive, but I suspect that the Banks et al. method is more labour intensive, so you probably have added labour costs as well. Of course that is another issue as well. The cost of these sorts of programs can be huge so that has to be weighed up and I guess that is not something that I could directly comment on. I can understand why they would probably use Chelex if they wanted something that was very quick, did not cost a lot and gave pretty good results.

**Ms FORREST** - So having said that then, it would be reasonable from what I am hearing to use the Chelex method to determine that yes it is a fox scat or no it is not. Then further investigation of the genetic marking and looking at more information about that particular fox, depending on the cost - and obviously that is an issue that needs to be considered - the Banks et al. method would be more appropriate to determine that?

**Dr PIGGOTT** - I think in an ideal situation if I were having a program like this where I wanted to do species and then do individual identification, I would, if possible, cut the scat in half do the Chelex on half of the scat and then use the other half to go on to individual identification if that needs to be done.

I do not want to say that the Banks et al. method is the only method that should be used; I am just saying that is a method that has worked very well and that is one that they have compared as well. If they have a method that does work very well and they can show that it compares well with something like the Banks et al. method, that would be fine as well. I am not trying to say that they would need to use Banks et al. method; it is just that, compared to Chelex, it uses a particular kit and the main difference is whether they need to use a kit. Probably not. What we use is called a Qiagen kit and that has really helped to remove all the inhibitors and to clean up the DNA but that kit costs quite a bit of money. I think you are right. It would be nice I think to may be have two particular methods where you can use may be the more expensive method if you get a positive ID for the species.

**Mrs BUTLER** - Maxine, could you give us an idea of the comparative costs of the two methods, please?

**Dr PIGGOTT** - I do not know with Chelex because I do not use it so I am not exactly sure and, again, I do not know what methods they use for the Chelex. I think for the Qiagen kit, from when last used it, the actual kit itself would work out at about maybe \$5 per sample and that is just to do the extraction and that does not include the time. It is

probably a couple of hours of someone's labour costs as well. It is a bit hard for me to do direct comparisons because I do not know how much Chelex costs.

**Mrs BUTLER** - If you had unlimited funds, what method would you choose?

**Dr PIGGOTT** - If I had unlimited funds I would do the Banks, just because I know that works very well and we have done that and we have always had very good results. But again that is for microsatellites for individual identification. If it was species ID I might actually do a bit of comparison myself and work out which one was more cost efficient. Non-invasive genetic analysis is an expensive method. You cannot get away from the fact that it costs quite a bit of money. A lot of projects that I have done do cost quite a bit of money and it is always good to try to minimise the cost where you can if possible. We have always used the Banks method. There have been a few changes over the years by various people but for the very core we have always used it because it has always worked so well and I have always had such good results with it.

**CHAIR** - You are saying the Banks method is a good one because you have had personal experience with that but in relation to the Chelex method you have not had any experience in it so you cannot really comment on its effectiveness or otherwise when trying to compare with the one that you have had experience with.

**Dr PIGGOTT** - With a number of the people I have worked with over the years we have used Chelex and we did not have good results so we have not pursued it. We have used Chelex for hair sampling. I have used it for getting hair follicles from animals and that worked very well but in terms of the scat analysis we have tried it but we have not pursued it because we did not get good results with it. That was mainly because our priority was always individual identification. The University of Canberra group were initially trying to get a method for species identification and I think they have gone for a method that they thought would be quick and easy and also cheap. I think we have come from different angles as well because we wanted a very robust, good method for individual identification that worked on a range of animals. We tried Chelex and we moved on from it and we developed an alternative method.

**CHAIR** - Does it depend upon the species as to what use? In other words, would the Chelex be best for foxes as opposed to the Banks, or it does not depend upon species?

**Dr PIGGOTT** - I do not think so. The Banks has worked well on foxes and we found it worked well on all the species that we looked at. It has worked well on wombats, rock wallabies, foxes and quolls. If you have a good method it should not really be species specific. I do not think there is anything particularly different about fox scat so that the Chelex would work better on foxes than other methods. In the end in their results they are still showing that basically the Banks method worked better for nuclear DNA than the Chelex for foxes. I think in the end the method probably comes down to what you are looking for. The Chelex method is a good method for species ID in terms of probably what the program wanted, which was a quick, easy and cheap method to identify foxes.

**Mr DEAN** - What comes out of the analysis that you have done so far, and it is rather interesting, is that the Rufus wallaby, which is a prolific Tasmanian animal, has not been found in any of the scat testing that you have completed. I understand it has been found

in devil scats and so on that have been analysed. Do you find that interesting and are there any comments you would like to make in relation to that?

