

TRANSCRIPT OF PROCEEDINGS

O/N 2543

FEDERAL COURT OF AUSTRALIA

TASMANIA DISTRICT REGISTRY

MARSHALL J

No TAD 17 of 2005

ROBERT BROWN

and

FORESTRY TASMANIA and OTHERS

HOBART

10.00 AM, WEDNESDAY, 8 FEBRUARY 2006

Continued from 7.2.06

DAY TWELVE

**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, Dr Michaels, can you go back to the witness box please. You have already been affirmed and you are still under that affirmation.

5 <KARYL FRANCES MICHAELS, ON FORMER AFFIRMATION
[10.01am]

<CROSS-EXAMINATION BY MR D. GUNSON

10 HIS HONOUR: Mr Gunson?

MR D. GUNSON: Thank you, your Honour.

15 Dr Michaels, yesterday I raised with you as I did on the 16th of December whether you would produce your field notes; are you able to produce those this morning?---Yes.

20 Will you produce them please? Thank you. Now, if you just retain those for one moment if you would, please. Those field notes related to what period and what specific activity?---They relate to 1994 when I was doing the work for Greg Blake on national estate conservation significance.

25 Is that related to coupe 7A?---Yes, I believe one of the sites there is - - -

Thank you. Your Honour, I seek leave to inspect that document. I wish to give it in turn to those who instruct me in the matter and turn to their scientist to have a look at and I will return it to the witness if we don't intend to cross-examine on the document.

30 HIS HONOUR: Any objections to that course?

35 MR TREE: I have not spoken with Dr Michaels about her preference in relation to that. I doubt there will be any difficulty with it. I don't imagine it is critical to her present research. It may be that there is some other matter in it that she doesn't wish disclosed, but I wouldn't anticipate, we can talk about it over morning tea unless my friend is wanting to do it now - I see. Well, perhaps Dr Michaels can be asked, perhaps via your Honour whether there is any difficulty she has with that course.

40 HIS HONOUR: Do you have any difficulty with that course?---No, as long as I get it back eventually, that is fine.

45 MR D. GUNSON: Yes, thank you, your Honour. If that document could be handed to me, please. You can just give it to Mr McDonald, I will be one moment, your Honour, bear with me.

HIS HONOUR: Thank you.

MR D. GUNSON: Thank you.

5 Now, thank you for that, Dr Michaels. Are you a member of the Green Party?---No.

Are you a member of any conservation organisations or groups?---Yes, I'm a member of the Wilderness Society and a member of the ACF.

10 And the Wilderness Society positively activates that there should be a cessation of logging in Tasmania, does it not?---I believe so.

Well, you know that to be the case don't you?---Yes.

15 And there is no believe so about it, you know that that is one of its aim, the cessation of logging in Tasmania?---Yes.

You also advocate the cessation of logging in Tasmania do you not?---Not actively no.

20 Not actively, but it is your view that there should be a cessation of forest activities that involve logging?---No, I believe there should be a cessation of logging - of activities that involve clear felling.

25 But you do not espouse the view that there should be a cessation of selective logging?---Not necessarily, no.

30 Did you consider whether or not you should disclose these views and in particular your membership of the Wilderness Society to the Court when addressing the issues of expert guidelines?---No.

Could I have those please. While we are on the subject do you belong to any other conservation organisations or movements other than the Wilderness Society?---No.

35 HIS HONOUR: I am sorry I thought you earlier said the Australian Conservation - - -?---Oh sorry I thought he said other - - -

40 He said other than the Wilderness - - -?---Oh sorry, other - yes, I said the ACF Conservation Foundation.

MR D. GUNSON: So you are a member of the Wilderness Society and how long have you been a member of the Wilderness Society?---I'm not sure, probably about nine years.

45 And a member of the Australian Conservation Foundation was it?---Yes.

And does that espouse the cessation of clear felling?---It espouses conservation of Australia's natural resources.

5 But does it espouse the view there should be a cessation of clear felling, particularly in Tasmanian forests?---Yes.

Yes, it does, doesn't it?---Yes.

10 And you are in fact a councillor with that organisation are you not?---Yes.

And where are you then within the hierarchy as a councillor for that organisation?---I'm just a councillor for Tasmania.

15 And does that mean that you are a senior executive of the organisation in this State?---No.

20 Why didn't you include any of this information in your affidavit, particularly the affidavit of the 18th of October of last year?---I wasn't aware that it was relevant.

Well, you said that you have read and understood the Court's expert witness guidelines, didn't you?---Yes.

25 Did you in fact read the expert witness guidelines?---Yes.

And did you not think that having membership of these organisations which clearly espouse views that are contrary - I withdraw that - clearly espouse views that are to the effect there should be a cessation of clear felling, that that was something you should tell the Court?---No.

30 You didn't even consider it?---No.

35 You didn't consider that membership of those organisations may lead you to a position where you have a degree of partiality in the matter, that you are biased?---No.

Didn't think that at all?---No.

40 Do you know Senator Brown?---I have met him on a couple of occasions, not formally.

45 Just a casual acquaintance?---I wouldn't even say that, someone who said hello and shook your hand on a couple of occasions I would not classify as an acquaintance, no.

Is he a member of the Wilderness Society to your knowledge?---I have no idea.

No idea at all?---No idea.

But he strongly supports that society does he not?---I have no idea, I don't know what Senator Brown's personal preferences are.

5 The Wilderness Society though supports Senator Brown and his endeavours to stop clear felling in Tasmania doesn't it?---Probably.

Well, you know that to be the case don't you? You only have to go down to the Wilderness shop and look at the posters on the wall don't you?---Yes, but if I
10 did that I would probably know that, but - - -

Well, you know that to be the case?---No.

15 Senator Brown relies very heavily upon the Wilderness Society and its members to provide him with electoral support during elections - - -

MR TREE: This is a matter well outside of this witness' competence, if it is relevant to any issue in these proceedings.

20 HIS HONOUR: Mr Gunson?

MR D. GUNSON: If it is within the witness' knowledge I am sure she is able to say that, your Honour.

25 HIS HONOUR: But how is it relevant to anything I have to determine?

MR D. GUNSON: Because of, I submit, the witness has failed to disclose this membership of these organisations to the Court and there is in my opinion a
30 lack of candour.

HIS HONOUR: Hasn't the last question gone beyond that?

MR D. GUNSON: I want to move to the point whether she has been actively involved in those campaigns.

35

HIS HONOUR: Well, perhaps that could be asked directly.

MR D. GUNSON: Yes, I will.

40 Have you been actively involved in campaigns to support Senator Brown's election to the Senate?---No.

Nor his re-election to the Senate from time to time?---No.

45 Thank you. Do you know what a habitat model is?---Yes and no. I know what some habitat models are. If there is a specific one that you are mentioning, I don't know.

Well, what is your definition or understanding, more correctly perhaps, of a habitat model?---I don't have one.

5 Well, would you accept this definition that it is a mathematical representation of the characteristics of areas utilised by a species?---Yes.

And you would accept that that is a valid definition of a habitat model?---Yes.

10 Is that a definition that you have applied when considering habitat models?---No.

What definition have you applied?---I have not considered habitat models.

15 Right. Have you looked at habitat models at all with the broad-toothed stag beetle in Wielangta?---If you are talking about the habitat model that was used in the Meggs and Munks paper, I have read about it.

You have read that?---I have read that.

20 And do you have any difficulties with the habitat model that they have used?---Yes.

25 You disagree with it, do you?---Yes. Not with the model but with the input and the results, yes.

Well, what about the model per se, is it an appropriate model for them to have adopted or used?---No.

30 Why is it inappropriate?---It was inappropriate because it failed to consider a lot of sites that were put in.

Have you ever used a habitat model yourself?---I do believe I just said that I haven't.

35 You have not done it?---Have not.

And you don't think that Meggs and Munks may be more experienced in this area than you for that reason alone?---Well, yes.

40 Would you agree with this proposition that the quality of a habitat model is dependent on two things. First, its predicted ability and second, its utility?---Yes.

45 Now, the habitat model that they used satisfies those criteria, doesn't it?---No.

Why not?---I believe it has poor predictability given that it predicted that the core area of habitat, only a third of the sites where they actually located the

beetle were in that predicted area and over two-thirds of the sites were outside that predicted area therefore I don't think it is particularly predictive.

And that is your complaint about it?---That's my opinion, yes.

5

Well, how would you have constructed a habitat model if you were in the position of Meggs and Munks?---I don't believe that I have the experience or ability to talk about that at the moment.

10 But they are more experienced than you in this area. It is as simple as that, isn't it?---They have used a model and I have not, yes, that's true.

15 Thank you. And you would agree no doubt that every conservation biologist would like to be able to produce models that have both a high predictability and high utility?---I can't comment on other ecologists.

But if you were signing a habitat model, that is what you would be doing, wouldn't you? You would be wanting to have high predictability and high utility?---Yes.

20

Yes. But in the case of a threatened species where knowledge is generally quite limited even a coarse model can still give high utility, can't it?---Not if it is not unparticularly predictive, no.

25 You obviously still subscribe to the view that the broad-toothed stag beetle resides in dry forest per se?---I believe that it's possible that it resides in both dry and wet forest.

30 It is possible and that is about the best you can do, isn't it?---Yes, I believe that's the best anybody can do on present knowledge.

If you found a beetle some 200 metres into dry forest, you would be more confident in concluding that it resides within dry forest than if you found it say 20 metres from the edge of damp forest?---Yes.

35

And if you found a breeding population you would be more confident still, wouldn't you?---Yes.

40 When examined by Mr Tree on the last occasion on 16 December you said - and it is page 703 of the transcript - that the species is:

Far and away the rarest stag beetle we have in Tasmania.

?---Yes.

45

Do you adhere to that?---Yes.

That is your view, is it? It is the rarest stag beetle in Tasmania?---That's my view, yes.

5 What about the stag beetle that occurs in north-east Tasmania and you are going to have to excuse me of my lack in pronunciation, hoplogonus bornemisszai?---Bornemisszai?

10 Yes. That is rarer still, isn't it?---No, it actually has - although it is very localised, it actually has quite high population numbers.

This has only a known range of 12 square kilometres?---Yes.

15 And the habitat for that species is estimated to be in the order of only 700 hectares, isn't it? That is addressed in Munks and Others in 2004?---If that says that there I would certainly agree with that.

20 Whereas the broad-toothed stag beetle has a range of something like 280 square kilometres of which something like that is considered 41 kilometres is considered habitat?---Yes, but potential habitat is not actual habitat.

That is the difference as far as you are concerned?---Yes.

25 So you wouldn't rate the north-east beetle that I have just described as rarer than the broad-toothed stag beetle?---No.

On par?---Close, yes.

30 Do you draw a distinction between extinction of a species and extirpation of a species?---No.

35 Surely, extirpation refers to the loss of a population of a species as opposed to extinction which is the complete loss of the totality of the species?---I think in the sense that you have just used, extirpation of a species and extinction, they mean the same thing.

So you see no distinction between the use of the words?---I see no distinction in the way that you just used them, no.

40 All right. I want to come back to something I asked you about yesterday. Riparian corridors and stream-side reserves. You appear - and you will correct me if I am wrong I am sure - to use those terms interchangeably in your affidavit. Do you understand them to be the same thing?---No, they're not the same thing.

45 What do you understand a riparian corridor to be?---An area of vegetation alongside a waterway.

An area of forest adjacent to a waterway whose make-up is in fact influenced by that waterway?---Sorry, I don't quite get that.

5 Well, do you simply say that a riparian corridor is an area adjacent to a stream or a river?---Yes, a waterway.

Or do you add to that whose make-up is influenced by the presence of that stream or river?---Its make-up would be influenced by the stream or river, yes.

10 Yes. So you need that influence, don't you? And a stream-side reserve is something that is dictated under the terms of the Forest Practices Code?---Yes.

Yes. A man-made reserve?---The reserve is man made, the vegetation is not.

15 And you understand it to be basically a management tool developed for use in forest management to conserve in-stream values during forestry operations. Is that a fair description?---It was my understanding that it was to conserve more than in-stream values.

20 Or it was to conserve the values alongside the stream?---Yes, vegetation adjacent, yes.

And as you are aware depending on the class of the stream whether that class is 1 to 4, the width of the retained vegetation can vary?---Yes.

25 Yes. In your affidavit of May last year you described Meggs and Munks 2003 as a significant publication on the beetle. You don't disagree with that now, do you? You adhere to that view?---No.

30 And you would agree that the two documents that you were given late last week and which we discussed yesterday would also fall into the same category as a significant - each of them being a significant publication on the beetle?---Yes.

35 Because both of those have increased the knowledge of the beetle and its whereabouts?---Yes.

And significantly so?---Yes.

40 You don't disagree with that, do you?---I agree that it's significantly improved our knowledge, yes.

And given a better indication than perhaps before the start of this trial as to where the beetle tends to habit?---Yes.

45 Yes. And both articles - both research papers, I suggest, are extremely beneficial in enlarging the overall knowledge of that beetle?---Yes.

5 Yes. And your criticisms of them, I suggest, are really minor criticisms?---Yes and no. I mean, yes, I agree that we have been - they represent substantial increase in our knowledge. I'm just very disappointed that it's still not sufficient knowledge to enable us to get a real grasp on habitat requirements for the beetles. I believe that they weren't extensive enough. If that's a minor criticism then yes, it's a minor criticism. If you consider that's a major criticism then it's a major criticism.

10 But you would have to accept this, that both reports have, as you have said fairly, increased the general level of knowledge and both reports have been quite rigorous in the way in which they have gone about trying to determine the presence or otherwise of the beetle in either damp or dry forest?---To the extent of the surveys, but given the limited number of sites in both surveys I still consider that they weren't comprehensive enough.

15 You wrote an article some time ago, The Effects of Clear-Fall Harvesting on Lucanid Beetles in Wet and Dry Sclerophyll Forests in Tasmania. Am I correct in understanding there that you only used pit-fall trapping and did not engage in log rolling?---Yes.

20 In your affidavit you say of pit-fall trapping that it is a measure of activity?---Yes.

25 It is a limited measure of activity, isn't it?---Yes.

Because you are very dependant on the activity level of the beetles at any one time to use the traps effectively?---Yes.

30 And at the end of the day log rolling must be the preferred method of trying to determine whether or not these animals exist in any given area?---I suggest it's a useful method, not necessarily the only method that can be employed.

35 But if they are as we believe or you believe them to be dwelling under the logs that is the most effective method, isn't it?---It is an effective method, but as we found it does have its limitations in the size of logs that can be rolled.

40 Are you able to say to his Honour whether or not you did any sampling looking for the beetle in coupe 17E at Wielangta?---I'd have to have an idea of where coupe 17E was. Is that the one that I - - -

Did you go on the trip to Wielangta last December?---Oh, okay, in that case, that was coupe - yes.

45 The first coupe we went to was 17E, the one that logging has already occurred on?---Okay. Yes.

Now, it was near that coupe I believe where Professor McQuillan found a broad-toothed stag beetle. Now, bearing that in mind are you able to say

whether or not when you did your work there that you trapped in 17E?---I don't believe so, no.

5 And the second coupe we went to was 19D, the one that has not been logged. Again, did you do any sampling there?---On this particular time?

10 Yes, on any time?---I would have to look at a map to see exactly where it was but if it's uphill of coupe 17E, yes, then that was one of the areas I believe we sampled.

15 Yes. Just bear with me one moment, we will give you a map?---But it might be better just to ask Peter if that was where we sampled because I don't actually have notes or anything as to the samples that we sampled.

20 Could the witness be shown this map, please, that is exhibit number JMM5? Attached to Mr Meggs' affidavit. Just ignore the writing that is on it, please?---Oh, right.

25 See if that assists you?---Yes. I'm not sure that it will. As I say, because I was not involved in plotting the locations I'm unsure as to exactly where it is.

30 But you can't - please tell me but just take your time?---No, I couldn't be 100 per cent sure so I wouldn't like to say. In fact I think I would have to ask Peter. I was one of the trips but, as I say, it was not my sampling program so I couldn't say for sure.

35 Am I right in thinking that on previous occasions prior to going there with Dr McQuillan that you didn't go to 19D?---No, I don't believe that is one of the areas that I have sampled previously.

40 Thank you very much. You are aware though that since your very early sampling of Sandspit area where you found no beetles that at least two have been found in that area?---Yes.

45 So when you first sampled Sandspit, and that is presumably along the Sandspit River, is it?---There, and on the top and on the other side, yes.

And for your Honour's information the Sandspit River was the place where we stopped after we came out of Wielangta and where your Honour went along that relic walk.

HIS HONOUR: Where we terrorised the bike riders?

MR D. GUNSON: Yes, that is the Sandspit River.

Now, initially your first survey in there was looking for the beetle in there and you found none?---I wasn't specifically looking for that beetle. That was part of another survey that I was doing.

But if you had found one as a bi-product you would have recorded it?---Yes.

And you certainly didn't find any?---No.

