

TRANSCRIPT OF PROCEEDINGS

O/N 2522

FEDERAL COURT OF AUSTRALIA

TASMANIA DISTRICT REGISTRY

MARSHALL J

No TAD 17 of 2005

ROBERT BROWN

and

FORESTRY TASMANIA and OTHERS

HOBART

10.05 AM, MONDAY, 6 FEBRUARY 2006

Continued from 16.12.05

DAY TEN

**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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MS D. MORTIMER: If your Honour pleases, I believe we are up to Mr Mooney.

HIS HONOUR: Yes.

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MS MORTIMER: Your Honour, there have been a number of pieces of correspondence flowing between the parties over the break and perhaps a number of issues that have arisen but we will attempt to resolve what we can and otherwise put off those issues until we have heard from Mr Mooney if that is convenient.

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HIS HONOUR: Yes. Thank you. Is Mr Mooney in Court?

MS MORTIMER: He is, your Honour.

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HIS HONOUR: Thank you. You can come to the witness box please, Mr Mooney.

20

<NICHOLAS JOHN MOONEY, AFFIRMED

[10.06am]

HIS HONOUR: Mr Mooney, can you please state your full name and address for the record please?---Nicholas John Mooney, 611 Grass Tree Hill Road, Richmond.

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And have you been appointed as a Court expert under order 34, rule 2 of the Rules of Court?---I have.

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Would you like to take a seat? And have you presented a report dated 11 November 2005?---I have.

Do you have a Court book in front of you? Volume 1?---Yes.

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And is that report to be found at page 33 and following of the Court book?---Yes.

I think through to 87?---Yes.

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And do you have any alterations to that report?---I answered some supplementary questions which were forwarded to the Court on 28 November. One of those involved some corrections in a total and that should have - I presume, is well and truly circulated.

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Yes. Do the parties have that?

MS MORTIMER: Yes, your Honour. Well, we do.

HIS HONOUR: Yes. Does anyone not have that? No? Yes?---And I have, since there has been a considerable interval, picked up some minor mistakes and been able to make one more correction.

5 Yes?---And I have these. Most of the changes are for people's convenience and understanding and I have copies of these changes and a stick-on label for one of the maps.

10 Thank you. I am treating as evidence-in-chief before me, Mr Mooney's report and the answers to supplementary questions and the questions themselves and these corrections as evidence before me. It doesn't appear that the Court file has the answers to the supplementary questions given on 28 November but that is something that we will be able to rectify at the break and if we can't, well, we might seek your assistance or the assistance of the parties?---I have another
15 copy here.

Have another copy for my associate? Thank you.

20 MR N. O'BRYAN: Your Honour, I think, subject to correction, that neither of the interveners has the supplementary answers. The first we have heard about them is today but perhaps we could, at some point, get copies when that is convenient, your Honour. There is no urgency about that I don't think.

25 HIS HONOUR: We might arrange for some copying at the short mid-morning break.

MR O'BRYAN: Thank you, your Honour.

30 HIS HONOUR: So it is not lost it might be better to actually mark the supplementary material. It consists of a Forestry Tasmania document raising various questions, a letter to the Registrar from Mr Roland Browne of 16 November and then a document from Mr Mooney headed My Answers to Five Questions from John McDonald to the District Registrar dated 21 November. That material, as a bundle, I will call exhibit M1, being M for Mooney. Also
35 amongst that for completion should be the document now handed up, the corrections document as the last page of that exhibit.

40 **EXHIBIT #M1 SUPPLEMENTARY MATERIAL TENDERED DURING MR MOONEY'S EVIDENCE**

45 HIS HONOUR: Mr Mooney, is there anything that you want to add by way of explanation to any material in your report and supplementary answers or are you content to go straight to questions if there are any?---No, I think those amendments I have offered would deal with that.

Yes. Thank you. Which parties desire to question Mr Mooney?

MS MORTIMER: Your Honour, we do and I understand we are the only ones.

5 HIS HONOUR: All right. Is that the case?

MR O'BRYAN: Yes, your Honour.

10 MR D. GUNSON: At least at this stage, your Honour. Something may arise from my learned friend's cross-examination which may cause us to ask some questions but I reserve our position as to that.

15 HIS HONOUR: No difficulty about proceeding that way so long as you have another go, Ms Mortimer?

MS MORTIMER: So long as I get another go, your Honour, I am perfectly content.

20 HIS HONOUR: Yes, Ms Mortimer?

<CROSS-EXAMINATION BY MS MORTIMER

[10.12am]

25 MS MORTIMER: Mr Mooney, you have got volume 1 of the Court book there with you? Book 1? Can you just go to your curriculum vitae please on page 82 and I just want to ask you about the second entry under your
30 professional employment history, your position that you held for a long time as wildlife biologist with the Nature Conservation Branch of DPIWE. Can you just tell his Honour please broadly what that involved? That is designed to be a short question and answer, not too long, Mr Mooney?---My job is to identify and assess and come up with solutions to nature conservation issues particularly to do with my expertise which is vertebrate animals, mostly
35 mammals and birds. My, I suppose, special expertise is in birds of prey and I am not there just to react to things that happen but to actually look for problems, if you like, come up with preventative management, not just emergency management and that is, on a broad scale, such as the issue we are dealing with here really and micro-management as well, things as supposedly as trivial as possible in a chimney so I think that would summarise it pretty
40 well.

Right. Now, that is not a position within the Threatened Species Unit?---No, I have never been in the Threatened Species Unit.

45 All right. Can you tell his Honour what your, in that position, interactions with the Threatened Species Unit were? Of what kind?---In relation to this matter with eagles I was actually dealing with this matter before the Threatened Species Unit was invented and in fact before there was legislation so that was

one of those cases of a problem being obvious to me and some of my colleagues and starting work on it and I maintain that that position of research and negotiation over solutions as the Threatened Species Unit became established and of course commensurate with that was the Threatened Species legislation and I remained in a very active research and advisory role right through to 2001 and in which case by that stage we had a contractor on, as what we would call project officer, dealing with the same issues and other urgent matters came up which I had to deal with so I moved away from a very active role in that to a passive over-seeing role, giving advice when it was wanted and sometimes when it wasn't.

Now, Mr Mooney, while you held that position you obviously also had a great deal of interaction with, as it was then known, the Forest Practices Board and Forestry Tasmania, both of those institutions?---Yes. A lot of very active interaction literally on the ground in the same vehicles, doing exactly the same thing but also some desk top exercises, assessing plans and maps and hundreds and hundreds of - not e-mails at the time but mostly faxes, phone calls and later e-mails. A very active interaction for the better part of 15 years.

And those activities, were they almost wholly concerned with you having input in relation to areas that had been designated for forestry operations?---Most of that was in relation to areas designated for forestry. Some of it was academic issues to do with surveying reserves, so we had comparable information from different areas. Almost all of it, in fact, would have been looking at the potential impact of logging and sometimes the potential impact of my recommendations on logging - that sort of interaction

Right, thank you. Now, you finished up with DPIWE in 2004. Can I ask whether you are currently employed and, if so, what you are doing?---I hope I'm currently employed. I am currently employed with DPIWE. However, that branch has changed, been restructured; so I'm currently employed in, effect, in that same position.

I see?---I think I cut and pasted that out of an old CV.

That is all right. So we should read that entry as 1982 to the present, really?---Please, yes.

All right. Mr Mooney, can you go back to the body of your report, please, and turn to the picture that appears on page 36 of the court book, the female eagle on her nest?---Yes?

Can you explain to his Honour why are the nests so big?---The nests are very large because they serve as territorial flags. Another eagle can see them from tens of kilometres away and they are very large because they are used for many generations. Some nests similar to this have been recorded used to several hundred years; more or less, the late adult life of the tree. They're very large also because eagles are very large and the chicks need a lot of space. They're in

the nest for three or four, even five months they're using it sometimes. But the main reason that they're extraordinarily large in some cases - not all cases - is because of that main use as a territorial flag, and also the structure of some of these trees allows a nest to build up, accumulating; and other trees, the structure is different and the nests, as they get too big, they just fall to pieces. So they're not all huge - you know, that's an unusually impressive one.

And is it the case that with active nests, that each pair that uses them adds to them?---Each pair that uses a nest will add to the nest and repair the nest quite actively. The pair bond is maintained through the year by occasional maintenance at the nest, particularly bringing sprigs back; that activity seems to maintain the pair bond. So if the nest is in a structure rather like this photo, it could get bigger and bigger and bigger. We've known nests of up to six cubic metres.

Now, Mr Mooney, is it the case that if a pair of eagles have an active nest where they have successfully bred, are you able to tell his Honour whether they will routinely use that nest again the next year, or what factors might influence them not using the nest the next year?---If they've been successful at a nest, they will try very hard to use it again for nesting the next year. That old adage that "nothing succeeds like success" is very true for eagles. If they have a natural failure, that is, a chick dies, they will usually repeat that use of the nest, but if they have an extraordinary or particularly an unnatural failure - a failure due to unnatural causes such as if they're pushed off the nest by heavy disturbance or gross exposure, loss of habitat adjacent, they'll usually build another nest nearby, perhaps within one or even two kilometres, but often also within a few hundred metres. But they also may have secondary nests that have been used in the distant past by previous eagles and they may move to those. There is considerable variation amongst individual birds. Some seem to prefer to build their own nests rather than move to someone else's - some other birds, I should say.

All right. So in terms of where an eagle might go if its nest is disturbed, it is difficult to predict whether a pair would go and build a nest or, shall we say, renovate an old one?---Yes, it's difficult to predict that, but they will try very hard to use, if you like, the envelope of the habitat which they prefer - big, old stable trees. They like stable trees because very narrow, supple trees massage the nest and it falls to pieces. So there is an envelope of habitat which they vastly prefer. The eagles live a long time and they have long memories and if there has been a catastrophe at a particular nest, there is a tendency to avoid that nest. Replacement eagles, of course, don't have that memory, so it can suddenly change.

All right. So if, for example, one of the pair dies and you have got a new eagle coming into that pair, that can affect the choices that are then made about nesting behaviour, can it?---It seems so.

Now, Mr Mooney, can you go to paragraph 16 of your report? You are talking there about where eagles nest and you talk there about ethological mature forest. Well, first you talk about old growth eucalypt forests and then in brackets you have got these words:

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Ethological mature forest where the physical effects of disturbance are negligible.

Can we take it that that is your working definition of old growth eucalypt forests, is it?---No. I've taken that definition from the RFA because that definition of old growth forest is used in the mapping. I have no choice but to use, and in most other discussions in the context here, when that definition was decided on, there was considerable debate about the inclusion of disturbance as a factor but, anyway, it was included.

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Well, I want to ask a couple of questions about that?--- Yes?

What do you understand those words "ethological mature forest" to mean when you are using them to talk about wedge-tailed eagle habitat?---In relation to the eagles, it means very large, very stable trees which almost invariably - and almost absolutely invariably - are very old trees. It is very unusual to find an eagle's nest in a tree that hasn't got hollows, which means a great age, and most of the research I'm familiar with shows hollows usually don't form before about 130 years; so we're talking old trees. Often those old trees have - the forests with those sorts of trees has a fairly open structure, very large-scale structure, under the immediate canopy - and that, of course, is convenient for such a large bird.

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The second component of that part that is in brackets are the words:

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... where the physical effects of disturbance are negligible.

Again, when you are talking about habitat for wedge-tailed eagles, what do you understand that to mean?---I take it as read in the definition that came up for mapping in the RFA, but as far as the eagles go, I would take that as there were no permanent active tracks, road tracks, that sort of thing: no saw-milling nearby, even mobile sawmills, no woodcutting; nothing that's ongoing. It can be distinguished from perhaps an extremely old decades old track that's completely overgrown, or a walking track or someone just passing through. With a visit to these sites, it's quite easy to distinguish between what is significant disturbance and what isn't.

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All right. So you are using "disturbance" there in terms of physical disturbance to the surrounding environment. Do you include fire in that or not?---Fire is one of the natural hazards eagles have to deal with and that's one reason they build nests so high and that's one reason they often pick trees without braches low down. I think that reduces the risk of fire catching. I don't think fire itself is normally a disturbing factor for the eagles, although it can actually - I know

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of several instances where it's burnt a nest but that's very, very rare. It's often the things that go with fire, that is, the fire-fighting helicopters, people, trucks; that sort of thing is far more disturbing for the eagles. I'm not making any comment on whether the fire should be fought or not. I'm just answering that narrow issue.

All right. Now, you then say - still in paragraph 16 - that:

Breeding does not occur in isolated trees -

Now, by "isolated trees" you mean trees that have been left when there has been clearing around them? Is that what you mean?---Either that or trees that are growing on their own in some woodland or marsh situation. In mainland Australia that does occur, often because the birds have no other choice, I suspect, and they seem to be behaviourally adapted to that. But in Tasmania I've never seen that. It's not been recorded by anyone else and I'd be pretty happy in saying it doesn't occur.

All right. You go on to say:

...and rarely in areas of forest less than 10 hectares.

Now, that is a statement that is based on your observations and experience in Tasmania; is that right?---That's correct.

Is it your opinion that that is a natural choice that the eagles make or are you saying that, given the circumstances that might prevail in Tasmania, that is the best they can do?---That seems to be a natural choice they make here. There are a number of areas where eagles are not nesting where in the past they probably would've nested, and there's only very small scatterings of trees, low-density copses, and the eagles don't nest there - and if that was the mainland of Australia, they would be nesting there; and the eagles seem to have a very - if you like, a very old instinct, a very old habit of nesting in forest here. It's not dissimilar to eagle populations in parts of south-eastern Victoria where the habitat is similar. The birds seem forest-dependent for nesting here, quite clearly.

All right. Now, paragraph 17, you are talking about what you have observed in terms of the nesting sites within a territory. I just want to ask you a couple of questions about what you mean when you talk about territories. Can you just explain to his Honour, is there a physical delineation for an eagle's territory? How do you decide where a territory starts and stops?---A territory of pretty well any animal is defined as the defended, or intensely defended part of a home range. Now, the eagles roam over extremely large areas, hundreds of square kilometres, and there will be a core of that which will differ for each pair and each home range that is very heavily defended against other adult eagles. Now, that core, the edges of it are often marked by displaying. They have particularly undulating flight displays, and by aggression to any intruder,

and the neighbours are always trying their luck, trying to poach in each other's territories, and they'll get rejected, or ejected I should say. So the territory boundary is indistinct. It can change almost day to day, but certainly week to week, month to month, and it will change with the degree of aggression in neighbours as they change. So it's a rubbery sort of boundary. Now, if we want to plot it we can only really plot it by extremely intimate observation of the birds with radio tracking, or something like that. You can get a rough guide from watching the birds display and their various aggressive behaviours. In the context of this discussion the boundaries of the territory itself are not necessarily that important, except where perhaps there's a nest site that doesn't seem defended, and that can be a very old nest site that, because of this rather dynamic effect of the boundary of territories, particularly with the degree of aggression the neighbours decide to show, it might fall in between that for historic reasons.

And is it the case that when you are looking at the extent of a territory you start - the ideal way to do that is to start with an active nest site, and work out. Is that what you do?---The only way you can do that is to look at what is contemporarily active, and early in the breeding season the eagles often repair a number of nests, a number of adjacent nests, line them, and they'll have a large territory in that situation, trying to defend all of these places, and then they'll settle down and decide on the site that they will breed in. And the territory can contract to be a core of that. The territories tend to be dome shaped, so if a bird wants to cross it it has to fly up and over.

Right. I see. Now, you were talking in paragraph 17 about the existence of what you call a primary nest in a perfect site, and then a whole lot of other nests around it. When we look at maps, including the maps that are in your report of nest sites, what we see in those maps are all the nest sites that have been located without discrimination as to which might be primary or secondary or whatever?---That's true.

And the only way that you can understand how, within a particular territory, how important a nest is, is by getting out on the ground or in the air and having a look at any given point in time?---That won't even give you that information necessarily. You might have to look at the history to see where the eagles were when they were first found, and of course that may simply not be possible. In many developed areas, be it agriculture, forestry, urban, the primary nest has long since been deserted, or even gone. The nest may have fallen down through decades of disuse, and it wouldn't even be recognised as a primary site. So identifying the primary site for that territory can be quite difficult. In other cases it can be quite easy, because some of these places are extremely obviously the best place in terms of shelter, and all the characteristics the eagles prefer. And perhaps there may be a road or a house nearby, and they simply - it's untenable, so they're already in the secondary site. Often the nests we find now are secondary, tertiary, even later sites.

Are you able to tell his Honour, Mr Mooney, again thinking about the - just have a look at figure - we will take figure 5 as an example. No, perhaps figure 4 might be a better one, because that has just got known nests sites. That is right, isn't it?---Yes, that's right.

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HIS HONOUR: Sorry, Ms Mortimer, what page is that?

MS MORTIMER: 59, your Honour.

10 HIS HONOUR: Thank you?---Figure 4, page 27.

MS MORTIMER: Oh, 27 of your report, and - - -?---Oh, sorry.

15 - - - you see that - just for your information, Mr Mooney, I will probably be using those stamped numbers in the corner?---Yes. My mistake.

Now, when you look at a map like that are you able to give his Honour any estimate based on your knowledge and experience of how many nest sites are located by observation of them without a breeding pair of eagles in them, and how many are located because you find a breeding pair of eagles there?---Most of the nests are found simply because of the nest structure, not because there's a pair breeding there or not. Finding a nest because you see birds displaying is a luxury we often don't have time to do. It takes a long time to do. Often the vast majority of nests are found by people, be they ourselves, or members of the general public looking for nests, or just literally coming across them doing something else.

