



COMMONWEALTH OF AUSTRALIA

Official Committee Hansard

SENATE

ENVIRONMENT AND COMMUNICATIONS REFERENCES
COMMITTEE

Status, health and sustainability of Australia's koala population

TUESDAY, 3 MAY 2011

BRISBANE

BY AUTHORITY OF THE SENATE

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**SENATE
ENVIRONMENT AND COMMUNICATIONS REFERENCES COMMITTEE**

Tuesday, 3 May 2011

Senators in attendance: Senators Bob Brown, Cameron and Fisher.

Terms of reference for the inquiry:

To inquire into and report on:

The status, health and sustainability of Australia's koala population, with particular reference to:

- a. the iconic status of the koala and the history of its management;
- b. estimates of koala populations and the adequacy of current counting methods;
- c. knowledge of koala habitat;
- d. threats to koala habitat such as logging, land clearing, poor management, attacks from feral and domestic animals, disease, roads and urban development;
- e. the listing of the koala under the Environment Protection and Biodiversity Conservation Act 1999;
- f. the adequacy of the National Koala Conservation and Management Strategy;
- g. appropriate future regulation for the protection of koala habitat;
- h. interaction of state and federal laws and regulations; and
- i. any other related matters.

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ADAMS-HOSKING, Ms Christine, Koala Research Network

BAXTER, Dr Gregory Stephen, Koala Research Network

ELLIS, Dr William Anthony Howell, Koala Specialist, Koala Research Network

McALPINE, Associate Professor Clive, Spokesperson, Koala Research Network

TIMMS, Professor Peter, Koala Research Network

YOUNG, Professor Paul Robert, Member, Koala Research Network

Committee met at 09:30

CHAIR (Senator Fisher): Welcome, everybody. I declare open the first public hearing of this inquiry into the status, health and sustainability of Australia's koala population. The committee's proceedings will follow today's program as circulated, except with all the starting times for all the witnesses being half an hour later given the variation in the commencement time, for which I apologise. The evidence that you are about to give is public; in fact, there will most likely be media present throughout the day as well. If at any stage you wish to give evidence in private or in camera, you may request that you do so and state the grounds upon which you wish to do so, and the committee will consider that request. The evidence that you are about to give is also protected by parliamentary privilege. It is an offence for any person to attempt to interfere with evidence that would otherwise be given by a person, or indeed for a person to give false or misleading evidence; it is also potentially in contempt of the Senate. Do you have anything to say about the capacity in which you are appearing today? We have your submission before us. Is there anything you need to change or amend in that submission? I will ask you to make an opening statement after that.

Prof. McAlpine: I have an opening statement plus a written statement which I would like to read out for five minutes.

CHAIR: Okay. There is nothing wrong with the submission that you have lodged?

Prof. McAlpine: No.

CHAIR: Okay, thank you. Then I invite you to make that opening statement.

Prof. McAlpine: Okay. Thank you.

CHAIR: Are you making this statement on behalf of the group?

Prof. McAlpine: That is right.

CHAIR: Okay, thank you.

Prof. McAlpine: The Koala Research Network is a network of 60 researchers from universities, government departments and private groups working with koalas around Australia, and we also have an international member. Collectively we have published over 200 scientific papers and reports on koala biology, ecology, health, disease and conservation. We have published papers in *Nature* et cetera.

We are here to address five critical issues relating to the health and sustainability of koala populations. The first issue relates to the evidence of decline in koala populations, which is validated by scientific data. In South-East Queensland there is strong evidence of a fairly drastic decline in koala populations. The 2008 koala monitoring data from the Queensland Department of Environment and Resource Management estimates a loss of 2,300 koalas from the Koala Coast population in approximately three years. This represents a 51 per cent decline in less than three years and a 64 per cent decline in the 10 years since 1996-99, when the population was estimated at 6,246. Koala hospital records show approximately 1,100 dead koalas from the Koala Coast between 2006 and 2008. Western Queensland populations are also in decline due to land clearing and drought. The koala populations in the Mulga Lands region, centred on Charleville, are estimated to have declined from 50,000 to 60,000 in 1996 to 10,000 to 12,000 in 2009. Work by Dr Alistair Meltzer and Dr Bill Ellis in Springshaw in

central Queensland and Oakey on the eastern Darling Downs also show a substantial decline in the population due to drought and drought induced dieback.

In New South Wales the koala population is listed as vulnerable, and the rapid growth in the human population in the north-east of the state has increased the threat to the koala populations—such as habitat loss and fragmentation—which has led to declines in those populations in this area—the former stronghold of the koala. In Victoria there is a lack of peer reviewed data on trends in koala populations, which are considered overabundant and secure by the Victorian government and some researchers.

The general list of known threats to koalas is common across all regions, but the relevant importance varies greatly across the range of the koala. The major reason for the decline in coastal populations is habitat loss and fragmentation, chlamydia disease, dog attacks and vehicle collisions, with habitat loss the primary causal factor. For western populations the major cause of decline is land clearing, drought, heatwaves and drought stress on eucalypt trees.

While the Victorian and Kangaroo Island populations are generally considered secure, the genetic viability of these introduced populations remains uncertain. Many Victorian populations are also highly fragmented and are vulnerable to catastrophic bushfires, such as the Black Saturday bushfires. While the long-term viability of some introduced island populations seems reliant on fence management, there is agreement in the scientific community that the threats facing koalas in their habitats in Victoria are a cause for doubt about the long-term viability of these populations.

There are unknown threats which are less well understood. An important threat to the koala is the retrovirus. Koalas in Queensland have a high prevalence of this virus in their blood, and are more likely to die from cancer. There is a mixed prevalence of this virus in New South Wales and Victoria. Kangaroo Island populations were sampled for the virus three times, and prevalence has increased from nought per cent in 2004 to 15 per cent in 2006, and 36 per cent in 2009.

With climate change, current koala distributions are likely to contract eastward and southward to coastal regions under a projected hotter and drier climate. That is, the Western populations of koalas are the most immediately vulnerable to climate change, particularly climate extremes. Populations in arid and semi-arid Queensland are already showing signs of contracting towards the coast. The distribution of key eucalypt species on which koalas feed, such as the river red gum, is also likely to change with climate change. The continuing rise in the concentrations of atmospheric CO₂ will also affect the leaf chemistry of eucalypts and decrease its nutritional value to koalas. Myrtle rust is affecting several eucalypt species in coastal New South Wales and southern Queensland, with potentially important consequences for koala populations in these regions.

The implementation of the National Koala Conservation and Management Strategy needs to be adequately resourced. Lack of resources was found to be the primary cause of weakness of the previous 1998 strategy by a formal audit in 2008. The Commonwealth needs to be proactive in its implementation. It is important to act now before the cost of recovery becomes higher as the series of population decline across the range accelerates. A critical priority is to establish a national koala monitoring program. By 'monitoring' we mean ecological monitoring that studies the causes of declines and possible increases—not just changes in the numbers. There is a need for evidence based conservation actions. Conservation actions need to be based on the best available scientific data. This will need especially explicit strategies that prioritise conservation actions otherwise valuable resources will be wasted and actions will be sub-optimal. The Koala Research Network is keen to cooperate with the Commonwealth government on these issues. In turn, the Commonwealth government, in conjunction with the state governments, needs to properly fund the actions that are identified in the various formal plans and strategies. Merely identifying that something needs to be done will not suffice. Providing funding is an unavoidable step.

Whether or not the Commonwealth Threatened Species Scientific Committee recommends listing the koala as threatened, that should not be the threshold for action by the Commonwealth. Critically, the insights into the plight of the koala population have come from researchers keen to conserve Australia's fauna, but they have largely relied on students, NGOs, ARC grants and short-term minor funding. This is not going to resolve the issues of the future. The case for national action to fund koala research is urgent and will result in a sharper definition of the problems, which will lead to better and more focused actions to conserve koala populations and which is where the focus will be most effective.

CHAIR: Thank you. I gather that no-one else wishes to make an opening statement—that was for the group. Would you care to table a copy of your opening statement for the committee? Thanks. We will now ask questions.

Senator BOB BROWN: Everybody please feel free to join in because we are here to seek information to fill in the gaps and to potentially lead to some national action, as you have been calling for, Dr McAlpine. I will begin by asking what may be a simplistic question. What is the population of koalas in Australia? I think there

are six jurisdictions I have heard listed there. One is the Commonwealth and there are Queensland, New South Wales, the Australian Capital Territory, Victoria and South Australia. If we take Australia as whole, I wonder if you could outline what we know or do not know about the overall population of koalas. The trend figures you have given there are quite alarming. Can you talk a bit more about what the population is and what the projections are if you just relied on those trend figures?

Prof. McAlpine: We do not know confidently the number of the overall koala population in Australia. There are estimates of regional populations which we know reasonably well, such as in parts of south-east Queensland and in western Queensland, but overall I do not think we can confidently say what the numbers are. One of the issues before the Threatened Species Scientific Committee was an over-emphasis on numbers. I think the emphasis should be on the trends in those numbers and on trying to address those trends rather than trying to say whether there are 50,000 or 100,000 koalas in Australia. We know that the populations are in decline. There were once millions of koalas in Australia; now there are probably no more than somewhere between 50,000 and 100,000, but we cannot confidently say what those numbers are. The critical question is not, 'What is the absolute number?' The most important question is, 'What are the trends in the numbers and how do they vary regionally?'

Senator BOB BROWN: But 50,000 to 100,000 would be the best information to be working on? I have seen figures range from 40,000 to 400,000 and you are within that range, but at the lower end of it.

Prof. McAlpine: Yes, but that is a subjective statement. I do not know if anybody else wants to add to that.

CHAIR: That is why you are here, Dr McAlpine—to give your very expert, subjective statement.

Prof. McAlpine: Yes, that is my expert statement then.

Dr Baxter: Clive is right and I do not want to contradict anything that Clive said, but where we do have good estimates, like in the mulga lands in western Queensland, we found that there was probably about 60,000 koalas there in the mid-90s. We have just gone back and done the methodology in the same way and there are probably only about 11,000 or 12,000 there now in the same place. So everywhere we do have good data we find the same trend—it is going down—so there is no reason to expect that in places where we do not have the data there is something different going on. I think it is probably uniform across the country.

Senator BOB BROWN: What is the area of the mulga lands of Queensland?

Dr Baxter: It is 192,000 square kilometres.

Senator BOB BROWN: In Queensland?

Dr Baxter: Yes.

Senator BOB BROWN: Can you give me those figures again?

Dr Baxter: In 1996 we estimated there were about 63,000 koalas out there. They were distributed sparsely but if you have a sparse distribution across a large area it ends up as a large number. We found in the mid-90s that about 45 per cent of those koalas were in less than one per cent of the land area, and that land area was along the rivers and creeks where the river red gums were. However, more than 50 per cent were in the residual plains—the ridges that were left—and they were previously thought to be unimportant for conservation. We have now found that koalas have tracked back to the riverine vegetation and they have completely vacated the residual breakaway country on the higher hills. We think that means it will be much more difficult for them to move through that landscape now.

Senator BOB BROWN: Why did they do that?

Dr Baxter: Because that is where the better quality soils and the higher concentration of water in the leaves of the eucalypts are.

Prof. McAlpine: There was a major drought, and combined with land clearing, that knocked the population.

Senator BOB BROWN: Do you know the impact? Land clearing was occurring at a fair rate there in late 1990s. Do you know what impact that had on the koala populations?

Dr Baxter: We estimate between 1969 and 1996 that land clearing was responsible for about a 10 per cent decline in the number of koalas because the land clearing largely did not affect the riverine vegetation. But after that, in some of the regions—we have divided the mulga lands into nine regions—the riverine vegetation declined by about 36 per cent, particularly in the east of the region.

Senator BOB BROWN: That was due to clearing?

Dr Baxter: Yes.

Senator BOB BROWN: So there is no restriction on riverine vegetation?

Dr Baxter: There is now, but there was a period when there was not. All of that riverine vegetation is strictly protected and you cannot touch it now, and we would endorse that decision. But that amount of vegetation clearing alone cannot account for the decline in the koala population in the mulga lands. We think that the rest of it is due to climate change—to drought.

Senator BOB BROWN: Because dieback of the eucalypt tree is due to the drought?

Prof. McAlpine: Yes. The trees became stressed during the drought and they lost their foliage and the health of the canopy, which affected the nutritional value of those leaves. The evidence that Alistair Melzer has found in Springsure showed that that was an important factor there. Those populations at Springsure have also experienced a fairly substantial crash due to the drought.

Dr Ellis: You asked about the total number of koalas. The issue for us there is that we do not have the resources to go out and count all of the koalas to get that sort of a number. All of our studies are focused on particular areas, and Springsure is a study site where we have done a whole range of not only demographic but also physiological studies of the koala population that date back to the 70s when Greg Gordon was out there. To carry on from what has been said so far, what happened there was that the koalas did retreat to the riverine communities but the drought was so bad and the amount of water that was available got so low that most of the riverine trees died as well. The collapse in that population has just been dramatic. A similar picture is out at Oakey as well. The only way you can get the really good long-term data on those sites is to look at them pretty intensively as opposed to looking over the whole of the state less intensively. That is where we found these fine-scale, cascade effects. When the riverine communities supplying the best habitat and supporting the highest populations suffer, they really suffer. The trees there cannot survive through the real extended droughts. That was a really good study population that just totally crashed.

Senator BOB BROWN: That crash is more than 80 per cent of the population in a decade, a bit more than a decade.

Dr Ellis: Yes, it is about 95 per cent of the population.

Dr Baxter: 80 per cent in the mulga lands.

Dr Ellis: This is more central Queensland where we are doing that work.

Senator BOB BROWN: On ecological principles, I would imagine that if the koalas came back to the riverine habitat, they would find it highly occupied anyway. There must have been some collision course for the species. There must have been quite a bit of internal rearrangement going on there.

Dr Ellis: Yes, quite possibly. As those systems were depleted down to small pockets, I doubt very much that they were actually sustainable, and the animals could not get from one to the other. So what is happening there is that there is a big program trying to bring the habitat back with replanting, but it will be 40 years before the trees will be there. Whether the koalas will still be around is another question.

Senator BOB BROWN: It takes that long for a tree to mature to the point where the koalas are going to feed from it or do they feed all the way up the line?

Dr Ellis: They will feed on younger trees. We have evidence of koalas feeding on trees as young as 10 years old. How fast the trees grow is very dependent on the weather conditions. Koalas seem to be particularly susceptible to changes in the structure of the landscape as well. A paddock full of 10-year-old trees is probably not going to sustain a population.

CHAIR: There would not be too many 10-year-old trees that would bear the weight of a koala? They trees do not grow that big that fast.

Dr Ellis: It just depends. We have had them using 10-year-old trees. We have good records of koalas of their own volition moving into replanted areas in central Queensland that were only planted in 1996.

CHAIR: Are they eucalypts?

Dr Ellis: Yes. With the proper resourcing there are steps we can take.

Senator BOB BROWN: You used the term 'koala coast'. What is that?

Prof. McAlpine: Koala coast is the region covering the Redland shire area and parts of Brisbane and Logan here, which has a very high density of koalas. That has been affected by urban development. We are now seeing a crash in that population. The Queensland Department of Environment and Resource Management have been monitoring that population over the last 12 years and found a substantial decline in that population.

Senator BOB BROWN: You have been talking about the mulga and then the move to urban south-east Queensland. Is there anywhere in Queensland where the population is steady or increasing?

Prof. McAlpine: We do not have data on some of those populations.

Senator BOB BROWN: Anywhere that you know of?

Prof. McAlpine: Not that I know of, some other people here may know.

Dr Ellis: There are some island populations. There is one island population that I have been working on for about 14 years. The fluctuations in that population are not as dramatic through the dry and the wet. That is an introduced population.

Senator BOB BROWN: Where is that?

Dr Ellis: That is on St Bees Island off Mackay. I understand that there are similar studies going on off Townsville on Magnetic Island. I am not sure about that population.

CHAIR: Are you saying that that first population to which you referred is increasing over time or are you saying that when it declines it declines less? You used the word 'fluctuation'.

Dr Ellis: Yes. We have been able to monitor that population really intensively. Every year we do a census on that population. It has fluctuated between about 190 and up to almost 300 koalas. But it is an unusual population. It has an unusual set of circumstances—a lack of predators—so it is not a natural population. But as far as a population goes, and this is a small population of 200 to 300 koalas, it is the only one that we can point to to answer your question and say, 'Potentially, this is a population we know of that is in serious decline.'

CHAIR: In Queensland?

Dr Ellis: In Queensland, yes.

Senator BOB BROWN: In Northern New South Wales, there is loss due to habitat loss and fragmentation and myrtle wilt threatening several eucalypt species. I know about myrtle wilt from Tasmania, of course, but I had not heard about it threatening eucalypt species before.

Prof. McAlpine: There is myrtle rust, which has been introduced. I do not know a lot of the detail or the exact background, but it is now affecting eucalypts in Northern New South Wales and South-East Queensland. In those—

Senator BOB BROWN: Does that have a beetle vector?

Prof. McAlpine: I am not sure about that. It is a fungus, as far as I know. It is particularly in the moist forest and the lower canopy of those forests—those moist micro environments. It causes defoliation of trees. I have asked for information on this from the Queensland Herbarium and the New South Wales herbarium and got limited feedback from them so far.

Senator BOB BROWN: Do you know what proportion of the koala population is actually protected within national park and securely protected habitat? Do you have any idea about that?

Prof. McAlpine: Koalas actually occur mainly on the better soils—the more fertile soils and the better watered agricultural soils—whereas historically most of the national parks have been on the coastal ranges or in sandstone country, which have lower fertility, so they are not very well covered in national parks. There are small national parks along the coast, such as Noosa National Park, where koalas occur, but they are very small areas that are not adequate to provide viable, long-term populations.

Senator BOB BROWN: With a national action plan, and you emphasised funding—which is logical—do you know how much is spent currently either at state levels or nationally by governments on protecting koalas?

Prof. McAlpine: I think the Queensland government has recently, through their conservation planning, allocated \$44 million in South-East Queensland for protection measures protecting koalas. I do not know how much is spent in New South Wales; I think it is considerably less. Some local governments—such as the Redland shire—are quite active now, but what they are doing now is probably too late; the damage has already been done in a lot of these coastal areas.

I do not know what is happening in Victoria in terms of funding. In the Commonwealth government there is one research project, which we have with the Commonwealth government at the moment and which is trying to prioritise some conservation actions at a local government level, and I think about \$250,000 has been allocated to that. But generally it is fairly patchy in terms of how the money is allocated both to research and to on-the-ground actions.

Senator BOB BROWN: You said \$250,000 from the national—

Prof. McAlpine: For one research project, yes.

Senator BOB BROWN: From my viewpoint, there clearly needs to be a national action plan. I think you are right there—that is logical. We have a \$300 billion budget coming down next Tuesday in Canberra, and \$250,000 is not going to bump that around too much, so do you have any idea what sort of funding would be required? If

you had in mind a real, nationally coordinated response to the plight of the koala, how would you go about it and how much funding do you estimate might be needed?

Prof. McAlpine: I will give my answer and then I might pass over to somebody else, because we all have different opinions. As I said in my statement, I think we need to be able to prioritise conservation actions to protect habitat loss. That is the critical thing. How do we do that? I am not sure. If the Commonwealth puts money into buying back habitat, as the Queensland government is, that will be a very expensive option. I think the critical thing is to actually stop that habitat loss. In terms of putting dollar figures on it, we are

probably talking hundreds of millions of dollars to do that. In terms of research, I think there needs to be a national research program funded by the Commonwealth, and I guess we can all agree or disagree on that. That again needs to be in the magnitude of tens of millions of dollars.

Prof. Timms: We do not disagree with any of that. I am a microbiologist and my expertise is chlamydia. I just want to give you a snapshot about how important chlamydia is. It is present in a lot of populations. I think one of the things we are seeing is that because there are more of us working more closely in Queensland populations, we see more of the evidence. You might hear elsewhere that the issues are not as big in New South Wales and Victoria. I think most of us feel that they are as big or they are about to be as big, so there is not as much close scrutiny.

I agree about habitat destruction. Particularly out of Clive's own group, there was a recent study using modelling showing how important in the koala coast different threatening factors might be. They certainly show, for instance, that that population is in decline. But even if you are able to reverse some of the habitat you probably still could not put it back into positive. Even if you are able to take away all the losses due to cars and dogs, you could not put it back into positive. But chlamydial disease in particular is a major threatening factor, and if you were able to reverse that, you could.

Senator BOB BROWN: Would you be able to if you had no restriction?

Prof. Timms: I am biased here, but our group is making pretty good progress towards a vaccine for chlamydial infections in koalas and it is going quite well. We are probably the other recipient of—

Senator BOB BROWN: If you do not mind me interrupting, they are not going to come and queue up at the town hall, are they?

Prof. Timms: That is a very good question. The way we would approach this is that we are trying to do trials in places like Lone Pine Koala Sanctuary and Australia Zoo but soon hopefully in a field trial. Our approach is that, in the first phase, there are enough populations under threat or about to be under active management that it becomes possible to interact with those populations and deliver a vaccine. Five years ago you would not have said that that was an option but today I think you could make lists of 10 or 20 populations that are under threat enough—you have heard some of them mentioned here—that you could capture a number of those animals and vaccinate them, because that is already happening.

Just to let you know we have been thinking about the long term as well. We are already working on projects to do things like insert small capsules into the animals that might release in 60 or 120 days down the track so that, once you have captured animals you do not have to get them back regularly. You can at least handle them, vaccinate them, let them go and they will get their second and third doses in the future. So while I cannot tell you how I am going to catch that last koala in that last tree—these guys cannot even find the last koala in the last tree—I think we are in a situation now that we can probably manage tens of thousands of koalas actively by using, potentially, a vaccine. I could talk to you more about that.

Senator BOB BROWN: How far away is that?

Prof. Timms: I would have said a while ago that it was a long way away, but our process at the moment is to make sure that we can vaccinate and make it safe in the first instance, and our approach is that, even if it is only partially protective—like 50 per cent—as long as it is safe, it has to be a good thing, because that could at least reduce it.

Senator BOB BROWN: Let me put it the other way: when could this get underway?

Prof. Timms: I guess we are doing it now. We are hopefully going to do the first field trial in the Coomera area near Dreamworld in the coming 12 months. So I think we are in a position in the coming few years to expand the vaccination approach.

Senator BOB BROWN: Is there anything holding you back?

Prof. Timms: Resources are always at a limit here. Clive mentioned an ARC linkage grant, for which we get \$110,000 per year. We are in the second year of that. That requires industry partners as well, which is a good

thing, and it tends to be local councils and koala sanctuaries and so on. We need a serious industry person to contribute significant amounts of money.

Senator BOB BROWN: What sort of funding would be required to make this program go?

Prof. Timms: I always joke about \$2 million to \$5 million. But I do not joke about the field work. As you will hear later on, we really need the veterinarians and the field people to do some of this work. It is quite expensive when you are out in the field capturing these animals, which is the reason we have not captured all animals in Australia. The figure in my mind is that \$2 million to \$5 million would make a really significant difference.

Senator BOB BROWN: Would that be Queensland or Australia-wide?

Prof. Timms: We are focused in Queensland at the moment, but we already have links now into several places in New South Wales and Victoria, because we realise that we need to expand our activities into those states as well.

Senator BOB BROWN: So what? If you bring back the koala population but the habitat is diminishing, what do you end up with?

Prof. Timms: First of all, you have seen what the animals look like. They suffer tremendously from this infection and this disease, so I cannot see how you could not try to help them with a disease such as that. I just think it is unethical not to do something about it.

Senator BOB BROWN: It would reduce or end the suffering of the animals.

Prof. Timms: Yes. Secondly, with other approaches, and you have heard some of them today, we can potentially manage some of the habitat. If we stop doing things that are obviously negative and start doing positive things, we can manage koalas in that habitat. Then at least, if we can stop the habitat destruction and we can also prevent the losses due to disease, we can manage those koalas. I think there are enough examples of that.

Senator BOB BROWN: Do you know of any agency anywhere under any government in Australia that is required to proceed with the precautionary principle when it comes to koalas? In other words, if you cannot say your action is safe to koalas you should not be proceeding. I am talking particularly about developmental agencies.

Prof. Timms: I am not quite sure I understand your question.

CHAIR: I am struggling too.

Senator BOB BROWN: Okay, that is a fair test!

CHAIR: I am sure Professor Timms is smarter than me!

Senator BOB BROWN: Is there any development agency here in Queensland which is under instructions not to proceed with a development such as a road, a land-clearing development, a coastal resort or an industrial development if it is going to be injurious to the potential for koalas in that region?

Prof. Timms: I am not the best person to answer that. I am really good in my area, but that is not my area, so I would not try to answer it.

Senator BOB BROWN: Does anybody else know of any such—

Dr Ellis: We do have a specific koala management plan.

Senator BOB BROWN: We being?

Dr Ellis: Queensland has legislated for koalas here. There is a set of guidelines for development, especially in South-East Queensland anyway.

Senator BOB BROWN: And that prevents the loss of koala habitat?

Dr Ellis: The first state planning policy for koalas, from memory, was state planning policy 1/95, so, even though that first policy came about in 1995, on the basis of the evidence it has been amended and is now in the 2009-16 koala management plan. The evidence is that, regardless of the fact that you have had to consider the requirements of koalas in the south-east, the decline of available habitat and the decline of koala numbers has certainly preceded unabated.

CHAIR: Thank you, Dr Ellis. We may come back to Senator Brown. I have a question on your pet topic, unfortunately, Prof. Timms: chlamydia. Dumb question: is an inoculation via injection essentially the only way that would work to combat chlamydia? I ask given the obvious difficulty of sticking a needle in each koala. Is there any other method by which you can treat the koala—putting something in some tucker that they might eat, for instance?

Prof. Timms: That is a very good question actually. Our expertise is in making vaccines against chlamydia in general, including in humans. In fact, the best way to deliver the vaccine is probably through some mucosal routes—by the nose, the mouth, ingestion and so on. We always think that one day you could potentially engineer eucalyptus leaves, but that is a 100-year project. The point is that you need to give it to them by some route and so, indeed, orally is probably a better route at the end of the day. We have just been working with a subcutaneous injection for logical, stepwise safety reasons, but you still have to get access to the animal.

CHAIR: Proximity?

Prof. Timms: Yes. There are different methods that you could use and they would all potentially work. It is not only injections.

CHAIR: Better than nothing?

Prof. Timms: Absolutely.

Senator CAMERON: As a self-confessed political tragic, I was watching Q&A last night and Simon Crean spoke about silos in government. From Senator Brown's questioning, it seems to me that there are silos of koala research and koala knowledge in and outside government. Would that be a fair comment?

Prof. McAlpine: I think so. It is only in the last year that koala researchers have actually started to come together and talk to each other. We were very much in our silos, like disease people and ecologists and the like. We have come together now to address this problem. Our Koala Research Network has over 60 members and we are starting to hold workshops on things like disease and that. It is very hard to know what goes on within government.

Senator CAMERON: State and federal?

Prof. McAlpine: That is right, yes.

CHAIR: Don't presume we know.

Prof. McAlpine: We have had some meetings with people in Canberra about this. The original person we had discussions with moved to another position and then another person came into that position. After a while they do not answer emails, so we do not know what is going on. That is a concern not just from a koala perspective. Conservationists say that it is difficult dealing with government and people are always changing positions and there is no continuity. In the Queensland government, we started to build some collaborations but people are shuffled around and that, so it becomes very difficult to communicate.

Senator CAMERON: I do not want to be defensive about this, but you could get the same argument that it is difficult to know who to talk to about koalas. I have to tell you, I am not an expert on koalas and since this inquiry opened up I am amazed at the amount of interest and passion in relation to koalas. Just look at the number of people here this morning. I do not know whether government has a peak body that we can talk to and say, 'Where are we going with it?' If governments have silos, so does the koala care community.

Prof. McAlpine: We are trying to break down some of those barriers. It is a slow process.

Senator CAMERON: Do you think there should be a peak body; an NGO for koalas that the federal government could talk to? Would that be a practical solution to some of the issues—at least a communication solution?

Prof. McAlpine: There needs to be a designated section within the government that we can consistently communicate with. At the moment, we do not have that consistency. If I send an email to people in Canberra and I do not get a reply, I do not know what is going on. Whether they have been told to keep quiet because of this Senate inquiry or they are not interested, I do not know. That is one of the problems we have.

Senator CAMERON: If it is a choice between a conspiracy theory or a stuff up, go for the stuff every time.

Prof. McAlpine: You are Scottish.

Senator CAMERON: I am an Aussie. Can't you tell by my accent? Let me get to the issues which are serious. You are saying it is a problem dealing with government. From the government side looking back to the koala care community, it might be a problem, who do we deal with? I have read some of these terrific submissions that are well presented, who would I talk to as a voice for koalas nationally? That is all I am postulating, nothing more than that.