**Dr PIGGOTT** - Do you mean in terms of Rufus wallaby not being found in fox scats?

**Mr DEAN** - That is right. On the document we have been provided with on the analysis that has been done, there are no remains whatsoever of the Rufus wallaby in those scats

**Dr PIGGOTT** - But you are finding them in quoll scats?

**Mr DEAN** - I understood that they had been found in other scats.

**Dr PIGGOTT** - It is hard for me comment because it just comes down the dietary preferences, maybe, between animals. I do not know what methods they have used. I guess that they are trying to find remains of what animals have been consumed by foxes. That is hard one because it probably depends on where the animals are found and whether is there high concentration of rufus wallabies and maybe there are other species that foxes are preying on. I am not sure I can comment on that one.

**Mr DEAN** - In relation to point 2, you have indicated there that there are three positions: protocols for collecting and storing samples in the field, and protocols for extracting DNA. That is the one you have concentrated on. In relation to protocols for the collection and storing of samples in the field, have you given any advice on how that should best be done or could be done? Have you been asked to do that?

**Dr PIGGOTT** - I have not been asked and I think that is a very important consideration because in all the research I have done I have found that collecting and storing samples is also a really important issue in terms of getting the best DNA from your samples. It has made a huge difference in my research. If I have control over how things are collected and stored and I really overlook how they done, then I did get much better results. I did not comment on that because I do not really have good information on that, and I wanted specifically to concentrate on my experience of the DNA analysis in the lab. It is something that should be really thought about and it is really important. I do not know if the university do this, but they probably have protocols on the best way to do this. It is very important that it is collected well and stored well because it does impact on the analysis later on.

**Mr HIDDING** - Maxine, could you tell us whether you have had any contact with the expert panel, the technical panel of the Fox Task Force? These are, we are told, the people who decide what science to use. Have you had any contact with them at all?

**Dr PIGGOTT** - Can you tell me their names, because I do not think so. No-one has specifically contacted me and have said that they are from that task force. So, I suspect I have not had any information.

I do not want to make this an us versus them argument, but in terms of this research I think it is really important that scientists get together and say, this is this and this works really well and we recommend you try this or we are happy to help out, because I think that the fox issue in Tasmania is a really serious conservation issue for all of Australia, not just for Tasmania. But I do think sometimes there can be a bit of in-house stuff and

people will not try to consult other people who may have good experience or have good suggestions in terms of these matters.

**Mr HIDDING** - Maxine, the reason for my question is that one of the issues we have with this whole fox problem down here is that there is a degree of public opprobrium attached to anybody who has anything to do with foxes. Somebody should write a social thesis on it one day. It is really quite weird. It would be absolutely wonderful if we had some scientific collegiality about at least this kind of thing. I would not be breaching confidence to say there is high-level thinking that somebody is bombing Tasmania with fox scats from Victoria. This is how people are thinking.

**Dr PIGGOTT** - I have heard all this and this is another issue where I thought, 'It's important that we get really good methods and that people are confident that the methods are working'. I have heard suggestions that people are planting this sort of stuff. It is probably unfortunate that it is hard to prove that it is not happening. I think there seems to be a lack of confidence in everything that is being done over there. I can only come in from my experience of the DNA analysis. I think it is a shame that there seems to be such problems with people believing that there may be this serious problem with having foxes in Tasmania. I think it is a real shame.

**Mr HIDDING** - In your experience, is there anywhere else in Australia where there is a lack of scientific collegiality or agreement on these matters? Is this peculiar to Tasmania?

**Dr PIGGOTT** - Not particularly. I think that scientists can be very closed sometimes in terms of collaborating because it often comes down to funding and who gets the work. I think there may be a little bit extra going on in Tasmania, just because it is a very controversial issue as well. I think also that scientists often think that they are doing better. The non-invasive field of research is a funny area as well because around the world I have noticed as well that research groups think that they do it better than other research groups. It is quite a technically-challenging area and people can often spend a lot of time on their methods and people then criticise it, which I guess is what I am doing. You can criticise other people's methods and say maybe they should be doing what we are doing, so I think there is a bit of that going on as well. I think it can become a bit closed and people want to keep it within their own laboratory and their own group.

**Mr HIDDING** - Can we read out to you the names of the technical panel?

**CHAIR** - Maxine, the members of the management committee are Penny Wells, who is Resource Management and Conservation, DPIWE in Tasmania; Charlie Zammit, Department of Environment, Water, Heritage and the Arts from the Commonwealth; Alex Schaap, Biosecurity and Product Integrity from the department; Mark Bryce, Parks and Wildlife Service; Peter Volker, Forestry Tasmania; and Tony Peacock, Invasive Animals Cooperative Research Centre. The members of the technical advisory panel are from a number of different States. Glen Saunders, Department of Primary Industries, New South Wales; Stephen Sarre, Institute for Applied Ecology, University of Canberra; Steven Lapidge, Invasive Animals Cooperative Research Centre, Adelaide; Dave Ramsey, Arthur Rylah Institute in Victoria; Andrew Murray, Department of Sustainability and Environment, Victoria; Hamish McCallum, University of Tasmania; Janine Baker, Bureau of Rural Sciences, Canberra; and Keith Springer, PWS Macquarie Island Pest Eradication Program.

