

BEFORE THE ENVIRONMENT COURT  
AT NAPIER

ENV-2019-AKL-000270  
ENV-2019-AKL-000272  
ENV-2019-AKL-000273  
ENV-2019-AKL-000274  
ENV-2019-AKL-000277  
ENV-2019-AKL-000278  
ENV-2019-AKL-000309

**IN THE MATTER**

of the Resource Management Act  
1991

of submissions under section 209 of  
the Act

**BETWEEN**

NGA KAITIAKI O TE AWA A  
NGARURORO

HAWKE'S BAY REGIONAL  
COUNCIL

EAST TAUPO LANDS TRUST

OWHAOKO B & D LANDS TRUST

WHITEWATER NEW ZEALAND  
INCORPORATED

ROYAL FOREST AND BIRD  
PROTECTION SOCIETY OF NEW  
ZEALAND INCORPORATED

OWHAOKO C TRUST

**Submitters**

Hearing Commenced: 09 February 2021 at East Pier Hotel, Napier

Court: Judge M J L Dickey  
Judge L Harvey  
Commissioner M Mabin  
Commissioner K Edmonds

Appearances: J Mauger, O Steedman and W Karena for Ngā Kaitiaki o  
Te Awa o Ngaruroro  
P Anderson and W Jennings for Forest and Bird  
S Eveleigh for Whitewater NZ

P Maw and I Edwards for Hawke’s Bay Regional Council  
P MacGregor and R Steedman for Owhaoko C Trust  
R Gardner for Federated Farmers of New Zealand  
A Davidson for Hastings District Council and Napier City Council  
H Atkins, T Gray and N Buxeda for Horticulture New Zealand  
L Blomfield for Big Hill Station Limited, Heinz Watties Limited, T&G Global Limited, Brownrigg Agriculture Limited and Ngamatea Farming Company Limited  
M Downing and S Newell for the Director-General of Conservation

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## NOTES OF EVIDENCE TAKEN BEFORE THE ENVIRONMENT COURT

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## KARAKIA TĪMATANGA

### INTRODUCTIONS

#### 5 THE COURT: JUDGE DICKEY TO MR STEEDMAN

Q. So Mr Steedman, are you speaking for Ngā Kaitiaki?

A. Yes, we did a joint submission and I'm also representing my own whānau trust, thank you.

Q. Which is?

10 A. The Opaea Whānau Trust.

Q. I see. Now, that family trust is not noted as a party in this proceeding?

A. Okay, well, it's – all my documentation states that and I, you know, like I have put the notice into the – notice 36 as Opaea and I do not know who else to represent, who else can I represent?

15 Q. Is that similar to the Owahaoko?

A. No. No, this is the estate of Opaea.

Q. All right, okay.

A. My own estate, thank you.

Q. Well that is something perhaps we can talk to you about a little more later.

20 A. Yes.

Q. Thank you, kia ora.

A. Thank you.

### INTRODUCTIONS CONTINUE

25

#### JUDGE DICKEY ADDRESSES COUNSEL – PRELIMINARY MATTERS

##### MR ANDERSON:

So, I'll commence the submissions now. Before I start reading I just will elaborate on the split between the lower and upper, that will be helpful, which is that the issues in relation to the lower primarily, as you'll be aware from the evidence, relate to indigenous avifauna and fish and the issues in relation to the upper are they were previously recreational white water and angling and as a consequence of that and the decision to not grant, not recommend an order

30

for the lower, Forest and Bird and Whitewater have split it up, so these submissions mainly deal with the lower and the Whitewater issues mainly deal with the upper. There's a little bit overlap with who in the upper, but that's the main, that's the way we've split up the case. We, when it comes to the upper, we stand with Whitewater in relation to what Whitewater submissions will say about the upper, but we don't separately deal with that, because there is no point in duplicating what my friend will say.

**MR ANDERSON READS LEGAL SUBMISSIONS FROM PARAGRAPH 1**

"The Ngaruroro River...those time restrictions." Now I will hand over to Mr Jennings who will talk about the process to date.

**MR JENNINGS CONTINUES READING LEGAL SUBMISSIONS**

"On 21 December...

**MR ANDERSON CONTINUES READING LEGAL SUBMISSIONS AT PARAGRAPH 28**

So the next section to talk about is the scope of the Court's enquiry and the burden of proof, so: "Two important issues...outstanding for (inaudible 11:12:13)."

I do wish to just briefly deal with a – the question of burden in relation to what happens once the river is found to be outstanding. And that's dealt with – I haven't got it in my submissions but I would like to take the Court to paragraph 59 of the Rangitata decision which is in the little bundle that is there. In order to save paper, I did not print that myself, I will just ask you if you could find that. So, paragraph 59, the first half of that paragraph mainly reflects what I've just said but in four sentences up from the bottom of that paragraph there's a sentence starts: "There is one exception..." I'd just like to draw the Court's attention to that: "There is one exception to the rule about the evidential burden," which is what I've just talked about, "it is that the effect of the presumption in the previous paragraph is that once the evidence establishes that the river has an outstanding characteristic then there is an evidential burden on any person who seeks an order to do something other than maintain

the status quo for the water's quality and quantity." So, where that takes us with respect to burden, I think, is that the burden is on those (inaudible 11:13:47) of fact, anyway. The burden is on Forest and Bird to show that the lower river is outstanding for fish and for – and the upper river is outstanding for who. The burden is on the parties seeking to reverse the decision, oh, the recommendation that the – or what do you want to call it, not a recommendation, – the finding that the lower river was outstanding for avifauna, the burden is on those seeking to change that. If the Court concludes that the lower river is outstanding for bird-life, then the burden is on those seeking that there be no order to convince the Court that that is.

**THE COURT: JUDGE DICKEY**

Q. So, there is no – so, if we find that the lower river is outstanding for bird-life, the burden is on the others to convince the Court –

A. That a WCO shouldn't be.

15 Q. That what?

A. That a WCO shouldn't be recommended and a bird-life and fish life. That's kind of important in this case because the way in which the Court applied the threat test was as a prerequisite test. So, once it said, "we've got outstanding bird values in the lower but we're not going to give a WCO because of the threat test which we say is in error", their consideration of matters following that and the decisions is understandably relatively light on detail because they didn't need to. So, that is an important point in relation to burden with respect to the matters to be decided if there is an outstanding finding, simply because the special (inaudible 11:15:56) didn't deal with those matters in any great detail because it didn't need to. So I've gone through the issue of burden in much detail there. I will take you to, if there are no questions?

25 Q. Thank you.

A. So I now move to paragraph 41.

30 **MR ANDERSON CONTINUES READING LEGAL SUBMISSIONS FROM PARAGRAPH 41**

"The issues in...the 5% threshold."

**COURT ADJOURNS: 11.31 PM**

**COURT RESUMES: 11.52 AM**

**MR ANDERSON CONTINUES READING LEGAL SUBMISSIONS AT  
5 PARAGRAPH 85**

“In any event...the main stem.”

**COURT ADJOURNS: 12.59 PM**

**COURT RESUMES: 2.21 PM**

**10 MR ANDERSON CONTINUES READING LEGAL SUBMISSIONS AT  
PARAGRAPH 255**

“The Environment Court...(inaudible 14:24:26)”

I think the best way to do this is to take the adopted draft that has been  
15 circulated and we'll just work through that from the start.

**THE COURT: JUDGE DICKEY**

Q. You mean the December?

A. The one that we handed up this morning.

**20 Q. The one that came up this morning?**

A. Which is the same, essentially, except for that amendment to clause 12.2.

Q. All right.

**MR ANDERSON REFERS TO DRAFT ORDER**

**25 “The documents starts...the damming definition.”**

**THE COURT: JUDGE DICKEY**

Q. So just, and sorry to interrupt you, just to be clear, this is a strike-out and  
underlined version of the special tribunal draft order?

**30 A. That's correct.**



**MR ANDERSON CONTINUES REFERRING TO DRAFT ORDER**

"The definitions of... comfortable with that."

**THE COURT: JUDGE DICKEY**

5 Q. So sorry, what amendments, are they being put in here to reflect their concerns?

A. There was an agreement with them and on the terms and that was set out in the memorandum and the – a couple of them, I understand, are important to the Winegrowers and they relate to 12.4 which relates to the not preventing granting of replacement consents and also 14 about existing consents, I believe those were relatively important matters for them. So Forest and Bird agree that, and Whitewater has as well, that any changes to this document that we want to make, you have to get their agreement too. Obviously, that doesn't bind the Court to make – to the agreement reached with the Winegrowers. Schedule 1A relates to the water to be retained in the natural state and that's identified on the left-hand corner and I think Ms Eveleigh will talk the Court through that very shortly about the locations which are not yet specifically identified. And then 1B is what is protected for their outstanding characteristics which again relates to the upper and then schedule 2 relates to the outstanding characteristics of the lower which is identified there and the matters we have been – we are seeking and the conditions that apply.

15 Q. And have you got a copy of the map?

A. Ms Eveleigh will address that.

25 Q. Even for the lower?

A. Say again?

Q. Even for the lower?

A. I will arrange for a map for the lower, I thought – I understand that that was covered, but I will arrange for that to happen. Then the fish screen requirements are in schedule 4 and the – schedule 3 I should say, and schedule 4 is no longer sought. So that's a quick run-through of the order that is sought.

30 Q. So is there a map we need for schedule 3 as well as schedule 2, I think?

A. For schedule?

Q. 3, the one water is to be protected for their contribution?

A. That is in the upper river, so I'll – I think Ms Eveleigh will address that.

Q. It says, "tributaries to the lower river"?

5 A. Sorry, yeah, we can – yes, I am not sure that a map was actually required to be attached but if that would assist, I can arrange for that to be presented and I will put that out.

Q. Well, it's just so that we can get an idea.

A. Yeah, I understand what – yeah, no, we'll –

10 Q. How long do you think that, unless it's in someone's evidence and we missed it?

A. I will...

Q. Have a look?

A. I will have a look and get back to you as soon as I can.

Q. Thank you.

15 A. So that, I'll say I am going to move to 235 of the submissions.

Q. So what I think we will do with regard to the draft orders is we will wait for everyone's presentations on them and then we might see you back for questions about them.

20 A. That is fine, and when it comes to that time we'll make sure that we have appropriate maps which identify the areas.

Q. Right, thank you.

**MR ANDERSON CONTINUES READING LEGAL SUBMISSIONS AT PARAGRAPH 235**

25 1435

"Clause 9 provides...the lower river."

**MS EVELEIGH:**

30 So, to assist in terms of a map, within the common bundle at page 1885, it's document 30. So, this is a map that was prepared by the joint witness – a joint witness statement on water quality and it shows the upper Ngaruroro catchment. The areas labelled A, B and C are those parts of the catchment that the water quality experts considered to be in their natural state. So, area A is the upper Ngaruroro above Kuripāpango. Area B is the tributaries on the true

right below Kuripāpango and above the confluence with the Taruarau. And Area C is the upper part of the Taruarau catchment.

**THE COURT: JUDGE DICKEY**

Area C, sorry, is the?

**5 MS EVELEIGH:**

Upper Taruarau. The other relevant point to note on the map is at the bottom of the coloured section, the Whanawhana cableway, and so that's the demarcation between the upper and lower Ngaruroro.