Dr Ellis: Everyone in the Koala Research Network competes with one another for grants and funds. We all have our own special areas of interest where we like to work. We pulled the Koala Research Network together primarily because we see, just on the basis of the science that we are all collecting, that the koala is in grave danger and the species we are working on is disappearing out the back door. But we do not necessarily reflect the community perception of koalas. If you are looking for a peak body with regard to community perceptions and

community desires, we confine ourselves to speaking about the science. One of our goals is to present. So from that perspective I do not think there is any doubt that we are trying to establish an authoritative group, scientifically speaking, about koalas. We may not necessarily be the peak body you would speak to around some of the issues. Does that make sense?

Senator CAMERON: Yes, it does. It seems to me too that, given the expertise of the panel that is sitting here this morning, there would not be much point in me asking you whether you have actually looked at the act. That would not be a priority, but I suppose someone from that koala care community needs to be looking at the act and saying, 'Look, here are the deficiencies in terms of legislative protection for koalas at the federal level.' Has anyone looked at that or are you dealing purely with the scientific areas?

Prof. McAlpine: We have been involved in the last three nominations for the koala to be listed nationally and we have made submissions individually and the last one as a group. We have been to Canberra and been to workshops and expert panels presenting information to the Threatened Species Scientific Committee on this very issue. So we have been engaged in that sort of process. The process so far has been to list the koala nationally, and under Senator Campbell that was rejected probably four or five years ago for various reasons, and again now there is a recommendation from the threatened species committee that it not be listed as vulnerable, and that is for another set of reasons. One of the reasons the first time was that the population we talk about in the mulga lands was a secure population and now there is no data to provide any evidence on that. Now we provide evidence on that to show this population has crashed. Now the reasons for not listing it have changed to something like there not being enough numbers. So one of the frustrations we have is the lack of consistency in the approach of the threatened species committee. The threatened species committee is the only vehicle that we have had to get the koala listed under the EPBC Act. There is no other mechanism within the Australian government to do that. There needs to be another mechanism, but it is not listed. The Commonwealth government needs to take strong action, as I said, to put in some process to protect the koalas. But, even if it is listed as vulnerable, there has to be action to go with that; otherwise we are wasting our time.

Senator BOB BROWN: Wouldn't that require a management plan?

Prof. McAlpine: There is a national strategy there—

Senator BOB BROWN: I mean under the EPBC Act.

Prof. McAlpine: There is a recovery plan, I think, which is required to go with that if it is listed. My experience with recovery plans is that they are not well resourced.

Senator BOB BROWN: That is my experience too.

Prof. McAlpine: And they are not effective. So we cannot afford to sit around and wait and say we do not know enough about koala numbers; we need to act now and we need to get around this impasse and we need to get around it quite quickly.

Senator CAMERON: You have listed five areas for priority action. I do not want to get carried off into another debate but, on the issue of climate change, some of my colleagues in the Senate do not believe climate change is real, so we have the task of trying to deal with that. Could you just outline the implications and what you have seen in terms of climate change effects on koalas.

Ms Adams-Hosking: My PhD research has been focused on climate change. Obviously I do believe in climate change. It has been based on the CSIRO projections for climate change—different scenarios going into the future. To back up other comments about the demise of inland koalas, my modelling is showing the same thing: that their range is going to contract significantly from the west towards the east, where it will be on a collision course with development, and also southwards. I have modelled the trees as well, and most of their critical food trees are also going to disappear, so that is yet another very real threat. I have just blown up a little map here to illustrate it. The dark green area is the higher probability of koala habitat. This is bioclimatic modelling. This particular—

CHAIR: We have some boring formalities—would you care to table that?

Ms Adams-Hosking: Yes, I would be happy to.

CHAIR: Thank you. Please continue.

Ms Adams-Hosking: Senator Brown might be interested that you can see here that, by 2050 and 2070, Tasmania will become very good habitat for koalas. If you focus on that, you will see the current climate. I do not think you have a colour copy—

Senator BOB BROWN: I will just interrupt you there. Very importantly, will they eat Tasmania's eucalypts?

Ms Adams-Hosking: My tree specialist tells me that they will, yes. Certainly in Western Australia, which in the bioclimatic modelling disappears as climate change goes on, we have fossils for koalas in WA, although they are not there now; they possibly got cleared at the last glacial maximum. But there are some koalas in captivity in a reserve—it is a large reserve of a couple of hundred hectares. They have been translocated from South Australia to Western Australia, but they are happily eating an endemic Western Australian eucalypt tree, if that shows anything. Returning to the map, you can see here this contraction eastwards and southwards as the climate warms, so that is another real threat for koalas, because we are going to lose that western range.

Senator CAMERON: Minister Combet is going to kill me for this, but given that—

CHAIR: You have nine lives!

Senator CAMERON: Yes, I have nine lives, and I have used a few of them! Given that there will be a price on carbon and the thousand biggest polluters will be paying a price, have you thought about trying to get some funding through that carbon price and getting some research money into whatever bodies are out there doing this business? What are the thoughts on that?

Prof. McAlpine: No, I do not think we have considered that. There is a general move within the conservation community to get conservation outcomes through carbon credit schemes through revegetation programs, and that is potentially an important solution to this problem. But you also need to consider that climate change and the increase in CO₂ is likely to affect the nutrient value of leaves in the eucalypts, so even there the nutritional value of the trees may not be enough to sustain the koalas. The other thing about climate change that we are witnessing now in western Queensland is that there is an eastern contraction in the range of the koala which is already occurring.

CHAIR: Before I go back to Senator Cameron, do you have evidence upon which you base the suggestion that increased CO₂ in the atmosphere may impact the nutrient quality of leaves? I see Dr Baxter nodding his head.

Prof. McAlpine: There is some research being done in the Australian National University and in Sydney which is showing that. I can point you to the people who are doing that research.

Ms Adams-Hosking: It is also listed by the IUCN—the International Union for Conservation of Nature—as one of the 10 species globally threatened by climate change.

CHAIR: Yes; but I am asking about the CO₂ in the air.

Ms Adams-Hosking: That is what they—

Prof. McAlpine: There is scientific evidence on that. I can find that information for you.

CHAIR: Thank you.

Senator CAMERON: If you could point us to the references on that, it would be helpful.

Dr Baxter: We have glasshouse experiments that show that, when you get extra carbon, the trees grow much better if they have enough water, but it dilutes the other nutrients in the leaves. So they can get enough carbon but they cannot get enough nitrogen, so they cannot get enough protein, so they starve to death that way. Not just in Australia but all over the world wherever it is being looked at, these things sorts of things happen.

Senator CAMERON: Are you aware of whether there are any big corporate sponsors of koala research around the country? I mean big enough to make a difference.

Dr Ellis: We have had a large project sponsored by a large mining company at one stage; that has been a project that has run over 20-odd years. Those kinds of things at a local level can make a difference. For example, we were able to show that koalas will independently move into revegetated landscapes. If we want to strategically revegetate areas in South-East Queensland or anywhere, we have to know whether or not koalas will move of their own volition to previously unoccupied areas, and we were able to show that. So there are some sponsors.

Prof. McAlpine: Can I just add that we have had two ARC linkages with the Australian Koala Foundation. Also, some regional natural resource management bodies have partnered in linkage projects. I think, Bill, you have had some work with San Diego Zoo as well where they have funded research. So there are various local governments and NGOs which we work with in terms of research.

Senator CAMERON: This is my last question for a bit. One of the submissions I read said that the amount of research dollars going into koalas is insignificant compared to what is going into the Tasmanian tiger—sorry, Tasmanian devil. I think there is a bit of money going into the Tasmanian tiger somewhere, isn't there? I do not know how good that is going to be. But, with the Tasmanian devil, obviously you can see the disease; it is a horrible-looking thing. How much of a problem is it that chlamydia and some of these diseases are not as visible to the public, or even government, and they do not see this as such a big issue? Has anybody thought about that?

Prof. Young: I think that is exactly the problem. With the Tasmanian devil, it is very acute—the passage of a cancer that has a very immediate effect and is spreading very fast. With the issues we have been talking about, you have heard of chlamydia. I work on a retrovirus that is moving through the koala population at the moment. The effects of that virus—or some effects, at least—we are really assuming on the basis of analogy with similar viruses in other organisms, including ourselves. We know that these viruses in other systems cause immunosuppression, so the long-term consequences of that could be greater susceptibility to disease, but it is over a longer period of time. We do not have the immediate feedback of individual animals that are going to death as a result of an acute infection. So we have a real problem in perceiving or getting the real story about what some of these diseases are doing, or at least their impact on the larger population, because it is happening over such a long period of time.

Senator CAMERON: So the koala that was photographed with Oprah Winfrey could be diseased and we would not know.

Prof. Young: Almost certainly; it could be carrying the virus. That is one of the issues. We have not had the resources to really pinpoint the issue of connection between the presence of the pathogen or virus and the disease. We have done some work that shows in a limited population that there is a statistically high association between those animals that had high levels of this virus and those that succumb to cancers such as lymphomas and leukaemias, so we believe that there is a real association there, but as I said we have not had the resources to look at this on a much larger population scale to see what effect these viruses and other pathogens are having on the population itself.

Dr Baxter: Senator, on the analogy that you drew between devil facial tumour disease and the retrovirus in koalas, we believe it has the potential to be as big an issue.

Prof. Young: We were surmising. Some years ago we discovered the fact that some of the koalas down in the southern parts of Australia did not have this virus, and we made the assumption that the virus was moving from north to south, because essentially 100 per cent of animals up here have it. What we have seen recently, on an island with a population that previously had no evidence of this virus at all, is a sudden increase in numbers—you heard Clive mention them in the opening statement. It went from a situation in 2004 where we did a population analysis and there were no infections on the island to a situation two years later where there were 15 per cent, and three years after that it was upwards of 36 per cent. So this virus is sweeping through Kangaroo Island at the moment.

Senator BOB BROWN: How did it get there?

Prof. Young: Good question. We do not know. We do not know how the virus is vectored between individuals, whether it could be taken on perhaps an infected animal. Translocations are happening all the time, in both directions, by concerned individuals. It is possible that it may have got on the island via an infected individual or an infected vector.

Senator BOB BROWN: Like a bird?

Prof. Young: Probably more likely some sort of insect, is our current theory.

CHAIR: Given that Kangaroo Island has an introduced species as well, is there any intelligence that you can draw on as to why? Dr Ellis talked about the one place he could think of where population has fluctuated on the up from time to time, but, as you said, it was an introduced species. Are there any analogies you could draw between the two?

Dr Ellis: The introduction histories are quite similar, a similar number of animals at a similar point in time. The animals that moved to Kangaroo Island came from another introduced population, and they are a genetically depauperate population.

CHAIR: Genetically depauperate? Is that like inbreeding?

Dr Ellis: They have low genetic diversity compared to other populations of koalas. That means that they are more likely to express deleterious alleles in their phenotype. We are really interested in the differences in the ecology of the koalas in Queensland and the ones in Victoria for a start. Also how these diseases may express themselves in the two populations might be related to the diseases themselves or might be related to the make-up of the individuals in those populations.

Senator CAMERON: The submission from Wildlife Warriors took me aback a bit. It says:

Disease in koalas has been well studied in individual animals, but little quantitative information has been previously available on the health of wild koala populations.

They have done some analysis under surgical procedures. Is anyone aware of that?

Prof. Timms: Yes, we work closely with them.

Senator CAMERON: So there is no silo between you Wildlife Warriors?

Prof. Timms: Absolutely not. There is very strong collaboration with a number of groups, particularly Wildlife Warriors and Australian Wildlife Hospital.

Senator CAMERON: And they will talk to us about the shocking figures that they are putting forward.

Prof. Timms: I am sure they will. I think it is a good example that if you study things more intensely you can get closer to what the real problems are and how serious the issues are, whereas if you stand on the ground with a pair of binoculars and look at koalas many of them look okay when they are not okay. I think that is a good way of summarising it. In depth, in detail studies are a really good way to find out what is wrong and potentially to go towards solving it.

CHAIR: To the extent that each of you individually is working in the network, how is your work and the work of others in the network funded?

Dr Ellis: Poorly and mostly individually. We each go after our own grants for particular areas. I am currently not working on koalas because our grant did not get renewed this year, but we have it in again and hopefully we will continue on next year.

CHAIR: So you are here out of the goodness of your koala heart?

Dr Ellis: I still have students working on it on a shoestring, but that is typical of many of us.

Prof. McAlpine: The Koala Research Network is not funded. I fund it a bit. I have an Australian Research Council Future Fellowship and some of my funds have helped to cover some of the small costs. I have written twice to the Commonwealth government about getting their support. I table those letters, one to Peter Garrett and one to Tony Burke. We have not got any funding from the Commonwealth to support the functioning of the network. In fact, we are having a workshop in June on koala disease which we are self-funding.

CHAIR: So pretty much you go for whatever pickings you can get?

Prof. McAlpine: Yes.

CHAIR: Do you have a list of the members of the network?

Prof. McAlpine: Yes, I provided a list of the members.

CHAIR: Can you formally table the letters and the membership list and then we can have a look at them?

Prof. McAlpine: Yes, I formally table them.

CHAIR: Thank you. Senator Brown was asking about increased populations in Queensland, to which Dr Ellis spoke. Are you aware of any other populations in other states where there have been similar fluctuations or perhaps increases over time?

Prof. McAlpine: In New South Wales there has been one population which has been often mentioned. There was a program on *Catalyst* recently about the Gunnedah population in central western New South Wales. That population has experienced an increase over the years, but in the heat wave in—I think—late 2009 that population crashed and something like 50 to 60 per cent of those koalas died.

CHAIR: So other than that natural event?

Prof. McAlpine: There is evidence that through habitat restoration populations will recover if a habitat is provided. That is conditional on CO₂ and changes in the leaf chemistry from climate change. The most positive thing that could be done would be to stop habitat loss and start large-scale restoration of habitats.

CHAIR: We get that message. To help us get the picture of how many there are, you have talked about the populations that your group monitors. Even though you do not know the population of those groups which you do not monitor, are you able to indicate to the committee, perhaps by grouping and not by individual number, the percentage of total groups? Do you know of the existence of all the groups that you do not monitor so that you are then able to say, "We monitor X per cent out of the total number of groups?"

Dr Ellis: Where we can get to is linked to the last question about how we are funded. We look at the populations at Oakey and Springsure. We also work up in northern central Queensland, on the islands and we have worked down in south-east Queensland as well. One of the reasons we work on those populations is that those are where most of the koalas can easily be found.

CHAIR: Let me ask the question another way. If there were groupings of populations somewhere in Australia that you do not monitor would your group necessarily know about their existence?

Prof. McAlpine: Yes.

CHAIR: Okay. Then if you know about their existence, how many groupings like that are there and what percentage of the groupings do you monitor versus those groupings?

Dr Baxter: The big gaps are in Victoria. We pretty well monitor the big populations everywhere in Queensland.

CHAIR: You might take that question on notice if you are able come back with something else. If you are not, that is fine and I understand your resourcing.

Prof. McAlpine: I understand the New South Wales populations reasonably well because I have worked with colleagues in New South Wales. The coastal populations in New South Wales, from the Tweed coast right down to Port Stephens and into Sydney, were quite substantial. In Port Stephens, for example, there were probably over 1,000 koalas there and that population has probably decreased by at least half. There have been koala conservation plans put in place under the New South Wales SEPP 44 provisions in Coffs Harbour and Port Stephens. They have been moderately effective, but they have not stopped the decline of the koalas.

CHAIR: I am really sorry, because it is really important, but I do need to stop you there and invite Senator Brown to ask one more question to take us to the end of the hearing from this group.

Senator BOB BROWN: I went to school in Coffs Harbour. You might just finish what you were going to say.

Prof. McAlpine: The Coffs Harbour population, as you are probably aware, has been impacted by urbanisation, but there have also been logging impacts there in some of the hinterland areas, and that has affected koala populations. But you need to speak to Dr Dan Lunney from New South Wales, now in the Department of Premier and Cabinet. He has been working with that population for a long time. I do not know whether he is going to appear as a witness in Canberra—

Senator BOB BROWN: We will check that out.

Prof. McAlpine: but he has a lot of information on the New South Wales population in Iluka, Coffs Harbour, Port Stephens and Gunnedah. We are working with Dan because almost all these populations in New South Wales are in trouble from the north coast down to the south coast and Bega. They are all in fairly substantial decline.

Dr Baxter: Another point is we are talking about hundreds of koalas. We are not talking about tens of thousands of koalas in each of those populations. The one population we could point to and say that there were tens of thousands does not have that anymore. There are probably about 10,000 left.

Prof. McAlpine: There is one more point. The Pilliga scrub, which is a large state forest in western New South Wales and once considered a stronghold of koalas, due to drought has had its population crash. Some of the logging practices also negatively impact on koalas.

Senator BOB BROWN: Thank you. Professor Young, I pursued the question of funding for a chlamydia inoculation earlier. What is required to tackle a retrovirus and see what might be done to find some equivalent?

Prof. Young: In those populations where the virus does not exist there is the potential for a vaccination program, and Peter and I have in fact been talking about going down that path. We have developed antigens of this virus that would induce a suitable immune response to afford some level of protection.

Senator BOB BROWN: How much is required to bring that program to real fruition?

Prof. Young: What was the figure? \$2 million to \$5 million.

Senator BOB BROWN: That was for chlamydia. Does that cover retrovirus?

Prof. Young: Absolutely. When we are talking about vaccines we end up in the same ballpark in terms of how we go forward with generating appropriate vaccines.

Senator BOB BROWN: We are talking about tiny amounts of money here: \$5 million to develop, potentially, a response to the two biggest diseases. We are not talking about habitat here. That is where we are at, isn't it?

Prof. Young: It is nice of you to say it is a small sum of money. From our perspective that is a large sum of money. And that probably says a lot.

CHAIR: Indeed, and it is from the perspective of many others. Thank you very much. No doubt we will hear from you further.

LOADER, Miss Joanne Jean, Research Scientist, Australia Zoo Wildlife Warriors Worldwide

HANGER, Dr Jonathan James, Private Capacity

[10:44]

CHAIR: Welcome. Is there anything you wish to add about the capacity in which you appear today?

Dr Hanger: I work for the RSPCA now. I have been a koala researcher for the last 24 years or so, mainly on koala disease. I am also a member of the Koala Research Network.

CHAIR: We have submissions from each of you. Do either of you wish to amend or change anything in your submission?

Miss Loader: No.

Dr Hanger: No.

CHAIR: Then I invite you to make an opening statement in whichever order you like.

Dr Hanger: I have not written down, other than in scrawl, my opening statement so I may not be able to table anything.

CHAIR: That is fine, proceed.

Dr Hanger: There are a couple of things I would like to do. I want to seed some ideas in your heads that you can take away with you and not be confused about, particularly a couple of paradigms that exist. They raised their heads a little bit in the last session. I really want to put them to bed very firmly and solidly for you.

The first is that the koala declines that we are seeing, according to the scientific evidence and also the anecdotal evidence that is before us, are far more dramatic than can be explained by habitat loss alone. In other words, even in areas of apparently good koala habitat that are not badly affected by urbanisation pressures or other pressures, we are still seeing dramatic declines of koalas. Even in well-protected habitat that is a critical factor that you must take away with you because you will hear a lot of talk today about habitat loss and the importance of it. I am not for a second saying it is not important. What I am saying is that even in good, well-protected habitat koalas are declining very substantially. That goes to your very valid question, Senator Brown, about what are we going to do with these koalas if there is not enough habitat to put them into if we are saving them from chlamydial disease or whatever.

The fact is that if you walk through the bush in Queensland or New South Wales, you will find it relatively empty of koalas. The population densities simply are not there. So even though we have trashed their habitat and fragmented it, even in the remaining habitat there are very few koalas. That is a really important point I want you to pick up on.

The second is, and I am sure you will hear it today, that there is an old paradigm that started as a hypothesis about 25 years ago and that is that koala disease was induced by nutritional stress caused by loss of habitat. That is a common paradigm. It has been very useful for koala conservationists for many years but, unfortunately, it does not quite stack up. The reasons for that are that if you look at some of the koala populations that are at very high densities and under significant nutritional stress, they are relatively healthy, for example, the Kangaroo Island population and the Raymond Island populations, both of which we have done a little bit of work on. Conversely, if you look at some of the apparently good habitats in South-East Queensland in the Gold Coast hinterland, for example, where the habitat is under very little alienation pressure and there is very little habitat loss, the koala populations are very sick and at low densities. So the paradigm that habitat loss is the primary driver of high disease does not stack up. In other words, there is something more insidious at work and we must not overlook that.

The third key issue that I want you to take away that has been spoken about today is the koala retrovirus, which I did my PhD on. I want you to understand that, based on the knowledge we have now, it has the potential to cause the extinction of koalas. I do not want you to underestimate its potential now. In five years time, with a lot of funding, we may be able to put that one to bed and say no, it is not going to cause that. But right at the moment we cannot say the koala retrovirus will not cause the extinction of koalas. We have spoken about major funding. I am sure that is going to be a recurrent issue. The amount of funding that has been given for koala disease research particularly is minimal. We know from HIV-AIDS how much funding is needed to even get the basic questions answered. I am not suggesting that we are going to get that for koala retrovirus funding but we are talking about some pretty substantial increases to get the basic questions answered about that virus.

The final issue is of putting all our eggs in one basket. The Queensland government have taken a bit of an interest in koala conservation recently. They have announced \$44 million going towards koalas. Forty-three million dollars of that package is going to habitat acquisition. There is a great risk that we are going to acquire a bunch of habitat and still see the koala populations in those habitats decline and go to extinction. That is happening commonly in Queensland and probably in New South Wales as well where we are seeing localised extinctions. We must not put all our eggs in the basket of habitat protection exclusively. It is very important; it is the one thing that we can control—stopping cutting down trees—but there are other things at play that we have to understand better. I will hand over to Joanne.

Miss Loader: Jon and I have been working on koala disease in the wild population since 2008 and, obviously, in the hospital situation for a lot longer than that. With the number of koalas that we see coming into the hospital that had really nasty disease—the severity of the disease was quite bad—we thought we would like to see what disease is actually like in the true koala populations.

We have looked at a number of populations in South-East Queensland to determine the prevalence and incidence of disease in these populations, incidence being the proportion of new disease lesions per year. We found that it is a lot higher than has been estimated in studies previously. We have found that with the sexually mature female koalas approximately half or more than half have reproductive tract disease, causing infertility in koalas. So that is more than half of the sexually mature females in a population that cannot breed. That has a lot to say for the viability of these populations, when half of the females are unable to breed.

You were talking about Oprah Winfrey and the koala before; yes, that koala could be ill. A lot of them do not show overt signs of disease. They can look perfectly healthy but have reproductive disease. That is a pretty scary thing that is going on in the populations at the moment.

In each of the populations that we are studying we see that it is fairly consistent. They are just as sick as each other. That is probably all I will say, because I guess you have questions.

Senator CAMERON: Dr Hanger, in layman's terms could you outline what the retrovirus is and the implications of the retrovirus?

Dr Hanger: That is an excellent question. The way that the koala retrovirus is behaving in koalas is unprecedented. There is not another virus animal model that we can look at to predict how this virus is going to play out in koalas. Having said that, there are other infections of animals that are relatively well studied and that seemed to mimic what is happening in koalas.

I guess the most notable is feline leukaemia virus in domestic cats. That causes leukaemia and bone marrow diseases and an AIDS-like condition. There is also a variety of other tumours that may be caused directly by the virus or possibly by the immunosuppressive effects of the virus. In koalas we see, clinically, the whole spectrum of those diseases that we see in cats with feline leukaemia virus infection. That is about where the similarity ends in that all koalas that we have tested in Queensland and New South Wales to date are infected with the virus, and it has managed to get into their genetic material, so it is passed from mother to offspring.

CHAIR: What does it look like? What do you see?

Dr Hanger: What does the virus look like?

CHAIR: Yes.

Dr Hanger: Or what do the clinical syndromes look like?

CHAIR: In layperson's terms.

Dr Hanger: The virus looks like a tiny little black dot under the electron microscope—

CHAIR: Okay, I understand—on the poor animal!

Dr Hanger: On the poor animal side, we seek a virus that looks like they have got AIDS; they have mouth full of ulcers, they have poor body condition and they eventually die from opportunistic infections. That is very common. Koalas with leukaemia, just like childhood leukaemia in children, become ill. It is a fairly acute clinical course that occurs over maybe one or two months and then they are dead.

In other words, once koalas show signs of this disease and once we have detected that their fate is sealed there is nothing we can do to treat them. That is a little bit different from chlamydial disease, where we can in certain circumstances treat them successfully. But the question is: if all koalas are infected with this virus then why don't they all get sick with it? That is where it becomes very complicated. It would take me many hours to explain some of the hypotheses about that or why that happens, but the bottom line is—

CHAIR: The bottom line is that they do not.

Dr Hanger: The bottom line is that not all koalas will die from a disease that we might like to blame on the retrovirus. I guess it gets back to the issue of our really needing to throw a significant amount of funding towards this: firstly, to figure out whether the virus is actually causing what we think it is doing; secondly, to predict what it might do or how it might play out over the continent; and, thirdly, to figure out if there is anything at all that we can do about it to manage it.

Senator CAMERON: My daughter's kitten had the feline leukaemia virus, so I know a little bit about it; it is a horrible thing. I am told it was because of the faeces; it is transmitted through faeces in the cat's litters. Some kittens pick it up; others do not. Is that the same for koalas?

Dr Hanger: We guess that it is transmitted by fairly close contact or bodily fluids. It is possibly transmitted sexually or by biting insects such as mosquitoes or sandflies—those sorts of things. But these are all questions that we do not have the answers to. Some of those types of viruses are transmitted by biting insects; others, for example feline leukaemia virus, are mainly transmitted by close contact and generally from mother to offspring. Certainly, with koalas, the mother-to-offspring or the genetic transfer of the virus is likely. But, as I said to you, there is no other animal virus model that is like this. I think Paul will back me up in saying that this is an unprecedented situation in terms of animals and viruses. We have not seen it before in any other species that we have looked at, so we do not know how it is going to play out.

Senator CAMERON: The previous submitters raised their concerns about the impact of global warming and climate change. Do you have similar concerns?

Dr Hanger: Yes, very much so. In fact, I think there are so many things going against koalas that this is just another nail in their coffin. I agree with that view. This is certainly not my area of expertise, but I am very concerned about the Mulga Lands population, not only from a climate change point of view but from a disease point of view. That population, as you have heard, is mainly scattered along the riverine systems, so it does not take much of a break in the chain to cause isolation of populations, which then makes them exquisitely susceptible to extinction from other natural causes, whether it be bushfire, climate change, drought or whatever.

Senator CAMERON: Is the evidence that you have provided of your clinical analysis and in the work that you have done under general anaesthetic widely known? Has that been published?

Dr Hanger: Some of the work has been published. I am primarily a clinician rather than an academic, and I admit that often I fail to publish things as commonly and as early as I should. Certainly, a good summation of the work that we have done over the last few years is contained in Jo Loader's thesis. Also, we did publish an unpeer-reviewed paper at the Lismore koala conference a couple of years ago, which I think formed a part of my submission. But, no, I have to admit that, other than attending Koala Research Network meetings and speaking with other scientists, I am very poor at publishing our data.

Senator CAMERON: It is not a criticism. I am just asking the question. Miss Loader, I did raise the issue of silos. Again, it seems to me that there is a problem. Have you got a view on the disaggregated approach towards koala research around the country and the lack of a central body to try and coordinate it? Have you got any views on that?

Miss Loader: Regarding disease like—

Senator CAMERON: On koala research generally. For instance, if one of the issues is that you have to get more funding, there may have to be legislative changes to provide funding—though, I am not sure. Many bodies that represent industry groups or unions or other non-government organisations have centralised research where they can say, 'You need to do this, and to do this you need these legislative changes to make a difference.' It seems to me from the very early submissions that we have had here that there is no overview body in the NGO koala community to deal with that. Do you understand where I am coming from?

Miss Loader: I think so. We formed only recently the Koala Research Network to deal hopefully with those sorts of things so there will be more uniformity, so there people coming together so that there is one voice.

Dr Hanger: If I might add to that, we recognised a number of years ago that there was a need for us to get our findings about koala disease out into the general koala research community. To that end we gathered together a bunch of koala scientists that were meeting at Australia Zoo and out of that very first meeting where we presented our findings the Koala Research Network was born. So I think times are changing. There has been a degree of siloism in the Koala Research Network especially and there certainly is in the koala care and rescue network as well. There are significant issues in terms of fragmentation in that network as well that need some work. But certainly from the scientific point of view, I think the Koala Research Network is a really positive thing that has happened in the last couple of years. I would argue that it would be the prime body that the government should or would go to now in terms of scientific data and information on koalas.