Right. Okay. Thank you. Now, can I ask you to go to paragraph 24, and the table 1 there, which is where you categorise the nests into disturbed and little disturbed. And can I ask you first what are the features that you look for in terms of the territories to decide whether something was disturbed or little disturbed?---We would tend to be looking at the nest site, which is a smaller part than the territory. The territory may be several kilometres in diameter. The nest site is something we tend to regard as an area within 50 or 100 metres of the nest site. So there can be disturbance in the territory that is not necessarily disturbing the nest, because it might be over the other side of a hill, or something like that. So we tend to go quite locally, and our decisions on the local disturbance will tend to go with the territories, but not always. I'm just pointing that out in case people are imagining that we cover the whole territory, which might be, you know, three, or four, or five square kilometres measuring disturbance all over the place. We tend to look at the core places. Most of these territories have several nests in them. So we sample the territory, if you like, at the most important place, which is the nest site. That's an explanation method if you like. So that the disturbance we'd be looking at would be based on my earlier work, which clearly showed that little disturbance, such as people walking through without paying particular attention to the nest, perhaps irregular traffic at several hundred, three or four hundred metres away, five hundred metres away, that's little disturbance. Moderate disturbance is an

increase in that rate. Perhaps some activity such as fencing near the nest, perhaps a place where vehicles stop within several hundred metres, not necessarily moving, and very heavy disturbance, which is tree felling, saw mills, which does actually happen occasionally under nest trees, very direct
5 disturbance, such as people stopping, parking, staring at the tree from close distance, that sort of thing. Now, the low and the moderate disturbance was far less damaging than the heavy disturbance, particularly machinery working close to the nest, as it inevitably does for hours, days, weeks.

10 And by close, what do you mean by close?---We looked very hard at the proximity and anything within two or three hundred metres, three hundred metres was, from memory, a fairly important distance. There was no line in the sand because there were considerable differences between individual birds, and those differences are not only bird based, but they're also site based. That is, if
15 the nest is in very dense forest the eagles feel sheltered. If it's in relatively less dense forest the eagles feel more exposed. A line of sight is actually very, very important.

20 That is a concept that appears throughout your report, and can you just explain to his Honour why line of sight is so important for disturbance in relation to an eagle?---Birds such as eagles are incredibly self aware, and they are aware very much - in fact, if you like, they are professionals at it, at knowing when they are seen or being watched, and they are also very, very good at knowing if the disturbance is directed at them, or it seems to be coming towards them, or it's
25 just incidental passing by. Predators like that rely on being unseen mostly for hunting. That's - their whole lifestyle is to lead a very low profile, except when they choose. So the birds are extremely aware of disturbance coming close, and in several occasions when I was trying to make sense of this I actually climbed to an eagle's nest to see why they might be so conscious, and an eagle's
30 eye view - an eagle's view from a nest is completely different from our view from the ground. The encroachment seems far more obvious than it does to us from the ground, and that to me explained why they seemed to almost over-react by human terms to some sorts of disturbance.

35 And what about noise, Mr Mooney? I mean, if you can compare that to what you have just told his Honour about the line of sight issue, how do you see noise in terms of disturbance effects?---Noise is simply additive. Research has clearly shown for many species of birds, including eagles such as this, that regular noise that's not associated with visual disturbance, where it doesn't
40 threaten the bird, is of no great effect. That can be gun shots. Some of the best places in the world for eagle conservation are actually in artillery ranges, and military practice ranges, where the birds realise that disturbance is temporary and not directed at them, and they just get on with it. Where you have machinery operating, be it roading, be it housing, be it forestry, or whatever,
45 creeping closer to the nest it's always accompanied by noise, and that accumulation seems simply very alarming for the birds, especially if it's in line of sight. Now, to help with that line of sight issue further the eagles use a variety of forest densities, some very dense and some much sparser, what you

would almost call closed woodland or open forest, whatever you prefer, and in open forest they certainly seem much more inclined to leave the nest and much more nervous than in very dense forests where I think they are sure they remain unseen for longer. It's not illogical.

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And when you are making that distinction between open forests and dense forests, where do you fit Wielangta into that categorisation?---Different parts of Wielangta are very closed, verging on rain forest, certainly mixed forest and others are quite open. Often a pattern in that very hilly terrain is very open along the ridges and on the northern boundaries and in the rain shelters and the gullies, very, very closed. The eagles tend to prefer the closed gullies, not so much because it is dense forest because that's often where it is wettest and the soils have accumulated and you have the biggest trees.

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15 Now, Mr Mooney, just go back to paragraph 24, table 1, for a moment and paragraph 25. Now, the percentages that you use to base a lot of your opinions in this report on are those percentages in paragraph 25 about disturbance. Is that right?---Yes.

20 And in your opinion the breeding success of undisturbed territories is 60 per cent. Now, what is it that causes almost half of the breeding to be unsuccessful even in undisturbed territories?---Inexperience of birds, natural accidents and you can include bad luck in that. Maybe very serious inclement weather that the birds were caught off the nest and the egg or chick died. That occasionally happens. Storms - occasionally chicks fall out of nests. Occasionally fire. All of these occasions add up to a 40 per cent loss. Some birds don't even manage to lay eggs. They may be infertile, incompetent, a whole list of reasons so for large eagles like this a 60 per cent success rate of undisturbed stable territories is fairly normal. It is also, in an undisturbed area, almost by definition, it's at carrying capacity and there is a lot of tension between pairs so two birds that try and nest close to each other, say only three or four kilometres away, it maybe just simply too much tension and they don't get it together.

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35 So in terms of looking at the protection of populations and trying to ensure the best possible breeding successes, obviously disturbance is a major factor. Do you agree with that?---Yes.

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And do you also have to take into account with this species that they generally only have one chick? How do you factor that in?---This species, like nearly all large eagles, often lays two eggs and only fledges one chick. There is a system there called fratricide where the first hatched usually kills the second hatched. That's presumably due to food supply. If a super abundance of food suddenly happens well they might be able to get two out and there is one record of eagles in history getting three chicks and that was in a rabbit plague but one is the practical product in a place like Tasmania which doesn't have a super abundance of food and I think in about 10 per cent of cases where there is success, there are two chicks produced, that is why the average from successfulness is 1.07 chicks so there is a natural limit. Whatever you do we

don't seem to be able to push it up above two chicks and, more pertinently, the birds can't push it up above two chicks.

Now, the figures that you have used in table 1 are figures from 2000 and 2001.

5 That is because that is based on work that you were involved in?---This is based on work I was involved with. Most of that work was carried out by my colleagues and I am familiar with the work.

10 And there has not, to your knowledge, been any work done since that is capable of producing updated figures to these?---No.

Would you expect, because we are now talking five to six years from those figures, those figures in terms of undisturbed territories to have trended upwards or downwards?---I would expect those figures to be very, very similar.

15 The behaviour of the birds hasn't changed in a few years, certainly not decades, so the figures even I was using in the late 80s, early 90s, would be exactly the same. The birds still react the same to the same types of disturbance. A change takes many years.

20 But what about in terms of the numbers of nesting territories that would fall into the undisturbed category?---I am sorry. There has been certainly what I call a disturbance creek, that is as each year goes by more nests are disturbed and very, very few nests become undisturbed that were disturbed before so you have nests slipping steadily into increasing disturbance. There is a pool of
25 nests in remote areas that were undisturbed and remain undisturbed. The problem with that is as they become more disturbed the breeding success inevitably slips.

30 Right. Okay. So in terms of the percentages that might now be looked at, would it be right to say that you would be looking now at a percentage of territories that would fall into the undisturbed category that is smaller?---Yes.

And therefore you would be looking at smaller overall breeding success?---Yes.

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HIS HONOUR: And smaller in little disturbed?---Yes, definitely. I did conduct that analysis some years ago, obviously not contemporary, and the disturbance creep was an unfortunate slide, yes.

40 MS MORTIMER: All right. And just to follow that through - thank you, your Honour - therefore an increase in the ones that are into the badly disturbed and untenable categories?---More likely an increase into the ones badly disturbed. With modern practices there's great efforts made to try and prevent them being
45 untenable, but that doesn't usually prevent, you know, significant disturbance.

Thank you, Mr Mooney. Now, can you go, please, to - - ?---I might offer something here. There's - it's not as though the birds can breed with gradually increasing disturbance, and it suddenly collapses. There is a very distinct trend

that any disturbance causes a reaction in the birds, be it an increasing heart rate, but some of that reaction - sorry, that reaction increases with the type of disturbance, and it's important to understand that any disturbance does have an effect. It may not be visible, and it may not be measurable from the sorts of work we do, but certainly it does. And work overseas has shown with these sorts of examples that what I might regard as minor disturbance might keep the birds off longer than they should be, so that increases risks of predation, it can reduce feeding of chicks, so although you may produce a chick at the end it may not be of the quality it otherwise would be, and there's a lot of work being done on birds, eagles, but also sea birds, on this and it's quite well understood now.

Thank you, Mr Mooney. Now, if you look at paragraphs 27, 28 and 29 those are the paragraphs in your report where you engage in some calculations about what is the available and potential breeding habitat throughout Tasmania; correct?---Yes.

And you have based that on information that has been given to you by - as you say in paragraph 28, "Tasmanian vegetation mapping program staff"?---Yes.

So who do those staff members work for?---Those staff members are housed and work at DPIWE, the Department of Primary Industries, Water and Environment, where I work.

And so they are maps constructed by those staff, or do they get their information from somewhere else?---They get their information from a pooled resource. It very much includes Forestry Tasmania, some of their own resources, the University of Tasmania I understand contributes some. It's such a large scale program, the Tas veg program, that there's extensive collaboration upon a set of ground rules for defining what's what of course.

And do you understand or know who makes the decision about what parts of Tasmania are classified into what kind of vegetation types?---I don't know the key decision maker in that process, no.

Do you know if it is someone within DPIWE or someone within Forestry?---I don't know the key one, but I'm aware there's often active discussion over which falls into which category. I've been party to that discussion, or witness to it, I should say.

And it is important, Mr Mooney, isn't it, because the mapping data is the principal tool that people like you can use to try and predict potential habitat?---Yes, it's the principal tool, and these systems can only operate on a high degree of trust.

And that is why it is very important to, from your perspective to be able to rely on the classifications, in terms of defining what is likely to be good eagle habitat or bad eagle habitat?---Yes.

If you can't rely on the classifications you can't do that exercise?---That's true. We can - sometimes inevitably this happens where we get to check an area, and with these very large programs that are - well, at this stage they're desk top
5 exercises, but there's been an awful lot of on ground work go into them, often with aerial photographs, but ground truthing as well. There will be mis-
matching, just the scale of operation, and in the course of our work with eagles we often would get to check areas that were supposed to be this type of forest, and we either found they were or they weren't, and mostly they were,
10 sometimes they weren't. Not so much the forest type can be in question, but the exact boundaries of that mapping. It's a technic issue I'm not an expert in.

And is it also the case that that kind of predictive mapping can't really tell you how many trees in a particular area are likely to be suitable for an eagle - for a
15 nest?---That type of predictive mapping can't tell you how many trees. It can often tell you the proportion of trees that are suitable, the proportion in numbers of the forest.

And that is again by calculating based on averages, how many trees of a given
20 age or size you might find in any particular forest?---As I understand it, it's all extension of samples.

Now, can I ask you to go to paragraph 31, please, which is where you are talking about some behaviour issues to do with eagles, and you are talking there
25 about territories that you describe as having high food availability. Can you tell his Honour what kinds of territories they are?---Well, good territories.

But when you are talking about food there, because there is - I withdraw that. There is a distinction you make, Mr Mooney, in your report between carrion as
30 food and its quality for eagles, and live prey, and - - -?---The best - - -

What I am directing your attention to is you are talking about high food as in live prey, or both, or what?---A good territory is a territory with - the best type of territory, the highest quality types of territories are territories with an
35 abundance of live prey that's in a habitat where the eagles can actually catch it. They prefer - live prey is a priority. The birds really can't breed if they're relying on carrion. They have to have live prey to be able to breed successfully. Their diet is quite distinct between breeding and non-breeding. A hunting
40 adult might stop at carrion for take-away, so to speak, but nearly everything brought back to the nest is live prey. Now, there's an importance here to understand availability and abundance of prey is quite different. You can have extremely abundant prey in a type of habitat where the eagle simply can't get at it, so it's not very available. It's not a tight relationship, but with eagles the perfect high quality hunting habitat is woodland, to close open forest, various
45 sorts of forest, where there's wallabies, there's some birds nesting in there, there's possums in holes in trees that the eagles can drag out of the holes, a whole mixture of things like that. They have a very diverse diet. The popular

image of eagles just catching rabbits or hares is certainly not the natural situation beyond the hares and rabbits not being native.

5 All right. And in terms of fragmentation of habitat in the areas in which they hunt, do I understand you in your report to be saying that short term that might produce a benefit, but longer term it doesn't?---It depends on the type of fragmentation. If you have very, very dense forest, and that's fragmented, that can have a benefit, as long as the fragmentation isn't perhaps a road which can create a hazard that negates the benefit or worse. If it's fragmentation without
10 disturbance or other problems from people it can be beneficial in the short to medium term, yes. If it's fragmentation of what was already an ideal habitat there's no real benefit.

15 All right. Now, in the next paragraph, paragraph 32, you talk about a segment of the eagle population that you describe as floaters, and if you just flick over to paragraph 59, when you are talking about total numbers, what I understood you to be saying in your report when you put those two paragraphs together was that it is the case that there are very few floaters in the Tasmanian wedge-tailed eagle population, and therefore that is a sign of population stress. Is that your
20 opinion?---That's what I believe, and that principle is well accepted in raptor biology. The floater is the spares which normally top up where a number of a pair dies, and they can also occasionally supplant residents. They're very necessary spares. Without those floaters often what happens is single birds hold territories, hopefully holding territories, or a bird that's too young, or very
25 inexperienced might have an opportunity to hold a territory that normally it wouldn't. This is a well-accepted principle in raptor biology, yes.

All right. Now, I want to ask you about paragraph 39, please - and this is in the part of your report that is dealing with reaction to disturbance. You give an
30 example there of an area in the Elizabeth River Valley. Perhaps you could just indicate for his Honour where his Honour will find that in terms of geography of Tasmania? We haven't got a map up for you, Mr Mooney, sorry?---No, it's well of that map. It's mid-east coast, 50 to about 100 kilometres inland of the middle of the east coast, just south-west of St Mary's. It's a very large
35 catchment.

What the events that you are reporting there about that area demonstrate is an apparently reasonable number of nests, 27 nests, and yet only two fledglings. Now, do you regard that example as unusual or a typical kind of product of
40 moderate disturbance?---Why I've used it there is it's perhaps an extreme example of a situation you have just before the situation you would have an agriculture. Now, if I can explain that, you have the birds frequently disturbed, either by moderate or high disturbance, otherwise they probably wouldn't have moved nests, and they've frequently been disturbed, left the next. We don't
45 know the history of most of those nests - so we don't know if they deserted during breeding or moved after breeding - and built another nest. The nests have been retained, as is the, you know, forest practises; and so we have a lot of nests, a lot of disturbance and a lot of moving. In fact, the microanalysis of

that would show quite well the disturbance creep, I'm sure. The next stage is, of course, where you have more and more clearing and you lose more and more of those nests and you have more of an agricultural situation than where you have simply just a few nests in pickets of forests in an open landscape.

5

Now, this was a survey carried out in 2004 and it was obviously a fairly focused survey on that area; is that right?---Yes, it was focused on a lot of areas but this particular example was worked up from that area because it's remarkable for having so many nests and so little production.

10

All right. Now, when you say it is remarkable, Mr Mooney, are you able to tell his Honour though whether if a similarly intensive survey was done in other areas that had been subjected to disturbance through forestry and other kinds of disturbances, that this result would be atypical or typical?---It's at the higher end of the scale and that's why I've used it as an example of what can happen. But you could perhaps - two-thirds of that number of nests could easily produce that same result in many areas. There's areas that flick through my mind straight away that fit that sort of description; not as severe but, certainly, recognisable in the pattern.

15

20

And it is the case, isn't it, that unless and until those kinds of detailed studies are done in other areas, it is not possible to get an accurate picture in terms of breeding outcomes about what is happening in disturbed areas?---I think we have a reasonably good idea of what breeding outcomes are in disturbed areas because most of the examples of small catchments we know very well have a very consistent result, and that is a slightly lesser degree than that example, but the same pattern of many more nests than would be the situation in an undisturbed area and relatively less production.

25

30

I see. So am I right in understanding, Mr Mooney, that part of what you are using this example to demonstrate is that you actually have a proliferation of nests in an area because birds are moving around?---Yes.

35

So if you were putting dots on a map, it might look like it was a heavily populated area but that might just be because you have a smaller number of birds moving around a lot?---Absolutely, and there's a mixture of natural and unnatural failures of nests in amongst that but it's basically birds being chased from gully to gully to gully around these catchments. In times gone past, we wouldn't have that information because most of those trees - this is decades ago - most of those trees would've been felled and you may only record nowadays a few nests, but in recent years these nests are not felled and, therefore, we get to record lots of nests and actually have a record of what happened.

40

45

I see, thank you. Now, paragraph 41, if I can just ask you again about these figures and how you say they reflect this concept of disturbance creep that you are talking about, do I understand the sort of the upshot of what you are saying in paragraph 41 to be that you start with, in this area that you are talking about, you start with:

43 nests that were little disturbed in 1970, 13 in 1995 and three in 2005.