10 So, what I thought I'll do at this point is first of all summarise what I understand to be the issues in contention and then take you through the drafting of the order. So, starting from the Special Tribunal's version, the applicants have sought some additional prohibitions and restrictions, whereas the regional council's version and those parties supporting that version seek a  
15 reduction in some of the prohibitions and restrictions. I'll make reference to the regional council's position so that it's clear what Whitewater's position is on that. I'm sure Mr Maw will correct me if I have misconstrued his client's position.

1445

So the first issue is waters in their natural state. So the Special Tribunal found  
20 that all of the upper Ngaruroro above the Whanawhana cableway –

**THE COURT: JUDGE DICKEY**

Q. You just need to go a bit slower, sorry.

A. Apologies.

25 Q. So the first issue?

A. Is which waters are in their natural state.

Q. Yes.

**MS EVELEIGH:**

30 So the Special Tribunal found that all of the waters above the Whanawhana cableway were in their natural state. I understand the regional council's position to be that only the waters identified in A, B and C on that map

are in their natural state. Whitewater and so the applicant's position is that they don't contend that the lower Taruarau Road or the Omahaki Stream catchments are no longer in their natural state, so on that point I think we are agreed with the regional council.

5

**THE COURT: COMMISSIONER EDMONDS**

Q. Can you just repeat that stream?

A. Omahaki Stream. So on that map its confluence is just above the Whanawhana cableway, it's on the true left of the Ngaruroro, or right on the map.

10

Q. Is this the one that you are looking at?

**THE COURT: JUDGE DICKEY**

Q. It's a different map, we have got a different.

15

A. Apologies, it looks like there has been a printing error in that map.

Q. That would be why we can't see Whanawhana.

A. Captured – can I hand that version, I am not sure if anyone else has printed versions of the common bundle that they could make available?

Q. Ours is cut off at the side.

20

A. Apologies, we will arrange to get a replacement page for that.

Q. So just returning to, sorry, just to go backwards a bit. So the Special Tribunal said all the areas above the Whanawhana cableway are in their natural state, all the waters?

A. That's right.

25

Q. And then the regional council's – oh, so that brings context to A, B and C, right.

A. And so that –

Q. So the regional council contends that all of that land that is not delineated by these A, B and C, all those waters are not in their natural state?

30

A. In natural state, that's correct.

Q. Different to what the Special Tribunal found?

A. That's my understanding.

**THE COURT: COMMISSIONER EDMONDS**

Q. And that's what the applicant accepts now, is that what you are saying?

A. It accepts in relation to the lower Taruarau and the Omahaki Stream catchments.

Q. Yes.

5 A. The area in contention is the opposite side of the river to the B, so it's the tributaries and also the main stem of the Ngaruroro River, from Kuripāpango cableway to the confluence with Taruarau River.

**THE COURT: JUDGE DICKEY**

10 Q. So the area opposite, on the other side of the B, is that right?

A. That's correct.

Q. So there, I'm assuming. And also the main stem of the river from where to where?

A. From Kuripāpango to Taruarau. So my understanding is that the B only  
15 relates to the tributaries in that area and not to the Ngaruroro main stem.

**THE COURT: COMMISSIONER EDMONDS**

We need a properly marked-up map, so we are all clear.

20 **THE COURT: JUDGE DICKEY**

Q. This is difficult for us to get a real understanding of where everyone has got to. Because you talking through it, while helpful, is – makes me worried that we're perhaps not appreciating the areas.

A. Certainly, I think what we will try and do is get a map that rather than  
25 showing the As, Bs and Cs, just specifically shows "natural state" and "not natural state" and "in contention".

**THE COURT: JUDGE DICKEY TO MS EVELEIGH – MAP**

30 **THE COURT: JUDGE DICKEY**

Q. So, sorry, we got to area in contention, the other side to area B and also the main stem of the river from Kuripāpango to where?

A. To the Taruarau confluence which is the purple edge of the B, as it runs down the main stem.

Q. I see, thank you.

**MS EVELEIGH:**

5 So after the identification of which waters are in their natural state, the issue is what protection is afforded to those waters. Clause 5 of the order provides for a protection of natural state waters and there are some varying amendments to that. In terms of the applicant's position, the upper Ngaruroro all natural state used to be contained in schedule 1, that has now been split into schedules 1A and 1B, 1A being the natural state portion and 1B being the remainder of the  
10 upper Ngaruroro not in natural state. And so in clause 5, the reference to schedule 1 has changed to 1A. The applicants seek deletion of the words *as far as possible* when it talks about, "waters being retained as far as possible in their natural state."

15 It also seeks deletion of the final words *through the protection provided in clause 7*, because the majority of the clauses apply to the natural state waters. They should either all be in there or not be in there. In the applicant's view, it creates unnecessary duplication to insert that cross-reference, it is not required.

20 So the second issue is protection of waters which in the upper Ngaruroro which are not in their natural state but which the Special Tribunal has recognised as having outstanding characteristics. The draft order provided for the regional council, it doesn't apply to those parts of the upper Ngaruroro and so has no protections for those outstanding characteristics. I understand from  
25 discussions with counsel for the regional council that they are clarifying whether that was the intended drafting, so I'll leave Mr Maw to speak to you about that.

For the –

1455

30 **THE COURT: JUDGE DICKEY TO MS EVELEIGH:**

Q. Hold on – so, clause 7, is that where we are up to?

A. Mhm.

Q. Oh, 6 sorry –

A. 6. So, that's where 6 comes in.

Q. – is talking to schedule 1B?

A. Mhm.

Q. And that is the part that has been left out by the regional council?

5 A. That's right, and it also talks to schedule 2 which is the lower river.

Q. But it is 1B that –

A. Is relevant for the upper.

**MS EVELEIGH:**

The next issue is damming. So, the approach of the Special Tribunal was to  
 10 generally prohibit damming in the upper Ngaruroro River, however the definition  
 of *dam* excluded some dams based on whether they would materially reduce  
 outstanding characteristics or result in visual intrusion into scenic values. So,  
 the differentiation between what – the damming that was prohibited or not  
 prohibited was contained in the definition of *damming* rather than in the clauses  
 15 themselves. The – what I understand agreed between the parties is an  
 amendment to the definition of *damming*.

**THE COURT: JUDGE DICKEY TO MS EVELEIGH:**

Q. When you say *agreed between the parties* what do you mean?

A. It's contained in both the applicant's version and the regional council's  
 20 version, the same definition. And for all parties who have responded on  
 that drafting, they supported one or other of those versions.

Q. So, the definition is the same in both?

A. Mhm. And accords perhaps with the more usual understanding of what  
 is damming, talking about artificial impounding of the waters.

25 **MS EVELEIGH:**

The applicant's position on it is basically not to change clause 8 which is the  
 restriction on damming of waters. There's an amendment to include the word  
*rule* which it appears might have been a typographical error in the  
 Special Tribunal's decision. The words didn't quite make sense without the  
 30 word *rule* in there. And then also to apply that to the lower Ngaruroro consistent  
 with Forest and Bird's case.

The regional council seeks that the prohibition on damming only applied to the main stem of the Ngaruroro River and so Whitewater opposes that consistent with its position that there is to be a prohibition on damming throughout the upper Ngaruroro.

The next issue is abstraction of water and this sits at clause 9 of the applicant's version and part A for the upper Ngaruroro waters. So, the Special Tribunal through clauses 1 and subparts 1 and 2 of that clause provided for abstraction of water where it would have a no more than minor stream depletion effect, that's in part 1. And in part 2, where it does not detract from the outstanding characteristics and features.

The applicants have sought an amendment to that which restricts any abstraction from the surface waters in the upper Ngaruroro. That is subject to the exemptions for like an order in relation to takes for drinking water, stock water and firefighting purposes, but it would prevent any other abstraction from those waters.

**THE COURT: JUDGE DICKEY**

So, that is the exemptions in 12.1?

**MS EVELEIGH:**

Yes, that's correct. Mr Anderson has spoken to the changes for part B for the lower Ngaruroro waters. So, the next issue is requirements to protect water quality. They sit in clause 11 of the applicant's version. The Special Tribunal's recommendation was that there should be no rules in a regional plan that would enable the exceedance of the water quality limits contained in schedule 4.

Based on the joint witness statement for water quality, I understand that the parties have agreed and it's certainly the applicant's position that schedule 4 be deleted. The Regional Council is seeking a narrative clause at clause 11 that there be no deterioration of water quality such that outstanding values that rely on water quality are compromised. The applicant's position is that there



should be no deterioration in the existing state of water quality and that clauses 11.2 and 11.3, there is an explanation of what that means. That is taken from the recommendations of the water quality experts in their joint witness statement. It identifies perimeters which are relevant to that determination in 11.2 and at 11.3, the requirements for trend analysis.

Just in terms of some minor drafting amendments, at clause 12 the Special Tribunal's version referred to use of water for reasonable domestic needs and drinking, stock drinking water and taking use of water for firefighting. So, the revised wording is to relate to taking use for all three of those uses.

#### **THE COURT: JUDGE DICKEY TO MS EVELEIGH**

Q. Just to go back a step, the 11.4 where there have been some amendments proposed, we do have a question about the meaning of that clause. I do not necessarily expect you to answer now but perhaps once everyone has finished someone could explain to us what they think that clause means and its impact?

A. So, what it's intended to mean is that there are water conservation order that seeks to hold the status quo. What this means is that the regional council could set limits or targets which were an improvement on the status quo.

1505

Q. That is the second part of the clause. What about the first part?

A. So, in terms of – if I take you back to 11.1, that only provides that no rule may be included in a regional plan authorising discharge of contaminants where it isn't consistent with 11.2 and 11.3. The intent is that the regional planning process would set those limits and that they would then be applied to resource consents. And so, the beginning of 11.4 is intended to make it clear that resource consents cannot be granted that are inconsistent with the regional plan. The concern at the Special Tribunal hearing was that it would be very difficult for resource consent applicants to satisfy, at that stage, schedule 4 in terms of the water quality limits, that that would be onerous on applicant's resource consent. And so, the intent is to pull that through to a regional planning framework.

Q. Is it intended to have the reference to schedule 3 in 11.4?

A. I suspect that should be – yes, I think so, but I think it should only be the first part, the first line of schedule 3. I'll check that and come back to you perhaps when I –

5 Q. And does that mean then that there needs to be a change to 11.1? Just to –

A. For consistency?

Q. Mhm.

10 A. Yes, it probably does. And then in terms of clause 13, the exemptions, that's really a re-ordering of the drafting, the words that were at the end of clause 13 have been pulled up into 13.I.

Q. And is that a clause that is agreed by the region as well?

A. I would need to check, your Honour. Perhaps Mr Maw can address that.

Q. That's all right. Are you going to talk about the schedules?

15 A. Certainly. So, schedule 1A is the waters to be retained in natural state. It's the applicant's position, and I apologise at the moment it has references to map reference X and Y. I will get those references inserted before tomorrow. But also, I think it's probably the map that is more useful to you than just have the map references inserted.

20 Q. It is.

A. 1B is the remainder of the upper Ngaruroro waters which have been identified by the Special Tribunal as having outstanding characteristics but which, it's accepted, are no longer in their natural state.