CHAIR: Being from fine Labor stock, Senator Cameron was probably hoping that you would say we need to have a koalas union.

Senator CAMERON: I will take that as a comment.

CHAIR: Indeed. We will go to Senator Bob Brown.

Senator BOB BROWN: Thank you both very much for your very good, concise presentation. I will ask firstly about the retrovirus, this virus that is like the human HIV-AIDS virus. We heard in previous evidence that it does infect and has now been found to be infecting the Kangaroo Island population. Dr Hanger, you have said that it might lead to the extinction of the koala. How does it parallel the facial tumour disease that is impacting on—and having a 100 per cent death rate for—the Tasmanian devil population?

Dr Hanger: I think the analogy is useful. There is a paradigm that is taught to ecology students that disease will rarely cause the extinction of wildlife species because if disease is highly pathogenic it is almost inevitable that a couple of individuals are resistant to it, so it knocks out the ones that are susceptible and the resistant ones then repopulate. But I think such a paradigm has been challenged recently particularly with the chytrid fungus disease in frogs. We know there have been worldwide, or global, extinctions of frogs presumably by the chytrid fungus. So we have got a lot of evidence that disease can cause extinctions. Certainly the Tassie devil facial tumour disease is another wake-up call that potentially diseases can result in extinction. As you have heard, the effect of koala retrovirus, if it is in fact the cause of the things that we have seen, is much more insidious and long term. As you know, the devil facial tumour disease is overt and graphic and rapid. The koala retrovirus, if it is responsible for this AIDS-like condition, is far more insidious. The koalas may not appear sick until they are close to death. Some of them do develop graphic tumours on their faces that are obvious but often they fade away.

Senator BOB BROWN: Do you have any assessment of or guess as to what impact the retrovirus is having on this crash of the koala population that we are coming to understand?

Dr Hanger: My guess is that it is having a significant impact. Jo's work in not only the prevalence of chlamydial disease but the severity of it suggests that there are other factors that are making chlamydial infections worse in koalas than they ordinarily would be. One hypothesis for that is that the koala retrovirus is affecting their immune response to chlamydial infection. Chlamydial infection should be a relatively minor infection as it is in humans. Women who become infertile from it often do not even know they have an infection. They develop infertility, there is a little bit of scarring in the reproductive tract and they do not even know they were sick. I might be out of line speaking on stuff that Professor Timms is an expert on—

CHAIR: Continue, you are doing very well.

Dr Hanger: Koalas we think should not get so sick from chlamydia but they do. One of the hypotheses about why they do is that the koala retrovirus is affecting the way they respond to that infection so they get more severe disease. They can potentially die from it when really they should not die from those sorts of infections. Then there are a whole range of primary diseases like leukaemias and cancers that might be directly caused by the virus rather than secondarily associated with immune suppression. My gut feeling is that it is a significant cause of premature death in koalas.

The only evidence from Jo's work is that the prevalence of disease is much higher in these populations than we previously suspected even in populations that are living in pristine habitat where they should be healthy. How it will play out on Kangaroo Island I do not know. Only time will tell. If those stats that you were given are true then time will tell what happens to them. The Kangaroo Island population is, as you have heard, genetically poor because it was derived from only a few individuals. That would, on first principles, make them very susceptible potentially to a genetic parasite like the koala retrovirus. Another key issue that I wanted you to go away with today is that whilst those Victorian populations might be abundant or of high densities in their habitat that is not a stable situation for them. Those are not stable ecological populations. They are maybe not in as desperate a situation as what is happening up here but we must not consider that they are an insurance population of sorts. They are unstable virtually by the fact that they are over abundant and that is unnatural.

Senator BOB BROWN: I have read the submissions but could you just reiterate what we know about where the retrovirus came from?

Dr Hanger: We do not know where it came from other than that we are guessing that it entered the country somewhere in its northern half and is spreading southwards. That is our guess at the moment. The most similar virus to it is the gibbon ape leukaemia virus which was a virus that caused epidemics of leukaemia in captive gibbons. The bottom line is that we do not know where this virus came from. We do not know when or how it jumped into koalas. What we do know is that we are watching the process of invasion of the koalas genome by

this virus in real time and that is what is unprecedented. Some of these questions we may be able to answer with appropriate allocation of funding in the coming years but right at this moment we do not know.

Senator BOB BROWN: *New Scientist* says that the HIV virus might have come out in the 1890s and spread through Haiti to the US in the 1950s. Have you any historical evidence for the beginnings of this virus entering the koala population?

Dr Hanger: We do not although I know that using one type of molecular clock analysis there was an estimation that it may have entered in the last 200 years but I am not sure whether that has been validated or not or whether we still consider that to be an accurate timing. Certainly, looking at the way the virus is acting in the population now and the fact that it seems to cause fairly significant disease suggests that it is a fairly recent incursion. By recent I cannot tell you whether it is 50 years ago, 200 years ago or longer than that simply because those molecular clocks are fraught with difficulty and there are many factors that affect them. That is not my area of expertise.

Senator BOB BROWN: Miss Loader you said that 50 per cent of the female population in the breeding period may be infertile. Does that mean that 50 per cent of females do not reproduce or are there some who become infertile during the breeding years and may have reproduced but then are unable to?

Miss Loader: Yes. They may have had a few joeys in their lifetime, but then become infertile. Is that what you mean?

Senator BOB BROWN: Yes.

Miss Loader: Yes. They can develop it. They could be five years old before they finally get reproductive disease, or they could be 18 months old. It happens at all ages; some of them dodge it. We have got some that have been able to reproduce beyond 10 years old, and they have had joeys every single year. I am sure they have been infected many times, but they are managing to deal with the infection. But some succumb at a very early age.

CHAIR: You include all of those in your 50 per cent?

Miss Loader: Yes. In the populations that we have been studying, some of them—it is very few—have managed to have joeys every year. Others have not had joeys at all, or they might have had a few and then they get the disease.

Senator BOB BROWN: Just going back: I was talking to people from Taronga Park a few weeks ago, and they were explaining that the Tasmanian devils breed for three or four years and then they live four or five years after that. I am just interested in the breeding period. How long do koalas live, and for how many of those years are they breeders?

Miss Loader: We age them by their teeth—their tooth wear. If I am ageing a koala I will generally say it is 10-plus years when they have no wear on their teeth. Would you say about 14 in the wild, approximately?

Dr Hanger: About that. If nothing kills them prematurely, they should live to maybe 12 to 14 years. It is sometimes longer in captivity, but I would suggest that the average age at death of koalas living in the wild is probably around six years or less because they are dying prematurely. They can breed from as early as 18 months to two years. As Jo has pointed out, the chances of them becoming infertile are very high. At one point, Jo's study looked at incidence—the rate of new infertility in previously healthy animals each year—and found that 30 per cent of healthy females developed infertility each year, and that was in a fairly small population. The incidence data, which is data that is collected longitudinally over time is much more difficult to gather. But that is really worrying; it means that koalas that are healthy today—and let's talk about female koalas—have perhaps a 30 per cent chance of developing infertility each year. In fact, we suspect that the prevalence of infertility in females in some populations is as high as 70 per cent—50 or 60 per cent is maybe across the board in all the populations that we have studied.

Theoretically, they should start breeding at around two years of age and have a joey pretty much every year until 10 or 12. We are finding that in some populations perhaps only 30 per cent of females are breeding consistently, and of those a significant proportion will develop infertility every year. So you can start to understand why disease has a very significant impact on population viability.

Senator BOB BROWN: Right. Any multiple births?

Dr Hanger: They are rare. You occasionally get twins, but they are rare.

Senator BOB BROWN: Any impact on male fertility?

Dr Hanger: Probably. In fact, invariably yes, there is. But with males it is much harder to detect pathological changes in their reproductive tract whilst they are alive. Certainly, if we are doing necropsy examinations of these

koalas, commonly we find inflammation in the prostate gland, and sometimes testicular inflammation caused by chlamydial infection. But our ability to detect that in live animals is quite low.

Having said that, a significant proportion of male koalas have cystitis, which is an infection in the bladder caused by chlamydial infection, and chances are that a significant proportion of those animals also have reproductive tract disease as well. Whether that significantly affects their ability to inseminate, we do not know. They may still produce viable sperm, but it certainly makes them, potentially—

CHAIR: Poor doers?

Dr Hanger: Well, potentially poor doers, and also sources of infection for previously healthy females. Now, one of the things that Jo brought up before was that there is a subset of female koalas that seem to be able to get to quite an old age and bear a joey every year. We are very, very interested in those animals, because they probably hold the key to how we can manage diseases. There is no question that they have been exposed to chlamydial infection and there is no question that they are infected with the koala retrovirus, but they managed to get to old age without succumbing to them, and those animals really are the key to and the focus of disease research.

Senator BOB BROWN: Are you indicating there that they have somehow become immune to chlamydia, they have thrown it off, or they have had it, suffered it for a while and then managed to get by with it?

Dr Hanger: Probably the middle one—that they have been exposed to it, had a subclinical infection and then throw it off and managed to retain fertility. Whether that infection has given them a degree of immunity to subsequent infections, we do not know. Certainly, that subset of animals may hold the key to how we can manage populations for disease resistance. But at the moment we are a long way off being able to do that.

Senator BOB BROWN: This is just a speculative question, so you do not have to answer if you do not want to. What do you think the potential is for vaccinating all the animals or otherwise getting rid of those two diseases? And there is a second question that is tied into it. We heard before that \$5 million to \$10 million might be enough to get each of them to that stage—to intervene and offset chlamydia and maybe even the retrovirus. Could you talk about that a bit.

Dr Hanger: Yes, I can. We are certainly getting to the situation in south-east Queensland where we have observed localised extinction of koalas, because of multiple factors, presumably, and we are getting to the point where we are going to keep on seeing that if we do not actively manage them. And I do not mean just stopping clearing their habitat; I mean going in there and building fences to stop them getting on the roads, controlling dogs and using every tool in our toolbox to try and manage those populations for sustainability. There are two tools that we need to develop that we might find really useful. One is a vaccine and, as you have heard, Professor Timms is close to field-trialling a vaccine—

Senator BOB BROWN: For chlamydia?

Dr Hanger: For chlamydia, yes. Developing a vaccine for koala retrovirus is probably a bit further off. As we know, developing vaccines for HIV-AIDS has been problematic. There is a vaccine for feline leukaemia virus, though, so I would not necessarily argue that it is impossible.

So in answer to your question, yes, I think those are tools that we need to develop because, when we get to D-day, the tipping point for extinction, we are going to want every tool possible to try and manage these populations for sustainability, because every one that blinks out is a loss of genetic material, and it is that genetic perversity in the population that builds their resilience to other threats like climate change and all the other things that are going to get thrown at them over time. So, yes, we need to develop those tools. Yes, they are going to be useful. Yes, they would be useful now if we could use them now, because they would help us to prevent localised extinctions from continuing.

CHAIR: Senator Brown's final question was: how much moolah?

Dr Hanger: Add another zero. They are being generous to the government, because we do not know. With the koala retrovirus, from the time that I started my work on it I thought there was a simple answer: to detect koalas that had it versus those that did not and just separate them and breed up a population that did not have the koala retrovirus. It is far more complicated than that. So, yes, they would be absolutely thrilled if you could throw \$2 million to \$5 million at them, and if you could add a zero onto the end that would be awesome. But the truth is that we are dealing with a multifactorial problem that is coming to a head and we may even be beyond the tipping point for extinction for koalas, certainly regionally and even nationally. So I do not think you can put an upper limit on what could be thrown at this problem.

Senator BOB BROWN: Getting a response to a six-month-old request to the federal government for funding—\$120,000, I think—might be a start!

CHAIR: That is a comment from Senator Brown! On that note, Senator Cameron has a final question.

Senator CAMERON: Dr Hanger, I have just had a quick look at the *National Koala Conservation and Management Strategy* from the Natural Resource Management Ministerial Council, and one of the issues it raises is low genetic diversity leading to what they describe as 'inbreeding depression'. I have not heard much about that this morning. Is that an issue for you?

Senator CAMERON: Dr Hanger, I have just been having a quick look at the National Koala Conservation and Management Strategy from the ministerial council. One issue it raises is the low genetic diversity and what they describe as 'inbreeding depression'. I have not heard much about that this morning. Is that an issue for you?

Dr Hanger: I think it is probably less an issue than other issues are. But what we have got to remember is that that is a simmering issue that might raise its head, particularly when koala retrovirus really gets a hold down in those southern populations that are genetically less diverse. It is possible that it could have much more dramatic effects down there because of that than it has had up here. We would argue that up in Queensland, if it is responsible for the things that we think it is, then its effect has been dramatic. So potentially its effect down there in those genetically impoverished populations is far greater, but beyond that I cannot really say much. Certainly in the Kangaroo Island population, we see deformities. We see testicular abnormalities and other deformities that are indicative of inbreeding. But in some respects it is the least of their problems.

Senator CAMERON: I will never look at a koala in the same way again, I can tell you!

CHAIR: I do not want to labour the point or diminish the importance of it, but, Dr Hanger, I am just trying to get a proper handle on what you are saying about the degree of the threat from the retrovirus. I have heard you say that you cannot say that it will not cause the extinction of koalas. Does that mean that you are able to say that it will? They are not necessarily the same. If so—that it will—on what are you basing that?

Dr Hanger: I am saying it might, and I would love to be in a situation in five years time where I am saying it is unlikely. But right at the moment we cannot say it will not. And we need to throw enough money at the issue to be able to say, 'This is not going to cause or is unlikely to cause the extinction of koalas.' Right now we cannot say that. I sincerely hope, obviously, that it does not. But I am worried that it is going to be a very significant factor in causing their extinction if we do not be active in managing it. A final point, if you would indulge me—

CHAIR: We have so far!

Dr Hanger: Yes, you have. I do not for a second want you to think that protecting habitat is less important than funding disease. It is not. The one thing that we can do right now is stop cutting down trees. That is the one thing that is so easy to control. The other things are difficult—investigating disease and controlling disease are difficult and it is going to take a lot of time and years and work—but we can stop cutting down trees right now.

CHAIR: Thank you, Dr Hanger. Miss Loader, is there anything you would like to add? Whilst you are thinking about that, I should have said earlier: in the event that the committee asks any questions on notice we have determined that the answers are to be returned by 16 May.

Miss Loader: I have a copy of my thesis here. I do not know whether you have a copy of it already.

CHAIR: We have an electronic copy, so that is adequate.

Senator BOB BROWN: If there is one available, I would like a copy.

Miss Loader: You can have this one.

CHAIR: You might autograph it, I think! Thank you both very much and thank you for helping us understand that with koalas what you see is not necessarily what you are getting. The committee will now take a break.

Proceedings suspended from 11.23 to 11.39

TABART, Ms Deborah, OAM, Chief Executive Officer, Australian Koala Foundation

[11:39]

CHAIR: Welcome. We have your submission. Are there any corrections you would like to make to it?

Ms Tabart: No, I am very happy with my submission.

CHAIR: In that case, would you care to make an opening statement for the committee?

Ms Tabart: I would, and I have tabled that.

CHAIR: Thank you. Do you wish to speak to it? It might help the committee.

Ms Tabart: I will speak to it. I am delighted to present for this committee. Thank you for having the opportunity. The first thing I want to do is clear up koala numbers. The maps in front of you are the result of 25 years of research costing about \$8 million. When you talked about money this morning I really wanted to say that the amount of money that we have already put into this has been dramatic.

CHAIR: I have interrupted. Would you care to hand the secretary the opening statement? Thank you.

Ms Tabart: I have another document I want to table as well.

CHAIR: Would you care to do that at the same time?

Ms Tabart: Thank you. So I want the numbers cleared up. In our submission there was methodology of how this document was created. I am more than comfortable with the scientific scrutiny that anyone can throw at it. We are saying that there are no more than 85,000 koalas in Australia and, more likely, 45,000. This map represents the habitat available: over 1.1 million square kilometres of the original koala geographic range. It does not include any isolates. We did that deliberately on the advice of Professor Hugh Possingham, who made it clear that those island populations were aberrant. They are not part of the long-term genetic diversity of koalas. Indeed, in our submission the US federal government dealt with that issue, and that is in our submission also. They said, 'Just because you have lots of koalas in lots of little places does not mean that everything is okay.'

So you will notice that the vegetation data on that map is actually from 2001. What I would like to table with this committee is that the vegetation data of Australia is appalling. We said in our submission that if you are going to find out where koalas are you have to know where their habitat is, and you can only do that with good vegetation data. I think the Australian government in general has no understanding of how important mapping is and how good mapping needs to be done. I could wax lyrical about that for days.

I want the committee to respect and accept that after 25 years of commitment and \$8 million worth of research—every single person who has spoken to the committee at the moment has been funded by our organisation, and I will restate that we have never taken one government dollar in our whole existence since 1986—quite frankly, I personally am tired of selling T-shirts for research that should be done by this government.

Secondly, I want the committee to acknowledge our work, which is often diminished. We have just spent 25 years trying to understand the complexities facing the koala. I really want you to acknowledge the people and the communities from around Australia who have tirelessly healed and returned koalas to the bush while all tiers of government have abrogated their responsibilities. Yesterday I spoke to a man who has just been in hospital. The number of personal relationships that I have formed over those 25 years with people who have fought governments for the protection of koalas to their own detriment.

Thirdly, I want this committee to get to the root cause of why koalas are being diminished, and that is koala trees. If we do not cut their trees down, they will not suffer from starvation, they will not be ripped apart by dogs, they will not be killed by motor vehicles and I am certain that the disease rates are less. In our submission we have identified 50 tree species that these maps identify as key across the nation. If this committee would just recommend protecting those 50 trees, that would be a simple first step for making sure that our koalas have a home. Lastly, I want to say that in our 25-year history I do not think more research is what we need. I know there are going to be researchers in the room who are not happy to hear that. Sometimes I think research seeks to delay and confuse. What the koala needs right now is legislative protection at the federal level, and I am asking this committee to make sure that the koala is listed under the EPBC Act even though I do not regard that act as being capable of protecting the koala. Land clearing is not even a trigger for the act.

It is a threatening process, and I notice the Hawke review is being delayed by two years by minister Burke. Our environmental laws are totally inadequate, but it would be a moral victory. You may be interested to know that there are 1,700 species already listed as vulnerable waiting for recovery, so even if the koala were to be listed it would be 1,701. What I have argued to Minister Garrett and to every minister I have met in my 23-year history is

that if you take the precautionary approach and list the koala and its forests you will pick up 1,000 species waiting for recovery, which would save the Commonwealth government something like \$5 billion in recovery. There are species coming out our ears in koala habitat and, if koalas are still there, chances are the bush is in pretty good condition.

I am also saying the simple act of listing the koala would ensure that all landholders, when wanting to change or develop their land practices, would be under strict and powerful guidelines to minimise damage to koala habitat. Responsible industries should not fear this oversight, and I am saddened that many forces have gone to great lengths to stop koala protection not just in the here and now but historically. If you read Dr Ann Moyal's book on the koala, it shows that the British did not actually want to protect any Australian species, because they thought they were ugly. The more I delve into the history of the koala and its lack of protection, it is absolutely time our federal government recognised its iconic status and stepped in.

I am delighted to say that I would also be very happy to appear before this committee in camera, because I have seen and heard much in my 25 years. The forces that seek to stop protection of the koala are harsh, determined and very persistent. Talking about the history or disease states of the koala is one thing, but to actually call to account governments who have abrogated their responsibilities over a long time and now industries that are rampantly destroying koala habitat and, worse still, changing legislation to make it easy for them.

CHAIR: Thank you. Are you requesting that the committee hear part of your evidence in camera? If so, how would you suggest we proceed with that?

Ms Tabart: No, I am not suggesting that at this hearing. I am saying that, if I do not think that this committee is getting to the core of what is stopping koala protection, I am prepared to go in camera in Canberra. In my final comments I wanted to say to Senator Doug Cameron that we have tabled our carbon and koalas document, which was in our submission and which we took to Copenhagen to show that the forests of Australia have carbon in the bank. I have many investors in the United States who would be delighted to buy some of those forests. We have a couple of research sites where we are starting to look at trees planted now versus trees in the bank, so to speak. I think this is one of the potential solutions for the protection of koalas without money.

CHAIR: Thank you. We are champing at the bit to ask you some questions.

Senator BOB BROWN: Thank you, Ms Tabart, for spurring me into action. Hearing you on the airwaves many times has stimulated me to act in the Senate to get this inquiry going, which has come from the community and from you, and that is how a Senate inquiry should work. I hope the outcome will be action to help protect and save the koala, so thank you for that. That said, I am interested in the legislative protection and how that would go but, firstly, I wonder if you would reiterate in brief form to the committee the earlier history of the koala when it was shootable and was a valued economic item.

Ms Tabart: When I got my job 23 years ago they said in the scientific literature that, at the time of white settlement, koala numbers were low because the Aborigines had nearly wiped them out, and once we wiped out the Aborigines the koala populations went to a large number and, therefore, it was okay to shoot them. As a Tasmanian—when I was a child I used to think Mum and Dad knew Truganini as she used to talk about them so much—I was outraged because I think the literature is very racist and very male dominated.

We went back and had a look at that. There is no evidence at all to suggest this. In fact the Kooris do not paint the koala and one elder said to me, 'They're bad eatin' sister'. In the 1920s three million went to market in one year. There is one wonderful document called *Black August*, which I think we also put in, that said four times that amount could have been shot. At one time there may have been 10 million koalas in this country across its geographic range. They may have been as abundant as possums, who knows? I am outraged at the literature and I do think that science has let the koala down.

I think things just get regurgitated and I wrote a paper called *Myth becomes scientific fact* where I said that we regurgitate something for so long that we think it is right. My mother said that a dolly's pram cover was the rigueur of the day in the twenties, and they used to get one shilling and sixpence for a koala skin. It became completely uneconomic. It was shot to extinction in South Australia and there were around 1,000 of them left in Victoria. At the last shootout in Queensland they had 800,000 and, in 1927, it was a ploy by the Forgan Smith government to win power just before a depression. In fact, President Hoover, in 1929, stopped the importation of not only koala skins but also opossum and wombat. That is the only reason I think the koalas are still with us.

Senator BOB BROWN: Thank you. With the woodlands and the protection of habitat, you were talking about koala trees. I am reminded of the famous statement by a member of the New South Wales Forestry Commission at Walcha who said, 'We don't cut down trees if we see a koala in them. We wait until the next day and then cut the tree down.'

Ms Tabart: I want to make the point that I had the national forest industries in my office and I made it clear to them that I think their industry is a shambles. I think the regional forest agreements need to be looked at. I think that koala habitat is being knocked down in forests every day. In fact you probably saw the koala that was cut in half by a merchandiser that was done in a New South Wales state government forest. I do not believe that the pre-logging surveys were adequate. I do not believe that leaving a koala or cutting its tree down the next day is appropriate. There is a member of the public here who said they saw exactly that here in Logan. A koala was in the tree, they waited until the next day and of course the koala died. It is pathetic and the lack of policy and lack of compassion is shocking.

Senator BOB BROWN: Are there any areas of woodlands which contain koalas, or potentially contain koalas, being cut down now in Queensland?

Ms Tabart: We could take you for a drive anywhere in Australia and see koala habitat affected. Someone brought me in a new map today of habitat that is going to be destroyed in the Ipswich region.

Senator BOB BROWN: For what?

Ms Tabart: A rail link that I suspect is going to feed the coal industry from the Darling Downs and from Gunnedah.

Senator BOB BROWN: There is a later witness today I will ask about this, but I understand that some of the open cuts on the Darling Downs may be kilometres across. In fact, I know of one that is said to be 11 kilometres across. But any one of those mines is only a tiny impact, surely, on the overall koala habitat.

Ms Tabart: I do not agree.

Senator BOB BROWN: I might be tempting you a bit.

Ms Tabart: I am plagued daily about the solutions. You will notice in AKF's submission that we focused on some simple solutions right now, because these are complex issues. I am obsessed about maps. I believe that if Australia had maps that said, 'This is where we grow food, this is where we mine coal, this is where we are coexist, this is where are going to put our roads, this is where we are going to do our developments' One thing that I was absolutely offended by this morning was the whole notion of Koala Coast. Let me tell you. The Koala Coast was put in place in state planning policy 1 of 1995 to protect five state and federal politicians—if you match the Koala Coast, it will meet the electoral boundaries exactly—because of the electoral defeat of the Goss government.

This has never been about putting the koalas in Koala Coast. Our whole country was koala habitat. There is no such thing as an urban koala. We are encroaching on koala habitat. This afternoon I am dying to hear from the UDIA—

Senator BOB BROWN: Which is what?

Ms Tabart: The Urban Development Institute of Australia. We worked with Brian Ray and the Ray Group, reportedly one of the biggest white-shoe brigades you could ever deal with, and Koala Beach was built in 1995. Twenty-six endangered species were there. It is still the only koala-friendly development in our country after 16 years. So the development industry has a lot to answer for for not saying: 'This is koala habitat. How can we encourage families to come and live amongst it?'

There are so many solutions. In my submission I say that I have written countless letters to all manner of industry, saying, 'Don't you think it would be a good idea if you did this?' By and large I get a letter back saying, 'Thanks very much, but no thanks.'

Senator BOB BROWN: Reading the map from here, it says '2011 eucalypt forest' and something else?

Ms Tabart: Yes. It is based on 22 species of vegetation types. It is called the potential koala habitat atlas because in some places in the country there is very little data and so we have had to use fairly broad-scale data. I put in my submission the Australian Vegetation Project, where I suggested to the feds: 'You need to have a repository of vegetation data in the federal government so that we can access it. You can have that on telephone poles. You can have it on bus stops. You can have it on post codes. But we have not got it on native vegetation.' I truly have become obsessed about mapping, and I cannot impress upon you enough that good maps will lead to good decisions.

Senator BOB BROWN: So the green there is real or potential koala habitat.

Ms Tabart: Yes. Interestingly enough, if you cannot prove that koalas are in there, under SEPP 44 legislation it gets no protection. Worse still, in the Gunnedah fights out there at the moment, SEPP 44 is extinguished by exploration rights of coal seam gas and coal mining.

Senator BOB BROWN: So mining legislation overrides koala habitat protection.

Ms Tabart: Totally.

Senator BOB BROWN: Does any other legislation do that?

Ms Tabart: I have seen every single piece of environmental legislation, of which there are 32, be overridden by lack of political commitment, 'She'll be right, mate' or 'Let's go to lunch'.

Senator BOB BROWN: According to one submission here, the Queensland government estimates that there are 460 koalas a year killed by roads and dog attacks. Are those statistics about right?

Ms Tabart: We estimate that 25,000 koalas have died in the last 10 years in South-East Queensland alone. That is after 16 policies since 1 of 1995 which have done nothing. I repeatedly say to the premiers here, 'If your documents are working, how come we've got 25,000 dead koalas?' That is documented on the DERM website.

Senator BOB BROWN: So that is an eight hundred or nine hundred per cent higher figure than what the government of Queensland is quoting for that death rate. Though your figure might be including the death rate from koalas which die from disease rather than—

Ms Tabart: They segment the data. In fact, at one stage, when the Australian Koala Foundation tried repeatedly to get this information, it was denied us. We have received solicitors' letters saying, 'Don't come after this data'—not from government but from other sources. Senator Cameron, I am saying too that I want and see the Australian Koala Foundation as the peak body. Not everyone is happy about that, but I think that after 23 years my board and I think nothing else. It was started by five Knights of the Realm, including Sir James Foots, who felt that koalas were important to our country. I know every single koala person in the country and respect and admire their work enormously, but banding them together is like herding cats, because they are such strong, passionate people.

Senator BOB BROWN: That should be the role of government at the end of the day, mind you.

Ms Tabart: Totally.

Senator BOB BROWN: What is the penalty if a dog kills a koala?

Ms Tabart: Very little. I have very strong views about this and I have written that in the submission too. If you had 25,000 cats ripped apart by dogs or starved to death—there was a woman in the room who had a little animal called Kuta. It was tiny. It had an empty tummy and starved to death falling out of a tree. There would be outrage. There is nothing. The only time there is outrage is when the minister can say someone shot a koala. There is a lack of follow through to developers who knock down trees and have deaths occur. There is nothing.

Senator BOB BROWN: To come back to the national scene, we have the Environment Protection and Biodiversity Conservation Act, which was the world's leading legislation to protect biodiversity when it was introduced in 1999. What has happened to stop that protecting this national icon—the koala?

Ms Tabart: Two things. I think it has been watered down over time. Like I said in my statement, land clearing is a threatening process but not a trigger to the act. Also, the IUCN criteria which comes out of Europe is that you have to prove the declines. This is where I think the science has let everyone down too. In Switzerland you can probably go up into the mountain, count five goats and say, 'There's three goats this year.' With ours you have to go, 'How many were there?'

