

TRANSCRIPT OF PROCEEDINGS

O/N 2547

FEDERAL COURT OF AUSTRALIA

TASMANIA DISTRICT REGISTRY

MARSHALL J

No TAD 17 of 2005

ROBERT BROWN

and

FORESTRY TASMANIA and OTHERS

HOBART

10.01 AM, THURSDAY, 9 FEBRUARY 2006

Continued from 8.2.06

DAY THIRTEEN

**MS D. MORTIMER SC appears for the applicant,
with MR P. TREE SC and MR T. MITCHELL
MR D. GUNSON SC appears for first respondent, Forestry Tasmania,
with MR A. ABBOTT and MR C. GUNSON
MR N. O'BRYAN SC appears for the Commonwealth,
with MR A. BROADFOOT
MR P. TURNER appears for the State of Tasmania,
with MR M. DIXON**

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HIS HONOUR: Yes, Ms Mortimer?

5 MS MORTIMER: If your Honour pleases, we have Dr Bekessy and Dr Wintle this morning but before I call Dr Bekessy I just want to deal with a matter that was left over from Mr Mooney's evidence and the brief evidence given by a Mr Bill Brown from DPIWE.

HIS HONOUR: Yes.

10 MS MORTIMER: Your Honour might recall he gave some evidence about the fact that the draft recovery plan has now been split into two parts. There is the recovery plan itself which is annexed to Ms Thompson's affidavit and there was a background paper with all the numbers in it that had been extracted and made separate and I asked him if he could supply that and he has done that. I
15 hand two copies up and I tender it, if your Honour pleases.

HIS HONOUR: Any objection to that?

20 MR D. GUNSON: No, your Honour.

HIS HONOUR: That will be exhibit V, V for Victor.

25 **EXHIBIT #V BACKGROUND DOCUMENTATION, THREATENED EAGLE RECOVERY PLAN**

HIS HONOUR: How shall I describe it? By its first heading?

30 MS MORTIMER: Background documentation, threatened eagle recovery plan.

HIS HONOUR: Yes.

35 MS MORTIMER: And your Honour, that reminds me, there is a misdescription of a related exhibit and I think it is exhibit U and I think if your Honour turns to page 793 of the transcript your Honour will see at line 10 exhibit U is described as a background paper provided by Mr Brown. That
40 indeed is the document I have just tendered and exhibit U, your Honour, is the version of the draft recovery plan released for public comment as at 2003.

HIS HONOUR: Thank you.

45 **EXHIBIT #U (Correction to description in transcript of 8/2/2006)**
VERSION OF THE DRAFT RECOVERY PLAN RELEASED FOR PUBLIC COMMENT AS AT 2003

MS MORTIMER: If your honour pleases. If the Court pleases I call Dr Sarah Bekessy.

5

<SARAH ADINE BEKESSY, AFFIRMED

[10.06am]

10

<EXAMINATION-IN-CHIEF BY MS MORTIMER

MS MORTIMER: Have a seat Dr Bekessy. Now, can you tell his Honour please your full name, your address and your occupation?---My name is Sarah Adine Bekessy. My address is 39 St George's Road South in North Fitzroy in Melbourne and my occupation is a senior lecturer at RMIT University.

15

Can Dr Bekessy be shown book 2 of the Court book please at page 620.

20

Now, Dr Bekessy, that is the affidavit that you have affirmed in these proceedings. Is that correct?---That's correct.

25

Are there any corrections you want to make either to the affidavit or to the documents that are exhibited to it. I understand there might be a correction to your report?---There's a correction to my - a minor correction to my report.

It starts on page 31, your Honour.

HIS HONOUR: Yes, I have that.

30

MS MORTIMER: Sorry, 631 and I understand, Dr Bekessy, it is page 634, somewhere in the second dot-point. Is that right?---Yes, indeed.

35

Now, firstly can I just get you to tell his Honour what sentence the correction is contained in that you need to make?---Shall I just repeat the sentence?

Just the first words so his Honour can find it?---

40

This potentially under-estimated the impact of harvesting as only harvesting events within two kilometres of the original nest sites were able to impact on the eagle.

So that is about three-quarters of the way down that paragraph.

45

HIS HONOUR: Yes, I have that thank you.

MS MORTIMER: All right. Now, what is the correction you want to make?---It's actually within one kilometre of the original nest sites.

All right. Now, why do you need to make that correction? Can you just explain to his Honour how it has come about?---The reason I made the error or
- - -

5 Well, firstly how did you pick it up?---I re-read over it again and it is inconsistent even within other sentences in that paragraph.

And was it something that also was raised by Dr Reed for Forestry in his affidavit?---Perhaps he misinterpreted that. I have never sort of mentioned that
10 the buffer zone - I believe that Dr Reed discussed an area that we could have made regarding the buffer zone that we used for nest sites. I don't actually ever sort of say, as he suggests, that we used a two kilometre buffer zone but I accidentally said two kilometres - it's a bit complicated but I accidentally said
15 two kilometres here referring to the old model so referring to the distance in which a wedge-tailed eagle would likely to be disturbed.

All right. Now, have you checked the model itself to confirm what was used?---Yes, I have.

20 All right. And are you able to tell his Honour whether what was used in the model was one kilometre or two kilometres?---It was one kilometre.

Right. Now, are there any other corrections that you want to make either to your report or to your affidavit?---No.

25 Your Honour, I ask that that be read as Dr Bekessy's evidence-in-chief on behalf of the applicant.

HIS HONOUR: Yes, it will be.

30 MS MORTIMER: Now, you just told his Honour your present position is as a senior lecturer at RMIT University. Is that right?---That's correct.

35 Right. And what are you lecturing in?---I lecture in environmental management and sustainability.

40 And at the time that you prepared the - or were involved in the multi-species modelling project that is the subject - in part the subject of your report, where were you working and what position did you hold?---I was at Melbourne University. I was a researcher.

And when did you leave Melbourne University?---Goodness. I would have to look at - I think it was - - -

45 Have a look at your CV which is on page 722?---Yes, I think I might have to if that is okay. I am sorry. 2003.

Now, Dr Bekessy, up until Tuesday of this week you were prepared to give evidence voluntarily in this on behalf of Senator Brown and then that position changed on Tuesday and you asked that a subpoena be issued for your attendance. Can you tell his Honour why that is the case?---Could you repeat
5 - - -

Tell his Honour why you asked for a subpoena?---I was advised it would be a sort of good thing to do.

10 Who gave you that advice?---It was advice from Melbourne University.

And do you know what the basis of that advice was?---I believe there is - my understanding is that Melbourne University were not keen for me to be here today.

15 Why is that the case?---I believe it's because they are under the understanding that Forestry Tasmania are not particularly keen for me to be here today.

20 MR D. GUNSON: I object to that. With the greatest of respect I object to all of this. It is obviously hearsay on hearsay.

MS MORTIMER: I am asking the witness what her understanding is, your Honour, and it has been explained - what has been explained to her and I will try and confine her to that.

25 MR D. GUNSON: With respect that doesn't address the issue, your Honour. She can only give an explanation for understanding based on what she has been told. She hasn't identified any of her sources. She says Melbourne University which I imagine consists of some several thousand people. We are just simply
30 left in the dark as to what this is all about.

HIS HONOUR: Her last answer is inadmissible.

35 MS MORTIMER: If your Honour pleases.

Who have you had a conversation with at Melbourne University about whether you ought to give evidence?---I have discussion with Professor Mark Bergman about that.

40 And what position does he occupy?---He's very supportive of me - - -

No, what position does - - -?---Sorry.

45 What is his position at Melbourne University?---He is a professor.

In what department?---In environmental science in the School of Botany.

All right. And did he have any involvement in the multi-species modelling project?---Yes, he was the chief investigator on that project.

5 All right. And have you spoken to anybody else about whether you ought to give evidence in this proceeding?---Not about whether I ought to give evidence, no.

10 Now, I want to - no, I will withdraw that. Have you seen any correspondence about the question of you giving evidence in this proceeding?---Yes, I have.

And who is that correspondence between?---It's between Forestry Tasmania and Melbourne University.

15 Right. And do you recall the details of that correspondence?---I recall some details.

What do you recall?

20 MR D. GUNSON: Well, your Honour, I object to this evidence. I don't know what its purpose is to start with, no doubt it will become clear in due course. In any event what the witness is doing is telling us about the contents of a document which has not been produced.

25 HIS HONOUR: Ms Mortimer?

MS MORTIMER: Do you have correspondence in your possession, Dr Bekessy?---No, I don't.

30 I have no further questions on that topic, your Honour, I will move on to something else.

HIS HONOUR: Thank you.

35 MS MORTIMER: Now, Dr Bekessy, I want to ask you to tell his Honour what have we got displayed on the projector there?---Okay. This is the bit where I have to pretend to be a lecturer again, I think.

40 That is an image from your computer?---That is an image from my computer, yes.

All right. And what you have brought along on your computer is the program that you used in the multi-species modelling project?---That is indeed.

45 And it is the program that you used in what I will call the 2005 revision of the work that you did for Forestry?---It is.

Is that right?---It is.

And just stop there a minute. Your Honour, what I am proposing to do and what I have explained to my learned friends, is just to get Dr Bekessy to fire out the program and walk your Honour through how it works. It is only going to take about five or 10 minutes just so your Honour can then understand the evidence once it has been given.

HIS HONOUR: Certainly.

MS MORTIMER: All right.

Now, Dr Bekessy, can you start by perhaps telling his Honour what a population viability analysis or what a multi-species modelling project is and if there is any difference between those terms because we have heard both?---Okay. The difference between - can I just begin by talking about generally what population viability analysis is?

Yes?---Okay. So, your Honour, it's a tool that is quite commonly used in environmental management conservation and essentially what it is in a very brief summary is it is up to the modeller to collect all known information through data and literature or where its possible, expert opinion, and basically everything you know about that species you actually translate into a mathematical model. You translate it so that everything that you do is explicit and all the uncertainties in that are explicit. Then if you use that mathematical model to predict into the future it allows you to explore a whole range of management scenarios that you never have the time to do in real time, so it can be useful in helping you assess the impacts of management scenarios.

All right, so that is a population viability analysis?---Yes.

And when the phrase multi-species modelling project is used, is that the same thing or is that something different?---The idea of the project was to take multiple population viability analyses for the same landscape and to make conclusions about the landscape and provide advice about management of the landscape.

And so is it correct then to say that that is a term that has been sort of picked up as particular to this project that you were involved in with Forestry?---Yes, it is an innovation to actually - normally we just look at one species but obviously management is concerned about multiple species so this was an innovative side of the project.

All right. Now, I will ask you to start up the - sort of the first part of the program and explain to his Honour what the components of the modelling are?---Okay. So the model that we used is called landscape. I will try and do this really as quickly as possible. I could really spend days doing it so I will really try to keep it as simple and concise as possible. Now, this - the sort of special thing about this model is that it combines two different modules so one part of it is actually describing the landscape, that's this Landau's model, so

within this Landau's landscape model what you're doing is trying to put every bit of information that you have about the types of species, as in tree species that are in the landscape, how they change over time, how they respond to fire, how they grow, how they die, so for example, one map that I can show you as
5 an example is the species composition so this map that I'm showing you is just the Bass district, that was the limit of our modelling exercise - - -

Now, I just stop you there, Dr Bekessy?---Sorry.

10 And ask you to just leave the witness box for a minute, if your Honour pleases, and show his Honour on that map where the Bass district is?---I can't be terribly precise here but my understanding is that it's this sort of area here, the north-east of Tasmania.

15 MS MORTIMER: All right, thank you?---So that is this area represented and the different colours actually represent different sort of forest types in essence so - - -

20 Forest type - - ?---So different forest types and different - you know, one forest might have a composition of certain types of species and other forests might have a slightly different composition. You can also model different kinds of disturbances such as, you know, fire for example. That was - an innovation of our model was that we had a sort of quite sophisticated fire model so we could say that the prediction - the probability of a fire occurring
25 in any one year was X and it's probability of its size being of a certain type is X and in fact the probability might change over time as you get a greater fuel load, for example. And you can also include harvesting, so, for example, in this model that I am showing you here this was the particular coupes that we were - we used to depict harvesting, so this is a cumulative map of the
30 harvesting events.

And just stop you there to make it clear that that is both native forest I understand, and plantation?---It is. Okay, so you have got this landscape. Now, what you do then is actually sort of look at how in this case, the eagle is
35 going to perceive that landscape, which habitat is useful to it and how is the habitat going to change over time and you link, in a separate module, the Ramus model, this is where you actually put in information about the bird itself so it's birth rate, it's death rate and - - -

40 And just stop you there, Dr Bekessy. Where do you get that information from as a modeller?---From the literature and also from other - form expert opinion and sometimes you can make inference about similar species as well.

45 Okay, please continue?---Sure. Okay, so that's the biology and behaviour of the bird, and then you basically link the two and make predictions about the future so then you simulate this model, and when I say simulate it's not just one simulation. The beauty of this is because there's a lot of - potentially a lot of uncertainty in them, you run thousands and thousands of simulations so your

5 results actually represent an average but they also represent bounds on that average, so I can show you just briefly the types of results that you can get out of this. So this is the landscape results so it is just looking at what is happening to the landscape. So, for example, you can look at where were the fires as we predicted, where did they sort of occur on average, and this is a sort of cumulative map that shows decade by decade where the fires actually occurred.

10 And their size?---Yes, so the size on the screen is - correlates with the sizes as predicted by the model so we can just see that this is just a map over time showing us decade by decade a cumulative fire map.

15 And over what period of time did the model run?---We ran this model for 160 years. They it can also - you can also sort of have just a look at the way that harvesting, for example, changes over time so this model - this map here is a depiction of decade by decade - it's a cumulative map of where harvesting is occurring so each colour that is coming on is actually representing the cumulative distribution of harvesting.

20 And where did you get the information that you put in to construct that, that part of it?---The harvesting?

25 Yes?---That was provided by Forestry Tasmania. Was developed in communication provided by Forestry Tasmania. So then you can actually - tell me as soon as this is starting to get boring, but you can also look at results relating to the way that the species responds over time so for example, this is just showing the habitat suitability for the eagle over time. So this is the Bass - and this is a time step one; decade two; decade three; decade four and so on to decade 160 - to 160 years so it is just showing - so it will be responding to the forest ageing. In some areas it will be getting better responding to fire and it will be responding to harvesting. There is a habitat model that goes behind this. That habitat model was developed by Nick Mooney et al, okay? So then what that - so that's your link, the landscape to the way that the species is responding to it, and now the output of all of this is a set of predictions about the population size of that bird. So how are the numbers of that bird going to be impacted by those changes? And I'm just going to show you one example you can get. There are many, many statistics that you can pull out of this but one, I think, that is interesting to look at is actually the trajectory of the bird over time. So this is - - -

40 Now, I will just get you to explain, please. There is five scenarios identified there, and can you just explain to his Honour what each of those represent?---These were the five scenarios that we developed with Forestry Tasmania for the original multi-species analysis report.

45 All right. Now, are you able - if you can't do it from memory, Dr Bekessy, tell me, but are you able to go through and just identify for his Honour what each of the scenarios involved?---Yes. This is - I wasn't as involved in this part of the modelling exercise in developing these scenarios, but my understanding in

very simple terms is that scenario 1 is a base model. So it is just really the landscape changing according to fire. So we're assuming that there are no humans interfering with this landscape, in essence. Scenario 2, I believe is related to a tactical plan of timber harvesting, but only native forest harvesting.

5 So looking really only at the impact of that landscape managed by native forest harvesting. Scenario 3, my recollection was a tactical plan with a more strategic plan as well added on, I think, with, you know, longer time. Perhaps a slightly longer time horizon. Scenario 4 represented - no scenario 2 was native forest harvesting, 3 was a tactical plan, 4 was the strategic plan, and 5

10 was called the RFA plan. My understanding was that it was - it included these other - the tactical and strategic plans, but also opportunities for other kind of plantation conversion on private land. These scenarios also included private land conversion, but this was, you know, all area that were identified in the RFA as potential or likely opportunities for native - for conversion to

15 plantation.

All right. Now, Dr Bekessy, is this a table that appears in the 2005 revision of your paper?---It is.

20 Now, is there anything else that you need to tell his Honour about that table?---Yes. I mean, like, the point of showing you this was to show you the kinds of - I wasn't - it was to show you the kinds of statistics and kinds of figures that you can get out of this modelling exercise. So for example here we have time on the X axis, and population size. That is the number of adult

25 breeding individuals. We've focussed on those because they're the important individuals in this particular model, those adults that are able to breed, and you can - - -

HIS HONOUR: So in simple terms what is the effect of the all scenarios example?---Alternators just - we actually just showed all scenarios on the one

30 graph for comparison. So the green one represents the base model for comparison and this one we just put them all on the same graph, just to sort of visually show I guess the difference between them.

35 MS MORTIMER: So just pausing there, Dr Bekessy. So the green line, if you look at the all scenarios box, the green is if what happens?---That's just wildfire in the landscape, and no sort of - - -

40 No other impacts?---No anthropogenic disturbance.

All right. And then the coloured lines are a combination of what is in the other graphs, are they?---They represent the other scenarios. Now, the difference between these and this - this scenario is representing the averages I described to you, but also the upper and lower sort of limits.