5

And you, at that stage, were satisfied that there were no broad-toothed stag beetles within that area, weren't you?---Well, not necessarily within that area - within the immediate area that I was sampling, yes.

10 Yes. And that was the effect of your report, that they weren't present there?---Are we talking - - -

This is your earlier report?---Okay. So you are talking when the other one - okay?

15

Yes?---No, I didn't find any, yes.

And you are aware that since then at least two have been caught within that area which you sampled?---Is that part of the Munks' paper - the Richards' paper?

20

Yes?---Okay. I wasn't quite sure because the maps didn't actually show the additional sites or the additional control sites so I wasn't aware that that was the - - -

25

For the purpose of this question, accept as a fact that two have been caught within that area since along the Sandspit River where you had previously sampled?---Yes.

30 That, I suggest, illustrates the problem with the beetle that you didn't find it when you did your report some years ago. Subsequent researchers have found it there?---Yes.

35 All that really means is you didn't find it because you didn't turn over the right bit of wood or it didn't wander into a trap set by you or it wasn't there at all and it has recolonised?---Yes, or that it was just not there at the time I was looking because it was the wrong time.

Wrong time of the year?---Yes.

40

And it may have been somewhere else. Or it may have been there the whole time, hidden away inside a log and you just didn't turn up the right log?---Yes.

45 You said in paragraph 7 of your affidavit that you collected specimens with a Greg Blake some years ago in respect of the broad-toothed stag beetle?---Yes.

Did you say when that was?---'94, '95 I think.

And how extensive was your surveying at that time?---Well, again the survey was not looking specifically for the BTSSB but was just surveying generally and I think we covered a fairly wide range area of Wielangta with 33 sites I think initially and that - - -

5

Are you able to tell us whereabouts in Wielangta that was? Was it in the Sandspit reserve area to start with?---Some sites were located around that area, yes.

10 Right. Were any sites located in dry forest?---Yes, quite a number of sites were located in dry forest.

Yes. Any located in completely wet forest?---Yes.

15 And I presume that would be the Sandspit reserve area?---Close to there, yes.

And what about damp forest?---And damp forest, yes.

20 And what was the total number of beetles captured on that occasion? When I say beetles I mean the broad-toothed stag beetle?---Yes, but when you say occasion, what do you mean by occasion?

25 Well, the time you were there with Blake?---Again that is kind of an ambiguous question. I went out once with Greg. The rest of the time I conducted surveys on my own occasionally taking somebody, who was listening for birds, with me so the trapping took place because it was pit-fall trapping over a number of occasions.

30 And was a report written about that particular survey?---I believe that Greg wrote a report, yes.

You didn't write one?---No.

35 And have you got his report?---No, I have never seen a copy of the report.

Never seen it?---I believe my name is on it as is usual for the fact that I did quite a lot of the field work and identified all the beetles but I have never seen the report, no.

40 But the report isn't attributed to you as one of the authors?---I just said that I believe that my name is on the report but I have never seen the report.

Well, you believe your name is on it as a co-author?---Yes.

45 But you didn't author it?---No.

And didn't co-author it?---No, but it is standard practice in academic areas, particularly because I had done quite a lot of the field work and survey work

and identified the beetles that it is kind of standard that you acknowledge that as part of the authorship.

5 So if we found the report it would be Blake and Michaels on whatever the subject was?---Well, I think there was other authors on the paper as well. I am not sure.

But you have never seen it?---No.

10 I see. Do you know if the information obtained as a result of that particular survey is available on any data base?---Some of the information on the beetles will be available on the data base. I remember giving some of the information on the beetles to the RFA back at the start of the RFA process.

15 Can I just ask you how long that survey took, at least your involvement in it - that is with Blake?---As part of my involvement? I am unsure. I think it was a few months.

20 At paragraph 11 of your affidavit you refer to the work that you did with Dr McQuillan at Wielangta in late 2004?---Yes.

And you said:

25 *In late 2004 I participated in further field work with Dr Peter McQuillan at Wielangta and was present when Dr McQuillan retrieved specimens from traps we had set some weeks earlier. One of these specimens was found in area of dry sclerophyll forest.*

30 Now, when you say "retrieved specimens from traps" is that a generic term referring to any specimens or are you suggesting that he retrieved more than one broad-toothed stag beetle from the traps?---It's a generic term referring to the contents of the pit-fall trap.

35 So there was only one broad-toothed stag beetle found in the McQuillan survey, is that correct?---To my knowledge. You would have to check that with Peter.

That is your understanding though, isn't it?---That's my understanding.

40 And were you there when he found that beetle?---I believe so, yes.

45 You say you believe so, I am trying to establish whether you actually were there or not?---I remember that we found what we thought was a broad-toothed stag beetle in one of the pit-fall traps but if you have seen the beetles, they are very small, very hard to positively identify and we weren't - while we were quite excited we didn't make a positive identification I think until Peter took it back to the lab and had a better look.

But you were there when that beetle was found in that trap?---Yes.

And there is no doubt in your mind about that?---I am fairly if that was the same beetle that later proved out to be the beetle then yes, I was there.

5

And what is your memory about where that trap was located? It was in dry forest?---To my knowledge, yes.

Or is that your belief that it was in dry forest. I am just trying to find out what your memory of finding of this solitary beetle is?---It was in dry forest.

10

Which was adjacent to, or in close proximity to, damp forest?---Yes.

Separated by what, 30 to 40 metres?---Yes.

15

Do you have any knowledge of the distance one of these beetles is capable of moving?---No, we don't actually have any real knowledge because nobody has ever done any studies but an upper estimate of 200 metres has been mentioned by Meggs and Munks.

20

But that is an estimate only isn't it?---Yes, it's still an estimate.

Because nobody really has done any research at all?---No, we don't know for sure.

25

They can't fly?---No.

Although they have wing cases, but they long lost their ability to fly haven't they?---That's right, they're flightless beetles.

30

So they must move around solely by walking on the ground?---Yes.

It is the only movement?---That's true.

35

In short I suppose of putting little numbers on their back or something and tracking them, there is not much you can do is there?---No, it has actually been done, little transponders have been put on the backs of beetles, to test that, but not for this particular species.

40

Not this particular species?---No, or even for that family as far as I'm aware.

But you need to do something don't you?---It is very difficult, yes, and it would be really nice to know exactly how far they travel because that could be very important as to how significant the impacts of fragmentation and isolation would be.

45

But at this stage it is really speculation as to their range?---Yes.

Thank you?---Except that, you know, when you look at them they're very small beetles, they're obviously - it's not going to go very far in any given time.

5 Because again there are just so many obstacles on the ground aren't there?---Yes.

Are you aware that Meggs and Munks' paper was peer reviewed?---Yes.

10 And what is your understanding of peer reviewed for the purpose of publication, papers such as that?---They usually go out to two referees who make comments as to the subject matter, the suitability for publication, whether any changes are recommended and then the refereed papers are sent back to the authors for changes to be made.

15 And it was published in a reputable journal?---Yes.

Your own research Michaels and Bornemiztfa in 1999 - - -?---Bornemizza.

20 Sorry?---Bornemizza.

Bornemizza, thank you for that. I suggest demonstrates that the beetle can still occupy coupes post harvest?---It does suggest that it's a possibility, yes.

25 That is the real thrust of your paper isn't it, that they can occupy a coupe post harvest?---I wouldn't say that was the thrust of my paper, but yes.

It is a conclusion you reached?---It's one of the conclusions, yes.

30 And in research for that paper you studied quite closely what had happened to forests that had been clear felled?---Yes.

And you went into forests that had regenerated?---Yes.

35 And you were specifically looking for beetles in forests that had regenerated?---Yes.

40 And you found the beetles in forests that had regenerated over a number of years?---I found a beetle in one forest that had been regenerating for a number of years, another one in a clear fell - recently clear felled area, yes.

And how long ago had the clear felled area been clear felled?---At the time that I trapped the beetles, probably a matter of months.

45 So it was there in a clear felled area?---Yes, that's not unusual though, there's often lots of survivors initially from clear fell.

And had that area been subject to burn?---Yes.

And had it been re-sown to your knowledge?---I assume that that's what's happened since it was told to me that that was standard practice, yes.

5 And that was some short months after that clear fell process?---Yes, I believe it was within a year of the clear fell process that I was trapping there.

And you found one?---Yes.

10 And the other forest that had regenerated was how old at that time?---At that time, I think the study was about '95 and the forest was clear felled in '75, so it would have been 20 years.

15 Twenty years? And you also trapped I think in a nine year, was it, clear - regenerated area?---Yes, nine years, nine year re-gen, yes.

And you didn't find anything in the nine year re-gen?---No.

20 And that doesn't prove anything really does it?---No, except that combined with other research it certainly suggests that there is certainly a length of time that's different in wet and dry forests before beetles do start to recolonise and even then selected beetles will recolonise.

25 If we go back the area that had been clear felled and you went into two or three months after the clear felling and burning had taken place and found a beetle, was that in wet forest or dry forest?---The surrounding forest would probably what would be called damp forest.

30 And the 20 year regenerated forest, was that damp forest or dry forest?---No, it was dry forest.

And the nine year regenerated forest?---That was dry forest as well.

35 Thank you. That is the dry forest by your definition rather than any established scientific criteria?---Well, that's dry forest as to what is said on the vegetation map.

Thank you. Just bear with me, your Honour.

40 Bearing all those matters in mind do you still assert - and this is your quote from your affidavit:

Any forestry operation that causes habitat loss will affect the survival prospects of the beetle.

45 ?---Sorry, bearing what in mind?

Bearing in mind your studies, particularly in 1999 that we have just been discussing, do you still assert that any forestry operations - that is any forestry

operations that cause habitat loss will affect the survival prospects of the beetle?---Yes.

5 Or should we read that "any clear fell forestry operations that cause habitat loss will affect the survival prospects of the beetle"?---No. And any operations that cause habitat loss, habitat loss being the critical factor, will have an impact on the beetle.

10 You say in paragraph 14(c) that the actions of machinery on soil and post harvest burning is destructive of the beetle and the habitat. In your paper with - I think it is Dr Bornemizza, you acknowledge though that:

15 *Forestry burns are often patchy and incomplete and depending on the intensity and duration of the burn many logs extant and newly felled survive often relatively intact.*

?---Yes.

20 That is what you said at the time wasn't it?---Yes.

Do you adhere to that?---Yes.

25 So even with a clear fell burn it is possible that sufficient habitat can remain and you have clearly demonstrated that to be the case?---Yes, not habitat but areas of refugia following the disturbance, yes.

30 And the fact that you found the beetle so soon after a clear fell burn clearly demonstrates that to be the case doesn't it?---Well, it clearly demonstrates that it survived the initial clear fell burn, yes.

Thank you. Meggs and Munks as you are aware found evidence of the existence of the beetle five years post clear burn and sow, didn't they?---Yes.

35 And you have found it I think at 20 years?---Yes.

And Meggs and Munks also found it at 24 years?---Yes.

40 And Meggs and Munks found the beetle in a number of areas that had been subjected to selective logging in the past?---I believe so, yes.

And they also found it - this is Meggs and Munks 2003 - in streamside reserves retained in eucalypt plantations didn't they?---Yes.

45 Yes?---Yes.

So what we have got is a pretty clear pattern of survival of that beetle, haven't we?---Survival of initial disturbance, yes.

Ranging from clear fell burn and sow right through to 24, 25 years post such activities?---Yes.

5 And including selective logging it has also been found to exist. So what we have got is a pretty clear pattern of the beetle being able to survive all of these effects haven't we?---Some evidence, yes.

And it is supported by your own research isn't it?---Yes and no.

10 Bearing in mind particularly that Meggs and Munks have found the beetle in stream-side reserves retained in eucalypt plantations does that not cause you to alter the view that you expressed that stream-side reserves will not protect the beetle?---We're still unsure as to that. Yes, they definitely found the beetles there, but this is directly after a plantation has been established. There's still no
15 evidence that they have been able to maintain a breeding population in those areas. So until we're sure that they are there continuously for a number of years - and I believe that's the case for almost of these studies, that we're still unsure that they actually can maintain populations over a long time - that we can't say for sure that they are useful.

20

Just bear with me, your Honour. Meggs and Munks said this:

25 *The occurrence of the beetle in isolated patches and thin linear strips of wet riparian forests and otherwise inhospitable habitat, that is, dry forest, suggests that the species may be able to maintain viable populations in relatively small areas of habitat.*

You would agree with that?---I agree they said that, yes.

30 You agree with that proposition, though? That is what they said, but do you agree with it?---Can you read that out again, please?

35 *The occurrence of the beetle in isolated patches and thin linear strips of wet riparian forests and otherwise inhospitable habitat, ie, dry forest, suggests that the species may be able to maintain viable populations in relatively small areas of habitat.*

40 ?---Yes and no. There is a suggestion, but as I say until we are able to discount the fact that they are vagrants or wanderers from close-by disturbance and have established that they are in those areas over a long period of time then at the moment then it's only a suggestion, it's not established.

45 There is a problem with vagrants, isn't there, no-one knows truly whether they are vagrants unless some real research is done to identify the beetle in its original home and then find it somewhere else?---Yes, that's true, vagrants are a difficult problem.

And, for instance, with the beetle that was found a short distance from damp forest, that was found by you and Dr McQuillan, I think it has been described by Meggs as a vagrant. You don't know whether it is a vagrant or an inhabitant, do you?---No, no, absolutely not.

5

And there is no way of determining that?---No, not without quite a lot more research - comprehensive research.

It would be a reasonable proposition I suggest that that particular beetle was probably a beetle that had moved from the damp area?---It's certainly a possibility.

10

A strong possibility, I suggest?---Not necessarily, but it is a possibility that should be looked into.

15

And of course the close proximity of the damp area really is the determinant factor here, isn't it?---As I have said before, it is quite possible that those interface - damp, given the fact that the beetle has been - so often been found in those eco-tone areas that that might in fact be its preferred habitat, an interface between wet and dry forest.

20

Just bear with me, your Honour. I just need a folder, your Honour. Could the witness be shown the affidavit, please, by Mr Meggs? And I will give your Honour the page number.

25

HIS HONOUR: Book 4, starting at 1189.

MR D. GUNSON: Yes. Thank you.

30

And if you would be so kind as to turn to page 1229, please?---Yes.

Now, you will see there the heading, Threat Posed to Latidens by Native Forest Practices with specific reference to the harvesting of coupes 17E and proposed harvesting of 19D. Do you have that?---Sorry, what was that again?

35

Do you have the heading there, Threat Posed to Latidens?---Yes.

Can I ask you this? Have you read Mr Meggs' affidavit?---Briefly, yes.

40

Well, it is a very lengthy affidavit and I want to be fair to you. Have you had the chance to study it just rather than glancing at it?---I have had a look and concentrated on some areas, but I wouldn't say that I'm familiar with everything that's in it, no.

45

Can I ask you this? Were you provided by Dr Brown's solicitors with a copy of Mr Meggs' affidavit to read and consider?---Yes, I was.

And how long ago was that?---I'm not sure. Some time ago.

And have you read it completely or just glanced at parts of it?---I have read it from start to finish and then, sort of, went back and looked at various parts of it.

5

All right. Have you prepared any critical analysis of it?---No, I haven't prepared a - - -

10 I am not criticising you if you haven't, I just want to know whether you have or haven't?---No, I made some notes and I think I mentioned a couple of points to the solicitors.

All right. And if you look at paragraph 115 for me, please, where it says:

15 *For a species like latidens with such limited dispersability as to be relatively widespread through a broad range of forest types and forest stands representing various disturbance histories it must have a relatively high tolerance to disturbance and or the ability to recolonise disturbed habitat in the early stages of forest succession. It is my*
20 *opinion that if the species was as sensitive to disturbance as portrayed by Drs McQuillan and Michaels in their affidavits it would largely be restricted to areas of relict rain forest and old-growth forest which is clearly not the case.*

25 Now, do you accept that?---Which part of that?

The two sentences that are there. Let us deal with the first sentence first of all. Just read it again to yourself, please. The thrust of the first sentence is that it must have a relatively high tolerance to disturbance and or the ability to
30 recolonise disturbed habitat?---Yes. I'm finding it a little bit difficult relating the widespread through a broad range of forest types to the work of Jeff, saying that it's restricted to wet forest.

35 In what way?---It just seems to be a rather contradictory sentence from what their paper says, that's all.

40 Well, just don't argue about that. Let us look at the issue. Do you agree or not whether the beetle must have a relatively high tolerance to disturbance and or an ability to recolonise disturbed habitat in the early stages of forest succession?---If that sentence was accurate, yes, but I don't actually believe that the first part is true.

It accords with your own studies, doesn't it?---Yes.

45 Yes. And then there is the second sentence - his opinion - that if the species was as sensitive to disturbance as portrayed by Dr McQuillan and yourself in your affidavits, it would be largely restricted to areas of relict rain forest and old-growth forest?---No, that's not true.