5 Is that the sequence?---That's right, and you will notice the date of that publication, that was data I collected through the 80s and early 90s.

right, and then you went back out to have a look as best you could in order to prepare this report?---That's right. If I can explain that further - perhaps I've
10 abbreviated it a little too much - where you have a nest that's in an undisturbed patch of forest, the nest becomes disturbed to whatever degree - in this case we're talking about forestry, but it could be agriculture or urbanisation just as easily - there's almost no circumstance where that nest is ever going to be less disturbed than it was originally. It's just not a fact of human use of the
15 landscape and that's why the disturbance creep is almost inevitable.

Okay, thank you, Mr Mooney. Paragraph 45, I just want to ask you some questions about these estimates of how separated the active nests are. Now, I understand it, what you are saying there is that a separation of four kilometres
20 is about the limit of natural tolerance for two active breeding pairs?---Well, just regarding the species itself, they can nest a lot closer than that but, in the Tasmanian situation, the four kilometres seems to be the limit and, at that disturbance, they're very rarely both successful. I think there's just so much tension there.

25 All right. I think elsewhere in your report you talk about a distance of seven to 10 kilometres. Is that a better distance, on your experience, in terms of breeding outcomes?---That's more usual in Tasmania, yes - seven to 10 kilometres.

30 Now, can you go to paragraph 49 onwards? I just want to understand a little about what you were doing there. Paragraphs 49 and 50 are the processes you undertook in order to produce the map that we see as figure 2 n page 46; is that right?---Yes.

35 If you look at the figures in paragraph 51, what you have concluded from that exercise is a total of 457 territories, all right?---Yes.

40 All right. Now, 365 of those are what you describe as known territories?---Yes.

And, therefore, 92 of them are projected territories?---Yes.

45 Now, if you can just hold those figures in your mind, Mr Mooney, and look at what you say at paragraph 59, one of the assumption that you use in paragraph 59 to make your calculations is you talk about an umber of active territories being 255 - and you say that you projected that from a sample and then you say 202 inactive?---Yes.

5 What I want to understand is how you say that those relate to the figures that appear to flow from paragraph 51. That is a combination, is it? So, although you have got 365 known territories, 92 projected territories, what you have then done in order to do the second round of calculations and population is to merge them back again, is it, into known and projected and make different distinctions between them?---Yes. Quite a few of those territories won't have two birds in them. That's the main difference.

10 Right, okay. But when you have looked at active territories, when you have come up with that number of 255, that includes projected active territories or is that only known?---Yes.

15 It is both?---Yes, it's both.

Therefore, obviously, the 202 inactive territories are also both projected and known?---Yes.

20 Okay?---If I can offer the - without projecting territories, I can't talk about the state population, and pooling them is an attempt to talk about the state population.

25 Thank you, I understand that. Now, I want to just ask you a couple more questions about paragraph 59, if you will go to that. Just explain to his Honour please how you came up with the figure - see the third line from the bottom there, you have got 214 juveniles. What did you do to arrive at that figure?---This is extending samples of - we considered samples of the eagle territories in different areas and looking at the proportion that produce young and applying the known numbers of territories that we are sampling to the total of projected plus known territories in the State. The proportion of that sample that came up with juveniles - that produced juveniles, produced chicks - if we apply that to the whole that is what we come up with, is 214.

35 So that is related back to the figure 255? You have used that as the basis have you?---Yes.

All right?---The difference there would be the number of failures.

40 All right. So that means that the breeding success percentage is - no, I withdraw that.

45 HIS HONOUR: In paragraph 59, where 214 juveniles is mentioned, immediately after that there is something that seems incomplete. Is that meant to be a reference - - -?---I am sorry, what's that?

There is the word "para" in brackets?---Yes. I have obviously foolishly missed out a paragraph and - I will have to ferret through this to get the paragraph.

Yes, that's right. Perhaps you can do that?---I can, yes.

5 MS MORTIMER: Yes, you see Mr Mooney, if you go to paragraph 57, one of the figures that you have used and I am just showing you this as one of the places where it appears, you used the productivity figure of 1.07 fledglings per successful pair?---Yes.

10 That doesn't seem to have been - well, it is obviously not the mathematical exercise that you engaged in to go from 255 to 214?---No. It is possible that active and successful are being confused there.

15 Okay?---If you have 255 active pairs and of those there is a proportion successful, and it will be slightly less than 214 to produce 214 chicks at 1.07 per pair. Yes, it's easily confused.

20 Okay. Thanks. I want to ask you some questions still on the population issue that relate to some other figures that appear in a version of the draft eagle recovery plan for Tasmania. I will start by asking a little bit about that. The recovery plan for both the wedge-tailed eagle and the and the sea eagle expired in about 2003. Is that right?---That's the signed off, approved recovery plan, yes, and there is a draft subsequent to that.

25 Yes, there is a draft subsequent to that. Can Mr Mooney be shown book 4 please and if you go to page 1886 of that. Now, just before I ask you some questions about that document, Mr Mooney, you have been involved in the preparation of a new recovery plan?---Not as an author, only as an overseer of sorts.

30 A source perhaps would be a good description?---Only a source for cross-referencing ideas. This draft recovery plan has been prepared by a project officer.

35 That is Mr Brown?---Yes. And I am on the recovery team with, if you like, that oversees the whole project. I don't try and micro-manage too much of that project. It doesn't work like that.

40 All right. Now, this is one version of it and can I just ask you to have a look through that document and tell his Honour whether you have seen that version of the recovery plan before?---It looks familiar but without extensive cross-reference I really couldn't say. I have seen many drafts of these manuscripts before they get submitted.

45 Okay?---Honestly, without checking various paragraphs and I really couldn't say that is the latest version. Now, I have seen what is the draft version, if you like, that was submitted to senior management for signing off, for want of a better phrase, and I presume that is the most recent and I presume you have the most recent of this.

All right. And it is the case that these documents can go through several drafts?---Many drafts sometimes.

5 I want to show you another version of it, Mr Mooney, that is one that has been
down-loaded from a web site and this is the one that was available for public
submission. Let me just hand that to you. Now, you see it follows the same
kind of format but I want to take you to a table that appears in the version that I
10 have handed to you that doesn't appear to be in the one that is annexed to Ms
Thompson's affidavit and that is on page 13 of the version that I have given
you. Firstly, do you recall whether you have seen a version of the plan before,
Mr Mooney, that included the information that is in that table 2?---Those
figures look familiar, yes.

15 And if you look at the bottom of page 12 there is a heading there in which
table 2 appears that says "Monitor Breeding Success" and it looks at - describes
some surveys that have been carried out which have estimated an overall
productivity of 140 off-spring. Now, that is, as I understand it, the same kind
of exercise that you have gone through in paragraph 59 to get to 214
juveniles?---Yes.

20 Do you have any explanation for why there might be such a difference between
those two figures?---The obvious explanation is that - sorry, the obvious to me
explanation is that we revisited those numbers several times. This recovery
plan manuscript is - well, it would be two years old now. I think two years old.
25 To put my submission together I wanted to have the latest information and
thinking on it so I carefully reviewed, not quite inch by inch, but grid block by
grid block, the State and, if you like, reallocated some of those nests to
proposed territories and simply came up with a different figure.

30 Yes?---Now, in the last two years there has been progressively - the data on
nest density and location has progressed in leaps and bounds and we have more
recent information and the calculations I came up with I have shared with the
author of this recovery plan and we don't have any issue with them.

35 Right?---So it's really a more recent review of the data more than anything.
The more recent information we have coming in on more nest sites, more areas
surveyed, that tends to consolidate the estimates and over the years I have to
add my estimates of the population have gone up by degrees simply because the
40 data has become more better and we have found various areas of high density
and other areas of low density but it's an improvement in the data that tends to
be the issue. Now, of course projected territories are that and there can be an
error in there and it can be very hard to know the exact error, be it plus or
minus a few per cent or 10 per cent.

45 Is it not likely, Mr Mooney, that that indeed is one of the differences, or one of
the explanations for the difference in the figures, that is that your figures
include projected territories, and these figures don't?---I think that's likely to be

the major difference. It's not clear reading this version of the recovery plan whether he's included any projected territories.

5 All right. Well, perhaps if you - I will give you an opportunity to have a look at that over the break, and perhaps we will come back to whether you are prepared to be a little firmer about your answer in relation to that once you have had a chance to read this whole draft. But can I just clarify this with you, Mr
10 Mooney, this is a version that - I withdraw that. I have to assume that this is the version that was available for public comment in September 2004, so you are saying that the work that you did for your report to the Court in this case has included material that was not available for Mr Brown in September 2004?---Yes.

15 And what is that material?---It would be many more nest records collected since then.

All right. So nest records collected between September 2004 and November 2005 by whom?---Most of those nest records in that period would have come from forestry industry.

20 All right. So those are records that are a result either of searching of coupes before forestry operations? That is one category?---Mostly, yes.

25 And discovery during forestry operations is in second?---Yes.

Are you able to find for me, Mr Mooney, what additional number of nests have been found in that last just over a year period? Not immediately, but
- - -?---Yes, that could be found.

30 Can I just ask you to make yourself a note to do that, please?---There's also - if I can offer there's also a, you know, evolution of technique and approach in dealing with - trying to allot nest sites to territories, and as literature around the world on how to do these things progresses it's almost a technical issue of how you decide how many territories you might decide are in a particular area, given
35 a scattering of nests, and so that requires very active discussion, and in many cases it's very clear, and there's no discussion needed. In other cases there might be an argument and you come up with a consensus on that. That's why I suggest that it's hard to know what error there is in many of those estimates.

40 I understand?---Sorry, what - the dates are in November you wanted?

Well, from about September 2004 to when you submitted your report. Just finally, your Honour, I have got one or two more questions on table 2, and then if that is a convenient time.

45 HIS HONOUR: Certainly.

MS MORTIMER: If you look at table 2, Mr Mooney, that also presents information that is significantly different from some of the information in your report. Look, for example, at the number of active territories is identifies as 99, and you have identified them at 255. Now, can you tell his Honour whether
5 you have ever discussed the figures that we see in this table and this draft with Mr Brown?---No, I haven't, but under the direction of my department I was given free access to all of this information. As part of being a Court expert witness there was some inexperience with how to deal with that in my work situation, so the secretary of my department directed that I have free and normal
10 access to information, which includes Mr Brown's considerable data analysis skills to ferret out this information from his data bases. Otherwise, you know, I probably couldn't do it. So in the updated version, which is my submission, there's - Mr Brown would be fully aware of what's going in the submission, fully aware of this, and I suspect the differences will partly be in definitions of
15 activity. But again we have for instance the first line in table 2, "Productivity of active territories is low," but that's not productivity of successful territories, which is probably - well, I know it's 1.07 also.

Well, yes. So you have used 1.07, but therefore you explain the difference
20 between that and .92 because you might be talking about different things?---Yes.

And that your 1.07 is successful? So you might have an active territory that is not successful?---Absolutely. Yes.
25

All right. And how do you explain the difference - I withdraw that. The differences between the figure 99 for active territories, and your 255 firstly can be explained in part because you have included projected territories, and Mr Brown may not have?---I would say that's the case. He may, at the date this
30 was written, have projected different territories. I would simply have to check that. It's not clear. I'm reading either side of this table and it's not clear what he's included in that.

All right. Well, perhaps I will give you a chance to read the information
35 around that table over the break, and then I can come back to it?---It's also possible in 99, you know, it's possible there's an error in there, just as I've made errors in some of my tables.

Sure. All right. Well, your Honour is that a convenient time to have a break?
40

HIS HONOUR: Yes. Seeing that there are quite a few tasks that people have to do it might be best if we resumed at 10 to 12, and then sat on to 1 o'clock.

MS MORTIMER: If your Honour pleases.
45

HIS HONOUR: We will adjourn.

ADJOURNED

[11.32am]

RESUMED

[11.50am]

5

HIS HONOUR: Yes, Ms Mortimer?

10 MR MORTIMER: If your Honour pleases.

Now, Mr Mooney, have you had a chance to have a look through the draft of the plan that I handed over to you?---Yes, I did and fortuitously, Bill Brown arrived. He's been watching me on camera waiting for me to fall into a pothole.

15 All right. Now, you have had enough of a look through it to be able to tell his Honour whether, as you read this document, in the figures that it produces it includes projected territories?---It does not include projected territories.

20 All right. And, having read the information around table 2, are you able to give his Honour supplementary or other explanation for why particularly that figure of the number of active territories at 99 is a lot different to yours of 255?---These are - as I said, there's no projected territories in here. This data was put together in November 2003, so it's a year older than the date of submission or listing or posting on the web.

25

Publication?---Publication.

Yes, for comment?---And of the number of nests surveyed there, 392, there are only 99 active, meaning you tend to have one active nest per territory. So
30 there's was very low activity rate in that year and there would be a slightly lower number successful. Mr Brown is going to check that 99 to make sure that's correct - it just seems a bit low - and he wanted to check that. But presuming that's correct, unless we're told otherwise, the other proportions hold. Now, the productivity of active territories of point 92, if that was
35 productivity of successful territories, it would be 1.07, and that 83.73 per cent relates that difference. The number of territories surveyed, the number of nests surveyed can't be disputed, the number of territories surveyed can be argued over simply because it can be difficult to assign nests to territories. There are some nests that are, for want of a better term, in the middle of nowhere.
40 They're historic nests. The dynamics of territories have moved on. So how we assign nests to territories, if you have this cluster of nests in the landscape and you're trying to draw territory boundaries around them, some are very obvious; they're just a little clump here, little clump there; others, we have a homogeneous scattering at very close range; that's not so obvious. So then we
45 would look at the nearest neighbour distance trying to find some measurement that allows you to assign them. Sometimes it boils down to, "Well, this is a very old degraded nest and these are a more contemporary nest, so we'll disregard the old degraded nest that cant really be assigned to a territory and

just concentrate on the more recent nests." So whenever we can we would lean towards contemporary data for the time whatever the report's been written. So the number of territories probably isn't a great issue. That could be out by, you know, 10 per cent easily.

5

All right. Because it is not far off your figure in paragraph 51 of your report, which is 365 territories. Sorry, Mr Mooney, I will let you find that. Page 11, paragraph 51?---Yes.

10 That is your figure of known territories, which isn't too far off the 338?---That's right.

15 One explanation of the 99 could also be that in the years to which these figures relate there just wasn't a lot of breeding activity going on?---It could be as simple as that, and that's a good illustration of why short surveys, there are risks attached to your data because if you happen to conduct a survey during years of drought, your results could be completely different to five year's time. That's why a continual survey with some of sort of rigour and pattern to it is vastly preferable to the snapshots - and there is risk with just snapshot surveys.

20

Okay, thanks. Now, can you go, please, to paragraph 108 of your - You can just put that report to one side. Your Honour, can I have that marked for identification, if your Honour pleases?

25 HIS HONOUR: MFI D is the next one.

MFI #D SURVEY MAP

30

MR MORTIMER: Now, from paragraph 108 onwards - court book 57, your Honour - you make this statement:

35 *Although site-based conservation can work for nest sites, it cannot deal with more widespread problems.*

40 What were the widespread problems that you had in mind when you made that statement?---Problems of mortality, mainly; what I'd call unnatural causes. I call it unnatural mortality. Mortality is natural, but the causes, either natural or not - and that is all over the State to varying degrees.

45 All right. When you are talking in the next sentence about trying to slow habitat change to allow eagles to adapt, do you include in that, for example, trying to slow down, for example, the rate of things like forestry operations?---Yes, that's the prime aim of that. I might offer, the original of this - I'm casting my mind back - is when we first started work on eagles actually in the late 70s we had it in mind that we were carrying out precautionary or preventative management rather than emergency management,

such as you would captive breed birds to release them, and those rather desperate measures. So we were trying to prevent a problem becoming more serious and, in doing that, there was common discussion amongst my colleagues around the world about slowing down unnatural rates of change to allow species to adapt; not so much individuals to learn but the species to, you know, accommodate these changes that we make in the landscape which are invariably much more radical than the natural ones - certainly their rate and extent. That's the idea behind this, is to allow species time. Now, in experimenting with various protocols for protection, be it an area of habitat or a distance of disturbance - things like that - it is essentially an experiment, and we kept a very close eye on what was happening in the rest of the world with other similar species and most people were conducting almost parallel work - and it's turned out much the same, and that is at low rates of change many species seem to be able to adapt but there quickly comes a point where the rate of change exceeds a species ability to adapt. So in this paragraph 108 I'm trying to really consolidate those changes, slow the rate of changes as much as possible within the constraints of public policy in my job and everything else to allow that species the maximum chance to adapt. I would like to point out here that the ambition of that is not to retain the minimum numbers of a species just for prosperity's sake but to actually retain the species as a fully-functioning and ecological identity - and that's the prime value of the species I see as a biologist.

And is the rate of forestry operations throughout Tasmania sufficiently slow to enable the wedge-tailed eagle to adapt to change?---It doesn't seem to be adapting. At the moment it still basically has the same requirements it had when we started the work; that is, we don't have any evidence that eagles are nesting in vastly altered landscapes at any rate different than they were decades ago.

So in terms of - and when you talk about altered landscapes are you including in that areas that have been subjected to forestry operations?---Urban, agriculture, forestry.