Q. And that is accepted by whom?

25 A. Accepted by the applicants. It's the, I guess, the regional council's position that they're not in natural state and for some of the waters that is the regional council's position, that applicant has accepted that. Schedule 2 is the position that has been advanced by Mr Anderson in terms of waters – the lower Ngaruroro waters be protected for outstanding characteristics. That's the main stem from the Whanawhana cableway  
30 down to Chesterhope Bridge. Schedule 3 is waters to be protected for their contribution to outstanding characteristics. So, these waters don't have the outstanding characteristics themselves. For example, the first, in relation to the upper, is hydraulically connected groundwater, but

because it contributes waters to the surface waters that have the outstanding characteristics, protection is sought to retain that contribution of waters.

**THE COURT: COMMISSIONER EDMONDS TO MS EVELEIGH**

5 Q. Is that just 1A and 1B, not 2?

A. So, the – that’s correct in terms of hydraulically connected groundwater and Mr Anderson might be able to address you on that further if you’ve got questions in terms of why hydraulically connected groundwater to the lower Ngaruroro isn’t included.

10 Q. I just wanted to be clear on why it wasn’t?

**MR ANDERSON:**

It’s not included and there’s a degree of compromising mediation around that to reach that (inaudible 15:12:18) of the agreement which we reached with the  
15 Winegrowers to remove hydraulic connected groundwater from the order.

**THE COURT: COMMISSIONER EDMONDS**

Right, thank you for clarifying that. I will just (inaudible 15:12:30) evidence hydraulically connected groundwater to the Ngaruroro River, thank you.

20 **MS EVELEIGH:**

Schedule 4 is the minimum requirements for fish screens and intakes, and I don’t think there’s been any challenge to that or any proposal for change. That takes me to the end of what I had intended to say about the applicant’s version of the order.

25 **MR MAW:**

So, starting with the interpretation of section clause 3, the definition of *damming* there is as set out in the joint witness statement for planning. Those changes appear to be consistent between the counsel’s version of the order and the applicant’s version.

30 1515

The definition of *upper Ngaruroro waters* has been amended. My friend referred you to the map contained in Dr Hix's evidence which has the A, the B and the C and we're going to provide some greater clarity in relation to that map overnight, I understand. But insofar as the council's version of the order relates to that map, the definition of *upper Ngaruroro waters* referred to in this definition aligns with the waters which the joint witnesses consider to be in their natural state as shown on that map. I should signal that I'm –

**THE COURT: JUDGE DICKEY**

Q. So, it's the areas excluding A, B and C on the map?

10 A. The areas including A, B –

Q. Oh, sorry, including, yes.

**MR MAW:**

I should signal that the areas outside of those three areas, I'm taking some instructions on at the moment as to whether it was intended that there be no restrictions that apply to those waters in the upper river. That may be another tendered consequence of the drafting that reflected the joint witness statement. I'll clarify that position as soon as I'm able.

**THE COURT: JUDGE DICKEY**

Q. That is schedule?

20 A. Schedule 2 in terms of – and there isn't a schedule 2 in the council's version of the order. I maybe – the schedule 1B that's in the applicant's order which is the waters in the upper that aren't in their natural state.

Q. So, that is the one you have taken instructions on?

A. Yes.

25 **MR MAW:**

You'll see a tracked change in clause 4(v). This is a change, consequential change to pick up on the difference between waters that are in a natural state and waters that contribute to a natural state and there's an inconsistency there.

Clause 5 contains some drafting improvements which are recorded in the mediation agreement. First change in clause 7 is a minor correction which I understand is agreed to by the applicants, the insertion of the word *rule*.

**THE COURT: JUDGE DICKEY**

- 5 Q. Just back to clause 5, sorry. So, when you say the drafting improvements recorded in the mediation agreement, when you say *recorded*, what does that mean, agreed or?
- A. My understanding is the mediation agreement that was filed following the mediation included some changes to – or these changes to clause 5.
- 10 Q. The council's clause 5?
- A. Yes.
- Q. So, as they relate to the upper river?
- A. Correct.
- Q. But they were not agreed to by the applicants because their version has
- 15 those words remaining?

**MS EVELEIGH:**

That's correct. The mediation agreement records that the drafting of that clause was discussed and that the wording presented there was the regional council's preferred wording.

20 **THE COURT: JUDGE DICKEY**

So, is it correct to say then the amendment to clause 5 is the regional council's preferred amendment?

**MR MAW:**

- 25 That's correct. No changes to clause 6. Clause 7 is the restriction on dammings and the second change here is important and worth emphasising, so that's the regional council's position that the damming prohibition should only apply to the main stem of the Ngaruroro river and it's the upper river.

1520

- 30 The drafting here was intended to capture the essence of the carve out from the Special Tribunal in relation to small dams on tributaries that wouldn't have

a material effect on the flows in the main stem. It's also perhaps worth highlighting at this point that the restrictions on operations of river flow in clause 8 would still apply to any damming on tributaries, so the protection still exists at that level.

5

Changes to clause 8, 8.1, comes from the planning joint witness statement. The change in 8.2 picks up on the changes set out in clause 7 in terms of the restriction on damming only bind to the main stem.

#### **THE COURT: JUDGE DICKEY**

10 Q. So, the change to 8.1, so you said that change came from, sorry, the planning joint witness statement?

A. Yes.

15 Q. What part of that change came from there given the essential difference between the council and the applicants in that clause, is it the exception provided by 11.1?

A. Yes. And just for clarity, the joint witness statement was working on different numbers when referring to the clauses and it had referred to clause 12.1 but it's picking up on the scope of the order.

#### **MR MAW:**

20 I've spoken about the first change in clause 8.2 in relating to damming of the main stem but there's a second change there, the word *deflection* is being replaced with *diversion*. That's provided clarity and to align with the definition of damming. That issue is addressed in Dr Mitchell's evidence.

25 Clause 10 in accordance with the water quality joint witness statement in schedule 4 has been deleted and instead the narrative description of water quality inserted. But the council agrees with the applicant in relation to the insertion of the words at the end of 10.1 but the point of difference is that the applicants then go on to specify the particular contaminants of concern and  
30 testing methodologies. It's the council position that that further information is not necessary to be recorded in the order.

Clause 11, the changes –  
1525

**THE COURT: COMMISSIONER EDMONDS:**

5 Q. Would you mind speaking to 10.2 from your perspective, the first sentence in particular, your understanding of that?

A. Bear with me for a moment, I'll just have a thing about that. Obviously, no changes are proposed. It strikes me as being superfluous having read it. I'd like to have a think about that in the context of the rest of the order to understand what its purpose actually is there and the obligation not to grant a resource consent inconsistent exists in the RMA in any event. Perhaps the only suggestion I'd have is that it's outlined there to provide a hook for the second sentence in relation to the council imposing more stringent water quality standards on resource consents.

10 Q. So, if you took at the first sentence, that sentence would still apply to 10.1 potentially?  
15

**THE COURT: JUDGE DICKEY**

Q. So, on the face of it, that sentence, it gives the impression that the regional plan sets the rules but if it's to be read as reading back into 10.1, as I think Ms Eveleigh suggested, if I am thinking about the same clauses?  
20

A. Remember just the difficulty here is that the order doesn't set the water quality limits and the reality is it would be the plan that does, in fact, set those limits. In a sense, they can't be inconsistent with the order because the order won't contain any limits and the only obligation in the order is that water quality doesn't deteriorate, taking into account testing methodology. I'll give that some more thought, perhaps in consultation with the council's planning witness, and we'll see whether any further light can be shed on the utility or usefulness of retaining clause 10.2, the changes suggested by the applicants.  
25

30 Q. Thank you.

**MR MAW:**

So the changes proposed in clause 11, dealing with section 14(3)(b) and (e) takes, have been put forward to better align that clause with the wording of section 14(3)(b) and (e) and the rationale is set out in Dr Mitchell's evidence as  
5 to why he recommends those changes.

Change to clause 11.2 is simply correcting a cross-referencing error and my understanding is that that's agreed to by the co-applicants.

1530

10 In relation to clause 12, and the council doesn't agree with the reordering or elevation that the applicants are contending in relation to this clause. Where the – where co-applicants are pursuing essentially a prerequisite prior to any exemption being granted, whereas the council is supporting the Special Tribunal's version of this clause in relation to the carve outs there.

15

There is a change at 12.2 and that's a drafting improvement. In my submission, the drafting at present simply refers to all of the schedules; however, referencing a specific schedule that refer to the characteristics and features which are to be protected would seem to be more appropriate there to avoid  
20 any confusion.

Then onto the schedules themselves. Schedule 1 has the waters to be retained in natural state. The changes here are to align with the joint witness statement for water quality and that map attached to Dr Hix's evidence. The reference  
25 points contained in that schedule will be marked up on a map so that it's clear to the Court precisely where the schedule 1 waters to be retained in natural state are.

There's a change in the second column in relation to the outstanding  
30 characteristics or features and that's the deletion of *natural characteristics – water quality*. My understanding is the applicants are no longer pursuing recognition outright of that particular feature.



Then in relation to schedule 2, the same applies with respect to the deletion of *natural characteristics – water quality*. No changes to schedule 3, that's the fish screening requirements. And then deletion of schedule 4 in accordance with the joint witness statement and Dr Hix's evidence.

5 **COURT ADJOURNS: 3:35 PM**

**COURT RESUMES: 3.59 PM**

***NOTE: MERK recording failed at this point, hearing then recorded on phone for remainder of 9 February 2021.***

10

**MR ANDERSON CALLS**

**KATHRYN JANE MCARTHUR (AFFIRM)**

Q. Can you please confirm that your name is Kathryn Jane McArthur?

A. It is.

15 Q. And that you were involved in (inaudible 16:03:04)?

A. Yes, I was.

Q. And you signed a (inaudible 16:03:11) statement of about 20 pages in relation to that conferencing?

A. Yes, I did.

20 Q. And that you prepared a brief of evidence dated 2 June 2021, which runs to some 48 pages including appendices?

A. Yes, I have.

Q. And you prepared a brief of evidence reply dated 11 December (inaudible 16:03:31)?

25 A. Yes.

Q. And do you have any corrections to make in any of those documents?

A. I do have just two minor corrections to make in my evidence-in-chief.

**WITNESS REFERRED TO BRIEF OF EVIDENCE**

Q. Can you just advise the Court what those corrections are please?

30 A. Yes. On page 9 of my evidence, paragraph 33, very last line in that paragraph just change the word *relay* to *rely* please, and then also paragraph 68 on page 20. The first part of that paragraph is formatted as

a direct quote from the joint witness statement but it's not a direct quote it's a paraphrasing of paragraphs 20 and paragraph 52. So, just to note that that isn't the exact language used in the paragraph reference there.

Q. That all your corrections?

5 A. Yes, thank you.

Q. And can you confirm that the contents of those documents that you have, (inaudible 16:05:50) statement and brief of evidence (inaudible 16:05:52) are true and correct to the best of your knowledge and understanding?

A. Yes, they are.

10 **THE COURT ADDRESSES COUNSEL – ORDER OF CROSS-EXAMINATION**  
(16:06:04)

**CROSS-EXAMINATION: MS EVELEIGH – NIL**

**CROSS-EXAMINATION: MS DOWNING – NIL**

**CROSS-EXAMINATION: MR MAW**

15 Q. Good afternoon.

A. Good afternoon.

Q. Ms McArthur, you've been involved in this proceeding since the very beginning. Is that a fair reflection of when you started involvement with this application?