And it isn't restricted to relict forest, is it?---No.

5 What do you understand relict forest to be?---Areas of rain forests that have survived relatively in tact for a long time in one particular area.

Such as the area at Sand Pit Reserve?---Yes.

10 Where the walk goes through?---Yes.

And the signs and everything for people to look at, that is relict rain forest, isn't it?---Yes.

15 And it is not confined to relict rain forest, is it?---No.

And it is not confined to old-growth forest, is it?---No.

Thank you. He then says in paragraph 116:

20 *Given that there is insufficient data to draw any firm conclusions on the long term effects of forestry practices on populations of latidens it is important to examine the degree to which the effects of such practice on habitat deviate from those produced by natural disturbance, referring to Lindamyer and Franklin in 2002.*

25

Now, are you familiar with the publication of Lindamyer and Franklin, 2002?---No.

30 Do you agree or disagree with the sentence that is set out in paragraph 116?---Yes.

Thank you. He then says at 117 - and this is what I want you to look at carefully, please:

35 *Many of the perceived impacts of forestry practice highlighted by Drs McQuillan and Michaels in their affidavit would also be associated with stochastic wild fires to which the species has been subject throughout its evolutionary history.*

40 You would agree with that, wouldn't you?---Some of the perceived impacts, yes.

Yes:

45 *These impacts are likely to be transient in effect and include -*

(a) removal or thinning of the canopy cover potentially exposing the species to drier conditions.

You would agree with that?---Yes.

5 (b) *changes in forest water relations with the replacement of relatively
mature or multi-aged forest with vigorously growing regrowth
forest.*

?---Yes and no.

10 Well, you say, "Yes and no". What reservations do you have?---Well, it would
depend to the extent that that is mentioned as to whether - I mean that would
seem to imply a complete replacement of the forest in that sentence and I don't
agree that that would be true.

15 All right. He says though:

Changes in forest relations.

20 Not complete alteration?---But it is the replacement. A relatively mature and
multi-aged forest with regrowth forest. I don't believe that that is a transient
effect of wild-fire events.

The loss of leaf litter and desiccation of logs associated with burning?---Yes.

25 Increased vulnerability to predators?---Yes.

And I suppose if you look at (a), (b) and (c) they could all result in increased
vulnerability. Correct?---Yes.

30 (c) *Edge effects whereby some of the effects of disturbance spill over
into adjacent undisturbed forest.*

?---Yes.

35 We understand - we talked about edge effects yesterday, didn't we, the drying
out basically for instance of a wet area at its edges?---Yes.

The death of individual beetles and the loss of their genetic input from the local
population?---Yes.

40

Now, you would accept all of those?---Yes. I think the important thing in that
whole paragraph of 117 is that these impacts are likely to be transient in effect
and the impact of long term effect to Forestry practices may be less transient.

45 Now, can I take you please to paragraph 126?---Yes.

Timber on the ground rotting is an important source of habitat for the beetle. Is
that correct?---As far as we know at the moment, yes.

Coarse, woody debris?---Yes.

5 Well, it is generally accepted that coarse, woody debris is their habitat, isn't it?---It's generally accepted at the moment, yes.

Well, they haven't been found lying under rocks, have they?---No, but we haven't looked under rocks yet.

10 No. Everybody looks under fallen logs or branches or whatever might be on the ground for them because that is generally regarded as its habitat?---Yes. And it might be wrong because that was the accepted hoplogonus bornemisszia up in the north-east as well and it was subsequently found to actually like living under rocks.

15 Mr Meggs says this at paragraph 126:

20 *Post-harvest assessment of coarse, woody debris on 17E showed that logging has roughly doubled the amount of coarse, woody debris in the logged areas relative to pre-logging conditions, has shifted the decay stage distribution of coarse, woody debris to less decayed logs and has added coarse, woody debris in the largest diameter class that was previously lacking in his CWD.*

25 Now, he says that is consistent with his findings in 1996 in a pilot study. Have you read his 1996 study?---Yes.

And you would agree that that was consistent with what he found?---Yes.

30 And it doesn't surprise you that post-harvest assessment of 17E has produced those results?---No.

And you would expect that to be the case, wouldn't you?---Yes.

35 Unless of course there had been a clear fell followed by a complete burn of the residue?---Yes.

40 So effectively what selective logging has done in 17E has produced more coarse, woody debris as a potential habitat for the beetle?---Yes, for the short term.

When you say in the short term, it is for a significant number of years, isn't it? We are not talking weeks or days are we?---No.

45 We are talking in biological terms, 50, 60, 70 years, aren't we?---Well, possibly depending on the decay status of the logs that are there, yes.

Well, that is the issue, isn't it, it depends on the decay status of the logs that are left and it depends on the decay process of the new logs that are being left behind such as material that hasn't been taken to saw wood or pulpwood?---Yes.

5

So you have got two processes, haven't you? You have got the continuing decay process of the wood that was already on the ground which can provide a habitat for the beetle and you have got the new wood which was a bi-product of the harvest which will start its decay process over the years?---Yes.

10

And what is your understanding of the decay process and how long it takes?---My understanding is it will vary considerably.

15

It will vary because of a number of factors. Moisture on the ground?---Yes.

Yes. The diameter of the log?---Yes.

The length of the log?---Yes.

20

And type of wood?---Yes.

Some woods will rot faster than others?---Yes.

25

They are all the factors and do you understand the decay process classification as to how many stages there are?---There are a number of decay stage classifications but yes, I have got a rough understanding.

30

Do you accept that there are five stages for the decay classification?---Well, I accept that the Forestry uses that particular model, yes.

Yes. So the overall effect though clearly from 17E is that as a result of selective logging more coarse, woody debris than before is now available for the beetles?---Yes.

35

And which is consistent with Meggs' findings of 10 years ago?---Yes.

40

Yes. And to your knowledge there has never been any criticism of Meggs' findings back in 1996 in this regard?---I am not sure that it was actually a peer review report. I think it might have been an internal Forestry report.

And if we then read on, half way down starting with the sentence:

45

The input of a relatively large reservoir, of coarse, woody debris in 17E will provide a potential micro-habitat resource to the species for decades to come.

And you agree with that?---Yes.

5 *The distribution of this resource throughout most of the harvest area is likely to buffer the species from any short term effects of exposure caused by canopy cove removal, act as a refuge from any impacts of the low intensity burn planned for the coupe and provide protection from predators for dispersing individuals.*

10 Now, in fairness to you there are about four propositions in there and we will go through them one by one. Would you agree that the distribution of this resource throughout the harvest area is likely to buffer the species from any short term effects of exposure caused by canopy cover removal?---Yes.

 And will act as a refuge from any impacts of the low intensity burn planned for the coupe?---Yes.

15 And will provide protection from predators for dispersing individuals?---Yes.

 Yes. In paragraph 127 Mr Meggs says this:

20 *Drs McQuillan and Michaels claim in their affidavits that the harvesting of these two coupes and by implication any harvesting will further fragment habitat which they claim is known to be a threat to the species. It is my opinion there is no evidence that fragmentation of habitat is a threatening process for latidens.*

25 Now, do you agree with that or disagree with that?---Sorry? There was two sentences there again. Which one am I agreeing or disagreeing with?

30 The first is an observation as to what he believes you are saying. Do you accept that that is a fair comment on what he believes you are saying?---Yes.

 Right. He then says:

35 *In my opinion there is no evidence that fragmentation of habitat is a threatening process for latidens.*

40 ?---In that he's technically correct in that there is a vast body of research that shows that fragmentation of habitat is a threatening process for particularly flightless, log burling beetles. There is no evidence for latidens because we don't have that research - it hasn't been done yet.

 So you accept that he is correct. As you say, technically correct?---Technically correct.

45 HIS HONOUR: Is there any logical reason why the situation with the latidens would be any different from other beetles?---I wouldn't think so.

 MR D. GUNSON: But you have made no specific study of it, have you?---No.

And you haven't read, I think you said, the paper by Fahrig, "Effects of Habitat Fragmentation on Biodiversity"?---No, that's true, I haven't read that recent paper.

5

Yes. Mr Meggs says:

To demonstrate that fragmentation is operating you need to show that a species is declining at a disproportionately faster rate than the rate of habitat loss indicating that the spatial arrangements of habitat is having a greater impact on the species than the total amount of habitat available.

10

Do you accept that as an accurate statement?---I do believe that we went over this yesterday and I think I said then that the problem with that is that there has been no studies to demonstrate that and given the lack of research on these beetles it is impossible to demonstrate.

15

Thank you. In your paper that is Taylor, Michaels and Bashford in 2000 you devoted your research - the subject of that paper to carabid beetles and not to lucanids?---You could say that, yes.

20

That was the thrust of your research wasn't it?---Yes, the research was on carabid beetles, yes.

25

Carabid beetles, not lucanids?---No, that's true.

And any that were caught were very much a bi-product of that research?---Yes.

In the abstract to your paper you said, did you not, that:

30

All four of the mature forest species were found in the retained strips suggesting that strips may be an effective way of maintaining carabid species in the matrix between reserves and ensuring dispersal between them.

35

?---Yes.

And you adhere to that?---Yes.

40

Thank you. You said in the study that you:

sampled carabid populations in the regrowth and mature stands and in addition sampled five mature forest sites that were present as retained strips along rivers or smaller streams.

45

?---Yes.

Rivers as such or just large streams?---Some were rivers, some were streams.

5 What rivers?---I'm unsure now, it's quite a long time ago and I believe that I didn't actually do the field work or do the site descriptions Dick Bashford did. I was a co-author on that paper with Robert Taylor.

What work did you do on the paper as such?---I helped to analyse the data.

10 Right. I just want to be clear on this: you helped to analyse the data only?---Yes.

Did you do any of the field research?---No, but some of the - a lot of the paper was based on field research that I had done in that area.

15 Just I want to take you through step-by-step. What was your involvement in the paper Taylor, Michaels, Bashford 2000 - - -?---It was - - - a co-author?---Yes.

20 Did you actually write anything?---I wrote something, yes.

What did you write, what part did you write?---I'm unsure at this stage as to what part I wrote it was a long time ago.

25 Right. Can the witness be shown exhibit R please?---And I believe it was substantially my input to comments adding to the thrust of the original paper, so - - -

30 I wonder if you would just hold your comments for a moment and wait until you get the document.

Do you have a spare copy available? Does your Honour have a copy?

HIS HONOUR: I do now, thank you.

35 MR D. GUNSON: Thank you.

40 I just want to take you back earlier today, you said in respect of Mr Blake back in about 1994 that you had assisted him in some way, that you believe that in some way you had been described as a co-author of his report but you didn't write it, nor did you assist in it?---No.

Now, can I take you to this paper, please. You are described there as one of the authors along with Mr Taylor and Mr Bashford; correct?---Yes.

45 Now, this was a study of ground dwelling carabid beetles carried out whereabouts?---In the Picton Forest.

In the Picton Forest and for his Honour's benefit that is south of Hobart near the Hartz Mountains isn't it?---Yes, down in the Tahune Forest Reserve.

And the Picton runs into the Huon River?---Yes, I think so.

5

HIS HONOUR: At Tahune?

MR D. GUNSON: Just above Tahune, your Honour. About a kilometre above.

10

Now, did you do any of the research of the ground, that is the setting of traps?---No, that was done by Dick Bashford.

15

Did you go to the site at all during the research program there?---No - yes, I think I might have gone down one day, but I couldn't be a hundred per cent sure of that.

Not sure?---No.

20

May have gone one day, don't know?---No.

So you didn't go through any of these areas and find any beetles yourself?---Not at that particular time. As it says here they re-sampled carabid populations in regrowth and mature stand strips and they were sites where I had earlier sampled for the beetle.

25

When you were doing your PhD; is that right?---Yes, and also much earlier than that when I was doing Honours.

30

And your supervisors for your PhD, one of them was Dr McQuillan wasn't it?---My only supervisor was Dr McQuillan.

And similarly with respect to your Honours pieces as well?---Yes.

35

And your Masters?---I didn't do a Masters.

Right, so Honours and PhD your supervisor - one of your supervisors was Dr McQuillan?---No, Peter McQuillan was my supervisor. Dr McQuillan was my supervisor.

40

All right, solely?---Solely.

Thank you. Now, you did some trapping in December 1994; is that right? Perhaps to assist you if you go to page 122 of your report - - -?---Sorry, we are talking this paper?

45

Yes. You will see under the heading Methods?---Yes.

Pit-fall trapping of the regrowth and blocks of mature forest was carried out by Karyl Michaels and the retained strips were sampled by Richard Bashford. Trapping by Karyl Michaels was undertaken between 2 December 1994 and 2 March 1996.

5

Now, what am I to understand from that, that the trapping in 1994 was trapping that you did at a time when you were doing your Honours and/or PhD work?---Yes, I actually had sites of pit-fall traps continuously operating in those sites from '93 to '96 for a period of about three years I think, so that was why I was still doing those particular ones and Dick Bashford was doing the strips.

10

So he did the strips between '94 and '96. I am just trying to find out what was your complete contribution to this paper?---I was doing the work in the growth and blocks of mature forests because that was part of the study that I was already doing and had been doing for some time. I'd already written a paper on that particular thing and it was - I identified the beetles and helped to analyse the data and make suggestions as to changes on the final paper.

15

20 Did you write the paper?---No, the principal author, Robert Taylor, wrote the paper.

25

Did you have any contribution to the writing of the paper?---As I just said parts of it - some of the stuff is in here came from a paper that I'd already written previously in that area and I made comments on the series of drafts.

But Robert Taylor was the principal author?---He was principal author, yes.

30

And who constructed for instance table 2 which you will find at page 124?---Table 2, that would have been Robert Taylor.

35

And the dendrogram in figure 2 was that constructed by you or was it constructed by somebody else?---No, that would have been constructed by Robert as well.

Is it fair to say that your work involved in the preparation of this paper was extremely limited?---Yes, that's why I wasn't the senior author.

40

And your contribution was basically limited to setting some traps and catching some beetles; is that a fair comment?---It was certainly a contribution, yes.

And replicating some earlier work that you had done working under the auspices of Dr McQuillan, either for your Honours degree or your PhD?---Yes.

45

Thank you. Now, I think a moment ago in fairness to you, you said you thought you may have written part of the paper. Just take a moment if you would and tell me whether you still adhere to that view?---No, I think I just made comments on the original draft.

That was about it, was it?---That's fairly standard for being not the senior author of a paper.

5 Is that a convenient time, your Honour? I am about to go on to an issue relating to the paper that will take a little while.

HIS HONOUR: We will adjourn now until 11.30.

10

ADJOURNED

[11.15am]

RESUMED

[11.32am]

15

HIS HONOUR: Dr Michaels, you are still on your former affirmation, you are bound by that. Mr Gunson?

20 MR D. GUNSON: Thank you, your Honour. Now, I was asking you some questions about this article, Occurrence of Carabid Beetles, etcetera, and we have established that you are not the author of it, but you may have part authored it; is that correct?---Yes.

25 And are you able to identify what parts of that document you have co-authored?---In effect all of it, in that I made comments on the drafts and had input.

30 But you didn't author any of it, you simply commented on drafts and that was about the best of it?

35 MR TREE: Well, my friend uses the word "authorship" as though it is a definite term. The witness has made it clear that she did not draft - other than by way of comment on a draft that was provided to her - the document, but otherwise she is the scientific author of it.

MR D. GUNSON: Just bear with me, your Honour.

40 HIS HONOUR: Mr Gunson?

MR D. GUNSON: Thank you.

45 Well, let us go back to the issue of authorship. By authorship I mean the actual writing of that report, the drafting of it, and amendment to it, the principal work?---As I said before, that is the task of the principal author and that's why I'm not the principal author on this paper.

Right. And your work would be limited as you best understand it or recall it to looking at a draft and perhaps making some recommendations as to a possible amendment?---Yes.

5 Do you actually recall doing that, or you are speculating that you may have done that?---No, I recall doing that.

All right. Thank you.

10 HIS HONOUR: It sounds like a Full Court.

MR D. GUNSON: Do you understand the principle of replication of measurement in experimental design?---Yes.

15 What do you understand it to be?---Replicating as far as possible what was done originally.

Or to put it another way, so you can draw inferences that are based on more than single data points or measurements reducing the likelihood of incorrectly
20 inferring casualty to some effect that is actually caused by something extraneous?---Do you mean casualty or causality?

I am sorry, it was my pronunciation, causality?---Yes.

25 That is a fair definition of it?---It's a definition, yes.

Are there any replicates of different width strips addressed within your report?---Insofar as that they were classified as narrow and larger.

30 That is all?---Yes.

Were any statistical tests used in the study that is addressed in your article? When I use your article I mean the Occurrence of Carabid Beetles?---I just have to have a look at it to refresh my memory. It has been quite some time.
35 Yes.

Well, what statistical tests were used in the study?---Differences in the means of groups we examined using analysis of variants and less significant difference was used to test for differences between individual pairs and means.
40

So that is the sole statistical test that was used, is it?---And correlations between variants were examined using the Pearson correlation coefficient.