And just focussing on the forestry operations for a moment, what is your opinion about the rate at which eagles return to areas that have been the subject of forestry operations and breed successfully there?---It depends on how generously, and by the word generously it's not - I don't use that accidentally - how generously the prescriptions were applied. A key part of the prescriptions for the conservation of eagles, and it's often been overlooked, the key words were, "At least 10 hectares for reserves around nests." These are sacrosanct areas around nests. And the original advice was another 10 hectares as a buffer, but in that additional 10 hectares, which is a narrow strip around, could be selectively logged, or some sort of disturbance in there. Now, if those - research I published in 1996 I think clearly shows that if the prescriptions are very generously applied, and rigorously adhered to, then there's a high chance that those birds will recolonise that area, or re-use that area. Often what happens the birds don't just go away. They stay in that area not breeding, until

things improve to the point where they can breed. And a very important point here is we don't know whether it's the same birds begrudgingly perhaps, or whatever, coming back to the original nest, or there's been a change within individuals of that pair, so the new pair has no bad experience at that place, and
5 it simply is re-using a place that's okay. So it varies tremendously on how much habitat is left there, and how much ongoing disturbance there is. Sometimes it's not terribly well attached. There can be disturbing activities as part of the broader forestry operation that are not strictly speaking anything to do with the eagle protection protocols. There might be someone coming in
10 surveying roads, or sampling water, and so the left and the right hand sometimes can have a problem connecting. So - and all of those things matter to the eagles. They don't really distinguish about who's doing the disturbing. It's a process of how well that area is being treated at the time of its development, and how well it's - protected is the wrong word - how much
15 disturbance is there when they come back.

You would agree, Mr Mooney, though plainly it is a circumstance that is not as desirable as leaving the habitat untouched?---No. Not from the eagle's point of view. I make no social comment at all there. From the eagle's point of view
20 - - -

That is all you are here to give evidence about, Mr Mooney?---Yes. I didn't want any misunderstanding there. It's preferable to be in the original condition. In some circumstances where eagles are right on the edge of their tolerance for
25 habitat some breaking up or fragmentation of that habitat might actually help them even in the long term. Certainly that would occasionally occur, but it's certainly in the minority, and it's on the fringe of where they're just hanging on. But as a rule I think it is unarguable that the original situation they chose is the best for them.

30 All right. Now, can I ask you to go to paragraph 109, and from there onwards you set out some conservation measures that you see as important, in the context of forestry operations, and I want to ask you in particular about what you say at paragraph 113. Can I take it, Mr Mooney, that that is one of the least
35 desirable circumstances, in terms of disturbance, isn't it, that you find a nest during logging?---Yes.

And - - -?---And excuse me, by logging there I include activities as part of that, like roading.
40

And the advice that the operation be withdrawn to a one kilometre line of sight, or 500 if not line of sight, is about the best sort of patch up mechanism; is that right?---That's - you'd call that a patch up or a rescue mechanism. It's not the best. The best would be further for longer.
45

Or to withdraw completely from the whole surrounding area?---Yes. There's probably a limit where it makes no difference to the eagles, but that limit is quite large, considering the birds don't just sit on the nest all the time. They

transit, and they know their territory, and their home range, their backyard, if you like, intimately. And they will know every change. That's what they do. They're very good at that.

5 So the advice that the operation be withdrawn to those limits is a compromise kind of advice?---It's a compromise advice. What I did in developing those early - it's not all the royal I, my colleagues gave me lots of advice - what we did developing those protocols was to, in effect test the industry to see what the industry could tolerate as far as all sorts of social aspects. And it would be
10 better for the birds if those distances were greater, but impossible to carry out in the industry. That was one advantage of starting this work before there was such a thing as a Threatened Species Act, or the Threatened Species Unit, or anything like that, in that there was a fairly informal low key curiosity that drove some of these experiments, and it didn't - and no one would have
15 imagined we would end up in Court discussing these things. Now, what that meant was we could actually try things out to see if they worked, both for the industry and for the eagles. And so that's a long winded way of agreeing that it's a compromise.

20 All right. And it will be the case that sometimes you will have, in your experience, in that kind of circumstance seen eagles come back to the nest, and sometimes not?---Yes.

25 Now, if you look at paragraph 115 you are talking there about the - I withdraw that. What you are talking about there is a very important aspect of trying to understand whether these mitigation measures work; isn't that right?---Yes.

30 And if you don't have sufficient monitoring in place it is impossible to tell whether any of the mechanisms that have been implemented are effective or not?---Yes. Not impossible. If nothing is changed on the ground it's - I believe it's quite valid to use past data with comparable situations, but if things changed on the ground to any sort of degree, that is, in actual practice, or rate of practice, yes, you have to have more contemporary monitoring. And I would agree the preferable situation is to have continual contemporary monitoring.
35 Although in some circumstances past data may be applicable.

40 All right. Although as I think you said in answer to one of my earlier questions you have to be careful about data that results from spot checks because you can get skews of it?---Absolutely.

And you say in the last sentence of paragraph 115:

Unfortunately few check of success could be managed in recent years.

45 What time period are you talking over there?---There's been very little specific checking of the success or not of nests in these altered landscapes, and of course you need control, you know, a comparison group in unaltered landscapes in the last three years.

Are you aware of any research efforts or studies that have been funded to try and look at that issue in a comprehensive manner?---No.

5 Are you aware of any that are planned?---We're trying - we're planning one, looking for funds and such like, looking for the resources.

All right. But that is not anything that has been approved yet?---No.

10 All right?---Oh, it's approved in principle. Often these things are approved in principle until people have to produce the money. Then it becomes a problem.

Spoken like a true researcher, Mr Mooney. Now, paragraph 116 you make the statement there that:

15

The presence of an eagle's nest gives an area priority as an area for inclusion in the CAR reserve system.

20 But if, for example, Mr Mooney, we look across to the map that is figure 4 is it fair to say that that priority in theory doesn't always translate into priority in practice? That is, if you look at where the reserves are and then you look at the dots, there is not a huge amount of overlap?---No. The CAR reserve system was designed to look after - well, one of the aspects of the CAR reserve system was to look after all threatened species, and eagle is just one of a long list of
25 threatened species, albeit at times a priority species, and if there were - how the CAR reserve system was set up, as I understand it, there was weighted layers, so as a species collected status under the CAR reserve system it assumed a lower priority for the next choice. An automated layer system, as I understand it, and I wouldn't pretend to be an expert in that layering. But wedge-tailed
30 eagles were not an absolute priority in the CAR system.

And can I take it from what you have said that as far as you are aware the eagles haven't collected enough points, so to speak, to have gone down the list?

35 That is, that their territories are not sufficiently protected that they have lost their priority in the CAR reserve system?---I understand that, yes.

Okay. I will ask you to go to the questions and answers that appear from paragraph 121 onwards, and to the map that is figure 6. Now, that is a map that you produced, Mr Mooney, or is that one that was produced for you by
40 someone else?---That's a map that Bill Brown and I produced, Mr Brown and I.

All right. And the information - you were given information by Forestry Tasmania about proposed logging activities in the Wielangta area; is that right?---Yes.

45

And was that information restricted in terms of proposal on the activities to a certain number of years ahead?---Yes. I was given information also by the Forest Practices Authority. That was information about logging on private

land. Forestry Tasmania could only give me information for state forest. Remembering here the Wielangta area includes private land as well as state forest.

5 All right. In terms of the information that you were given by Forestry Tasmania can you tell his Honour how many years ahead in terms of the coupling were you given information about?---I could only be given rock solid information for coupes that had been already approved for the duration of the Forest Practices Plan. There was information given on indicative coupes for up
10 to about 2012 I think, without consulting the plans I have so late 2012 or early 2013 from memory.

So what you and Mr Brown have represented on this map are coupes for which there are either existing Forest Practices Plans - number one?---Yes.

15 And secondly number two, coupes that Forestry Tasmania has told you it proposes to log on or before about 2012?---When you ask about what does an indicative coupe mean, usually the answer is not that we propose to log this, it is more like we might log this. There seems to be a qualitative difference there.
20

What do you understand that difference to be?---I understand that as very tentative forward planning. Now, what I don't know is how many of those indicative coupes are in fact logged. Historically I don't know so that may be
25 an accurate example of what is likely to be logged or it may not be. I don't know. I might add there that we don't have such forward planning for private land because that is very private information and so it is quite possible that more coupes, many more coupes even, would be logged on private land. I don't know. There is certainly more than is shown here so what I am showing is
30 what is already approved for private land, for State forest and the indicate or hopeful coupes or whatever definition you prefer - indicative is what Forestry uses. I don't have the equivalent for private land. That's an important distinction.

35 And it is also the case, isn't it, that this map doesn't show areas that have already been logged where Forest Practices Plans have expired?---That's true. The questions didn't encompass that.

40 No, I understand that. I just want to try and delineate what we see from the map and what we don't?---Yes.

So we don't see areas that have been logged in the past for which Forest Practices Plans have expired?---No.

45 Nevertheless it is the case isn't it, Mr Mooney, that in relation to areas in Wielangta that have already been logged outside any reserves identified because of a discovered nest, there has been significant reduction in the number

of available alternate trees that an eagle might choose to build a new nest in?---Yes.

5 So in terms of the ability of the eagles that live in this area to move to find new trees that has been significantly compromised by logging that has already taken place?---By the word significantly, it would be wise of me to have some measure of that but from over-flying that area - literally over-flying it a number of times I would say yes.

10 HIS HONOUR: When was the last occasion that you did that?---Just before the submission - without checking my diary but early November probably, late October perhaps.

15 MS MORTIMER: All right. Now, in paragraph 130 on this issue about areas that have been logged - pardon me a minute, your Honour. Sorry, Mr Mooney, I have just got to find something. Yes, in that paragraph you talk about the - I withdraw that. One of the points you are making in that paragraph is that the planned rotation cycle is too short to allow trees to grow old enough to become useful for breeding for eagles?---That's overwhelmingly so, yes.

20 And it is also too short to enable the formation of tree hollows for some of their prey like possums and nesting birds?---Overwhelmingly true.

25 And you say it is "deliberately" too short. Why did you use that word?---Perhaps I didn't need the word "deliberately". I suppose I was thinking it's - the recycling of that forest - recycling as in silviculture - as I understand it they wish to avoid old trees with hollows in them because the timber is lower quality, rotten and splits and whatever, as a general industry practice looking for very homogenous product.

30 Yes?---I am not an expert in that but that has been explained to me a number of times - and it tends to be coincidental that the ages of the tree that makes it suitable for eagles is also an age where it starts to get hollow. It is a big, old, stable, solid tree so the deliberation is about avoiding that age where hollows form and perhaps the timber is compromised. I am sure that is why I used it.

40 All right. Now, when you are talking in paragraph 134 about what you see as the disruption by Forestry operations in this particular area in Wielangta, is it fair to say that if you put unnatural mortality to one side, what you are saying is it is the overall loss of old growth forest that has an impact on the eagle. That is the overall loss throughout Tasmania?---The overall loss and the disturbance that tends to stay in those areas to a greater or lesser extent, and it comes and goes, that goes with that loss so the change is a package of loss plus disturbance. I am talking from the eagle's point of view.

45 All right. And when you talk about disturbance you are talking about disturbance both prior to the loss, that is in the preparations for Forestry operations and then after the loss?---Prior is usually the lesser and post is

5 certainly the greater because although those roads, some of them may be locked up some of the time there is, my considerable time I have spent in those areas for whatever reason shows that there is a lot of activity with logging these roads and there is a lot of disparate human activity in those areas and not all of it taking notice of the eagles, or very little of it.

10 Because what, as I understand it Mr Mooney, you are identifying on a Tasmania-wide basis in paragraph 134 are two principal impacts, unnatural loss of adults through a range of human persecution - number one - and then significant loss of habitat. Is that right?---Yes. If you call the loss of habitat - I would call it loss and disturbance but the loss of undisturbed habitat, let's understand that and we will agree on that.

15 All right. And it is the nature of this particular bird, and the fact that it has territory spread over a large area, which means that in isolation you are never going to be able to say that logging one coupe is going to have an immediate and significant impact on an entire population?---No, you couldn't say that.

20 All right. What does, is the cumulative effect of Forestry operations. Do you agree with that?---Yes.

25 And the cumulative effect in terms of both habitat loss and disturbance that you have spoken about has an impact on the eagle both in terms firstly of population decline?---Yes.

Lack of breeding success?---Yes.

30 And that includes not only the number of chicks fledged but whether a particular pair chooses to breed at all?---Yes. The population decline usually comes after - is a result of other things. If you like it is an end, not a means. What happens with a bird like an eagle is quite unlike animals like rabbits which can compensate for problems but just breeding more, producing more young. Eagles can't really do that. All they can do to compensate is to breed at a younger age and literally one or two years younger but those young breeders are the least successful part of the population as far as breeding goes so it is almost to no avail so birds such as eagles, albatrosses too, other large slow breeding birds, really have very little flexibility built into their biology to allow them to compensate for an unnatural low productivity which you could call losses due to disturbances, unnatural low productivity and certainly mortality as well, unnatural mortality and premature deaths, if you like.

45 Right, thanks, Mr Mooney. Now, I want to show you a table that we have attempted to construct from your report and to just take you through that. I am going to just give you a chance to look at that, Mr Mooney, and you will see that in the footnotes there are some cross- references to parts of your report. Tell me if this is something that you would like a bit more time for, then I can put it off until after lunch and we can come back to it. But what I want you to check for me is that you are satisfied that the way that we have represented the

information from your report in this tabular form is accurate. Now, if you would prefer to do that over lunch, just tell me and I will pop on to something else?---I'm just selecting certain numbers there. They make sense to me without going through every number. It would be wise of me to double-check them, but what I can see there looks familiar.

All right, well, I am going to take you through a series of propositions about it and you tell me if you would rather take a bit more time to look at it, okay? But can I take it, so far as you have seen it so far, you are content that it accurately reflects what is in your report?---Yes.

Okay. Now, if you look at that first column, "State of the wedge-tailed eagle breeding success," we probably touched on this morning, but you would agree with me that breeding success in terms of percentage drops dramatically with disturbance?---Once disturbance becomes significant it does drop dramatically, yes.

And it is a cumulative kind of impact?---It seems to be, yes.

All right. Now, what this table shows is that we have got 116 territories that remain undisturbed, so about 25 per cent?---To date, yes.

Would you agree with me that one of the principle aims of conservation for a threatened species like this is to prevent more territories becoming disturbed or degraded?---That's the minimum principle aim. Many people forget that these plans written for threatened species are called recovery plans and they're actually meant to recover the species not just hold absolute minimums; so that's why I say at a minimum.

All right. So let me pull that apart a little. So you would agree with me that to prevent further decline a key conservation aim has to be to keep the number of undisturbed territories at what it is now?---Yes.

And if you are looking to try and recover a population, you have got to do better than that; that is, you have got to try and restore territories to less disturbed levels?---Yes, and remembering that there are also other problems we have to address, other serious problems. Mortality issues.

Like the human persecution issues. So, as far you are concerned, you need to see those twin aims: restoration in terms of recovery, restoration of territories and mitigating human persecution?---Yes.

All right. If you look - and I ask you to put the human persecution issue to one side for a moment. If you look at the issue about territories, what you see in that table is that there are 30 unreserved territories in the state forests that are still falling into the undisturbed category; do you see that?---Yes.

Would you agree with me that, taking into account those conservation aims we have just been talking about, you ought to give some priority to those 30 territories?---Yes.

5 And how we read your report is that we see that six of those territories, that six of the 30, are in Wielangta; do you agree with that?---No. Without following the reading you have used to come to that - without following the rationale to get to that, some of those territories in Wielangta are not undisturbed.

10 Are not undisturbed?--- No.

Why do you say that?---Because several of the nests that have been used in recent years, or attempted to be used, are adjacent to - well, in gullies near logging, roads near them, and certainly they would not be undisturbed; and one of those nests, 1069 up in the centre right, is quite near one of the contentious coupes - if I can call it that - and one of the indicative couples is even closer to it. So that's certainly barely undisturbed at the moment. Probably from the combination of factors there, I'd say it's already disturbed. That's just an example that a number of these nests are already disturbed.

20

Are you able to tell his Honour out of the - what I am looking at, Mr Mooney, if you go to paragraph 141, the figures you give in terms of Wielangta are is that there are nine known nests and six pairs?---Yes.

25 Does that mean that we ought to take it that there are about six territories?---Yes.

Okay. So if we take it that there are about six territories, are you able to say how many of those you would put in the undisturbed category?---If you're talking about territories, most territories will have some disturbance in them but that doesn't mean the nests themselves are disturbed.

30

That comes back to that distinction you were making before about the smaller area and the greater one?---Yes, and it can depend - if the territory is such a shape - and as I think I indicated very early on, it can be very hard to measure the exact shape. Perhaps that's an irrelevant difference, I'm not sure. Maybe some of these words, "territories" should be swapped for nests and there's often debate amongst my colleagues whether you talk about territories or nests; it can create a bit of confusion. But most of those territories would have some disturbance in them and at least half of those nests, I think, have some degree of disturbance near them.

40

Half of the nine nests?---Yes, from memory, just looking at the map here.

45 All right?---Yes, the known nests.

I just want to focus on the number of birds for a moment. You are talking about six pairs of eagles in the area. How many of those are nesting in sites

that you would characterise as undisturbed? Are you able to do it that way?---To answer that properly, I would have to have contemporary knowledge of the use of every one of those nests - and I don't. But I know most of these nests - and looking across them, there would be perhaps two or three of those
5 nests are in what you'd agree are undisturbed sites. A site that I would imagine logging has occurred 10 years before, a few hundred metres from a nest - that may seem undisturbed, but if there's a road through the middle of that logging area and there's traffic comes and goes, people "hooking" for - a popular term - firewood, bit of hunting, a bit of this, a bit of that - it's not an undisturbed site.
10 That access by people is an important, often overlooked thing. So that's why I say there's probably only two or three of these nests are in truly undisturbed situations.