20 A. I believe the first report that I wrote was dated 2012.

Q. And that was the report that accompanied the application?

A. Yes, on water quality I believe.

Q. And that report also included reference to a range of other values that you had assessed at that point in time?

25 A. If I can think back that far, yes, I believe so.

Q. And at that point in time you expressed an opinion that values including values for the indigenous fish habitat was outstanding?

A. Yes.

30 Q. And you prepared some evidence for the special tribunal, both for stage one and for stage two?

A. Yes, that's correct.

Q. (inaudible 16:08:55) stage one was for the upper river and stage two the lower river?

A. Yes.

5 Q. And in relation to your evidence given at that point in time on the topic of the indigenous fish community, did the special tribunal accept your evidence that the characteristic was outstanding?

A. I understand that they didn't but there wasn't to my mind a great deal of explanation as to exactly why that was in decision.

10 Q. Thinking back to the time that you prepared your evidence for stage two, you had assessed the indigenous fish community differently to the way that it's been assessed for this hearing?

A. Yes, there is a difference in the assessment method, and that is largely as a result of the joint witness conferencing that was held for this process and, excuse me, the fact that the experts came up with an agreed range of criteria at that witnessing, at that joint witness conferencing. So, I was then able to utilise those criteria. Previously, we had no agreed criteria whatsoever and it was one person's opinion versus the other.

1610

20 Q. It would still appear to be the case that it's one person's opinion (inaudible 16:10:22).

A. It does appear to be the case, yes.

Q. And just touching on that joint witness statement, it's fair to say there is no agreement between the experts as to whether this river qualifies as meeting the test for outstanding?

25 A. No. We are not agreed on that.

Q. Did your evidence before the special tribunal you had pursued an assessment relying on the IBI, the index of biotic, and I always forget the remaining I, integrity?

30 A. Integrity.

Q. And you've moved away from that assessment with respect to your evidence before this court?

A. That was one part of the assessment that I undertook for my special tribunal evidence. It wasn't the sole criterion on which I based my

opinion. So my opinion there was based on multiple criteria as it is in this also.

Q. In front of the special tribunal you hadn't carried out a (inaudible 16:11:26) scale analysis of diversity?

5 A. No I have not.

Q. So that's a new feature of your evidence at this point?

A. It is and it arises out of the joint witness statement discussion.

Q. And perhaps it may arise also out of reference to a paper from Dr Holmes that was referred to in the special tribunal report which referred to the potential for outstanding values at a reach scale?

10 A. I believe I did quote Dr Holmes' paper in support of that, yes.

Q. So you've spent, I want to say the best part of eight years, but some part of the last eight contemplating what outstanding means in the context of a WCO. Has your thinking evolved a little along the way as to what might be outstanding and (inaudible 16:12:13) in the context of an indigenous fish community?

15 A. I think it's evolved somewhat in terms of this case. However, I did present the question to the New Zealand Freshwater Science Society conference in December because we still don't have ecologically agreed criteria for outstanding and we have legislation and policy that refers to outstanding but in an ecological sense it's very hard for us to answer that question because we don't have an agreed set of criteria to do so. So it does come down to expert view. It's evolved some way – I think it would be useful if we had some agreed national criteria that would make it clear.

20 Q. In terms of the threshold for what's outstanding or what's not, has your opinion on that changed since 2012 when you first started thinking about this?

30 A. No. I think my general view is still in the absence of a nationally determined ecological criteria that it does come down to expert judgement and expert view. And that's consistent with previous methods to determine significance like the RVAS significance criteria does have expert panel and expert judgement layered within it.

Q. And perhaps, given some of the challenges that you confront as an expert in this space, that perhaps explains the differences between some of the

experts. Some say it's not outstanding. Some say it is. And that's perhaps that you're drawing the line, as in the threshold, in a different place?

5 A. I'm not sure that we're necessarily drawing the threshold in a different place. I'm not sure that we are answering exactly the same question and I think that's where the problem arises.

Q. So when you say you're not answering the same question, do you mean there that you're answering a different question than perhaps the question that's been put to some of the other experts?

10 A. When I read through the expert evidence across Dr Hix, Dr Keesing and myself on fish, we do seem to each be answering a slightly different question. So the boundary of what is outstanding is a little bit different for each of us because we are working with no established framework to work within.

15 Q. So perhaps another way to express that is that you're looking at where the line is, the threshold, in a different place?

A. Well no, I don't think we are looking at the threshold in a different place. I think we're looking at a different threshold within a different context within each of those briefs of evidence.

20 Q. Well speaking of the briefs of evidence I do have some questions of you about your evidence. So I assume you have a copy of that with you there?

#### **WITNESS REFERRED TO BRIEF OF EVIDENCE**

A. I do, yes.

25 Q. So we start at paragraph 25 of your evidence, if you can turn to that?

A. Yes.

Q. There you make the observation that there are currently no major human made fish barriers in the Ngaruroro mainstream from source to sea. When you think about the braided rivers of New Zealand is this feature,  
30 is it common that there would be no barriers?

A. Well not for the Waitaki.

Q. So how many braided rivers are there in New Zealand?

A. Oh, I can't remember precisely how many are classified as braided.

Q. In the order of 163 give or take?

A. That sounds around about the right figure, yes.

Q. So when you think about those rivers it's really just the Waitaki that has been dammed?

5 A. I actually don't know out of all of those 163 rivers which have barriers and I'm not necessarily just talking about large hydroelectric barriers, but barriers to fish migration. There may be some within those. I couldn't tell you.

Q. Is it fair to say that the absence of human made fish barriers doesn't set the Ngaruroro River apart from other braided rivers in New Zealand?

10 A. There are other braided rivers that don't have barriers, but barriers obstruct approximately 60% of all catchments in New Zealand so they are an issue in terms of fish migration. Quite a significant one.

Q. More so in the tributaries than the main stems of those rivers?

A. Not necessarily. The Waikato River has multiple dams on the main stem.

15 Q. Is the Waikato River a braided river?

A. No, it's not. But you were asking generally?

Q. Well I'm asking about braided rivers here. So the 163 braided rivers here. And I'm trying to understand the context for this paragraph here and whether the absence of fish barriers sets this river apart from other  
20 braided rivers?

A. Well the absence of fish barriers means that its habitat quality is greater regardless of whether it is a braided river or not. Connectivity is an important characteristic.

Q. We will come onto connectivity shortly. Paragraph 27, the last sentence there, you discuss: "Maintaining or enhancing the state of water quality throughout the river of being a critical component of maintaining the indigenous fish habitat"?  
25

A. Yes.

Q. Is it your understanding that a water conservation order would not seek to enhance the state of water quality?  
30

A. That is my understanding but that doesn't preclude it from being enhanced if an order were placed.

Q. But that would be perhaps the domain of a regional plan to drive that enhancement or improvement?

A. It could, yes.

Q. It would be important to ensure that opportunities for improvement or enhancement weren't cut across in the context of a WCO?

5 A. I don't see, from my perspective, how a WCO would do that but I'm not a planning expert.

Q. You wouldn't want it to have that outcome though, from an indigenous fish perspective?

A. Well, enhancement is always better than maintaining the status quo unless the status quo is natural and very good.

10 Q. So, when you think about the lower reaches of the Ngaruroro River, and to be more precise I'm speaking about the waters below the Whanawhana cableway. How would you describe the river environment from that point to the sea?

15 A. How would I describe it? It's a large braided low gradient river with multiple channels. It has a wide variety of mesohabitats, so pools, ripples, runs throughout it, and the water quality is very good for a lowland large river in New Zealand.

Q. Would you describe the river as being modified below that point?

20 A. Well, it certainly has some degree of modification. I don't know whether you're talking about bank to bank or within the channel, but activities happen, people are there, they do things, the river is not completely natural. It is modified.

Q. Is it fair to say that it becomes highly modified closer to the sea?

A. Yes, it's quite channelized close to the sea.

25 Q. Now, you mentioned connectivity earlier, and you've addressed the issue of connectivity in your evidence and I want to take you to paragraph 29 when you started connectivity. In here you say that, in your second sentence: "Any analysis that splits the upper catchment indigenous fish habitat from the lower catchment habitat is not ecologically valid. It is more ecologically appropriate to take a whole of catchment approach to any analysis or evaluation"?

30

A. Yes.

Q. I want to work through now the indigenous fish community composition within the river and I want to understand a little more the methodology

that you've applied when preparing your evidence. So, at your paragraph 31 you refer there to the New Zealand Fresh Water Fish Database?

A. Yes.

5 Q. And you refer then to the records held for the Ngaruroro River, and you note that 383 records were recorded over the last 20 years and represent the recent records of the Ngaruroro fish community?

A. Yes.

Q. You then go on to refer to specific surveys that were carried out recently, being the Mclean survey and the Jellyman and Sinton survey?

10 A. Yes.

Q. Sinton, yes, Sinton. Are the records from those surveys included within that database?

A. They were not at the time that I extracted the database download.

15 Q. Were those records indicating a higher diversity of fish assemblage compared to the records that existed within the database?

A. I would have to have a think about that. Potentially one species higher.

Q. Did you look carefully at the data cards associated with these reaches of the river when preparing your evidence?

A. Yes.

20 Q. And there were 30 data cards between, oh, covering the period of the last 20 years?

A. Not sure if I've noted exactly how many in here and I couldn't recall off the top of my head.

25 Q. When you looked at those data cards what was the average number of species found each time a survey occurred?

A. In the Ngaruroro? That was not the analysis I undertook so I can't answer that question.

Q. Having looked at those data cards, there was a single reference to eight species having been found?

30 A. I believe so. Yes.

Q. Whereas the rest of those cards range between one and eight, an average of 3.7?

A. I'll have to take your word for that. Because I have not undertaken that analysis I can't answer that question.



Q. So you've picked out the single highest records here for the purposes of your analysis?

A. No. What I did was use all the information available to me to look at where there were records of high diversity or high species richness. So I didn't just look at the Ngaruroro, I used all of the information in the database which was some 32,000 records for 6,000 waterways and I looked at where there was highest diversity. I did add the Jellyman and Sinton and Mclean surveys. They were recent data that wasn't included in the database. If they had been uploaded to the database they would have been included in my original data set.

Q. They weren't included in the database so in a sense at that point your comparison is comparing apples with oranges.

A. It is not. All methods were undertaken in the data set that I looked at and that was the same as the studies that were undertaken. They fit within that data profile.

Q. So did you add any other studies to the database for comparison purposes or just the ones for this river?

A. I did not. Well it was relevant to add those for the river that we're talking about.

Q. Doesn't that introduce a bias into the data set though?

A. Actually it's a failing on the part of the people who undertook those studies to have not uploaded their information to a national database which is generally what we are requiring people to do when they undertake a survey. I had to add them in because they had not appropriately undertaken that upload.

Q. And then somewhat conveniently here they recorded a higher number of species than other records within the database?

A. Well it's simply the fact that there were a higher number of species at the time that they undertook those surveys. For other rivers in the database, and I scanned 32,000 records both by eye and using statistical analysis, many rivers that had high or exceptional diversity also had records for those reaches with lower diversity. Some samples and some surveys use more effort than others and will find more species. That's just the nature of sampling fish.