Right. Would you regard the experimental design there as weak and the study
45 having no predictive power?---No.

It wasn't particularly strong though, was it?---It was reasonable.

Not particularly strong though, was it? You say reasonable but - - -?---It was similar to a lot of other research.

5 Right. And it had no predictive power, did it?---Not as such, no.

No. How much weight would you place on the absence of the beetle known as Natomus Polytomous?---Polytomous. How much? Sorry, could you just repeat the question again?

10 How much weight would you place on the absence of that beetle at the narrower strip?---I think given that that's one of the most common beetles in the area I would put a reasonable amount of weight on that.

15 All right. Do you stand by the statement in the paper which I will read to you:

Based on the classification of areas as depicted in the dendrogram -
which is there -

20 *which utilised proportional representations of species there appears to be no consistent difference between strips and blocks of mature forest in terms of their carabid faunas.*

25 Do you still adhere to that?---Yes.

Is there a reason why you adhere to it?---Because that's what I said at the time.

30 Would the narrowest strip which was S1 and the second narrowest strip, S2, support the same vegetation as the other strips?---Oh, fairly similar.

Well, I suggest to you that they didn't and they were in fact dominated by eucalyptus regnans whereas the others were dominated by eucalyptus obliqua?---That would be the main difference, otherwise the vegetation would be very similar.

35 All right. Do you adhere to the view expressed in the paper that without further sampling of narrow strips it is not possible to separate the possible effects of site differences and the effects of site - sorry, strip width?---Yes.

40 Do you still feel comfortable with your expressed view that retained strips have little to offer the broad-toothed stag beetle by way of conservation?---Yes.

45 Well, clearly your view must change I suggest in that regard given the fact that they have now been found in those areas?---That's certainly suggests that they do have value and further research should be looked into to make sure that they are actually maintaining viable populations in those areas.

You were earlier of the view that there was little point, or have little to offer the beetle, but you have now changed your view as to that?---In the light of current evidence that some beetles have been found in those areas I think it's well worth a further look.

5

But you have to accept that your earlier statement that retained strips have little to offer the broad-toothed stag beetle must be re-examined in the light of current findings?---Yes, I would certainly re-examine it in the light of findings, yes.

10

And you would be prepared to moderate that previous view that you have expressed?---Yes.

15

Yes. Thank you. The research that is addressed in the article in front of you is really based in part on your doctoral research?---And my honours research, yes.

20

Can I take you to - that article can go back, please, to the attendant. Could I ask you, please, to turn to your affidavit which should still be in front of you, volume 1, and if you would go, please, to page 91?---Yes.

Would you read out please paragraph 13?---

25

I have examined the Forest Practices Plans for coupe WT017E and WT019D.

Yesterday you were asked some questions by me about that issue. Page 895, your Honour.

30

Line 10 I asked you this:

Do you have a belief as to the size of the wildlife habitat clumps that have been prescribed for coupe 17E at Wielangta?

35

Your answer:

No, I don't know the exact prescriptions. No.

40

You were then asked:

Have you looked at the Forest Practices Plan for 17E?---No, I haven't been given a copy.

45

And have you looked at the Forest Practices Plan for 19D?---No.

Now, your answers yesterday obviously conflict with paragraph 13, don't they?---Yes.

So what is the truth? When you swore your affidavit in May of last year had you examined the Forest Practices Plans for coupes 17E and 19D or not?---Yes.

5 Well, why yesterday did you tell me that you hadn't looked at them?---I didn't remember looking at them. I've looked at so much paper work over the last year regarding this case that I have completely lost track of everything I have looked at.

10 Well, they are very important aren't they, the Forest Practices Plans?---Yes.

They set out the prescriptions in each of the coupes?---Yes.

15 And no doubt you are interest to know what prescriptions were there with respect to the beetle?---Yes.

And you say that you have examined them. Now, I understand from examined, to mean something more than read. It suggests to me that you have closely looked at the material and perhaps thought about it?---Yes.

20 Was that in fact the case when you swore your affidavit?---Yes.

Well, what did you learn from examining the Practice Plans for 17E and 19D with respect to the beetle?---I don't remember.

25 You don't remember?---It was over a year ago and I have read a lot of paper work since then, I am sorry. I just simply don't remember.

30 Right. Do you have with me today your letter of instructions from FitzGerald and Browne?---No.

I see. Did you receive instructions from them in this case to prepare an affidavit?---Possibly. I don't remember.

35 Well, I call for its production, your Honour.

MR TREE: It is not presently produced. It will be retrieved at the next break.

40 MR D. GUNSON: Thank you. And I also call for production of copies of any documents that were forwarded with the letter of instructions from FitzGerald and Browne to Dr Michaels.

MR TREE: And a similar response to the extent if we can comply we will.

45 MR D. GUNSON: Thank you.

Now, were you provided with the Forest Practices Plan for Dr Brown's solicitors, Messrs FitzGerald and Browne?---If they are the Forest Practices Plan that are referred to there then I have looked at them at some stage, yes.

5 Were you given copies of them or did you merely look at them for instance at Mr Roland Browne's office?---I am unsure. I believe I looked at them at the office.

Well, to examine suggests to me that you spent some time looking at them. Is that a fair comment?---No.

Well, what did you mean when you said you examined them?---I looked at them.

15 Well, does it mean you read them?---Yes.

And spent some time looking at them?---No, not some time, no.

20 So your explanation now is that you simply forgot yesterday when I asked you, whether or not you looked at them?---Yes.

The questions were pretty clear, weren't they?---Yes.

25 You weren't confused in any way at all were you?

MR TREE: The witness isn't suggesting she was confused. She says she has forgotten, your Honour.

30 MR D. GUNSON: Were you confused by my question?---No. I just forgot that I had actually seen then because of the time difference and the sheer amount of paper work that I have looked at.

35 Yes. We can now accept of course that the article that we were discussing a little while ago was not written by you, can't we?---I do believe we have established that the senior author on most papers write the paper.

40 And have you ever said that you wrote that paper along with Robert Taylor and Dick Bashford?---I might have said it because that's an accepted way of saying that you are an author.

Did you not tell his Honour on 16 December last year - page 709, your Honour - when shown the paper by Mr Tree as evidence-in-chief that you wrote that paper with Robert Taylor and Dick Bashford?---Yes.

45 And leaving aside the scientific niceties of authorship that is simply not true, is it?---In terms of the scientific authorship of the paper it is true.

Thank you.

HIS HONOUR: So where in particular on that page are you referring to, Mr Gunson?

5 MR D. GUNSON: Line 44, your Honour, at the very bottom. I just hope I am not working off the wrong page.

HIS HONOUR: Thank you.

10 MR D. GUNSON: Now, could the witness be shown volume 3 please and if you turn to page 862?---Sorry, what was the page again?

I will take you to an exhibit to that at page 890 please. What you should have is a Forest Practices Plan for coupe 17E?---Yes.

15 Now, is that a copy of the document that you examined and told us about some time ago?---Again I couldn't be sure.

Well, just take your time please and have a look?---I believe so, yes.

20 You believe so? And for what purpose did you examine the document? Were you looking for something specifically?---I was looking to see what the prescriptions were for the beetle.

25 Yes. And what did you find in there in respect of 17E? Perhaps I can assist you; if you go to page 8 of the document?---Yes.

And there is a reference at the bottom, isn't there?---Yes.

30 *To maintain the habitat for the broad-toothed stag beetle the harvest area should not be available for post-harvest firewood collection.*

?---Yes.

35 And would you regard that as a reasonable requirement?---It's a reasonable requirement, yes.

Yes, and an appropriate one?---Yes.

40 Yes. And wildlife habitat clumps were required?---Yes.

And the mix of wildlife habitat clumps would be selected include one or more of, where possible, around habitat trees and rotting logs and rotting logs we know is the ideal habitat for the beetle

45 ?---On current information.

Yes.

5 *In the dry eucalyptus obliqua containing several old trees and trees of mixed age, wildlife habitat clumps would contained it to at least two mature trees with hollows and a range of other trees, scrubs of various ages.*

Now, that was an area generally regarded as not being the habitat of the beetle, wasn't it?---Yes.

10 Yes. But nonetheless a wildlife habitat clump or five of them have been left and a prescription to retain rotting logs which you regard as reasonable?---Yes.

Can I take you now please to the Practice Plan for couple 19D which you will find at page 1381 I think it is. Sorry, wrong, 919?---Yes.

15 And again if you would just satisfy yourself that that is a copy of the document that you saw at Mr Browne's office?---It looks very familiar, yes.

20 Just satisfy yourself that it is and did you find reference in that to the broad-toothed stag beetle?---Yes.

And you have found that at page 7 of the 14 pages, have you not?---Pardon?

25 You have found that towards the bottom of page 7 of the document?---Yes.

Yes. And under the heading Broad-Toothed Stag Beetle you will see this:

Class 4 streams will have 10 metre wide streamside reserves.

30 There are three CS class 4 streams located in the vicinity. What do you understand class 4 streams to be?---Certain amount of water flowing through them.

35 Or a certain size?---And a certain size.

Right. Now, no machinery will enter the stream reserve except at designated crossing points. Within the stream reserve there should be no disturbance of the under-storey or woody debris on the forest floor?---Yes.

40 You would regard that as a suitable requirement for the continued existence of the broad-toothed stag beetle there?---No, I don't believe that a 10 metre wide reserve is sufficient to maintain the habitat, no.

45 But again you cannot produce any scientific results to suggest the contrary can you?---Other than that there is quite a body of scientific evidence that suggests that the edge effects would extend within the 10 metre reserve is obviously going to have edge effects.

Are you familiar with the Forest Practices Code?---I have read it on occasions but I am not - - -

5 It looks like that?---I have got a very old version.

Have you read it?---Not cover to cover. I have referred to it on occasion.

10 For what purpose have you looked at the code?---For reference material if I need to.

Have you looked in the Forest Practices Code to see what a class 4 water course is?---If I have I don't actually remember what the definition was.

15 Let me read it to you:

20 *A class 4 water course is differentiated from a drainage depression by having at least one of the following features: a gravelly, pebbly, rocky or sandy bed indicative of flowing water; an obvious gully; a short steep section of stream bank adjacent to the water course bed; a class 4 water course will often have a change in the under-storey vegetation from the stream bank to the surrounding forest, eg riparian, moist-like vegetation on stream banks, ferns, mosses, sedges.*

25 ?---This is my understanding now, yes.

When I asked you about it were you aware of it?---No, not that level of detail.

30 Now, you said a moment ago that you have an old version of the Forest Practices Code. Is that right?---I believe so.

Have you ever looked at the more modern Forest Practices Code of 2000?---No.

35 Can that be shown to the witness please?

Just have a look at that document please and tell me whether you have seen that before?---Do you mean have I seen it around - - -

40 Have you read the Forest Practices Code 2000?---No.

Have you ever seen a copy of it just lying around maybe in Mr Browne's office perhaps?---Not to my recollection.

45 And you have never been shown one by a colleague?---Not to my recollection.

Is it fair to say that you don't know anything about the Forest Practices Code of 2000?---Yes.

And you are not competent to say what is in there. Is that a fair comment?---Yes.

In your affidavit at paragraph 15 you said this:

5

A streamside reserve is a strip of forest both sides of a stream that is reserved from Forestry operations. The Forest Practices Code 2000 prescribes the width of these reserves.

10 ?---Yes. I was informed as to that information.

So who informed you of that information?---Roland Browne.

15 When did Roland Browne inform you of that information, Dr Meggs - sorry, my apologies. I am sorry. I was looking at a note that I had here to myself. Dr Michaels?---Probably when we were doing the affidavit.

20 Probably. So did you bother to check the Forest Practices Code 2000 or did you merely accept Mr Roland Browne's assertion that that is what it prescribes?---I accepted his assertion.

25 Is there anything else in your affidavit that is a product of advice to you from Mr Roland Browne? Just have a think about that and perhaps look at your affidavit. In the meantime can I have the code back please?---I think further down there he mentioned that the wildlife habitat clumps have a 30 metre radius.

So just to help me that is at paragraph 16?---15B.

30 All right. We are looking at page 93, your Honour.

35 So let us just look at 15B and Mr Browne told you that wildlife habitat clumps with a 50 metre radius are too small to provide habitat for the beetle did he?---No, he suggested that - he gave the 30 metre radius as being the habitat clump size.

40 So he told you that. What else did he tell you that is in the affidavit?---He gave me information on the advanced growth retention method as I was unaware of it previously.

I am sorry, whereabouts is that?---Paragraph 16.

45 What did he tell you?---He gave me information about the method of advanced growth retention.

So what did Mr Browne tell you, that advanced growth retention is proposed for coupes in Wielangta?---Yes.

Just staying with page 93 is there anything else that Mr Browne told you that appears in your affidavit?---The process. Explaining the process.

5 Yes. What did Mr Browne tell you? He explained the process where the mature trees are removed, only trees up to a 30 centimetre diameter are left?---Yes.

10 He told you that? Did he tell you this has the effect of removing the BTBS source of decaying logs?---No, that's my opinion.

15 What else did Mr Brown tell you that appears on page 93? Perhaps I could take you up to paragraph 15 and ask you whether he told you a wildlife habitat clump is an area of land reserved from logging and other Forestry operations?---No.

You knew that did you?---Yes.

All right. Is there anything else on page 93 that Mr Browne told you?---No.

20 Well, I wonder if you would just go back to the beginning of your affidavit in light of this evidence and tell me, perhaps starting at page 88 - I imagine there is nothing on there that Mr Browne told you?---No.

25 It looks pretty general. Page 89 is pretty general, isn't it?---Yes.

And 90 I imagine, nothing Mr Browne told you?---No.

We come back to then 91?---Yes.

30 And paragraph 13 we have discussed, you say you have examined the private practices code; now is that really true that you have examined them in light of what we have now discussed? Please think about it, it is important?

35 HIS HONOUR: Sorry, it wasn't a code.

MR D. GUNSON: Sorry, practices plan, I am sorry?---As I say I looked at them, I'd call that examining.

40 You looked at them. Nothing more than a glance perhaps?---I looked through them briefly to look for the recommendations and then unfortunately promptly forgot it.

45 But it is untrue to say you have examined the documents isn't it?---If you want to define the word examined.

Examined, I will define for you as a close perusal of the document?---No, I didn't closely peruse the document.

And at best you gave the documents a cursory glance?---Yes.

Thank you. So is there anything on page 91 that comes within the ambit of material Mr Browne would have told you?---No.

5

And to come back to page - next to 92 is there anything Mr Browne told you?---No.

And page 93 we have dealt with that. Page 94 is there anything that Mr Browne has told you? Just carefully go through the page, please?---No.

10

And on the next page is there anything Mr Browne told you?---No.

Did you believe that you were being retained by Mr Browne as an expert witness in this case?---Not retained, but yes.

15

You regard yourself as a person who was being asked to give expert evidence?---Yes.

Did you not think it necessary to check the references that Mr Browne had given you to make sure they were accurate?---No.

20

Why not?---He was much more familiar with the work and the material than I was at the time, I had no reason to doubt him.

25

You were just prepared to accept anything that Mr Roland Browne basically told you and be prepared to swear that that was the truth?---Yes.

Yes, thank you. And you saw nothing wrong in doing that?---I didn't believe that anything he told me had any great - - -

30

You saw nothing wrong - - -

MR TREE: Let her finish the answer please.

35

MR D. GUNSON: Finished your answer?---No.

Well, finish it please?---I didn't believe that that had any great bearing on the crux of my evidence.

40

You didn't see anything wrong in just accepting carte blanche something Mr Browne told you without going back to the source material to check that it was correct?---No.

You are a scientist?---Yes.

45

Don't - haven't you been taught as a scientist to check to make sure that what you are saying is correct, particularly when you are writing a report?---Yes.

And to check your source materials?---Unless you're fairly confident that the source materials are accurate.

5 Yes. Now, how many draft affidavits were prepared?---I think two.

And did you go through those draft affidavits?---Yes. Not as carefully as I should have, but I didn't have - - -

10 Did you amend those draft affidavits?---I think I amended one or two things in the affidavits, yes.

I call for a production of the draft, your Honour.

15 MR TREE: Again, if they still exist and we will attempt to meet my friend's call.

MR D. GUNSON: You understood of course that Mr Roland Browne was the solicitor acting for Dr Bob Brown?---Yes.

20 Did it ever occur to you that he was being paid to advocate a particular view?---No.

Are you being paid to give evidence?---No.

25 Have you been paid at all for your affidavit?---No.

It is all voluntary is it?---Yes.

30 And I assume that is part and parcel of your desire to see clear felling stopped in Wielangta?---No, it's part of my desire to ensure that the beetle for which I have a particular fondness does not go extinct.

35 But you saw no reason to go and check Mr Browne's advice to you as to the effect of the plans or the code?---I have great faith in Roland Browne's ethics.