All right, and when you say two or three of the nests, then you are talking about
15 two or three of the pairs who are nesting in areas that are undisturbed?---Yes, probably more like one or two of the pairs, there being more nests than pairs.

And based on the answers that you have given to date, can we take it that you would agree that the protection of what is presently undisturbed ought to be
20 given some priority?---Absolutely. Just perhaps may I offer this? The area is about point 5 of one per cent of the area of Tasmania but it holds about 1.5 per cent of eagles, be it measured as territories or nests. So what you have is Wielangta on an average is, you know, a very high value; it's a good spot for eagles.

25 I think somewhere in your report you talked about it as having relatively high densities?---Yes.

And, therefore, in terms of - and let us talk first about maintenance of present
30 populations before we get to recovery. What is important is to minimise as much as possible disturbance within Wielangta for those six pairs?---Yes.

And the more forestry operations that occur, the less likely you are to be able to
35 minimise disturbance?---Absolutely.

And when we get to talking about recovery, then you have got to do more than
just minimise disturbance; you have got to try and somehow recover areas into that undisturbed category?---Yes, it's a whole new concept.

40 Is that happening at all in Wielangta?---No, it's not really happening anywhere.

All right?---It's fair enough to say the CAR Reserve system has that potential
45 for some threatened species but it doesn't necessarily increase - the activities being undertaken, including the CAR Reserve system, don't really increase the status quo. They don't really include badly disturbed nests that are going to become much less disturbed. That's not really the trend. Unfortunately, most of our work is involved with trying to maintain the status quo at best.

All right. And when you talk about the reserved areas, not including disturbed - I withdraw that - inactive nests or old nests, is your point there, Mr Mooney, that if an area with those kinds of nests is protected, you enhance the prospect of eagles returning there, remaking the nest and using it in subsequent
5 years?---Yes, you do. I have immense faith in eagles' judgment for a good place, particularly if you can identify a primary nest or even a secondary nest - third, fourth, fifth nests might much less - often the places aren't as good. But some territories will hold four or five gullies that are equally as good, so who knows why they pick a particular place - but they did for some reason. And in
10 those cases if you have a nest in what is obviously, by the criteria that most people understand, quite clearly is a good place for eagles, they are very valuable places from an eagle conservation point of view.

Now, taking into account your characterisation of Wielangta as a high value
15 area for eagles, although, as you have done the sums, the loss of habitat in hectares might be a smaller proportion across Tasmania, is it fair to say that because of the high value of the area there is something other than a proportional impact on how much, because of what you log?---It's arguable. I tend to operate at a state basis for this species, because it's what we call a
20 landscape animal. It covers a landscape, extremely mobile, and therefore you have sinks and sources. You have some parts of the State that we know are almost certainly sinks. You know, lots of eagles die there or whatever, and there's very little productivity. So they drain, they tax the other parts of the State. But when you start to break Tasmania into regions it doesn't make sense
25 dealing with an animal like this. That's why I've very deliberately treated Tasmania as one pool. Now, centres - I nearly said centres of excellence - I mean good places like Wielangta. There are other good places, especially good places, like Wielangta. They are on a pro-rata bird for bird, or nest for nest basis, though not necessarily any more valuable than anywhere else, and I have
30 a number of times advanced the idea that birds that are nesting in slightly disturbed areas are the most valuable birds, because they may be the only future for the species.

You say that because of their likely adaptation qualities?---Yes. Yes. Now, it's
35 beyond us to manipulate that at all, or choose which birds nest where, of course. But undisturbed nests to me should be somewhat sacrosanct, because they will produce the birds that serve these other experiments in nature, if you like, like the birds that nest. There has to be - if you have a number of sinks around the State, which we do have, there has to be a valuable source for those
40 sinks. There has to be birds that are - nests, territories that are reliably producing young. Now, the west coast, parts of those big informal areas they certainly hold some eagles, and are a valuable proportion, but it's a low proportion, that the reason people aren't developing that land sometimes is because it's very low soil fertility, and there's not many eagles in those areas.
45 They are a source for other sinks, but it's a very small source, and we have to have a bigger source to service the unfortunate sinks we have around the countryside.

If I can just take you back to Wielangta for a moment, so I think we were up to, in terms of your estimates, that we may have one to two pairs nesting in relatively undisturbed nests?---Yes. Something like that.

5 And the remainder are in areas that you would categorise as what, little or moderately disturbed?---A variety. When I over-flew them to check which ones I could in the time I had in late October there were a number of these nests I checked that weren't being used. A couple of them had signs of perhaps a nesting attempt and nothing happening. And they were all in disturbed areas,
10 and that wasn't a surprise. That's - I'm quite familiar with that result.

And so far as you know there have been no surveys done in Wielangta to equate some of the other ones that you have talked about in your report, about how many chicks are fledgling each year in that area?---A few of the nest sites
15 in Wielangta, because we've known of them for some time, have been included in the larger samples over the years. There's - an important point here is that there's Forestry Tasmania and some of the private companies do lots of nest checks in the recent years, but they are to do with operational matters, whether they can start logging or not, or roading or not. They're not checks after the fact
20 to see how productive they were. So although there's a lot of nest checking early in operations, it is an operational matter. It's not designed to collect nest success or failure information for our monitoring, so there's a short fall of that latter data.

25 So let us take the kind of - agree or disagree with me - whether there is a typical example where there is a logging planned in a particular coupe, and somebody goes in to search for nests and finds an active nest, and there is a 10 hectare minimum reserved placed around it. That is what is supposed to happen; you agree with me?---Yes.

30 What you are saying is that there may have been a check done to see whether that nest was active in order to trigger that prescription; right?---The trigger would be more typically, whether we can start this road, or put in this road, or start logging. And a more typical example might be a nest that's been known
35 for several years, that they want to log or road near it, so someone would go and check that at a certain time of year within the breeding envelope, so to speak, to see if it's being used or not.

40 But what doesn't happen, am I right in understanding you, is that nobody returns after the operations, in the window where the chicks ought to have fled, to see whether anybody did?---That's right. Occasionally we can manage that, but often it's a matter of convenience, because it was near to some other work or something. That was a major part of the work I did some years ago, which resulted in a few publications, because that's exactly what I wanted to find out.
45 But this is no excuse at all. It's just an explanation of how resources are divided. We tended to have collected more things to do with eagles, more operations to service. Things such as wind farms which didn't exist. The whole world of eagle conservation is much more complicated now, and there's

less resources that can be focussed on, in this case, monitoring. A lot of that monitoring really should be done by the air, and it's expensive work. Even if it's done on the ground it's expensive. So what you say is true.

5 All right. Now, go back to the numbers of pairs that you estimate to be in Wielangta. So is it fair to say that although you are estimating there might be six pairs there, you are not able to say whether there are six chicks fledging each year?---I would bet there weren't.

10 Were or were not?---Were no.

Were not. Okay. How do you measure, if you look at the - I withdraw that. You say you would bet there were not. Have you got any ideas - do you have an opinion about how many might be, or would you be guessing?---No. I'd be
15 guessing. If you visit a nest site and it's nothing there, well, if there was something produced the year before you may have - be highly suspicious that something has gone wrong, it's failed for a reason. If you don't know the history of that nest intimately you may be simply looking at a nest that's not normally used any way, a secondary or a tertiary nest. So then you may have to
20 look for all nests in that territory, or another nest that is active. You have to examine the whole territory then to be sure it's not been productive, because it may be another nest you just don't know of. And that's a standard problem with negative results on nests.

25 In terms of the productivity of that area, based on six pairs nesting in a range of nests that might go from undisturbed to moderately disturbed, if the pairs were to be disturbed out of an active nest how do you measure that impact in terms of what that does to the value of Wielangta as an area for eagles?---It's very difficult. There's no sure fire way of doing it, and that's why we don't - that's
30 why the Wielangta boundary is essentially a human social boundary. It's a political boundary. It's nothing to do with eagles. Those eagles would come and go from Wielangta any way. So you have local source and sink situations operating all over the countryside. So that's why I find that question - not your question there, the question of trying to define an impact in Wielangta with
35 such a mobile species extremely difficult, because there's pooling with the neighbouring areas, and the whole State in fact.

And that comes back to what you were saying about it being cumulative across the State rather than - - -?---Yes. Essentially yes. For all we know Wielangta
40 may be a sink. It would seem like there's lots of birds there, but we don't know the productivity well at all.

Now, can you go on to some of the answers that you gave please, Mr Mooney, to question 1(a)(ii), so that starts on page 65 of the Court book. Now, in
45 paragraph 136 you said that you understand Wielangta coupes, other than the two nominated ones, to be an area within 10 kilometres of the peak of Wielangta Hill. How did you get that boundary?---That was arbitrary simply because Wielangta is not a formal area unless we are talking about the forest

block and that wasn't mentioned in the questions. In actual fact although it was arbitrary I did test it against the Wielangta forest block and it is almost exactly the same area - more by good luck than good management - so almost everything I had to say about my Wielangta area, that is the area 10 kilometres around, applies - - -

Applies to the Wielangta forest block?---Pretty well, yes.

All right. Thank you?---I might offer another comment on the value of the undisturbed nest sites and that is a reference value. If we are trying to measure an effect of anything we need a control, something that is not affected to see if it is better or worse, and although we can arguably use historic, undisturbed sites - historic information to say this is what happens at undisturbed sites, in matters of climate change and all sorts of things, droughts come and go, it is much better to have contemporary information so that by far the best way to measure the effects of forestry or agriculture or anything is to have contemporary controls, that is a proper sample of undisturbed sites and arguably a site on the west coast of Tasmania that is undisturbed is under quite conditions than a site on the east coast which you may be trying to compare it to so there is certainly, if you like, a scientific/social value of those undisturbed sites as controls for measuring effects of other things.

Is it also the case, Mr Mooney, when we looked at your figure 5 that the values of the west coast, and in particular that large area that is currently reserved, has to be a projected value because there is really not enough information about eagles and those areas?---Yes, it has to be a projected value but it is one we have thought about very, very carefully. It might seem an extremely remote area and it is certainly remote and it is certainly very large but in some places there, there has been a lot of human activity, a lot of researchers working. I have spent a lot of time in a few of those catchments and I have had opportunities to survey it, albeit as de facto surveys. One was using a helicopter doing surveys for peregrine falcons many years ago, a technique that will turn up eagles and I certainly had one eye on the falcons and one on the eagles and so although they are projected because - they are projected only because we don't know of the nests and - I have more confidence in it that just all of those red dots.

It is fair to say, Mr Mooney, that there is no biological, ecological reason why you wouldn't find eagles there?---Certainly not.

And the nature of the subspecies is such that it has got a general distribution across Tasmania?---Yes.

And that having been said the disturbance to its territories is much more prominent in the east than it is in the west. Agreed?---Yes.

And you wouldn't be suggesting that an acceptable outcome for this bird is that it has to retreat to undisturbed areas in the west?---No, and in fact birds don't retreat like that.

5 Do they just die, Mr Mooney?---If I can be forgiven, it's a misconception that the animals go back to the hills. The ones that were in the hills originally are the only ones left. That's more to the point. What would be unfortunate for this species is if the west, and those remote places like the west, were the only citadel of this species left because then you have very small numbers, a very
10 small source of young and a very big sink of the whole population and that's to be avoided at all costs if we are serious about conservation.

All right. So in terms of this species, one of the aims is to preserve those parts of its territories across the whole of Tasmania that deliver the best breeding
15 success to it?---At the minimum and even those that aren't the best breeding success should be also conserved. Remember that the aim of it should be to maintain an ecologically functioning species, not a museum piece. Not something that's just there to be ecologically functional. The species has to be very near its capacity to be carrying out its roles as an agent of evolution or
20 preying on the sick and the deformed and all the rest of it. The species has to be near its carrying capacity.

And with this species that means a carrying capacity that is very widely spread. Is that right?---Yes.
25

And do you see that as one of its important ecological functions?---I see that as probably its most important ecological function oddly enough. It's probably more important now that we lost thylacines. We have a deficit of top predators in this State, if we are to take that seriously, yes.
30

HIS HONOUR: What about the effect of the decline of the devil as a remover of carrion?---Yes, very interest effects we are hoping to look into. The carrion is useful for eagles for survival in winter and for some immatures that are struggling but it's not the basis of how the species works. Wedge-tailed eagles do perfectly well without carrion.
35

MS MORTIMER: Is that a convenient time, your Honour?

HIS HONOUR: Certainly. We will adjourn until 2.15.
40

ADJOURNED [1.08pm]

45 **RESUMED** [2.15pm]

NICHOLAS JOHN MOONEY:

HIS HONOUR: Ms Mortimer?

5 MS MORTIMER: If your Honour pleases.

Mr Mooney, can I ask you just to go back please to figure 6 on page 63 of the Court book for a moment. You will see that the explanation for that down the bottom says that the red dots are the nests and the project territory core, black dot. Now, is that the black dot sort of in the upper western side?---Yes.

That is territory that you have projected based on what you know about the habitat?---Yes. We think there would be a few nests found very close to there.

15 Okay. Thank you. Now, when you were - pardon me a moment, your Honour. When you were preparing this report you wrote to Forestry and asked for some additional information, didn't you?---Yes.

Principally to Ms Thompson?---Yes. No, I didn't deal directly with Vanessa - I may be corrected. I was asked to deal through Maree Yee.

Sorry, I thought you sent some e-mails that were - - -?---I may have early in the piece - - -

25 - - - directed to Ms Thompson. I have got copies of them here. From about October last year?---I wouldn't dispute that until we sorted out how they wanted to operate, yes.

All right. And I just want to show you this document. Now, that has got a word processed document that goes for about half of that bundle, Mr Mooney, and then behind that you will see a series of e-mails. If I can just ask you to go firstly to the e-mails and have a look through them and tell me whether that is the series of e-mails that you sent to Ms Thompson with your questions that you needed to have answered in order to prepare some parts of your report?---Yes, they all look familiar.

All right. And that part of the document that is on the top, the one that is headed Responses to Questions Requests Received by Nick Mooney, you have seen that document before obviously?---Yes.

40 And that is the same document that you received from Forestry with the substantive answers to your questions?---Yes, it looks familiar.

All right. Now, I just want to go through that with you for a moment, that document. You will see under question 1, under the heading Response, it says:

Forestry Tasmania is producing a map which will be provided to Nick Mooney.

Did you receive a map from Forestry?---I saw one that they had that was offered to me but I decided I didn't need to take that map. Forestry is sensitive about where its indicative coupe planning information goes and there was a little unease about me taking the map away like that. That is a standard issue they had with that indicative planning. If it was an issue I would have insisted that it wasn't really an issue. I realised I could use the information in another way which I have here on figure 6, just relating the size of the coupes or the proposed coupes or indicative coupes to circles rather than the exact boundary but I had the exact boundary of these coupes in that table under response in the particular Forest Practices Plans I had.

All right. So you took that from that information?---Yes. The larger map I was pursuing for presentation reasons really for my submission which I decided I didn't need that detail for my presentation although I could use the detail, that is the exact shape of the coupes, in my written submission and I wrote to the shape of those coupes, if you will.

All right. Now, you see under the heading 22 October 2005, question 1, there is a question from you about the definition of Wielangta and it says:

The lawyers have provided a response to this question.

Did you get a response from Forestry Tasmania's lawyers about what you should consider to be Wielangta?---I was forwarded a brief exchange between Forestry Tasmania's lawyer and I think Roland Browne, to the effect that - I had the impression they couldn't really agree whether it was going to be the Wielangta forest block on A and they agreed with my suggestion to use a 10 kilometre radius area around Wielangta Hill. I think probably because coincidentally it's not that dissimilar.

All right. Now, if you turn over a couple of pages you will see the subheading, WTO19D with a Forest Practices Plan number?---Yes.

And there is a substantive answer to your question about 19D there and there are some parts that are crossed out. There is a sentence. It says:

Refer to attached operational planning procedure in the wedge-tailed eagle nest recording form.

Do you know what that crossing out represents?---No.

All right. Did you get attached to this document something that fits the description of an operational planning procedure and a nest recording form?---No. I would perhaps guess they thought that wasn't necessary because I would have known of those procedures and sorts of form they'd use. That is my own only guess.

And similarly if you go over a couple of pages to the - there is a subheading WT008 A, E and F - you will see some more crossings out?---Yes.

5 And a reference again to that same thing and then to attached documentation. You didn't get any other documentation attached to this?---Not that I recall, no.

All right. Your Honour, I tender that.

10 HIS HONOUR: Any objection? That will be exhibit S, S for Sam.

EXHIBIT #S ADDITIONAL INFORMATION FOR MR MOONEY FROM FORESTRY

15

MS MORTIMER: And your Honour, I should also tender the table that I was asking Mr Mooney some questions about before lunch.

20 HIS HONOUR: No objection?

MR D. GUNSON: Well, with respect to that I am a little unsure as to whether Mr Mooney accepts the accuracy of the table completely. He was going to look at it at lunch time.

25

HIS HONOUR: That is correct.

30 MS MORTIMER: That is correct. Yes, I had asked him to confirm that. Mr Mooney, can you confirm whether you are happy to accept that as an accurate representation and table form of what is in your report?---Yes, I am. The difference between 455 and 457 is, I don't think, of any consequence in the argument. I would have included such a table had I thought of it myself.

