

# Plenary: a session of questions and answers

## QUESTIONS & ANSWERS

**CHRIS DICKMAN:** When you do ask a question, please state your name for the record. This will be part of the published proceedings. There were a lot of issues that came out of today: dingo purity came up in a number of talks and questions. We might want to pursue whether we can determine whether a dingo is pure or not, and to what extent we could extend this knowledge to manage dingoes at the population level? Another issue is that if this is a difficult thing to do at the broad-scale population level, does it really matter? Do we forget about purity and simply go for function? A number of speakers spoke of function - the role that dingoes play in the ecosystem. Finally, the issue that has dominated much of the day's proceedings is the issue of the conflict, the balance between conservation and control.

**SHELLEY BURGIN:** The population of dingoes in the south east that was interbred with dogs - I was wondering if it could possibly have been from an earlier wave of dogs that had come into the country and that all that is left is just that isolated population now in the south east. We have heard about races; that does not seem to be a realistic possibility unless a new wave of dingoes or dogs has come in, maybe as an earlier radiation.

**LAURIE CORBETT:** I don't think that it's likely to be the result of an earlier wave of dingoes, as this is the first or single wave to come in. There have been later waves that have come in from the north. The reason why there are more hybrids down in the south east of Australia, I think, is because people and their dogs have been down there longer, allowing more time of contact and therefore more opportunities for hybridisation to occur and then re-occur. It's just a matter of history of the first Europeans and their dogs.

One of the interesting studies I did when I went to Asia was to try and find the purest population of dingoes there to compare with the Australian dingo. I travelled through most of the Asian countries to find one which had pure dingoes. It's interesting that you could have a significant correlation between the percentage of hybrids in a country and the length of time that western culture, including introduced dogs, had been in that country. Thailand had the purest dingo population because it's only the last 50 or so years that they've had really good contact with Europeans. In places like the Philippines, where they've had the Spanish for 400 years and the Yanks for 200 years, it's very hard to find a pure dingo. That's the reason there are hybrids in the south east.

**ALAN WILTON:** The hope of the DNA work is that we might be able to answer questions like that. The idea is that if we can get enough samples we shall be able to distinguish between different groups of dingoes. Hopefully, within the next few years, if we can get enough correct samples spread over a wide area, we'll be able to find out what is going on down there in the south east.

With collaboration, particularly with people like David Jenkins who's trapping animals down in that area, and a lot of people in the Rural Lands Protection Board sending us samples whenever they happen to knock off a wild dog, we might be able to have a look at what is around. Any samples, blood samples, tissue samples, lop off an ear off a dead dingo and send it to us, we'll be happy to test it. If it's just a piece of ear it can be dried; a piece of dried hide can be sent through. I did get a nice piece of meat in a nice jam jar from one of the Rural Lands Protection people, but it unfortunately went to the University of Sydney before it got to me. I don't know how long it was in the mail, but I opened it in the fume cupboard when it arrived. A bit of alcohol, your best whisky or something, as a preservative please. Formalin is not too bad either, but alcohol is better than formalin. People extract DNA from mummified skins, dried skins, stuffed animals and museum specimens. Tissue doesn't have to be treated in any special way really.

**DAVID JENKINS:** Alan, with respect to the DNA testing, do you envisage further down the track that there will be a kit available so that when you catch a dog, you can take a blood sample, squirt it into the kit and take a result out at the end in an hour or so?

**ALAN WILTON:** It would be possible to develop a kit for the field in the long term. That sort of kit is available for medical testing; but it is based on the DNA sample, and the technique used - amplifying the DNA so that you can test the polymerase chain reaction - even at the laboratory, takes a couple of hours in what's called a thermocycler which changes temperatures. So you need a power supply and a couple of hours. I don't work with the animals in the field myself, but I'm told that you would have trouble getting ethics permission to keep a dog, or any animal, for a couple of hours while you did the test. It would be a long-term project, but it should be possible to do a test that would take perhaps three hours in the field.

**DAVID JENKINS:** You showed some results of some of first blood samples we sent from Kosciuszko National Park.

**ALAN WILTON:** Yes. We haven't closely analysed them yet. They look promising, but I still need to review those data. Talking to other people here today, perhaps the way to go, if people needed to test individual animals, would be to mark them with paint, or something like that, so that you could go back in a week's time and shoot them. I don't work with live dingoes. I don't know what the possibilities are, but yes, a nice bullseye on the side or something should allow identification.

**BARRY OAKMAN:** Alan, the dogs that I've got have been laboratory tested and a lot of them are getting long in the tooth. Some of them I don't want to breed because of space constraints, but how long before you'd have some sort of idea as to whether they were pure or not so people like myself, who do the conservation bit, can actually identify what we're holding so that we can do the appropriate thing?