**Ms FORREST** - Have you had contact with any of those people or given them any advice?

**Dr PIGGOTT** - No. The only person I have had some contact with is Tony Peacock recently. There was a blog on the *tasman/antimes* concerning the fox program. My name was raised and I felt I would like to give a response. I contacted Tony privately and said what was going on because he suggested there was collaboration going on between the University of Canberra group and Monash University in terms of the fox research, which there has not been, so I wanted to clarify that. He is the only person that I have had any contact with. He asked me if there were any better methods that could be used.

**CHAIR** - It seems obvious on the evidence that we have before us at the moment that there are foxes in Tasmania. There have been 21 different staff members who have picked up scats that have been identified as coming from foxes. Therefore the real issue is, is the eradication program efficient? Could it be done better? That is what we have to make up our minds on. So that would be a question to you, could it be done better? I understand the summary of your evidence would be, with the system that you have described and given evidence about in DNA, maybe working in concert with or alternative to the Chelex method.

**Dr PIGGOTT** - It is certainly possible. I think it would be important to work out exactly what methods are being used. If they are still using the method that they are referring to then I think they would need to think about improving that method, even using, as I said, the Banks et al method. There are certainly ways that they could advance that method that they are using and, again, maybe they have. I do not want to say that they are only using Chelex because all I can say is that based on the reports I have seen on individual identification they are referring to that method of Berry et al 2007.

There are other matters I think as well that could certainly help. Point 3, which I have raised on the second page which is under the second recommendation and the timing between DNA extraction and subsequent analysis, that is another really important consideration as well. I do not know in terms of when they have identified the species how long it is taking for them to then do individual identification because that is another really important step. We found that the genotyping had to be done within a week following DNA extraction to get the very best results. If that is not happening that could also be something that might impact on their results. I would not know what the time lag is between the DNA extraction, identifying the species and then sending it to Perth to identify the individual. They are the sorts of things that we have found from experience as well. That is why I think it would be nice for there to be more interaction. I have worked on those sorts of analysis for nine years now so these are things that we have found that make a big difference in terms of the results.

**Mr DEAN** - Maxine, how much time is elapsing from the time those scats are found in the field until you carry out your DNA testings?

**Dr PIGGOTT** - From my research in particular?

**Mr DEAN** - Yes.

**Ms FORREST** - You are not doing tests for Tasmania, are you?

**Dr PIGGOTT** - No, I am not involved in it at all.

**Mr DEAN** - I thought you had carried out some of the work.

**Dr PIGGOTT** - No, no I have not done any fox research at all in terms of the Tasmanian one. I have done separate fox DNA analysis for Victoria but I had not been involved at all in the Tasmanian one.

**Mr DEAN** - If that is the case, Maxine, I will turn it around. What is the time lapse between the time of those scats having been located and you carrying out those tests?

**Dr PIGGOTT** - The very best thing is to have fresh scats. I think if you can get scats that are less than a week old, you are going to get better results. I understand that when trying to locate scats, particularly when you are searching in the field, you may end up having to collect very old scats. If you do get older scats then, yes, that may impact on the success of the genotyping.

In most of the research I have done we have really tried to maximise the freshness of the scats. For some of the species that has been very easy. When I did rock wallabies we had scat pots set up in the colonies and you could go in and get scats that were less than 24-hours old. Again, with the fox research I did in Victoria, it was quite easy to find abundant scats and they were also quite fresh.

If you are only collecting quite old scats in the field in Tasmania then that is another factor that is very hard to control and it probably does have an impact on the number of individuals that you can identify. You would definitely have problems with getting as good results as you would with fresh scats.

**Mr DEAN** - Thank you for that.

**CHAIR** - Maxine, did you want to say anything in summing up your evidence?

**Dr PIGGOTT** - I want to say that I do not want to put the boot into any of the current researchers, I think they have done a good job, and I certainly do not want to impact at all on the DNA detection program because I think it is really important. I think it would be good to maybe have a bit of a review of the methods that are currently used and make sure that the very best methods are being used, particularly for individual identification.

If the methods that they are currently using are different from what I have seen reported and they are providing good results then that is great but it would be really nice to make sure that the very best methods and protocols are being used to make sure that you are maximising the number of individual animals you can identify and that will then impact on how best to manage and eradicate foxes in Tasmania.

**Mr HIDDING** - Well put.

**CHAIR** - Maxine, thank you very much for your time. Sorry we kept you waiting for eight minutes but sometimes these things can drag out a bit.

**Dr PIGGOTT** - That's okay. Hopefully I could be of help.

**THE DISCUSSION CONCLUDED.**