35 HIS HONOUR: Exhibit T.

EXHIBIT #T REPRESENTATION IN TABLE FORM OF WHAT IS IN MR MOONEY'S REPORT

40

MS MORTIMER: And just while we are on that exhibit can I ask you to clarify, Mr Mooney, when we look at the second column, the figure of 86 undisturbed territories that are formally reserved, that includes projected territories?---Yes.

45

Indeed all these numbers included projected territories as well as - - -?---Error. All of these numbers are a mixture. If I might offer, I just perhaps remind that that is not an attempt to sort of camouflage the real numbers. It is just that

without the projected numbers the formal reserves would be heavily unrepresented, that is why I took as much care as I think I could to treat the formal reserves with projections.

5 All right. And that combination of recorded nests and territories and projected nests and territories is your attempt to give, as I understand it, the Court your best estimate of a Tasmania-wide representation of the species. Is that right?---That's correct.

10 HIS HONOUR: Ms Mortimer, have you finished with figure 6? Are you still asking questions about figure 6?

MS MORTIMER: No.

15 HIS HONOUR: Mr Mooney, is there any particular reason why the black dot appears in the particular place in which it appears?---Yes, the combination of shelter aspect, this south-east aspect of some of those gullies is excellent. When I over-flew the area it had excellent prospects for a nest or two in that corner. In actual fact if I was going to dot out a territory it would be quite a bit
20 larger than that. Remember these are quite small grids but it is a combination of slope, habitat and it is a discrete little rather sheltered gully system there. Just what the eagles would like I suspect.

MS MORTIMER: Mr Mooney, can you go to page 69 of the court book, and
25 this is your answer to Part B of question 1 I want to deal with. In paragraph 158 there you talk about what happens to areas that have been - where there has been forestry operations, and there has been an area of reserve left of about 10 hectares. Is your reference there in the fourth line to minimal eagle reserves of
30 10 hectares to the prescription that requires that, or sets that as a standard?---Yes, remembering that that 10 hectares related to eagle behaviour, and therefore that set the minimum standard for the prescription. It's not a coincidence. One caused the other.

All right. And do you know of any studies that have been done of areas that
35 have been reserved in that fashion, to see what has happened to the mature nesting trees in those areas, in terms of attrition and edger fix?---Not in areas of forest of 10 hectares. There have been studies that have looked at rural tree die back, and the persistence of copses of a variety of size. Some of those were 10 hectares. Most of them were a bit smaller, but there are very specific studies
40 looking at how viable those small copses are - - -

For eagles?---No, no. Just looking at the viability for trees and general
vegetation. As far as the use by eagles goes I did a specific study on that 10
45 years ago or more, and that's published.

Looking at what kind of areas, in terms of how useful they remain for
eagles?---Looking at - in that study I looked at nests that were conserved more
or less under the prescriptions, and compared them to the nests that were

undisturbed, looking at, if you like, the effect of that degree of prescription being applied.

5 And what did you find?---I found generally that where the prescriptions were well applied the eagles would return and attempt to breed usually several years later, but in general the production of those nests was, from memory, about 33 or 34 per cent down on undisturbed nests. That is, the prescriptions lessen the damage, or lessen the effect of the habitat disturbance and loss.

10 All right. Thank you?---So I think there's often a confusion of the words amelioration and mitigation in those respects, so I would say that the protocol to mitigate the effects, they don't, they just lessen them.

15 Right. Thank you. Now, if you can go to paragraph 161, still in what you say in answer to that part of the question, you talk about what has happened in relation to similar species, making some territories untenable, what species did you have in mind then?---There was a recent, I would say extremely good study done of golden eagles in Scotland.

20 And that is the one that you are referring to there?---That's the one that I'm referring to, but we've also observed the seeds of that trend, if you like, in wedge-tailed eagles here, meaning everything that - the conclusions from that study on golden eagles, all the evidence I've seen the same applies to wedge-tailed eagles here.

25 All right. If you look at page 77 of the court book, Mr Mooney, there is two articles by, is it Mr Whitfield or - - -?---Sorry?

30 There is two articles listed by, is it Mr Whitfield?---Yes.

And you regard each of those as good pieces of scientific research about that species?---I do.

35 All right. Now, can you turn, please, to page 71 of the court book and your discussion of some of the fledging rates and the management prescriptions, and look at paragraph 177. You make a statement there, about two thirds of the way through that:

40 *Forestry planners are increasingly adopting the at least 10 hectares recommendations, and recent nest reserves have averaged nearly 15 hectares (at Wielangta) measure by connected forest and so forth.*

45 When you describe forestry planners as increasingly adopting the at least 10 hectares you are talking in particular about the last couple of years?---Yes. What often happens with eagle nest reserves, an eagle nest may be perchance formed in another type of reserve next to a logging operation. So there may be some very convenient boundaries to draw. The eagles nest may in fact be reserved without removing any areas from logging, just because it happens to

be in this stream side reserve, or a wildlife habitat strip, or something like that.
Now, in other cases the eagles nest may be smack in the middle of a proposed logging operation, so a piece of forest has to be very deliberately excised from logging. And so where an eagles nest falls in a stream side reserve or a big
5 wildlife habitat strip the area reserved may be quite large, because it's in a reserve any way. And it all depends whether you're dealing with a desk top reservation, like you use your computer system to put a circle around the nest that's 10 hectares, or you're actually making a reserve that is 10 hectares in itself, or 10 hectares and above that. Now, there was certainly some resistance to the 10 hectares early on. In fact I had arguments in writing against that very
10 early on. And the 10 hectares - sorry, reserves in excess of 10 hectares were quite unusual, and where they occurred it was usually because it was coincident with another reserve type simply stuck next to it. Now - - -

15 And when you say that are you meaning to say that it was accidental, rather than deliberate, like not directed at the - - -?---Sometimes accidental, occasionally deliberate, because well, sometimes it wasn't, say on a cable logging operation. You understand cable logging is very steep. You have a nest in the middle of the slope. Well, by the nature of cable logging in those
20 days it would be very hard to log underneath it. So you might end up with a whole lot of forest under the reserve that couldn't be logged practically any way. It's good for the eagles, and good for eagle conservation, and it removes a bit of forest, but it's arguable whether that was put aside as part of the eagle reserve. I'm more - I'm pragmatic in these instances, and regard that as reserve.
25 Now - and the degree to which that 10 hectares or more was met varied from place to place, and time to time, to do with the enthusiasm of planners or district foresters, as you would expect, because the at least 10 hectares gives a lot of leeway, and it gives the opportunity to reserve a lot more, or the bare minimum. In fact it wasn't really until the late 90s until 10 hectares even
30 became an average area put aside. Before then a measurement I did in the early 90s was about six hectares, and it crept up to eight. It can be very hard to measure the exact reserve sites because of those coincidences with other large forest patches. But - - -

35 But?--- - - - anyway as people understood that - oh, sorry, you ask the questions.

No, I was just going to sort of bring you back to - am I right then to understand that you are saying that that is an aspect of the management prescriptions, the
40 application of them that is improving?---It seems to be improving, but I don't have good contemporary information on it, and one reason I don't is that there can be quite a difference between a desk top exercise, where you put - use your geographical information system in your computer to put a circle around a nest, as distinct from going out to a nest on the ground and running a GPS around it,
45 and measuring the actual area. They can be quite different.

Now, can I just ask you to explain to his Honour how they can differ. They can differ because what somebody does on the desk top isn't carried out in the

field?---Oh, it can. It can differ. It can be either greater or smaller. There's one's a - literally a theoretical exercise and one's a practical exercise. Fire can affect it, a regeneration burn. There have been several cases of regeneration burns intruding, even destroying nest reserves. So that aspect has been
5 improving, but, well, I'll have to be frank and say far, far slower than I would have hoped. How I came up with the 10 hectares was if you look at - if you imagine a graph of the size of forest versus eagle nest success, at 10 hectares the success drops right off. Above 100 hectares it may as well be infinite size. It doesn't make much difference. So between 10 and hectares was quite
10 critical. That's why the original recommendations back in the very early 90s, or late 80s actually were 10 hectares core, plus 10 to give the 20 hectares, the 10 being a bit of a buffer. That was very rarely implemented, and in fact it was an original instruction that was rescinded because the industry wouldn't tolerate it, and it just wasn't working. So we worked out an experimentation system where
15 we tried to encourage wherever possible to have more than 10 hectares. And that was based on what happens if you move the eagles you'll just as likely encounter them again and have another set of problems, and that can be a disruption to the logging operation, a problem for the eagles. So the whole idea was try and keep the eagles where are, and I think once planners and the
20 industry understood that that's actually the best result, to keep the eagles where they were found, and work around them, so to speak, that's when the more than 10 hectares began to establish. And the final point I'd make is it's my belief this, this planning at Wielangta is done by one of the best forestry planners, the person who is designing these reserves, and there is variation from district to
25 district, as I've said.

All right. And so you would see it as critical to the success of those prescriptions in mitigating, as you say, the fix of forestry that the areas be
30 closer to 20 hectares than 10?---Absolutely. Yes.

And it is the case that in the past there were a lot of reserve areas that have even been less than 10 hectares?---Yes.

Sometimes as little as one hectare?---It has happened.

35 And that you would be saying as highly undesirable?---Highly undesirable.

In fact likely to make the nest untenable?---Yes.

40 Now, just one last point on that reservation area. In terms of encouraging eagles to return to nests and encouraging their breeding to be as successful as possible, is it also the case that you need closer to 20 than 10?---Yes.

45 Now, the prescriptions themselves, Mr Mooney, when one looks at them, the Forest Practices Plans prescriptions, all talk about the period August to January as the critical breeding period, therefore, disturbance period. You are familiar with that?---Yes.

That was set presumably on advice from people like you that that, sort of, is the general span of time between which the eagles start finding their nest, setting on a nest and laying their eggs, sitting on them - incubating them - and then fledging; is that right?---Yes it is. If I can qualify that a little bit? In many respects, for eagles the breeding season never stops because of the pair-bond maintenance; so there's always a level of pair interaction - they don't disappear and then rejoin. So if you have to draw a line in the year where the breeding season starts, it's actually very difficult because some out-of-season mating occurs - or apparent mating. There's all these sorts of levels of excitement come and go. So drawing a boundary on the breeding season is really a compromise with industry. If we weren't dealing with industry I would extend that a month or even more in the forehand simply to include more of the sensitive lead-up period.

Because it is the case, isn't it, that although these prescriptions specify January as some kind of cut-off date, the fact is that in nests where there are breeding pairs with a chick, those chicks will still be very young, they will still be on the nest; is that right?---Most chicks, when these descriptions were drafted, the breeding season seemed tighter than it is now - and that's a common thing these days and it's thought to be due to global warming or a changing climate. But most chicks should have fledged by the end of January. They're still dependent on their parents and in the area, but as the season progresses, the effect of disturbance gets slightly less for two reasons. One is the chick itself is big and robust. It's not going to get taken from the nest by a raven or something like that. It's more robust with inclement weather. It can move around the nest and get into shade - so the chick itself will survive longer. And the adults have made a much bigger investment by that stage and are less likely to leave it and it can be left for longer periods because it's got fat reserves. Early in the season is far more critical than late in the season for those sorts of adjustments.

All right. Now, again, in terms of some of the other things that happen once a forestry operation has been through an area, I want to ask you some questions about burns and the effect that they have on eagles. Now, I think you have already said in your evidence that one problem can be the escaping of regeneration burns into reserve areas. Have you experienced that or known that that has happened?---Yes, I know of three cases where the whole reserve and nest and everything has been burnt like that.

There is a difference in terms of the kind of burn that might be carried out between what Forestry call low intensity and high intensity burns; do you agree with that?---Yes.

And if I can ask you focus on high intensity burns and putting to one side the risk of escape, do you say that they have any other effect on nest reserves in an area if a coupe is subject to a high intensity burn?---If the nest reserve is adjacent to that and protected it from the burn, that is, it's treated as neighbouring forest, because those high intensity generation burns are usually carried out in autumn, there's little effect. The protection is the main issue, and

it's such an obvious issue that it's usually not overlooked, but sometimes things get out of hand.

5 And do you say the same for low intensity burns: that is the integrity is not maintained, it is not an issue?---Low intensity burns are usually conducted at another time of year and the low intensity burns can be conducted at various times of the year but sometimes in spring. I could easily be corrected - I'm not sure of the current policy - but, in my experience, that has happened on many occasions, particularly on private land but also state forest - and that's the time
10 when people attending these burns, and equipment and helicopters, starting them, or whatever, can be particularly disruptive. The low intensity burns per se don't seem to worry the eagles. In fact, eagles will sometime hunt round them to catch the animals flushed.

15 Again, it is the disturbance effects of them more in terms of presence of machinery and people?---That's right. If I could add, at times - well, many times, really, we've had negotiations with Forestry over occasions where they wanted to burn and there's a nest nearby and, you know, we arrive at some sort of compromise or postponement, but I only know the occasions that
20 negotiations has happened; I would have no idea, other occasions.

All right. Now, Mr Mooney, I want to just run through with you, based on your knowledge and experience over the last more than 20 years, some of the things that can go wrong with the management prescription process - and I want you
25 just to tell his Honour whether you are aware of these kinds of things happening in relation to forestry operations. Roads going in too close to nests, up to 150 metres?---Roads going in much closer than that sometimes, yes.

30 Up[to what are you aware of?---Eight to 10 metres.

How does that happen?---That's not been recent. That's happened in the distant past usually because someone, perhaps a contract, perhaps even a driver of the machinery decided not to see the nest, and I think the thinking - and this has not, to my knowledge, happened for some years - I think the thinking there is,
35 once the road's in they're not going to change that, so, I mean, we'll tell them; and occasions where logging has gone right up to a nest tree, usually it turns out later that, yes, someone did know the nest was there, and "Mum's the word" until the operation's sort of done to the contractor's satisfaction. To my knowledge, that's not happened in recent years. It's not to say it hasn't but, to
40 my knowledge, it hasn't.

All right. And there have been case, to your knowledge, or trees with eagle nests in them actually being felled?---Yes, a couple of times that's been done perfectly legally. We've even issued permits on four occasions, I think. This is
45 where a tree's been a safety issue, and several other occasions. In fact, I can think just while I'm sitting here, of about five occasions where it's been done maliciously.

All right. And harvesting of parts of what had been identified as a nest reserve during forestry operations, are you aware of that happening?---That has happened on many occasions, particularly in the early years where we were trying to establish this reserve system into the culture of forestry.

5

And machines intruding into the nest reserve - that kind of thing can still happen, can't it, and does happen?---Can still happen. I don't know of any instances recently but I haven't been involved in the day-to-day operation of those coupes on the ground.

10

All right. And areas that are heavily logged and then a nest is discovered and it is too late to put a 10-hectare reserve around it, are you aware of that kind of situation occurring?---I'm aware of that kind of situation. In several cases I can remember where local management was somewhat embarrassed by the fact and so in a perfectly - I think a goodwill attempt to retrieve the situation we excised a big area of regrowth to make up that 10 hectares or more around the nest so future years the nest grows up with this small clump of old trees around it - a very small clump - and an area of regrowth is buffer on the outside; and those take many years to see if they're going to work, basically, and I don't know of any that have been revisited..

15

20

I see?---Most of those nests I have revisited, the nests have simply degenerated because it hasn't been maintained; so a very low success of those are what would you call, retrieval situations.

25

And that is just a case of trying to do something rather than nothing to remedy the situation?---Absolutely.

30

Okay. And it is the case that there has even been a report of eagles hit by helicopters?---Three or four cases, yes.

35

All right. So it is fair to say, Mr Mooney, is it, that there are a host of risk factors introduced for eagles from forestry operations even with management prescriptions on paper that wouldn't otherwise be there?---Yes, it's inevitable.

Are you aware of any circumstances in which there has been incursions into areas that have been reserved for eagles, where the people responsible for that incursion have been prosecuted?---No.

40

No doubt - - -?---I'm aware of investigations, but not a prosecution.

No doubt - - -?---And my knowledge may be out of date.

45

No doubt there have been circumstances where you would have urged a prosecution, or would like to have seen further investigation?---Yes. It's not in my place to urge one, but I certainly would have liked to have seen several, but the decision to prosecute or not depends on a whole list of circumstances.

Are you aware of circumstances where in coupes those conducting the forestry operation have been at pains to try and demonstrate that a nest is inactive rather than active?---I've noted on a few occasions a great, almost wishful thinking enthusiasm, to the point of wishful thinking that it's inactive. But it can be quite hard to tell, and sometimes that can be a genuine mistake, because a nest height, its shape, particularly nests have a cup on the inside so eggs can be well down in the nest, so it can be very difficult to tell sometimes. That's why my habit was to over fly with a light aircraft and settle the issue that way.

10 And the identification of a nest as active therefore depends on the resources and diligence of those doing the investigation, to some considerable extent?---To a great extent, and I imagine also the degree of auditing they are concerned about that may happen, you know, forest practices auditing. Physical incursions, machinery coming too close, roading, all of that can be picked up on an audit quite easily. People's physical activities, walking around, lingering in vehicles, this sort of thing won't be picked up in auditing, unless someone reports it, and supports that report. So the mechanical issues are only part of the package that the eagles have to deal with. The people themselves are a problem. Early in this research we realised that often a nest was reported. By the time someone like myself was there to inspect and make some decision or recommendation, actually when you asked questions you found out that, you know, five, six, seven visits had been made by various curious people. They had a bit of a look, most of them in just some ignorance, and so the damage has already been done before you even got to make the recommendations. Now, people are much more aware of that now. We did put a huge amount of effort into training, as did the Forest Practices Authority, and I think those sorts of unnecessary problems have dropped right off. Although I'm not familiar with the day to day activities this year and last year, I'm aware of the, you know, that those problems were very prolific before, and the word is they're not so prolific now.