**ALAN WILTON:** Some of the samples that we originally started with were from animals that Barry has - some from the dingo sanctuary at Bargo, some from other wildlife parks, such as from the Northern Territory and from Perth. One of the interesting things is that the data that I showed are already indicating that most of those animals seems to be purebred. I have not yet gone through and looked at individual animals and analysed them closely. I would say I can give you that sort of information within a few months.

One of the questions that people often ask is how do we know it's a purebred dingo in the first place? This is the real question. We found that when we compared a sample of dingoes to a sample of dogs that at least one of these markers, where all the dingoes were completely different from all the dogs, helped support our prejudices that this was a group of dingoes and they were different from a group of dogs. So we are pretty certain that the animals that we are using - and a lot of these animals are from Barry - are purebred to start with. I hope that answers your question.

**MARTIN DENNY:** I feel we are losing the plot a little bit. If we are going to start splitting off dingoes as purebred dingoes and non-dingoes as pest species, how in the hell are we going to tell what they are in the field? When we see a dog running down a track, what sort is it? If we take up Laurie Corbett's criteria, the one that he was using for races, then if animals are ginger coloured and their skull measurements are within 95 per cent confidence limits, then they are dingoes, and we leave them alone. If you talk to other people like Roland Breckwoldt, he says, "Oh, don't worry, we've got to toss in the black and tans," like we're in some sort of Irish rebellion. Is there really any external feature to distinguish a dingo from a dog? Do we shoot it because we think that it may be a dingo or it may not be a dingo? It seems to me that for all of this legislation and the rules we are going to have, we still have no idea of whether we are going to get a

dingo or not in the field, or whether we're going to talk about dingoes being pests or non-dingoes as being pests. I don't think any of us yet have come up with any of those criteria. Maybe the experts can help.

**ROLAND BRECKWOLDT:** Black and tans are recognised as a dingo race because they were here prior to European settlement.

**LAURIE CORBETT:** One of my main conclusions was the fact that it doesn't matter what colour an animal is. You can't be sure what its ancestry is, because there's dominant genes for coat colour, there's submissive genes or subordinate genes. If you mate a ginger dingo with a black and tan dingo, all the offspring are ginger, and you'd certainly trap them, shoot them and get the bounty on them because they'd look like dingoes. If you mate those pups, then you'd get about fifty-fifty black and tan and gingers, and you could leave the gingers alone because they look like dingoes, but they're not, and shoot the black and tan because you think they're hybrids or whatever, and they are. It does not matter what colour its coat, its pelt, is, you can't tell what it is.

**MARTIN DENNY:** That's not the point. If you're talking about conservation, how do we stop the increasing menace of hybridisation sweeping the continent?

**LAURIE CORBETT:** There are two distinct questions with two distinct answers. Firstly, you can't tell at this stage what an animal's purity is in the bush. As Bob Harden and Alan Newsome said, it doesn't matter what an animal is if it's performing an ecological role in the bush. If you think that the thylacine was here before the dingoes, and the dingoes took over from the thylacine as a top predator, then it really doesn't matter who's running around the bush.

Secondly, if you think the dingo is worth saving as a native Australian species, as a great Australian icon - and I think they are - then they are a bit like Collingwood Football Club. You either love them or hate them, but at least everybody knows about them. If you want to save them as an icon, then you should do something about separating the hybrids from the purebreds and then preserve the purebreds.

**MARTIN DENNY:** How do you keep the Collingwood Football Club?

**LAURIE CORBETT:** In the bush, at this stage, I don't think it really matters if you use skull tests or DNA tests or whatever. It is probably going to take 10 or 20 years to get a working test kit in the bush. It doesn't really matter because you come back to base one; you're still looking at the animals' role in the bush, and that's the important thing.

If you want to preserve the breed, offshore islands are probably the best bet to do that. You have a confined area, which you can control. Besides controlling the dingoes, their purity by testing, and matching their numbers to the native food supply available to them so that they sustain themselves in a natural fashion, you can also control people and their domestic dogs. That's most of the problem in relation to producing hybrids. You change people in two ways: you can stop them having domestic dogs or insist on them having neutered dogs on that island where there are pure dingoes; but, more importantly, you can train the visitors to the islands who see those dingoes to change their perception of what they should expect there. You'll treasure a fleeting glimpse of a wild animal much more than having a mob of camp dogs raiding your barbecue.

**ERIC DAVIS:** This is an important issue and worthy of really good debate; but right now, at a practical level, we have troops out in the paddocks in various places trying to implement wild dog control. So you can see the importance for this functional base in terms of wild dog definition versus the genotype or breed-based definition.

**BRUCE MOORE:** I am from the Barwon River Wild Dog Association. Firstly to Bob Harden. You stated that part of the reason for there being numbers of fairly pure quality dogs in the north east of the state was due to long-term use of the 1080 buffer strip method of wild dog control in the north. Is that correct?