- Q. So when you think about the Mclean and the Jellyman and Sinton surveys, do you accept that the purpose of those surveys was to see how many different fish species they could find?
- A. Yes. That's the purpose of many fish surveys within the database.
- 5 Q. But not all of the surveys within the database?
- A. Not all of them. No. They are for multiple purposes.
- Q. And so one needs to be a little careful with the database in terms of its application for comparative purposes because the reasons underpinning the surveys, or the surveys taking place differ across the database?
- 10 A. The reasons differ, the methods differ. Notwithstanding that I did look at a lot of the recent methods which were new methods that we use more commonly now, which is to use a greater effort over a greater reach to try and find more species. Because the harder you'd fish and the more area you fish the more fish you find. And there are a large number of surveys within that data set that were undertaken for that purpose and you can tell by the way that the data record is entered, there are a variety of purposes. It is the only database we have.
- 15 Q. So in terms of these methods that are now being used, have they been applied to other large braided rivers in New Zealand?
- 20 A. It did look like there were some records that were undertaken using those methods. The Waitaki has been particularly fished quite often to measure the effect of the hydroelectricity scheme I would imagine. Also the Hurunui I believe. Can't remember exactly which ones off the top of my head. But yes, there were recent records from braided rivers.
- 25 Q. There seems to be an absence though from the likes of the Rakaia and the Rangitata?
- A. That's possibly the case. They were within the database though. They had lower species numbers so they didn't pop out the top of the analysis.
- Q. Is it difficult to survey braided rivers?
- 30 A. It is difficult to survey braided rivers.
- Q. And so the absence of data perhaps for other braided rivers may simply be a reflection of the difficulties and challenges associated with conducting surveys?

- A. It may be. But they were present within the data set. There were surveys from those rivers in there.
- Q. Have you yourself conducted any fish surveys of other rivers?
- A. Braided rivers?
- 5 Q. Braided rivers?
- A. No.
- Q. Have you surveyed the Ngaruroro River yourself?
- A. Only through cultural monitoring. So not using ecological survey methods, no.
- 10 Q. So no survey of the indigenous fish community. You're relying on the records of others?
- A. I am relying on the records of the national database.
- Q. In paragraph 32 you discuss the species composition of the Ngaruroro and there you refer to the upland pulley?
- 15 A. Yes.
- Q. Now there's some dispute amongst the experts as to whether that fish species is present in the river. You will recall Dr Hix has provided evidence indicating that that species is not present. You've read Dr Hix's evidence?
- 20 A. I have read Dr Hix's evidence.
- Q. In the light of his evidence do you accept his explanation as to why it's unlikely that that species is present?
- A. I accept that it's a plausible explanation. However, there is a record from the Department of Conservation that is quite recent for upland bully in the
- 25 Ngaruroro and I did speak to the person who undertook the survey, Dr (inaudible 16:30:28), and he confirmed that he believed it was an upland bully that he had identified. Now I can't validate further than knowing what's in the record. It's a moot point because the upland bully is not present in the very high diversity within the fish assemblage of the high
- 30 diversity sampling.
- Q. Paragraph 39 you provide some evidence in relation to the percentage of fish species which have a conservation threat status of at risk, declining.
- A. Yes.
- Q. And you say that six of the 18 species have that threat?

A. Yes.

Q. How does that compare with other rivers?

5 A. Well we do have a lot of threatened species and at risk species in most rivers because we have a very high proportion of threatened and at risk fish. 74% of all species are threatened or at risk of extinction. So it follows that in many rivers there are threatened and at risk fish.

Q. And so the presence of threatened or at risk fish within the Ngaruroro River doesn't set this river apart from other rivers?

10 A. No. But it is of conservation interest and it is of interest in terms of the assemblage. It does have a reasonable number, 33% is quite high, but I couldn't tell you how that compares to all other rivers in New Zealand.

Q. So you haven't done the comparative assessment in that regard?

A. I haven't because there's a few problems with that as I've identified in my evidence-in-chief.

15 Q. In paragraph 40 that follows, you make there a statement that intact indigenous fish communities and representative high quality habitats and populations of threatened species are of significant biodiversity value in Aotearoa New Zealand?

A. Yes.

20 Q. That doesn't mean that the habitat is outstanding though. That's a different thing?

A. It is a different thing. But I think when you look at a fish habitat generally you should look at the at risk and threatened species and where they fall within the assemblage. Particularly given the circumstances we find ourselves in where so many species are threatened or at risk of extinction. It is important ecological component of the species' assemblage to understand that.

Q. But again this is not setting this river apart from other rivers, given the high percentage of species that are threatened?

30 A. Not on its own. But in forming an expert view I've looked at multiple criteria and looked at the various ecological circumstances rather than looking at each one in isolation.

Q. I want to move on now to the criteria for assessing outstandingness. You've set out at your paragraph 41 the different assessment matters that the joint witnesses considered appropriate?

A. Yes.

5 Q. And that list doesn't include reference to taking an holistic view in relation to those matters?

A. It sets out a number of criteria. I think there is kind of a multi-faceted way you could look at it. It may be that some criteria are in and of themselves enough to say that a river is outstanding. So the Nevis is a good example  
10 of that where it has its own species that is not found anywhere else and thus it is outstanding. But I think you can also look at multiple criteria to determine whether a river is outstanding or not.

Q. Is there a risk applying that approach you could end up with any number of rivers that you might consider to be outstanding as you slice and dice these different categories?  
15

A. I don't know that looking at more than 6,000 waterways is slicing and dicing. I think I took a pretty broad view in order to come to where I came to. The risk is that in relying on expert opinion across a range of criteria that we will have different opinions.

20 Q. In your paragraph 33 you refer to the work (inaudible 16:36:37). I understand co-authored with respect to assisting the Bay of Plenty Regional Council and its outstanding freshwater body assessment under the 2017 NPSFM?

A. Yes.

25 Q. When you think about the outstanding water bodies that now need to be protected under the NPSFM including the new ones, do you understand outstanding in that context to mean the same thing as outstanding in a WCO context?

A. They aren't the same thing in a policy and legislative context but  
30 ecologically when we're trying to think about where is the threshold, is it significant, is it outstanding, they might well be the same. I don't know. we simply don't have a framework to work off so we're grasping at straws a little bit.

- Q. So you don't know whether it's the same or a different threshold? You simply prepare an ecological assessment and form a view as to whether you think it's outstanding?
- 5 A. There are differences in how those two tools are applied as I understand them. One being national policy to direct regional plans and the other being a higher level legislative instrument.
- Q. If you think about the context within which the NPSFM assessment is occurring, that's at a regional scale given that it's, that the outcome finds its way into a regional plan?
- 10 A. I think the 2017 version was leaning more towards that, the 2020 version now includes specific reference to water conservation orders within the definition.
- Q. It's not an exclusive reference though –
- A. No, it's not.
- 15 Q. – which indicates that there are perhaps other matters which would be considered outstanding that aren't, and perhaps don't meet the threshold required for a WCO?
- A. Potentially, and the question we were answering in the (inaudible 16:38:45) was the regional question, what do we do about outstanding
- 20 water bodies within the NPS context.
- Q. And so, it's relevance to the WCO care, that assessment's not particularly relevant?
- A. I think there are relevancies when you come to what is outstanding in an ecological sense. It's not relevant possibly in a planning sense, I can't tell
- 25 you about that, but ecologically there is relevance there but it is not the framework that I have relied on in coming to my view.
- Q. On we move to indigenous species richness.
- A. A favourite topic.
- Q. Here we go. Now, your paragraph 47 you note that species richness can
- 30 be measured at their reach and at catchment scales?
- A. Yes.
- Q. And when you do the catchment scale assessment, the Ngaruroro doesn't stand out compared to other rivers?

- A. It comes out as quite high compared to other rivers but it doesn't get as high as southern rivers with non-migratory (inaudible 16:40:12).
- Q. So, in a national context the, at a catchment scale this river wouldn't be considered to be outstanding?
- 5 A. Well, that would be if you thought that a catchment scale was the appropriate scale at which to test that, and you'll note from my evidence that I don't hold that view.
- Q. And yet, at paragraph 29 of your evidence you confirm that ecologically it wasn't appropriate to slice up catchments? My paraphrase.
- 10 A. Looking at different scales isn't slicing catchments up. It's looking at different scales.
- Q. (inaudible 16:40:58) taking the whole catchment approach is it?
- A. It is to take a whole of catchment approach, I have considered how many species are in the catchment as a whole. If the species, if the catchment
- 15 as a whole had very low number of species probably wouldn't have formed the view that I've formed.
- Q. How does that catchment scale species composition compare to the rivers in New Zealand that would have the highest catchment scale species composition?
- 20 A. I understand that might have been in Mr Hix evidence to the tribunal, from recollection it was around the low 20s. The problem being that we only have around 50-something species. So, discriminating one catchment from another, you might have 16 catchments that have 23 and you might have 15 catchments that have 22, and are they really very different from
- 25 each other and how do you discriminate which is more outstanding than the other.
- Q. It does get tricky to see which ones really stand out?
- A. It does.
- Q. But for a WCO it does need to stand out, doesn't it?
- 30 A. I understand that to be the case.
- Q. Now, you have your analysis and you record in your paragraph 48 that the Ngaruroro contains all of the extant species that you'd expect to occur in the catchment. The grading being the one that's missing?
- A. Yes.

Q. And how does that compare to other rivers, so have you analysed other rivers in terms of understanding the current diversity in light of what you'd expect to see?

5 A. There's been quite a lot of work done nationally and I think I would probably rely on the Canning paper, and that's looking at expected diversity versus observed diversity and we do have some issues where rivers, many rivers, are not holding the number of species that would be expected to occur there and that's a reflection of the threatened and at-risk status.

10 Q. But in your evidence you haven't outlined or provided any comparison of this river and other rivers in terms of what would be expected to be found in terms of species composition?

A. No, I have not.

15 Q. At your paragraph 49 you broaden your lens to perhaps a global lens in terms of the catchment scale species richness. But a WCO and that which we are arguing about here is at a national scale isn't it?

A. Yes it is.

20 Q. Your paragraph 57 towards the end, you express some concerns about catchment scale species richness being the threshold required for a WCO?

A. Yes. I don't agree that it is an appropriate threshold.

Q. That's not the threshold when you think about other WCOs, for example a single fish might meet the criteria, for example, the Nevis?

25 A. Yes. I don't have other examples to draw on because it seems to have been a high bar to cross.

Q. I want to take you to your paragraph 60 now. In there you draw a comparison between the northern rivers and the southern rivers.

A. Yes.

30 Q. And again you capture the point there that the southern rivers would be expected to have the higher number of species?

A. At a catchment scale, yes. Because the south of New Zealand simply holds more fish species.

Q. And a WCO does not discriminate between the North Island and the South Island?



A. No.

Q. So might it be that it really could just be the southern rivers that really do meet that threshold for outstandingness when it comes to diversity?

5 A. I don't agree because I think the ecological context is really important and if we're thinking about what makes an outstanding river, to me you have to think about the context within which that question fits rather than saying, which is the best fruit? Apples or oranges? You need to have some criteria that help you find what the question you really want to answer is. So because the North Island is comprised of periodic  
10 volcanism which has disturbed all the rivers, I'm not sure how that makes them not outstanding or not able to be outstanding. It's simply a part of what is and what has happened.

Q. But every river in New Zealand can't be an outstanding river.

15 A. I'm not arguing that every river should be an outstanding river. I'm arguing that you should assess whether it is outstanding within the context within which it sits. It's ecological practice to do so.

Q. And that again perhaps is where a challenge arises because the context within which the assessment is occurring for a WCO is a national context?