30 Thank you. Now, I want to - just while we are on the question of some of the improvements that you have noticed in the administration of the management prescription, it is the case - well, I withdraw that. Ms Thompson has sworn an affidavit that is going before this Court to the effect that Forestry Tasmania staff are now sufficiently competent and skilled that when they are conducting aerial searching they can do it by themselves, not with anybody that is a specialist in raptors. Do you agree with that?---Until you resurveyed the areas with someone who is a raptor specialist you wouldn't know. That is, they find very many nests, but we don't know how many they're missing, and I haven't seen an analysis of nests found in those areas, say, during logging, which is ultimately a very thorough search. So until that comparison was made you couldn't really argue that point. Ms Thompson might be basing that on her own analysis of exactly that. I don't know. If I can offer something there? Getting the industry, and if I can include Forestry Tasmania in the industry, to participate like that, we have had a policy of trying to do that to try and install the ownership of these procedures to get conserving eagle nests as just part of the forestry industry culture. So not all - we've been quite deliberate about including people when we can to try and change attitudes of ownership. But

there are natural hazards in that you can have too many people involved, and of course people vary in their competence and enthusiasm and everything else.

5 Right. Now, Mr Mooney, I want to ask you some questions about the multi-species modelling project that was undertaken by Melbourne University, and in particular the chapter that dealt with the wedge-tailed eagle. You were involved in providing information to the people at Melbourne University that undertook that project?---Yes.

10 And indeed is it fair to say that you were their principal source for the biological and ecological issues to do with the eagle?---With the assumptions, yes. I don't know what other sources they used that they may not have quoted. They may have talked to many people presumably, but I was party to many of the assumptions in the model, yes.

15 All right. And so far as you are concerned, the assumptions that were made in that model reflected the best information that was available at the time?---The assumptions to do with eagle behaviour and ecology, yes.

20 And you didn't at the time have any criticism of the assumptions and parameters that were used in relation to the eagle?---No. We discussed all of them in detail, and we made our best call on knowledge at the time.

25 And you are not aware of any information that has come your way since that model was published that would have cast any doubt on the assumptions that they used?---Not the assumptions to do with eagle ecology and behaviour as threats. There are assumptions to do with vegetation and forestry plans that I'm not expert on.

30 No, I understand that. Can Mr Mooney be shown court book number 4, please? Have a look, please, at page 1614. This is an affidavit that has been affirmed by one Mr Reid on behalf of Forestry Tasmania. Now, have you seen this affidavit, Mr Mooney?---Yes, I have a copy somewhere here.

35 You were supplied with a copy of Mr Reid's affidavit, were you?---I was.

By whom?---By - I think Roland Browne supplied me with it.

40 By Mr Browne?---I think so, yes.

Yes. Okay. Can I have a look at the copy you have got, please?---They're my bits of - - -

45 No, no, that is fine. So you have had a chance to read that?---Yes.

All right. Can you go to paragraph 31, and in that part what Mr Reid is doing is criticising one of the parameters that was used in relation to poisoning?---Yes.

And he says:

5 *The physiological tolerance of eagles to 1080 poison is relatively high, and to my knowledge there is no evidence of mortality of Tasmania of wedge-tailed eagles from such poisoning programs on State forest.*

10 Is that an accurate statement as far as you are concerned?---Yes. There's no evidence. We haven't found a dead bird. That statement Mr Reid is using is almost a verbatim statement from a 1991 publication of mine.

15 All right. And as far as you are concerned does that mean that 1080 poison - I withdraw that. Is it your opinion that you can infer the opposite from that, namely, from the absence of evidence you can infer that there is no effect on
20 wedge-tailed eagles from 1080 poison?---No. It's a probability issue. If I can explain a bit about 1080 poison. There's 1080 poison, or the essential ingredient is found in many plants in Western Australia, so animals in Western Australia, native animals, have a high degree of resistance. There are also trends amongst animals. The carnivores tend to be more resistant than the
25 herbivores. Now, eagles being a carnivore they are moderate to high resistant. They have a moderate to high resistance. for 1080 to do the registration of the chemical, they do all sorts of sub-lethal and lethal testing, were from West Australia and South Australia, I believe, so none from Eastern Australia or Tasmania. So it is possible our birds are more susceptible than the birds tested,
30 so they may be more susceptible than the theory tells us. Now, the test for that is somewhat in do we find dead birds after operations, etcetera, etcetera. Well, the bare essential are, we find many dead eagles - or other people do - that we don't know the cause of death. Testing for 1080 is extremely expensive and unless we couldn't find some other possible reason, we wouldn't go to that
35 trouble. In actual fact, I don't know of any eagles found dead that have been tested for 1080 and one of the problems in testing for any chemical like that is you may find a residue of it but that's not to say that chemical killed the animal. The eagle may eat something with a bit of 1080 in it - this is a dead wallaby - something like that - but it may not be harmed at all. It may get run over or be
40 shot, or something else happen. Just the presence of the chemical doesn't prove the death. So, in fact, testing these carcasses doesn't necessarily get you to a satisfactory end point. Another point, a practical point, is that when animals such as eagles - sorry. When eagles get a very high dose of 1080, they often vomit and get rid of that lethal dose, but they still retain a sub-lethal dose that makes them sick. They can appear - this is from descriptions of the animals under tests. They can appear slightly unco-ordinated, a little bit drunk almost, and in that state they are extremely prone to accidents. Three instances I can remember, I've seen somewhat unco-ordinated, almost drunk looking eagles scavenging around 1080 poisoning, and they may have been eating carcasses
45 there for several weeks; so every day ingesting a small amount of poison. Nothing to kill them but it can certainly make them very prone. I couldn't catch them to have them tested, but just because I can't catch them doesn't mean they're flying properly. And so I think the evidence suggests that they're

unlikely to be killed directly by 1080 but they could easily be affected at the point that the risks increase. The risks of being run over or crashing into a fence, or something, I suspect would be much higher after being sick by 1080 than before.

5

All right. Well, the point that Mr Reed is making, you see, Mr Mooney, is made in the last sentence of paragraph 31. He says:

10 *Use of such a poison impact algorithm is thus not relevant to the impact of Forestry activities on the viability of the Tasmanian wedge-tailed eagle.*

15 From what you know about the eagle, do you support the use by Dr Bekessy of that particular parameter into the study?---I still think it's relevant and I can remember a discussion several years ago about this because there is still potential to do the birds harm and there hasn't been a specific study to look at whether they are harmed or not. There is still potential. I have communicated many times to the - if I can be forgiven for saying - guru of 1080 research, the man responsible for most of the fundamental research on it's toxicity on wildlife, and he certainly won't dismiss the possibility; and one of the reasons he won't dismiss it is because we don't know if in their evolution the eagles came from the west coast of Australia and, therefore, are very resistant, or they came from the east coast and went west, and so the only resistant birds are in the west. And those evolutionary movement are very fundamental to this sort of issue of physiological susceptibility. So he won't disregard the possibility that eagles could be severely affected, and my observations are that they can be made to behave a little bit abnormally, even in the field in Tasmania, and so the risks are there. We can argue about the level but the risks are there.

20
25
30 All right. Can you go to page 1676 of that court book? That is an extract. That is the part that contains the Melbourne Uni report on the eagle and it starts a court book 1666. I just want to draw your attention to that table at 1676?---Sorry, what page is that?

35 1676. What that sets out, you will see, Mr Mooney, is the assumptions that were made in relation to a number of events and their effects on the eagle, and I want you to focus in particular on the third one, the native forest harvesting?---Yes.

40 And just refresh your memory about that and then tell his Honour, if you would, whether you see those as reasonable assumptions to make?---Yes.

45 HIS HONOUR: This is, in fact, part of a document that you co-authored, is that correct?---Yes, I suppose I'm likely to agree somewhat but I haven't changed my mind, and there are opportunities to change your mind as an author and suggest a change - but, no, that's one problem with these matters, it's a very small company of people that work on these issues.

Yes?---There was considerable discussion went into this; not just with Ms Bekessy but with all sorts of people. The whole aim of these game control procedures are to reduce the food population: basically, wallabies and possums.

5

MS MORTIMER: All right. Now, have you had an opportunity to read the report that Dr Bekessy has filed as part of her proposed or foreshadowed evidence in this case?---This is the report attached to her affidavit?

10 Yes?---Yes, I have.

All right. That is in book 2 of the court book. Can you go to page 638, please?---Something if I can offer again on the point of 1080? I should have added it a few minutes ago. The animals that tend to be the most susceptible are the ones with the highest metabolism, as a rule. So an eagle chick, a small chick, with its high metabolism should be much more susceptible gram for gram than an adult. There is a very easy mechanism to imagine an eagle would zero in on, would be very focused on sick, poisoned animals before they die; so, yes, this animal's caught, taken back to the nest and fed to the chick. Chicks for their size, high metabolism, also eat a lot. So there is a mechanism that could compromise a chick - and chicks have never been tested. There is actually, you know, a lack of information at that stage. Now, both John McIlroy, the man responsible for most of this toxicity research and myself have noted eagle chicks being raised in areas where there's been lots of 1080 use, but we've also realised chicks die in those areas for whatever reason, and there's no post mortems been done and a lack of information is not necessarily a conclusion that nothing happens.

20 All right. Well - - -?---We've very wary about that.

30

In part, taking that into account, but looking more broadly at the factors that Dr Bekessy has put into her modelling, if you look at the bottom of page 638 you will see that Dr Bekessy has identified, in terms of assessing the impact of forestry operations on the eagle, four things, identified as A to D, do you accept that those are the appropriate matters to factor into that?---What page are you

35

638, book 2?---I've lots of books.

40 You are not wrong, Mr Mooney?---It's like reading Lord of the Rings.

It is much more exciting than Lord of the Rings, Mr Mooney.

45 MR D. GUNSON: Another work of fiction.

MS MORTIMER: Couldn't resist that one, could you.

Page 638?---Yes.

Now, you have read that before if you have read Dr Bekessy's report?---Yes.

5 So my question to you was do you agree with Dr Bekessy that those are the appropriate assumptions to factor in when she is looking at the impact of Forestry operations on the eagle?---Yes. The only modification would be - she hasn't put them in order of importance I don't think.

10 No?---Probably the 1080 poison issue would be the least in the order of importance but that is carried into her assumptions - the detail of her assumptions in the model I believe.

15 That is right. So you understand, do you not, Mr Moody, that in conjunction with people like yourself she has weighted the risks?---Yes.

20 Now, what that model predicts, Mr Mooney, is extension of the species in 200 years. From your perspective how do you factor in the impact of Forestry operations in that?---What this model predicts is the extinction in that region in Tasmania. Now, what is not going to happen of course is there will be no eagles there at all, just a gap, and then eagles the other side of the political line. If her prediction comes true what in effect you have is that Bass district becomes a gigantic sink for eagles.

25 Yes?---It is very hard to actually treat that as a discrete population because it is not a discrete population but in effect what this model predicts is that area will be unsustainable to a point where it needs flow in from elsewhere. It predicts that local area will become a big sink. That is the practical prediction so eagles will move into that area because there is still food there and there is still some nesting opportunities and whatever but it will be a drain on all the other
30 productivity around the State.

35 Right?---Now, this is a phenomena that is common to extinctions. Once you have in a net fashion, more sinks than sources, you have total extinction. That is how extinctions occur. So the effect of Forestry in this is that it takes away, as I see it, insurance, it takes away almost any ability of the birds to compensate if Forestry removes too many potential nests and actual nests. So Forestry as a modifier mainly of productivity of eagles is very important there. All sorts of other problems will occur. There is lots of mortality problems but most of those are extremely hard to effect further than we have.

40 Yes?---The birds are protected. There is large penalties. It is anti-social. In most parts of Tasmania they shoot eagles but road traffic is increasing all the time, speed and volume. It is fanciful thinking to imagine we can actually reduce a lot of the mortality factors so to me it becomes more and more
45 important that Forestry in any of these district - this just happens to be the Bass district - forestry, farming, urbanisation, all of those activities that can modify nesting habitat are managed very, very carefully to maximise the possibilities for breeding for this eagle.

5 Because they are the only ones that remain capable of modification, given what
you have said about the human persecution, you don't see that there is really
much else that can be done to change what is happening with that?---In many
respects and I think perhaps one unfortunate thing of this prediction is it uses
the word persecution in far too wide a sense. Persecution to me is where
someone goes out deliberately to harm something so really we should be
thinking perhaps in terms of human induced mortality rather than persecution.
It does askew it a little bit.

10 Right?---Modifying our effects on the breeding of eagles is something that we
can make large changes to. It is very difficult to make large changes to the
mortality factors.

15 Now, from what you know about the Bass district where the study was carried
out, do you agree with Dr Bekessy that in broad terms there is not a great deal
of difference between that district and the Derwent district in terms of
extrapolating her model to the Derwent district?---There are some big
differences as I understand it the degree of plantation in each area and that is an
important issue because some sorts of plantations, or all plantations at a certain
stage almost remove habitat from eagles. It is arguably not that much different
from concreting some of it over. The standards are so even age, so dense, so
homogenous the birds simply can't use them and they have to bypass them and
that has also been a major problem in other countries for eagles where what
was hunting habitat is basically excised from their home range so they either
have to expand their home range to get enough food or they can't breed.
Anyway I know I am wandering a bit there, sorry.

30 No. But in answer to my question one of the differences you identify is that
there is more plantation conversion that has occurred in Bass than in
Derwent?---As I understand it, yes.

35 But in terms of otherwise the nature of Forestry operations aside from
plantation conversion, so the native Forestry operations where there is
regeneration, as far as you know the way that they are carried out in Bass and
the way that they are carried out in Derwent is not materially different?---No, I
think the same list of activities would be undergone with a greater or lesser
extent for those different silviculture treatments.

40 Right. And so with the qualification about plantations would you otherwise
accept that if you are going to model the effects of Forestry and other mortality
risks on an eagle in one district like Bass, you are going to get similar results in
Derwent?---Similar. Ideally you would tweak the plantation issue, tweak the
mortality issues. You would have to do some research on either to see that
there are differences worth tweaking the model about but from what I
understand of the modelling process you would probably end up with the same
priorities of problems, perhaps with a different emphasis you may end up at

slightly different end-points with predicted extinctions, that sort of thing. But I see them as essentially very similar but probably not identical.

5 Are you aware of any changes to either scope of Forestry operations in either the Bass or the Derwent district or the management restrictions that apply that occurred as a result of the production of this modelling about the eagle. Did it have any practical effect as far as you know, and the people that commissioned it?---Not that I know of. Since this report has been circulating I haven't had day-to-day on-ground management with the forest industry but I am aware of 10 the general mood, of the changes or no changes and that is why I say I am not aware of any changes.

All right. Mr Moody, from the perspective of your knowledge and experience with the wedge-tailed eagle and if we step back for a moment from the question 15 of prescriptions and what they might do to mitigate effects of Forestry operations, if you were making the decisions about what should happen in Wielangta from the perspective of the eagle, would you log it?---Protection of eagles doesn't mean logging has to cease. It depends a little on what you mean by logging. It depends a lot on that.

20 In what way?---Whether there is a lot or a little, or there is selective logging or clear fell or there is more reserves or less reserves - - -

25 Can we just run through those? So it is the rate at which the area is logged you see is important?---The types of forests being logged are important obviously, most people who know eagles would agree is prime breeding habitat or even secondary breeding habitat, habitat that it can reasonably be assumed the eagles might use for breeding is very important. That's a similar habitat that they use for hunting that should be minimised and - - -

30 Can I just stop you there for a moment and ask you to clarify. That means habitat they are either actually using now or might use in the future?---Yes, they can't exist without good hunting habitat, and because trees eventually fall over they can't exist without potential replacements. And when I say 35 minimised I'm well aware that I'm not the only person with an interest in this, and so I would be just pushing a bargaining position by minimising. It doesn't mean completely stopping it all.

40 All right. And then I think you also identified the areas of reserve protection as critical?---There is reserve protection. Any nests that are in secure - as in they're not in the last tree in that area in undisturbed situations, I think that would be a priority for, you know, reservation, or otherwise excising from logging. There's a whole bundle of activities that could be contained. Larger reserves. It's an easy list to go through and say, this would be ideal for eagle 45 conservation. There are minimal roads, maximal reserves. Any site that's in an especially good place, looked after especially well, which usually means minimum disturbance, maximum reserve size. The roading is always an issue, public access to that roading. That's a great problem for the forestry managers

for their own reasons, I understand that. There's a whole package of problems that go together like that.

5 Now, those factors, can I suggest to you, all deal with maintenance of present populations, and minimising disturbance to current breeding rates. If, as I understand, you have already indicated to his Honour part of the goal was to recover a population, what needs to happen?---Basically eagles have an inherent flexibility. To recover the population they have to be given time, time to adapt, and to my mind preserving the status quo and doing it properly and
10 credibly, and holding at least the status quo will give the birds time to adapt.

What do you mean by the status quo?---Oh, how ever many pairs are breeding now at least. It is conceivable that in the distant future if the status quo is held the number of breeding pairs, the productivity, and we can reduce the mortality
15 wherever we can, that the birds will adapt and start to use areas that they're not currently using. That's been observed for many species around the world, but usually for species that have short vigorous life spans, that throw out lots of young, that are always trying the opportunities. Eagles are much more conservative, so the whole process takes a lot, lot longer, and by eagles I mean
20 the whole family suffer many of these things, which does let me use - make predictions from what's happened in other places, with other species.