**BOB HARDEN:** Bruce, I don't actually remember saying that.

**ROLAND BRECKWOLDT:** You gave the example of buffer zones in Western Australia, and I think that's what the question was getting at.

**BOB HARDEN:** The buffer zone is to stop dingoes coming from the national park into your property.

**BRUCE MOORE:** All types of large dogs come from the cities to the north. I can't see any other logical reason that could have resulted in the north-east of the state having a higher proportion of pure dingoes than the existence of that long-term 1080-poisoned buffer strip that annually takes out the hybrid dogs.

**BOB HARDEN:** If you put out aerial baits once a year, it's wishful thinking to say that you will have any significant impact on the ingress of feral dogs into national parks or state forests. It can occur at any time through the year. I know that it's popularly believed, but I'm not aware of any evidence, or whether anybody else is aware of any evidence, that supports that hypothesis. The real problem is, as you know and I know, that the aerial baiting occurs over about a two-hour period each year, and the baits are probably viable, in the wintertime, for maybe a month or six weeks at the most.

.....: 200-odd days in the winter.

**BOB HARDEN:** I would have thought both Peter Fleming's and John McIlroy's data would suggest less than that. So really, it's a fairly big ask.

**BRUCE MOORE:** I hadn't heard of any better reason put forward today.

**BOB HARDEN:** I don't think any reason was put forward at all.

**GREG CLANCY:** I come from the north-east. The north-east is a reservoir of species that have declined or become extinct in the south-east, in central New South Wales, and the central coast. I think that the purity of the dingo here is pretty good; we're not seeing that many that look terribly hybridised, but I know you can't reliably tell. In north-east New South Wales we still have the bulk of the koala population, the bulk of the quoll population, the bulk of the phascogale population, and it goes on. With macropod diversity - the kangaroos, wallabies, etcetera - we still have virtually every species that we had at the time of white settlement. There are not many areas that can boast that. So that the north-east corner of New South Wales, despite 150 years of trying to log it and burn it and knock it all down, still is a great reservoir of native species compared to other areas that have suffered a lot more. And there are probably a lot of reasons for that; one is it was naturally more diverse anyway because it is in the MacLeay/McPherson overlap zone. I think the dingoes are just part of that. The dingoes and their populations are healthy because it is a healthy region at this point. It won't always be like that; there are a lot of people working hard to destroy it, but at the moment we are pretty lucky.

**BRUCE MOORE:** I think those other species you mentioned are a bit more environment-specific than the dog. The buffer strip that we have, there's a lot of that hybrid-type dog moving in that area; that's basically the only that they are being taken out of the system.

One further point, I'd like to ask Martin Denny whether he remembers doing a forestry EIS in the Walcha-Styx River area and finding a healthy tiger quoll population in Ben Hall's Gap State Forest. It's now a national park. That forest has had a very long history of 1080 baiting. Bob couldn't be drawn on the point yet. He's yet to do some research on it. To a layman, it would seem interesting that you've been putting a significant amount of poison out in a specific area that's deemed to have a significant impact on a species and yet we have a reputable scientist finding a healthy population of that species in that area.

**MARTIN DENNY:** Yes. There are high population numbers of quolls there. I can't tell you what the correlation is between that and the 1080. There's a creek near Wauchope, which is really open grazed land where the tiger quolls come into the people's chicken coops. There are high numbers of quolls there. The tiger quoll is quite adapted to natural or artificial or human things, but I can't give you any response to what it would be in terms of the 1080 baiting.

**SHELLEY BURGIN:** I have one suggestion for helping out the dingo in the long term and that is to start making domestic dogs untrendy as pets. Every dog that we get rid of as a pet is one less that's potentially out there ready to breed with dingoes.

**ARTHUR WHITE:** There's been discussion about the changes to the Rural Lands Protection Act. I would really be interested to have somebody tell me what they think will be the practical outcomes of those changes.

**ERIC DAVIS:** From a practical point of view, there won't be too many significant changes. The previous Act didn't bind the Crown, but the new Act does. We are trying to separate the effect of that so that the areas that were previously covered will have similar provisions. There will be new provisions on the Crown lands, and the National Parks and Wildlife Service and New South Wales Agriculture are pursuing the matter. We also intend to talk to State Forests, and that should be happening soon, and other land managers as well. The aim is to get collaborative programs in place. I see that as formalising best practice arrangements that have already existed in places, but not uniformly.