20 A. It is. So I did think about that quite a lot when I looked at doing the reach scale assessment. Because the benefit of a reach scale assessment is that it somewhat removes those confounding influences because the things that influence species' richness at a reach scale are different to the things that influence it at a catchment scale. So, to remove some of those influences of north versus south, or distance from the sea which is a hard  
25 one to remove because the closer to the sea the more species you have that's just the way it is, to be able to remove some of those things and look at diversity on a national comparative basis with those confounding factors removed seemed like the best approach for me to take.

30 Q. In paragraph 64, you discuss some of the limitations of the New Zealand Fresh Water Fish Database?

A. Yes.

Q. And you note that the limitations associated with assessing species richness at the reach scale are surmountable and can be relied upon?

A. Yes.

Q. So, can you outline what those challenges with that database are and how you've surmounted them in this context?

A. So, the challenges with the database are largely use of different methods and surveys for different purposes. I think broadly speaking those would be the two major challenges, in surmounting those the volume of data is useful to get you across the line there. In my view, 32,000 records with a variety of purposes and methods sitting within them is a large volume of data and would reduce the influence of one particular method or one particular purpose for undertaking a survey, and that's why I think that those limitations are surmounted. It is the only dataset that we have, the beauty of it is that it has a lot of data in it.

Q. So, if I've understood that correctly it's the volume of data that gives you the confidence in the outcomes?

A. I think looking at more than 6,000 waterways is a rigorous assessment, even if there are some limitations and inconsistencies of method within that dataset. The majority of methods are electrofishing, so it's not a huge one.

Q. The number of passes of electrofishing have a bearing on the number of species found?

A. Yes, they do.

Q. And are the number of passes recorded in the database?

A. They are, and I did not analyse by number of passes because I wanted to go for the most data that I could use.

Q. So, when it's been convenient to trim the dataset down you have, but in that context it perhaps wouldn't have been (inaudible 16:49:52)?

A. I haven't trimmed the dataset, it's simply the ones that had more species rose to the top of a very large dataset, I didn't trim them.

Q. In terms of the sensitivity testing of the database, insofar as there could be some rogue data included, did you do an assessment of averages to see where averages lay rather than absolutes?

A. Do you mean average species richness for a particular site?

Q. Yes.

A. No, but I did observe the data and I know that some sites vary between five and eight species, and some sites are very low all of the time. There

seem to be two sets of data within the data set, one that was very species poor, so I would assume they would be very poor quality waterways with low numbers of species consistently, and then some that sat in the middle that were sometimes high and sometimes average, and then some that were consistently quite high all of the time. So, there were a number waterways in the *H plus* dataset, which I believe is my appendix one where there were multiple entries for those reaches that were high.

5

Q. So, when you think about the Ngaruroro River, were there multiple entries that were high there?

10

A. Yes, there were four or five within the *H plus*. In the main stem, the tributaries generally were lower.

Q. And those were recorded on the data cards in the last 20 years?

A. Oh, I believe so, yes.

Q. And does that include or exclude the Jellyman and Sinton assessments?

15

A. That includes Jellyman, Sinton, and Mclean, because I built one dataset and then looked at it.

Q. So, if you were to exclude those and look only at the dataset as you have for other rivers for your comparative assessment, how many were at the upper end for the Ngaruroro?

20

A. I couldn't tell you, but like I said those surveys should have been in that dataset, which is why I put them in.

Q. So having extracted the records out of the database, you then applied some filters to that data in order to see where the Ngaruroro might be elevated to in terms of its outstandingness?

25

A. That's not the process I went through. The process I went through was to extract the data and apply some filters so that it was relative only to rivers and only to indigenous species and only to records within the last 20 years. And from that you can do a species count for each reach. And then you can look by the number of species how many rivers sit within that.

30

Q. So you trimmed down the list of waterways and you created a data set of 59 river reaches which had at least eight or more species?

A. Yes, I didn't trim it. That's just how many were within the data set.

Q. That's what it was?

- A. Yes. 59 I believe.
- Q. So the Ngaruroro is one of 59 rivers with at least eight or more indigenous fish species?
- A. Yes. Out of 6,000.
- 5 Q. One of the 59 though isn't outstanding in the context of a WCO is it?
- Q. That's not what I'm arguing. I'm saying that that's very high species richness because it's only roughly 2% of the data, something like that. Maybe slightly less. That sit within that bracket. To get –
- Q. Very high?
- 10 A. Very high species richness.
- Q. Very high is – do you use very high as something different to outstanding or do you consider those to be the same thing?
- A. Well the ones with nine or 10 I would consider to be outstanding because they were certainly, there was only .3% of the total record that sat within
- 15 that threshold. I don't think the 59 are outstanding necessarily. I think they have very high species richness and that we should take a good look at protecting them in whatever way we can. But it is the 17 catchments or 20 waterways I would say that are exceptionally high. Nine or 10 species. To me those are outstanding.
- 20 Q. So that's where you draw the line, the top 17 reaches, the top 17 rivers in this context are outstanding?
- A. Yes. It's .3% of the measured record.
- Q. You went a little further though in relation to the 59 river reaches in your analysis and you sliced those up a little further into three different
- 25 categories?
- A. I didn't slice them. I found a way to express what sort of rivers they were. Because I visited each of them on Google Earth and when you hop around rivers all over the country you notice that their characteristics are very, very different. So a small single thread coastal channel that's
- 30 maybe not even a metre wide versus a very large braided river, I thought it was useful to try to describe what sort of river it was.
- Q. But a WCO doesn't discriminate between different types of river does it?
- A. No. I don't have any criteria. So I don't know that a WCO doesn't discriminate. I guess it could. I'm not sure. I used them as descriptors

so that we could understand what sort of rivers these records were coming from.

Q. It looks to me that what's happened through this analysis is that the subsets of data have been, or the categories have been added to the data step by step until the point at which the Ngaruroro River is unique because it's the Ngaruroro River. And because there are none other like it because it's the Ngaruroro River. But they've excluded all of the other rivers.

A. I looked at all of the 59 rivers and classified and described them and the Ngaruroro was the only large braided river with nine or more species. That's simply the fact of what the data shows.

Q. But again a WCO doesn't discriminate between the types of rivers?

A. Ecologically it's relevant to look at what type of river it is. A braided river is very different from a coastal channel. It's important to understand that the two are different rivers when you're looking at the numbers.

**MR MAW:**

I wonder whether that would be a convenient place to press pause for now?

**THE COURT: JUDGE DICKEY**

So what we need to do, I think, is complete the cross-examination (inaudible 16:58:26) before we start the Google Earth (inaudible 16:58:34). So you'll just remain under oath overnight. That concludes the court's business for the day.

**KARAKIA WHAKAMUTUNGA**

**COURT ADJOURNS: 5.10 PM**

25

**COURT RESUMES ON WEDNESDAY 10 FEBRUARY 2021 AT 9.50 AM****EXHIBIT 1 PRODUCED – TRIBUTARIES NGARURORO RIVER****MR MAW RE-CALLS****5 KATHRYN JANE MCARTHUR**

Q. Good morning.

A. Morena.

Q. I want to pick up discussing the reasons you give for, in your words, surmounting is probably not the best word, you say the issues with the data set are surmountable in relation to reliance on the NZFFD?

A. Yes.

Q. And one of the reasons that you have given is the improvement in the quality of the data given the consistency of data collection methodology?

A. Yes.

15 Q. Paragraph 64 might point you about where my eyes are at?

**WITNESS REFERRED TO BUNDLE OF DOCUMENTS**

A. Yes.

Q. And you refer there to the methodologies or the monitoring protocols from Joy et al. 2013?

20 A. Yes.

Q. And your observations of the records in the database show an improvement since that time with the standardisation of methodology, is that –

A. Yes, but it's certainly not (inaudible 09:54:07).

25 Q. And that's improved in relation to the monitoring of the main stems of braided rivers as well, based on your observations?

A. Can't recall (inaudible 09:54:17).

Q. Jellyman and Sinton and the Mclean surveys that you rely upon, do they use the updated methodology as well?

30 A. With – I couldn't tell from the report whether they specifically used that full method but they did do some size (inaudible 09:54:35) and abundance measurements which are part of those newer records.

Q. So, provided that the records done since that time are using that methodology, that would give you added confidence in the records being recorded?

A. Sorry, can you repeat that?

5 Q. Provided the surveying that's been done since those protocols were established was done in accordance with those protocols, that would give you greater confidence in relying on the Freshwater Fish Database?

A. I don't think it would change my level of confidence. What it does provide is an abundance data rather than simple presence-absence data. So, it's  
10 clear when you look at the records when those abundance records have been filed because you get multiple carves – well, not carves, but multiple entries in the database for the same species rather than just (inaudible 09:55:28). It gives us more information. I don't think it necessarily has to be done by that method to give me confidence. I have confidence in the  
15 data that I've looked at.

Q. And in relation to that methodology, it's your understanding it applies to braided rivers as well?

A. It's more difficult for braided rivers certainly because there's multiple channels, so it's more time-consuming to do a 150 metre (inaudible  
20 09:55:56).

Q. Do you recognise this document?

A. I do.

Q. And this is the sampling protocols referred to in your evidence?

A. The Joy et al. 2013 (inaudible 09:57:14).

25 **EXHIBIT 2 PRODUCED – NEW ZEALAND FRESHWATER FISH SAMPLING PROTOCOLS, BRAIDABLE RIVERS AND STREAMS, JOY, DAVID & LAKE**

Q. So, these protocols apply to wadeable rivers and streams?

A. They do.

Q. And if you turn to page 3 of the document. Perhaps if we start on page 2  
30 there, section 1.3?

A. Yes.

Q. That sets out the guiding principles?

A. Yes.

- Q. You then turn over the – page 3, top left-hand column, under the two bullet points it sets out the rivers to which these protocols will apply?
- A. Sorry, can you repeat that?
- Q. If I take you to page 3?
- 5 A. Yes.
- Q. You'll see the two bullet points?
- A. Yes.
- Q. The paragraph under those two (inaudible 09:58:52)?
- A. Oh, the paragraph (inaudible 09:58:53), sorry. Yes.
- 10 Q. And there it's clear that the protocol is to apply to wadable streams and those are defined there?
- A. Yes, they are.
- Q. In less than 0.6 metres deep and a mean wetted width of less than 12 metres?
- 15 A. Yes.
- Q. And the Ngaruroro river, would that fit within this or not?
- A. Well, braided rivers are tricky because they have multiple channels, so which channel is the main channel (inaudible 09:59:32). They don't fit – braided rivers don't fit into boxes easily.
- 20 Q. In fact, the protocols for sampling for braided rivers haven't yet been established or finalised and published in this form, have they?
- A. No, I don't think there's a specific braided rivers protocol that's been published.
- Q. And so, these protocols don't do anything to improve the quality of the data set with relation or with respect to braided rivers?
- 25 A. I wouldn't go so far as that because I think that they improve the quality with respect to understanding the size, class and abundance and that you can apply some of the methods in order to improve your likelihood of finding more species. I don't think they should be excluded as (inaudible
- 30 10:00:21) braided rivers.
- 1000
- Q. So, in terms of surveys of other braided rivers, the co-applicants haven't conducted any comparative surveys of other rivers?
- A. No, (inaudible 10:00:33) 163 (inaudible 10:00:36).