45 Just take that little more slowly if you would like?---Oh, okay.

Take scenario 3 as an example. Now, there is two very squiggly lines on the outside, and a bolder line through the middle. Just take his Honour through what those are?---Okay. So the bold line is the average of thousands and thousands of simulations. The top squiggly line is the sort of upper predicted limit and the bottom is the lower predicted limit.

All right. Now, again, just to complete, in terms of his Honour understanding were the sources, the source of the information for the pattern of wildfire you got from where?---My recollection is that we were provided with a report on fire - fires and characteristics in - - -

From?--- - - - in Tasmania.

No. I mean, who provided you with the report?---Oh, sorry. That was provided by Forestry Tasmania.

All right. Now, no further questions about that map. Now, that is an example, as I understand it, Dr Bekessy, of what you might say is the ultimate outcome of the modelling process; is that right?---That's one.

One. That is what I said, it is an example?---Yes.

Is that right?---That's right.

Okay. Now, is there any other necessary component of the model that you need to show his Honour, or is that it?---I don't believe, unless there is something you'd particularly like me to - - -

All right. No. That is fine?--- - - - elaborate on.

Thank you, Dr Bekessy. Now, can Dr Bekessy be shown book 5 of the court book, please?---Would you like me to get rid of this?

It can stay, because you may well be asked some questions about that?---Okay.

Oh, see her face. They can't see you, Dr Bekessy - - -?---They can't see me? No. All right. What a pity for you.

- - - and they are worried about that, so we might just put the lap top back down on the table?---Sure.

Now, in book 5 - no, I am sorry, book 4. My apologies. Book 4, page 1605, your Honour, Dr Reed, isn't it. Now, you have had an opportunity to read Dr Reed's affidavit?---I have.

Can I ask you to go please to paragraph 18, page 1609?---Yes.

Now, in that paragraph Dr Reed identifies in his opinion two things as main outcomes of the multi-species modelling project. Do you agree with Dr Reed that those are the two main outcomes of the multi-species modelling project?---No, I don't.

5

Why don't you agree?---I think that there are actually other main conclusions that were made.

10 All right. What do you identify as the other main conclusions or outcomes from the project?---I think one of the main conclusions were that we modelled - myself and many other collaborators modelled 11 species, and each of those species were shown to be impacted by both native forest harvesting and plantation conversion. Some of those species responded quite significantly to management scenarios, others were more resilient to management scenarios.

15

All right. That is one other thing that you would identify as a main outcome of the project. Are there any others?---Yes. And this often happens with modelling. You find counter-intuitive results, I guess. I think everyone on the project expected that we would find that plantation conversion was a far more sort of significant threat than native forest harvesting.

20

25 HIS HONOUR: What do you define as plantation conversion?---Plantation conversion, in my understanding, is say harvesting native forest, and then rather than let it naturally regenerate, actually replanting - well, planting a monoculture of trees. So, as you can imagine you'd anticipate perhaps that that would have a greater impact. It's a more sort of like a biological desert in a way than having a native forest that regenerates. But in the species that we modelled there were no - there wasn't a strong message that that was actually - that the species were seeing those sort of differently, or responding differently, and I guess we concluded that, you know, this - that the forest is not actually able to recover in the rotation lengths that are currently used, the kinds of characteristics, the habitat characteristics that species actually need to persist. So that - - -

30

35 MS MORTIMER: All right. That is the second main outcome, other than these two, that you would identify. Are there any more?---Not that I can recollect.

40 Do you agree with Dr Reed that the two things that he has identified are properly characterised as main outcomes, subject to what you said about there being others in your opinion?---I can talk with more authority about point 2.

45 All right. Well, you ought to tell his Honour if you don't feel that you can talk about point 1?---I can't actually recall having that connectivity. I recall that was actually a, sort of, significant impact on the spotted-tail quoll, a significant driver. However, I don't recall if it wasn't for other species.

Okay. Now, the way that Dr Reed describes the outcome in relation to the wedge-tailed eagle in (ii), do you agree with the way he has described that outcome?---No, I don't.

5 Why not?---He states that the eagle was at a significant threat of extinction. I agree with that part of his statement. However, he goes on to say that this was predicted to be due to unnatural mortality, accidents, shooting, and poisoning rather than forestry activities. I don't agree with that statement.

10 All right. Can you tell his Honour in your opinion what the model showed in terms of the Tasmanian wedge-tailed eagle and the relativity of impacts on it?---There is absolutely not doubt that natural mortality is a very significant threat for this species. However, forestry activities were also shown to be a significant threat. So, for example, I believe - my recollection is that the
15 expected minimum population size was halved in zones that included forestry activities, or perhaps it was reduced by 40 per cent or 50 per cent, something like that, in the original report, and that was in the absence of unnatural mortality. So even in a situation where you have no unnatural mortality at all, forestry was leading to a halving of your expected minimum population size. I
20 don't, sort of, consider that to be significant. I'm not a manager, I don't make those judgment calls.

In your opinion, Dr Bekessy, and focusing on what the model showed are you able - is it possible in your opinion to say that unnatural mortality outranked
25 the impact of forestry or they were the same, or one was less than the other, is that a comparison that you can undertake in terms of the model outcome?---It is and it isn't. You can separate them out and look at - I mean, this is why modelling is actually good because you can separate them out and look at their comparative impact. However, in this situation experts believe that there is
30 actually correlation between the two, that some unnatural mortality is actually due to the forest being opened up by roading and that allows for accidents due to road kill as well as, you know, the shooting and poisoning that goes on.

So in terms of what the model shows how does that relationship affect the
35 ability to separate them out as impacts?---It makes it difficult, not impossible, but difficult.

All right. Now, if you look at paragraph 19 what Dr Reed argues there in the
40 second sentence in particular is that results from the multi-species modelling project cannot therefore be generalised to other forest districts in Tasmania without acknowledging the less significantly intensive forest management occurring in other districts, and that is because he has already made a statement to the effect that the Bass district has a relatively high level of forestry activity.
45 Do you agree with Dr Reed's opinion that results from the project cannot be generalised to other forest districts?---Can I tell you which parts I agree with?

Yes?---I agree that you cannot do that without acknowledging that there's less - perhaps there's less intensive forest management occurring, but it is our best

and most complete information about this species and there is nothing else available. So I think that it should be used in generalising in other districts, you know, with provisos unless there's something that disproves its relevance. It is the best information we have at the moment.

5

All right. In saying that, are you recognising that there will be necessary differences if there are differences in harvesting intensity?---Absolutely. You know, our model is linked to the degree of disturbance.

10 And in terms of the projections for the eagle based on what you know do you see those differences as significant or large, small, how would you characterise them?---Are you asking me to compare the intensity of forest harvesting in the Bass district and in other districts?

15 I am asking you how that difference that Dr Reed has identified in your opinion is likely to affect modelling on the eagle - in relation to the eagle, for example in Derwent?---Okay. Absolutely. Well, I mean, I can say that the results of our modelling were robust. You have to substantially change management and substantially reduce timber harvesting before you reduce
20 substantially the main conclusions of the model.

Can you go, please, to paragraph 31, page 1614, where Dr Reed makes a criticism of the use of a poison impact algorithm? Now, what I want to ask you about that, Dr Bekessy, is where did you get the information about the
25 impact or absence of impact, or levels of impact of 1080 poisoning on eagles?---From the literature and from expert opinion.

Whose expert opinion?---The expert opinion of Nick Mooney and McIlroy - is it John McIlroy?

30

Now, can you look at paragraph 33? There Dr Reed characterises one of the results in your report as this:

35 *That two components of the eagle's environment individually predicted in this analysis to cause overwhelmingly greater impacts on the eagle than all other model components combined.*

Do you agree with that?---I don't agree there it was overwhelmingly greater.

40 All right. How would you describe the comparison?---I describe both as being significant impacts.

All right. And is there anything that you would have put in the same category in terms of their impact apart from the two things that Dr Reed has
45 identified?---Could you repeat that question, please?

Well, you have said that - you characterised them as, did you say important?---I'm sorry, I think - I have become confused.

I withdraw the question, your Honour. I will start again. And just take a moment Dr Bekessy to read that part of paragraph 33 and (i) and (ii). What Dr Reed is saying is that the two components that he identifies there, human persecution only and in-forest persecution, caused - that your model - the modelling that you were involved in caused - those two things cause overwhelmingly greater impacts than all other model components combined, and what I am asking you is whether you agree with that?---I don't agree with that.

10 All right. I want you to identify for his Honour whether there are any other things that you say have the same or close to the same level of impact?---I think there are other aspects that have significant impact, so that they're not - I think, for example, when we modelled the impacts of forestry we could actually separate the different elements out. So we assumed that there were different impacts that were going on. Now, when we just modelled the impact of the reduction of habitat - so we didn't include any of the other elements to do with, you know, 1080, or, you know, in-forest persecution or nest disturbance, none of that, just habitat reduction, that led to a certain halving of the population size.

All right. Can you go to paragraph 36, please, page 1616? Dr Reed gives his opinion there in this way:

25 *That the major logical conclusion from the 2005 PVA is not that forestry is driving the Tasmanian wedge-tailed eagle extinct instead the major conclusion is that human persecution, both broad scale and in-forest, is by far the largest risk faced by the Tasmanian wedge-tailed eagle.*

30 Do you agree with that characterisation of the conclusion of your modelling?---No, I don't.

35 Why not?---It's certainly a large risk. It is a very important risk. However, there are other risks that also are important.

All right. Well, the way that Dr Reed is putting it is that human persecution is by far the largest risk?---I don't agree with that.

40 How would you describe the risk faced by the eagle - on your model - from human persecution as compared with forestry?---You have asked me to do that before, and as I said I find it hard to separate them out for the reason that I gave. However, if you just look at - if you do separate them out for the purposes of argument, without any persecution at all and with the impacts of forestry, including habitat reduction, there's a certain halving of the population. And when you include unnatural mortality due to persecution and other things as well then it sends the bird to extinction.

Would you, based on that answer then, agree or disagree with Dr Reed's characterisation in the next sentence of paragraph 36 of the conclusion from your model about forestry activities as a secondary one?---I think it's an equal consideration.

5

All right. Now, I want you to go to paragraph 40 please which is on page 1618. Now, in this part of his affidavit Dr Reed is talking about some of the assumptions that he says have been made in the model and his criticisms of them and what he says in the first sentence in paragraph 40 is:

10

The first incorrect assumption involves uncritical use of the native forest harvesting schedule provided by Forestry Tasmania in 2001.

Now, what is your response to the way he characterises your use of the native forest harvesting schedule provided by Forestry Tasmania as uncritical?---I have to admit I don't really understand it. I really can't understand grounds for it. We developed these scenarios with Forestry Tasmania. We had no reason to assume that they were anything but what they hoped to be reality. I mean they were funding the project. I was under the understanding that they were actually interested in the results of it and were interested in the management implications so I don't understand why we shouldn't have assumed that the scenarios that we developed with them were something we shouldn't have used.

25 What, in your opinion, would be the utility of engaging in a modelling project of this kind and size on the basis of unrealistic and theoretical plans?---I think it would be rather silly.

30 MR D. GUNSON: Before my friend asks the next question I wonder if we could just have the program turned off. The constantly turning logo of RMIT is a distraction, your Honour.

HIS HONOUR: Making you dizzy is it, Mr Gunson?

35 MR D. GUNSON: It is free advertising.

MS MORTIMER: Yes. And I don't know why we are giving RMIT a free plug. It certainly wasn't our intention?---They will be very proud of me.

40 Yes, I am grateful to my learned friend. Actually I should have checked with you what your screen saver was, Dr Bekessy?---That's true. Now, you know I'm boring.

45 All right. Now, can you go to paragraph 41 please, page 1620. In paragraph 41 and if you look through (i) and (ii), Dr Reed is criticising the model's use of a scenario called the RFA scenario and what he says in the last line of that first part of paragraph 41 is:

The use of the name RFA or the scenario 5 is completely misleading as it did not form part of the Tasmanian RFA.

5 Do you agree with Dr Reed that the use of the name RFA is completely misleading?---From my perspective, no, I don't. Yes, I don't agree with that.

10 Can you explain to his Honour how that scenario came to be called the RFA scenario? How did that happen?---I was not a part of the team that actually developed the scenario but my understanding was that it was called the RFA scenario. There were other words that were also used to describe it but it was known as the RFA scenario. My understanding was that it included, as I mentioned before, the plantation conversions that were looked at as opportunities under the RFA as well as the tactical and strategic plans. If it is not then I had no knowledge of that.

15 All right. During the preparation of this project did you ever receive any feedback from anybody at Forestry Tasmania to the effect that describing it in that way was inaccurate or wrong?---No.

20 All right. Can you go to paragraph 47, page 1625 - actually first to paragraph 44 sorry, Dr Bekessy, page 1624 and I just want to run through what Dr Reed says in summary for problems. Firstly he says that:

25 *The revised PVA over-estimates the extent of native forest harvesting.*

What is your response to that?---We used the scenarios we were given by Forestry Tasmania.

30 He then says that:

It uses an exaggerated scenario for conversion of native forest to plantation.

35 What is your response to that?---Again we used the scenarios that we were given.

Right. That:

40 *It assumes nest disturbance always follows forest harvesting within two kilometres of known nests when prescriptions exist to minimise this.*

What is your response to that?---We actually assumed next disturbance follows forest harvesting within one kilometre.

45 And where did you get the information for that assumption from?---That was from our expert, Nick Mooney.

And the fourth point in summary is that:

The inclusion of poisoning when they are not known to be sensitive for it.

5 Again where did you get the information for that from?---From the literature and from experts.

Who?---Experts?

10 Yes?---Dr Nick Mooney and I believe his first name is John McIlroy.

Now, can you go to paragraph 47 please. The opinion that Dr Reed expresses there - I will just draw your attention to the first part of it. Firstly he says:

15 *It is unlikely that repeating the PVA with corrected parameters -*

and I want you to assume that that means the corrections that he says should be made -

20 *would alter the logical conclusion.*

Do you agree with that part of the statement?---Well, I think that you would have to do a heck of a lot to the model to change the major logical conclusion because it's a very strong message.

25

And then he goes on again to describe that conclusion that:

The various components of forest harvesting constitute a minor risk by comparison.

30

Again do you agree or disagree with that?---I disagree they constitute a minor risk.

35

Is that for the reasons that you have already given to his Honour?---Yes.

35

Now, can you got to paragraph 51 and in paragraph 51 and following - and I will try and summarise this. Dr Reed is making a criticism of one aspect of the inputs or one of the assumptions that you made, namely a risk of 30 per cent decline across all scenarios. What is your response to that criticism?---I think it's actually a fair criticism.

40

All right. And is that something that has to remain the same as between the 2004 project and your 2005 revision?---No, we chose - different sort of types of statistics were used to describe the population decline.

45

Why did you change the risk percentages across scenarios in the 2005 revision?---Well, because they are more sensible statistics to describe the

model, the model outcomes. Is it worth me outlining why 30 per cent was chosen in the first instance?

5 Let us take it step by step. Please tell his Honour why you chose 30 per cent and then how that was changed?---Okay. 30 per cent is almost like a convention, for example, the International Union for Conservation Nature considers a reduction by 30 per cent to be sort of significant. It might change the listing of the species. It might change the ranking of it from being, you know, threatened to endangered or what have you so we, in all of the chapters used 30 per cent as a kind of a trigger point at which to discuss threat for that reason.

15 Yes?---However, in this particular instance it was not really appropriate because even in scenarios that included just wildfire there was some chance there was a 30 per cent decline. That's because it's a species that obviously responds to stochastic events but it's naturally uncommon and so if there is a big sort of event, like a wild fire, it can impact on the population. If we had chosen say, expected minimum population, that would have shown - it would have been a better statistic to use in this instant.

20 And so how have you changed that in the 2005 revision; what differences have you plugged in?---Do you mean how - which statistics - - -

25 In terms of the percentage of decline across she scenarios, how have you changed that percentage?---We've just provided results that show 30 per cent decline - probability of 30 per cent decline, probability of a 50 per cent decline, probability of a 70 per cent decline, probability of extinction and as well we have included an expected living population size.

30 All right. Now, can you turn please to paragraph 57, at the bottom of 1629 over through to 1630. There are three paragraphs there, 57 to 59, where Dr Reed criticises your model for using predicted risks of extinction instead of - no, I withdraw that; withdraw that and try this question, Dr Bekessy. So I understand the criticism in paragraph 58 of Dr Reed's affidavit, it is that although you have acknowledged some - all the uncertainties or the reliability, problems with reliability, that you have, as he says, persisted in quoting predicted risks of extinction. Now, can you explain to his Honour why, in the model, it quotes predicted risks of extinction?---We, as I said, provide a whole range of different statistics, including the risk of extinction.

40 Do you understand what Dr Reed means by an actual risk of extinction?---I believe so.

45 Pardon?---I think I do.

What do you understand that to mean?---That the chance in a simulation - the probability that it will become extinct, it will reach a population of zero.

Do you understand that to be different from a predicted risk of extinction?---Predicted versus actual?

5 Exactly, Dr Bekessy. What I am asking you is, in your understanding of this modelling process, is that a valid distinction to make? When you are talking about modelling can you talk about something that is an actual risk of extinction and - - -?---Yes, I don't think it's a normal - - -

10 - - - and differentiate it from a predicted risk, or can't you?---I don't think it's normal terminology.

HIS HONOUR: It is all about prediction, isn't it, the whole concept?---Yes, it is. It is.