And so based on your faith on Mr Browne's ethics you were prepared to do what you did?---Yes.

40 Thank you. Now, you were asked to produce your notes, your field notes?---Yes.

And you have produced those today?---Yes.

45 When you were working in Wielangta, did you record grid references as to where you found broad-toothed stag beetles?---Yes.

I wonder if you could have a look at your notes, please?---Not recorded there, no, not in the notes.

5 These are your field notes aren't they?---They're field notes from a study that I was doing that involved a lot of sites that I wasn't responsible for collecting the information on, so the grid references would have been in a separate document on a separate piece of paper that I just - that I would have checked back in my office and put directly into the computer.

10 Are there any grid references in there?---There's probably some that I've written in at a later stage, just to make sure that I didn't lose them.

15 Have you found any grid references in there?---There are some grid references in there for some of the sites, particularly the ones that I actually used for later papers.

20 And have you recorded any of the coupes in your field notes?---I would have to go back and check to see which were the coupes and which were the relevant - whether they actually did have some.

Just take your time please. Can I ask you this, did you check your field notes last night?---No.

25 You indicated yesterday that you would do so, didn't you?---No, I said I would find them.

All right. Go through them please?---What was the question?

30 I asked you did you record any of the numbers of the coupes in your field notes?---The numbers of the coupes, no, I don't believe so. I'll just double check. There are a couple of numbers that may or may not be coupe numbers.

Right. And they are in your notes?---Yes.

35 And what numbers are there?---There's a WT42A for site 17, a clear-felled site.

WT?---42A.

40 42A. Yes?---But I'm unsure if it's actually a coupe number or if it was a referral to the road and the location.

45 Right. And is anything recorded against the entry for WT42A as to whether you found anything by way - an example?---Oh, I wouldn't have what I found in these particular field notes, basically these field notes were to enable me to re-find my traps on a regular basis.

Yes. All right. What other references have you got to coupes or some other numerical reference?---Well, I have got a couple of WTs and numbers.

Well, just tell me what they are, please?---WT30.

5 Yes?---And a site 21, which is a site that was one of the nine-year old clear-felled sites at the time. WT31 for the corresponding site 22 which is the other of the nine-year clear-felled sites at the time.

10 Yes?---WT2 with 75 in brackets, but I don't know that it's a coupe number but just referring to the fact that that site 23 was clear-felled in 1975. And WT1. So it could be just that that was some sort of notation that I was using at the time.

15 Well, did you record the grid references as to where you found broad-toothed stag beetles?---Yes, I do have a - in this book, no.

Not in that book?---No.

20 That is your field notes?---Well, I have grid references on some of the sites and some of them quite possibly would have been sites where I found the broad-toothed stag beetle.

25 Well, yesterday you were asked a question about this - A27, your Honour - and your answer was when you were asked in general terms about whether you would be able to tell us where you found them and you said you had found three. You said - I asked, "Are you able to tell me the coupe numbers?" And you said, "No, not off the top of my head because I don't remember little things like that, but I would certainly be able to give you good references." It is obviously grid reference, it is a corruption in the transcript. And I said, "And they would be found in your field notes presumably the grid references?" And you said, "Right."?---Yes, and I do have grid references for most of the sites but I would then have to go back and correlate that with the sites where I found the broad-toothed stag beetle.

35 How many figures are in your grid references? What are your northings and eastings?---Just three last two digits. So you need to actually put the map number in front in well.

40 So six-figure grids - sorry, grid references?---Final three figures for northings and eastings.

Yes. Do you understand that such figures are likely to give a variation in position to you?---Oh, obviously. I mean, at the time I was doing the study I didn't have access to a GPS so - - -

45 I am not criticising you, but I want you to understand the question?---So there are going to be variations. I mean, you could be out quite - anything up to 10, 20 metres, yes.

On six figures, 100 metres I suggest is the variation?---Quite possibly, yes.

Well, that is so, isn't it?---Yes.

5 Yes. So with using those grid references your position could be North, East, South, or West by 100 metres - your true position?---Yes.

And not particularly accurate, is it?---No, that was certainly one of the limitations that have been overcome by GPS.

10

And would it be fair to say also that your field notes don't describe the forest types in any true way?---That's true.

15 Yes. They are very limited, aren't they?---As I said, this was a study where I was not responsible for doing that part of the work. I was doing the work on collecting - sampling and collecting and identifying.

20 If you would just stay with me for a moment, please, and concentrate on the question. The field notes do not describe the forest types in which you either set your traps or found beetles. That is true, isn't it?---There was limited information on some sites, yes.

25 Well, is there a detailed description such as dry forest consisting of, and then going on to describe the forest type around it?---Not for all sites, no.

25

No. So what is the best description you have got there?---In terms of a couple of sites there I have got actually a print out that I did at a later stage where I looked at the vegetation because I was particularly interested in those sites and was doing long term trapping there.

30

Yes. But I am interested in what your notes record about the type of forest you were trapping in and or set your traps or found beetles?---Very limited in my field notes, yes.

35 Yes. Now, if we come back to the issue of finding beetles, you found three; is that right?---Possibly more, but yes.

When I say beetles I am referring to the broad-toothed stag beetle specifically?---Yes - no, I found more than three, I believe.

40

All right. Now, do your field notes record capture of those beetles?---No.

45 Do your field notes record where the beetles were captured?---Only in that I can correlate the information in my field notes with other information that I have.

Do your field notes record where they were captured?---No.

No. They don't record it by reference to grid references?---No.

Or by reference to coupes?---No.

5 So what other notes are there that are in existence that assist you to determine these issues?---Other information that I have on my computer, not necessarily notes.

10 Well, when were those computer entries made?---At the time, or at various times over the period of my studies.

And presumably what is in your computer was extracted from your field notes to a large degree?---No, a lot of the stuff was actually done back in the office.

15 So the reality is that your field notes really don't record very much?---No.

20 And you were asked some questions yesterday about stream-side reserves - 892, your Honour. Do you remember me asking you some questions about stream-side reserves and whether you had captured beetles in them or set traps in them?---Yes.

And you were asked if a map would assist you and you said, "Probably not." Then you said - I said this to you - line 31, your Honour:

25 *You said you need a map. Is a map going to assist you, Dr Michaels?*

And you said:

30 *Not right at this moment but certainly in conjunction with my field notes it would.*

I said:

35 *So am I wasting my time and your time if a map is produced; is that right?---Right at this moment, yes.*

40 *But tonight no doubt you will be able to check your notes and come back tomorrow and tell us where those stream-side reserves were?---Yes, assuming I can find my field notes overnight.*

Now, do your field notes make any reference at all to the stream-side reserves and where they were?---Only in that I think there was Sand Spit and there is some mention of - no, they're not particularly helpful, no.

45 So they are silent as to that?---Yes.

So the answer you gave me yesterday is just wrong, isn't it, that they would assist?---Well, at the time I thought they might, but it had been at least a considerable time since I have looked at the notes.

5 Yes. So I can ignore your answer from yesterday then; is that right?---Yes.

As being unhelpful?---Yes.

10 Thank you. You must have realised that your field notes were reasonably sparse when I talked about them yesterday with you?---No, I haven't looked at them in some time.

15 You must have realised when you got them today or yesterday when you found them they were reasonably sparse?---When I looked at them this morning, yes.

They didn't contain very much information?---No.

20 Why did you place so much reliance on your field notes yesterday for identifying coupes, identifying grid references, and identifying stream reserves?---I thought they would be more helpful.

But clearly they are not?---Clearly they're not.

25 And you would agree that they are very, very limited in the information they contain?---Yes.

30 And that by using those notes you would not be able to provide an accurate position as to the finding of any beetles let alone where traps were set?---Oh, no, there's great detail there as to where the traps were set.

Well, do you have the grid references for traps being set?---In some cases, yes.

And again six-figure grid references?---Yes.

35 Which means they can be 100 metres out in any direction?---Yes, the best available that you can do with maps.

40 You can do better with maps, I suggest that you didn't have that resource is that what you are saying?---Sorry, could you repeat the question?

You didn't have better grid references than six figures?---That's the best you can do on a map.

45 In any event you would agree that you would be up to a 100 metres out anyway?---That is a limitation of maps for all people who use grid references.

Now, I want to come back - just bear with me.

MR TREE: While my friend is doing that, I wonder if I can warn your Honour that I intend - with your Honour's permission anyway, to stand for a little while. It is not that I am taking objection to anything my friend is doing, it is just more comfortable for an inconvenient back that I have at the moment, if your Honour doesn't mind.

HIS HONOUR: Not a problem.

MR TREE: Thank you.

MR D. GUNSON: We need not go into how his back was injured and the

HIS HONOUR: And I didn't break my associate's shoulder either.

MR D. GUNSON: I have to confess to your Honour that he was dancing at a function that we were at.

HIS HONOUR: That is clearly an exercise that is dangerous.

MR D. GUNSON: But how it happened your Honour doesn't need to know, I can assure you. We digress.

You are aware of the importance of your field notes when I asked for them?---Yes.

Did you not think to access your computer and also bring your additional computer notes?---That's a bit difficult because the notes from this are on an old computer that I'm having problems with.

Yesterday at page 817 when this issue was raised - just bear with me, your Honour. 817 line 8 your Honour, I asked this:

Did you have any records that are available to us when in January you checked your traps?---Yes, I would have records.

Are they readily available to you?

You said yes, "They are on a computer, buried somewhere on my computer, but relatively accessible." Now, what is the true position?---Accessible given time.

Relatively easily accessible?---A half day.

Well, yesterday you said they were relatively accessible, you say today they are not relatively accessible, what is the truth of it.

HIS HONOUR: Well, I don't think she did say they are not relatively accessible.

MR D. GUNSON: Perhaps I will rephrase the question.

5

They are not immediately accessible to you by accessing your computer?---Not without some hunting.

I call for production of those, your Honour?---The production of what?

10

Copies of your computer records relating to, or that are supplementary to your field notes.

MR TREE: Again I will make some endeavour, your Honour.

15

MR D. GUNSON: I want to come back now to the subject of the vegetation data you have recorded in your notes. You would agree with this that the only reference to vegetation data is on a print-out or printed out spreadsheet but not in the original notebook?---That's true.

20

And it is a general description of vegetation isn't it?---A general description of vegetation at specific sites, yes.

You are not the author of the spreadsheet are you?---No.

25

And the spreadsheet data I suggest is sparse?---Yes.

And probably insufficient to enable anybody to determine whether the forest could be described as wet, damp or dry at any particular site?---No, I don't believe it's insufficient. It does give information that will enable you to make that assessment.

30

For instance if I was to ask you what does the definition used in that spreadsheet of dry forest, what would your answer be?---There wasn't a definition on the spreadsheet.

35

And if I asked the same question with respect of wet forest what would your answer be?---There's not a definition there either.

40

It would follow I imagine that with damp forest there is also no description within the spreadsheet?---Yes.

So what does the spreadsheet tell you?---It tells you the dominant species, the dominant shrub layer, the dominant ground layer and the percentage cover of a variety of understorey plants.

45

For what purpose, determining whether it was wet, dry or damp, or some other reason?---To determine - because it tells you those things.

To determine what vegetation was present as opposed to what the forest could be described as, whether it was wet, damp or dry?---Yes, but you can make assumptions based on the percentage cover of trees and undergrowth.

5 There has to be at best a guess then doesn't it, albeit perhaps an educated guess, but nonetheless a guess?---If you were just using this, yes.

10 And you have not tried to reference the damp, dry or wet forest against any known scientific criteria?---At the time it would have been with reference to what the vegetation was on a vegetation map of the area.

15 What was the source of the vegetation data that you have there on the spreadsheet?---That would have been a field survey at those particular sites.

20 Would have been or was it, that is what I want to know?---It was a field survey at the particular site.

25 Performed by whom?---Performed by a group of students from geography and biological studies.

Where?---At the sites.

30 Sorry, what institution did they come from?---Oh, University of Tasmania, sorry.

Well, do you know that to be the case or are you merely guessing now?---No, I know that to be the case because I supervised them while they did it.

35 All right. And that is the sole basis of it?---Yes.

All right. Could I take you please to your publications record which was - - -

HIS HONOUR: Book two I think it was.

40 MR D. GUNSON: Affidavit I think of 18th of October.

HIS HONOUR: 489.

45 MR D. GUNSON: Thank you, your Honour.

I just in my own mind want to be clear in light of your evidence earlier today about authorship of scientific papers as to which papers you are truly the author of. And if we look at the first book, are you the author of A Field Guide to Tasmanian Frogs?---Yes.

And the only author of that?---Yes.

And if we then look at academic publications, the first one Michaels, K.F. 2000 Carabid Beetles as Biodiversity and Ecological Indicators, that is your PhD thesis which is obviously your work isn't it?---Yes.

5 The next one are you the sole author of that?---I am a joint - co-joint scientific author with George - - -

Well, who actually wrote the article you or your co-author?---I wrote the draft.

10 The next: Michaels and Mendle?---I wrote the draft and Louise Mendle wrote the vegetation descriptions and we both did the analysis.

We have dealt with Taylor, Michaels and Bashford. The next one: Michaels is solely your work in 1999?---Yes.

15 McQuillan and Michaels, who was the author of that?---Peter would have written the substantive first draft.

20 Peter would have written the substantive first draft, but did Peter write the substantive first draft?---Yes.

And you wrote nothing?---I would have made comments and provided the information and it was my study that found the beetle.

25 And can I assume from that that basically he wrote it and you checked it?---That's standard procedure for scientific papers.

Is that the case here?---Yes.

30 Is it the case of the next one, Michaels and McQuillan in 1995?---What -sorry?

That he was the author and you were not?---I believe that I'm the principal author.

35 You were the principal author. And then if we then run through the unpublished reports and do this quickly, the first two written solely by you; is that right?---Yes.

40 The next one McQuillan, Michaels and Blake, can I assume that McQuillan there was - Professor McQuillan was the author of that?---Principal author, yes.

The next one, Michaels K.F. The Ground Beetle Fauna Etcetera, solely you?---Yes.

45 The next one on the next page; solely you?---Yes.

And similarly the second and third ones; solely you?---Yes.

And the fourth one and the fifth one; solely you. Is that right?---Yes.

5 Thank you. The Picton Valley where you carried out research on carabid beetles was essentially a wet forest?---Yes.

And one could go so far as to say almost totally wet throughout and very wet?---Yes.

10 And quite different to Wielangta?---Quite different.

Yes. When you saw Mr Roland Browne at his office for the purpose of preparing this affidavit which I think you said "we prepared", am I right in thinking that you sat down with him and you worked together on this project of preparing that affidavit?---No, we didn't sit down together. We did it over the phone.

20 You did it over the phone? You didn't go to his office?---Unfortunately that wasn't a possibility at the time.

How could he show you the Forest Practices Code 2000 if you didn't go to his office? I understood you said you saw it his office?---No, I didn't say that I saw the - - -

25 The plans, I am sorry?---That was another occasion.

Right. Well, when was that?---I couldn't say.

30 So let me just understand this. You were interviewed over the telephone by Mr Browne?---Yes.

You were home or at the university or somewhere were you?---At home yes.

35 And do you remember what he said to you?---No.

Presumably he asked you whether you were prepared to swear an affidavit did he?---Yes.

40 And did you know that he was going to contact you for that purpose?---Yes.

How had you learnt that?---Through a phone contact I believe.

From Mr Browne?---Yes.

45 And did you regard it as unusual to be interviewed over the telephone about - - -?---At the time we thought that it was urgent to get it done fairly quickly and I was totally unavailable to come to his office at any time.

So he asked you some questions, did he?---Yes, and I gave him my responses and sort of said as many things as I thought were important.

5 So if I could ask you this, the affidavit was prepared in a question and answer form really, was it? He asked you some questions and you answered them?---For some of it, yes.

10 Had you provided him in advance with any of your articles to read?---Yes, I had.

What had you provided him with?---I had provided him with my CV.

15 Yes. Any articles that you had written on the broad-toothed stag beetle or any research on the broad-toothed stag beetle?---I believe I provided those to him subsequently.

After you prepared the affidavit?---Yes.

20 In this phone conversation?---Yes.

Did Mr Brown e-mail or fax to you drafts of this document?---Yes, e-mailed drafts.

25 E-mail drafts, thank you. What was the urgency that attached to the preparation of the affidavit as you understand it?---As I understood it the Court case was going to be heard much earlier than it subsequently was.

30 And had you known of the possibility of these proceedings being commenced by Dr Brown for some time?---I wouldn't say some time.

Well, how long had you known about the possibility of the commencement of these proceedings by Dr Brown before Mr Browne, that is Roland Browne, contacted you?---I couldn't say for sure.

35 What was your source of information?---I don't really remember that either.

But you had known about it?---Yes.

40 Now, would it be fair to say that you had known about it for several months?---No.

Several weeks?---That would be closer.