Q. That set, though, you could apply some filters to it as you have to the data set to find some other rivers that might be considered to be comparable to conduct some surveys, you could identify some rivers, couldn't you?

5 A. Well, you could but the problem with that is that you've been looking at a small subset and trying to make a large assumption from a small subset. My preference is to look at a large amount of data in order to make an assumption.

10 Q. So, this lack of comparative assessment of other braided rivers has been an issue right the way through the application, it's not the first time this issue's arisen?

A. I don't agree with that point and the reason for that is that there are braided rivers within the 32,000 records that I examined, there are a number of braided rivers in there. Hurunui I believe came out as a braided river. It has a similar (inaudible 10:01:36) to the Ngaruroro.

15 Q. In your evidence you've referred to a report by Dr Holmes, that was produced for the hearing in front of the Special Tribunal?

A. Yes.

Q. And you're familiar with that report?

20 A. I haven't read it for some time since preparing my evidence, but yes, I am (inaudible 10:10:58).

1002

Q. Well, luck would have it, I happen to have some copies. So, you should have in front of you a report entitled: "Relative value of the lower Ngaruroro river native fish community." Do you recognise that report?

25 A. Yes.

Q. And that is the report of Dr Holmes that you refer to in your evidence?

A. It is.

**EXHIBIT 3 PRODUCED – RELATIVE VALUE OF THE LOWER NGARURORO RIVER NATIVE FISH COMMUNITY, ROBIN HOLMES**

30 Q. If I can take you to page 8 of that report, section 1.5 sets out a summary and some conclusions?

A. Yes.

- Q. There are five subparagraphs referenced at the bottom of page 8 going over onto page 9. And those subparagraphs carried some weight in the Special Tribunal's decision as they appear in the decision of –
- A. From memory, yes.
- 5 Q. If I can take you to the second paragraph on page 9. Let's see, so the first paragraph starts with points 1 and 2?
- A. Yes.
- Q. It's the second paragraph I just want to ask you about there. Perhaps you could read that paragraph?
- 10 A. The whole paragraph?
- Q. Yes, you don't need to read it into the record. Just re-familiarise yourself with it. So, there Dr Holmes is highlighting the challenges associated with the lack of up-to-date data for this assessment, isn't he?
- A. This will be about fish density and that's not the same thing. It's not the same thing as species richness. So, he's talking about the problems with density and I think all the experts agree in terms of (inaudible 10:05:33) density we simply don't have enough information to utilise that as a criteria.
- 15 Q. So, with respect to fish density and abundance, you'd accept that there is insufficient data to draw any useful comparison at a national level?
- 20 A. Yes, and all the experts would agree with that (inaudible 10:06:03).
- Q. And that's specifically recorded in the joint witness statement?
- A. I believe so.
- Q. You have a copy of the joint witness statement with you and I want to stay on species richness for a moment. Paragraph 40.
- 25 A. Yes.
- Q. And the experts jointly are highlighting some of the challenges with the lack of comparable data with respect to species richness?
- A. Yes. Just note that that paragraph in that agreement proceeded to be undertaken by analysis. So, part of the driver of my analysis was to test some of those assumptions that were made in the joint witness statement.
- 30 Q. But no additional data had been added after that point, the Sinton and the Mclean data was in existence at that point?

A. It was but it hadn't been analysed for reach scales (inaudible 10:07:55) species richness as far as I was aware. I had (inaudible 10:07:58).

Q. I want to move onto threat classification status, to paragraph 75 in your evidence-in-chief. You'd accept that there's a lack of robust population data for these threatened species?

5

A. 75?

Q. 76.

A. Sorry, can you repeat the question with respect to that paragraph?

Q. Is there a lack of robust population data for the threatened species referred to in paragraph 76?

10

A. I don't believe any of those are classed as (inaudible 10:09:50) deficient in the threat classifications, so I would say no.

Q. I'd just like to take you back to the joint witness statement, paragraph 43?

A. Yes.

15 1010

Q. There's a reference there that threatened species and that it's impossible to assess the importance of the Ngaruroro river for conserving these species in a national context?

A. I think that's referring to population data of the threatened species within the Ngaruroro river.

20

Q. Not those referenced in your paragraph?

A. Well, you asked me about data on the populations generally. I didn't know you were specifically meaning just in the Ngaruroro, so I was referring to the population data that's used to find their threat classification and whether they are declining or not. Sorry.

25

Q. Do you accept there is a lack of population data to enable an analysis as set out in the joint witness statement?

A. There is in terms of being able to say – I think there's a good comparison with the birds to be able to say that 5 percent of the population of dwarf galaxias dwell in the Ngaruroro. We don't know that. We don't have the data to be able to say that. We don't really know exactly how many fish there are and how many dwell in that river.

30

Q. I want to move to abundance and we spoke briefly about abundance this morning, are there simply no or insufficient data to assess abundance on a comparative basis across rivers?

A. That's correct.

5 Q. And we move to representativeness of habitat and species assemblage. Then we start with the dwarf galaxias habitat at paragraph 83 and you've helpfully set out paragraph figure 4 on page 26 of your evidence showing the distribution of that species in waterways in New Zealand?

A. Yes.

10 Q. You accept that there's a broad distribution of the dwarf galaxias through central New Zealand?

A. Yes, I do.

Q. And it's across 376 rivers?

A. 360 – yes, and that was all in the last 20 years, possibly the whole record.

15 It might be the whole record, 755 records.

Q. Just so I understand that, the 755 records, they're just multiple data cards in relation to each of those 376 rivers?

A. Most of that data will be individual, 755 roughly individual surveys within 376 rivers. The (inaudible 10:13:39).

20 Q. Now, being in a class of one of 376 doesn't in and of itself indicate that something stands out, does it?

A. 376 rivers is the known distribution. What we know about know about dwarf galaxias is that they are declining, or assumed to be declining from population data that we do have the database over time which is why they are classified as at risk.

25

Q. So, my question was that one out of 376 doesn't indicate that it stands out?

A. Well, I think one out of 376 stands out.

Q. One of 376. The same argument then would apply to each river where that species is found?

30

A. I don't think I'm understanding your question.

Q. The presence of this galaxias in the Ngaruroro river doesn't stand out compared to other rivers in New Zealand?

- A. Well, it does stand out because they're not very commonly found in lowland mainstem rivers. They're normally in much smaller tributary areas. So, there are a very small number of observations where dwarf galaxias were found in a lowland mainstem river. I believe it was 10.
- 5 Q. So, again you've narrowed down then the class of rivers that you're conducting your comparative analysis within?
- A. Because it's unusual to find dwarf galaxias in those habitats and wanted to see how unusual it was. It was noted in the Jellyman and Sinton report that it was unusual to find dwarf galaxias in mainstem lowland habitat, so
- 10 I examined how unusual it was.
- Q. Simply because something is unusual doesn't mean it's outstanding though, does it?
- A. I believe it contributes to the indigenous fish assemblage and character of the Ngaruroro river. I don't believe it makes it outstanding in and of
- 15 itself. But as I've said earlier, I made a holistic assessment based on the number of criteria and in that was one point in my assessment, it was an unusual distribution for this fish to find it in that (inaudible 10:16:05).
- Q. And on the way through that analysis you've excluded a number of other rivers that aren't similar in terms of their form and function to the
- 20 Ngaruroro?
- A. I wanted to answer the question of whether it was unusual or not to find dwarf galaxias in the lowland mainstem rivers, so I looked at the distribution and pulled those out. I did not exclude the others, I simply looked at which ones fitted that category in order to answer that question
- 25 for myself.
- Q. And then to assist with the answering of that question you then further refined your dataset and you put an upper limit in terms of distance from the coast. So, you introduced a further filter of 45 kilometres from the coast?
- 30 A. I needed to draw a line as what a lowland river was likely to be, so it wasn't an additional filter, it's simply that's the delimitation that I put in to determine what could be considered low.
- Q. And did you carry out any sensitivity analysis as to the effective drawing the line at 45 kilometres instead of saying 60 or 30?

- A. I did look at the data in relation to that and I think I noted the Clarence was the only mainstem river that was outside of that 45 and it was a long way instream, it's a very large catchment. So, the majority of sites did fit within that 45 kilometre coastal lowland boundary.
- 5 Q. So, the majority of sites did fit within that?
- A. Yes, but most of them were not mainstems.
- Q. So, your further filter there was to mainstem filter to reduce down the list from 376?
- A. To answer the question of how unusual is it to find them in a lowland  
10 mainstem river.
- Q. And the next part of your evidence deals with the habitat for migratory bully assemblage?
- A. Yes.
- Q. And the Ngaruroro doesn't get there for this criteria alone, only three of  
15 the four species are present?
- A. That's right, history of the four species. So, I tested the statement that other experts had made that having all four migratory bully species in a single survey was common and it was not common.
- Q. But three out of four, in terms of your assessment set out at paragraph 94,  
20 155 records, so the Ngaruroro is one of 155?
- A. That's correct. It was to support the statement that it is a good representative habitat for migratory bullies. I think (inaudible 10:19:12) support for that statement.
- Q. And that same statement would apply to each of those other 154 in that  
25 dataset?
- A. Yes, it would.
- Q. We then move onto torrentfish. You're familiar with torrentfish?
- A. Quite familiar with torrentfish.
- Q. They're your favourite fish, aren't they?
- 30 A. They are my favourite fish.
- 1020
- Q. Your paragraph 97, you refer to the abundance of torrentfish?
- A. Yes.

Q. And again, picking up on our earlier discussion, there's no comparative data to compare the presence of torrentfish or the abundance of torrentfish in the Ngaruroro with other rivers?

5 A. No, I was simply relying on the statements made about the abundance of torrentfish within those Hawke's Bay rivers (inaudible 10:20:44).

Q. Are torrentfish widely distributed around New Zealand?

A. They are.

Q. And how many other rivers might you expect to find torrentfish?

10 A. I did not test that exact number. Quite a few, most fast flowing rivers that are in reasonable condition (inaudible 10:21:09).

Q. And so, the presence of torrentfish in the Ngaruroro doesn't in and of itself indicate that the river's outstanding as a habitat for torrentfish?

15 A. I believe the statement I made was that it was a stronghold habitat and the reason I made that statement, and that's consistent with the (inaudible 10:21:26) methodology and they talk about stronghold rather than representativeness. The reason I made that comment was because of the high range of size, different size (inaudible 10:21:37) of torrentfish that have been found particularly in the Mclean survey, that there's obviously quite healthy ovulations (inaudible 10:21:46) juveniles, large breeding  
20 adults and that they were very abundant.

Q. So, your opinion is that this is a stronghold – that the Ngaruroro is a stronghold for torrentfish. How many other rivers in New Zealand would you consider to be a stronghold?

25 A. I can't tell you the exact number, but representativeness speaks of what is typical to other rivers. So, I'm looking at representativeness. It's relevant to look at something that might typically be found in a number of other places. That's why it's a little bit tricky with respect to outstanding (inaudible 10:22:20).

30 Q. So, in terms of a comparative analysis to torrentfish your evidence doesn't compare the presence or the – your categorisation of the Ngaruroro as a stronghold with other rivers?

A. Not in terms of abundance because I can't (inaudible 10:22:36).

Q. We're getting there. Diversity of habitat types.

A. Yes.

Q. So, my understanding is that you haven't assessed the actual habitat but rather you've used the presence of fish species as a proxy for habitat?