15 MS MORTIMER: All right. Now, the criticism that he makes in paragraph 59 is that some of the lifestyle characteristics of the eagle make it unusually sensitive to slight errors in estimation and as I understand it that's in part a criticism of a - or a - yes, it's a criticism of the model because he is saying it has a particular uncertainty for the eagle. Can you explain to his Honour, 20 please, whether sensitivity analysis has a role in this model and what it is?---Absolutely. Sensitivity analysis is a - any good model does a very thorough sensitivity analysis so as I mentioned, there may well be some uncertainties in the data. I mean, you are modelling the real world, a complex world, so sensitivity analysis is basically a process of taking every assumed 25 estimate and changing it and once you change it you look at your outcomes, your statistics that you - our output and you see if they change and if they change significantly when you change one element then you know that is a critical element to get right or it's a critical - yes, it's a critical element to make sure it doesn't change your sort of management scenarios when changed, 30 etcetera.

And what parameters in relation to the eagle did you find to be particularly sensitive?---We found that vital rates, so you know, birth rate, death rate, were significant. 35

And how did you factor that in to the way the model worked?---Well, you have to - you put error bars around it. You ask experts, okay - fortunately with the eagle there's a lot of information that we know about it. There are lots of people out there who know these things so there's actually a lot of information, 40 unusually, about birth and death rates but there is still uncertainty so we put bounds around that in the model so the uncertainty in the model predictions actually reflect that uncertainty.

And in relation to that exercise for the wedge-tailed eagle in your model, who did you get that information from?---For the vital rates? 45

Yes?---We got that information - there's a lot written about the eagle so from the literature. There's some - they know how many chick per year for the pair,

you know, there's lots of information on that and we also - we augmented that or we sort of - any gaps that were still free we used expert opinion.

Whose?---Dr Nick Mooney and Dr Bill Brown.

5

Paragraph 61 Dr Reed expresses or gives some views about the response of Forestry Tasmania and he makes this comment as an aside in that paragraph:

10 *Should these results be presented to Forestry Tasmania for pre publication discussion and not in the form of an affidavit.*

Now, Dr Bekessy, did you present the results of your multi-species modelling project to Forestry Tasmania?---Yes, we did, I did.

15 When?---They were involved with it from the very start and we were communicating constantly through the program and I believe the first sort of formal presentation was an oral presentation I gave to - at Forestry sort of Tasmania, here in Hobart.

20 All right, and in relation to the release of the report was that something - and this is the 2004 report - was that something that you were involved with?---Do you mean the 2004 - yes, yes, I was involved in that.

25 All right, and do you remember whether you sent a copy of that to anybody in Forestry or was that left to someone else?---No, no, that wasn't my role.

30 And in relation to your revision of that project, the thing that I have been - that you call in your report the 2005 revision, and that I've been calling the 2005 revision, is that an activity that you told Forestry Tasmania about?---Absolutely.

Who did you communicate with in Forestry Tasmania about that revision?---Dr Simon Grove.

35 And do you recall approximately when you first started communicating with him about that revision?---I believe it was last year.

40 Was it before or after you affirmed your affidavit in these proceedings?---No, before.

45 Now, I just want you to - to save a little bit of time, if we can, Dr Bekessy, run through the summary of Dr Reed's points in paragraph 66 please, page 1633, and what I am asking you to do is to look at those and if there is anything by way of a response to those that you don't think you have already picked up and talked to his Honour about, I want you to tell his Honour what your response is. If you think you have covered them all then just say so?---So should I talk about point 2?

What is your response to the point he makes there?---My response is that - I don't know if you are reading it, your Honour - my response is that expected minimum population sizes and risks of extinction can and should be used in management situations, and they are used, often in management situations, particularly when - I mean, obviously it is easier to risk - to rank different risks rather than actually say what those risks are, it is the same with anything that you are trying to predict but that's not to say that the measures themselves are useless. If there is a large magnitude of difference, for example, between different management scenarios and magnitude, magnitude is actually informative. So, for example, you know, as I have mentioned before, if you have a halving of minimum population size I suggest that is a useful measure.

All right. Paragraph (iii) I won't ask you to deal with again. (iv) I will ask you this question. Do you agree with Dr Reed's characterisation of your model predicting risks of extinction to be over-estimated?---No, I definitely don't agree with that. Could I elaborate slightly?

Yes, why?---In all conversations with the experts who assisted in our sort of - in the estimates we used in our model they have consistently said that we were actually conservative in the impacts that we modelled. We, in some senses, perhaps may have under-estimated some of the impact.

All right, and then I believe you have dealt in your answers already with (v) so - - -

25

HIS HONOUR: Who were the experts that said that to you?---It was mostly Nick Mooney.

MS MORTIMER: Your Honour, no further questions of Dr Bekessy.

30

HIS HONOUR: Right. Can I just raise a matter that came out of page 1609, paragraph 19 of Dr Reed's affidavit, in the last sentence. It says:

35 *Results from the project cannot therefore be generalised to other forestry districts in Tasmania about acknowledging the less significantly intensive forest management occurring in other districts.*

I think Dr Bekessy, you acknowledged the truth of that but you said that it still could be used with provisos?---Mm.

40

What were the provisos?---Okay. So, I mean, obviously the best thing is if you could actually make a model for those districts but you could make an educated guess, I guess, about the sort of differences so you would have to look through, you know, is the species substantially different in that district, yes or no. Are the forest types significantly different, yes or no? Is the density of eagles different, yes or no? Is the extent of forest harvesting different, yes or no? And then you could look at the differences, and you could look at how

45

sensitive the model was to those differences, and you could say whether or not the, you know, similar kind of risks would be present in that site.

Yes. Thank you. Anything arising out of that?

5

MS MORTIMER: No, your Honour.

HIS HONOUR: We might adjourn for 15 minutes. Before doing so you recall that we are scheduled to sit at 9.30 tomorrow morning?

10

MS MORTIMER: Yes, your Honour.

HIS HONOUR: I was thinking about three hours being a long session without a break. Would anyone have a difficulty if we started at 9.15, and had a 15 minute break some time during that three hour session?

15

MS MORTIMER: We have no difficulty, your Honour.

MR D. GUNSON: No, your Honour.

20

HIS HONOUR: And I propose to do the same on Wednesday, because we are sitting Friday hours on Wednesday. That is, Wednesday - - -

MS MORTIMER: Somehow we thought we might be, your Honour.

25

HIS HONOUR: Wednesday of next week. Right. We will adjourn until 11.30 today.

30

ADJOURNED

[11.16am]

RESUMED

[11.30am]

35

HIS HONOUR: Mr Gunson?

MR C. GUNSON: If your Honour please.

40

<CROSS-EXAMINATION BY MR C. GUNSON

[11.31am]

45

MR C. GUNSON: Dr Bekessy, in your evidence-in-chief this morning you indicated that you had asked for a subpoena to be issued to secure your attendance at Court; is that correct?---Yes, that's correct.

Who did you ask to issue a subpoena?---I asked Roland Browne.

And when was that request made?---I believe it was yesterday.

5 And when did you have the discussion with Professor Bergman that you referred to?---The day before.

And was that a meeting in Professor Bergman's office?---It was.

10 And who requested the meeting?---He did.

And did he say to you why he had requested the meeting?---Yes.

15 What was his reason?---He was pretty long winded, I do recall, but it was to discuss - it was to discuss the draft publication of the, sort of, you know, what's called in this case the 2005 revision - or version of the manuscript, the model.

And is it the case that you worked on the 2002 modelling project whilst an employee of the University of Melbourne?---Yes, that's true.

20 And is it your understanding that there was a contractual agreement between the University of Melbourne and Forestry Tasmania, regarding the conduct of that project?---I think there's a similar sort of ARC linkage agreement that is used in most of these kinds of cases, yes.

25 Were you aware of a contract between Forestry and the University of Melbourne for the conduct of the 2002 PVA?---An ARC contract. I think there has to be one.

30 And were you aware of any confidentiality provisions relating to the conduct of the 2002 PVA?---No, I'm not.

Did Professor Bergman tell you a couple of days ago that there were confidentiality provisions?---No, he did not.

35 So what was Professor Bergman's concern with you giving evidence, as he told you?---He didn't - he didn't exactly express concern with me giving evidence.

He just said that you should ask for a subpoena to be issued?---That's correct.

40 Now, you are no longer an employee of the University of Melbourne, are you?---No, I'm not.

And Professor Bergman is an employee of the University of Melbourne?---He is.

45 Professor Bergman is not an employee of RMIT?---No, he's not.

Did you think it unusual that an employee from a different institution was giving you advice about giving evidence in this matter?---He wasn't giving me advice about giving evidence.

5 Did you think it unusual that Professor Bergman advised you that it would be a good thing to ask for a subpoena to be issued to you to give evidence?---He didn't give me explicit advice in the way that you're suggesting.

It was just a suggestion on his part, was it?---It was discussed.

10

How did the data that you used for the 2005 remodelling come into your possession after leaving the University of Melbourne?---What data are you referring to?

15 The underlying data to enable you to run the model?---Actually it's a good question because I don't - there are some - I don't have in my possession most of that data.

20 Right. You understand, do you not, that to enable the 2002 PVA to be conducted Forestry Tasmania provided substantial amounts of data to the University of Melbourne?---Yes. I understand that.

And that data, or parts of it, are used to conduct the PVA model itself?---Yes, that's correct.

25

Now, when you left the University of Melbourne as an employee, presumably you returned data and intellectual property of the University of Melbourne?---What do you mean by that, sorry?

30 To come at it another way, did you take the data that formed the basis for the PVA model with you when you left the University of Melbourne?---I'm actually just trying to think if there was - I think my - I mean, I guess firstly it's - I believe that intellectual property resides with the, you know, the authors and contributors. I don't know what the exact contract is, but I think it would be
35 extremely unusual if it didn't. But secondly I think that the only I took with me were the actual population models, which were elements that I obtained from literature and from expert opinion. Unfortunately I wasn't as much involved in the actual development of scenarios, and the predictions on the scenarios. I was guided on that by other people, and provided with, you know, out put from
40 that to put into my biological sort of side of the model.

45 So when you left the University of Melbourne, just to be perfectly clear about this, is it your evidence that the only data you took relating to the PVA in which the University of Melbourne was contracted by Forestry Tasmania to perform, was those pieces - - -

MS MORTIMER: I object to that question because it involves an assumption that there is a contract, and this witness has not given that evidence - - -

MR C. GUNSON: There is a - - -

MS MORTIMER: - - - and it is not otherwise in evidence.

5

MR C. GUNSON: I will rephrase it.

I just want to be clear about what data you took when you left the University of Melbourne. Is it your evidence that the only data you took that related to the 2002 PVA involving the University of Melbourne and Forestry Tasmania was that information that you have just given evidence about, the population data and data from expert - or there is experts involved in it?---When you say took, what do you mean exactly? I mean - - -

15 Did it go with you?---Is it on my computer?

Did you retain possession of it?---Is it on my computer? Is that - I mean I don't - you'll have to be more specific. I mean it's electronic data that I think that you're referring to. I don't know.

20

If I could ask you to turn your mind back to when you were an employee of the University of Melbourne?---Yes.

25 At that time what data did you have access to which related to the PVA between the University of Melbourne and Forestry Tasmania?---Okay. So what sort of information did Forestry Provide?

No. What data - - -?---That I personally could have a look at on a computer?

30 Yes. What data in relation to this PVA did you have access to whilst you were an employee of the University of Melbourne?---Well, I believe there was a report on fire size and interval. I believe there were - I think there were forest stand data, so describing, you know, the elements of the forest that we required to produce a landscape model. I believe there were sort of predictions - or
35 there were scenarios, such as the ones that I've described, management scenarios and there - I'd have to sort of probably check my report to see what other data there could have been.

40 Were there algorithms?---What sort of algorithms?

Algorithms used in the modelling process?---Can you give me an example, or something that you mean?

45 Well, it is the case, isn't it, that in relation to the 2005 remodelling that Dr Wintle prepared and provided certain algorithms to you?---Algorithms. What sort of algorithms do you mean, like - - -

Well, for example, a nest disturbance algorithm?---Yes, okay. Yes, that was - yes.

5 So there was data at the University of Melbourne of that nature?---The algorithm is basically - it's just a mathematical representation of your assumption. So it's not really data as such, it's just how you mathematically write your assumption about nest disturbance.

10 And were there data files provided by Forestry Tasmania to which you had access?---I guess at the time, yes.

15 Now, where at the University of Melbourne was that data stored?---It was a computer called "Hal" very originally that actually a lot of this data stored on it.

And where was that computer located?---In Mark Bergman's computer laboratory.

20 And in order to access the data could you only access it from that computer?---Well, certain elements, yes.

25 And which elements were they?---I believe they were the scenario data. I think the forest, you know, composition data that I described. They were basically the GIS - geographical information system - of layers that were used as the basis for the landscape component of the project.

The data you understand to have been provided by Forestry Tasmania?---Yes.

30 And in order to access that data from the computer - I think you said called "Hal" - did you need to log on to it?---Yes, I think so.

And use a password?---Yes.

35 So access to the data was restricted?---Oh, yes.

Did you need to obtain an authorisation from anyone at the University of Melbourne to access that data?---I think the password was just given to people who were working on the project.

40 But it was a password that was given to people nominated to work on the project?---Yes.

45 It wasn't a general password that any student or academic of the university would know?---I don't believe so.

And could you copy that data from that computer?---Yes, it's not a very pleasant thing to have to do, but I think you can.

Did you copy it?---No.

5 Now, that data is - I withdraw that. The data provided by Forestry Tasmania contained on that computer forms the basis for the model; is that correct?---It forms the basis for the scenarios and the way that they were produced in that landscape model that I showed.

It produced as the landscape model?---Yes.

10 And without that data you cannot do the modelling; is that correct?---Well, yes.

15 It is an integral component of it?---Yes. You can use - I mean, basically the way it works - sorry, I won't go on.

Please, please, complete your answer?---I mean, I guess part of the science and art, or whatever, of modelling is that you take those layers and you have to convert them in a form that can be used in the package that you want to use.

20 Right. So the GIS layers, the forest composition data, the scenarios, and the like were converted into another format?---That's correct.

25 Now, where - and another step, was that format in the nature an electronic file?---It's lots of different files.

A series of files?---Yes.

30 Where were those files stored?---Again, "Hal" was the computer where most of that was stored.

And was the modelling that you undertook in relation to the 2002 PVA physically performed by you on the "Hal" computer?---No, not entirely, partly.

35 How much of it was performed on the "Hal" computer?---Several weekends probably.

And where was the rest of it performed?---Well, some of it I had to do on my computer.

40 And which parts did you have to do on your computer?---Running the simulations that I showed you, your Honour.

So the simulations were done on a stand-alone lap top?---Yes.

45 Now, how did the data get transferred from "Hal" to your computer?

MS MORTIMER: I object to the question and I object to this line of questioning. I have let my learned friend go on for a little while, but in my submission it is irrelevant and I object on the grounds of relevance.

5 HIS HONOUR: Mr Gunson?

MR C. GUNSON: In my submission, it is relevant, your Honour. I had hoped that the witness would concede certain matters but she hasn't. It will go substantially to the issues relating to the data, where it came from, the use to which it was put, and allegations in relation to confidentiality agreements being breached in relation to this issue and other matters relating to the credit of this witness in general. I don't propose to go too much further with it and would seek your Honour's indulgence to that extent as it is an important area.

10
15 HIS HONOUR: Ms Mortimer?

MS MORTIMER: What my learned friend has said in answer to my objection demonstrates, in my submission, why it is irrelevant. Because this evidence of this witness has been read and - but no objection taken to it, and therefore cross-examination on some purported breach of confidence in my submission is irrelevant. The evidence is in. There has been no objection taken.

20 HIS HONOUR: Mr Gunson, you said in any event you have very few questions remaining on this line; is that correct?

25 MR C. GUNSON: Yes.

HIS HONOUR: Well, I will permit you to do that.

30 MR C. GUNSON: Doctor, did you transfer the - I withdraw that. How did the data become to be transferred from "Hal" on to your computer?---It's actually hard for me to exactly recall, to be perfectly honest. I guess, I can't entirely remember. I can't entirely remember.

35 If you look at the computer, is it the same computer that you had?---Actually it's not, no.

40 When you left the University of Melbourne did you have data sufficient to enable you to continue conducting PVA analysis similar to the 2002 PVA?---I didn't have a set of data, I had to run some simulations as requested by Forestry Tasmania. I had to run some simulations and I - due to the business of my life - didn't have time to constantly be going back to "Hal" to run those simulations. So I did have to run some simulations on my own computer.

45 And when you performed the 2005 remodelling you received some assistance from Dr Wintle?---I did.

And he assisted you by preparing some data for use in the PVA model?---That's correct.

5 And where did that data that he assisted with - prepare, come from?---From "Hal".

So he got it from "Hal" as far as you know and then gave it to you?---He didn't give me any data from "Hal".

10 Where was the data that he assisted you to prepare for the purpose of the 2005 PVA physically stored?---On "Hal".

15 So he converted it into other material that you could use?---Well, I guess that's - yes, in essence, it's a translation so you can - you know, there's a whole lot of data and you have to basically form files that you're going to be using in your model.

20 And that was new data that you received at a time that you were no longer an employee of the University of Melbourne?---It wasn't data.

Well, what was it?---It was a model.

25 So you received the model in its entirety in 2005?---No, I mean, my role had to be something other than just pressing a button on the lap top to make it run. I was involved in, you know, making sure that the population part of the model was - you know, had the same assumptions and was robust and accurate.