Senator BOB BROWN: We have heard evidence this morning of a 95 per cent crash in the koala stronghold of the mulga lands of Queensland. Why has that not triggered action to protect the koala under the Environment Protection and Biodiversity Conservation Act? Do you know?

Ms Tabart: Because the koala is not listed. If the koala is not listed, nothing happens.

Senator BOB BROWN: Why is the koala not listed?

Ms Tabart: We have nominated it three times, and it never meets the criteria. The scientific committee chairman can go on television with Mr Garrett and say there is no science to support the data.

Senator BOB BROWN: I am probably going to go around in a circle here, but we heard this morning about this crash of population.

Ms Tabart: I can say that the author of that particular document is in the room. It was kept from the Australian Koala Foundation and released at midnight one night.

Senator BOB BROWN: But we now have it. Do you know why that has not triggered action?

Ms Tabart: Because the koala is not listed as a federal species, so nothing can come into place. We have nominated the koala to be listed as critically endangered under the Nature Conservation Act. That document is

now sitting with dust here in Queensland. Every nomination in this country has been put forward by our organisation and every rejection has come from that.

Senator BOB BROWN: Finally, do you think vulnerable is really the right category for listing?

Ms Tabart: As I pointed out to successive ministers, it is listed as vulnerable in New South Wales already—

Senator BOB BROWN: I am talking about nationally.

Ms Tabart: I understand. So that should just be ticking the box. Queensland already has it as vulnerable in its stronghold. That should be ticking the box. Victoria regards the koala as a pest because of its island isolates. So I would be thrilled with vulnerable but I think, after all this messing around over 20 years, it should be endangered.

Senator BOB BROWN: You just used critically endangered.

Senator CAMERON: Are they? That is good. I did ask the scientists about what were the constraints and what analysis they had done about the act and the problems of the act. I think—without verballing the scientists—it is not their job.

Ms Tabart: That is right.

Senator CAMERON: And they have gone, 'Look, we have looked at the science', and the science is quite compelling from what we have heard this morning. So it will be interesting to hear from the scientific committee.

Ms Tabart: I have taken advice over many people, and, interestingly enough, when Senator-elect Larissa Waters worked for the EDO, I did fund the EDO to look at the inadequacies of the EPBC Act, so I have had good advice over the years. And this is the thing when you set up silos. Apart from herding cats, the amount of money that has been reduced out of universities over the last 20 years is shocking. Our research team member Dr John Woolcock, who is from the University of Queensland, has attended every board meeting for 25 years, honorarily, is shocked at the state of the science in our country. These things are very complex and I feel the koala is just a jigsaw piece in a very flawed puzzle of so many things, which is why now I see the koala as just a symbol of our country and why I love going to work every day, because I think we have to look at why is this animal suffering so much when it is such a symbol. There are so many complex problems that we have to all solve and again back to mapping, back to good maps and law—

Senator CAMERON: Just hold on. I do have some questions I want to ask you.

Ms Tabart: Okay. I have only got a minute.

Senator CAMERON: I know you are passionate about this but I have just got to get my head around it.

Ms Tabart: I understand.

Senator CAMERON: So I would like you not to take me away on something else while I am trying to work through the issues.

CHAIR: He only has a few minutes left to do it in, Ms Tabart.

Ms Tabart: And 'critically endangered' in South-East Queensland; absolutely. And where are those documents, Senator Brown? We have repeatedly put these scientific documents—we had seven scientists on our payroll for about seven years. I cannot impress enough on you how hard you have to work and how many T-shirts you have to sell to pay for that. They have just been demoralised that their science has been diminished. I am cross with the scientific community both here and in Copenhagen because they have not got enough guts to stand up. I repeatedly say to them: where are you when I am on radio? It is not fair. I have really had enough.

Senator BOB BROWN: I get a tinge of that.

Ms Tabart: Yes, well, it will be good to be able to retire one day. But I cannot retire until this information is passed—

Senator BOB BROWN: It is time we got the proposition—I see carbon and koalas collide. We heard this morning some evidence about carbon diminishing and the nutrition in the feedstock for koalas. We also know that ending the logging of native forest woodlands and forests would reduce Australia's greenhouse gas output by between 15 and 20 per cent. So there is the potential for a win-win here, if it is taken up, isn't there?

Ms Tabart: I cannot tell you how exciting my career could be if I went around the world and said: 'We have koala forests to sell; how much do you want to pay for them?' I have sat in planes in Boston, New York City, where people have money ready to do it. You take it to Canberra and it falls on deaf ears. It is the most demoralising thing that I have ever experienced.

Senator BOB BROWN: There are Tasmanian blue gum and other species currently in plantations. There is an area the size of Tasmania in plantations elsewhere in the world and there are big areas on the mainland. Do you

think those are potential koala habitat? Or are they also called ecological deserts? Do you really need to plant mixed species or try to replant what was there before?

Ms Tabart: We gathered five blue gum plantation growers together for a scientific project. I do not think it is tabled, but I am happy to table it for you at some point. That shows that the koalas just whip in and go 'yum'—the way I describe it to my donors is: meat and three veg, peaches and ice cream and a dinner mint. Koalas need a suite of trees. So if the blue gum is there it is probably just like a pork chop. But they are very smart so they come in and out. I have repeatedly asked logging companies if they could put a shelter belt through—and that meets the Kyoto protocols. I have asked them if they could leave a shelter belt that could gain biodiversity credits so the koalas could move through those plantations. I have seen koalas move out of these isolates in Victoria because of those huge blue gum plantations. So I see them as a little bit of a solution but with good science to support it. I do not think we put it in our submission but I would like to table the Victorian fires commission document that we wrote that identified the ignition points in pine plantations and how you need to buffer some of your plantations with native forest. It is a fine document, scientifically valid. I did table that to NAFI, and they just read it and nothing happens.

Senator BOB BROWN: What is the biodiversity credit?

Ms Tabart: Under the original Kyoto protocols it said that if you did plant on previously cleared land to 1990 and you did provide some sort of buffer you would get extra credits.

Senator BOB BROWN: Thank you.

CHAIR: Thank you, Ms Tabart. Senator Cameron.

Senator CAMERON: Ms Tabart, I am not quite sure where to start. I have just had a quick look at the act and it is quite complex.

Ms Tabart: The EPBC Act?

Senator CAMERON: Yes.

Ms Tabart: It is impossible.

Senator CAMERON: Impossible? I thought 'complex', but maybe 'impossible' is—

Ms Tabart: Can I just make one point: it does not give incentives for anyone on private property. Eighty per cent of Australia's koalas are on private land. I noticed this morning about the national park: only six per cent of national parks in our country have koalas in them. If you do not find really innovative ways to make a landholder want to keep their biodiversity—in the United States and again I have another document—101 pages of the inadequacies of the EPBC Act and indeed solutions for how we could make that money go around. Revolving funds for instance; you could buy biodiversity, and sell it off to someone with covenants. The lack of innovation in our country about this is shocking. The EPBC Act only protects the koala; it has no planning power and, worse still, it has no tax or incentive powers.

Senator CAMERON: But it is even more complex than that. It does provide for the minister to take advice from the scientific committee.

Ms Tabart: And he has, and they have said no—three times.

Senator CAMERON: Do you know who is on the scientific committee?

Ms Tabart: Professor Robert Beeton. It is interesting Dr McAlpine knew the answer to that; no-one else does.

Senator CAMERON: Who did you say?

Ms Tabart: Associate Professor Robert Beeton is the Chair of the Scientific Committee, and as I heard this morning, Dr McAlpine seemed to know that the committee has said no on this occasion; no-one else knows that yet.

Senator CAMERON: Wouldn't you expect government to place some reliance on well researched scientific opinion?

Ms Tabart: I used to think that. I do not anymore. After being in Copenhagen and watching governments ignore people at all levels, I do not believe that the world is watching. I do not believe our political leaders have any idea of how much this planet is in peril.

Senator CAMERON: Be that as it may, what I am saying here is that under the EPBC Act the minister has certain quite clear obligations and the obligations are to get advice from the scientific committee and that is—

Ms Tabart: Yes, he has; and as I said, it has happened three times and they have all said no. I have them on my desk every day to just keep me charged up.

Senator CAMERON: Why do you think the scientific committee is saying koalas are not endangered? Because the scientists that were here today—

Ms Tabart: They are not on the committee.

Senator CAMERON: are actually saying: yes, they are.

Ms Tabart: I think you should ask them. I would love them to be called in. You can ask them that question. A lot of them are invertebrate experts. A lot of them have never been in the bush. I have been in the bush for 23 years now; I never bump into a government scientist.

Senator BOB BROWN: Senator Cameron, can I interrupt just to put in a request that we ask that committee to appear.

Ms Tabart: That would be great. I would be happy to give you questions for them.

Senator CAMERON: I look forward to those questions.

Ms Tabart: They are rippers.

GRABOWSKI, Ms Vanda, Secretary, Koala Action Pine Rivers**ROBERTS, Ms Lynn, Vice President, Koala Action Group Queensland**

[12:20]

CHAIR: Welcome. Do you have any comments to make on the capacity in which you appear?

Ms Grabowski: I am also representing the interests of Moreton Bay Koala Rescue.

CHAIR: We have a submission from each of you. Do either of you need to fix any mistakes or errors in your submissions?

Ms Grabowski: Nothing at all, thank you.

Ms Roberts: I just have a slight addition, which really reinforces one of the points that were made about the dog attacks.

CHAIR: You might care to address that in an opening statement. If each of you would like to make a brief opening statement, proceed.

Ms Roberts: Thank you. Koala Action Group has been active for over 25 years. I have an environmental science degree and an interest in population ecology. My practical experience includes working as an after-hours koala ambulance volunteer for 10 years, in which I saw just about every opportunity a koala would have to get itself into trouble. I have reared orphan koalas and restored habitat in a professional capacity as an environmental consultant.

Although my personal experience has been with the Koala Coast, which is south-east of Brisbane, which you well know, and in the Redlands in particular, I believe the problems faced by koalas there to be similar to those of all the other koala populations found on the coastal areas of northern New South Wales and South-East Queensland. Koala Coast has the advantage of being one of the best studied groups of koalas. Populations have only been scientifically estimated since 1996, but KAG has run phone-in surveys since 1987 and they have a similar parallel. We can validate our phone-in surveys as they show the same dips and peaks that the scientific research does. The Koala Coast population of koalas is very special in that it is the largest concentration of koalas near a capital city, along with Pine Rivers, which is in a similar situation.

Another interesting feature is the large number of koalas that have lived and continue to live successfully in urban areas. However, there has been a dramatic decline in numbers in the last 15 years, coinciding perfectly with the dramatic rise in the human population in the Redlands, which has grown from 92,000 in 1993 to 137,000 in 2008. Modern development methods typically totally flatten sites and place large houses on small lots, making it impossible for koalas to traverse the developed site. A DERM study in 2009 documents the rapid koala decline in the Koala Coast. It highlights the importance of conserving urban populations after blaming the decline in the bushland areas on a previous decline in the urban population, which meant there were fewer dispersing animals from the urban areas to populate the bushland areas.

KAG is highly concerned about the lack of protection of habitat in the urban areas, which ignores the findings of this report. Individual trees are difficult to assess using satellite technology, so they are discounted and consequently not protected. This is highly damaging to urban koala populations that are dependent on being able to access trees in a stepping stone fashion—that is, the urban koalas typically have a chain of trees that they visit to feed in. The removal of one tree can remove a link or break the chain, making it difficult, if not impossible, for them to visit the next link. With the multitude of infill developments, especially in the Redlands, owners are able to subdivide into smaller lots and that inevitably leads to the loss of these backyard trees.

The Queensland state government has put a lot of effort into protecting koalas in the Koala Coast since the first state draft planning policy was presented in 1995, but with a spectacular lack of success, as shown by the decline of 64 per cent of the koala population in the Koala Coast between 1996 and 2008. That is the same DERM report that I was talking about before. Under the latest state planning regulatory provisions, protection largely depends on habitat mapping. Outside the urban footprint, large areas are excised as key resource areas for quarrying, and under the SEQ Regional Plan the rest is rural production area. The latter land use allows clearing for farming and livestock. Within the urban footprint, there is little or no protection for these important individual trees. Threatening processes apart from habitat loss are also inadequately addressed. Road traffic has increased exponentially in the last 10 years in our area. Some fauna underpasses have been installed but their effectiveness is unproven. It is far more likely that koalas will use overpasses, so it is disappointing that there are none planned for the Redlands, in spite of there being excellent sites at known hotspots. The Koala Coast is also exceptional

because most koalas killed by dogs in the Redlands are killed in the dog's backyard. The Redland City Council has brought in local laws requiring dogs to be confined at night in the designated koala conservation areas, but most koalas are killed in the urban areas. The map I was talking about illustrates that point.

The link between development and disease is clearly shown in one development study in the Redlands. We have an area of land surrounded by urbanisation and bushland. It was one of the better developments, because 25 per cent of the land was given to koala protection, or was kept as natural. Another 25 per cent was large blocks, which would presumably allow trees to continue. It started off with 70 koalas on the site in 1996, with five per cent showing clinical signs of disease and 90 per cent of females having young. After development, in about 2004, there were only 15 koalas on the site, and 25 per cent had clinical signs of disease and less than 30 per cent of the females had young. The situation has continued in that trajectory. So there are fewer koalas, more disease and fewer females with young. That is just one of what we would call a koala friendly development.

I firmly believe that the listing of the koala under the EPBC Act is the only thing that can help prevent the Koala Coast population and all the other similar populations with their separate genetic identities becoming extinct. This loss of genetic variability will lead to the eventual loss of the whole species through the mechanisms that have already been talked about today—disease et cetera.

CHAIR: Thank you, Ms Roberts. If you have written copies of your opening statement, you may care to table those for the committee.

Ms Roberts: I will.

CHAIR: Ms Grabowski, do you have a quick opening statement?

Ms Grabowski: I do not have any written submission, so I am just going to speak from my head and my heart.

CHAIR: We would love to hear from you.

Ms Grabowski: The point I really want to make is that every single koala management strategy, plan, recommendation and suggestion has not resulted in a reduction in the loss and fragmentation of habitat. It has not resulted in a reduction in the number of motor vehicle strikes killing and injuring koalas. It has not resulted in a reduction in the number of koalas attacked by domestic animals. It has not resulted in any reduction of disease. So what has been written to date is totally inadequate and we have escalating declines in the koala population to substantiate the invalidity of those very documents.

Whilst we are repeating the same thing, when I began working with koalas in 1993 as a rescuer, as a carer of sick, injured and orphaned animals and also as a raiser of koala joeys, we knew what the problems were. Loss and fragmentation of habitat in the Moreton Bay region was No. 1, followed by motor vehicle strikes at No. 2, followed by dogs, followed by disease. In Pine Rivers we were supposed to have the healthiest koala population in South-East Queensland. In the last surveys in 2007, 2008 and 2009 disease is now the second biggest killer of koalas. Habitat loss and fragmentation is No. 1, disease is No. 2, and cars and dogs follow on.

I think the solutions are multifactorial. We have to use a combined range of options to reduce the problem. Habitat loss and fragmentation is just as important in my mind, and in the minds of the members that I am involved with, as disease. But local, state and federal governments have not come to the party in any adequate way as far as our groups are concerned.

Senator BOB BROWN: Is one of the answers to end development in koala habitat areas?

Ms Grabowski: I do not think that is possible. There are several issues that that relates to. No. 1 is that the mapping has been totally inadequate. They have used in the Moreton Bay region the Bruce Highway as a demarcation line, for example. Everything to the left of the highway has been surveyed to varying degrees of accuracy but to the right side of the highway, for some reason known only to the state government, it has not been explored at all. So until you have an accurate baseline, for a start, I question the whole management process. You need to have the right information to introduce the right options and resolutions to those problems.

Senator BOB BROWN: I guess where I am getting to is that, if we accept further developments into koala habitats, where is the end point of it?

Ms Grabowski: There is not. We are seeing the end point. I believe in our area—I do not know about Redlands; I know more about the Moreton Bay Regional Council area and Pine Rivers—we are already seeing local extinctions. When I first began in 1993 you would walk down the street and you would see a koala maybe within a 15-minute range. You would now be hard-pressed to find a koala in an hour's walk in many of the regions where there was a high density. It is urban footprint, and that has absolutely no protection on a private level as per a residential household, or on a local government level as in the retention of parks, or on a level where

developers actually ensure that ecologists are present and that appropriate care is taken during the clearing process to make sure that koalas are not injured during clear felling.

Senator BOB BROWN: Should housing developments in koala habitats be dog-free?

Ms Grabowski: That is an option. I do not see how you are going to do that, because the existing—

Senator BOB BROWN: You could pass a law.

Ms Grabowski: None of our existing animal control laws—I do not know the Redlands area; I know my region better—legislate towards a particular behaviour of a householder and their domestic animal. I can quote an address now where her German shepherds have killed seven koalas. Each time animal control goes out and says, 'You have to restrain your dogs.' They are in a large fenced area but the fenced area contains probably about a dozen koala food trees. Koalas can negotiate wire fencing quite easily. Now her seventh koala has been killed on her property and nothing has been done by local government to put a halt to that.

Senator BOB BROWN: Has anybody that you know of ever been prosecuted for having their dog kill a koala?

Ms Grabowski: Not one single person has ever been prosecuted. Not one single submission our groups have written has ever been acknowledged. Every single objection we have made on a development proposal has failed to do what we wanted it to do.

Senator BOB BROWN: Extraordinary. Ms Roberts, you spoke about overpasses. Do you mean a bridge?

Ms Roberts: I am convinced that they will use overpasses rather than the underpasses.

Senator BOB BROWN: This is the koalas?

Ms Roberts: Koalas will use overpasses. There is a really good example at Compton Road in Kuraby in Brisbane.

Senator BOB BROWN: Can you describe it?

Ms Roberts: It is a land bridge. It is based on the Canadian design of big arches that the roads go through, backfilled over the top to make a fairly natural surface that koalas and other fauna of course can walk on. As well, they have glider poles to encourage other fauna to cross. That is very land hungry and is not really realistic in the urban situation, but there is a prototype developed by Main Roads that they are going to build at Mount Cotton Road at Burbank, which is a scaled down version. It is virtually like a pedestrian walkway. I see no reason in the world for koalas not to use it as well as wallabies, with the addition of exclusion fencing, of course, that directs them into that. If they want to go in that direction they will keep moving in that direction over surfaces that we would not think are particularly natural. I am sure they will use it. It remains to be seen how many koalas will use it. I would rather see it put in an area where koalas are getting killed on the roads in great numbers, where I think we have a better chance of doing the studies to see whether they actually use it or not.

Senator BOB BROWN: Are there speed limits in koala road-kill zones?

Ms Roberts: No. Our main arterial roads are the biggest killers and they are all 80 kilometres per hour. We find that is not very conducive. It is also the volume of traffic. I think that is the reason for the big change we have seen in the last 10 or 15 years. As I said in my opening statement, we have had this almost 50 per cent increase in population, which does translate into the traffic volumes, and it is the traffic volumes that make it very difficult. You do not see the koala on the road until it is in front of you.

Senator BOB BROWN: Are these largely night kills or day kills?

Ms Roberts: Largely night but very often typically they move around in the early morning and late evening, and that is when the traffic is often the busiest.

Senator BOB BROWN: Do you know of anywhere that there is a speed limit at night?

Ms Roberts: A few years ago they tried a differential speed limit. They did a study in the koala coast. The choice of roads was very poor and it basically was not obeyed by the motorists. It was very difficult to draw any conclusions whether it worked or not.

Senator BOB BROWN: Do you know of any occasion where any motorist was booked for exceeding a speed limit to protect koalas?

Ms Roberts: Yes, I do. Many people were caught in that time when they had the differential speed limit in the hours of darkness. Many people were booked but not enough, obviously, to change the behaviour of most motorists.

Senator BOB BROWN: Do those speed limits still exist?

Ms Roberts: No, they were removed.

Senator BOB BROWN: Why?

Ms Roberts: The study was over. It did not work.

Ms Grabowski: Many people thought it was not a success from the point of view of policing. We tried to get something implemented in the Pine Rivers area. The police told us that unless someone was going to be watching that stretch of road there was no way you could police it to ensure people slowed down. They could not categorically say that a reduction in speed limits translated to a reduction in koala deaths.

Senator BOB BROWN: Are whistle attachments to cars effective at all for koalas?

Ms Roberts: Not that I am aware of, because koalas basically are not dashing across the road, they amble or are sitting on it. I think any noise would just make them continue in the direction that they are heading.

Senator BOB BROWN: A 64 per cent drop between 1996 and 2008 of itself means extinction in a few decades.

Ms Roberts: Absolutely, if the trajectory is followed.

Ms Grabowski: In our region it is 47 per cent decline so our population is on the brink of extinction and is hanging on by their little claws as we speak.

Ms Roberts: I am not aware of more recent studies. There are studies that should be coming out fairly soon that have looked at the koala coast area. I imagine the decline has continued but perhaps it has slowed a little. I understand from colleagues of mine in the urban areas that those numbers seem to be relatively stable. That is quite interesting, really. In the older developments where the trees have been retained, especially along the foreshore in places like Ormiston and Wellington Point, they still have koalas that are living and breeding because they are able to. Whereas the other areas where the infill is happening and where they are losing their backyard trees—and it can be individual trees which, as we said, have no protection whatsoever—it leads to their decline and their loss from certain areas.

Senator BOB BROWN: It comes back to if you protect the trees you protect the koalas.

Ms Roberts: It does, and recognise the trees. Even the habitat mapping does not recognise the individual trees that are so vital to the urban koalas.

Senator CAMERON: Do you have any relationship with the koala research network?

Ms Roberts: I am aware of them and, yes, I am very interested. I am a member of the koala task force and some of the scientists are in that body. I keep my eyes on the literature as it is published. Yes, I am aware of it.

Senator CAMERON: Would you agree with my view that there are a lot of silos in the koala protection networks? People are doing their own thing and there is not enough connectiveness across all of the groups that are attempting to look after koalas.

Ms Roberts: I do not really agree with that. I think anyone who works in the field naturally works in their own areas and in their own fields. There are many avenues for communication between these groups.

Senator CAMERON: What is your view on the argument about habitat versus disease?

Ms Roberts: As the example that I gave you, when you are on the ground you see healthy koalas in the trees all the time and you do not become so focused on the disease. In the hospital clinician situation you are focused on the sick and you naturally see that. We tend to see the koalas that are healthy and breeding every year. Habitat would be my—

Ms Grabowski: I disagree with that, from my experience and from the work that I have been involved in. Dr Hanger has clearly stated that koalas have a high incidence of chlamydia and they may not show any visible signs. Without actually going in and giving those koalas a health check, to suggest that they are healthy is not sound science. We can only determine their health by analysing their health. A lot is being missed because people are just looking at this on a visual level, rather than looking at the extenuating underlying factors.

Ms Roberts: But surely if the animal has been exposed and remains healthy, as Dr Hanger was saying, they are the ones we should be looking at; they are the ones with perhaps some slight genetic difference that can survive the disease.

Ms Grabowski: Indeed. I agree we should be looking at those.

Senator CAMERON: I am inclined from the evidence so far to say that the threat of disease is underestimated.

Ms Grabowski: I agree it is totally underestimated. Also, the other thing to bring into the equation is that when we are talking about admissions we are talking about what we see. David Dique, a researcher who worked

actively in the Moreton Bay region, has quite clearly articulated in his papers that for every one animal that is found either as a dead body or brought into a wildlife centre for care there is at least another one or two that have not been found. I think the actual deaths and injuries may be double what we can scientifically verify, so the problem is even more serious than we know it to be.

Senator CAMERON: I would not be critical of you if you had not seen this, but have you seen the scientific committee's letter to the minister?

Ms Grabowski: No. I think there is a big difference between the community groups, the volunteer not-for-profit groups, and those scientific researchers. Unless they have a good working relationship with a particular scientific researcher, such as I have with Dr Hanger, where I become privy to information that I probably could only access through heavy research or through having to make a more formal approach. I think there is a gap between the volunteer not-for-profit groups generally who are involved in koala care, rescue and rehabilitation and the actual scientists who are putting those facts that are verifiable and clinically proven to a wider government audience.

Senator CAMERON: Can I ask you to comment on some points, which you may not want to do if you have not read the context of the letter, but I would be interested to get your view. The scientific committee says there has been a marked decline over three generations.

Ms Grabowski: I support that fully.

Ms Roberts: Definitely.

Senator CAMERON: They are also saying that the koala could be potentially eligible for listing as vulnerable.

Ms Grabowski: I think there is no potentiality about it. I think it must be. If we are going to save the population it must be classified at a higher level than it is at the moment because, hopefully, that will bring the state government into play and some actual acts, rather than recommendations and suggestions, can be incorporated into legislation.

Senator CAMERON: I suppose this goes to some of the evidence that Ms Tabart gave.

Ms Grabowski: Yes.

Senator CAMERON: What the committee says is that there is a lack of consistent, high-quality, demographic data across the geographic range of the koala.

Ms Grabowski: Yes, I totally agree with that.

Senator CAMERON: As someone who is actually dealing with it at the local level, you would accept that?

Ms Grabowski: Yes, I would totally accept that.

Senator CAMERON: The committee also says that the body of the data is not nationally comprehensive or co-ordinated and that should be fixed.

Ms Grabowski: That should definitely be fixed.

Senator CAMERON: The committee points out that over 15 years there is only limited improvement in quality, relevance and integration of the data.

Ms Grabowski: I would say not even limited; I would say totally inadequate.

Senator CAMERON: And population estimates are based on anecdotes or opinions?

Ms Grabowski: They have not been scientifically verified. There are exceptions in certain areas in South-East Queensland. Lynn quite rightly supports that. Koala Coast has been fairly well covered, wouldn't you say?

Ms Roberts: Definitely.

Ms Grabowski: In the Moreton Bay region, Pine Rivers has been actively researched, but the Caboolture, Morayfield and Burpengary areas have had absolutely no research.

Senator CAMERON: And the committee says because of the deficiencies in the data they have been obliged to exercise professional judgment.

Ms Grabowski: But they are not using the precautionary principle as a guiding line. By the time we have sufficient evidence the fire will have already decimated the entire forest. Surely the precautionary principle, which scientists adopt, should come into play. Until we are positively sure there is not a problem, let us at least look at ameliorating those problems that we know to exist.

CHAIR: At what cost?

Ms Grabowski: I think koalas have been neglected in the whole equation. There has not been a financial value attributed to an animal that draws tourists from all over the world and elsewhere in Australia. They have not been financially given a value. Were they given that value, I think they would be much higher on the list of things to be attended to.

CHAIR: Money is obviously a component of that. I was not meaning to belittle that concern. When I said 'at what cost' I was actually meaning beyond the financial. At what other cost to communities would it be? I hear you responding to Senator Cameron that basically precautionary principles—

Senator CAMERON: I was actually trying to pursue a line of questioning, but you are chairing and you will do what you like.

CHAIR: I will, Senator Cameron.

Senator CAMERON: I know you will.

CHAIR: On the precautionary principle, at what cost should that risk be managed?

Ms Grabowski: I do not have the skills to put a financial value to it.

CHAIR: But you have a view, surely?

Ms Grabowski: Yes.

CHAIR: Leave aside the money. What factors should be compromised in order to manage the risk to the koala?

Ms Grabowski: Let's at least put some legislation in place that does something. Let's at least make a koala management plan that has legal strength and the ability to act so that someone whose dogs have killed seven koalas can no longer continue that. It does not have to be huge. You can do things. There is a rule that says if a developer is clearing trees he is not to clear a tree that a koala is in. So what has he done? He has devastated every single other tree and there are maybe one or two animals in an isolated tree. I personally have witnessed bulldozers, in spite of the rules, pulling down trees with wildlife in them. What is the impact? They pay a \$1,000 fine. What is \$1,000 to these developers? It is nothing in the scheme of things.

Ms Roberts: I think we owe it to posterity to do our very best to retain this species. What we have been missing in Senator Cameron's questions is the importance, which has been mentioned already today, of retaining the genetic variability. That really is our only insurance policy against disease and climate change. That is why we need to retain these populations. They are all slightly different genetically, so we need to retain them all for the future. If we do not retain that genetic variability, it will be on a downhill slide and will not persist into the future. I think we owe it to future generations to retain this iconic animal.

Senator CAMERON: I am not sure again whether this is unfair but, given that you have read some of the literature, have you read the National Koala Conservation and Management Strategy?

Ms Roberts: Absolutely.

Senator CAMERON: You have? I would like your opinion. The scientific committee says that it advocates a genuine national effort to rapidly implement the strategy through an effective action plan. Would it be a step forward to do that?

Ms Roberts: I think it would be a good step forward to do that.

Senator CAMERON: They basically say that, if that cannot be done, they may have to list. I am just wondering what the best thing to do is. Is it to actually implement this and, given the scientific committee will not list at this stage, look at trying to get a proper action plan through the management strategy? How do you think that would work?