45 So somewhere along the line you learnt of Dr Brown's intention to commence proceedings and several weeks later Mr Roland Browne contacted you?---No, I think it was much the same thing. It might have even been Peter. I honestly don't remember. I just remember that it came up and I said that I would be prepared to be a witness.

You contacted him, did you?---No, I was contacted.

5 With the Forest Practices Plans, did you see them before or after the drafting of the affidavit?---Before.

And you went what, to Mr Browne's office?---Yes.

10 So before the affidavit was even draft, before Mr Browne even spoke to you about doing an affidavit, you had seen the Forest Practices Plans. Is that the substance of it?---Yes.

15 So what took you to Mr Browne's office on that occasion where he showed you the Forest Practices Plans?---I think he was asking if I would do some work with Peter.

You think he was asking you if you would do some work with Peter. About what?---Looking at that for the survey.

20 HIS HONOUR: That is Dr Peter McQuillan?---Dr Peter McQuillan, yes.

MR D. GUNSON: Or was it Dr McQuillan who perhaps contacted you?---I honestly don't recall.

25 Let us take this in sequence. You heard about the possibility of Dr Brown commencing proceedings, then there was some contact with Roland Browne. Is that right?---I am not sure which one came first, the hearing about it and the contacting.

30 At some stage you were in Roland Browne's office and he shows you the Forest Practices Plans?---Yes.

35 Which we now know that you didn't examine, rather you just glanced at?---Yes, unfortunately I was busy.

And some time after that he contacted you about an affidavit?---Yes.

40 So what took you to Mr Browne's office in the first place when he showed you the Forest Practices Plans?---I don't remember. It would have been involved in the whole process.

I am sorry?---I don't remember. It would have been something to do with this process.

45 Well, at least try and remember and tell me what took you to Mr Browne's office where you looked at the Forest Practices Plans with respect to Wielangta before you were even invited to swear an affidavit?---Sorry, I don't remember. I think it would have been in conjunction with being asked to do an affidavit.

You think?---I think.

5 But you have no idea?---No. I mean that would be the logical thing but I don't remember.

10 Is it fair to say then that you have no real idea now of the sequence of events that occurred in May of last year leading up to the swearing of that first affidavit?---Yes, that would be fair.

15 But you do recall the contact. There was contact in Mr Roland Browne's office where you glanced at the Forest Practices Plans. There was contact by telephone where, in a question and answer process - - -?---I mean the events would have started prior to May last year because I was involved in the survey with Peter in 2004.

Yes. So who got you involved in that? Dr McQuillan?---Yes, I believe so.

20 And did you understand that in 2004 that that survey was designed for the purpose of trying to find evidence to use in this case?---Yes.

Yes. So in 2004 and you were well and truly aware that Dr Brown was intending to bring some proceedings. Is that a fair comment?---Yes.

25 And you understood in January 2004 when you were working with Dr McQuillan in 2004, that was all part and parcel of research for proposed litigation?---Well, I knew it was research looking for the beetle, yes and I knew that there was a Court case and I put them together but I don't believe that I was expressly told.

30 Let us just go back a step. When you were asked by Dr McQuillan to go out to Wielangta, you did so on the basis or understanding that you believed he was looking for broad-toothed stag beetles?---Yes.

35 He was conducting a survey solely in relation to broad-toothed stag beetles. Is that right?---Yes, that's right.

You became an assistant in that program?---Sort of, yes.

40 Who else was involved in it?---I don't know. There was quite a lot of other people there.

45 And you understood them to be what, university students or under-graduates or what?---People helping with the process.

All right. And when you were there on that occasion you understood that it was an exercise in the gathering of evidence to use in these proceedings that were yet to be commenced?---Yes.

Right. So by then you obviously knew that you were on an information or evidence gathering exercise?---Yes.

5 Yes. Was Sophie Underwood there?---I am not sure.

Do you know Sophie Underwood?---Yes.

10 You can't remember her being there?---I sort of do but I couldn't be 100 per cent sure. I think she may have been there on one occasion but I'm not sure whether I remember seeing her around that time. I don't know whether it was that particular day or not.

15 Did you regard yourself as being part of a team assembled for the purpose of gathering evidence on behalf of Dr Bob Brown?---No.

But in truth you were out there as part of a team, weren't you?---Yes.

20 It was a collaborative effort between you and Dr McQuillan and whoever else was out there?---Yes.

25 Right. Now, no doubt - I withdraw that. Did you know when you were working in Wielangta with Dr McQuillan that you were likely to become a witness in this case?---Yes.

Yes. And had that been discussed with you by Dr McQuillan?---No.

Who discussed it with you?---I don't recall.

30 Did Roland Browne discuss it with you?---Yes.

Yes. So when you were out there with Dr McQuillan you knew you were going out there for an evidence gathering exercise?---Yes.

35 You knew that there was going to be a Court case because you had been told by Roland Browne?---Yes.

40 Did Roland Browne give you a briefing as to why you were going out there?---I don't remember.

Well, please try and remember. Where were you that Mr Browne told you that first of all you were going out there as part of an evidence gather exercise?---I don't remember.

45 But you were in no doubt that that is the case, are you?---Sorry, what was the question?

You were in no doubt that that is why you were out there, as part of an evidence gathering exercise to assist Dr Bob Brown?---I was looking for the beetle.

5 Looking for evidence to assist Dr Bob Brown in these proceedings which were then to be commenced?---Looking for evidence of the beetle.

Yes, to use in proceedings that were to be commenced?---Yes.

10 Yes. and you had been so advised by Roland Browne?---Yes.

And had you been so advised by Dr McQuillan as well?---I am not sure. I think so.

15 Well, surely you must have discussed with Dr McQuillan why you were all out there looking for the beetle?---Yes.

20 And no doubt he said "Because Dr Brown is going to bring some proceedings to try and stop logging in Wielangta"?---Not in those words but possibly that information, yes.

You are not denying that are you?---No.

25 No. And you would accept that that is probably a fair assessment of the conversation between you and Peter McQuillan?---It was part of the conversation, yes.

30 Yes. Now, I come back to Mr Roland Browne. Did he go out to Wielangta at all and take part in this process of beetle hunting?---I don't think so.

You don't remember him being out there?---No, I don't remember him being there.

35 So you completed your research out there, that is assisting Dr McQuillan?---Yes.

I understand from what you have earlier said that was fairly limited in the terms of what you did?---Yes.

40 You were only there occasionally?---Yes.

I think you said you put in some pit-fall traps?---Yes.

45 And you checked some pit-fall traps?---Yes.

Did you have any discussions with Dr McQuillan about how desirable it might be to find a broad-toothed stag beetle in dry forest?---No.

Was any discussions about finding a broad-toothed stag beetle in dry forest and as to whether that would assist Dr Brown in the litigation?---Yes.

And no doubt - - -

5

HIS HONOUR: Sorry, yes to which part of the question?---Sorry. I have done that again. I am not listening. Could you repeat the question.

10 MR D. GUNSON: I will put the question again. Were there any discussions with Dr McQuillan that it would be very useful for Dr Brown's case if the broad-toothed stag beetle was found in dry forests?---Not in those words, no.

15 But you were certainly left with that impression, weren't you?---Yes, but I don't know it necessarily completes his conversation.

Well, did it flow from some other conversation did it?---Yes.

With whom?---Again I am unsure.

20 But as a researcher out there on the ground you were left in no doubt it would enhance Senator Brown's case he was proposing to bring if a beetle was found in dry forest?---Yes.

Thank you. Is that a good time, your Honour.

25

HIS HONOUR: How much longer do you have to go?

30 MR D. GUNSON: I reckon about - what I want to do, your Honour is, to be fair, to review my notes and see how long it will be. I don't think I am going to be very long but I would like the opportunity just to review my position.

HIS HONOUR: Right. Well, we will adjourn until 2.15.

35 **ADJOURNED** **[12.46pm]**

RESUMED **[2.15pm]**

40

KARYL FRANCES MICHAELS:

HIS HONOUR: Mr Gunson?

45

MR D. GUNSON: Could this document just be shown to the witness, please? Is that a copy of a letter from the legal firm of FitzGerald and Browne to you detailing the terms of your retainer in this matter?---Yes.

Would you read it out to his Honour, please?---

5 *I write to confirm your engagement as an expert on behalf of Senator*
Brown in relation to his potential claim in the Federal Court for an
injunction to restrain logging at Wielangta. I confirm that Senator
10 *Brown will be responsible for your fees at \$400 a day plus GST plus*
expenses. At this stage, I would like to retain you to attend the survey
weekend conducted by Dr McQuillan. This is on 4 and 5 September
next. Either Sophie Underwood will be in contact with you or could
you, please, contact Sophie in relation to the arrangements for that
weekend.

15 I tender that document, your Honour.

HIS HONOUR: Any objection?

MR TREE: No.

20 HIS HONOUR: That will be exhibit 13.

**EXHIBIT #13 COPY OF LETTER FROM FITZGERALD AND
BROWNE TO K.F. MICHAELS**

25

MR D. GUNSON: Earlier today I asked you about the terms of your retainer.
You indicated to me in your answer that you were not to receive any fee for
giving evidence or being involved in this matter; is that right?---That's true.

30

That letter portrays a different situation, doesn't it?---Subsequent to that letter I
declined to be paid for this evidence.

35 When did you make that decision?---I believe it was shortly after the first field
trip.

And did you communicate that advice to Mr Browne in writing or by
telephone?---No, I believe it was a face-to-face conversation.

40 Thank you. Your Honour, subject to the other documents that I have asked to
be produced being produced and having the opportunity to look at them and
then make a decision as to whether I wish to ask any further questions of this
witness, I have no further questions at this time.

45 HIS HONOUR: Yes. Thank you.

MR D. GUNSON: That is the only document that has been introduced so far
in accordance with the call for production.

HIS HONOUR: Mr Tree?

MR TREE: Thank you, your Honour.

5

<RE-EXAMINATION BY MR TREE

[2.18pm]

10 MR TREE: Dr Michaels, you were asked some questions about the use of lethal pit falls that you have employed from time to time in your research?---Yes.

15 And some perhaps oblique criticism was made in relation to the fact that they destroy the beetles that come into the trap whereas other forms of non-lethal pit falling could be deployed which see the beetles survive?---Yes.

20 Can you tell his Honour, please, what, if any, advantages there are to lethal pit falling, perhaps from a cost or convenience perspective?---Oh, well certainly cost and convenience are both advantages. The other advantage is of course that you can leave the pit-fall traps for a longer period of time. If you use pit-fall traps dry then you have to check them quite often to ensure that the specimens in there aren't eating each other or escaping. So it's a method of ensuring that you do get a catch, being able to leave it for a longer period of time, and of course that's going to have cost and resource implications.

25 In employing the lethal pit falls which you did in 1995 and perhaps on other occasions was cost a consideration for you or not?---That was probably one of the main reasons.

30

Did you have resources to deploy non-lethal pit-fall trapping?---No.

Now, I wonder if the witness might be shown Court book 4 at page 1457, please, your Honour?---Thank you.

35

1457?---Yes.

40 You might remember that you were asked a considerable number of questions about the sequence of the provision of this material to Forestry Tasmania and the paper which is one of the other annexures to this affidavit?---Yes.

Firstly, can I direct your attention, please, to the heading that my friend directed your attention to on occasions, the heading Adult Stage?---Yes.

45 And the adults are active from roughly November to March and presumably mate and breed during this period. During the course of your evidence you said that your preference articulated earlier in your evidence was spring to

early summer of their movement was an educated guess. What has informed that educated guess?---The activity period of finding them in pit-fall traps.

5 And that has demonstrated what to you?---The possibility is that they're active earlier than that particular time frame.

And what is it that you associate their activity as being connected with, if anything?---With mating, your Honour.

10 Has there been to your knowledge any study undertaken as to the seasonality or otherwise of the mating patterns of latidens?---No.

15 Leaving aside dispersal for mating can you identify any other purpose for the dispersal or movement of adult beetles?---In response to disturbance.

But leaving aside disturbance is there any naturally - I accept disturbance could perhaps be natural as well, but is there any natural event in their life cycle which would cause them to disperse?---Not that I'm aware of at this stage.

20 Thank you. And are you aware from the two extensive additional materials that have been provided to you in the form of the additional Groves paper and the Richards paper whether any effort has been directed towards identifying the cause for dispersal or the time of breeding of the beetles?---No.

25 Thank you. Now, I wonder if the witness could have exhibit 1 placed before her which is the listing statement under the Commonwealth Act and I have concluded with exhibit 4 - with volume 4 for the time being.

30 My learned friend Mr Gunson asked you some questions about the criterion which are criterion 1, 3, 4 and 5, to which your attention was directed to the sentence which appears in each of those, "There is no evidence against this criterion." Can you tell his Honour please what your understanding of that sentence is? What the phrase "no evidence against this criterion" means?---It means that at the moment there is no evidence to be able to assist establishing that criterion for the species.

35 Is it consistent with there being evidence contrary to the satisfaction of that criterion, or the absence of evidence either way?---It's the absence of evidence either way.

40 Thank you. Now, I understood in your evidence under cross-examination by my learned friend, Mr Gunson, that you have never in fact deployed the log rolling method to specifically look for the broad-toothed stag beetle?---Aside from my log rolling with Peter McQuillan excursion.

45 In 2004?---In 2004.

Thank you. Which was in your role as assistant rather than a principal research it would be fair to say?---Yes.

5 Why is it that you have not in the course of your research specifically dealing with the BTSB deployed log rolling?---Because aside from the study that was contracted by Forestry my finding of *lissotes latidens* has generally been an incident find of my other research.

10 And to the extent that you have deployed other methods to identify the broad-toothed stag beetle, why did you deploy those rather than log rolling when you did them?---At the time - are we talking about the study for Forestry?

15 Yes?---It was based on conversations that I had with George Bornemizza who is well known in the State for being an avid lucanid hunter and probably somebody who has got a vast knowledge of those and he has employed that method of actually sort of looking within logs on other occasions looking for other similar species of lucanids which is why that was adopted for that particular study, in addition to the pit-fall trapping.

20 And presumably it was on the basis of that conversation that you deployed the pit-fall trapping technique?---No, pit-fall trapping technique came about because as part of my research pit-fall trapping has been an accepted method for trapping ground dwelling beetles around the world for quite a long time.

25 Thank you. My friend then asked you some questions directed towards how you would devise a study to determine the existence or non-existence of the beetle in an area. Firstly, is it possible to be one hundred per cent certain that the beetle is not in an area in the Wielangta State Forest in your view or not?---Sorry, could you just repeat the question?

30 Is it possible to be one hundred per cent certain that the broad-toothed stag beetle is not in an area of the Wielangta Forest by some test?---Unfortunately that is very difficult. It is much easier to prove presence than it is to prove absence for almost any species.

35 If one were attempting to prove the negative by the absence rather than a presence, would four weeks or six weeks of rolling of logs suffice in your view?

40 MR D. GUNSON: I object to the question, your Honour, it calls for pure speculation on the part of the witness. In any event in my submission the question would need to involved propositions as to how many people were involved, the size of the logs involved, the means by which the logs were rolled. In any event we went through all of this yesterday afternoon and I
45 particularly asked this witness was it not the case that basically to determine the absence of the beetle, you would have to roll every log in a particular coupe and she answered in the affirmative.

HIS HONOUR: I will allow the question.

MR TREE: Thank you, your Honour.

5 Would it be possible by deploying log rolling over a period of four to six weeks to positively determine the non-existence of the beetle in a coupe?---No, not unless that happened to coincide with a period of peak activity that they were definitely there, otherwise it would be very difficult.

10 Thank you. Would a period of four to six weeks of log rolling be, in your opinion, a sufficient period of time to positively conclude the absence of the beetle in any time?---No, not to positively conclude the absence.

15 Thank you. You have been asked a number of questions which delineated between work that you have done for beetles and lucanids generally and the broad-toothed stag beetle and on a number of occasions questions have been directed to you identifying that although you had done work in relation to lucanids generally, your work was not specific to the species under consideration here, namely latidens, do you remember those line of
20 questions?---Yes.

Thank you. Firstly, can you identify whether in your experience there are any behavioural similarities between subspecies of lucanids?---Yes, as a family they have broadly similar lifestyle requirements and habitat requirements. At
25 least as far as we know that's true. And it is only because we have very limited experience we tend to extrapolate from what's true of other similar species.

Is that scientifically defensible in your opinion to undertake that extrapolation?---Certainly it's about all we can do until we actually have the
30 research to show conclusively.

Is there any other - is there any better method other than extrapolation from other lucanid research which you can bring to mind?---Other than original
35 research, no.

Now, today you were asked some questions in relation to your membership of the - well, two organisations and you were asked some questions about the activities of the Wilderness Society. You were asked some questions about the opposition of the Wilderness Society to clear felling forestry operations, can I
40 ask you please whether to your knowledge that Society espouses any views in relation to clear felling of plantation forestry?---Not that I'm aware of.

Do you yourself identify any difference between clear felling of plantations and clear felling of native forests?---Yes.