Was it the landscape model that you received?---Yes.

30 And after leaving the University of Melbourne until you received that in 2005 is it correct that you did not have possession of the landscape model?---No, because the reason why we did this 2005 revision was that this new technology that I showed you came along. So previously it wasn't easy to do that landscape modelling at all, that's why we had to do this 2005 revision for
35 publication as requested by Forestry Tasmania.

Is it the case that the genesis of the 2005 remodelling was the fact that new software had become available?---Yes.

40 And you perceived that new software to be better than the software that had previously been used?---Yes.

And you had some experience in using that software, I understand, in Canada?---Yes, that's right.

45 And that was in late 2004?---When was it? Do you mind if I look at my CV?

Please?---Sorry, this makes me sound like - the years seem to go quickly. I think we were in Canada in 2003.

5 Now, you just said that Forestry Tasmania instructed you - you didn't say that, I withdraw it. You said that Forestry Tasmania asked you to do the 2005 remodelling?---Yes.

Who at Forestry Tasmania asked you to do that?---Simon Grove.

10 And when did Simon Grove ask you to do that modelling?---There was an e-mail sent to me and I can't entirely remember when it was but I believe it was early last year.

And do you have access to that e-mail?---Yes.

15

Is it an e-mail that you can produce in Hobart?---Let me just think. Perhaps. It's archived I believe perhaps on my computer so it's whether I can access archive messages. I don't know.

20 Could I ask you to endeavour to locate that e-mail and produce it?---Yes, absolutely.

25 Now, the 2002 model as you understand it - or the 2002 PVA, as you understand the situation was funded by Forestry Tasmania?---It was partly funded. I mean they are called ARC linkage grants so it was a co-contribution of a sort of smaller amount of money but the majority of the money is provided by the Commonwealth as a nationally competitive grants scheme.

30 And Forestry was an industry partner?---An industry partner.

And provided money to enable the project to be undertaken?---They were a co-contributor, yes.

35 In relation to the 2005 modelling that you undertook has Forestry - I suggest to you that Forestry has not funded any of that?---Sorry, can you repeat that?

40 I suggest to you in relation to the 2005 remodelling that you undertook, Forestry Tasmania has not funded that project of yours?---Well, it is a natural sort of extension to want to publish the findings that you - it's a very normal thing once the grant is officially over to have to continue to publish material from it. That's a very bog standard, the way that ARC grants work.

45 Isn't it the case that the project between the University of Melbourne and Forestry Tasmania came to a scheduled conclusion in about March 2003?---I don't really know to be honest. Sorry.

And a report as a consequence of that project was provided to Forestry Tasmania in about February 2004?---I believe that's the case, yes.

And at that point is it not the case that the project was over?---I don't actually sort of know how you exactly define a project. I mean part of academia is publishing and part of projects is publishing. Actually the ARC requires you to
5 publish otherwise you don't get the ARC grants so in some ways no, it wasn't over. It's not over until the results are officially published.

Now, you weren't personally funded by the grant were you?---In 2005?

10 In 2002, I am sorry?---Yes, I was.

You are named on a grant, are you?---No.

15 It is the University of Melbourne that is the recipient of the grant, isn't it?---Yes.

And the chief investigator was Professor Bergman?---That's correct.

20 And under the terms of the grant is it not the responsibility to publish of the University of Melbourne?---It's not a responsibility as such. It's just a highly desirable outcome of an ARC grant. I mean you don't have to publish but it's kind of career suicide.

25 HIS HONOUR: Publish or perish?---It is. It's true. It's sad but true.

MR C. GUNSON: So it is unnecessary to publish to comply with the terms of an ARC grant?---Well, you won't ever get another one.

30 Isn't it the case that in relation to this, or the 2002 project, that publication had occurred by the publication of the report to Forestry Tasmania in about February 2004?---It's not acknowledged by the Department of Education as being a sort of - it doesn't give you the points that are required - a publication that doesn't go through a journal, yes.

35 Now, what you are proposing to publish as a result of the 2005 remodelling is not a publication of the entire multi-species modelling PVA. Is that correct?---No, it's just one component.

40 As an employee of RMIT?---Yes. Although Melbourne University is listed as my affiliation. They demand that because they get the points as well.

Presumably because some work was undertaken whilst you were an employee with that institution?---That's correct.

45 And it is a paper that you intend to publish in Australecology?---Yes, that's right.

5 And you have not obtained the consent of Forestry Tasmania to do so?---I don't know what consent would actually be involved. The way these normally work is that you have a nice collaboration with an agency and we certainly are going to send a copy to Forestry Tasmania, in fact I think we already have sent a draft to Forestry Tasmania for any sort of comment. In the spirit of the collaboration that's what is done.

10 When did you send a draft to Forestry Tasmania for comment?---I believe that Mark Bergman sent a copy some time ago.

When do you believe that occurred?---I don't actually know.

15 Now, Professor Bergman is not listed as an author of the paper that you propose to publish is he?---There was always the intention of him being an author on the paper.

So he will become an author at some point?---Yes.

20 When did you first discuss the possibility of you giving evidence in this matter with anyone?---With anyone? So when was it proposed to me?

When did you first consider giving evidence in Bob Brown's action against Forestry Tasmania?---So when was I asked to?

25 Yes?---When was it? Sometime last year.

Early last year, late last year?---I actually can't exactly recall, to be honest. I actually can't exactly recall.

30 Now, you have attached to your affidavit a letter from Fitzgerald and Browne dated 4 October 2004.

HIS HONOUR: Five.

35 MR C. GUNSON: 2005. I apologise.

HIS HONOUR: 623.

40 MR C. GUNSON: 623. Do you recall receiving that correspondence?---Yes, I do.

45 And is that the first communication that you had with Fitzgerald and Browne in relation to you giving evidence in this matter, or was there communication prior to 4 October 2005?---Yes, there was.

And what did that communication consist of?---I believe it was a phone call.

Right. From?---Roland Browne.

And about how long prior to 4 October 2005 was that phone call?---I don't actually recall, to be honest.

5 Now, you read the expert witness guidelines prior to preparing your report?---I did.

10 And what did you understand the main thrust of those guidelines to be?---I think they had quite a few points, but my main - I think the main thrust is that you are an expert to the Court. You're not partisan. You - obviously it has to be your - your - that your understanding that is expressed in affidavits, and if you obtain, you know, advice, from others, and you - you are meant to actually articulate that.

15 Now, the 2005 PVA that you performed, could I suggest is and was capable of being stored on a DVD; is that correct?---Which part do you mean?

The model itself?---The models? I guess so.

20 And had you provided the report on - I withdraw that - the models on a DVD it would have possible for the Court and counsel to analyse the model itself, wouldn't it?---Oh, absolutely.

25 And you chose not to do so?---I was never asked to.

Did you consider paragraph 2.11 of the - as expert, as witness guidelines?---Can I please have a look at them? Thank you very much. Where did you say, 2.1?

30 2.11?---Yes, I did read that.

35 And as a consequence of reading that you still didn't consider whether you should actually provide the models themselves for use in this litigation, as part of your evidence?---No. That's true.

And you didn't seek the advice of Senator Brown's solicitors?---No, I didn't.

40 And you would concede, wouldn't you, that without access to the models themselves, it is virtually impossible for anyone else to assess the process that you have gone through to conduct the modelling?---No, I don't concede that. I mean, I don't know if this is beside the point, but a previous of model has - it was sent to Forestry Tasmania, so that - I think that - if - I know that's not sending it to the actual legal team, but Forestry Tasmania did have a previous version of all of the models.

45 Of the 2002 model?---Yes, that's correct.

But, as I understand your evidence, the 2005 model was significantly different?---No, it's not.

I suppose some different software?---There's - it's not different software.
5 There's a different element to the software that allows you to be more explicit about your representation of the landscape.

It has different assumptions?---Not substantially different assumptions.
10 There's some difference in the way that they're implemented, because well, this is a more sophisticated package that allowed you to be more sophisticated about the way that you implemented them.

For example, in the 2002 model 1080 poison - the effects of 1080 poison were incorporated into overall mortality rates; is that correct?---I think there were -
15 my recollection is that, yes.

And in the 2005 remodelling they were models as a discrete impact?---They modelled as discrete impact in both.

20 And likewise, when you prepared your report, is it not the case that you were asked to provide to Fitzgerald and Browne a copy of the manuscript to the 2005 remodelling?---Yes, that's true.

25 And you didn't do so?---Well, I was anticipating having it published - now being able to gets comments and having it published, but unfortunately my sort of life was extremely hectic at the time, and so I didn't manage to get it sort of completely ready for submission, and we didn't have a chance to sort of, you know, get comments from industry partners, for example, so it's not actually submitted for publication yet.

30 No. And you didn't provide a copy of the manuscript at all to Fitzgerald and Browne as a part of your report, as requested by them; that is correct?---Let me just see what my - I think I recall - I believe actually that a copy was sent to both parties, a draft was sent to both parties.

35 At the time that you prepared your report, it is correct, is it not, that there was a draft manuscript in existence?---Yes.

40 And at the time that you prepared your report to Fitzgerald and Browne had manuscript had not been published?---No, that's true.

45 And it is the case, is it not, that you could have provided a copy of your draft manuscript at that point in time?---Yes, I could have given what was - version that was under development.

And the draft manuscript - I withdraw that. You ultimately did provide a draft manuscript to Fitzgerald and Browne; is that correct?---Yes, I believe so.

Do you recall approximately when you did that?---Not entirely, no.

Was it after you prepared your report?---Yes.

5 And the draft manuscript is relatively extensive, isn't it?---Yes, it is.

And you would agree, would you not, that the draft manuscript contains significantly greater detail in relation to the 2005 model than your report to FitzGerald and Browne?---Yes, it does.

10

And the draft manuscript, you would agree, is a tool that can be used in an attempt to understand the modelling process upon which you embarked?---Yes, it is.

15 Did you not think or consider it important that your model be capable of being understood when you prepared your report?---Yes.

Did you not consider the provision of at least a draft manuscript would be of significant benefit?---It would have been great but I just didn't have the time.

20 It wasn't at all in a state at that point where it would have been at all useful and enlightening anyone.

So your report was dated 26 October 2005. Is that correct?---Which page is that on, sorry.

25

It is on the header of each page of your report?---Okay. Yes.

As at 26 October 2005 how detailed was your draft manuscript?---Not very detailed.

30

How long after 26 October 2005 was it before you provided the draft manuscript to FitzGerald and Browne?---I can't actually recall.

Do you have any idea?---I should have but I actually don't, I am sorry.

35

Do you recall if it was approximately a week, two weeks, a month, two months?---I actually really don't. It was a very busy time for me. I can't actually remember, I am sorry.

40 Would you be prepared to accept that a copy of the draft manuscript was sent by e-mail from Mr Roland Browne to Mr John McDonald in Forestry Tasmania on 24 November 2005?---I don't have any idea but if you tell me it was, I guess it was.

45 Does that time frame accord with your recollection of when the draft manuscript was forwarded to Fitzgerald and Browne?---As I said I can't actually recall it but I mean obviously it's likely seeing as that's when you - - -

After you completed your report and sent it to Fitzgerald and Browne how much work was undertaken in the next month on the draft manuscript?---I don't entirely recall to be honest. I have had to work on it over the last sort of year and I can't exactly remember in that time period how much was done. I mean what do you mean by - - -

Well, as I understand your evidence you didn't include - I withdraw that. As I understand your evidence the draft manuscript at the time that you provided your report to FitzGerald and Browne was in a very draft form and would have been of little use to anyone?---Yes, unfortunately.

Now, do you recall when - I withdraw that?---I guess it makes sense that I would have worked on it if it was sent in November. I mean clearly it was a time when I must have done some writing.

I wonder Dr Bekessy if you could have a look at this document please? Now, is that a draft report of a paper that you propose to publish?---Yes, it looks like it.

And is that a copy of the draft report that you sent to FitzGerald and Browne?---I don't know. I would have to look. I have done some many revisions of this that I can't exactly remember if it - I can't remember.

How did you send the draft report to FitzGerald and Browne. I withdraw that. How did you send the draft manuscript to FitzGerald and Browne?---It was probably as a word document.

By e-mail?---I think so, yes. I believe so.

I call for production of that e-mail.

MS MORTIMER: It is not produced now, your Honour. We will make inquiries.

MR C. GUNSON: I appreciate that. It might be convenient, your Honour, if at this stage I simply have that draft manuscript marked for identification.

HIS HONOUR: No objection to that course?

MS MORTIMER: No, your Honour. It's a matter I will deal with my learned friend about but no, no objection.

HIS HONOUR: All right. The draft manuscript will be MFI4.

45

MFI #4 DRAFT MANUSCRIPT OF DR BEKESSY

MS MORTIMER: Your Honour, if this is going to short circuit it I have instructions to accept that if that is what Forestry asserts, that this is the document that was sent by my instructor to Mr McDonald. I have instructions to accept that to be the case.

5

MR C. GUNSON: Yes, we have been trying to work to, your Honour, and if it is accepted then I tender the document.

HIS HONOUR: No objection.

10

MS MORTIMER: No, your Honour.

HIS HONOUR: MFI4 now becomes exhibit 16.

15

EXHIBIT #16 MANUSCRIPT OF DR BEKESSY

HIS HONOUR: That might go down on record as the shortest-lived MFI in what is shaping up as the longest case time I will ever have heard although I think the one that challenged it went for about 30 days before it settled and it was also a Tasmanian case.

20

MS MORTIMER: Those that are not from Tasmania might be tempted to say something, your Honour.

25

HIS HONOUR: Though it did have Melbourne counsel in it.

MS MORTIMER: Touche.

30

MR C. GUNSON: Probably explains the length.

Dr Bekessy, do you describe yourself as a concerned scientist in relation to Tasmanian forest?--I am a scientist. I am interested in the forests in Tasmania.

35

Do you hold the view that the Tasmanian Regional Forest Agreement is widely perceived in the scientific community to have failed to deliver the intended protection of environmental wilderness and heritage values that the State and Federal Government is committed to when they signed the National Forest Policy in 1992?---Yes.

40

Likewise, is it not your view that the scientific processes in the Tasmanian RFA were overwhelmed by political compromises?---I think you're reading out a statement that was made by 100 scientists.

45

Is that a view that you hold?---Yes.

And it is a view that you have held since about August 2004?---It's a view that many scientists, as you'll see the signature list, have held for a long time.

5 Is it likewise your view that the established criteria for forest conversation not fully applied?---Not fully applied?

Applied?---Could you say that again?

10 That in relation to the scientific processes in the Tasmanian RFA is it your view that the established criteria for forest conversation were not fully applied?---Yes.

15 And it is your view, isn't it, that there are large areas of high conservation - high value conservation forest that would have been reserved if the RFA criteria for forest conservation had been fully applied?---Yes.

20 And likewise it is your view that logging practices and the conversion of native forests to plantations have intensified in the seven years since the signing of the RFA? I think it is now eight years?---Sorry, can you repeat that, please?

25 It is your view that logging practices and the conversion of native forests to plantations have intensified in what is now eight years since the signing of the RFA resulting in record volumes of export woodchip production?---That's my understanding.

30 And it is your opinion, is it not, that this intensification combined with the well-documented inadequacies of the conservation-reserve system exemplified by the unprotected large areas of unlogged eucalyptus regnans, tall, open forest, has produced highly modified forested landscapes with diminished landscape values?---Sorry, can you, please, repeat that one again?

35 It is your view that this intensification combined with the well-documented inadequacies of the conservation-reserve system exemplified by the unprotected large areas of eucalyptus regnans, tall, open forest, has produced highly modified forested landscapes with diminished landscape values?---Yes.

And that likewise is a view that you have held for some time now?---Yes.

40 And it is your view that there is an urgent need for Australian Government intervention to significantly improve the forest-reserve system and to adequately protect landscape values?---Yes.

And that is a view that you have held for some time?---Yes.

45 From at least August 2004?---I guess that's when I signed that declaration alongside 100 other ecologists.

5 And you believe that the conservation of native forests - or the conversion of native forests to plantation is highly undesirable and is contrary to the spirit of the RFA, the national plantations policy, the forest stewardship council, and the Australian forestry standard?---Well, I'd probably have to actually look at each of those in detail to answer, to be honest.

10 So you are not sure about those factors?---Well, I know that there have been some changes, for example, to the Australian forestry standard. So I don't actually - I can't agree with every one of those points, to be honest.

It is a view that you have previously subscribed to however, isn't it?---Yes.

15 And likewise it is your opinion, is it not, that in light of the extensive changes that have occurred in many of the most productive forest ecosystems in Tasmania you believe that the reserve system should be significantly extended to include all high-value conservation forests?---Well, yes.

20 And that is an opinion that you maintain to this day?---I think there needs to be more work done to protect threatened species in Tasmania, yes.

And it is an opinion that you have held since at least August 2004?---Yes.

25 Now, those opinions that I have just read to you are contained in a document entitled Statement from Concerned Scientists, Statement of Support for Change on Tasmania's Forests; is that correct?---Yes.

And the first signature - I withdraw that. It says "signed comma" and then a list of names. The first name is yours, is it not?---Yes, I think it's alphabetical.

30 I wonder if the witness could be shown this document, please?---Thank you.

And your name is the first one on that?---Well, they have misspelt my first name, but yes.

35 And you authorised the inclusion of your name on that statement?---Yes, I did.

Your Honour, I tender that.