Ms Grabowski: The management strategy has not worked to date, so why continue doing something that does not work?

Senator CAMERON: Is that because there has not been the effort put in?

Ms Grabowski: There has not been the political will, resources, time, people or money.

Senator CAMERON: If the political will and the resources were there to implement it, would that be a satisfactory first step?

Ms Roberts: I think that would be a very good first step.

Senator CAMERON: That is not listing but taking this as a first step prior to a listing.

Ms Grabowski: No, it should still be listed. That is the No. 1 thing.

Senator CAMERON: It should still be listed?

Ms Grabowski: Yes.

Ms Roberts: I think the weakness of this is that it is a strategy which provides policy advice to state governments. They need to get the legislation behind it. They need to have that listing to give it a head of power so that it is meaningful to the state and local authorities or it will not be worth the paper it is written on.

Ms Grabowski: You have developers competing with koalas. You all say, 'Put a dollar value on it.' What do developers do?

Senator CAMERON: No, we do not all say that.

Ms Grabowski: To me, if people had other opinions this would translate to on-the-ground stuff, and it has not. I have been doing this since 1993 and I can see that it has made absolutely no difference. Nothing has changed. There is a saying: 'Nothing changes if nothing changes,' so we are going to have to start doing some different things. We have to organise for the state and local governments to have incentives to save the trees, even a single tree in a person's private property. Our groups have to go for grants to do replanting. I have had local government come to me and say, 'No, you cannot replant in this park because you are interfering with the aesthetic amenity of grass.' Give me a break! Hello, planet earth calling!

Senator CAMERON: The aesthetic amenity of grass?

Ms Grabowski: Yes. A councillor told me that.

Senator CAMERON: I suppose there are those who argue that the economics of this are important. I would think the economics of doing these things would have to be looked at. But we live in a society, not an economy, so we have got to deal with a wider range of issues than just the economic impacts.

Ms Grabowski: And informing the community is part of that, too. They do not know.

Senator CAMERON: I am wondering how you get the balance between the Queensland and New South Wales 'white shoe brigade' who want to come in and build high-rises—

Ms Roberts: Balance is a very dangerous word, because what it means in effect is half of a half—you have half of it and then half and half—and in the end you are left with absolutely nothing; it is all gone. The other thing we have to talk about is population. We are undergoing unsustainable population growth, unsustainable in the fact that we are losing species and we are losing their habitat. As you know we have been subject to huge population growth in South-East Queensland, and of course it has these effects. Is it sustainable? No, it is not. We have got to bite the bullet. It cannot continue, unless we are prepared to lose everything that we hold dear in life. That means quality of life, the trees and everything else.

Senator CAMERON: I have been biting my tongue. I do not want to ask this question: is relocation an option?

Ms Roberts: No, absolutely not.

Ms Grabowski: We do not agree on that.

Ms Roberts: How is that going to help anything. We have heard today that there are no places anywhere. Koalas are in low numbers and there has got to be a reason for that. It is important to retain the genetic diversity. We have made so many mistakes in the past, particularly in Victoria and South Australia, where they have diluted the genetic variability down to nothing, virtually. We think we are so clever, but by moving things around we can just make things so much worse: we further dilute the genetic integrity.

Senator CAMERON: What is your view, Ms Grabowski?

Ms Grabowski: I have got a science degree and my scientific brain says to me that in an actual population there would be movement and dispersal both into and out of a population. What we have done in creating our cities is create huge walls, like the Great Wall of China, between the population of Redlands and the population of Moreton Bay. In the natural world there would have been flexible movement in all of these different areas, which would have supported the genetic diversity paradigm. However, we do not have that now. We have areas such as Kallangur, for example, in which on one side the barrier is a rail link that is going ahead and on the other side it is high-density residential development. There is a pocket of koala habitat in between those two things. Where are those koalas going to go. I can guarantee you that they are going to go out through the urban area and every single one of those koalas will come to us at the hospital either dead or injured.

I am not talking about broad-scale relocation on any excuse. I am saying to argue on a case-by-case situation, look at the factors, look at how they have to disperse, look at the available bushland, look at the possibilities of rehabilitation of secondary habitat and look at the possibilities of increasing the carrying capacity of parks et cetera, but don't just broad scale and close your mind to that. We have enough research in South-East Queensland already showing that relocated koalas have successfully survived and bred. To suggest that that does not work is

scientifically naive, and I will not even go there. I am saying that if this Kallangur situation occurs, let's radio track those koalas and we will put them in this place—in the Moreton Bay region we have an area around Lake Samsonvale, which formerly had a high population of koalas. The fur trade in one month killed 60,000 koalas in this particular area alone. This I have verified by looking at permits that the shooters used to have to apply for through government. That area has been researched by DERM and there is still potential for more koalas to go in there, but it is totally isolated by agricultural and grazing land. So there is no way a koala from one location can successfully move to another location to disperse. Being a scientist, I would suggest that we look at this Kallangur population—which is doomed in the short term and the long term—and apply scientific principles. Let us radio collar them, give them the health check, move them, watch them, follow them and then draw a conclusion. With enough plans like this in place, we can support relocation in certain situations.

Ms Roberts: I still believe it is fiddling around the edges. It is not going to be a solution to anything. It is not the solution to the removal of habitat that should not be removed. The koalas should be protected where they are and of course they should be allowed to move around in a natural way by building corridors between isolated populations to make it possible. I think there is potential for a huge amount of damage by willy-nilly doing it—moving them around—and you are not helping anyone in the long run. You can do a lot of damage to populations.

Ms Grabowski: You just have to look at the evidence.

Ms Roberts: Yes, and there is no peer-reviewed evidence that supports relocation in the long term.

Senator CAMERON: I do not want you two fighting over this.

CHAIR: They are just having a very healthy debate, Senator Cameron.

Senator CAMERON: I am not into conflict.

Ms Grabowski: But that is a different basket. I am not saying one thing is going to do anything. But let us look a little bit laterally. Obviously what we have been doing up until now has not worked. So why do the same thing if it has not worked? That is all I can say. Common sense tells me that nothing changes if nothing changes, so if we actually want to make a difference, let us look at being more constructive about it. Let us look at putting a few eggs in different baskets; let us spread it around a little bit.

Senator CAMERON: Can I get your views on the issue of climate change? I am not sure whether you were here this morning when evidence was given to say that the increasing CO₂ in the atmosphere is changing the chemical composition of the eucalypts and the nutrients in the eucalypts. Do you have a view on that?

Ms Grabowski: I have done a bit of study in this area and I believe that it is going to make a dramatic difference. Even at this stage, we are seeing changes to certain nutrient levels in the leaves compared with the levels found in the first research—when they were looking at making artificial biscuits for koalas.

Ms Roberts: Absolutely it is going to make a difference to them. It is an even stronger argument for retaining their habitat and allowing them to pick and choose between the different species and look after their own diet. They have to be able to make that choice and they have to be free to move if they are not getting sufficient nutrients from a particular species. By hemming them in we restrict their ability to utilise their habitat.

Proceedings suspended from 12:58 to 13:52

BEATON, Ms Carolyn, Co-founder and Administrator, Koala Diaries

CHAIR: The committee resumes and welcomes Ms Beaton from Koala Diaries. Were you here for the hearing this morning and heard the procedural niceties?

Ms Beaton: Yes.

CHAIR: That is good. Do you need to fix anything in your submission?

Ms Beaton: No.

CHAIR: In that case we would like a brief opening statement.

Ms Beaton: I thank the committee for the opportunity to participate in this forum today. I consider it a great privilege, moreover, to provide a voice for the koala. I am an enthusiastic participant because my overriding hope is that this inquiry will deliver strong outcomes that will raise the bar in terms of how Australians take account of the extraordinary tourism, cultural and environmental asset that is the koala.

This inquiry will likely be key to whether wild koala populations survive in Queensland. It is my belief that, should Queensland retain the status quo, koalas will soon disappear from our landscape forever. Queensland has arguably written the blueprint for how not to conserve koalas.

In my written submission I have attempted to identify some of the key reasons why this has occurred—principally an enormous loss of habitat and then the compounding impacts of a high incidence of disease and poor management plans and policies at the hands of consecutive state governments. I believe it was Albert Einstein who said that you cannot hope to solve a problem with the same mindset that created it. The mindset within the ranks of our state government is, seemingly, that human population growth and therefore more development on koala habitat not only is desirable but is an economic necessity. In this context the koala has simply been collateral damage in the unrelenting push for a bigger Queensland and we are in line for more of the same.

This is abhorrent to many people and I personally feel that no human endeavour is so important that it justifies pushing another species to the edge of extinction. Going forward, high levels of intellectual rigour in strategic planning are clearly needed but this will take time to achieve and I am at pains to stress that the koala is at the bottom end of a very slippery slope and does not have the luxury of time. With the race against time at the forefront of my mind, I co-founded the online portal koaladiaries.com.au in February 2010. Its koala sighting census was a first in integrating geographic information system, or GIS, technology with community engagement to record the occurrence of a single species in Queensland. Simply put, it was born out of a desire to help the koalas of Queensland first and foremost but also, by offering the technology freely, it could be a helpful tool for other concerned communities around Australia to step up their grassroots conservation efforts.

However, the encouraging public response to the Koala Diaries initiative aside, my attempts to secure a future for the koala in Queensland can only be described as an exercise in frustration. I have taken a particular interest in the koalas that inhabit the Noosa Biosphere Reserve, where I live and where not long ago hundreds of koalas also lived. In my Noosa Heads district, where nature based tourism is important, today we can count the survivors on two hands.

I have outlined in my written submission some of the stepping stones in my community's campaign to save the koala. There is, however, a great deal more history. Suffice it to say that the back-story is quite lengthy, involving a recurring theme of stone walls emanating from here in George Street, Brisbane. On a more positive note, I believe that a strong collaborative effort involving the community, koala experts and all levels of government can save the koala from its crisis if the effort from all parties comes from an honest base. But despite numerous representations, our Sunshine Coast community has failed to get to first base with the state government. We failed to even elicit a response.

This is a deeply disappointing scenario, particularly when we have koala experts waiting in the wings, wanting to help, who have brilliant intellectual resources that our community has not been able to exploit. All this has led me to conclude that at present the Queensland government has a public relations campaign that ticks all the boxes in giving the impression that it is trying to address the dramatic decline in wild koala numbers. The reality is that the much lauded \$45.5 million koala recovery plan is window dressing. The plan is weak, does not stand up to scrutiny in many aspects and, further, does nothing to conserve the koalas of the Sunshine Coast. I know we can do better. I would be pleased to address this or any aspect of my written submission through any questions.

CHAIR: Thanks, Ms Beaton.

Senator BOB BROWN: Thank you, Ms Beaton. I would like to know a bit more about how your diaries program works.

Ms Beaton: Basically it is a website where we ask members to register initially so that we have contact details for each person who is participating. If you are familiar with Google Earth, that sort of map feature is available.

Senator BOB BROWN: I have had people show me it!

Ms Beaton: People can then pinpoint or identify with great accuracy the tree in which a koala is sitting. We ask a number of questions to build up some information, and then that is submitted into our engine room, so to speak. This has been in operation since February of last year, and 2,087 sightings have been recorded. I should add that 90 per cent of those are in South-East Queensland. However, 272 districts Australia-wide have recorded a sighting of some sort. In South-East Queensland we are dealing with quite low numbers. That is because in the bigger picture the estimate of the number of koalas remaining in the South-East Queensland bioregion has been put at about 2,000. On that basis we are probably accounting for close to half that number.

The limitation of Koala Diaries is that it observes where people and koalas meet. We hope that there are many more koalas that people do not observe. The feeling here in South-East Queensland is that we have had this great tsunami of development and we are on the beach, if you like, salvaging the remains and trying to put together a picture of exactly where we are at today. That is where Koala Diaries was hoping to fill a void, because it was the first time that this type of technology was available to community efforts and it really tried to tap into that community knowledge and the grassroots efforts.

Senator BOB BROWN: You spoke about George Street, and I presume you mean the Queensland government. Has the federal government responded to your work?

Ms Beaton: No. I have met with every level of government through our local member. My local member is Mr Warren Truss. He is certainly aware of the website. He is an active participant. He has koalas where he lives. I know that he has lobbied to some extent. The other aspect is another group that I am a member of, Wildcare Australia, applied for a grant in the last year to do some baseline studies in our area. Unfortunately, that was unsuccessful.

Senator BOB BROWN: But you have not approached the federal government for assistance?

Ms Beaton: No.

Senator BOB BROWN: You say that you are very frustrated. Can you elaborate on that? What has frustrated you?

Ms Beaton: Credit where credit is due: we did have the opportunity to meet with three members of the Premier's senior staff in the latter part of 2009. They subsequently suggested that we meet with Minister Kate Jones, the Minister for Environment and Resource Management. We met with her in November 2009. We tabled at that meeting a plan to address the problem we have within the Noosa biosphere reserve. We subsequently did not get a formal response out of either of those meetings, which was disappointing. We also wrote to the director-general—

Senator BOB BROWN: Did you get any response?

Ms Beaton: No, not to this day. We have never had a response. Our local state member at that time was the shadow minister for environment. He was assisting us. He was very supportive. So despite his efforts we did not get a response.

Senator BOB BROWN: On that—I do not know much about local politics—has the opposition proposed a koala protection plan or policy of action that they would put in place if they came into government?

Ms Beaton: I have been privy to a draft plan. They have not announced anything publicly to this point yet.

Senator BOB BROWN: Right. Do you think that that draft plan might have more teeth in it than the current one that exists at government levels, which we are hearing is not effective?

Ms Beaton: Yes. I believe that it does. We approached the director-general of DERM, and we did not get a response to a request for a meeting. That was another frustration. The local media in our area has tried to take it up on our behalf, but unsuccessfully. All round, it has been quite frustrating.

Senator BOB BROWN: If you were the minister for koalas, what would you do, through legislative means, to protect the koala?

Ms Beaton: I feel that strong legislation at a federal level is the answer. That legislation needs to override some of the poor policies that exist in Queensland at the moment. That is where I would look firstly.

Senator BOB BROWN: There has been a lot of discussion about habitat protection. We were given a description of what the word 'balance' means here before lunch. At the end of the day, it means not much, if anything.

Ms Beaton: That is right.

Senator BOB BROWN: Habitat destruction is emerging as a major threat. It is not just a threat: in fact, it is one of the active components in the loss of koalas. Have you thought about how you would limit or end the destruction of habitat through developments?

Ms Beaton: I definitely think that a moratorium on cutting down koala habitat would be the way forward. Using where I live as an example, that region is earmarked for more development. The effect on koalas in our area has been enormous; yet there is more development still to come.

Senator BOB BROWN: Where do you live?

Ms Beaton: In the Noosa Heads area. I am talking about what used to be the Noosa Shire before the council amalgamations. It is now referred to as the Noosa biosphere reserve. It is about 150,000 hectares. It also includes the Noosa National Park, which is 3,500 hectares. That national park is the most visited national park in Queensland. It gets about a million visitors a year. From a local level, that environment is very important to us.

Senator BOB BROWN: Thank you very much. On the national park, which has koala habitat, do you know how well the koala's are surviving in the national park?

Ms Beaton: Very poorly. I have been able to put a microscope over the data that has come into koala diaries in my area where I have taken an interest. We believe there are only 11 koalas in the Noosa National Park. That is in 3,500 hectares. There are only four remaining in the headland section of the park, which is 450 hectares. We know that five years ago there were about 30 koalas in the headland section. The last time a management plan was written by the state government for the park was in 1999. I think there were so many koalas in the park they described them as 'easily visible', because by looking around you saw a koala in every tree. The decline has been very marked. From the anecdotal evidence we have of the wider Noosa area we believe there has been about a 95 per cent decline since the year 2000.

Senator BOB BROWN: Again that is a very sobering statistic, even if it is anecdotal. Dogs would be prohibited from that park, wouldn't they?

Ms Beaton: Yes, they are. Our observations of the issues in the park are, firstly, that it has been a hotspot for koala disease—and certainly Chlamydia and the koala retrovirus have been very evident there—and, secondly, in the surrounds of the national park the human population has increased so there is more traffic on the roads surrounding the park and residents have dogs. Whilst the dogs are not allowed in the park, they are living on the perimeter of the park, and that has been an issue as well.

Senator BOB BROWN: Is there potential for corridors from that park to other koala habitats or is it inevitably going to be an island?

Ms Beaton: I think inevitably it will be an island because the major roads have been constructed in such a way that they are very close to the perimeter of the park. As things stand, for the koalas to move from the park into another area they have to go across one of the busiest roads on the Sunshine Coast, so that has been an issue.

Senator BOB BROWN: Thank you very much.

Senator CAMERON: You are a national organisation now through the web?

Ms Beaton: By virtue of the website being freely available to anyone in Australia to log onto. I guess the value of it will come in over time as we gather more data but, as we have been able to do in Noosa, when you get a good community response and put the microscope over a particular area some significant trends do become apparent.

Senator CAMERON: Senator Brown was quite disparaging about the use of the word 'balance'. Do you agree with Senator Brown in terms of his view that there can be no balance?

Ms Beaton: Clearly, we have not had balance, and that is one of the key issues. Obviously different people depending on where they come from have different views of the equation. I dare say that the development industry would argue that the right balance is there. Certainly, with the data in terms of koala mortality and the trends coming through very strongly, from an environmental point of view the balance is not right.

Senator CAMERON: So the balance between developers and habitat is the key issue for you, is it?

Ms Beaton: Yes, definitely.

Senator CAMERON: Where do you stand on the debate we had this morning about the need for scientific analysis of disease and that being a growing and probably major issue against the habitat issue?

Ms Beaton: We are lobbying very hard to get some of the koala experts who spoke this morning to work in our area. I believe with the right resources they do have the ability to make a difference. We would dearly love them to be working on the ground within the Noosa biosphere reserve but it is just not possible because we do not

have the funding presently. We are constantly brainstorming. At present I am talking with our local tourism body and our local council. We are trying to work out a plan going forward, recognising the limitations that are there. I definitely agree with the point of view that there needs to be a serious investment in koala disease.

Senator CAMERON: Your website is very good—though I could not bring myself to listen to Warren Truss. But good on Warren for doing that; it is a good initiative. I have no criticism of that at all. I cannot find your interactive maps.

Ms Beaton: You need to login as a member.

Senator CAMERON: So I have to join?

Ms Beaton: Yes.

Senator CAMERON: Would I be eligible?

Ms Beaton: Yes. No memberships are refused. It just gives us the opportunity to collect some information on people. At the time we launched the site it coincided with a koala being shot here in Queensland and we felt there was the potential for people to use the site for not the best intentions. So, we always wanted to record who was using it.

Senator CAMERON: I would not be critical if you have not looked at this, but have you seen the letter from the minister to the Scientific Committee?

Ms Beaton: I have not, no.

Senator CAMERON: I want to ask you some questions that I have asked other witnesses. Do you agree there has been a marked decline over three generations?

Ms Beaton: Absolutely, yes.

Senator CAMERON: The scientific committee has said that they consider the koala to be potentially eligible for listing as vulnerable. What is your comment on that?

Ms Beaton: At the very least they would be vulnerable or endangered. I am talking mostly from a Queensland perspective. I think certainly here they should be listed as endangered.

Senator CAMERON: I am on the economics committee, and if this was at that committee you would be talking about information asymmetry—a lack of information on koalas. Even the scientific committee says that there are data interpretation challenges and lack of precise population trend data. Is that what you have found?

Ms Beaton: I think it is relative to the resources that have been invested in this area. Some of the scientists alluded to that this morning. I do feel that on balance the Australian Koala Foundation's habitat atlas is the best mapping we have presently available. They obviously concede it has its limitations as well. We need serious money invested into getting the right scientific evidence put on the table. I believe we have the capability to do that if we are given the resources.

Senator CAMERON: It is also said that the scientific committee had a conference to consider public comment on the nomination of the koala. Did you comment or make any written submission?

Ms Beaton: I did make a written submission.

Senator CAMERON: Did you get a response to that?

Ms Beaton: I cannot recollect that I did, no.

Senator CAMERON: So if you make a submission you do not get any feedback from that scientific committee?

Ms Beaton: No.

Senator CAMERON: They say that population estimates are based on anecdotes or opinions. Would you agree with that?

Ms Beaton: I would agree with that. That has been one of the obstacles we have been trying to overcome in our own area. We had a Noosa koala summit two years ago and we presented anecdotal evidence at that time to our local council, with a recommendation following that there should be no further action because we had not been able to produce the scientific evidence. That was just prior to council amalgamations. We had been very close to the state government commissioning scientific research in our area but that was withdrawn basically on the eve of the amalgamations happening, so we never did get that opportunity to progress that research. That is another one of my frustrations. I noted in the submission from the Department of Environment and Resource Management here in Queensland that they said that the two areas in south-east Queensland most at risk were the populations at Redlands and at Pine Rivers. Accordingly, they have invested a lot of resources in those areas. I am

not saying that that is not warranted, but they are making that assumption without having any scientific evidence whatsoever. There are many other populations—at least 14 significant populations—in south-east Queensland and most have had not scientific work done on them whatsoever. Koala Diaries is trying to tap into that community knowledge. We are trying to build up a picture of what is going on out there, because we have not had a proper scientific assessment.

Senator CAMERON: You are not scientists, are you?

Ms Beaton: I am not a scientist.

Senator CAMERON: The scientific committee has said that, because of the lack of information that is available—the deficiencies in the data, as they describe it—they have been obliged to exercise professional judgment. Do you have any idea how a scientist would exercise professional judgment?

Ms Beaton: I would have thought that the precautionary principle would have come into play, personally. I do not really understand why they do not observe that in this instance based on the anecdotal evidence and based on the research that has been done that clearly underlines the dramatic declines. I would have thought that that would be sufficient to warrant them observing the precautionary principle. But clearly they are not.

Senator CAMERON: Would observing the precautionary principle lead to the stopping of all development in areas in which koalas are endangered?

Ms Beaton: Yes—at least until we get an accurate understanding of what is going on.

Senator CAMERON: So if we got an accurate understanding, could we then apply a balance?

Ms Beaton: I believe so, yes. As I said in my opening statement, the strategic planning has really been lacking here in Queensland. That is my observation. If you had that information and scientific evidence, that might change. I guess what I am saying is that going forward I would like to think that the scientific knowledge could be used for best purposes and for us to take a long-term view on this.

Senator CAMERON: I notice that in the questions and answers section on your website—and while you do not use the word 'relocation', I think you talk about the same thing, although maybe it is not—you say that if you relocate a koala it will not die.

Ms Beaton: Yes. That is one of the things that I have observed. I had the benefit of working alongside koala experts in my employment. I participated in a translocation project, which was successful.

Senator CAMERON: 'Translocation'—that was the word that I was looking for.

Ms Beaton: The industry term is 'translocation'.

Senator CAMERON: Is it? That is the insider term.

Ms Beaton: That is right. My observations of that is that it can be successful. The proviso with that is that it needs to be conducted by experts. It should be mandatory that a health assessment is undertaken as part of that process. Sometimes, the right experts have not been involved in projects. I know that there have been some very poor projects undertaken elsewhere in Australia. I think that the people involved did not have the appropriate expertise.

Senator CAMERON: I am not proposing this, but if a developer wanted to develop in an area where there was a koala population that was under stress and they agreed to translocate them and provide ongoing support for that koala population, would that be a viable option?

Ms Beaton: I believe that it is. We had an example of that exact scenario here in Brisbane only a few months ago. I was one of the people who lobbied the government on this. Basically, there was a koala population in an urban area. They were basically in an island situation, with development all around them. Their area was to be cleared. It was inevitable that they would have succumbed to car strike or what have you. In that particular instance, the government—unusually—allowed the translocation of those koalas. In that instance, I believe that it was the best outcome from an animal welfare point of view. I am not saying across the board that that is the way forward. I think there are some special circumstances sometimes. In that particular instance those koalas did have the benefit of experts taking out that translocation and they did have the benefit of comprehensive veterinary examinations, and it was done to very strict protocols. I think in that case that it was the right outcome.

Senator CAMERON: So if you had, say, a healthy koala population—as healthy as it could be, given all the challenges for them—not in an isolated position but, say, in a coastal area with plenty of food—and a developer wants to come in and say, 'Get rid of that; I will translocate that,' what would your view be about that?

Ms Beaton: That is another situation that is also being played out right now on the Sunshine Coast in the Noosa hinterland. We have a seemingly healthy koala population. We make that judgment on the fact that we have got veterinary records that go back to 2000 and there has never been a koala from this area admitted to a care

facility due to injury or illness, at least in that time. So we believe that they are healthy. Yet there is a state infrastructure project, a powerline project, earmarked to go through that area. In that instance, I believe the right course would be to stop that project going through the habitat and to look at the alternative route. I think that would be the best outcome in that situation, because there are alternatives. There are a number of other factors coming into play but it just seems illogical that they have nominated this route for high-voltage powerlines and it is going through koala habitat, pristine eucalypt forest.

Senator CAMERON: On the issue of climate change, you have heard some debate about that this morning. Do you agree with the analysis that was put forward by the scientists this morning that increased CO₂ in the atmosphere is changing the chemical composition of the eucalypt leaves?

Ms Beaton: I am not really in a position at all to comment on that. I certainly have no reason to doubt that evidence put forward, but it is beyond my knowledge.

Senator CAMERON: Beyond your expertise. Thank you very much.

Ms Beaton: It is my pleasure.

CHAIR: Thank you very much, Ms Beaton.

SIPPEL, Mr Peter, Chair, Environment Committee, Urban Development Institute of Australia, Queensland

STEWART, Mr Brian, Chief Executive Officer and General Counsel, Urban Development Institute of Australia, Queensland

[14:23]

CHAIR: Welcome. The evidence that you are about to give is public and subject to parliamentary privilege. If at any stage you want to give evidence in private then ask to do so and the committee will consider it. If at any stage you want to object to answering a question then indicate your wish to do so and again the committee will consider that request. It is an offence, and indeed potentially in contempt of the Senate, for a person to give false or misleading evidence to the committee or for a third party to attempt to interfere with evidence that would otherwise be given. With that, and also noting that any questions that we might ask you on notice—that is, you take them away and do homework—are to be returned by 16 May. We have your submission. Is there anything you want to fix up with it?

Mr Stewart: No, Senator .

CHAIR: Then would you care to make a brief opening statement?

Mr Stewart: Thank you for the opportunity to present to you today briefly and thank you for the opportunity of providing a submission to you on this very important issue. There are obviously, as you know, a number of significant issues surrounding this issue, particularly in South-East Queensland. We, of course, represent developments throughout the state, and UDIA is a national body. So I guess in that context our views come more in relation to the purpose of the inquiry itself, the adequacy of federal legislation as opposed to state legislation. Rather than going into the details of individual developments, we are more than happy to take questions on notice and provide any answers that you do require.

There are many examples of the development sector working to preserve koala communities. So we do not see this as an issue of the koala versus developers. As you understand, developers act in accordance with the law as it is proclaimed by the Commonwealth, by the states and by local authorities. If they do not and are outside the law then they suffer the full consequences and penalties of it. We see this as an issue of very significant public policy and, indeed and unfortunately, a matter of public policy that simply will not go away. It will be with us certainly for our generation and generations to come.

CHAIR: I have one question before I go to my colleagues. I thought obviously that you would be saying that your organisation and those it represents do not aim at koalas in building developments, so your aim is not the koala but it might be collateral. Do you think there is anything that the people you represent could be doing to dodge koalas in a sustainable way? I am talking sustainable in terms of the development.

Mr Stewart: I am not sure what you mean by 'aim at koalas'. The simple reality—

CHAIR: What I am suggesting is that any damage to koalas from urban development is not going to be intended by those you represent, surely?

Mr Stewart: No, indeed, to the contrary. And there are very clear management plans that are required to be put in place where there is a potential for intervention and, again, they are highly prescriptive, as they really ought to be. So your question I guess is precisely that. There are many developers, where there is a level of interaction, who will go to every step possible based on the scientific evidence that they are provided by their consultants. As you appreciate, it is quite a complex industry. The developer himself or herself is generally not equipped to make decisions associated with protection of the environment—the whole range of environmental matters that are the subject of experts whom they engage. There are conditions provided on the development applications by the local authority, by the referral agencies at the state government level and, at this stage, of course, in respect of koalas, not by the federal government. But the regime is there and is there very clearly. My colleague Peter Sippel from THG is one of those experts, having worked in that field with developers for a significant period of time. He chairs our natural resources committee and, although not a koala scientist as such, he is one of the professionals who does advise the industry.

CHAIR: Do you have any handle on the energy or resources or endeavour—however you want to gauge it—directed by the urban development industry towards looking after the koala in constructing developments?