45 And what do you identify those differences as being?---A plantation would have already cleared - the original clear felling of the forest would have taken

place before the plantation was there. So it is as effective just - effectively then a plantation that has become a monoculture or a farming exercise.

5 Thank you. You were asked about your membership of the ACF, can you tell the Court please in broad terms what your understanding of the role of the ACF is?---To conserve, protect and restore Australia's natural resources.

10 Is that specifically directed towards forests, or does it have an ambit broader than forestry?---No, it has an extremely wide ambit.

15 What other interests does it have other than forestry for instance in Tasmania?---Possibly in Tasmanian that might be its main focus in direct action, but it's also, you know, true that many of the problems that we have here are Australia-wide and in that case it's pretty broad reaching.

Does it have an interest for instance in salinity issues?---Yes.

In marine issues?---Yes.

20 And in air quality issues?---Yes.

Now, it is suggested to you that you were a senior executive of the ACF and I think you denied it, you are however a councillor of the ACF are you not?---Yes.

25 What is a councillor, is that an elected role or an appointed role?---It's an elected role by the members of the ACF within the State which the members are elected.

30 And does the ACF have paid or salaried employees in addition to its council?---Oh it does. The role of council is not to actually undertake any of the activities that ACF is involved in, but rather to help produce policy and guidance as to the direction of ACF.

35 Thank you. My friend then asked you some questions about work that you and others had done which demonstrated initial survival of the beetle in coupes after the fire and perhaps its presence in years thereafter?---Yes.

40 Can you assist the Court please as to whether the initial survival of the beetle is a guarantee or otherwise of its long terms survival in the site?---It generally is no indication of long term survival. The evidence research worldwide generally shows that there may be an initial survival for a short term, but the beetles will eventually disappear and then fail to recolonise the area for some time.

45 What factors may come in to play after an initial survival of the beetle which sees it thereafter fail to colonise or recolonise the site?---Distance from another possible source site of the species. Sort of so changes in the matrix so that

within a particular year if you get a cleared area and then another cleared along, so changes in the matrix surrounding the original area of unsuitable habitat.

5 Yes. Is the provision of long term coarse woody debris a factor in the continued survival of the beetle if it survives the initial clear felling or selective logging operation?---It will be in the long term. If there - assuming that there is a possible source of colonists then obviously the maintenance of that habitat is going to be important.

10

Thank you. Your research and the research of others has detected the presence of individual beetle, individual adult beetles on the site. Are you aware of any research which suggests the presence of breeding populations on the site shortly after a clear felling or selective logging operation?---No.

15

Are you aware of any research which suggests the presence of breeding populations in regeneration forests?---No - oh, are we talking about the BTSSB?

Yes?---No.

20

And I am using the term breeding population as distinct from merely specimens being present?---Yes.

25 Thank you. My friend asked you some questions about the probability or possibility that the beetle found by you and Dr McQuillan in 2004 being a vagrant in that it is said to be located some short distance, 40 metres or thereabouts from a damp forest area. Can I get you to cast your mind back please, the beetle which you located in - sorry, the beetles which you have located in dry forest areas have been located in areas close to damp or wet forest or not?---Some of the beetles have been in damp forest and others have not.

30

And those that you have found in dry forest, those that were not in damp forest, have the positions that you have located them been close to damp or wet areas?---No.

35

40 Now, if you also consider the most recent research that has been undertaken by, I think Dr Richards, in which a beetle was identified in dry forest, albeit in what is said to be a transition zone between dry and wet forest, am I correct in the maths that there have now been at least five beetles found in dry forest?---At least, yes.

45

And my friend asked you some questions about the possibility of the - let us call it the McQuillan beetle being a vagrant, do you have any view as to the possibility that those five beetles are all vagrants?---Unfortunately when you find single beetles it's not an open and shut case that you can say definitely not vagrants. I suspect not given the low dispersal ability of the beetle.

You mentioned in answer to my friend that in fact that interposition area between wet and dry may in fact be the habitat of the beetle?---Yes, I believe that is a possibility.

5 Can you identify any logical reason why it may prefer that as its prime habitat rather than being a secondary habitat for itself?---It may be that that particular combination of climate and habitat variables is what suits it best.

10 Thank you. You were asked some questions today about Mr Meggs' criticism of the confusion between fragmentation of habitat and the destruction of habitat. You remember there was reference to the Fahrig paper?---Yes.

15 Can you identify please the sort of research that would need to be undertaken to determine whether fragmentation is or is not an issue for the broad-toothed stag beetle at Wielangta?---You would have to identify areas where it was that were in a fragmented matrix and follow up to find out if it maintains populations within those small areas.

20 Would that be slender research or extensive research?---It would be long term monitoring research.

Absent that research are you aware of anything which assists in demonstrating that fragmentation is not an issue for the beetle at Wielangta?---No.

25 My friend has asked you to look at the two Forest Practices Plans in respect of coupes 17E and 19D. You might remember you were shown those this morning and one dealt with a failure - sorry, a policy that firewood collecting should not be allowed post harvest?---Yes.

30 And can I just get you to focus on that prescription in that particular coupe. Is that prescription itself sufficient to maintain habitat in the long term for the beetle?---Yes and no. It may provide future habitat. It is unlikely to provide habitat in the short term because the beetle would be unlikely to utilise that resource while the micro-climate and lack of canopy cover would be taking effect.
35

40 If there is a series of harvests thereafter at say 80 to 120 year intervals of the regenerating forest, is the initial debris which is prohibited from firewood collection, is that going to survive into the infinite future for the beetle's food source?---No, it would continue to decay to it's problematic as to whether the beetle would recolonise within its usable period.

45 Thank you. My friend then asked you some questions directed towards your field notes and there was a series of questions directed towards the suggestion that in undertaking classification of vegetation, what you were doing was undertaking an educated guess. Firstly, can I ask you please whether you can, in your mind, identify an area of dry sclerophyll forest?---Yes.

Can you, in your mind, identify an area of wet sclerophyll forest?---Yes.

Can you identify, in your mind, an area which you would describe as damp sclerophyll forest?---Yes.

5

And I am assuming that damp is some mixture between the two?---Yes.

In identifying those in your mind can you say from your experience whether you believe what you have identified as dry, wet and damp is at odds with what the scientific community regards as dry, wet and damp?---No.

10

And my friend has asked you to - in answer to my friend's questions you referred to vegetation mapping that you had had regard to?---Yes.

Can you remember now the classifications that you used in that vegetation mapping? Were they dry, wet or damp or was it directed towards the actual content of the individual forest communities?---It would be broad forest community types that by definition fit within dry or wet.

15

Thank you. That is the re-examination of this witness but there are now produced, pursuant to my friend's call, somewhere on our side of the bar table - I am told that the draft affidavits that have been referred to in this witness' evidence are outside the Court. Perhaps if the matter could be stood down just briefly I can supply those to my friend and examine them and see whether the witness can be relieved.

20
25

MR D. GUNSON: I have no problems with that, your Honour. There is one thing though that I omitted to do. I had intended to tender Dr Michaels' field notes as an exhibit. I apologise for not having done it during the proper time but I over-looked it.

30

MR TREE: I doubt there is any difficulty with that. I might just inquire of Dr Michaels whether there is - no, there is no difficulty with that, your Honour.

HIS HONOUR: All right. The field notes will be exhibit 14.

35

EXHIBIT #14 FIELD DATES OF KARYL MICHAELS

40

HIS HONOUR: I will adjourn. If you let my associate know when you are ready he will retrieve me.

MR TREE: Thank you.

45

ADJOURNED

[2.47pm]

RESUMED

[3.25pm]

5 HIS HONOUR: Mr Gunson?

MR D. GUNSON: Thank you for that indulgence, your Honour, I am sorry we were a little bit longer than we thought we would be but it was necessary. I do wish to ask some questions of Dr Michaels concerning the affidavits.

10

<FURTHER CROSS-EXAMINATION BY MR D. GUNSON [3.26pm]

15 MR D. GUNSON: Could the witness be shown this document, please? Now, Dr Michaels, do you recognise that document?---Yes.

It is in fact a draft affidavit, isn't it?---Yes.

20 And would it be right to suggest that that is the first draft of what ultimately became your affidavit which I think was sworn on 29 May?---Yes.

2005. That is correct, it was the first draft?---yes.

25 Is it?---I believe so, yes.

All right. Thank you. Now, I wonder if you would look at that draft document, and do you have before you your original affidavit, volume 1, page 88?---Yes.

30

And you would agree, would you not, that the draft differs from the final document? For a start it is considerably shorter, isn't it?---Yes.

35 Now, can I just take you back in time, please, and think back if you would. Is this draft affidavit the document that was prepared on the basis of a telephone discussion with Mr Roland Browne?---I couldn't be 100 per cent sure.

40 Well, it is pretty clear having looked at the draft that at some stage that draft has been developed to become your final affidavit, that is correct, isn't it?---Yes.

And it is fair to say that material has been added to it?---Yes.

45 And it is fair to say that material has been deleted from it?---I'm not sure if it's been deleted. Oh, yes, there's been a couple of bits deleted, yes.

Yes. Now, I want to go through the process with you. Your memory is that at some stage you were in Mr Browne's office, you can't fix the date, but your

memory, as I understand it, is that it was probably a couple of weeks before he contacted you by phone?---It was prior to the phone conversation, yes.

5 All right. And earlier of course in August 2004 you had already been engaged as an expert on behalf of Senator Brown in relation to his potential claim?---Yes.

And we have seen the letter of retainer, haven't we?---Yes.

10 Now, let me take you back again. Is it still your memory that the affidavit was drafted over the telephone by Mr Browne telephoning you?---Certainly there was one drafted over the phone, yes.

15 Right. Did you correct the draft that is in front of you and send that corrected draft back to Mr Browne?---I'm unsure as to whether I just verbally corrected it or wrote it out.

20 So there may have been a telephone conversation or you may have gone and seen Mr Browne and you may have discussed the contents of the draft, but you can't remember which?---Yes.

Or there may be another option and that is that you, as you said, marked the first copy, wrote comments on it and so forth, and sent that back?---Yes.

25 Do you have a memory of doing that?---No, I don't remember any of the above, I'm sorry.

All right. Now, could I take you, please, to paragraph 7 of your draft?---Yes.

30 In the previous paragraph - or two paragraphs, you have said while studying for your PhD in 1999 you were engaged by Forestry Tasmania to prepare a report on the lifestyle traits of *lissotes latidens* from the point of view of vulnerability to forest operations; is that correct?---Yes.

35 Now, if you turn to your original affidavit - sorry, to your final affidavit, you refer there in paragraph 5 to while studying for your PhD in 1998 being asked by Forestry Tasmania to prepare a report on the status and lifestyle traits of the beetle, didn't you?---Yes.

40 Now, in your draft you said this occurred in 1999, and I am not going to quarrel about the year, but in the draft at paragraph 7 you said this:

45 *I handed the report referred to above to an employee of Forestry Tasmania in 1999 named Mark Wapstra. He commissioned me to do the report. I told him that my advice was not to log the Wielangta area because of the threat posed to the BTSSB. His response was to say that is not an option.*

That is what it said in your draft, isn't it?---Yes.

But first of all you set this conversation in 1999?---Sorry?

5

In your draft you say the conversation occurred in 1999 which is clearly wrong isn't it?---I think we already went through the dates earlier and - - -

Yes, but it is clearly wrong isn't it?---The dates are wrong, yes.

10

You said you handed the report to him, that is Mr Wapstra?---I changed that because I said that wasn't what happened.

Right, that is what I want to get to. So who put this paragraph in, in the first place? Who prepared the paragraph in those terms?---I believe the Roland prepared the report following a phone conversation and obviously trying to sort of take down what I was saying and write out into meaningful - - -

15

When you say your report, you mean your affidavit?---Yes.

20

So whenever you say report I should understand that to mean the affidavit?---I'm sorry, did I say - I meant affidavit.

So Mr Browne, you say, misunderstood your instructions; is that right?---Yes.

25

And you corrected it?---Yes.

Or he corrected it on your instructions?---Yes.

30

All right. Could you have a look please at paragraph 12 of your draft?---Yes.

And just read that to yourself please?---Yes.

And this deals with some field work that was carried out by you was Dr McQuillan wasn't it?---Sorry, I think I'm looking at the wrong place.

35

Paragraph 12 of your draft affidavit - - -?---Okay, sorry, I'm looking at the wrong one.

- - - deals with some field work that you carried out with Dr McQuillan; is that correct?---Yes.

40

And if you look at paragraph 11 of your affidavit that you have sworn in these proceedings?---Yes.

45

And it reads:

5 *In late 2004 I participated in further field work with
Dr Peter McQuillan at Wielangta and was present when Dr McQuillan
retrieved specimens from the traps we had set some weeks earlier. One
of the specimens was found in an area of dry sclerophyll forest, an area
within coupe WT017E. The forest in this coupe area is dry sclerophyll
forest.*

?---Yes.

10 Now, in your draft you have only part of the coupe referred to and that is WT0
and there are a series of dots?---Yes.

Now, somebody at some stage has obviously inserted the numbers 17 and the
letter E?---Yes.

15

Now, were you reminded that it was coupe WT017E by Mr Browne or did you
identify that from your own notes, or did somebody else tell you it was coupe
17E?---I don't remember.

20 Well, it is not referred to correctly in your draft, so somebody has obviously
put it in?---Yes.

You didn't input the information in yourself from you own memory or notes
did you?---No.

25

And there is something else in that paragraph that doesn't appear in your
affidavit isn't there?---Yes.

30 Would you read that out please?---

It is unusual to find the B T S B in this forest type.

35 So that was your first draft saying that the beetle was found in dry sclerophyll
forest and it was unusual to find the B T S B in that forest type?---Yes.

And that has been excised from your final affidavit hasn't it?---Because I - - -

40 Just answer the question please, it has been excised hasn't it?---Yes, it has been
excised, yes.

Now, who decided that it should be excised?---I did.

And when did you decide that?---When I saw the draft.

45 But is that what you told Mr Browne in the first instance?---No, I don't believe
so.

So what do you think you told Mr Browne in the first instance?---I can't remember what I would have said at the time.

You have no idea?---No.

5

But it has certainly been excised from your affidavit hasn't it?---Yes, it has.

Now, if you go please to page four of your draft affidavit?---Yes.

10 And if you would then compare that to paragraph 15 of your final affidavit?---Did you say page 4?

Page 4 of your draft, it should have at the top of the page, "The beetle undoubtedly has specific habitat preferences"?---Yes.

15

Now, then go to please page 93 of the Court book?--- Yes.

And you will see that it is here that the words "Concerning the Forest Practices Code" and "that wildlife habitat clumps" are inserted in your affidavit. Is that correct?---Sorry, B looks the same to me on both pages or am I missing something here?

20

Well, if you would look at paragraph C and go back over the page and then you will note, comparing the document, that a whole new paragraph goes in about stream-side reserves with the words:

25

The Forest Practices Code 2000 prescribes the widths of these reserves. A wildlife habitat clump is an area of land reserved from logging and other forestry operations.

30

They have been inserted haven't they?---Yes.

Yes. So there is obviously, at this stage of the affidavit, having been drafted, that you must have had your discussion with Mr Brown about the Forest Practices Code?---Yes.

35

And you would have no memory as to whether that was by telephone or in Mr Brown's office?---No.

40 Thank you. And the balance of the affidavit on page 5 adds all of the material that is now set out in paragraphs 20 - sorry, 21, 22 and 23, doesn't it?---I am lost again.

Yes. All right. If you look at paragraphs 21 - or 20, 21, 22 and 23 dealing with Jeff Meggs - - -?---Yes.

45

- - - they do not appear in your draft affidavit, do they?---No.

Now, can you tell me please what led to those paragraphs being inserted in the affidavit when they weren't in the draft originally. Were these as a result of further discussions with Mr Roland Browne?---Yes.

5

So when did you have those discussions with Mr Roland Browne?---I am unsure. Some time between one and the other being produced.

Well, did you draft those paragraphs 20, 21, 22 and 23, or did Mr Browne kindly draft them for you?---I believe that he drafted them following my instructions.

That is your belief but you can't say whether that was done by telephone or by personal contact in Mr Browne's office?---No, I am sorry. I can't quite remember.

I have no further questions. I tender that draft affidavit, your Honour.

HIS HONOUR: Any objections?

20

MR TREE: No, your Honour.

HIS HONOUR: The draft affidavit will be exhibit 15.

25

EXHIBIT #15 DRAFT AFFIDAVIT OF KARYL FRANCES MICHAELS

HIS HONOUR: Mr Tree?

30

MR TREE: I don't wish to re-examine further and I would ask the witness be excused.

HIS HONOUR: No difficulty about that, Mr Gunson?

35

MR D. GUNSON: No, your Honour.

HIS HONOUR: Dr Michaels, thank you for your evidence. You may be excused from further attendance but if you wish you may remain in Court.