40 HIS HONOUR: Any objection?

MS MORTIMER: No, your Honour.

HIS HONOUR: Exhibit 17, Statement from Concerned Scientists.

45

EXHIBIT #17 STATEMENT FROM CONCERNED SCIENTISTS

MR C. GUNSON: Was that a statement that was prepared by the Wilderness Society?---Not in my recollection.

5 Who prepared the statement?---I received it from Professor Toni Norton.

And you were asked to sign it?---Sorry?

10 And you were asked to subscribe to it, essentially?---I was asked for comments on it and yes, if I wanted to - if I agreed to support it.

And at the time that you agreed to support it did you make any inquiries - I withdraw that. Did you consider the terms of the regional forest agreement?---Yes.

15 And how did you do that?---Well, I have had to throughout all of my work, I guess, become reasonably familiar with them. I wouldn't call myself an expert, but reasonably familiar.

20 And you considered the national plantations policy?---I guess I have seen it and I do recall some content of it, I think.

When you received the statement from concerned scientists how did you receive it?---As I said, I think I received an email from Professor Toni Norton.

25 Do you recall approximately when?---No, not really.

And what was your understanding of the intended use to be made of the statement?---I think it was - I believe perhaps a media release.

30 It was certainly your understanding, wasn't it, that her statement would be used to push the cause for conservation in Tasmania?---What do you mean by push the cause?

35 To aid the cause of conservation in Tasmania?---It's not aiding a cause, it's actually pointing out some scientific evidence that we agreed to.

40 It was designed, was it, to create media attention in relation to your perceptions regarding the forestry industry in Tasmania?---It's a form of - it's a public engagement that we as academics are encouraged to partake in.

Are you aware of any places where this statement from concerned scientists has been published?---No, I'm not. I don't think it made much of a splash, unfortunately.

45 Now, when preparing your report and your affidavit did you consider it appropriate to advise the Court of your views regarding forestry in this State?---No, I'm not here to talk about that.

I would be obliged if you would answer the question. Did you consider when preparing your affidavit and report whether you should disclose to the Court your views in relation to forestry practices in this State?---No.

5 Didn't even cross your mind?---No.

Even after reading the expert-witness guidelines?---Yes.

10 And your views - I withdraw that. You are aware that one of the purposes of the expert witness guidelines is to assist expert witness to avoid criticism that their evidence is maybe coloured in flavour of the party calling them?---Yes, I do.

15 And did you consider that the views of Senator Brown are quite clear as to his attitudes regarding conservation in general?---I didn't consider that relevant.

20 And you would agree, wouldn't you, that Senator Brown's attitudes and policies regarding the forestry industry in Tasmania are widely known?---Did I consider - what is the question, sorry?

You would agree that Senator Brown's views in relation to forestry in Tasmania are widely known?---I guess so.

25 And you understood, did you not, that this case related or relates almost exclusively, to the conduct of forestry operations in the State of Tasmania?---Yes.

30 Now, you are not an expert in the biology of the wedge-tailed eagle, are you?---What do you mean by expert?

Have you written papers in relation to Tasmanian wedge-tailed eagle biology?---I've written that report and I've written this draft manuscript.

35 Which is modelling of population trends essentially?---Yes.

40 You were reliant, when preparing the model, on the advice from experts in the relevant fields?---Partly, as well as a very extensive and time consuming literature search on my part, an investigation of every other bird similar to the eagle in their parameters so I feel like I'm very much across the literature on the biology of the species.

You have not studied the fecundity rates of the wedge-tailed eagle other than for the purposes of preparing the PVA model?---Well, no.

45 And you haven't undertaken any field studies in relation to the nesting habits of the wedge-tailed eagle?---No, I haven't.

And you would defer to people like Mr Mooney for that advice?---Absolutely.

5 And is it fair to say that any assumptions you make for the purpose of preparing the PVA model, are based either upon the expert advice you received or your reviews of the literature?---Yes, that's what building models is about, absolutely.

10 And in relation to the reviewing of literature, is it fair to say that you accept or are prepared to accept facts that appear to be uncontroversial within published research?---Yes.

15 And if there were divergent views, for example, in published research, it is more likely that you would be reliant on the expert advice that you receive from people such as Mr Mooney?---If there were divergent views then often that means you have to include that there is an uncertainty bound around that parameter.

You would agree that Mr Mooney has far greater experience in the study of the Tasmanian wedge-tailed eagle than you?---Yes.

20 Now, I want you to consider briefly the issue of 1018 poisoning in relation to the wedge-tailed eagle?---M.

HIS HONOUR: Are you going to be very long on that topic?

25 MR C. GUNSON: It will certainly go over in to lunch; if that is a convenient time, your Honour.

HIS HONOUR: Yes, well, I might adjourn now until 2.15.

30 MR C. GUNSON: As your Honour pleases.

ADJOURNED [12.40pm]

35 **RESUMED** [2.16pm]

40 **SARAH ADINE BEKESSY:**

45 HIS HONOUR: Just before we continue, the reason for the slight lateness is we seem to be bombarded with requests today from journalists and members of the public for copies of affidavits or part thereof and the Hobart Registry is not all that familiar with being so popular in that regard and my associate is having to assist. The requests so far - one related to a copy of an affidavit of Dr Bekessy and the relevant form has been faxed to the Mercury together with a copy of the relevant Court rule which permits inspection on application to a

judge and I raise this because it is a matter the parties might want to be heard on, I don't know, before I make a ruling on whether I am prepared to allow inspection.

5 And there has been a request just now which has caused us to be a little late
coming into Court by the South West Forests Group or some group with that
type of name - could be South West Forest Protection Group - for copies of
maps used in the proceedings. Now, forms have been sent to them. I hope
they will identify the maps they are talking about. That is a little bit more
10 tendentious but at the moment we can't assist any more but I thought it would
be prudent to put on record, not just to explain my lateness but to put on record
what is going on today in case the parties ultimately want to address me on it.
Sorry, has the witness been reminded that she is still on affirmation? Would
you like to do that?

15 THE COURT: Dr Bekessy, you understand you are still bound by your
previous affirmation?---Yes.

HIS HONOUR: Mr Gunson?

20 MR C. GUNSON: Dr Bekessy, after providing your report to FitzGerald and
Browne, did you meet with Professor Mark Bergman to discuss the fact that
you had provided such a report?---I can't actually recall, sorry.

25 Do you recall a meeting with Professor Bergman and Dr Wintle and yourself
on a Friday night in late October 2005 at which the report that you prepared
was discussed?---That's true.

30 So you do have a recollection of that meeting?---I recall talking about the
report.

35 And do you agree that during that discussion it was agreed between you, Dr
Wintle and Professor Bergman that documents relating to the PVA remodelling
that you undertook should have been forwarded to co-authors and Forestry
Tasmania for their information and comment before the results were shared
with a third party?---I don't recall that.

40 I suggest to you that that is exactly the agreement that you, Dr Wintle and
Professor Bergman came to at that meeting?---Okay.

45 So you remember the meeting but you don't remember what you agreed at
it?---I think we agreed that we should continue the collaboration as normal and
continue to share and collaborate with Forestry Tasmania as we have done for
the last few years.

So in answer to my question is it yes, I do recall what was agreed at the
meeting?---I don't think anything was agreed as such.

Did you agree or suggest to Professor Bergman that you would contact Forestry Tasmania directly in relation to, in essence, why the results of the 2005 remodelling were provided to a third party and not to Forestry Tasmania for their information and comment?---I actually do recall something now
5 which was that I did write an e-mail to Forestry Tasmania to explain my involvement and to sort of clarify that nothing was being presented that they hadn't already been aware of. There was no new information or substantially different information that I was presenting that they hadn't already been completely aware of.

10 And it is the case, isn't it, that you provided the results of the 2005 remodelling to the solicitors acting for Senator Brown for use in this case before you provided them to Forestry Tasmania?---I don't actually recall the sequence of events. I know a draft was sent to Forestry Tasmania as well.

15 What I suggest to you is that a draft was sent to Forestry Tasmania on 31 October 2005 after your meeting with Professor Bergman and Dr Wintle. Do you agree with that?---If that's what the e-mail says then I guess it must have been the case.

20 Okay. Now, is it the case that you provided the results of the 2005 remodelling that you undertook to the solicitors acting for Senator Brown for use in this case prior to providing them to Forestry Tasmania?---I guess technically yes.

25 Why technically?---Well, because they're exactly the same as the results you have had sitting on your desk since 2002.

It's a remodelling. It's different results, isn't it?---It's not different information.

30 I suggest to you that it is a substantial remodelling?---It's not a substantial remodelling.

35 So if I understand your evidence you don't consider that there is any difference of significance between the two models. Is that correct?---I have stated in my report in detail any differences that might exist - that do exist in my knowledge.

40 Now, you said earlier in your evidence that the draft paper or manuscript that you had prepared at about the time that you prepared your report for FitzGerald and Browne was so lacking in detail that it would not be of use to anyone?---With respect to any of the kind of technical details of the different package for example.

45 I wonder if the witness could be shown a copy of this document please?

Have you seen that document before?---It is probably quite similar to the other one. It's another draft of the manuscript.

Is that a copy of the draft - I withdraw that. Did you send a draft manuscript to Professor Bergman on the morning of 31 October 200?---I don't recall. I honestly don't recall.

5 Do you recall sending Professor Bergman a draft copy of your manuscript at all?---Yes.

10 How many times have you done that?---Quite a few. This is what happens when you are in a collaboration. This is where the authorship and collaborations evolve. You send many drafts and many people get to comment and it's a collaborative effort.

15 So the answer is many times is it?---I think so. I can't exactly recall. I sent it to a lot of different people. There were a lot of people involved in the publication. That's the way it happens when you co-publish.

I wonder if I could have that document back please?---Certainly.

20 And you said that you sent an e-mail to Forestry Tasmania explaining the report that you provided to FitzGerald and Browne?---Yes.

And on what dates did you send that e-mail?---I don't have that information. I can't recall.

25 To whom at Forestry Tasmania did you send it?---I think it was to Hans Drielsma.

And do you recall the e-mail address that you sent it from?---Yes.

30 Could you tell us that please?---sarah.bekessy@rmit.edu.au.

35 And do you recall if it was about the time of the meeting that you had with Professor Bergman and Dr Wintle that we have just discussed?---Actually yes, I do.

And have you retained a copy of that?---It'll be somewhere, probably on my lap top, you know - yes, probably.

40 I call for its production at a suitable time?---Sure.

45 MS MORTIMER: Well, your Honour, we will answer that call, but if this is some kind of game? The witness has just said that it was sent to Mr Drielsma at Forestry Tasmania who happens to be part of the respondent. Now, in my submission we shouldn't have to answer a call if it's already in the respondent's possession. It can be shown to the witness. This witness has to try and get it from Melbourne. It is ridiculous.

HIS HONOUR: Mr Gunson?

MR C. GUNSON: Your Honour, it is not a game. I have called for the production of the document. You might note that I asked questions in relation to the email address that it was sent from and the approximate date.

5

HIS HONOUR: Yes.

MR C. GUNSON: The intent is that Forestry may be able to find it through their IT system. I haven't seen a copy of it. My understanding - it is the first I have heard of this particular email. I have called for its production, but I have also adduced evidence which means that Forestry can search internally.

10

HIS HONOUR: Well, the call is going to be answered in any event, but the concerns raised have been noted, and you will no doubt take them into account.

15

MR C. GUNSON: Do you agree that it is accepted academic practice when conducting collaborative research with an industry partner to provide the industry partner with a copy of a manuscript prior to releasing it to third parties?---I think it's - I mean, I think that would probably be a good practice, yes.

20

Well, why in this case did you not do that in relation to the 2005 remodelling?---It was done at, you know, the same time and we felt that the content and conclusions were very similar to a report that the industry partner had had for a very long time.

25

Isn't it the case that you only provided Forestry Tasmania with a copy of your draft manuscript because Forestry Tasmania expressed concern about the fact that you had provided a report for use in support of Senator Brown's case without referring it to them?---No, it was always my intention to collaborate fully with Forestry Tasmania on this publication, no.

30

But you were going to give evidence against them first?---I'm not giving evidence against them, I'm actually giving evidence to the Court because they find my opinions and my knowledge and my model useful in this particular case.

35

You were going to give evidence as a witness called by a party opposing Forestry Tasmania before you gave them a copy of your manuscript. Was that your intent?---No. I mean - no.

40

Now, it is the case, isn't it, that in September 2004 you were contacted by the Wilderness Society to make a comment in relation to the report that had been given to Forestry Tasmania; is that correct?---That's correct.

45

And Professor Mark Bergman was also contacted by the Wilderness Society in relation to that?---That's correct.

And it was the desire of the Wilderness Society to use the report to achieve publicity, wasn't it?---I believe so, yes.

5 In fact, you know so?---Well, I think so. I'm not the Wilderness Society.

It is the case, isn't it, that you and Professor Bergman subsequently prepared a media release in relation to the report?---That's correct.

10 Out of fairness, it also included Dr Wintle and Dr Mick McCarthy as signatures to the media release?---That's correct.

15 And it is the case, wasn't - I withdraw that. You understand that the Wilderness Society was planning to use the report that had been provided to Forestry Tasmania as a platform to raise issues relevant to threatened-species day in 2004?---That's correct.

And you and Professor Bergman advised Forestry Tasmania of the contact that had been received?---Yes, we did.

20 And you did it by email?---I think so, yes.

And would you agree that it is an email that Professor Bergman sent?---Most probably, yes.

25 And you a copy recipient of it?---I think so, yes.

30 And at some stage during the course of - I withdraw that. The contact from the Wilderness Society was on 6 September 2004; is that right?---I can't remember the date. If you can find out when threatened-species day is, I guess it was some time before that.

35 It is 7 September 2004. Now, on the date that you were contacted by the Wilderness Society it is correct, isn't it, that you and Professor Bergman discussed whether or not you would make a comment to the Wilderness Society in relation to the report?---Yes.

And the two of you decided that you would do so?---No.

40 So you decided not to make comment to the Wilderness Society?---Correct.

If Professor Bergman had written to Forestry Tasmania:

Sara and I were contacted by the Wilderness Society to make a comment about our Forestry Tasmania report.

45 That sentence would be correct?---That's correct.

And they are planning to use it as a platform to raise issues relevant to threatened-species day tomorrow.

That is a fair assessment of your understanding?---Yes, that's correct.

5

And if he wrote:

We are of course only too happy to talk to anyone about this work and its implications.

10

Is that a view that you held jointly with Professor Bergman?---Well, yes, it is. I interpreted your question is did we formally, you know, co, sort of, author a release. We actually decided at the time that what was best to do was to, you know, depoliticise the issue by actually publishing a media release with the scientific facts, forwarded to Forestry Tasmania for their comment, you know, before we released it, and that way, sort of, just have the facts out there rather than anything that was unfactual.

15

Now, at what time did you - or were you contacted by the Wilderness Society in relation to this issue?---I don't entirely recall, it was before that threatened-species day.

20

It was the day before threatened-species day, wasn't it?---I don't recall, I think I just mentioned - - -

25

Do you recall the time of the day - I will go back a step. Were you contacted by the Wilderness Society by telephone or email, or some other means?---I think I recollect a telephone conversation.

30

And do you recall what time of the day roughly that was?---No, I really don't.

Do you recall if it was in the morning, in the afternoon?---No, I don't have any recollection of that at all.

35

Do you remember who you spoke to from the Wilderness Society?---It was a woman. I can probably try and remember, but it doesn't actually come off the tip of my tongue, to be honest, I'm sorry. It was a woman from the Wilderness Society in Tasmania.

40

Virginia Young?---I think that was her, yes.

And going back to what Professor Bergman may have said. If he had written to Forestry Tasmania:

45

I am letting you know so that you can at least have a little forewarning.

Is it the case that you agreed with Professor Bergman that you would provide Forestry Tasmania with some forewarning as to what you were going to do?---Absolutely, that's only fair.

5 Even if an email was sent at 5.59 pm?---Well, you know, something was going to be published the next day. I don't know if Forestry Tasmania would have preferred that it was sent simply from the Wilderness Society that wasn't necessarily based on the facts. I don't know.

10 And - - -?---We had to act fast. I mean - - -

And if Professor Bergman had said to Forestry Tasmania, we will be as balanced as we can, and we will try to use the opportunity to raise the agenda of the focus on conservation, and to address those topics that are costing us the most species, is that a fair statement of the agreement that you came to with Professor Bergman?---Absolutely.

15 Why didn't you telephone someone at Forestry Tasmania and advise them?---I personally didn't have contact with, you know, many people, you know, really who - the people I worked with at Forestry Tasmania had mostly moved on at that stage. I could have contacted Simon Grove perhaps, but - - -

20 Why didn't you?---We decided an email was best, because it was official and, you know, like it was there. You could see. We had to attach a document.

25 So that email sent to Forestry Tasmania advising them what was going to occur attached a media release, did it?---I don't remember exactly, but I think it did, yes. That was the point of it.

30 I am wondering if the witness could be shown this document, please? Now, you are identified as a copy recipient on that document, aren't you?---Am I?

Down the bottom?---Oh, okay. Yes. Sorry.

35 It is in an unusual place?---Yes.

And do you recall seeing that email?---Yes, I think I do.

40 And it is an email from Professor Mark Bergman - - -?---Yes.

- - - to Dr Drielsma, Forestry Tasmania?---No. It's to Mick Brown, Simon Grove and John Hickey.