Mr Stewart: Peter will answer that in some detail. There is a relatively simple proposition that we can look at. We have had changes to the law here in Queensland through the state planning policy on koalas coming in some 12 months ago—probably not quite that long. The sorts of issues that are really significant is whether land that a developer is looking to develop is prohibited from development by the new regime, in which case obviously that is again quite prescriptive and is off the table from the development sector's point of view. There are development applications where the land is within the urban footprint, where there is a level of approval existing, and there may or may not be immediate koala concerns with the land itself. In that case we would always—at least those developers with a keen sense of social responsibility and a level of sound business acumen—work closely with all of the authorities to ensure that what they are doing complies fully. And that is just sound, good, proper business ethics. I know of no developer in Queensland at the moment who would not follow that course of action. Almost invariably they will have invested significant sums into the project to date, so there is a certainly amount of healthy financial self-interest in that, but there is also a sense of social responsibility. Where there is a level of discretion on the part of the local authority or the state government to make a determination, it certainly will not be approving developments unless the best process that can be put in place according to their system at the time is implemented. So, yes, there is quite a bit. Peter could probably fill you in on a bit of the detail that will go to those particular types of developments.

CHAIR: For now, I think I will invite my colleagues to ask some questions. We might come back to that, Mr Sippel.

Senator CAMERON: Can I get some clarification on your submission. You say that the issues around koala population protection are very substantially affected by emotional or other views based on values which can lead to incorrect outcomes, and you then say, 'It is critical that this hyperbole is stripped away and true scientific measures utilised.' If that is the case, if the scientific committee looking at koala protection determines that koalas should be protected, you would accept that outcome?

Mr Stewart: Absolutely.

Senator CAMERON: Even if it has an effect on developments along the coastline or anywhere in Queensland?

Mr Stewart: The answer to the question remains 'absolutely'. The question that follows from that of course is what consequences there are from that and what should be the public policy in addressing those issues. In other words, where should the burden fall if there is an interference with existing property rights or business rights? So you come along to quite a different question, Senator.

Senator CAMERON: You must have breathed quite a sigh of relief when you read the outcome of the scientific committee. You have read the letter, I suppose, from the scientific committee to the minister?

Mr Stewart: Yes, I did.

Senator CAMERON: The issue that strikes me about it is that they say the only thing that is stopping us declaring the koala is the lack of information. Would you agree with that?

Mr Stewart: I would need to sit down and read it precisely. But that is the tenor of what they were saying, as I understand it, yes.

Senator CAMERON: So do you think the urban development institutes have an obligation at all to try to identify the true nature of the threat to koalas given that you are, according to some here, impinging upon their habitat?

Mr Stewart: That is a very interesting proposition, actually. Should UDIA or the development institute be all things to all people?

Senator CAMERON: Or the developers themselves who are going to make a profit out of the development.

Mr Stewart: That is a question you would need to ask each one of those individually. I know what many would say and that is that the law, the state, sets the parameters under which development can occur. They will work to comply with the legal requirements to the very best of their ability. It does not become a moral question for them as to whether it is koala protection or not and if it does, that is a matter for their own value judgment, certainly not the industry.

Senator CAMERON: Is not that a bit like the Nike defence, that we can go in and we can exploit workers all over the world as long as the law in those countries allows us to do that?.

Mr Stewart: If that is what the government of Australia says that businesses can do in Australia, that sets the moral fibre because the parliament itself is not a house without morality which comes through legislation. I do not see that resting solely with the individual; that rests with the parliament.

Senator CAMERON: I am unclear about some of the propositions you are putting forward in your submission. You say:

Should the government wish to progress the current management arrangements for Koalas and Koala Habitat, it should obtain independent advice on the spatial and development impact and prepare a Regulatory Impact Statement for community consideration.

Why should the government do that? Why should it not be the developers who make a profit?

Mr Stewart: The profit only does not vest with the developer when you look at any development project. Queensland, for example, has lost something like 17,500 development jobs in the last two years since the start of the GFC. Add on another 50 per cent for retail and you will see that this is an industry in Queensland which has been very significantly impacted not only by global financial issues but also by some of the policy decisions taken here in Queensland which provide a high level of uncertainty for development. When we talk about regulatory impact statements we are talking about having a complete picture out there so that at the end of the day, when government takes a decision it is a fully informed decision based on jobs, on community wealth, a decision which looks at all the elements one would expect in looking at the environment—the social implications, the environmental and economic aspects of it as well.

Senator CAMERON: I am pretty keen on jobs but the act does not require the minister to assess any animal being placed on the list on the basis of its effect on jobs. It is about the future of the animal.

Mr Stewart: That is your legislation at the Commonwealth level, yes, because there are specific criteria. The remaining decisions taken in Queensland as to what environmental measures are put in place are a value judgment, a determination made by the government of the day and under its own legislation it is really bound to look at all the parameters of environmental sustainability, one of which of course and most significantly is the environment—but then so do the other issues as well. All we are saying is that when you do make decisions about public policy—and the same principles apply for the Commonwealth, the state government and local authorities—you are the ones who will determine, based on the best evidence, what the ultimate singular decision is on a whole range of these issues. You will determine when you set your legislation—in fact, as you know probably better than I do, the Commonwealth is limited as to how far it can go in that regard anyway under the foreign affairs power. The state of course has to make those determinations every time environmental legislation comes down. As we see it, it is a very difficult job. All we ask is that all these issues are taken into consideration.

Senator CAMERON: If the koala were placed on the list, that would increase the moral responsibility of state governments and councils to make sure that they do not destroy koala habitats. I think it would be a brave council or state government that would just say, 'These protected animals do not matter but 100 jobs are more important.' Is that not the dilemma you are faced with?

Mr Stewart: With great respect, I really do not see that as a dilemma. I guess I come from an old school which says that state governments are required to comply with the law that they themselves set, the law that the Commonwealth sets binds them to the extent that it binds them, and likewise with local government. It is not a matter of morality at all in the context of making determinations about what they will do. If you do prescribe them under the legislation in accordance with the terms of your legislation, then the state government is bound and there are legal mechanisms that you and citizens can take to ensure the state government complies with those issues. I think the system itself is relatively straightforward and provides a sort of certainty and protection that you are talking about. So I do not have an issue with what you are saying.

Senator CAMERON: Just tell me a practical example of what the implications are if the scientific committee decides—and it is not clear that this is not going to happen—to protect and list the koala. What are the practical implications for your industry?

Mr Stewart: In Queensland at the moment not all that significant, in the sense that the state planning policy that is currently in place was a very, very significant advance in the level of protection that was afforded. That has restricted significantly development in areas where there are known koala habitats, suspected koala habitats. We had some issues with the mapping in the first place, seeing as it covered a number of shopping centres, dams and a few other areas, but those teething problems are being worked through. In real terms there may be a less than significant number of development sites that are currently within the area of the urban footprint that could be developed.

The question that would then need to be asked is: are the populations of koalas in those areas sustainable? What is the best way of dealing with them and protecting them and how can that be achieved? There will then be some downstream consequences. Housing for the community will take place one way or the other. That is axiomatic. Where it takes place and how, with density and a whole range of other things are some of the key questions into the future.

Senator CAMERON: Have you had a look at if the koala was listed under the EPBC Act as either vulnerable and then the next step as endangered? What is the difference in those two classifications for your industry?

Mr Stewart: I cannot answer the question. In practical terms what it does mean is a very substantial overlay—and Peter can answer that—from the federal government which will provide another level of involvement into the development application process. We do have some experience in the other states with that overlay and its complications. It is perceived by other states to be a very blunt weapon from the point of view of prohibition of development. In practical terms I have not had a close look.

Senator CAMERON: What is more important: development or the safeguarding of a species?

Mr Stewart: That is a very, very interesting question. I am not sure what species you are talking about.

Senator CAMERON: Koalas.

Mr Stewart: I am not sure what development you are talking about.

Senator CAMERON: Your members' development. I thought it was quite clear. You are here representing an industry. The industry is saying, 'Look, there have to be checks and balances on this.' The industry is saying, 'Look, wherever there are developers that own land, we want an exemption.' That is what you are saying. I am saying to you what is more important: that exemption for profit and to build with some social advances and benefits for housing or the maintenance of a species? I thought it was a pretty clear question.

Mr Stewart: I will go back to the first premise. The first premise is that if there are existing property rights taken away as a result of the legislation there can be no issue from the developer if there is a level of fair and appropriate compensation.

Senator CAMERON: That is not quite correct, because there is existing federal legislation there and the developer would have acquired that land under the knowledge that there is the potential for federal law to apply. I do not think it is quite as easy as you are saying. I would be happy if you wanted to take that on notice. If you want to tell me that there is a listing then you are saying that developers have to be recompensed for their property rights. I would ask you to take that on notice and give me your legal view on that.

Mr Stewart: I will do that. I will also be happy to give you a bit of analysis of what is, in effect, constructive resumption and some of the morality of that issue as well. Your question, for example, presupposes a knowledge of listing that may or may not be evident. We are talking about social issues as well as environmental issues. You will make the call—or, at least, federal legislation will make the call—about whether land is or is not sequestered to preserve species, and that is something we totally accept. By the same point, we would expect the Commonwealth government would also look at the morality of sequestration of land rights. It should be fundamental.

Senator CAMERON: I am happy for you to give us what you think the industry's opinion is on applying existing law in terms of protecting species and what that means for compensation for your members.

Senator BOB BROWN: Seeing as we are onto compensation and moneys—and this is not an emotional question; it is a very important one—what is a koala worth?

Mr Stewart: The answer to your question is the value that is put on it.

Senator BOB BROWN: What value do you put on it?

Mr Stewart: Are you asking me as an individual?

Senator BOB BROWN: Yes.

Mr Stewart: Incredibly high.

Senator BOB BROWN: Can you give us a ballpark figure?

Mr Stewart: In dollar terms? No, I would not value any human or living species in dollar terms at all.

CHAIR: What value would you put on it, Senator?

Senator BOB BROWN: I am asking the question, but I would put a national value on it which would require compensation to the nation from those people who destroy koala habitat.

CHAIR: I am not sure what that means, but proceed with your questions. We will sort it out later.

Mr Stewart: I can answer that, and I think the law does already provide for that. Whether or not it is adequate is a matter for the law and our parliamentarians.

Senator BOB BROWN: Could you tell the committee occasions in which legal action has been taken and led to compensation for the destruction of koalas or koala habitats by developers?

Mr Stewart: Are we talking lawful or unlawful destruction? I presume you are talking unlawful, because if it is lawful destruction of habitat then it has been sanctioned by the law and by government.

Senator BOB BROWN: You are right. Can you tell me of any case in which there has been a penalty applied through the law in Queensland on a developer for destroying koalas or koala habitat?

Mr Stewart: I will take that on notice and we will have a look. You would have to ask the state government representatives.

Senator BOB BROWN: I am asking you as a representative of industry.

Mr Stewart: As an individual, no, I do not. The only instance that I have been—hang on. There would be two or three instances that I am aware of in the last nine years that I have worked in the industry where there has been unlawful clearing and where penalties have been imposed. Of course I do not monitor all of those cases in all of the courts in Queensland.

Senator BOB BROWN: No. But you said in your presentation that your industry or members do not damage any koalas. Could you elaborate on that?

Mr Stewart: I do not think those were exactly the words that I used. The words that I did use were that I do not know of any developers who would knowingly damage koala habitat or koalas in the context of being beyond the approvals that they have been given by their permits.

Senator BOB BROWN: Let us talk about approvals where they are given. Do you know of any developers or members of your industry who have damaged koala habitat with the approval of the authorities or the state government?

Mr Stewart: Yes, the previous witness gave a circumstance where there was a development application that was approved by the government just recently where koalas were relocated. It stands to reason that there was damage to the habitat.

Senator BOB BROWN: You have said it is not an issue of koalas versus developers, but we hear that developers do damage koala habitat. Surely that is an issue of developers damaging koalas. We have heard about catastrophic drops in the numbers of koalas that are in Queensland—and, indeed, across the country. Is the institute not alarmed by the sorts of figures we are hearing: up to 95 per cent loss of koalas since the mid-nineties?

Mr Stewart: I could answer your question this way. I am sure every time you turn on a light switch you are conscious of using energy. Every time we take a step as an industry we are, on the one hand, providing benefits to the community in accordance with the law that our politicians set, and, on the other hand, interfering with the natural habitat. That is one of those things that happen.

Senator BOB BROWN: That is one of those things that says we should stop breathing because we breathe out carbon dioxide, I suppose.

Mr Stewart: I suppose it is. I think that is where your argument was coming from.

Senator BOB BROWN: No, I think that is where you were leading it. But I want to ask you about your evidence to the committee in which you say that 'larger core bushland habitat areas' should be 'protected and embellished'. Are you sure that only core habitat koala lands should be protected and embellished, and what do you mean by the words 'core' and 'embellished'?

Mr Stewart: That is our submission to the inquiry. The submission itself was prepared by one of our committees, which includes a range of people like Peter and his team. I will give you the sense of what came from the experts who work day in and day out in our developments on that level of habitat protection. What they were saying to us was basically that there is not a significant amount of enhancement of habitat that is suitable for koala protection and preservation in the longer term.

Senator BOB BROWN: If I could take that point: what is the industry doing to take on that task of enhancing koala habitat?

Mr Stewart: The industry is made up of a whole pile of individuals and individual corporations. Some of those in existing developments are putting in place very substantial preservation, as we are required to by the law. Some are providing and will provide in the future offsets for developments that do proceed. So, where those legal requirements are, that is where they will act.

Senator BOB BROWN: I am not asking about legal requirements. I am asking about a good industry working to enhance koala habitat. I am just asking how you do it, if you do it at all or if you do not do it.

Mr Stewart: In many instances that I have been involved with personally, the measures that we take to put in management plans to educate our community about the existence of species, be they koalas or be they other species which are significant in those locations, are communicated and enhanced by plantings of species, by a

whole range of traffic arrangements and by a whole range of management issues that are brought into place where that is.

Senator BOB BROWN: Can you give me an example of that?

Mr Sippel: For instance, there is one such site in the northern part of the growth area of the Gold Coast. I was personally involved in the development of the koala management plans, with expert advice, for that development. It has major housing and golf courses. We have rehabilitated a golf course with habitat trees to re-embellish and strengthen the habitat availability. We have planted corridors.

Senator BOB BROWN: So the golf course was not closed.

Mr Sippel: We have restricted traffic flows. In some areas animals—dogs and cats—are not allowed to be kept because of the significance of koalas within those locations, which are existing development areas.

Senator BOB BROWN: Thank you. What has the success been in terms of increasing and enhancing the koala population in those areas?

Mr Sippel: At this point in time it is too early yet to say what that outcome is, but measures have been put in place.

Senator BOB BROWN: Can either of you gentlemen tell the committee of any management effort or investment by the industry which has led to an improvement in the koala population anywhere on earth?

Mr Stewart: We would have to take that question on notice, to be quite frank—

Senator BOB BROWN: Please do.

Mr Stewart: because that is not within our area of expertise. But, if you are looking at ascertaining what has happened, I understand there are a couple of developments that have been. I am not trying to justify or excuse what has occurred in the past. What you must appreciate as well is that this is an industry that operates in accordance with the laws set by the parliament.

Senator BOB BROWN: Yes, and I am also aware—

Mr Stewart: That is the nature of how the industry works and how environmental protection works and has worked up to this time.

Senator BOB BROWN: You used the words 'emotional' and 'moral' earlier in the submission. I am just asking where the industry is exemplifying those values to have an outcome that is positive. The law does not prevent anybody in Queensland from working to improve the status of the koala. There is no prohibition on that that I am aware of.

Mr Stewart: I do understand that. However, I also understand that developers and the community are entitled to act in accordance with the restrictions and mandates that are imposed by the law. We do not ask developers to become experts in koala protection and preservation as such.

Senator BOB BROWN: Just on that matter, Mr Stewart, do you or your industry lobby government or government members about developments and the impact that koala preservation may have on them? Have you ever done that?

Mr Stewart: No, I have not.

Senator BOB BROWN: And your industry does not do that?

Mr Stewart: Members who have development applications would no doubt have made representations to the authorities that make that decision. As an industry, we do not make representations on individual developments under any circumstances other than in association with the principles that are involved. In other words, we do not lobby on individual cases unless it is as a representative case. So it would not be about the science at all.

Senator BOB BROWN: I have another question predicated on your last answer: do you lobby on the formulation of legislation in Queensland?

Mr Stewart: Yes, we certainly do.

Senator BOB BROWN: Thank you. You have said:

The UDIA considers that the key objectives for ensuring the future health and sustainability of Koala populations should include ... reduce current koala losses ...

Reduce current koala losses by how much?

Mr Stewart: From the industry's perspective, we look back at a history of approvals that sees a structure in place today where there are isolated pockets of declining koala populations. We see a very substantial number of koalas killed throughout communities in the suburbs that our members are developing in. We note that that has a

very concerning effect, as it ought, on the decisions that are taken as to how, when and where we build into the future. Our view is really fairly simple. The development sector needs to know where it can build with a level of certainty so we can ensure that we do provide housing for the community. We see that as a relatively simple proposition.

Senator BOB BROWN: My question, though, was: surely an aim to reduce current koala losses rather than to increase koala populations is going to lead to their extinction?

Mr Stewart: Yes, but I do not know that we have said at any stage that we would not wish to see significantly enhanced populations through—

Senator BOB BROWN: I am just reading from your submission, and I cannot see that anywhere in your submission.

Mr Stewart: What, those precise terms used?

Senator BOB BROWN: The terms you have just now used.

Mr Stewart: I guess we would see that as being inherent in the statements that we were making about having dedicated and appropriate locations where there is significant enhancement of koala habitat for that very purpose.

Senator BOB BROWN: It says here you would achieve a net benefit for koala habitat over habitat loss areas. How?

Mr Stewart: Where there are areas that are lost as a result of development under the approvals, we would see that the offset policy would be put in place, which would be able to deliver sustainable populations.

Senator BOB BROWN: But, you know, koalas have been here longer than you and I have—

Mr Stewart: I do understand that, Senator, yes.

Senator BOB BROWN: and they have occupied all habitat areas.

Mr Stewart: Individual ones I do not know, but as a species, certainly.

Senator BOB BROWN: Just what do you mean by saying that you would improve the habitat areas for koalas over the areas being lost? Where are they going to go? What are we going to do?

Mr Stewart: If you did have a look at the mapping under the state planning policy, there is a very significant area of habitat that is there. What we are trying to say—

Senator BOB BROWN: But you are talking about offsets—

Mr Stewart: If you would let me finish, please—

Senator BOB BROWN: I am just pointing out that you are saying 'increase habitat areas for koalas'. I want to know how you propose you will do that.

Mr Stewart: How we will do that?

Senator BOB BROWN: Yes, how you propose it.

Mr Stewart: Through an extensive and appropriate offset policy which is currently being developed, as I understand it.

Senator BOB BROWN: You mentioned the federal government's use of the external affairs power in protecting the koala. Would you recommend, if the committee found it was warranted, that that external affairs power be used to protect the koala?

Mr Stewart: That is a very interesting question, because it seems to put the cart before the horse.

Senator BOB BROWN: Well, you raised the external affairs power—

Mr Stewart: I certainly did. What I was just going to say then was: the power is a valid exercise of federal power under the Constitution and is there for a very sound reason and has been since Federation. If there is an international obligation that Australia enters into that gives the federal government an obligation then to legislate, then of course I would have no difficulty, nor would the industry, with the federal government exercising to fulfil its international obligations. It is relatively simple.

Senator BOB BROWN: I have one more question, but I have to leave to go to another committee meeting by phone just for a moment, so I am sorry, because I am enjoying this.

CHAIR: We will miss you, Senator.

Senator BOB BROWN: You will. Should the federal government use the corporations power, if necessary, to protect the koala? If not, why not?

Mr Stewart: That is a fair question. As a lawyer, my answer is very clear: the states have conferred to the federal government various powers—

Senator BOB BROWN: This is the constitutional power I am talking about.

Mr Stewart: Absolutely. If it is a legitimate use of power and the High Court finds it legitimate, then that is the power of the Commonwealth under our current arrangements. There are a lot of ifs there, though.

CHAIR: Gentlemen, thank you very much. In closing, is there anything that you think the committee should bear in mind that you have not had the opportunity to expand on today?

Mr Stewart: I will very briefly make one point. With complex issues like these, it is a very expedient approach to jump into the trenches and immediately, when values are challenged, to have developers placed on one hand and have those who preserve the environment thrown in on the other.

CHAIR: Do you mean moral values rather than financial in that context?

Mr Stewart: Yes, I do. That is really unfortunate because, quite frankly, it does not lead to the best outcomes. There are value issues here and those values are very strongly held—for example, values associated with the preservation of species. Those are not the only values, however. There are property right values that have a long history to them. In that context as an industry we simply ask for clear direction as to where we can and where we cannot develop. We look to our legislators to provide that, and to our mind this is one of those exercises where those ideals and values are debated. I am sure we or people after us will be sitting here in five or 10 years time having similar debates and discussions.

Senator CAMERON: Hopefully, we can help fix that so we do not have to come back in 10 years.

Mr Stewart: I did say 'similar'; I did not say it would be about this issue. There will be issues on climate change that will go into the next 10, 20, 30, 40 and 50 years. There will always be the issue of population growth and the way in which we relate to the natural environment. That is why we look to the Senate, the House of Representatives and state legislatures to make decisions. They are not always going to make decisions that we all agree with. That is I guess the nature of governments.

CHAIR: Thank you for venturing into the lion's den.

Mr Stewart: It has been a great pleasure. Thank you.

CHAIR: Thank you very much for your evidence.

CARTER, Mr Daniel, Principal Adviser, Natural Environment, Redland City Council

HAMMOND, Mr Charles, Coordinator, Biodiversity Team, Sunshine Coast Regional Council

HOBSON, Mrs Melva Elizabeth, PSM, Mayor, Redland City Council

SKULL, Dr Stephen, Manager, Environment Policy Branch, Sunshine Coast Regional Council

[15:08]

CHAIR: I welcome representatives from the Redlands City Council and the Sunshine Coast Regional Council. You have all been in the room this afternoon and have heard the procedural niceties. We have submissions from both councils. Is there anything you would like to change in your submissions? If not, how about a brief opening statement from each council?

Councillor Hobson: We thank you for the opportunity to appear. Redland City Council fully supports the inquiry and as such has prepared a detailed submission, which you have received and noted. Dan is the council's principal adviser for the natural environment. He is here to assist with fielding the questions. I have been mayor for three years and only on council for three years, so his advice is invaluable.

Koalas in Redland are under threat and are heading for extinction within five years. Council has made the moral statement that it believes the koala to be endangered, and that is written in our policy. But, if all levels of government act now and in partnership, we should be able to properly manage these precious animals and their habitat. It is not too late to save them.

I will give you a little bit of information about Redland. We are in South-East Queensland and cover 537 square kilometres, consisting of mainland and island communities. The island communities are very significant, and I will address that in a moment. Our city is located on Moreton Bay and borders Brisbane City, Logan City and the Gold Coast. We have a population of about 140,500. Community surveys in the past 18 months have reconfirmed that protecting and managing our Redland koala population is a priority for those people. However, there are some challenges at the moment. I may refer to some stickers that some residents designed called 'Eat a koala'—a rather sick attitude that seems to be appearing in some members of the community.

Senator Fisher we are delighted that you share an affinity with us at Redlands in that your family farm was called Redlands.

CHAIR: I have an 's' on the end.

Councillor Hobson: We do not. You have produced two female senators and we have produced one female mayor.

CHAIR: Hear! Hear!

Councillor Hobson: Redlands, as you know, is part of what is considered the koala coast, and I understand the comment that Deb Tabart made about the koala coast. It is part of South-East Queensland.

The state government regularly provides koala population estimates. That is why I am interested in the comment that 'anything is just anecdotal'. It is clear to see our Redlands koala population is rapidly declining. In 1999, there were 6,246 koalas. By 2006, that figure had dropped to 4,611. In 2008, only 2,279 koalas were counted. Referring again to the comments made about 'anecdotal figures', I would like the scientists here to tell each of the people sitting behind me, who come from the Redlands, that they really did not stand out in the rain counting koalas and looking up trees, that they just imagined it. We have people who actually go out and physically count koalas in trees.

Those numbers represent a decline of 50 per cent between 2006 to 2008 and we are anxiously awaiting the count from the latest state government koala population estimate for last year, which finished in about October or November 2010. The koala coast population lives within both the urban and rural environments of the city, not as separate populations but as a single population. They require habitat in both the rural and the urban areas of the koala coast if they are to survive. The Redlands also has a koala population on North Stradbroke Island. This population is unique—it is the only true island koala population in Australia. Genetic studies show that it is different from the koala coast population and it also appears to be in good health.

In between official counts we keep track of the koala population through anecdotal evidence—and yes, that sort of evidence is used as well—such as daily interactions with the community through koalas crossing roads, moving through backyards and interacting with dogs. Taking on some of the comments that Senator Cameron has made about morality and ethics, these interactions are getting fewer and fewer as the population declines. Taking some words used in your maiden speech totally out of context, Senator Cameron, you referred to wanting a society that sees 'the protection of the weak against the powerful.' To me that is where there is a moral and ethical argument.

We recognise that the state is the pre-eminent authority for the management of koalas in Queensland. However, that does not mean that the federal government can pass all responsibility to the state government. Instead it should take the lead to ensure that an international, national and locally significant species, such as that in Redlands, is protected and not allowed to become extinct. The council and the community also need to take responsibility for local planning and management to protect and restore habitat while dealing with other pressures such as cars and dogs. Council has managed the issues and we did send you a copy of our policy, developed in 2002 and then revised in 2008. Over that time, state governments have created numerous planning instruments. They have continued to be strengthened, but they have not achieved the objective of halting the decline.

Developers continue to lack innovation in creating designs that retain and restore habitat. While this continues, the population will also continue its current decline. I am sorry that Senator Brown is not here, because he did ask about values and I am happy to table this. It is a production from a developer in the Redlands. On the back you will see that it is official—koalas add value to property prices.

CHAIR: It is so tabled.

Councillor Hobson: We actually conducted some research. A koala habitat area would add \$29,600 or about five per cent of the value of an average home. If a koala might move through an area of 10, 15 or 20 homes you can then estimate the value. I will table that for you. The value is well recognised by developers.

Senator CAMERON: I'm glad I saw that koala in my backyard!

Councillor Hobson: It is worth it just to see a koala.

CHAIR: Is it still there, Senator? That is the question.

Senator CAMERON: No, it has gone.

Councillor Hobson: Senator, just to see the koala adds an extra \$3,000 to the value of your property. And if it happens to be bushland it is even more.

The key issues for us in the Redlands are: protecting, managing and restoring habitat across the city; reducing koala deaths from cars and attacks by dogs; and minimising the impact of disease, which of course is related to both of the above.

I will quickly outline my final key points. We need the federal government the koala of South-East Queensland as critically endangered. We need the federal government to look at its land holdings in the Redlands, and we have a map of those, and ensure that land is protected and managed. We need help to fund land acquisitions and to compensate or buy out development rights in some areas. We have urban areas which are worth \$10 million. We cannot afford that level. We have spent some \$26 million on land acquisitions since 1994, on which we pay stamp duty and now GST, so we would appreciate any support.

We need support through incentives and tax support to encourage private individuals—this was raised this morning by one of the senators—to protect and restore their koala habitat, install koala friendly fencing, den their dogs at night, and manage and plant habitat. We also need help to pressure the state government to ensure all mechanisms and funds are available so our koalas can be protected, including listing as endangered under the Nature Conservation Act. That concludes my statement, thank you.

CHAIR: Thank you. You might care to table a copy of your statement.

Councillor Hobson: Yes, I will.

CHAIR: Let's hear now from the Sunshine Coast Regional Council.

Dr Skull: Thank you, Madam Chair, for the opportunity to appear today. From our perspective, the current status of the koala populations across South-East Queensland is simply a reflection of the way growth is managed in South-East Queensland. We are fortunate in some ways that we have the South-East Queensland Regional Plan, which I am sure has been discussed today, and the fact that it defines an urban footprint. Before that, it is important for the committee to understand, there was effectively rampant speculative development, particularly on the Sunshine Coast across vast swathes of habitat and areas that would never have been approved for

development under a planning scheme, but it was very difficult for councils to combat that speculative development. So we welcome the regional plan.

One difficulty with the plan is that, whilst it defines an urban footprint, a lot of highly significant habitat, including habitat for koalas, remains within the urban footprint. That is where the majority of the tensions lie; it is not where all of the tensions lie but it is where a lot of them are. For mine, if we had enough data—and I counter very strongly that we do not have sufficient data about our koala populations in any way, shape or form; nor, perhaps equally importantly, about their health—that urban footprint certainly needs to be amended to reflect the significance of those populations and where they are.

I would also add that there are a range of other legislative mechanisms in place, including the state planning policy, the Vegetation Management Act and a range of others. But, to me, if they were all working as terrifically well as we would all like we perhaps would not be sitting here today discussing the plight of koalas, as Councillor Hobson has just outlined for the Redlands, in terms of their dramatic decline.