All right. And that is those two articles that you are referring to about the golden eagles?---Yes. And in answer to your question about what I think
25 should be done to maximise the areas use for eagles, I would like to point out that that's quite complex, and it really does - beyond those headline comments I've just given it really would - it deserves a lot more thought than I've given it in a few seconds here.

30 All right?---But the principle - I stand by the principles. I also realise I'll never be asked.

Your Honour, there is one matter that is just outstanding in terms of the information I have put to Mr Mooney. I put to him this second version of the
35 draft report, and I haven't had a chance to discuss with my learned friends whether there is any objections to that. But I will hear soon enough. I press the tender of that now.

40 HIS HONOUR: Yes.

MR D. GUNSON: At this stage we object to it being tendered, your Honour. We may be able to resolve it by some discussions.

45 HIS HONOUR: Yes.

MR D. GUNSON: I think that may be a sensible way to proceed, if the matter could be stood down for a little while we may be able to discuss it and see where we get to. I understand there is a number of versions of this document.

HIS HONOUR: Yes.

5 MR D. GUNSON: Starting perhaps even with the document ahead of the one that has been now MFI G, I think it is - D, leading up to documents beyond that, so I think it is very much a draft document that is being put to Mr Mooney at this stage.

10 MS MORTIMER: And I don't suggest otherwise, your Honour. But in my submission it is plainly a document that is as much a draft as the one that is attached to Ms Thompson's affidavit. That is, it has got the same status, and the purpose of the tender is just to demonstrate the difference in some of the figures, and to assist in understanding Mr Mooney's evidence about why the difference exists.

15 HIS HONOUR: Is this something you want resolved while Mr Mooney is here?

20 MS MORTIMER: Probably not, your Honour. He probably doesn't need to be involved in that.

HIS HONOUR: Yes.

25 MS MORTIMER: So, your Honour, I am going to ask, if it is not inconvenient, and there is no object, that Mr Mooney not be excused, because we have a number of other witnesses in this case that are dealing with eagles, and it may be necessary to impose on him and ask him to come back - - -

30 HIS HONOUR: Certainly.

MS MORTIMER: - - - depending on what happens. But at the moment I don't have any further questions for him.

35 HIS HONOUR: And that would be unlikely to happen in this segment of the proceeding?

MS MORTIMER: That is right, your Honour.

40 HIS HONOUR: So if you want Mr Mooney back it will probably be in May?

MS MORTIMER: Yes. That is so.

45 HIS HONOUR: Is that an inconvenient time for you, Mr Mooney?---No, no, no. It'll be fine, thank you.

You will be in Tasmania at that time?---Unfortunately, yes. No, I joke.

MR D. GUNSON: I have a couple of questions for Mr Mooney, if I may, your Honour.

5 HIS HONOUR: Yes, Mr Gunson?---Excuse me. Before - can I answer some questions that were asked of me of this - or is that not relevant now, those - - -

MS MORTIMER: Oh, if Mr Mooney - did you make some inquiries over lunch, Mr Mooney, about that, and is that about the table 2 figures?---Yes. Because if I give it to you now it's not for ever lost.

10 Who did you make some inquiries of?---Bill Brown.

All right. And what did you ask him?---I asked him how many nests have been found since this report was written, and between November '03 and September 15 '04 we're talking 75 nests. And between September '04 and October '05 we're talking 98. These were discovered by extensive helicopter survey by Forestry Tas.

20 All right. So that is 75 plus 98 - - -?---Yes.

- - - plus 99. Should we read active territories as active nests in table 2? Are you able to answer that question?---I strongly suspect so. I think the point of that little bit of - those few inquiries of mine is that there are a lot of nests discovered since then - - -

25 I - yes?--- - - - which skews, or which - - -

But of course the - no, I withdraw that. Of those 74 plus 98 did Mr Brown tell you how many of them were determined to be active?---No. I just asked how 30 many nests.

All right.

35 HIS HONOUR: Sorry. I didn't hear that?---No. I just about how many nests, simply because our discussion was mainly about differing sample sizes and whether there was a big enough difference to account for different impressions from the information.

40 MS MORTIMER: So some of those, about 180-odd nests that have been discovered, some of those will be active, some of those will be inactive, and therefore they'll fall into - some of them will be added to the 99 but not all of them?---Yes. As Mr Gunson suggested earlier, this is one of a series of documents. In fact this one was drafted in late 2003 so it's two and a bit years old.

45 All right. Thank you, your Honour.

HIS HONOUR: Thank you. Mr Gunson?

5

MR D. GUNSON: Mr Mooney, if I could take you back please to the list of amendments this morning you gave us about your report which is dated 5 February?---Have you got one that I could have?

10 Do you have it in front of you?---Thank you.

My learned junior during the course of the morning was trying to bring the report up to date and he drew to my attention item 5, paragraph 90, line 2. I wonder if you could have a look at your report for me please. We couldn't
15 make much sense of that and we want to bring your report up to date?---Yes.

HIS HONOUR: Page 54?

MR D. GUNSON: Yes.
20

And you say in item 5, paragraph 90, line 2:

Change "of 61 per cent" to "of 150 per cent".

25 I think when you look at it you will see the problem?---Well, the accident rates have increased from 4.1 to 10.3 which is 150 per cent increase. I made a calculation error. Called it 61.

It is 31 in our copy.
30

HIS HONOUR: Paragraph 90?

MR D. GUNSON: Can I have a look at the page you are looking at please.

35 MS MORTIMER: Your Honour, this is complicated because this is a part that has already been corrected in answer to Forestry Tasmania's questions so what is in the Court book has already been corrected.

40 HIS HONOUR: I see?---I see. So I have made that second correction on top of that.

MR D. GUNSON: Yes. I follow that now. Thank you for that?---I'm sorry for that confusion.

45 That is all right. Not a problem not of your making. If you could go to volume 4 please and if I could ask you to look at page 1843.

HIS HONOUR: Just before you go to that, Mr Gunson, so what appears on the second page of the document headed:

Please find below my answers to the five questions.

5

What appears at the middle of that page is the new 90?

MR D. GUNSON: Yes.

10

HIS HONOUR: And is that in a form that now should stand.

MR D. GUNSON: It should stay.

HIS HONOUR: It should stay? Is 90 substituted for the 90 at page 54?

15

MR D. GUNSON: That is as I understand it.

HIS HONOUR: Yes. Is that correct, Mr Mooney?---In paragraph 90, the first set of brackets should read:

20

4.1 to 10.3 per year, an increase of 150 per cent.

So that is further varied - 150?---Yes. That's why I yet again apologise for the inconvenience.

25

That is all right. When I am reading this some time later I need to make sense of it?---That's how I feel.

30

MR D. GUNSON: And if you could now go to volume 4 to page 1843 you will see a document there, it is exhibit 13 to Ms Thompson's affidavit, headed Source of WTE Nest Discoveries?---Yes.

And it is chart sourced from the 2005 Rotary presentation provided by obviously Bill Brown?---Yes.

35

Who is a raptor specialist with the Threatened Species Unit. Now, if we run along the line there you will see that on the bottom line we have "Forestry operations, Forestry roading, other reports then PFRP". What does that stand for?---Private Forest Reserve Program.

40

Thank you. I have no further questions, your Honour.

HIS HONOUR: Thank you, Mr Gunson. Anything arising from those questions any one else wants to ask.

45

MS MORTIMER: No, your Honour.

5 HIS HONOUR: If not, Mr Mooney, thanks for your contribution today. If you could be on stand-by for the period we are back in May in case you are liable to be called. If you have any difficulty or if you have any particular dates that cause problems, if you could let my personal assistant know then we would be grateful.

10 MS MORTIMER: Your Honour, before Mr Mooney goes I did notice that he had brought into Court something that he doesn't want tendered but might be appropriate to display?---I am aware that you have had the pleasure of an excursion to Bruny Island - it is not a present - but you probably haven't seen an eagle that is all. That is what - I nearly brought a live one.

HIS HONOUR: Can I call him Peter Matera?

15 MS MORTIMER: And I think, Mr Mooney, can you just tell his Honour whether you think that is a male or a female, juvenile or adult?---I brought a couple along which only one I have brought in just to demonstrate that we can tell the difference. This dark bird is an adult, a very old bird, probably more than 10 years old and the size of it, the neat beak and the very neat
20 wedge-shaped tail, which I won't - I will break it showing you - tells us it is a male. A female is much bigger, somewhat darker and the juveniles are mottled colour. That is really only to demonstrate that they are actually very big birds.

25 HIS HONOUR: And you mention that they prey on other nesting birds. Do they prey on swift parrots?---They can't catch them. Should I remove all of this.

Thanks, Mr Mooney?---Thank you.

30 <THE WITNESS WITHDREW [3.43pm]

35 HIS HONOUR: Ms Mortimer?

MS MORTIMER: Your Honour, if we could perhaps just try and sort out this issue about the report and then we will have concluded with eagles.

40 HIS HONOUR: How long do you want me to stand the matter down for?

MS MORTIMER: Ten minutes.

45 HIS HONOUR: Yes, all right. Well, perhaps my associate can remain and when you are ready he can retrieve me.

ADJOURNED [3.43pm]

RESUMED

[3.57pm]

5 MS MORTIMER: If your Honour please we have resolved that issue through
an agreement that we will actually ask your Honour to take a short piece of
evidence from Mr Bill Brown, from DPIWE, he being the author of these
documents, and he will be able to explain to your Honour the provenance of the
draft, and where the process is up to. So we thought that might be the most
10 helpful way to proceed.

HIS HONOUR: Yes, thank you.

MS MORTIMER: I call Mr William Brown.
15

<CROSS-EXAMINATION BY MS MORTIMER

5

MS MORTIMER: Mr Brown, can you tell his Honour, please, your full name and your work address and your occupation?---William Edward Brown. My work address is 134 Macquarie Street.

10

And what position do you hold?---And my position is Project Officer Threatened Eagles.

15

With DPIWE?---With DPIWE.

Which is, if you want - I will ask you to spell out the acronym rather than me. The Department of?---The Department of Primary Industries Water and Environment.

20

All right. Now, Mr Brown, you are the person who has been primarily responsible for the development of the new recovery plan for the wedge-tailed eagle; is that right?---That's correct. It's the recovery plan for threatened eagles. It includes the white bellied sea eagle.

25

I apologise. Right. For all eagle species in Tasmania?---Yes. The two species.

30

Can Mr Brown be shown MFI D, please, and also have to hand book 4, and I just ask you to turn to page 1886 of book 4, Mr Brown. And it is the case, is it, that the recovery plan has gone through a number of drafts?---That's correct.

And the draft that is identified as MFI D is - I think Mr Mooney gave some evidence that it was prepared towards the end of 2003?---Yes. The initial plan was prepared then.

35

And that, the one that is MFI D is the one that went out for public comment?---It may have been that draft, or it may have been a slightly later draft that went to public comment.

40

And so far as the information that is contained in it, and if you turn for example to page 13, table 2, which was the table that Mr Mooney was asked some questions about, the background information, or the source data information was in this version of the report, but has subsequently been taken out; is that right?---Correct.

45

And can you just explain to his Honour whether that information is still going to be publicly available and in what form?---The reason for the removal of a lot of the background information from the original draft was based on a decision by the Commonwealth Department of Environment and Heritage, in terms of

the format that recovery plans should take. So that information will be presented as background information to the recovery plan. And I believe that will be available on the DEH web site.

5 All right. So if you turn to the version that appears as an exhibit to Ms Thompson's affidavit, starting at page 1886, that is a version that has had all that source information removed; is that right?---That's correct.

10 Do you know, Mr Brown, whether the substance of the source information has changed? Take, for example, table 2. Whether the information has changed from the numbers that are there?---No, I haven't made any changes to that.

15 And the version that appears at page 1886 as an exhibit to Ms Thompson's affidavit, can you tell his Honour whether to your knowledge there is a subsequent version to that one?---Yes, there is indeed. There have been some minor changes made quite recently. The document's actually changed its title, and it's also the actual dates of the document have been changed, so it'll be the recovery plan from 2006 to 2010, as a consequence of delays in its approval. It's currently with the State minister for approval, and it will then go to the
20 Commonwealth Minister of Environment.

25 So as far as you are aware are there any changes in the substance of the report from the one that appears at page 1886?---No. Most of the - well, I would say all of the changes that have been made are of a typological or corrections, for example changes of names to branches, and the threatened species section.

30 And have you seen a copy of the document that is to become the background information?---I have. That is essentially the same as the information here that's presented in the draft. It may well be updated before it goes on public display on the DEH website.

35 Is there any difficulty with you providing a copy of that background paper to the parties in this case so that it can sit alongside the version that is next to Ms Thompson's affidavit?---No, not at all.

All right. Well, if I could ask you to attend to that perhaps just by sending a copy to us. Your Honour, would it be appropriate if it be sent either to the Court or to my instructor? I am happy with whatever - - -

40 HIS HONOUR: I am not fussed. Whatever is easier for the witness.

MS MORTIMER: Pardon me, your Honour. Are you happy that it comes to us?

45 MR D. GUNSON: Yes, you give us a copy.

MS MORTIMER: Right. Mr Brown, if you would send it to my instructor, Mr Browne, and he will distribute the copies. Thank you. Your Honour, on that basis I would ask that your Honour mark MFI D as an exhibit.

5 MR D. GUNSON: No objection there, your Honour.

HIS HONOUR: Exhibit U.

10 **EXHIBIT #U BACKGROUND PAPER PROVIDED BY MR W. BROWN**

MS MORTIMER: I have no further questions for Mr Brown, your Honour.

15 HIS HONOUR: Mr Gunson?

MR D. GUNSON: I don't cross-examine, your Honour.

HIS HONOUR: Yes, thank you, Mr Brown.
20

<THE WITNESS WITHDREW

[4.07pm]

25 MS MORTIMER: Your Honour, that concludes the evidence that we want to adduce tendentiously related to Mr Mooney and in view of the time I would like to just bring your Honour up to date with what is outstanding in terms of housekeeping matters, and perhaps then if we could start Ms Michaels in the morning if that is not inconvenient.

30 HIS HONOUR: Certainly. As I understand - is her evidence-in-chief concluded, or are there additional matters?

MS MORTIMER: No.

35 HIS HONOUR: There are some additional matters in-chief?

MS MORTIMER: There are some additional matters in-chief, your Honour, because the respondent has produced a new report on the beetles, and so my learned friend, Mr Tree, needs to ask Ms Michaels some questions about that. And while we are on beetles, your Honour, there has been an exchange of notices to produce, possibly the most unusual notices to produce that I have seen in this Court, each requiring production of a beetle.

45 HIS HONOUR: A form of habeas corpus.

MS MORTIMER: One answered more fully than the other because one has been decapitated, but they may well find their way into evidence at some stage,

5 your Honour, but I thought I would just inform your Honour about that. There are, as we understand it, two outstanding matters of argument that need to be dealt with in the course of our case, and one that can be dealt with at the close of our case. There is the privilege claim over the production of documents that was noted from last year, and that claim will be contested, so that we will need to set some time aside for that, but we will - - -

HIS HONOUR: Does that relate to any particular witness?

10 MS MORTIMER: Well, it really related to Mr Meggs, your Honour.

HIS HONOUR: I see.

15 MS MORTIMER: So it is not a matter that is likely to - - -

HIS HONOUR: Can that be done at the end of your case?

20 MS MORTIMER: It can either be done at the end - it may have to be done before Ms Bekessy and Mr Wintle give evidence next week, your Honour.

HIS HONOUR: I see.

MS MORTIMER: We will try and make provision by agreement for that.

25 HIS HONOUR: So it might have to be done after Dr McQuillan.

MS MORTIMER: Yes.

30 HIS HONOUR: Yes.

MS MORTIMER: And there is also a new affidavit that we have filed and served by one Mr Wakefield, about swift parrots, and there is an objection to that affidavit.

35 HIS HONOUR: That should ordinarily be dealt with at the time that it is proposed to call him.

40 MS MORTIMER: Yes, all right. We will tend to that to make sure that we have left some time to deal with that. The one matter for argument that we will await the close of our case is the question of the Commonwealth seeking leave, as I understand it, to read some evidence, namely the affidavit that has been sworn.

45 HIS HONOUR: I thought Forestry Tasmania is now going to read that.

MS MORTIMER: No, there has been - I will let my learned friend explain, your Honour, what has happened with that, but there has been a changed position about that.

MR O'BRYAN: There is no change, your Honour. As we indicated at the outset of the case it is the Commonwealth's desire to lead its own evidence, the one single affidavit explaining the legislative history, and in particular the negotiations entered into of the Regional Forestry Agreements, and we would like to resolve that at the end of the applicant's case, your Honour, because if we are unsuccessful in convincing your Honour that it is appropriate to have that evidence to assist the Court in the intervener's role, then we would like some time to give consideration to whether it should or should not be read in someone else's case, your Honour.

HIS HONOUR: Certainly.

MR O'BRYAN: So the best time, we submit, is at the close of the applicant's evidence, so that that can be dealt with at that point.

HIS HONOUR: Certainly. Thank you.

MS MORTIMER: Those are all the outstanding matters, your Honour.

HIS HONOUR: All right. Nothing else from anyone else? All right, we will adjourn now until 10 o'clock tomorrow morning.

**MATTER ADJOURNED at 4.12 pm UNTIL
TUESDAY, 7 FEBRUARY 2006**

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NONE REQUESTED