45 I apologise. That is the recipients?---Yes.

Yes. And what date is the email?---Monday, 6 September.

And what time?---5.59 pm.

I tender that, your Honour. I only have one copy of it, and I will arrange for additional copies to be made.

5 HIS HONOUR: Are there any objections?

MS MORTIMER: I would like to have a look at it, your Honour.

MR C. GUNSON: I think that is reasonable.

10

MS MORTIMER: Thank you. Yes, no objection, your Honour.

HIS HONOUR: Yes, exhibit 18.

15

**EXHIBIT #18 EMAIL FROM PROFESSOR MARK BERGMAN DATED
06/09/2005**

20 MR C. GUNSON: And following the sending of that email you jointly prepared a media release with Professor Bergman, Dr Wintle and Dr McCarthy; that is correct, isn't it?---Yes. With the assistance of Melbourne University.

25 So Melbourne University assisted in the preparation of the media release?---Yes.

And the media release indicated that you would be available for comment at any time tomorrow; is that correct?---I can't recall.

30

I wonder if the witness could be shown this document, please?---That's what it says.

Now, that is a copy of the media release, isn't it?---I think so, yes.

35

And it says that, as in essence that you have made yourself available for comment to the media at any time?---Yes.

And could you read the last paragraph of the release proper?---

40

Given this media statement is timed to coincide with threatened species day, it is our recommendation that the risks posed to native flora and fauna by other threatening processes warrant at least as detailed an examination as were given to those of north east Tasmania. Most environmental assessments are woefully under-resourced and superficial. Land clearance, agriculture and the related effects of salination, urbanisation, disease and invasive species remain the most serious threats to biodiversity in Australia.

45

5 I propose to tender that media release, and I assume that my friend is going to ask to inspect it first, so maybe it is convenient if it be handed to her. Again, your Honour, I only have one copy of that at the moment, and will make copies available.

10 MS MORTIMER: It is an annoying habit, your Honour. Sorry. Your Honour, I might quibble only with its identification, because it doesn't, on its face, appear to be a media release at all. It is just a bunch of words that may have consequently been translated into the form of a media release, but that's not what it is.

HIS HONOUR: Is it best that it be marked for identification at this stage?

15 MS MORTIMER: Well, I am sure that a proper copy of however it was released, with the usual headings and things on it, could be found, if that is what my friend is about. So if it is marked for identification I don't have an objection, your Honour.

20 HIS HONOUR: Mr Gunson, are you happy to treat it that way?

MR C. GUNSON: At the moment, your Honour. My recollection is that the witness identified it as a media release.

25 HIS HONOUR: Well, perhaps I will have a look at it. Thank you. Dr Bekessy, do you know whether a media release in that form was issued?---I believe that Melbourne University issued it, yes.

30 Are you sure?---I'm pretty sure.

MS MORTIMER: Well, that is the point, your Honour. I mean, it is just a question of identifying it correctly. A statement understood have been released as a media release by Melbourne University. This witness is saying it wasn't released by her.

35 HIS HONOUR: Well, it is described in terms as a media statement. This last paragraph says:

Given that this media statement.

40 Mr Gunson?

45 MR C. GUNSON: It seems to me, your Honour, that the witness is quite content to accept it as being what she believes to be the media release. The words she just used were, "Quite certain." If it is a matter of mere description, then the description of it as a media statement may be more appropriate, but, in my submission, it is capable of being tendered.

HIS HONOUR: Do you want to be heard against that?

MS MORTIMER: No, your Honour.

5 HIS HONOUR: Exhibit 19.

**EXHIBIT #19 MEDIA STATEMENT PREPARED WITH THE
ASSISTANCE OF MELBOURNE UNIVERSITY**

10

MR C. GUNSON: Dr Bekessy, it is the case, isn't it, that you, from about September 2004, wanted to use the PVA work that you had done to support conservation causes?---No, that is certainly not the case.

15

And you wanted to use it to support the Wilderness Society?---No, that is really not the case.

20 What was the purpose of the media release?---It was avoiding an unscientific representation of our information and providing the most unbiased and fair description of our work even with, you know, a statement at the bottom highlighting other environmental concerns and other sort of forms of land management need to be looked at other than forestry. We are being as fair as we absolutely possibly could be.

25

Now, over the luncheon adjournment did you have the opportunity to attempt to locate the email from Forestry Tasmania authorising you to proceed with the 2005 remodelling?---I found an email to that - to that, yes.

30 MS MORTIMER: Yes, your Honour, I apologise to my friend, I ought to have indicated that. Dr Bekessy made some inquiries over lunch as a result of which a series of documents have been faxed to my instructor which I have not had a chance to have delivered to Dr Bekessy, so we will attend to that and it will be produced before the end of the day.

35

HIS HONOUR: Thank you.

40 MR C. GUNSON: Yes, I am content with that and I am sure that my friend and I can work out a mechanism to both view them prior to the witness being relieved.

Dr Bekessy, have you undertaken any field-based research in relation to the effect of 1080 poison on the Tasmanian wedge-tailed eagle?---No.

45 And in your draft manuscript you factor the impact of 1080 poison into the model?---Yes, as we did for the 2002 report.

And the PVA modelling is only as accurate as the data or assumptions that are entered into it?---Yes, that's true, and especially if some data and assumptions are shown to be highly significant and when you do a sensitivity analysis.

5 And it is possible to manipulate the results that are achieved from a PVA model by altering the assumptions, isn't it?---Manipulate? What do you mean, to change - you can test the sensitivity if you alter a parameter, you can see, as I described before, your Honour, that you can actually evaluate the impact of that particular parameter by how it changes the overall statistics.

10 By changing a parameter it is possible to change the predictions that the computer model makes?---It's amazing, some parameters go quite robust and so you can actually change them quite dramatically and they don't impact on the results and some are very sensitive, that's why you do a sensitivity analysis.

15 Now, I suggest to you that in fact a PVA model can be manipulated by manipulation of the underlying assumptions?---I don't really understand what you mean. You can do a thorough sensitivity analysis and I agree with that, yes, but I don't agree - I don't know what you mean by manipulation, you might
20 have to explain what you mean.

Well, if, for example, the assumed rate of mortality for 1080 poison had negligible impact you can increase the assumed mortality rate for 1080 poison and achieve a different impact?---You can run a sensitivity analysis on it
25 within the bounds that you reasonably assume that parameter might exist within, and if it changes the result then you know that that parameter is potentially a sensitive parameter.

Now, it is the case, isn't it, that the PVA assumed mortality from - I will
30 rephrase that. That it assumed decreased survivorship of Tasmanian wedge-tailed eagle chicks due to 1080 poisoning at 5 per cent?---Yes, and that was - I think there were conditions about - within the year of a plantation establishment only. In that year.

35 But the assumed rate within that parameter was 5 per cent?---Yes, that was the initial sort of input for the model, yes.

Now, you haven't undertaken any research on the effect of 1080 poisoning on the Tasmanian wedge-tailed eagle. Where did you obtain the assumed rate of 5
40 per cent from?---Through investigations and literature and discussions with Nick Mooney and I can't remember his name, but I think it's John and I certainly remember his surname, McIlroy.

45 And which literature did you look at?---There was actually a big report in - I think it was last year on the impact of 1080 on native fauna.

And is that referred to in the references of the draft manuscript?---Actually there is one - here is another one. McIlroy JC - on page 23 of the draft.

McIlroy JC 1984, the sensitivity of Australian mammals to 1080 poison - animals, sorry.

5 Animals?---Animals, but I actually - you know, I mean - yes.

And that has a figure of 5 per cent contained in that report, does it?---No, it doesn't.

10 So where did the figure 5 per cent come from?---Well, that was through discussions with both the author of that paper and with Nick, Dr Nick Mooney.

You believe that Dr - Nick Mooney has a PhD?---I actually don't know.

15 Why do you refer to him as Dr Mooney?---I sort of thought that he might. Out of respect, I guess.

HIS HONOUR: From the school of hard eagles?---That's right.

20 MR C. GUNSON: Now, it is your evidence, is it, that Mr Mooney nominated the figure of 5 per cent?---Yes.

And when did he nominate that figure?---In several discussions. He actually nominated a range of sensitivities.

25 And what was the range of sensitivities?---Between zero per cent, I mean, because we don't - we haven't got any data in the field, it's possible, even though we know that they are sensitive, they are sort of - the scientific data tells us that this bird in adult form is actually tolerant to 1080 in that it - you know, there's actually sort of toxicology studies that show you when they start to die as a result of 1080. However, both McIlroy and Mooney were
30 concerned that chicks who were fed the carcasses of dead animals that had died from 1080 might - are likely to be more vulnerable - or a chicks phases are always more vulnerable to sort of toxicology so, you know, they assumed that to be the case. They said there's likely to be around the 5 per cent mark, it is,
35 you know, possible that it's zero and it's possible that it's as high as 25 per cent.

Even though there is no evidence within the scientific literature as to the mortality rates - - -?---I don't think anyone has - - -

40 - - - within the Tasmanian wedge-tailed eagle from 1080 poisoning?---I don't think anyone has poisoned chicks to see if they die, no. A very nasty study, and unfortunately there is no monitoring data from Forestry Tasmania to tell us if they do.

45 So it is your view that Forestry Tasmania should be monitoring eagles?---Well, it is in the recovery plan for the species.

Allocated to Forestry Tasmania?---That the wedge-tailed be monitored - yes, that monitoring takes place.

5 In relation to 1080 poisoning?---I relation to the impacts that we know, and we suspect are occurring.

10 Is it - what is your understanding of the current use of 1080 poisoning by Forestry Tasmania?---I understand that someone goes out with a bunch of carrots for a couple of days in a row and the animals in the area sort of get used to getting carrots and then on one particular day they are laced with 1080 and they kill the native fauna that consume those carrots.

15 And that is your understanding of the operations of Forestry Tasmania relating to 1080 poisoning as of today, is it?---No, I've actually - I have further understanding of - that as part of the Tasmanian Community Agreement there was a phase out of - or there is meant to be a phase out of 1080 use on public land.

20 And can you explain to his Honour what your understanding of the use of 1080 poisoning by Forestry Tasmania currently is in the State of Tasmania?---I don't know.

Now, you read Dr Reed's affidavit before giving evidence?---Yes, I did.

25 I wonder if the witness could be shown Court book 4?---I've got it here.

Paragraph 43, page 1624?---Which paragraph, sorry?

30 HIS HONOUR: Is it 43 on 1624?

MR C. GUNSON: Actually I don't think it is that one. Yes, sub-paragraph (2), did you read that paragraph?---Do you mind if I quickly read it again?

35 Please do?---I have read it, thank you.

Now, does that refresh your memory as to the status of the use of 1080 poisoning by Forestry Tasmania in this State?---I think I probably stated something similar to that.

40 That is it not used by Forestry Tasmania?---That it's not used on public land. That it's the phase - it's a planned phase out on public land.

45 Can you nominate what private land Forestry Tasmania manages?---I don't - I don't know. I know that it's part of the Regional Forestry Agreement to actually convert native forest on private land into native forest plantations on private land because that was part of our management scenarios but I'm - - -

Would it surprise you to learn that Forestry Tasmania manages State forest?---No, that's what I said, public land.

And you understand public lands to be State forest?---Yes.

5

Or to include State forests, out of fairness?---Yes.

And do you accept that as of now 1080 poison is not used in State forests?---Absolutely, if that is what their policy is then - it's still used in - you know, in private land that affects the eagle unfortunately but it's not used in public land.

10

Now, it is the case, is it not, that when you performed the PVA model in 2005 with an assume 5 per cent mortality rate from 1080 poisoning, that it is demonstrated a negligible impact, an impact of something like .1 reduction in birds on - as minimum population?---Yes, absolutely.

15

And it is the case, isn't it, that you didn't trust the result?---No, I didn't. It was - it's one of the things about modelling that you know, you basically are trying to detect things that pop out at you as being interesting so if they can pop out at you and you think that, you know, you should - if it looks different to something you've discovered before in a model, then you go back and you re-test it. Sometimes its an error and sometimes it's actually an interesting result and it's counter-intuitive and that's the use of a model.

20

So what you then did was you ran the model again?---Yes.

And you adjusted the impact of 1080 poisoning to a 25 per cent increase in mortality?---No, no, that's not what - that's a false representation. I re-ran it and I found exactly the same results so that's why I wrote those very words that you just read to me. We also, as we did in other versions of the model, ran a sensitivity analysis on that parameter.

30

I wonder if you could look at page 18 of your draft manuscript? Have you got that?---Yes, I do.

35

Now, you see in the second sentence there - the second paragraph I'm sorry, the last sentence:

40

Decreased survivorship of chicks due to 1080 poisoning C had a negligible impact at the assumed rate of 5 per cent. I don't trust this result - could we re-run it -

45

but when it is increased to 25 per cent the risk of distinction becomes certain?---That's right. This is provided, you know, in good faith, I guess, as a collaborator, you know. I mean, I was pointing out that it was something that, you know, is slightly different to the last version of the model. We need to investigate it, whether it was an error or whether it was true. It turns out it was

actually true and so that's why I have - I have written those words. It's an interesting result.

5 Now, the table that is contained on that page has a number of columns in relation to it and a lot of letters. The first column is a description of the model or the impact - I will withdraw that. The first column is the scenario; correct?---Yes.

10 And you have listed there base model, native forest harvesting, tactical strategic RFA and those are the scenarios themselves that you have described?---Yes, scenario one, two, three, four, five, yes.

15 Yes. Now, below that where you have A only - A and B etcetera, down to the bottom of the page?---Mm.

Those are separate impacts within the RFA scenario, aren't they?---They are, we wanted to separate them out and have a look at which ones work, you know, having the most serious impact.

20 But it is within - it is a separation out within what you have described as the RFA scenario?---That's right.

25 Yes. The first column marked N is the number of the population of birds after 160 years?---That's correct.

And MP is minimum population?---Yes. Expected minimum population size, yes.

30 S is the sensitivity of the parameter to change?---Yes, that's right.

E is the risk of extinction within 160 years?---That's right.

35 And P with the little e,f and g are percentage risks of decline for 30 per cent, 50 per cent and 70 per cent respectively?---That is correct.

Now, if I could move initially to the scenario of base model. That assumes no impacts, correct?---Just fire.

40 Fire is the only impact?---Yes.

It also excludes, is this not correct, unnatural mortality from human persecution?---That's right.

45 And it shows a population after 160 years of 143 birds, has a minimum population of 88 birds and there is no risk of extinction?---That's correct.

Now, in the row below RFA where you have "A only", "A" is the impact of forestry operations, isn't it?---It's the reduction in the availability of habitat.

Yes. As a consequence of forestry operations?---That's correct.

5 So it is a reduction in the availability of nesting sites as due to reduction in forest age?---Yes. Actually, it's not just - sorry, can I, please, explain?

10 Yes?---It's actually not just forest age, we used a habitat model to predict the availability of habitat. This is a model developed by Mooney et al. So that incorporated age and a few other things.

And the reduction caused by "A" in nest sites, that leads to a change in carrying capacity; is that correct?---Yes, it does.

15 And when you ran the model only looking at the reduction of carrying capacity it is the case, isn't it, that there was no risk of extinction of the species?---Absolutely.

However, the numbers dropped to 64.2 birds?---That's right.

20 And the minimum population roughly halved to 44-and-a-half birds?---That's right.

25 Now, "B" is the impact of a reduction in fecundity in the year of harvesting due to nest disturbance?---That's right.

So if you add "A" you have a reduction in carrying capacity and you add "B" you are then modelling the additional impact of reduction fecundity as a consequence of nest disturbance?---That's right.

30 And that is nest disturbance caused by harvesting operations?---Yes.

Well, forestry operations in general?---Yes.

35 I think we assumed that it was the first year that a harvest took place or, you know, a repeat visit or rotation took place, or if a plantation conversion took place.

40 And the impact of a reduction of nest sites due to reduction in forest age together with a reduction in fecundity as a consequence of disturbance, or nest disturbance, resulted in no predicted risk of extinction?---That's right.

And compared to the "A only" impact there was a slight reduction in the minimum population to 42 birds?---That's right.

45 And there was interestingly a slight increase in overall numbers to 67 birds?---Yes, that's right at the end of the simulation.

But you would agree, wouldn't you, that largely adding "A" and "B" has insignificant consequence overall?---Well, you know, it depends what you look at, I think. You know, if you say for example look at the final column, PG, which is the risk of 70 per cent decline, it rises from 17 per cent in the absence of fecundity reduction to 30 per cent in the presence.

And when you increase, as you did when running your model, the reduction of fecundity from 35 per cent to 80 per cent, it effectively - I withdraw that. When you increase the reduction fecundity to 80 per cent it has a very significant impact on the species?---That's right.

Whilst the numbers there are - number of birds of 25.2, the minimum population of 4.3 is effectively a non-functioning species at that point, isn't it?---Yes.

So in essence by altering or changing one parameter from 35 per cent reduction fecundity to 80 per cent the model predicts the effective extinction of the species?---I guess it's not an effective extinction. I mean, you see what it predicts, it's quantified in very clear terms.

I will rephrase it. It causes a very significant impact on the species?---It does.

And that is purely by altering one parameter within the model?---That's right, that's what a sensitivity analysis is.

And then if you look "A" and "C", that is reduction in nest sites together with 1080 poisoning, at 5 per cent, again there is very little alteration between that and the "A only" scenario?---That's correct.