There is some work going on in terms of monitoring the natural resource management aspects of the regional plan, led by the Department of Environment and Resource Management, which is very welcome. But one of my key points is that, even if we have that information, what are the policy triggers or the legislative changes that will derive from the information about some of the targets in the regional plan? Who will actually pull those triggers or respond to that negative information, if it is negative, to perhaps alter what is set out in the regional plan or anywhere else in council planning schemes? What are those corrective actions and who take that action? So there is some work happening on the targets but it is slow and it probably is not going to come quickly enough. Again, how will those responses occur?

I think there are some key potential solutions. Certainly one is support for the listing of the koala federally. There are some issues we have about the way state infrastructure is delivered and the exemptions they have from various planning legislations in relation to the way infrastructure gets delivered, particularly linear infrastructure across the Sunshine Coast and the exemptions it has around some of this legislation. There are some particularly difficult pieces of legislation and regulations. One in particular is a thing called the native forest harvesting code. That allows landholders to apply to remove potentially significant amounts of timber from private property with very little regulation of that. We have found on the Sunshine Coast that highly significant habitat, including koala habitat, continues to be whittled away before our very eyes—so much so, that in frustration we end up putting these blocks up to council for acquisition under our environment levy acquisition program as a last resort to secure these habitats into the future. There are pieces of legislation, for mine, that are working against the koala and its conservation.

As I mentioned before, there are certainly huge gaps in the data that we have about koalas. I would like to see a significant investment made by all levels of government into better understanding the populations that we have, where they are and why they are significant. Once and for all, we also need significant investment made in a clear policy sense to protect them into the future.

One final point: while the current focus of this committee is on koalas, conservation by species may be good in this instance, because it helps us bring to bear power on a few other issues around conservation. But we could be having this conversation about a whole range of species in south-east Queensland and indeed a whole range of habitats because of the pace of growth and the way that it has been managed. We have catchments just to the south of us and to the north of Melva's area in Caboolture that have just received an F rating under the healthy waterways system of rating our river systems. It is a like a report card that you get at school. F is a fail. Why have those catchments failed? Because of the northern extension of Brisbane in the last five to 10 years that has seen massive development pressure. That catchment is now clearly failing. We have not got it right. We will continue to watch species like this decline in south-east Queensland until we get it right.

CHAIR: Dr Skull, I presume that in your earlier references to species you mean various species of koala, not species of other—

Dr Skull: No, species across the board. We are losing habitats, let alone species. We do not have a handle on the species that we are losing. We struggle to keep up with the habitats that we are losing. The Vegetation Management Act goes a long way to helping us with that. At the Sunshine Coast level, our council endorsed biodiversity strategy talks about a very clear need to not just protect what we have but expand it—in effect, a net gain policy. That is extremely challenging under the current legislative framework. We have offset provisions for koalas, as you are probably well aware. But to me it is a catch up strategy far too late in the process. It is complex. The habitat types that we are seeking are often not available, particularly in a coastal community sense, where there is high pressure from development. Everybody is looking for the same offsets, in short, and they are not there.

CHAIR: I presume that you have finished your opening statement.

Dr Skull: Yes, sorry; I have.

CHAIR: Where do you rate threats to koala species versus threats to other species of animals? On what do you base that rating?

Dr Skull: I would hate to rank one species in front of another, to be honest.

CHAIR: Don't we all?

Dr Skull: The value of the koala is that it does have that iconic status and people seem to relate to it and attach to it, which gives us a groundswell of support for conservation of a whole range of things, not just koalas. That is the beauty of the story of the koala. For me, the broader issue is habitat conservation. That is what at the heart of the koala's plight: the protection and restoration of adequate koala habitat. That is currently not working.

CHAIR: We heard from other witnesses earlier today that perhaps the emphasis on habitat might be overstated. I do not if you heard that evidence, but what is your view of that.

Dr Skull: I do not think that you can overstate the importance of habitat. I am a botanist by trade and that is what my research has always been on: threatened communities and habitats. Once they are gone, they are gone. They are extremely difficult and expensive to rebuild, so I do not think that you can ever overemphasise protecting what is significant. Now, as our biodiversity strategy clearly states, if we are actually going to get in front of the game we have to start rebuilding. It is expensive. A lot of the land we need is in private ownership so, picking up Councillor Hobson's point about incentives, we have to be very smart about the incentive packages we deliver to private landholders to help us unlock this land. Councils cannot afford, nor can the state or anyone else it would seem, to keep buying land. We keep buying land, but it is very expensive. Federal programs are often directed to larger blocks of land which can be bought for similar sums of money. Whilst we have had some success at obtaining federal funding, it is very difficult to argue against large blocks of land being purchased in Cape York, for example, when we need to buy very small blocks of land sometimes that are just as critical for the same price.

CHAIR: Ms Hobson, the same question to you?

Councillor Hobson: The habitat is critically important. If I look at our figures, in 2008-11, 199 koalas have been taken to hospital from disease. Some of it obviously is through disease that has been passed on, but we would estimate that much of that has been related to habitat loss. The whole of Redlands, pretty well, has koalas—from almost one end of Redlands to the other, and particularly around our coastal areas, the moist areas. For us it is not a matter of being able to acquire back; it is a matter of being able to save what we have, expand what we can in the middle of a population of 140,000-plus, expected to grow to 180,000 in the next 20 years.

Habitat loss is critical. It is not just about the overall area; it is about fragmentation, the edge effects, the limited areas that are there and the linkages that need to be created. We have koalas that do amazing jobs crossing railway lines, crossing four-lane highways and then landing in their favourite camping spot in the middle of a tree in a roundabout. We have koalas that are living in the urban environment. Retaining an increasing habitat for those koalas is critical. They walk through the main street of Cleveland. From October to December you are likely to sit in Iluka Arcade and have a koala join you. Across the whole of Redlands we need to ensure that habitat is retained, that linkages are kept and that the habitat is enhanced.

Senator CAMERON: Councillor Hobson, I hope you enjoyed my maiden speech and learnt something from it. I have to congratulate you on your plan for managing koalas; what has been done seems to be excellent. You are saying that koalas should be listed. What are the implications of listing in terms of the interaction that council has with developers?

Councillor Hobson: We were discussing that before and Dan may wish to elaborate. It is another level of assessment. The developers would probably see that as an issue, particularly in Redlands where so much of the area is already covered by state regulation. From the developers' perspective, they may see that as an issue. From our perspective, we would also see that it applies some pressure to the state government to do its listing of critically endangered under the Nature Conservation Act.

Mr Carter: It also provides a few checks in relation to types of development. It allows a system of reviewing and assessing the implications of development in this environment. Even with the best intentions of the planning scheme, it has not been successful in protecting habitat, so a further level of protection would go a long way towards further strengthening our ability to protect the koala.

Senator CAMERON: I am just wondering whether you have made any assessment as to whether this would affect your rate income if development did not go ahead in the areas where koalas are.

Councillor Hobson: Council has enough issues with water in the current legislation without having to worry about what it might mean in relation to koalas. We acknowledge that koalas and residential development have to go side by side. We have 500-odd square kilometres which is a residential area, prime land—Moreton Bay Breezes. We know it is the best part of the world, with all due respect to the Sunshine Coast.

Senator CAMERON: Here we have another fight among the witnesses!

Councillor Hobson: Passion goes with being Redlies, doesn't it? We know that we have to live together. It is how we can ensure that we maintain the habitat. When you come to purchase urban land, you are looking at some \$10 million for land, which we really should have in our acquisition in urban suburbs of, say, Ormiston. One of the things we are looking at currently, because of the sheer cost of acquisition, is whether there are different ways that we can undertake development, which may include purchasing some development rights. Previous speakers spoke about infill development, where developers or mums and dads can cut their 800 square metre block into two 400 square metre blocks. It is very hard to keep a big gum tree on a 400 square metre lot and build a house. So one of the things that our offices are looking at now is whether there are other ways that we may be more innovative in approaching that and acquiring some of their development rights to keep the corridors passing through. They are things that we have to look at, because with Queensland's injurious affection rules it would cost us an arm and 55 legs to acquire all the land and the habitat that we would need to.

We know that we have to live together. It is how we can make sure that we can keep the areas that have good quality habitat and how we can encourage the community to increase levels of habitat where they can. We are doing a lot of street planting of trees where we have smaller blocks of land. We also have a list, and I can send this to you. It is the latest report from our koala people about the amount of trees planted since January this year and the nature of those trees—whether they are for biodiversity or for koalas. We see that that is really what we have to do, but there are some areas where we clearly just have to buy out the development rights of some people. In other areas we can redesign the development in conjunction with the developer, if willing. We have recently bought land to see if we can resubdivide it and maintain those linkages, but that would cost us millions of dollars.

Senator CAMERON: Dr Skull, I suppose you have the same challenges. Could you also give us some idea whether there are any stranded koalas in any areas where they are really struggling and they actually should be relocated?

Dr Skull: Yes. I have several example I can think of, and even a high-profile one. At Noosa National Park they are effectively isolated. It is still a relatively healthy population of koalas, as far as we are aware, but again the information we have about the health and sustainability of individual populations like that is very limited. We see more and more of these animals being brought into the Australia Zoo koala facility at Beerwah. Certainly the view of the vets there is that the disease problems are getting worse, not better. We have a good understanding of some of the problems but certainly not a good understanding of all of them. There are definitely even smaller stranded populations. They are at least secure in their habitat tenure, in a national park, but there are plenty of other small stranded populations of koalas.

Senator CAMERON: Could both councils advise us as to what your estimates are of land that koalas are on now that is covered by development applications or owned for development? What sort of money are we talking about for buybacks? You have said we need to look at buying back land, so I would like to know how much it is going to cost.

Dr Skull: From the Sunshine Coast's perspective, we would probably have to take the question on notice. We have an environmental levy acquisition program. It is one component of a \$9 million environment levy program the council has. It allocates \$3 million to \$4 million a year for the purchase of environmentally significant land, but given the costs we are talking about that might be one block of land, and it might not be a very big one. It might be hugely significant. So the costs are certainly in the tens if not hundreds of millions of dollars for buybacks. I pick up on Councillor Hobson's point about the peculiar difficulty we have in Queensland with the 'injurious affection' clause in the planning legislation; it really is problematic. Local government has been lobbying the state for as long as I can remember to have it changed.

Senator CAMERON: I am not sure what that clause is. Could you explain the bit after the reference to Councillor Hobson.

Councillor Hobson: For Redlands it would be figures in the millions. The land I referred to, which is about one hectare, was \$1.5 million. For other areas that may be slightly larger, it is in the tens of millions. They are beyond what is reasonable for a local government. That is why we have looked at whether there are different options where we may achieve not as good an outcome but where we may achieve better outcomes, and that is to

do with talking to groups of people and having them work together, with incentives. We actually pay an incentive—a koala conservation agreement—for people who have more than 1,000 square metres. We will help them with fencing, with maintaining dogs, with education and also financially. We want to see more of those sorts of incentives in private areas; it is not about buying out, it is about encouraging people financially to do the right thing.

For us, acquiring land in an urban area where land values are very high would be almost an impossible achievement. But we certainly will take any that you have to offer to council to acquire those blocks of land. We would be very willing recipients of such donations.

Senator CAMERON: That is a surprise!

Mr Carter: I would like to point out that we have got 70 hectares in that koala conservation program, so that is \$70 million worth of land that is under a five-year agreement to protect and retain koala habitat on those properties. That is a significant small investment for a bigger long-term gain out of those situations. My entire neighbourhood is currently looking at signing up on that area in the next few weeks. That is the extent of those types of programs.

Senator CAMERON: I have been asked to wind up, so maybe you could take it on notice to provide us with some details on the implications of the legislation—is it state legislation?

Dr Skull: The 'injurious affection' clause? We would be happy to do that.

Senator CAMERON: Given that you said that there are projects you would like to do, did either of the councils make any applications through the RaLCIP for any funding to assist in the koala area?

Councillor Hobson: We made an application and had several million. Most of it was in relation to community infrastructure and in the shovel ready to have the community infrastructure. We were very grateful for that. We applied those funds to our community gathering areas—our parks. We did about three or four areas using that. So we are very appreciative of that.

Senator CAMERON: You could have made an application for a koala—

Dr Skull: I do not believe we did, but the federal funding we have been successful in obtaining is through the National Reserve System funding. Councils across S-EQ have banded together to do that, in a regional sense.

Councillor Hobson: And we missed out.

Dr Skull: We didn't!

Senator BOB BROWN: I am sorry I missed the start of your presentation, but I have read it, and I am very happy that you are here. I note again the figures showing catastrophic loss of koala population, even going ahead of the rate of loss of koala habitat that has been registered there. I note in this map from Redland—I am a lover of maps, too—that there are some Commonwealth lands involved, and I have no doubt that will be the same with your council. I hear through this that you are recommending that this committee look at the Commonwealth reviewing its lands with a view to protecting koala habitat. From the figures you are giving us, some of this would be exquisitely expensive land if you had to buy it. It is something the committee may look at, because Commonwealth lands are being offered for sale at any given time, all the time. With this in mind it is a very poignant thing to bring to the committee. I note that some of the pieces of land are effectively developed, but some of the prime ones are not and look like they may have potential for some recovery as far as koala habitat is concerned.

Mrs Hobson: Particularly in Birkdale—the very large areas there. The communications people used to use that. I am not sure if they still are.

Senator BOB BROWN: It has been partly cleared, but—

Mrs Hobson: It is partly cleared, yes. There are some private leases that are on there, but it is certainly an area that we would seek that the Commonwealth look at. We have just recently spent \$3.2 million on purchasing Commonwealth land on Moreton Bay so that we can ensure there is public access to Moreton Bay at Toondah Harbour, and we acquired one of those CSIRO sites. One of the other CSIRO sites you will see on there has significant linkage potential, and it will probably be cut up for development. We do not own that; CSIRO still own that.

Senator BOB BROWN: You think it may be sold?

Mrs Hobson: They have it on the market because they have gone to Boggo Road, the old jail site. The former site was a marine research facility, and—tragically—they came into the city and left the bay. So that site is still for sale and has not yet been acquired.

Senator BOB BROWN: So one might go to jail, and the other lot may have a death penalty! I note your figures here which say that the koala could go to extinction within five years. That is very sobering.

Mrs Hobson: It is.

Senator BOB BROWN: Also, the article is saying that koalas do have a financial costing.

Mrs Hobson: Yes.

Senator BOB BROWN: What is the potential for people at local government level to pay a specific quality to purchase land? Do you think that that has already been canvassed?

Mrs Hobson: We do. We charge \$109 a year per rateable property as an environmental levy, which is used for land acquisitions across the board for koalas and biodiversity with a significant amount also for koala habitat and some maintenance of our conservation estate, which is not inconsiderable.

Senator BOB BROWN: I do not know the state of the law in Queensland, but I presume state government can overrule local government if it wishes to protect koala habitat where a development is coming down the line.

Dr Skull: That is correct.

Senator BOB BROWN: Has either council got a proposal in hand for dog-free developments?

Dr Skull: Yes; in fact, I think Councillor Hobson touched on it before. We certainly do. There are a range of conditions, including on cats and dogs—but particularly in relation to dogs—that we put on developments in known areas of koala populations.

Senator BOB BROWN: How about prohibition?

Dr Skull: Yes.

Senator BOB BROWN: Have there been any developments which have had a prohibition on dogs?

Dr Skull: We would have to take the question on notice and check, but we have that capacity.

Senator BOB BROWN: It is just that it is my experience that, where you try to take dogs out of an area, you are really up against it.

Dr Skull: It is a very controversial move.

Senator BOB BROWN: But where you offer people the alternative of koalas as a living entity into the future and say that they cannot have dogs as pets, I think that might be a premium attraction to a new development if it were proceeding in koala habitat.

Mrs Hobson: We have actually mooted that. In fact, in a recent agreement through the court we wanted it out of the development footprint; but it is in, and they have volunteered that it would be dog-free. That is probably a first for us. There is another area where, again, we had it kept as open space for rehabilitation and the developer took it through the court, and they have also agreed that that will be specially-designed koala housing. In other areas, as we have done structure plans, we have looked at the possibility of inviting some areas to be dog free. That, again, is a negotiation that we would have with the developers. But as you say, there is not a lot of love in some areas, but in other areas people are quite delighted not to have dogs because of associated things with barking. We do have some areas in the Redlands where dogs have to be compulsorily penned at night. They tend to be in the bushland areas. We are currently reviewing our local laws—that takes a good 12 to 18 months—with a view to how it may strengthen those provisions in areas where there currently is not dog denning at night.

We have done a major campaign without community on dogs and koalas and we have what is called a 'dogs day out, where we would have 1,000 people and their dogs—it is interesting to see what the dogs look like and what the owners look like—come together to share the experience as an education day. Some of the people behind me here from the Redlands are there. We feel that we are making a difference in the awareness for dogs. Our figures would show that in the last three months we have only had one or two dog attacks reported. That may be just coincidental, but it could be increasing awareness. We would need to monitor that over a greater period of time. But we certainly, as a review of our local laws, are looking at the laws in relation to the denning of dogs, particularly at night.

Senator BOB BROWN: Are there any local government laws or bylaws penalising people who allow dog attacks?

Mrs Hobson: We checked that up because you had asked that question before.

Mr Carter: I spoke to our animal control officers. It is actually a penalty under the new animal cats and dogs state government law—the Animal Management (Cats and Dogs) Act 2008.

Senator BOB BROWN: If what happens?

Mr Carter: One, if it kills or maims another animal, it is 100 penalty units. Then there is the issue of proof; it has to go to court. If it harms or if it fears, there are 50 penalty units, or 20 penalty units if a dog is shown to be creating fear for other wildlife or other issues. In council we have not actually utilised those powers.

Dr Skull: Can I just add, though, that if we are going to rely on a local law, they are extremely problematic to enforce. Mr Carter just touched on that. You basically have to have proof—photos and even videos. Our experience with tree clearing local laws—and they are actually very strong—is that you take people to court and you invariably lose unless you have very strong evidence. If we get to the point where we are relying on individual local governments to enforce local laws we are in big trouble.

Mrs Hobson: We have experienced that in relation to dogs which attacked a school farm. They had sheep within an enclosure. Most of the animals in the enclosure were killed. Two dogs were seen leaving. Because they were not actually photographed in the process of attacking the animals, it was not able to proceed to court because the evidence was not sufficient.

Senator BOB BROWN: I have some neighbours who take their own action in that sort of case.

Finally, I just wanted to ask about overpasses and underpasses. Do they help?

Mr Carter: Currently we have designed two underpasses on one of council's roads. We are yet to see the results of that. That includes fencing. We are investigating options in relation to overpasses, working with our researchers at the University of Queensland to develop some ideas. At the moment road kill is a major cause. We recognise through some work that a lot of it is about education and awareness but also physically assisting the koalas to cross these roads without having to take the peril of crossing with the cars.

Senator BOB BROWN: I hear that the general speed limit on urban roads in Berlin, at least, if not the rest of Germany, is 30 kilometres per hour.

Mrs Hobson: Wow!

Senator BOB BROWN: Is that an option?

Mrs Hobson: Local government may be well-off financially.

Mr Carter: Currently council is trialling some LED koala signage which flashes up a message if they are going over the speed limit and flashes up a positive message if they are under the speed limit. We recognise that the speed trial that occurred in the Redlands was not at all successful, given the lack of police control and other enforcements. Also more recent studies and analysis of koala kills and data show that we probably had the wrong time of year and some of the dates were incorrect. However, I think that needs to be reinvestigated in the use of new LED type signage where the speed could be arranged to change at certain hours and drop down from 80 to 60. The fear of some of the engineers is the traffic ramifications of slower speeds.

Senator BOB BROWN: It is traffic calming. It is good.

Mr Carter: That is right. I had the same questions and answers with the engineers. That is the concept you are dealing with to make it more easily enforceable and practical for all and sundry to understand the circumstances and reasoning behind the need to reduce speed at certain hours.

Councillor Hobson:

It has been reported to me from people in our community that they have observed these. There is a smiley sign as they go past if they are doing a good speed and if not people have slowed down. Our research has shown that people have slowed down. It is only a relatively small amount—four to five kilometres an hour—but that is a start. I do have to say that the council is coping some most unfortunate community comments about us for using things like LED signs. We have been criticised by our community for spending that money. We actually had one member of our community who developed a sticker with a koala on it and a knife and a fork over the top with the slogan, 'Eat a koala.' So there are some really unhealthy attitudes that are being exhibited within our community. We think it is extremely sad to see that. Some of that is being used for political purposes. The RSPCA have also indicated that they have had some similar examples of a fairly bigoted attitude towards not just koalas but animals as a whole. I think it is a sad indictment on our community if that sort of thing is happening.

Senator CAMERON: I did see on the web some of the comments in a local paper against the council. Congratulations for standing up for the koalas.

Councillor Hobson: Thank you. Can I make one comment to Senator Bob Brown, because he missed out on my little reference to his maiden speech?

CHAIR: Very quickly.

Councillor Hobson: I would just like to say that in your maiden speech, Senator Brown, you made a comment which I think is very relevant. In your closing remarks in 1996 you said:
We have the capability and responsibility. We must act before it is too late.

Senator BOB BROWN: Yes, thank you.

Proceedings suspended from 15:53 to 16:02

ALLWORTH, Mr David John, Researcher, Biodiversity, Friends of Felton

BEUTEL, Mr Glenn Norman, Private capacity

LAWS, Dr Nicola, Private capacity

WHAN, Mr Ian Francis, Committee Member, Friends of Felton

CHAIR: We welcome a couple of witnesses in a private capacity, as well as the Friends of Felton. We have received submissions from each of you. Is there anything that any of you needs to correct in your submission?

Dr Laws: Yes. Glenn Beutel and I have put in a joint submission, and I have given our written amendments to the secretary. But the main thing I wanted to present as new evidence since the submission went in is a map which I think you have all been given.

CHAIR: You might talk to that in a minute. There are no corrections to your submission, Friends of Felton?

Mr Whan: No.

CHAIR: Thank you. In that case, how about a brief opening statement? Mr Beutel and Dr Laws, are you going to combine your opening statement?

Dr Laws: Yes, there is just one opening statement for both of us.

CHAIR: Would you like to start off by tabling the map?

Dr Laws: Okay. I would just like to table this map as additional evidence to the Senate committee. This is a new mining tenement map from since our submission, covering more mining leases across the eastern Darling Downs. The co-authors of our submission were me, as a farmer and near neighbour of Acland, and Glenn Beutel, the last remaining resident landholder in this small Darling Downs town. We thank the Senate committee for the opportunity to present before it today. We stand between the koalas of Acland and the proposed stage 3 development of New Hope Coal. I will give you some details about this development. It is 7,340 hectares of land to be open-cut mined for coal. During this, 8.2 kilometres of Lagoon Creek is to be diverted and mined under, and the entire township of Acland is to be lost. There will be a loss of 165 hectares of remnant state significant ecosystems, including poplar box koala habitat. There will eventually be five final voids comprising 560 hectares. Mining is planned until 2042 and will produce 10 million tonnes per annum of coal and contribute four per cent of Australia's greenhouse gas emissions. The status of this is that the third stage environmental impact statement is currently being considered by the Queensland Coordinator-General and a decision is expected soon. We showed in our submission that Acland is a viable and good koala habitat.

We present five main points for consideration. Point one is that we stress to the committee the potential devastating impact that mining will have on koala populations west of the Great Dividing Range if the current legislation is allowed to continue. Queensland coal maps and koala habitat maps are very similar and the new tenement maps of the Darling Downs near Acland have been presented. They represent approximately 400 square kilometres all of new mining leases since February 2011. We think we have a small window of opportunity as a nation to do something about this predicament of mining in koala habitats.

Point two is that the EIS process is seriously flawed in terms of koalas and many other issues. So the weighty and lengthy document prepared by Sinclair Knights Merz dedicated only a few sentences to koalas prefaced by the statement that koalas are a least-concern wildlife under the Nature Conservation Act, which they are in South-East Queensland west of the Great Dividing Range. They searched only 20 trees for evidence of koalas or their droppings. There was no indication of numbers or the impact of mining on this population of koalas. Because of the status of koalas west of the Dividing Range, this is not required by law.

There were many other errors in this EIS. We think that mining companies and their consultants evade and distort the truth to promote their own agendas. No Queensland mine has been rejected on the basis of an EIS. It is seen as setting their conditions to mine. Environmental impact statements should rightly be funded by mines overseen by governments but performed by independent consultants.

Our third point is to change the status of koalas across all of Queensland by law to an endangered or vulnerable species—for example, a new koala act or a new amendment to the act. This would mean that no mining be allowed on known koala habitats, leave koala trees standing. The whole of the Darling Downs is a mosaic of

koala and non-koala habitats. So in any given mine lease, movement corridors should be established years ahead of any potential mining activity.

The fourth point is for companies to have an annual or biennial koala audit done by independent experts and these audits to be published as a public report. Show us koala counts. Show us proof of habitat protection and revegetation. Let us see their reports of animal deaths, sightings and staff educating and training. At present mine leases operate behind a veil of secrecy.

Our fifth point is a koala levy to be put on mining companies to fund these measures and harsh penalties should apply when numbers or measures fall below an agreed acceptable level. The industry can afford this. New Hope Coal alone made \$400 million profit last half financial year and has cash reserves of \$2 billion.

Another amendment we made, which we submitted, is that we need some research into the impact of coal dust either by ingestion or inhalation on koalas. We think they are incompatible, that coal dust would be covering their food source.

We finished up by saying that current laws facilitate mining. If we cannot stop mining, then let us make companies truly accountable for their environmental impacts, as required under the environmental protection act. Mining is destroying thousands of hectares of land and koala habitat and no amount of gloss or spin can alter the consequences to Queensland koalas in decades to come.

Mr Whan: I am going to speak to the general tone of our submission. Friends of Felton was formed in February 2008. We formed immediately we heard about the proposal by Amber Energy to establish a large open-cut coalmine in our valley and a petrochemical plant for transforming coal to liquid. Mind you, the proposal has changed four times along the way, so Amber Energy is obviously having trouble crystallising what it wants to do.

Friends of Felton formed to oppose and ultimately defeat this proposal. We think it is unconscionable to want to establish a large open-cut coalmine 30 kilometres out of Toowoomba, where there is a relatively dense settled population and sustainable agriculture. We are all highly dependent on groundwater reserves. We want to save the koala in that area as a surrogate measure for everything that we think is vital. As Nicola has already said, the koala is a very sound indicator of a lot of things that we want to retain in a rural environment.

Unlike Redland Bay, the area is not a subdivision—an invasion of thousands of people seeking their 40-perch block or whatever. We are living quite sustainably with nature in the Felton Valley, despite its being very intensive. Our threat is from coalmining. The map Nicola has given you indicates that coalmining exploration leases blanket the whole of the Darling Downs. There is an assumption on the part of miners that they can come in and have their wicked way; it does not matter what the history of that area, its natural resources or its sustainability are. That is not a bad assumption, as it turns out, because the main obstacle to getting a mine proposal up—to gaining access—is the EIS process. That is a highly prescriptive sort of process whereby consultants who are friendly to and employed by the proponent simply go through step after step and essentially tick the boxes.

Unfortunately, koala protection is not an integral part of that process at this stage, and it should be. Since we are speaking to senators of the Commonwealth, this is a good opportunity to raise the EPBC Act, which we think could be a lot more potent. At the moment it is quite benign. Occasionally, it fires up. It got Traveston Dam off the hook, but that is a fairly rare occurrence. We believe that koala populations and koala protection should be assessable under the EPBC Act and that people affected by a mining proposal should be able to require the EPBC Act to be invoked and koala populations automatically assessed.

That is the main point we wish to make. We do not think it is really appropriate to try to isolate koalas as something freakish in the environment or try to put a special dollar value on them, because we see them as a surrogate for a lot of other things that are worth protecting. Government generally has to step up and do a hell of a lot better job as far as access by miners to particular parcels of land is concerned.

CHAIR: Thank you very much, Mr Whan.

Senator BOB BROWN: Having been to both areas briefly last year, I appreciate the problems you are confronting. Do you have any idea of the koala populations in either region?

Dr Laws: We thought you would ask that. It is very hard, because it has not actually been measured. Glenn, how many have you seen in the township of Acland?

Mr Beutel: Since I have had my camera, from about June or July 2008, I have photographed many visits by koalas and I am guessing that there would be about six to eight individuals. Some of them I have photographed over and over again, some I have not seen again and some new ones have arrived recently. I have seen three different males and about three to six different females—some young, some old. I used to see one koala every two

weeks on the same day as the fishermen came, so that gave me the impression that they had a routine, and every two weeks that particular koala would have a sleep in the trees in my garden.

Senator BOB BROWN: How is the future for your garden?