40

<THE WITNESS WITHDREW

[3.38pm]

MR TREE: I should, for the convenience of your Honour, and those at the bar table at least, distribute another two copies of what I believe to be the affidavit that my friend has just tendered.

HIS HONOUR: What is proposed occur now, Mr Tree?

5 MR TREE: It is proposed that Dr McQuillan be called and it is anticipated that his cross-examination will commence today.

HIS HONOUR: Yes. Does that give you a potential difficulty?

10 MR TREE: It gives us a number of potential difficulties which have been the subject of considerable consideration over lunch and this is the course that we have decided is the least potentially inconvenient, at least to our side of the bar table. Ms Mortimer correctly identified that your Honour is probably concerned about Drs Bekessy and Wintle. It is anticipated that we will interpose those tomorrow at 10 o'clock.

15 HIS HONOUR: What I am concerned about is a situation arising where Dr McQuillan's cross-examination commences today that the evidence of Dr Bekessy in combination with the evidence of Dr Wintle, takes the balance of the week and then you have difficulties in not being able to get instructions
20 from Dr McQuillan while he is under cross-examination.

MR TREE: Those are all matters that have concerned us too, your Honour. The only other real option is to proceed to adjourn now. We are not in a position to put any other matter before your Honour other than the evidence of
25 Dr McQuillan this afternoon.

HIS HONOUR: No, isn't the middle position just having the evidence-in-chief of Dr McQuillan?

30 MR TREE: Just excuse me a minute, your Honour. There is one additional fact that we perhaps should throw into the equation and that is we have been advised by counsel for Forestry Tasmania, Mr Gunson's junior, who is cross-examining Drs Bekessy and Wintle that he does not anticipate that all of Thursday and Friday will be required for their evidence. Now, although the
35 time table shows other potential witnesses on that occasion I think our preference would be to proceed with Dr McQuillan's evidence and to try and exhaust whatever time we have either today or on Friday or indeed on Tuesday or Wednesday to try and move towards the conclusion of his evidence.

40 HIS HONOUR: All right. In any event you are content that the cross-examination commence today?

MR TREE: Yes.

45 HIS HONOUR: Yes, all right.

MR D. GUNSON: Could I be heard as to that, your Honour. I don't know how long my friend is going to be with Dr McQuillan in-chief. He says 10 minutes. I can certainly start but I would be hesitant about wanting to start with the greatest of respect, bearing in mind I am not going to come back to him possibly until Tuesday, maybe Friday. We are only looking at a matter of 20 minutes or so but I still would be unhappy about doing it.

HIS HONOUR: Do you have any idea about how long in total your cross-examination might be?

MR D. GUNSON: At least a day, your Honour. At least. Your Honour, we anticipated a long cross-examination of this witness and that is why we are anxious to make as much use as we can of whatever morsels of time are available to us.

HIS HONOUR: Why don't we at least have the evidence-in-chief and then Mr Gunson can tell me then how he feels about starting to cross-examine.

MR TREE: Thank you, your Honour. I call Dr Peter McQuillan.

<EXAMINATION-IN-CHIEF BY MR TREE

5

MR TREE: Could you tell the Court your full name, please?---Peter Bernard McQuillan.

10 And your residential address please?---Number 2 Invercargill Road, Mt Nelson.

And your occupation or profession, please?---I'm a senior lecturer in eco systems at the University of Tasmania.

15

Perhaps I could just commence by clearing up one matter. During the course of today you have been on occasions referred to as Professor McQuillan, is that a title - an august title to which you have yet arrived?---I don't deserve the title at all, I'm a plain doctor.

20

Now, I wonder if the witness might be shown Court books volumes 1 and 2, please, your Honour. In Court book volume 1 could you turn to page 108 please. And could you look at pages 108 across to page 114 please and identify if that is a copy of an affidavit affirmed by you on 29 May 2005?---Yes, I recognise it as such.

25

Thank you. I will ask that affidavit form part of the evidence of the applicant in this case.

30 HIS HONOUR: Yes, it will.

MR TREE: Could the witness then be shown Court book volume 2, please, your Honour.

35 And could you turn please to page 491?---Yes.

And do you identify pages 491 and 492 as being a copy of an affidavit affirmed by you on the 18th of October 2005?---That's correct.

40 Likewise I would ask that that affidavit form part of the applicant's case.

HIS HONOUR: Yes, it will.

MR TREE: Thank you, your Honour.

45

Now, I wonder if the witness might have Court book volume 4 placed before him, please, your Honour. And I have finished now with volumes 1 and 2.

Could you look please at page 1189 and identify if that is an affidavit of Jeffrey Meggs?---That's correct.

5 And have you had an opportunity to consider Mr Meggs' affidavit prior to giving your evidence today?---I have.

10 Thank you. Now, can I deal with one preliminary issue at the outset, please. You are aware that Mr Meggs asserts in that affidavit some detail about a prior relationship, a professional academic relationship between you and he during the course of his masters thesis?---That's correct.

15 Could you tell the Court please your understanding and recollection of what that relationship was please and how it came about?---Well, that relationship was in the nature of myself being a research supervisor for Mr Meggs' masters degree with science. His primary supervisor was Associate Professor Alistair Richardson of the Zoology Department of the University.

20 And what is the distinction, if any, between those two roles that you and Professor - the other professor you told us about - what is the difference between those two roles?---Well a principal supervisor has main carriage of the project and he is the supervisor most responsible for the progress of the student. The research supervisor is very much an adjunct supervisor who may be called upon to contribute particular expertise that may not be available from the primary supervisor.

25 And can you say whether you were a member of the academic school in which Mr Meggs was undertaking his Masters thesis study?---No, I was a member of the School of Geography and Environmental Studies.

30 And were there others to your knowledge, or any other person who was a research or other supervisor of Mr Meggs' Masters thesis?---I understand Dr Sara Munks was a research supervisor and she worked of course with Mr Meggs at the time.

35 Thank you. Was she an employee of the University of Tasmania at that time or was she an external research supervisor?---She was an external supervisor.

40 So in fact to your understanding there were three supervisors of Mr Meggs?---That's correct.

Two research supervisors, of which you were one?---Correct.

45 And a principal supervisor who came from the school at the university at which Mr Meggs was then studying?---That's right.

Can you recall what contact you had with Mr Meggs during the course of acting as his research supervisor?---I can only recall in very sketchy detail, but Mr Meggs contacted me on several occasions with particular questions relating

to the progress of his work. In particular, I can recall because he was collecting beetle larvae during his surveys, and given my background in rearing these sorts of insects in the past, I took possession of some of that material and was able to rear it for him to confirm some identifications which I made available to him. I also attended several meetings that were convened in the office of Professor Richardson at which Mr Meggs was present where we discussed his progress up to those particular points in time, and I kept a, sort of, weather eye on his progress just through conversations with people broadly. Jeff was fairly well known to me and he also supplied me with a copy - a final copy of his thesis once it had been accepted for my library.

Did you provide any feedback by way of peer review or otherwise of that thesis that he submitted to you?---On components of it I gave him verbal feedback, most memorably in association with Professor Richardson at meetings we had in Professor Richardson's office. I had several phone conversations with Mr Meggs. I can recall one where I was feeding back information about what species of larvae I'd reared on the tree he provided to me. I saw him, you know, casually on a number of occasions and I dare say we talked in general terms about his project, but at no time did I give him comprehensive written feedback in the sense they'll understand it as peer review that I would provide for a student that might - or I might be the principal supervisor.

Did you understand that that role lay with Professor Richardson?---Correct.

And did you in agreeing to become his research supervisor or one or two research supervisors understand that you would be performing any part of that more general oversight role?---No, my understanding was that as research supervisor my supervision formally would be relatively minor. That's not to say that a research supervisor could not if he chose expand his role. However, if the role was expanded pretty much then it would be usual to be formally brought on board as a, you know, principal supervisor. The reason for this is that there are financial incentives to departments to progress students to completion and the principal supervisor or his department - his school, gets more of that money if there is a single principal supervisor than if it's shared between schools. Since our school got no money whatsoever, it was my understanding from this project than that would indicate, but my role was indeed minor.

Thank you. Now, can I direct your attention, please, to several paragraphs in Mr Meggs' affidavit? Firstly, can I get you, please, to direct your attention to paragraph 24 of his affidavit, please? It is page 1198 of Court book 4. And can I direct your attention, please, particularly to the part of the paragraph which is in about the middle of it which the line commences:

Evidence of ongoing habitat potential in 17E lead me to conclude that the harvesting of 17E will have had only a minor and short term impact on the local population of the species and that sufficient habitat will be

available throughout the silvicultural cycle to maintain the local population in the area.

5 Do you have any comment in relation to whether the impact of the harvest and its impact will only lead to minor and short term impacts on the local population of the species?---Yes, I'd find that statement as Mr Meggs has it here highly speculative and very optimistic. Having visited that site several times I would judge the impact is very significant in terms of modification to the habitat, the amount of recruitment of dead logs to the ground and coarse woody debris which is essential future habitat will be much less than it would have been had the site not been harvested. He mentions here local population. That would need to be defined more precisely and it's a value judgment as to what is sufficient habitat, we simply are not well placed to say what is a sufficient habitat in the circumstances.

10
15 Thank you. Can I direct your attention to paragraph 25 please where it reads:

20 *The only objective measure as to whether the harvesting of these two coupes will further threaten latidens is an increase in the threat status of the species to critically endangered under the EPBC Act.*

25 Do you agree or disagree or have any comment in relation to that?---I disagree it is an objective measure, it's in fact a bureaucratic measure. An objective measure would require a significant amount of data to be gathered from the field and a judgment made as to whether the species had been further threatened according to the criteria for making that judgment about threat status.

30 Thank you. Can I direct your attention please to paragraph 33 which identifies the sampling method selected by Meggs and Munks as a:

35 *Stratified sampling design based on four broad categories of forest type found within the study area: wet eucalypt forest, damp eucalypt forest, dry eucalypt forest and riparian wet forest.*

40 Do you have any comment in relation to that as the sample design?---It's a design that might be commonly used for similar studies, but it's not the best design that might be used. A better design where you're wanting to answer the question: where does the species occur in the landscape - would be one where you would use randomly selected sites and you would then describe the vegetation of each of those randomly selected sites. The difficulty with this design is that it pre-determines there shall just be four types of forest when in fact in other parts of my reference you will sit and talk about the continuum of forest type from wet to dry. And indeed we know that Wielangta is highly complex in its dispersal of forest types. In addition this nomination of damp eucalypt forest is in my view a problem because it is not readily well defined and not already recognised in botanic literature. It is something of a construct in my opinion.

Is it a term that is commonly used within biological or scientific circles to describe forest type, damp forest?--Not in my experience. It is not typically mapped. I mean wet eucalypt forest certainly is mapped as a category and dry
5 eucalypt forest, but this sort of intermediate so-called damp forest type is not widely used in my experience.

Thank you. Can I get you please to direct your attention to paragraph 47 where there is reference to your affidavit and it is suggested that you and Dr Michaels
10 are suggesting that the finding of the beetle in 2004 should overturn our current understanding of what constitutes potential habitat for latidens. Is that an accurate characterisation of what you say should be the consequence of the detection of the beetle in 2004 in dry forest?---I think it overstates that it's like a revolutionary finding, in fact I would certainly claim it expands the
15 understanding or expands the knowledge of where the species might occur, it is simply additional data.

In paragraph 52, page 1205, there is criticism of your work as not being peer reviewed, in the sense that it has not been published in a refereed journal. Do
20 you have any comment to make as to the validity of scientific work which does not have that feature?---Yes, that would still be done in a scientific manner, you know, meet the needs of objectivity and care and good recording. In one of Mr Wapstra's affidavits he says that forestry uses an adaptive management program or process in its work on conservation that makes use of both
25 published and unpublished data sources, or best of other information and recently did acknowledge this is effectively a single data point or a couple of data points. It doesn't have the legs to stand up as a full-blown paper, but nevertheless it's objective data that should be considered.

Thank you. Can I get you, please, to direct your attention to paragraph 98, page 1222, and you will see that there is a bold heading, Recommended
30 Conservation Management Strategy and Prescriptions for Latidens. Firstly, can I direct your attention to paragraph 99 where there is the recommendation in A(1) on the bottom line on that page that:

35 *The width of class 4 streamside reserves should be a full 10 metres.*

Do you have any comment as to the efficacy of a 10-metre streamside reserve as a source of potential habitat for the beetle into the future?---I would say it
40 has a very limited future, for simple reasons: one is that 10 metres is less than the height of the average tree at that site, so once trees become over mature and fall down and become logs, on average they would tend to fall outside the streamside reserve where they will be lost to habitat. Secondly, these streams tend to flood at regular intervals, perhaps a one-in-ten-year event. We tend to
45 scowl at streamside reserves, so they are not - streamside reserves are not necessarily all that useful in the long term because they are quite disturbed habitats. And thirdly, 10 metres, particularly in open forest, or relatively open

forest, tends to be largely all edge in the sense that you get drying effects and things such as that. There's no real interior to a forest that narrow.

5 Thank you. Can I direct your attention to paragraph 117 please where there is
a comparison made between stochastic wild fires and forestry practices and it
said that there is some commonality between those two events. Do you have
any comment as to that assertion?---Yes, I think in the past and even in the
present day claims that natural random stochastic wild fires in the sense are
10 recapitulated by management fires is a very long bow to draw. First of all
natural wild fires tend to be extremely patchy, they occur at time intervals that
bear no relationship to management fire burns. Management burns or
regeneration burns tend to be extremely hot fires because they're managed to
be that way, they're intended to kill all other species ideally so that the
eucalypts come away without competition. And if you look at the aftermath of
15 a wild fire you find that quite a few trees are not killed at all, some scorched
and it's regenerated in situ, in other places they're killed and the trees come up
from seeds, so you tend to get multi-aged forests whereas the outcome of a
management burn tends to be that the regenerative forest is all even-aged as a
single cohort of trees.

20 Can you identify in Mr Meggs' affidavit or indeed any of the reports that he has
provided or the publications he has made, any reference to unplanned fire
within the silvicultural cycle during regeneration?---I just can't recall a specific
incidence but - - -

25 If there were such an unplanned fire within the cycle of regeneration would
that have, in your view, any impact upon the ability of the planned habitat for
the beetle to maintain itself into the long term?---Yes. The fact that there is a
lot of reliance given to things like retained habitat, clumps, habitat strips,
30 streamside reserves, these will need to remain in perpetuity in that landscape to
meet the needs of the threatened species that live with them and if you could
unplan fires, or even arson, that demolish those elements in the landscape then
obviously the utility is completely lost and so that would represent an
undesirable threat to the species survival.

35 Could the witness please be shown exhibit H, your Honour?

40 Now, Dr McQuillan, exhibit H bears some substantial similarity to the affidavit
of Mr Meggs that you have recently had in front of you but is in fact a draft
which preceded the affidavit that he swore. I want to direct your attention to
some paragraphs in it which do not seem to have found their way into the final
version. Can I firstly direct your attention to paragraph 97 please and I want
you to look at the first sentence of paragraph 97 which reads:

45 *Our lack of understanding of the impacts of CBS -*

which is clear fell, burn and sow -

forestry on local populations of latidens and our uncertainty as to if or when regenerating forest after clear felling becomes suitable and sustainable habitat for the species represents the greatest impediment to ensuring the long term conservation of the species.

5

Do you agree or disagree with that sentence?---I agree with its broad intention, yes.

Thank you. The second sentence reads:

10

Currently we cannot clearly say whether the mitigation measures developed for this practice are warranted let alone whether they are effective or adequate.

15

Do you agree or disagree with that sentence?---I agree with that.

Paragraph 99, the first sentence reads:

20

To my knowledge no effectiveness monitoring program has been implemented for latidens.

Do you agree or disagree with that sentence?---Is this the recent document made available to us last week I think - - -

25

Yes?--- - - - that purports to be in an evaluation of the monitoring program but other than that I am not aware of any effective monitoring program.

Thank you. Paragraph 100:

30

Hence the implementation of an adaptive management strategy for the conservation of latidens can be considered to be somewhat patchy given that the conservation management strategy developed for the species is dependent on such an approach, this is something that urgently needs to be rectified.

35

Do you agree or disagree with those two sentences?---I certainly agree with both of those.

And the third sentence which has been struck through:

40

The longer the status quo of conservation management for this species is maintained, the higher the risk of extinction to the species based on current knowledge.

45

Do you agree or disagree with that sentence?---I agree with that.

Thank you, your Honour.

HIS HONOUR: Yes, Mr Tree. Mr Gunson, I think your position is a bit a fortiori given the time.

MR D. GUNSON: Sorry, your Honour.

5

HIS HONOUR: Your position is a fortiori given the time.

MR D. GUNSON: I think so, your Honour. I think so.

10

HIS HONOUR: I think we will adjourn now until 10 o'clock tomorrow morning.

15

**MATTER ADJOURNED at 4.05 pm
UNTIL THURSDAY, 9 FEBRUARY 2006**

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