**BRAD NESBITT:** I'm with National Parks and Wildlife Service on the north coast. I've been working with dingoes for about four years. We are dealing with their conservation management and their control in terms of minimising their impact on livestock on our boundaries. One of the questions that remains unanswered is the question of what is the number of dingoes and/or hybrids that we're dealing with in those landscapes. The general feeling with some land-holders is that our parks are teeming with dogs, and we're talking hundreds and thousands through those areas. Then, we do a lot of surveys, we travel through the parks and sometimes you don't see any dogs at all. Has anyone done any research or can anyone give us a feel really for densities per kilometre?

**BOB HARDEN:** It's a question I probably need to go home and look at the data on, Brad, but we had data from the 60s and 70s and 80s when we worked there on densities. From memory, we estimated we had about 40 dogs in an area of - I've got to pull this one right out of the air - something of the order of about 30 or 40 kilometres wide, say about 900 square kilometres. It is a difficult question, because the answer depends on where you draw the line.

**CHRIS DICKMAN:** I ask this question wearing my Scientific Committee hat. We've heard a lot about the state of dingoes in parts of Australia and in New South Wales. Is there any information to suggest that there are populations of pure dingoes in this state and, if so, where are they most likely to be found?

**LAURIE CORBETT:** I can only speak from the data on the skulls, i.e. skull morphology. Samples from the coastal regions and the north-east of New South Wales, Bob Harden's country, seem to be the best bet. Most of those skulls were fairly old. They were collected in the 1960s and the 1970s and a lot could have happened since then. The important thing was that they were similar to skulls from the rest of Australia, so there were good dingoes then. It's important now that more recent samples are taken.

In the surveys that Peter Fleming, David Jenkins and Alan Wilton mentioned from throughout the state, - it would be important to not only collect samples from the north-east, as I'm sure they will be, but also to take the skulls as well as samples of DNA from the same animals from the same region and compare the two methods.

**KEITH ALLISON:** In relation to the arguments that have gone on here today, talking about the south-east being hybrids because of the length of time they've had to hybridise, I would suggest that the purest dingoes in Australia are where the least human occupation has been for the longest period of time. I'd say that's central Australia.

The chances of crossbreeding up there have been a lot less than in your coastal areas or your more densely-populated areas, but I fear today, with the huge increase in ecotourism that we are losing the isolation of those communities because there's huge amounts of traffic there, and because there's a big chance that tourists with dogs quite often lose them.

**Laurie Corbett:** Yes, that's quite true. The more pure populations are in the centre north, the north-west of Australia, but there's also been domestic dogs up there for a number of years as well, particularly when you consider some of the settlements, the Aboriginal settlements, and some of the mining operations. There have been animals up there since the 1920s, so there's been plenty of scope for hybridisation to occur. In the broad sample which CSIRO took in central Australia in the 60s and 70s, it was, I think, 98 per cent pure dingo. If you break that up into smaller areas, the sort of hot spots where there might be 78 per cent hybrids, in all those cases you could associate that figure with a mining venture or a settlement with its associated domestic dogs.

Until recently we thought Kakadu National Park in the top end of Australia was pretty free of hybrids. You only find ginger dingoes up there, and so on. But in the last couple of years they've got cases where they're checking out to be hybrids. Again, because of the advent of tourists and their dogs.

**Paul Jennings:** I worked at Tibooburra for eight years and, for the lack of any skulls, any DNA, any blood or anything like that from that region, we don't know what's in western New South Wales. I haven't heard anybody say anything about western New South Wales yet. I think we need to get a few samples.

**Chris Dickman:** I'm afraid we do have to wind up at this point. It's been a very exciting meeting. I was sitting in front of Alan Newsome, who was poking me earlier saying that this kind of meeting would not have happened 20 or 30 years ago, and it's really good to see that it has today. I think it's been so productive. I'd like to hand over to the President of the Royal Zoological Society of New South Wales for a final wrap-up.

**Shelley Burgin:** I think it has been a very exciting day and it's great to see people from so many viewpoints come together in the same room without any real punches thrown. I really thought that there may have been a lot more vocal controversy than there actually has been here today. It's my pleasure to thank people who have made this day possible and I'd like to start with Chris Dickman. It was his idea that we should run this dingo symposium. The Council of the Royal Zoological Society thought it was a wonderful idea and, as always, threw their support behind Chris, as they always do for any of these forums that we run. I'd like to particularly mention Hickson Ferguson. He did a great deal behind the scenes to get this going initially. I'd also like to thank the Scientific Committee, the New South Wales National Parks and Wildlife Service, who supported this financially. The Australian Museum also has supported us financially by giving us cut rates on the food and on the room here today. I'd like to also thank all the speakers and the organisations that have paid to send you along. I'd particularly like to thank Adam Harris, who did a great deal of work behind the scenes, with assistance with the booking and the running of this theatre today, and Tish Ennis, and other museum staff for their stuffed animals and so on for their exhibits, which made a really nice touch. Thank you all for coming and making it a wonderful day.