And if you combine reduction in nest sites together with a reduction in fecundity and add to that the mortality rate of 5 per cent due to the application of 1080 poisoning after plantation establishment the risk of extinction remains at zero?---That's correct.

The overall numbers remain around that 64, 65 birds and the minimum population is lower at 39.3 birds?---That's correct.

Isn't it the case that on the assumptions that you originally modelled it is only when persecution is added to the impacts that the model predicts the extinction of the species?---That's correct.

Because if we leave aside - because if we separate out each of the three other factors the species remains in tact as predicted by the model?---I wouldn't say in tact, I'd say - you know, I'd use the statistics, the population at least halves.

With those three factors of reduction of nest sites, reduction of fecundity due to disturbance, and increased mortality as a consequence of the application of 1080 poisoning, the model predicts a zero risk of extinction within 160

years?---Yes, it predicts a 42 per cent of a 70 per cent decline - 42 per cent chance of a 70 per cent decline and a zero risk of extinction.

Yes, that is what the question was?---Oh, sorry. I'm sorry.

5

It predicts zero risk of extinction?---Absolutely, yes.

Now, every time that persecution is added, which is the "D" factor, the model predicts the extinction of the species?---That's right.

10

And indeed you have also modelled it on an "E" only scenario which is the application of blanket rates of unnatural mortality in the absence of forestry operations?---That's right.

15

And it is correct, isn't it, that when such a scenario is modelled it effectively predicts the extinction of the species?---It predicts a 49 per cent chance of extinction.

That is on "E" only, is it?---Yes.

20

And what it predicts is:

After 160 years with blanket persecution in the absence of any forestry operations the population would decline to three birds.

25

?---Yes.

The minimum population would drop to 1.8 birds, and in those circumstances it is not surprising you have got 100 per cent chance of a 70 per cent decline?---That's right.

30

Would you therefore agree with the proposition that persecution is the single most threatening factor to the Tasmanian wedge-tailed eagle, based on your PVA model?---I think it's definitely something that needs to be seriously looked at if this is going to have - if this species is going to have a future, yes.

35

Is that a yes to the question I asked?---It's - what was the question again?

That it is the most significant threatening factor to the Tasmanian wedge-tailed eagle?---Yes, I agree with that.

40

And forestry operations, on the basis of your model, of themselves have a not insignificant consequence, but they are unlikely to lead to the predicted extinction of the eagle?---It depends if you include the increased risk of persecution as a result of roading due to forestry.

45

Because that is why I asked you forestry - impacts of forestry operations of themselves - - -?---Okay.

- - - and if I could ask you to exclude persecution?---Absolutely.

5 Now, can you explain, please, what the impact of roading as a consequence of forestry operations is on the eagle?---Sorry. Again this is something I defer to my expert, her information, but the understanding is that once, you know, a sort of expanse of native forest is opened up through roading it actually allows people in, vehicles in, perhaps power lines, perhaps - and all of these things that I guess cause unnatural mortality can be raised in their effect.

10 And in the model you have increased unnatural mortality as a consequence of roading resulting from forestry operations by 10 per cent?---Yes, that's correct.

15 And what do you understand the extent of roading in the Bass district to be?---I don't really know.

You have made no inquiries in relation to it?---As I said, I relied on my expert to provide me with information on this aspect of the model.

20 And who was that expert?---Nick Mooney.

25 Do you know what inquiries Mr Mooney made in relation to roading?---I believe he and another collaborator have, you know, some unpublished data on persecution rates that they, you know, rely heavily on.

So is it the case that Mr Mooney simply provided you with information, increase mortality by 10 per cent to allow for roading?---To test the sensitivity, of it included as a - as a, you know, very realistic assumption.

30 In what form did Mr Mooney provide that expert advice to you?---Over the telephone.

35 Do you recall when?---I believe it was last year some time. I think we discussed this issue - actually I believe that we originally discussed this issue a very long time ago. But we weren't able to include it in the model until this new version was actually sort of available. But I think it was something we discussed probably way back in 2002, or when we were originally putting the model together. We just had to acknowledge that that was a potential under-estimation of the impact of forestry at that point. We weren't able to include it at this point.

45 How much additional roading did you assume would be required over the duration of the model to enable the coupes that you assumed to be logged to in fact be logged?---As I said, the assumption is based on my expert, expert's opinion.

So you have no idea of the extent of existing roading within State forest in the Bass district?---No, I don't.

And you have not attempted to make any inquiries?---I didn't really see the point. I relied on my expert to give me, you know, some advice on how I should incorporate it into the model, and I went ahead and did that.

5

Do you agree that unnatural mortality as a consequence of the existence of roads will be occurring in any event, if there are roads already existing in the Bass district?---Mm.

10 Now, you accept that there are roads in Bass?---I don't know. I mean, I don't know. I assume there are.

Well, there are towns there - - -?---Yes, that's right.

15 - - - and presumably cars drive between them somehow. Now, so if I could ask you to assume some figures that within the Bass forest district there are currently existing approximately 13,200 kilometres of roads. Can you just assume that at the moment?---I can assume there.

20 Which comprises of roads, main roads, minor roads, tracks. All of those roads are currently a risk to wedge-tailed eagles, aren't they?---I don't know. Not actually - I imagine so. You could ask Nick Mooney that question.

HIS HONOUR: Including Paterson Street, Launceston?

25

MR C. GUNSON: I guess if one chose to pick up some carrion there, your Honour, on a Friday night. And after a Bar Association dinner.

30 And of that there are approximately 5400 kilometres of roads existing within State forest?---As of this date?

If I could just ask you to assume that at the moment. And it has been calculated that new roading to be able to access every coupe that hasn't yet been logged would require approximately 975 kilometres of further roads.

35 Would you agree that the increase in roads is approximately seven per cent of the total roading in the district?---Can I ask a critical question here? This model is one from 2001. Are you telling me data about roading increased since data at 2001, or from now until - - -

40 How about we approach this another way? Does your model take into account the extent of the existing road network in the Bass forestry district?---No. We were really - no.

45 Does it take into account the extent of the existing road network on State forest within the Bass forestry district?---No.

And does it take into account an analysis of the actual amount of additional roading required to log all of the coupes that have been identified as possible coupes to be logged?---We made an assumption.

5 So your assumption is simply 10 per cent?---Yes. We are talking about 37 per cent of the - I think - is that correct, 37 per cent of the district is still, you know, new forest opening up for logging, so we assume that that would be the case, there would be new roads in those areas.

10 Now, is it the case, isn't it, that to have an impact on the eagle new roading would need to occur in essence where the eagles are?---Within their territories.

And has an analysis been made of that factor?---No. It would be really terrific to do. I think it would be a really excellent modelling exercise.

15 It is the case at the end of the day, isn't it, that Forestry Tasmania, or anyone else cannot assess the validity of your model, in so far as it relates to the impact from roading?---Of course they can. I can give you - you can take the model away, and you can test it and change the assumptions for yourself, and that's the beauty of the model. You can test the validity, you know, to your heart's content if you want.

20 How can Forestry Tasmania assess the validity of the assumption that mortality caused by new roading will increase mortality of the wedge-tailed eagle by 10 per cent?---Can you please say that again?

30 How can Forestry Tasmania, or anyone else assess the validity of the assumption that you have made that new roading in Bass forestry district will increase the mortality of the Tasmanian wedge-tailed eagle by 10 per cent?---I guess they could talk to Nick Mooney about his unpublished data.

How does Forestry Tasmania - - -

35 MS MORTIMER: Your Honour, none of this was put to Mr Mooney, absolutely none of this, and it is unfair to this witness, in my submission, to continue to press her, when she has said that she has relied on Mr Mooney. And if it now being put by the respondent that there are inaccuracies in what Mr Mooney has said, none of that was put to him.

40 HIS HONOUR: Mr Gunson?

MR C. GUNSON: I think I can address it with a question immediately because I think I was about to move onto that next question in any event.

45 In your draft report or manuscript, I should say, you do not identify the basis of the assumption that mortality caused by new roading will increase by 10 per cent?---Don't I? I should have referred to Mooney pers com. It certainly would be in my most revised revision. I do apologise, it is not written there but

it is in my most up-to-date version which I am happy to table if anyone wants it but that's where it was from.

5 Now, to answer the question you do not identify the basis on which the assumed rate of 10 per cent was used. That is correct, isn't it?---That's unfortunately true.

10 So if we come back to the issue, how was Forestry Tasmania in a position to assess the validity of that assumption?---They could have asked me.

Had you included - I withdraw that. In the report attached to your affidavit it is also the case, is it not, that you do not identify the amount of persecution that was caused by roading?---Do you mind if I just have a look?

15 Please do?---That's true.

It is also the case, isn't it, that you didn't intend to give Forestry Tasmania your manuscript prior to giving evidence?---That's totally untrue.

20 When did you intend to give Forestry Tasmania the manuscript?---Well, we have been in communication about it for a long time and I really should have, if I was a sort of more organised person I would have had it done a long time ago. I have been in discussion about it for a long time. I think the second it was ready for submission that would have been the ideal time to actually send
25 it.

At the time that you completed your report and gave it to FitzGerald and Browne on 26 October 2005, when did you intend to give Forestry Tasmania a manuscript relating to your research?---I gave it to them.
30

No. At the time that you completed your report when did you intend to give it to Forestry Tasmania?---When I gave it to them.

35 So at the time that you completed your report on 22 October it was your intention at that point in time to provide a copy of your manuscript to Forestry Tasmania when you first gave it to them?---Certainly. That's only fair.

40 Is it seriously your evidence that on 26 October 2005 you intended to give your draft manuscript to Forestry Tasmania on 31 October? That is what was in your mind, was it?---If those are the times - when did I submit my report? Yes. I mean ideally, as I have said, it would have been better to send a manuscript that was finished months and months ago but the timing was such that it was only possible to send it at the same time.

45 Wasn't your evidence today to the effect that at the time you completed the report to FitzGerald and Browne, the manuscript was in such a condition that it could not effectively be used by any one? Is that your evidence or the essence of your evidence today?---Yes, you are right.

5 And isn't it also the case that the only reason you provided a draft manuscript to Forestry Tasmania on 31 October 2005 was as a direct consequence of the meeting that you had with Professor Bergman and Dr Wintle?---No, that's not true.

10 So that is not right?---No, it's not. I have always tried to keep an extremely good relationship with Forestry Tasmania and we have been collaborating effectively throughout this whole project so I had no intention of misleading them or leaving them in the dark about anything that we have ever done.

15 Didn't you agree with the proposition that it would have been better to provide Forestry Tasmania with details of your research, or the results of your research, prior to releasing it to a third party?---I did.

And I suggest to you that at the time you provided your report to Senator Brown's solicitors you had no intention of providing a manuscript - -?---That's utterly wrong and that's actually quite offensive.

20 May I finish the question?

HIS HONOUR: Wait for the end of the question.

25 MR C. GUNSON: That you had no intention at the time you provided your report to Senator Brown's solicitors, of providing the results of your research to Forestry Tasmania?---That is totally and completely untrue.

30 At what point in time did you intend to provide a usable set of results to Forestry Tasmania?---As I said as soon as it was available. Obviously I was able to send - I can't remember the exact timing of things and that is problematic here but it was not my intention - I never, ever maliciously gave information to one party and not the other. Absolutely not.

35 Well, what I suggest to you is that you provided a report to Senator Brown's solicitors with the intention of trying to avoid scrutiny of your model by Forestry Tasmania?---That's so untrue.

40 Okay. When you prepared your report at what time did you envisage completion of a manuscript in a form that would be usable to enable an assessment of your report to this Court?---I was working absolutely as hard as I could and I did it as soon as I could.

45 Could you please listen to the question and answer it. At the time that you provided your report to FitzGerald and Browne, when did you anticipate or envisage that you would be in a position to provide a usable set of results or manuscript to Forestry Tasmania?---I worked on it like mad to try and get it done. Look, I don't remember. I think I thought let's try and get it done as soon as I possibly can.

Okay. I will try and approach this from another way. On 26 October 2005 you finished your report to this Court. Is that correct?---Yes.

5 And on or about that date you provided it to FitzGerald and Browne?---This report?

The report that is annexed to your affidavit?---Yes.

10 And at that time, as I understand your evidence, your manuscript was not in a condition that it was of any use to anyone?---It didn't have tables completed. It didn't have sensitivity analysis, numbers and that.

15 Your assessment of the manuscript as at 26 October 2005 was that it was not of any real use to anyone?---My recollection is that at that point I was working like crazy to try and get the thing finished but it wasn't something that I was willing to sort of release because I felt it was incomplete. It didn't have, as I said, it didn't have the tables completed and it wouldn't have been the basis upon which people could really have - yes, it wasn't complete.

20 So it wasn't of much use to anyone in your opinion?---Well, no.

25 Okay. With that state of mind and just having completed a report for use in these Court proceedings how long did you think it was going to take you to finish your manuscript to a point that it was usable by someone to understand your model?---I just thought I'd work like crazy.

30 So you actually had no idea of how long it would take?---Well, I guess I hoped ideally to have it done within a week or something or as soon as I possibly could.

35 It is the case, isn't it, that you really have no understanding of how long it might take you to complete that manuscript?---The problem with publishing is that there are many authors, they all want input. It's part of the reason why it hasn't been submitted yet because I am still collecting comments from people and incorporating them and updating it with anything that I am provided with so yes, it's uncertain. You never know exactly when something is going to be ready. Finished.

40 And in academic circles or within a higher education institution October, November is a busy time of year?---Yes, very, very busy.

Are you involved in the examinations for courses that you run?---I am.

45 Are you involved in marking exams?---I am.

And by what time of the year are you required to have exams marked?---I can't actually remember the week. Week 13 of the semester. Week 14 of the semester.

5 Early December?---I think sooner than that.

When does RMIT release results to students?---I don't know.

10 When are you required to have results presumably to Student Administration?---I think it's around week 14, week 15 of the semester.

What is that roughly in terms of a date?---I don't know. It changes from year to year.

15 Just a rough estimate. I don't need a date. Last week of November? First week of December? First week of November?---I actually don't really remember.

20 And early December, is that a busy time for you as well?---It was definitely last year.

25 And in that period of time you knew that you would be greatly struggling to afford any significant amount of time to completing the manuscript. Is that correct?---I just thought I would spend every moment I could possibly working on it. I had to try and fit it in.

Every spare moment?---Not every spare moment. When I could. I have a lot of other things I have to do at the same time. I had to try and juggle it.

30 As it is, isn't it the case that you were almost two weeks late. I withdraw that. That you were two weeks late providing your report within the time frame requested by FitzGerald and Browne?---That's possibly the case.

35 If you look at the letter of instructions contained at - - -?---Okay. I will admit that probably was the case.

Have we got the instructions?

40 MS MORTIMER: Well, she has admitted it, your Honour.

MR C. GUNSON: Fitzgerald and Browne had asked you to have the report to them by 12 October hadn't they?---Do I need to check? If you say that's when it was then - - -

45 HIS HONOUR: What is the point of going into that further?

MR C. GUNSON: As I can leave that issue there?

HIS HONOUR: Yes.

MR C. GUNSON: The delay in the provision of your report was as a consequence of pressures of work?---Yes.

5

And other commitments?---Yes.

Now, you weren't prepared to release the manuscript until it was in a format that had been submitted to Austral Ecology?---That's what I ideally hoped for.

10

And did you really expect - I withdraw that. The process to have the manuscript in a format suitable for submission to a journal involved it having to go to the co-authors?---Absolutely, yes.

15

You had to, on your evidence, undertake substantial work in relation to it?---I had some simulations left to run.

And you had a substantial amount of content that needed to go into the manuscript?---Yes, I had to - absolutely. I had to sort of really, yes.

20

Austral Ecology is peer reviewed is it?---Yes.

So even if you had the time you needed to be extremely accurate to ensure that it would pass the peer review process?---Absolutely.

25

And you understood that this case was listed for trial in early December 2005?---I don't recall.

Did you understand that the Court hearing was starting in December?---I think that was the case.

30

Did you have discussions with Senator Brown's solicitors or counsel about potentially having to come to Hobart to give evidence in December last year?---Yes, I did.

35

It is simply the case, isn't it, that you were never going to have the manuscript to a level that you identified in your report of 26 October 2005 before the start of this trial?---It was possible. It depended on how much time I could have spent on it. I wonder if the witness could look at or be shown the affidavit of Steven Mark Reed which is book 4?---Yes, I have that.

40

HIS HONOUR: How much longer do you anticipate to be, Mr Gunson?

MR C. GUNSON: Probably an hour to a couple of hours.

45

HIS HONOUR: So you may not finish this evening?

MR C. GUNSON: I doubt it, your Honour.

HIS HONOUR: How are you feeling, Dr Bekessy? Do you feel like you need a break?---I am actually okay, thank you very much.

5 If that changes, let me know?---Thank you very much.

MR C. GUNSON: Page 1605.

HIS HONOUR: Sorry, what was that?

10

MR C. GUNSON: 1605, your Honour.

Now, I wonder, Dr Bekessy, if you could turn to paragraph 15 of that affidavit, page 1608? Now, you have read the affidavit, I assume?---Yes, I have.

15

And you understand that Dr Reed is the Chief Scientist at Forestry Tasmania?---Yes, I do.

And did you read his curriculum vitae?---Yes, I did.

20

And you would agree that he - - -?---I read his - yes, I did. I think I must have been - yes.