Mr Beutel: While I am there it will be fine.

Senator BOB BROWN: I should explain I had a cup of tea in that garden. As you were saying, Dr Laws, the proposal would eliminate that garden and the township with it.

Dr Laws: We think the density in the Darling Downs area varies between 0.4 and one koala per hectare of habitat, so, if we are looking at 165 hectares just in this Acland development, it will potentially affect 100 koalas if we are being generous with our estimates. We do not know how many. The company did not have to count them and their consultants did not have to either, so we are just guessing, but we know that there is important habitat there that will be lost.

Senator BOB BROWN: What is the offset arrangement that they are talking about?

Dr Laws: This is none. The rehabilitation efforts usually just involve grassed mounds. They just have to revegetate usually with seeding grasses, and they do some roadside planting with hardy trees, but they are not always koala trees. They are also cosmetic plantings next to roads, which is not really suitable for koalas, and they tend to use drought hardy species, which are not always koalas species.

Mr Beutel: We are awaiting the supplementary report to the EIS to be made public. That may address some of the submissions and may indicate what they intend to do with the comments made about koalas in the submissions to the EIS.

Senator BOB BROWN: Is 165 hectares the area of the open-cut coalmine that is proposed?

Dr Laws: No, the open-cut coalmine is 7½ thousand hectares. There are 135 hectares or so of poplar box endangered woodland that provides a koala habitat. It is a very scattered ecosystem, as most koala habitat is. There are clusters of trees in their movement corridors as well, but mining companies just come in with their bulldozers and explosives and everything goes. A moonscape is left, and that is the problem.

Senator BOB BROWN: What is the state of play with the Felton?

Mr Whan: In terms of numbers?

Senator BOB BROWN: Yes, in terms of numbers. Again, I know you may not have those figures, but it would be good if you did. You say the proposal has been changed quite a bit. I am interested in the state of play of that proposal by Amber Energy.

Mr Whan: David will speak on the numbers.

Mr Allworth: As to the numbers, they are somewhere in the vicinity of Acland. There is a general trend as you go further west for the densities to drop. What you can say is that there are koalas about but they are not dropping out of the trees in large numbers. You have to go looking quite hard to find them. There have been local observations by people who have been there for decades that they do not see them as regularly as they used to. There would, of course, be those disease issues and the other issue of fragmentation of habitat et cetera. The Friends of Felton do not have science in terms of numbers, and that is really why there has to be a proper government process to investigate those things, rather than the two lines that we saw in the Acland case.

Mr Whan: I might make a general comment about the scale of mining these days. It is no longer a cute little industry. As Dr Laws has said, they are looking at 10 million tonnes a year out of Acland. These are massive operations which create enormous externalities. It is just the sheer scale of it. It requires a constant vigilance by the whole regulatory system to make sure it is commensurate in scale with the scale of the mining itself.

Senator Brown, I think your question related to how this thing at Felton has evolved. It started off with them talking about dimethyl ether, which is sort of a synthetic diesel. Apparently that was not a viable option. It had a few reincarnations. At the moment it is called amber CTL, which just means coal to liquid. I think it is an unleaded petrol that they are talking about. So, as well as a huge open-cut mine, we would have to suffer a petrochemical plant on site, which would generate huge greenhouse gasses—much more than it would in actually burning the fuel.

Senator BOB BROWN: We heard this morning that in the mulga lands over the period 1995 to now there was up to a 95 per cent loss of koalas. Besides anecdotal evidence, which seems to corroborate that in your area, is there any population census at all? Has there ever been, that you are aware of?

Dr Laws: David Dique related to me that there was a 30 to 40 per cent decline due to drought across a couple of seasons. Drought has certainly had an impact on the Darling Downs koalas. Anecdotal evidence is actually

quite strong. We talk to all the farmers around the Acland lease. Nearly all of them used to have 15 or 20 koalas on their farm and they are down to one animal or they never sight them. So that is the decline in one generation or two generations really of farming.

Senator BOB BROWN: Has that been related to habitat loss?

Dr Laws: No, these were farms before mines came in, so they were still habitat. This is farmland. There are a number of factors. We think chlamydia was quite bad during the eighties on the Downs, so that has had some impact. We have had a 13-year drought on top of that; koalas are eating cardboard instead of nice juicy gum leaves. We have noticed since the rain has come back that we have got males calling and females breeding again. So it is certainly climate related. This was intact habitat before the mines come in. That begs the question: do you worry about a vulnerable habitat more than you worry about a flourishing habitat? We should just have a blanket legislation that covers all habitats, because it is very hard to say, 'This population is more worthy of protection because its numbers are better or worse than the one next door.'

Senator BOB BROWN: Mr Whan, in your description, are you saying that the EPBC should be required to be invoked? Are you saying that the discretion that is available there at the moment ought to be tightened up in terms of protecting koalas or protecting habitat?

Mr Whan: It does not pick up koalas at the moment.

Senator BOB BROWN: Because they are not listed.

Mr Whan: That is right. David will speak more to this point. There are at least two things we would like to see. We would like to see koalas assessable throughout the whole state and indeed the country because of their status and the fact that they are a litmus test for a healthy environment anyhow. We would like to see them as assessable for projects. The preferred way of handling large development projects in this country is to have blanket legislation for certain but then to assess on a case-by-case basis. That is how we are going to handle strategic cropping land in this state. It is how mine proposals and other large developments are handled. It should be just a standard requirement that the koala population be assessed, because they are a threatened species, when a large development project comes up because of the implications it may have for the habitat and the environment. That is the point. It would be helpful to have the Nature Conservation Act that applies in South-East Queensland east of the range also apply more generally. West of the range we do not have that; our koala population there is not protected in that way. I will just ask David to make sure I have got all that correct.

Mr Allworth: Yes. The koala strategy, which was written back in 1988—so 13 or 14 years ago—talked about it being really important to make sure that the koala populations did not decline. Yet when you look at that fine rhetoric and ask, 'What are the levers?' you see the deficiency with the EPBC Act because it is not listed, and under the Nature Conservation Act they are not listed, they are not of concern outside of South-East Queensland. Then when you look at some of the key habitats on the eastern downs, they are not captured with the Vegetation Management Act. So all the methods of trying to catch them in the decision-making process are not working for the citizenry, and all that is really left is by force of political lobbying. That is a serious deficiency. We have got the fine rhetoric, but when push comes to shove and the development rolls into town, all the processes just wash their hands and say, 'Not of concern.' EISs become acceptable with simple lines like, 'We don't have to worry about it.'

Senator BOB BROWN: Thank you. Dr Laws, I think you were talking about the destruction of woodlands being a trigger under the EPBC?

Dr Laws: That would have been Ian.

Mr Allworth: Some woodlands are covered by the EPBC.

Senator BOB BROWN: But they have to be rare and endangered of themselves, don't they?

Mr Allworth: Yes, and they are very limited on the downs. So with the major koala habitats what you have got once again is this washing of the hands, because they do not get to that critical level where it can be: 'Yes, you've got to address this. Yes, this is a trigger for the minister to pay attention to the matter.'

Senator BOB BROWN: This is just an opinion, but do you think that the question of the listing of the koala may have been influenced by the fear that that would then lead to the need for action to look at projects which threatened koala habitat?

Mr Whan: I am equally cynical.

Senator BOB BROWN: I was just asking a question!

Mr Whan: I think for a quiet life the states would just like all major projects to be subject to an EIS. From their point of view it is a safe and robust process. They are certainly very voluminous. But in terms of protecting anything that is a valuable indicator of the quality of life on this earth they do not go near it. It is all about

maximising the opportunity for royalties and jobs and all that sort of hoo-ha. For the sake of this committee, we are saying that the EPBC Act should be an excellent tool for just ramping up—it would not require a major adjustment. To bring koala protection into it, to make that an assessable criterion, would be a very sound move for protecting the natural environment of this country.

Senator BOB BROWN: Thank you.

CHAIR: Dr Laws, I do not know if you were here for the evidence of Dr John Hanger earlier today. I thought I heard him contesting the proposition that koalas necessarily do better in better habitats. Would you care to reflect on that.

Dr Laws: I am not an expert on koala diseases, but I think you are what you eat and it is the same with the koalas. We have seen really terrible environmental conditions with drought for the last decade and a half on the downs and that has to affect koalas. We know what the trees looked like then compared to now and I cannot believe that there is not some impact from nutrition as well. At least currently they have got trees. The way it is going on the downs, there will be such a loss of trees as well that will exacerbate the situation.

CHAIR: So you basically can't see how it cannot affect them?

Dr Laws: I think it does impact them and that was our other worry: what will coal dust do to their nutrition as well because we know it coats houses, we know it coats rainwater tanks and filters are black and cattle slaughtered at the abattoirs have black lungs. These koalas that are living anywhere in the vicinity of these mine impacted areas are going to have a thick coating of coal dust and the toxic chemicals in coal dust on their food source as well.

CHAIR: One of the earlier witnesses today said words to the effect that we are what we eat, but that is pretty much what you are basing your assessment upon as well.

Dr Laws: Again, strong anecdotal evidence of the impact of drought on the downs, yes.

Mr Allworth: The question was raised by Dr Hanger about the importance of disease. Although we are not experts in koalas, from all the evidence we can see the disease issue is critical but you do not have to choose between saying it is only disease or it is only habitat. Both of those questions are important to resolve and manage properly if the survival of the koalas is to be ensured. We know that in the Felton area if we do not have the habitat for the koala, whether it is diseased or not, you will not have the koala.

Senator CAMERON: Who is from Acland? I was just looking at the submission and you are saying proudly that Alan Jones comes from Acland. You have a lot to answer for, let me tell you!

CHAIR: Most of it very good.

Senator CAMERON: I see that Alan Jones got involved in the debate about the mine, and that is fine. Given that we are concerned to protect the koalas, has anyone spoken to Alan Jones about the implications the scientists told us about this morning, that if we do not deal with CO2 pollution the eucalypts will be not in a fit state to nourish the koalas in the future? Given Alan Jones vehement—and I think quite crazy—response to climate change, I am wondering if you have ever raised that with him.

Dr Laws: Yes.

Mr Allworth: You are not saying we are not consistent, are you?

Senator CAMERON: I am saying he is very inconsistent and not very well versed in science.

CHAIR: The good man is not here to defend himself so let's have the questions answered.

Dr Laws: We have been speaking to him. He is actually going in to bat for us very strongly at the moment so we are talking to him. We accept his limitations. But he is going in to bat on it on an allied issue that this is our farmland, that we are digging up our food bowl and where is Australia's food going to come from in the next decade. It is not just koalas, it is farming communities that are being wiped out on the Darling Downs and further west too.

Senator CAMERON: That was just a passing thought I had.

Mr Beutel: I think farmers have a chance to enhance the koala habitat too whereas mining has less of a chance.

Senator CAMERON: Sure. I used to live in Muswellbrook in the Hunter Valley and I am well aware of the issues of coalmining development. The residents when I was involved nearly 30 years ago were active in the EIS process. Are you saying the EIS process does not give you any opportunity to raise these environmental issues while the planning process is being considered?

Mr Allworth: I would not go that far. Community consultation is an integral part of the process, but how it is analysed and comes out in the report is very much up to the consultants. These consultants are employed by the proponent of the project and they do all the reporting.

Senator CAMERON: What did the EIS say about the koala population?

Mr Allworth: At this stage at Felton they have only got to what is called an initial advice statement. They have not even set the terms of reference for the EIS. We want to see some of the mistakes and deficiencies of the process that we have seen at Acland remedied before things go through the mill on the Felton site.

Mr Whan: What is happening at Felton is vastly different to what has happened in most cases before. A lot of rural communities do not have the time, the resources or the population, quite frankly, to organise themselves the way we have. We have over 100 members, we have money in the bank, we employ consultants and we have our ears laid back on this whole process, so our views will be known to the government directly. But that is a rare occurrence. Normally what the government will see will be just a consultant's report via the proponent.

Senator CAMERON: We had a debate earlier in the day about balance. What is the general view, or are there different views, as to whether you can get a balance between mining development and the safety and nurturing of the koala population?

Mr Whan: The way to get that sort of balance would be not to have any open-cut coalmining on the Darling Downs for starters. Balance is a very good word to be using in the context of this whole debate. The miners love to talk about coexistence. It is an absolute myth that they have perpetuated. It is impossible, as the Acland case demonstrates only too well, to have a community and an agriculture coexisting with a large, open-cut mine. There is a place for open-cut mining, but it is not where you have high population density and ecosystems that support koalas.

Senator CAMERON: You say the EIS is in its early stages. Wouldn't the state government have to look at the implications for koalas in the EIS approach?

Mr Whan: No, not at the moment.

Dr Laws: They are not protected by law. The mining company do not break the law; they just work to the absolute limit. They were not asked to look at Acland's koalas in depth, so they counted 20 trees, looked for the evidence of droppings and said there were koalas throughout the proposal site. That is all they have to do by law because koalas are a species of least concern under the Nature Conservation Act.

Senator CAMERON: What would be the implications if the scientific committee recommended to government to place koalas on the list?

Dr Laws: You would have 1,000 angry mining companies knocking on your door the next week, because they are the most aggressive, nastiest people that you will ever have to deal with. They make urban developers look like Sunday school teachers. They need some strong regulation. We cannot do it as communities; we are beating our heads against a brick wall. They realise they have a window of probably 20 years where they can get into vulnerable areas like the Darling Downs and anywhere on the Surat Basin with coal seam gas. They are like greedy pigs at a feed trough, trying to get as much swill as they can in the next 20 years before the legislation tightens up—before governments realise the damage that is being done to our environment, our climate and our pristine food regions.

We keep talking about the koalas of Acland, the koalas of Felton and the koalas of Noosa. They are not; these are the koalas of the planet and we are just the very privileged few that are given the custodianship of these species. As I said before, we have a really small window to get this right and to change this act, because if we do not the koalas of the Darling Downs are gone.

Senator CAMERON: If a mining company came in and said, 'We did an analysis of the koalas other than just the droppings and found that there were colonies under stress and colonies that were diseased; we want to relocate, protect and assist these koalas,' what would be your view?

Dr Laws: I think we have to look at the bigger picture, and the bigger picture is to change the legislation as soon as we can. These neighbouring leases I showed you on the map will go ahead. The drilling will go ahead in the next couple of years. If you move Acland koalas to us, which is EPC's 1979 yellowed area on the map, they are not in the coal drilling area now, but they have told us we will be mined in the next eight years. So where do we keep moving the koalas? They will all end up in Moreton Bay. There is nowhere for them to go.

Senator CAMERON: Relocation has a technical term that I forget again.

Mr Whan: Eighty per cent of Queensland is covered by exploration leases.

Dr Laws: Will you ask the coalmining industry to talk to you in Canberra?

Senator BOB BROWN: Certainly we would be happy to see if they would like to make a representation. I had better ask the chair to take that on board. They have a very large glass building in Canberra. I am sure there is somebody from there who could come across to Parliament House.

Senator CAMERON: I think the coalmining industry has got a responsibility to do more than just an EIS and the minimum standards at the moment. I do not know which mining company is trying to develop around there, but I think maybe someone could come and talk to us about what the implications for the koalas are. I think that would be important.

Dr Laws: They have a lot of lobbying, the minerals resources council and things like that.

Senator CAMERON: I used to be a union official; I know what the coalmining companies have got!

Dr Laws: Have I been too nice in my descriptions?

Senator BOB BROWN: That is the second time today, Dr Laws, I have heard the term 'species of least concern'. What does that mean?

Dr Laws: It is from the Queensland Nature Conservation Act. It is its form of categorising. We are outside that South-East Queensland koala plan. Anything west of that is classified as this 'species of least concern'. It is just so derogatory to a species like the koala. That is how New Hope prefaced their whole EIS statement. This is a species of least concern under the Nature Conservation Act. And so within the law all they have to do is count 20 trees out of 7,000 hectares.

Senator BOB BROWN: Does the act define what 'least concern' means?

Mr Allworth: An expert panel comes up with these categories. The act then says, 'Depending on the status, what particular steps should be followed?' There are some parameters. Usually it is a question of rarity. As you heard in evidence earlier today, there is some to-ing and fro-ing amongst the scientific community and some serious debate about the status of the koala. At this stage in Queensland, west to the range basically, they are saying, 'They are as common as all hell and you do not need to worry about it.'

Senator BOB BROWN: Oh, no, the evidence we heard this morning was of a massive drop in numbers.

Mr Allworth: Sure, but there is not yet a complete alignment and that is why you have, as has been talked about by a couple of the other witnesses, some committees coming forward and saying it is not yet of sufficient concern. To find out what those parameters are you would need to get those scientists before you so that you can quiz them. That would be, in this case, the state government's advisers for what gets listed under the schedules of the Nature Conservation Act.

Senator CAMERON: On that point, the Threatened Species Scientific Committee said that koalas would potentially be eligible for listing as vulnerable, that the only problem, basically, was lack of information on how koalas are going. So how could someone argue that they are not—if the scientific committee is saying they are potentially eligible for listing as vulnerable, how can this other definition be correct?

Mr Allworth: I cannot answer that. I know what the net result is. If you raise the issue of koalas across the range, they say 'least concern' or 'not of concern' and there it is in the schedules. When you look down the schedules and you look for the various species, you will see that the Powerful Owl will be up in the endangered category and so will all these other animals. The koala is not there and therefore there is no requirement to address issues of its management et cetera.

Senator CAMERON: If the scientific committee is saying they are potentially vulnerable, then surely the coal companies have to deal with that definition from the scientific committee?

Mr Allworth: If it is not in the act, you wash your hands. There is a disjunct between what the scientific committee is saying and what is then going into the act. That is a very serious problem.

Senator CAMERON: That is the state act.

AITKEN, Mrs Megan, President, Moreton Bay Koala Rescue

ALDENHOVEN, Dr Janice Maree, Member, Wildlife Research Group, Wildlife Queensland

BOWMAN, Mr Col, Private capacity

BRUCE, Mrs Gail, Koala Action Group Redlands

HALVERSON, Mrs Meghan, Private capacity

HALVERSON, Ms Sarah, Private capacity

OLDFIELD, Ms Paulette, Private capacity

[16:46]

CHAIR: We will now move to the open microphone session. There are some ground rules which I will outline. We would love to give each of you brave witnesses three minutes to speak, but note that I will adhere strictly to that time limit. We will not ask you questions. You need to put your views into those three minutes. The evidence that you give is public and what you say and your details will be published in a transcript for viewing by anyone who wants to have a look at it.

The final point is that we are not a court; we are doing our best to conduct a very broad inquiry into the wellbeing of the koala. We will make some observations and findings, but we are not here to judge. That said, we would like to hear your points of view in the three minutes that we are very happy to be able to give each of you.

Dr Aldenhoven: I am speaking on behalf of the Wildlife Research Group which is part of Wildlife Queensland. We have put in a written submission. I am a resident of North Stradbroke Island, which is in Moreton Bay and part of Redland Shire. We have one of, if not the only, naturally occurring island populations of koala in Australia. These koalas are genetically different to those on the mainland and they have been isolated from the mainland for about 8,000 years. There is a misconception in some quarters that the Straddie koalas are safe; I am here to say that they are not. They are at risk and they need out protection. For one thing, the population is small and that alone makes it vulnerable. We do not know how many there are—there has never been a population count on the island and we need one desperately.

The very rough estimate is that there are something like 300 to 1,000 individuals. The koalas are healthy and breeding, yet the population is probably at best static and possibly declining. We do not know the net effect of 60 years of sandmining on the koala population as whole. Our koala faces similar threats to those on the mainland. We have the usual things of traffic strike and dog attack—from both domestic and feral dogs and from the dogs brought by the many holiday-makers who come to our lovely island. There are hot bushfires and habitat clearing. There is no regulation on the island to stop someone cutting down a koala tree. The population already has a low genetic diversity, so we cannot afford to lose more numbers. Favoured habitat is wetlands, but particularly on the coastal margins, which are vulnerable to sea level rise. Habitat can also be ruined by anything that disturbs the underlying hydrology of the sand. Our island is also now on the cusp of great change. The state government has announced plans to make 80 per cent of the island national park by 2026 and to phase out sand mining by 2025. Under current plans, unfortunately much of the best koala habitat is not in that national park.

Urban expansion is planned in the three townships, townships that have been built on prime koala habitat. The main tourist road slices right through koala country. It is a 100 kilometre per hour speed limit. We have not been able to get it lowered. There is nowhere to rush to on such a small island. We hope that koalas will be part of our tourist attractions. But one has to ask whether the planned ecotourism mean more koala deaths through traffic and dogs.

We are fortunate, though, in that we still have time to plan our future with the koalas in mind. But it is going to take some pretty wise and effective decisions by state and local governments. That is why the Commonwealth

coming on board would really help us—because there is time. A listing under the EPBC Act would be very welcomed by us.

CHAIR: Thank you for the Stradbroke Island perspective.

Ms Oldfield: I am a mother and a resident of Logan in south-east Queensland. My journey into koala conservation began about eight years ago when I attended a community meeting in Logan. I attended this meeting with my two young children to hear a mayoral candidate talk about his objectives and in particular his plans regarding a piece of land identified as prime koala habitat. He promised all the residents at this meeting that this land would not be developed and would be retained as koala habitat. This did not happen. I was under the impression, along with my fellow community members, that my government was taking care of our environment and had the interests of our wildlife at heart. I was wrong. Along with a couple of others mothers in the area, I fought to have the decision to develop this land overturned. We went doorknocking every night after work with our children. Every single person signed the petition to protect this koala habitat. During this process, we collected over 5,000 signatures. We were not successful in stopping the development, but we were overwhelmed by the public support and the anger in the community that our government was allowing this to happen.

As I got more involved in koala conservation with the encouragement of my community, I soon realised that my government at all levels was not serious about koala conservation. This prompted me to organise the first koala rally in Australia through the streets of Brisbane on 25 September 2009. Along with thousands of other concerned Australians, we wanted highlight to the government that our koala was in serious trouble and that the community wanted action now. There were international documentary crews filming this event. People came from all over Australia to be part of this rally. I had messages from people all over the world wishing that they could be there to march with us.

I watch as more and more koala habitat is destroyed in south-east Queensland. Our government is giving precedence to money and the development industry rather than protecting our biodiversity and our koala. I have seen machinery rip through pristine bushland with few or no spotter-catchers on site to protect the wellbeing of the koala or any other wildlife. I constantly get messages from thousands of Australians expressing their anger and frustration at the lack of action by government to protect our country and its natural assets. Developers do very well in this state. The greed of this industry is appalling. I refuse to stand by and let the biodiversity of this country and my children's future be destroyed because of greed and poor planning. I got involved in this cause protecting my children's future is the right thing to do as a mother. Protecting our biodiversity is the right thing to do. Fighting to protect the koala is the right thing to do. Listing the koala as critically endangered is the right thing to do. The koala is Australia's national icon. It is the face of Australia. Do not let Australia lose its face.

CHAIR: Thank you, Ms Oldfield. Speaking of faces, now I know why yours was a little familiar. Thank you, from a rallying mum. Mr Bowman, now you get to have your say.

Mr Bowman: Yes, very good. For the last two decades, when I have been involved in reforestation in the form of regeneration of native forests and farm forestry, I have become more aware of the plight of the koalas. I was aware they were endangered but they are becoming more endangered. I wonder whether it has something to do with the fact that there are I understand only eight families of koalas in Queensland. If communities are isolated and have no interaction with other communities and do not have more genetic material coming in, they lose their vitality, become weak and are more susceptible to diseases. We have instances of this with the Tasmanian devil being quarantined from Tasmania on the mainland and with the northern quoll in the Northern Territory being moved to quarantine islands because of the influx of the cane toads. We have zoos around the world involved with pandas, cheetahs, tigers and elephants. There is all this interaction and changing of the genetic strains to keep the vitality of the groups.

Hopefully, we can, especially with isolated communities, start to identify the genetic make-up of the koalas—generally the males because that is the easiest one to change the strain—and interchange them with communities. I do not know whether that is going to be too big, but if we do nothing we will get nothing. If we do that we will get some results. Last Friday a well-known family celebrated a wedding and welcomed a brand-new, lovely daughter-in-law to their family.

Basically it gets down to science. I heard people here today say they cannot understand why we have Chlamydia and all these other things. You get it when you have inbreeding. I was a primary producer for 40 years and in breeding cattle you get much stronger and better animals if you have genetic breeding. It is so simple. I guess the koalas are different to cattle that you can muster into a yard, but let us look at doing something on a positive scale instead of holding our hands up.

Mrs Halverson: I moved to Australia about 2½ years ago. Obviously, from my accent, you can see that I am not from here. I have been involved in animal care and human care. I am a registered nurse, a midwife and a mother. I fell in love with the koala. When I came to Australia the first thing I wanted to see was a koala. That was what I did the day after I got off the plane.

I am appalled to see the government fail to list this species. The evidence is there. It may not be perfectly scientific or there may not be enough mapping or this or that, but it is really clear to me and I think this room how important this issue is right now. We cannot succumb to greed, to overdevelopment and to mining. We need to start thinking about sustainability on a climate level as well as on a personal level. Everybody should be thinking about the future because there is going to be no future for us as well if we let a species like the koala die.

They are iconic. People from around the world come here. This is the only place on earth you can see this animal in the wild, and this country is not protecting them. You heard Deborah saying there are people who have money that want to buy a plant. Let them do so. Let them do whatever it takes to support this animal. Let Jon have the money for research, because I think that is critical as well. I think it is a twofold issue. It is not just one or the other; it is both of them. If we can do that, we may find some solutions to help this amazing animal. I volunteer at the Australia Zoo wildlife hospital three days a week. What I see in these animals is ancient wisdom. They have much more than any of us in this room have. If we do not protect them, then we are failing all of Australia. This is my daughter, Sarah.

Ms S Halverson: I just wanted to say that I really love the koala. They are such an incredible animal. The first time I met a koala I just gazed into its eyes and I knew that I wanted to protect it from going extinct. We need to list it as critically endangered because they are just the sweetest animal.

CHAIR: Thank you to both of you, in particular Sarah.

Ms Aitken: I am the President of the Moreton Bay Koala Rescue group. I am not a scientist, I am not an environmental expert and I am not a town planner. But I and my fellow rescuers every day on ground level see the rapid decline of koalas, the appalling situations they get into. I get very emotional, but I cannot believe these little creatures suffer so much at the hands of our greed, whether it is by mining companies, development companies or people who just do not care about them. Governments of all levels have failed to protect them. There was scientific evidence presented here today by Deborah Tabart of the results of land clearing and, in particular, inefficient mapping. You cannot protect the species with legislation if we do not have mapping that gives the true figures of koalas. I live in the Moreton Bay region, up in Burpengary. There is no mapping to say that there are koalas, but I have koalas walking through my front yard. There is no protection for them because the mapping is not efficient. I and my members would all like to see the koala listed as critically endangered before the last koala that I see on this earth is the one tattooed on my foot.

Ms Bruce: I live in Redlands and I have been involved in koala conservation for 20 years. I have been part of the Koala Action Group and worked on the council's koala ambulance in Redlands, as well as being a ranger at Daisy Hill when it first opened in 1994. Over that whole time, it has always puzzled me why we have not been able to do something about the simple housework that is involved when you live in koala areas. Senator Brown touched on dogs and koala crossings a couple of times, as if to ask why we have not done something. It keeps coming up so often, but we have never ever really addressed it properly. If we are going to save koalas, we really have to attend to the little things that are important and that we can do something about while we are dealing with all the other things like habitat and disease. We have to address these other current problems right away.

When I was working with the ambulance, it was heartbreaking the way we went back to the same places over and over again. The same thing was happening, when all people really needed to do was lock the dog up on the patio. It is a simple thing to do, and then it will not kill a koala that comes into the yard. With the koalas getting across the road, all they need is something a little bit stronger than what a possum uses—a pole. I have raised orphans. I have seen how they can easily deal with climbing and twirling around poles. It is so simple and yet it has never been done. I think our mayor, Melva Hobson, touched on that. We are doing everything we can in Redlands, but we still cannot do these simple things without the koala being listed nationally, because not everyone wants to do it, so it will not happen. I am very proud to be in Redlands because I know we are doing all we can, but it is just not enough without that support. When I was doing the ambulance work for over a decade, we used to have one koala a week killed by dogs in yards. That is 50 a year. Over 10 years that is 500 healthy koalas just gone. It is something that we could stop tomorrow if we had the power.

CHAIR: Thank you, Mrs Bruce. Thank you again to the seven of you, in particular, for bringing up the rear of today's proceedings so well. Thank you to everybody who gave evidence today for leaving the committee—certainly, for my part—far better informed than we were through reading in preparation for today.

That completes today's hearing other than to remind those providing questions on notice that we would love to have your answers by 16 May. Again, thank you to the witnesses and to the one or two of you in the audience who have not been before us today for sitting through most of if not all of the proceedings.

Committee adjourned at 17:06