His curriculum vitae is exhibit 1 to the affidavit?---Okay. Thank you.

25

Which is page - - -

HIS HONOUR: 1637.

30

MR C. GUNSON: 1637?---Yes. Thank you, your Honour.

Have you read that curriculum vitae?---I think I remember flicking through it, yes.

35

Would you like a moment just to peruse it?---The CV? Okay. How carefully do you want me to look at this?

Just a general perusal of it. I am not going to ask you detailed questions about the content of it?---Okay. Well, in that case I think I'm probably done.

40

Now, you would agree, wouldn't you, that Dr Reed has a lot of academic and professional experience?---Yes.

45

And has written a large number of papers either as a primary author or as a co-author?---Absolutely.

And you would agree that in general terms as a result of his experience that he is appropriately qualified to make the observations that he does in his

affidavit?---Well, I don't know. I mean, I don't see any information that presents an experience with population modelling for eagles, but - - -

I wonder if you could look at paragraph 10 where Dr Reed says:

5

My investigation has not required expert knowledge of the particular population modelling software packages used in this research or expert knowledge of the Tasmanian wedge-tailed eagles beyond information that is available in the public domain or as presented in affidavits filed in these proceedings.

10

You would agree with that statement, wouldn't you, given the contents of his affidavit?---Well, not necessarily. In a sense, he's saying that the last five years that I have spent doing this has been useless.

15

Now, in paragraph 15 of his affidavit, Dr Reed says:

Population viability analysis, PVA, is a process that models mathematically the size of the population of a species over time to allow estimation of the risk of a particular decline in population size within a defined time frame.

20

Do you agree with that sentence?---Yes.

25

And the process can take explicit account of habitat requirements, biological characteristics of the species such as reproductive rate and mortality rate distributions under different circumstances and factors of stochastic occurrence over time such as wild fire.

30

Do you agree with that?---Yes.

Various threats to a species can be included in the modelling depending on the particular software used, the models can be spatially explicit taking account of the arrangement of habitat variables across the landscape, and can allow for dynamic changes in habitat in space and time.

35

You agree with that?---Yes.

40

And the outputs of PVA can include prediction of risks of the species becoming extinct during the modelling period, prediction of risks of its population falling below any particular threshold size during the modelling period, prediction of its minimum population size during the modelling period, and prediction of the expected population size at the end of the modelling period.

45

And that is an accurate statement as well, isn't it?---Yes.

Now, you were involved in the 2002 study and if I could ask you to look at paragraph 17 where Dr Reed says:

5 *The multiple species modelling project was instigated partly as a response to intensification of forest management in Tasmania following the Tasmanian regional forest agreement. The project was not designed to make direct predictions of risks of extinction to any of these species or to make direct predictions of any particular population sizes or to make specific management recommendations.*

10

You understand that is the case; is that correct?---Well, actually not entirely, no.

15 Okay. What do you disagree with in relation to those two sentences of Dr Reed?---Sorry, which was the sentence again - not designed to make direction predictions of risk and - - -

Okay. If we could start with the first sentence in paragraph 17:

20 *The multiple species modelling project was instigated partly as a response to intensification of forest management in Tasmania following the Tasmanian regional forest agreement.*

25 Do you have any issues with that sentence?---No, I don't.

25

Okay. The next sentence - and we will take this in stages:

30 *The project was not designed to make direct predictions of risks of extinction of any of these species.*

30

Do you agree with that statement?---Well, the risk of extinction was used as the metric so you couldn't help - I mean, it was used as the thing to evaluate the scenarios. So it was always an intention to do that.

35 Okay. Is it your evidence that the purpose - or one of the purposes of the 2002 study was to make direct prediction of risks of extinction of the species studied including the wedge-tailed eagle?---Yes, to compare management scenarios.

In relation to the following statement:

40

40 *The project was not designed to make direct predictions of any particular population sizes.*

45 Do you agree with that proposition?---Again, I mean, risks of extinction, population sizes, expected minimum population, they're the statistics you use to evaluate management scenarios.

And the project was not designed to make specific management recommendations.

5 Do you likewise disagree with that?---Yes, I do. I think the whole point of it was actually looking at different management options.

10 As I understand your views in relation to that part of Dr Reed's affidavit is this a fair assessment? That Forestry Tasmania retained - has entered into a collaborative agreement with the University of Melbourne to predict the risk of extinction of amongst other things the Tasmanian wedge-tailed eagle?---I actually don't - I don't have the original application that the Melbourne University wrote. Perhaps you could refer to that? I mean, I was brought in as a modeller on this project. So I don't really feel like this is my field of expertise, the original intent of the project.

15 So in relation to that entire sentence:

20 *The project was not designed to make direct predictions of risks of extinction of any of these species, or to make direct predictions of any particular population size, or to make specific management recommendations.*

25 The position is you don't know, isn't it?---Well, I don't - no, I actually do know that that was definitely and it has had to be part of it, because they were the tools that we used. They were - and I think it would be quite easy to get a copy of the original application to look at what the wording was. But, I mean, this, in my - there is no other way of doing it. You have to - I mean, you have to make those kinds of predictions, otherwise you can't evaluate the management scenarios.

30 There is a difference, isn't there - I withdraw that. Dr Reed explained his position by saying:

35 *That is, the modelling process was not intended to calculate actual risks. Rather it was designed to investigate whether PVA of a range of representative species could lead to efficient means of managing multiple species in the forest management decision making process.*

40 It is that latter sentence - - -?---It doesn't - - -

- - - which is the purpose of the PVA, is it not? Now, before you answer that, if you don't know please say, I don't know?---I have - you know, I have some knowledge of the application, and I certainly have read the introduction to the report. So if I can base my understanding on that, then I'm happy to give an opinion, if you want it.

45 HIS HONOUR: Well, what do you say about that sentence?---Well, I just think that the - let me just have a little think for a second. But, I mean, the

reason why - but the reason why you are wanting to manage the multiple species in the forest management decision making is because you're interested in those species, and other species. So the - I just don't see - I don't understand why this project would have been done unless they were actually interested in these species, and - - -

Sorry. You are saying that the matters at the top of that page, such as predictions of risks of extinction, and direct predictions of population size and management recommendations, whatever the niceties were of the wording of the actual purpose, those matters were so inextricably bound up in what you were doing that it would be nonsense not to have regard to them?---I think that's right.

Is that the effect of your evidence?---Exactly. Exactly.

MR C. GUNSON: So from that perspective is the extract contained in that paragraph from the report of the multi-species modelling project being:

The species in this study are a representative sample of the taxa that might be affected by human activities in these forests. Any plans that focus on managing or protecting these species in particular were to change their status from examples to management goals. This is not the intention of this research. The idea rather is to learn from the general principles and patterns that emerge from the analysis.

So who ever wrote that part of the report is incorrect, are they, in your opinion?---I don't really know.

In fact that is the case in relation to your knowledge as to the very purpose of the multi-species modelling project, isn't it? You don't know what its purpose was for?---No, I worked for a year doing it, so I would have felt like a bit of an idiot if I had no idea what the purpose was. I had, you know, an understanding, and I could have been completely wrong. But I did have an understanding of what the purpose was.

Now, if I could ask you to look at paragraph 20 over the page. Dr Reed says:

Substantial levels of uncertainty are associated with the numerical outputs of PVA. This is because the modelling is based on a large number of assumptions about biological systems and processes, and because of the problematic nature of the dicastic population models.

And he cites McCarthy. You agree with that sentence, or those two sentences?---It's sometimes the case that there is substantial uncertainty associated with outputs, and sometimes it isn't.

So in your opinion Dr Reed is incorrect in that statement?---The uncertainty is correlated to the uncertainty in the variables that you put into a model. If

you're really certain about the variables that are put into the model, then your uncertainty about its predictions are lowered.

5 And uncertainty also arises with a number of factors relating to how the model is structured in general; is that correct?---I don't really understand the question.

10 Well, for example significant uncertainty will occur with a species such as the wedge-tailed eagle being a landscape animal if the geographical model is too small?---I still don't really understand, I'm sorry. Could you please re-ask that question?

15 Say that this model had been conducted in relation to the wedge-tailed eagle purely on the area of the Wielangta State Forest, the subject of this application, with only a small number of birds within a small geographic range. There would be significant uncertainties in relation to the operation of the model in those circumstances, wouldn't it?---Well, I don't think it makes sense really to do it that scale.

20 That is right, because for example one fire could well lead to the predicted extinction of the species, because the sample area is too small?---Well, that's right. I mean, if you want to define extinction as a local extinction, then it would be extinct.

25 Dr Reed also says:

The most reliable outputs from PVA are not numerical values of, for example, extinction risks for a species, or predicted population sizes. Instead, the most reliable outputs from PVA are relative predictions.

30

Do you agree with that statement?---Can I please have another look at it?

Yes, please?---Sorry, I kind of lost my point there. Which paragraph are we on?

35

Paragraph 20, the fourth line, it starts after the citation of McCarthy's?---Yes, I think I stated before that it's made far easier to rank scenarios than to put numerical values on those predictions.

40 And as well he then says:

That is, the ranking or order of scenarios, according to their associated predicted numerical risk of extinction values, from greater risk to lesser severe risk, or predicted population sizes from smaller population sizes to larger population sizes.

45

?---Yes, that's true. Ranking is more reliable. It also depends on the magnitude of the difference.

And that is right, isn't it?---That ranking is more reliable, yes.

And Dr Reed also says that:

5

A further reliable outcome from PVA is the ranking or order of predicted effects of the management scenarios on risks of extinction or risks of decline in population sizes. These rankings are taken to be reliable, even when absolute predictions are accepted to be unreliable.

10

Again, he cites McCarthy, the later article 2003. Do you agree with those statements of Dr Reed?---Yes, I do.

And at paragraph 21 Dr Reed says that:

15

The out put of PVA is not an accurate predictor of risk of extension or future population size. It is specifically acknowledged in the report of the multi-species modelling project. "While there is considerable uncertainty associated with using population viability models to predict actual risks of extinction."

20

And he cites Taylor, McCarthy, and a number of other articles:

25

PVA models appear to be useful for predicting changes in population size and ranking the severity of the effect of different management strategies.

And he continues:

30

In addition, the absolute estimates of extinction risk are not reliably estimated, because many of the parameters and model structures are poorly understood. However, the results give a clear picture of the sensitivities of expected population sizes to alternative management options.

35

And you would agree with those statements, would you not?---I partly agree.

40

Which parts do you not agree with?---It's also known, and I could quote McCarthy, that if you have an extinction risk that - extinction risks are most unreliable when they are sort of low-ish or medium. You know, they are not particularly reliable statistics in those situations, whereas he also says that when they extinction risk, you know, is extremely high, for example, then it is a more sort of reliable statistic in that, you know, if it is one, for example, then it is a far more reliable statistic. It's also - so I mean, I think it's always better to look at parameters and to look at parameters something - like expected minimum population size is a better thing to look at than extinction risk but if that is zero and extinction is one, then it is a - I think it is a, you know, a fairly reliable result. The other thing is that, you know, it's only reliable if you can -

45

in your sensitivity analysis you get a consistent result so, you know, within the reasonable bounds of assumptions you change those reasonable bounds and it dramatically changes extinction risk then you are less likely to feel confident to depend on those extinction risks but if you change, you know, your range
5 within the realistic assumptions and they don't change dramatically, then you can believe them more strongly, I guess.

I wonder if I could ask you to turn forward in that affidavit to paragraph 33, please? Page 1615. Now, you were taken to this paragraph during your
10 evidence-in-chief and you, in relation to the sentence of Dr Reed:

Two components of the eagle's environment are individually predicted in this analysis to cause overwhelmingly greater impacts on the eagle than all other modelled components combined.

15 And he then identifies those two components as human persecution only and in forest persecution only. You said that you did not agree that those two components caused overwhelming - or as predicted in the analysis, to cause overwhelmingly greater impacts on the eagle and all other modelled
20 components combined. Do you remember saying that?---Yes, I do.

And why did you say that?---I don't think it's overwhelming, it's certainly greater but as I think I mentioned previously, if you look at even the most conservative estimate of forestry impact with no other - no kind of - no
25 persecution, no nest disturbance and no 1080 poisoning, it still leads you to a halving of the population so I think the word "overwhelming" in some ways trivialises other impacts which I don't think is a - I think that is a sort of misrepresentation.

30 Isn't it the case that mathematically the impacts of human persecution and in forest persecution, are significantly greater on the basis of your model than all other impacts combined that you have modelled?---They are definitely greater.

Now, if I could ask you to look at paragraph 38 of the affidavit, please? In the
35 second sentence of that paragraph Dr Reed says:

In many cases it is difficult to ascertain the particular assumptions and values used as full details are not given in the respective affidavits or reports.

40 That is a correct statement, isn't it?---I'm sorry, I think I'm lost again. Are you - paragraph?

Paragraph 38?---Sorry.

45 The second sentence which starts a bit over half-way on the third line?---Oh, okay, okay. Well, yes, I guess that is the case.

And why did you not provide the particular - or details of the particular assumptions and values used either in your report or your affidavit?---Well, I guess for a number of reasons. Firstly because, as you know, I was under duress to get it finished; secondly because the assumptions were clearly spelled out in the 2002 report and I clearly stated which assumptions had changed in the affidavit in my report and finally I did provide a copy of the manuscript with - at the time with my best sort of you know, explanation of those kind of assumptions. Obviously it was a draft manuscript so it has been - you know, it has evolved from then till now but at the time it was my best information that I had available.

From whom were you under duress to complete your report?---Well, I was asked to produce it and I had - I was already two weeks late.

You said that you were under duress?---Well, not under duress.

What did you mean by that?---I was feeling - I was late to provide something to the Federal Court of Australia.

Well, you weren't actually providing to the Federal Court of Australia at that point in time, were you?---Well, I was a witness to the Federal Court of Australia and I was asked to produce a report and I was late.

And you were asked by Roland Browne to provide it to the firm of Fitzgerald and Browne, weren't you?---Yes, with the notion that it was going to the Federal Court of Australia.

And was Mr Browne phoning you and applying pressure to get the report finished?---No, he wasn't.

So the duress was simply the effluxion of time?---Yes.

No one said anything to place any pressure on you to get it done?---I think I did have one phone call asking if it was ready.

Now, is it your evidence that all of the parameters and assumptions are identified in the 2002 report?---Yes, most of them. I mean, I have a - as I've mentioned before a latest copy of the manuscripts that might also be useful, together with that, with the 2002 report I feel like - yes.

I notice it is 4.15.

HIS HONOUR: Do you have much to develop in the current line of questioning?

MR C. GUNSON: I can certainly deal with this paragraph extremely quickly.

I wonder if you could just look at the sentence at the start of paragraph 38:

A number of important parameters using both the 2002 modelling and the more recent 2005 remodelling of forestry activities by Wintle and Bekessy have not been assigned realistic values.

5

Now, do you maintain the position that all of the parameters necessary to read your 2005 remodelling can be found in the 2002 paper?---That, combined with my report, should cover most of them.

10 I suggest - - -?---Actually we have already discussed the fact that I failed to mention the 10 per cent parameter. That's true.

I think your Honour that that is a convenient point.

15 HIS HONOUR: We will adjourn until 9.15.

MR D. GUNSON: Before you do that, your Honour, you did raise with us early this afternoon the issue of releasing a copy of Dr Bekessy's affidavit to the press and I don't know whether your Honour wishes to hear us as to that.

20

HIS HONOUR: Well, I haven't had a formal application yet.

MR D. GUNSON: Your Honour will bring that to our attention I imagine whenever it arises.

25

HIS HONOUR: My associate will bring it to my attention and I will bring it to yours.

MR D. GUNSON: In due course to us. Thank you, your Honour.

30

HIS HONOUR: His people will speak to their people and my people will speak to me.

MR D. GUNSON: And we will have somebody speak to our people.

35

MS MORTIMER: Your Honour, Dr Bekessy and Dr Wintle are both on planes out of here tomorrow and we would be grateful for an indication that my learned friend expects that both will be finished.

40 MR C. GUNSON: Your Honour, I expect Dr Wintle will be significantly shorter than Dr Bekessy and I have very little doubt in my mind that we will be completed tomorrow.

45 HIS HONOUR: Does that mean I shouldn't have a computer screen in front of me.

MS MORTIMER: And can I just also for the purposes of our planning then, we will ensure that Dr McQuillan is available tomorrow if that is the indication and I take it we should do that. We are starting at 9.15.

5 HIS HONOUR: Yes, I intend to sit roughly these hours, 9.15 to around about a quarter to 11 or some convenient time and then assuming it is a quarter to 11, and then 11 to 12.30.

MS MORTIMER: If your Honour pleases.

10

HIS HONOUR: But if there is a problem we can have a short break and we can sit slightly longer tonight/

15

MS MORTIMER: We are happy with that if Dr Bekessy is happy to go on a bit longer, your Honour.

HIS HONOUR: I don't want to do it if it is not necessary because the witness has been in the box for a while.

20

MR C. GUNSON: Your Honour, I really don't think it is necessary. I can't see myself still standing cross-examining one of these witnesses at 3 o'clock tomorrow afternoon.

25

HIS HONOUR: All right. Yes, and then the lunch break is 12.30 to 1.30 and then we have got a session 1.30 to 3. We will adjourn now until 9.15.

**MATTER ADJOURNED at 4.20pm UNTIL
FRIDAY, 10 FEBRUARY 2006**

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