A. That's correct.

5 Q. So, in a sense that's simply double counting the species richness criteria when you look at this assessment?

A. No, I don't believe it is. I believe in order to have good species richness I inferenced you must have high quality habitat.

Q. So, those rivers in New Zealand that have a large number of species would have better habitat again?

10 A. There's very few rivers in New Zealand that have a larger number of species. It's in my appendix 2 I believe.

Q. 16 other rivers from memory?

A. There's some double ups in there, but yes that sounds about right, 16 others. Not higher. Comparable or higher. So, ones that have higher  
15 diversity are even less than that, (inaudible 10:24:08). Sorry, five, I missed one.

Q. So, in your evidence, have you provided any assessment of the habitat types in other rivers (inaudible 10:24:32) comparative analysis?

A. No, I haven't because I've used the fish as proxy for habitat, largely  
20 because we have a very largely database of fish information and not a very large database of habitat information, in fact no database at all.

1025

Q. So, we move on then to assess some of the threats to the indigenous fish population. We'll just start with dams. So, the order for the upper already  
25 prohibits dams in the upper river?

A. Yes.

Q. Based on your knowledge of the lower river, do you accept that it would be fanciful that a dam would be constructed on the mainstem of the lower river?

30 A. I'm not an engineer so I don't think I could fanciful. I don't know.

Q. Paragraph 112, you discuss some potential risks around further allocation of water from the river?

A. Yes.



- Q. Do you have a working knowledge of the planning framework or is that outside of your area of expertise?
- A. I have reviewed the draft (inaudible 10:26:55) management.
- Q. And in light of that plan change, no further abstraction is enabled with respect to water takes at low flows?
- 5 A. At low flows I believe that's the case. (inaudible 10:27:09).
- Q. And in your opinion, does high flow abstraction have an effect on indigenous fish?
- A. It has an effect on their habitat.
- 10 Q. Why is that?
- A. Well, if it's very high it can reduce the frequency of flood events that clear sediment (inaudible 10:27:37) and also the high level (inaudible 10:27:40).
- Q. So, it would need to be a very high high flow abstraction to have an effect?
- 15 A. I'd have to look at what the scenario looked at (inaudible 10:27:53) as well because high flow abstraction can mean anything above medium flow, it can mean anything (inaudible 10:28:00).
- Q. And you haven't assessed the impact of specific high flows – abstractions of high flows, that's not covered in your evidence?
- 20 A. No, I just looked at the minimum flow in relation to torrentfish, bluegill bully (inaudible 10:28:17) that it is not enough (inaudible 10:28:22).
- Q. And the WCO can't do anything to improve that situation, can it?
- A. No, but it can (inaudible 10:28:28).
- Q. Now, we may have traversed much of which I was going to cover, so just bear with me. Perhaps if I can take you to paragraph 31, and here you have captured the basis your assessment and you described it as holistic assessment?
- 25 A. Yes.
- 1030
- 30 Q. And not a compartmentalised assessment?
- A. Yes.
- Q. Haven't you done a compartmentalised assessment on the way through, so you've put different classifications into different compartments and

narrowed down the focus of your assessment to find reasons to support the Ngaruroro being an outstanding river?

5 A. I don't think that's the case. I looked at the criteria that we discussed and the joint witness statement and tested as many of those criteria as I could with the data I had available. But I still maintained the view in that joint witness conferencing that in the absence of an agreed framework on exactly how we would test outstandingness ecologically that it relies on an expert judgement, and in my expert judgement putting together those various criteria on the whole, and it is my view that it is outstanding.

10 Q. Have you carried out any other assessments of rivers in New Zealand using that type of assessment or is this the only one you've done this exercise for?

15 A. I have for water quality parameters, not in terms of outstandingness but in terms of national levels (inaudible 10:31:55). Not in terms of determining outstandingness, no.

Q. And that perhaps highlights some of the challenges here with determining what's outstanding on a national comparative basis, it's that national comparison that's the difficult part?

20 A. It is the difficult part but I feel quite confident in, particularly in the reach scale species (inaudible 10:32:25) richness analysis that that comparison was broad enough and it used enough data and that it was sufficiently discriminative to come to the conclusion that I've come to. I think that everyone of those 17 rivers is outstanding with respect to indigenous fish.

25 Q. And that perhaps highlights the difference between you and the other experts as to where the line is drawn?

A. Well, we have several (inaudible 10:32:52) water conservation orders that (inaudible 10:32:55). I'm not sure why we have to only pick one or two indigenous fish. I think 17 is perfectly fine in terms of determining outstanding. 17 out of more than 6,000 is quite a small number.

30 Q. The final topic that I wanted to explore with you is covered albeit briefly in your paragraph 29?

A. Yes.

Q. There you lend your support to the use of the NCI as Professor Fuller has suggested?

A. Yes.

Q. Do you consider yourself an expert in NCI?

A. I'm not an expert in the NCI (inaudible 10:33:41), no. I'm familiar with its use in rivers.

5 Q. It's never been used before in a WCO context?

A. Not that I can recall, no.

1035

**CROSS-EXAMINATION: MS ATKINS**

10 Q. Mr Maw's taken you through some of the detailed matters that the Court is going to have to grapple with. I'm going to come up above those a little bit and just talk about some high level principles that cover the same topics that Mr Maw covered which are all the topics in your evidence in the order set out in the joint witness statement. So, the first thing I just wanted to check in is that we're on the same page in the sense that the  
15 job of the Court is it now has the task of determining what tests to apply in deciding whether indigenous fish habitat is outstanding. Is that your understanding of –

A. Yes, it is.

Q. That's what your evidence is trying to assist the Court to do?

20 A. It is.

Q. As is the evidence of the other ecological experts?

A. Yes.

25 Q. Okay, so just with that as our kind of starting point, because we may come back to that just to make sure that we're assisting the Court and you're assisting me to understand at the same time. Now, in the joint witness statement, the experts, particularly doctors Hix and Keesing talk about the fact that previous water conversation order tests are helpful to inform an assessment of whether a river is outstanding in terms of fish. Did you agree or disagree that they are helpful, it wasn't clear to me?

30 A. I think at the time I hadn't reviewed every one of them and I probably still haven't reviewed every single one of their cases and I didn't want to make statement without (inaudible 10:37:18).

Q. And have you had a chance to have a think about that since that time?

A. I've read some cases and those are the ones that are referenced in my evidence or in the joint witness statements. So, I looked at Rangitata (inaudible 10:37:30).

5 Q. So, are – I'm not asking you to say they're completely sacrosanct I'm just asking you to say are the tests that they have come up with, do they provide some assistance to the Court?

A. I think they do provide some assistance. The thing I have a problem with is the it must be one or two. I don't think that there's very many rivers where you could discriminate anything down to just one or two apart from  
10 examples like the (inaudible 10:38:02) where there is a species that is only found in one place.

Q. (inaudible 10:38:04). And you make that clear as do the other experts in there, in the joint witness statement and in the evidence. Now, is it also your understanding from the joint witness statement discussions, and is  
15 recorded, that the other experts also agree with you that it does come down to expert opinion, they're not – in other words, they're not all saying it's all about WCO tests, are they, or are they – do you think they're disagreeing with you, that it comes down to expert opinion?

A. I'm not sure that they're necessarily completely disagreeing with me but  
20 they didn't sign up to the statement that I put in the joint witness statement saying that I believe it comes down to expert opinion in the absence of (inaudible 10:38:57).

Q. I'll just double check. It's probably nothing really comes of it, I don't think. So, just at page 9 of the joint witness statement which is in the common  
25 bundle, page 56. At 28 it says the experts note the guidance around outstanding (inaudible 10:39:35) on a national comparative basis, quite ordinary on a national basis. You signed it. You agree with that?

A. I do agree with that, yes.

Q. And then you all went on to agree on the six matters listed at 29?

30 A. There was a lot of discussion to come to the list, but yes.

Q. I've heard that. But no, that's helpful. I just wanted to make sure that we're not, I'm not actually clear about what was agreed on and what wasn't agreed on, so the issue really is not so much that previous WCO decisions aren't helpful, but the issue for you is that in this case for this

river the assessment you have undertaken has resulted in the outcome it has resulted in and there are some differences. Using the same, you've all looked at the same criteria, there are some differences in opinion as to whether it's outstanding, whether it's high, or whether in some cases it's neither of those things.

5

A. That is somewhat it. I think the additional thing I would put onto there is there's a difference of how to look at this.

1040

10 Q. I agree and Mr Maw has explored that with you in some detail so I wasn't proposing to do the same thing. Thank you. So, just again I'm still on the topic of outstanding, just to start with. So, focusing in on fish species which I take it is a really key component of your assessment, your issue about the way that the other experts have looked at that is that they haven't taken the same approach in terms of the biogeographical differences between the various rivers that were looked at. You've looked at it from a much more fine grain perspective. I'm not suggesting that you've looked at it, you've filtered it, but you're looking at it from a more fine grain perspective and focusing in on rivers that are, in your opinion, more geographically aligned to this river.

15

20 A. No, I wouldn't say that. I think I've looked at it in a finer grain, that's correct and the reason for doing that is to try to reduce some of that biogeographical influence that occurs to try to surmount some of those problems that come about with the (inaudible 10:42:14) species in the south and they are always in that water.

25 Q. Yes, so I understand that of bringing the scale down. You explained it earlier the amount of issue. So, the other experts, in particular Hix and Keesing, as I understand it, they've been looking at the national scale of comparing rivers of similar catchment size, but they don't bring it down to that next level which is to look at splitting it up based on other catchment considerations or whereabouts that river is in New Zealand. Have I understood?

30

A. Well, my understanding of Dr Keesing's analysis is that he looked at specific river types, a subset of rivers of roughly comparable size. I don't

believe Dr Hix undertook that. He looked across all rivers and the diversity is my understanding.

Q. So, if we just focus on Dr Keesing's evidence for the issue, he, in his evidence, and I can take you to it if you need to?

5 A. I would like to go to the page.

Q. Me too. Yes, so if you look at his evidence-in-chief at paragraph 102?

A. I will need to know where to find this.

Q. So, that will be, it's in the common bundle and it's on page 2297.

**WITNESS REFERRED TO COMMON BUNDLE**

10 Q. Is that helpful?

A. Page?

Q. I think it's in volume 2. At document number 43.

A. Document 3, 42.

Q. 43.

15 A. Volume 5.

Q. Is it volume 5, sorry?

A. Ours is volume 5.

Q. I didn't get to do this. I've got a hard copy volume so I'm working from document 5. Yes, paragraph 102.

20 A. Page number?

Q. Page 7, 2297 I think it is?

A. It's the common bundle is it at paragraph what, sorry?

Q. 102. So in there, that's where he talks about what you've just talked about in terms of what he looked at.

25 1045

A. Yes.

Q. So even though he did just focus on North Island comparable rivers, he says that: "It doesn't, this river doesn't make the top 10%"?

A. So that's a catchment scale.

30 Q. Absolutely. I accept that you've looked at things from a different perspective, but from a catchment scale perspective, which is the way Dr Keesing has looked at this?

A. Yeah, I did have a problem with that analysis because he missed black flounder in there which brings the species count up one and I believe it

changed it to being within the top 5% when that species number was added in. We traversed that at the special tribunal hearing, so I don't agree that this necessarily gets us the right number.

5 Q. Okay. So, I'm now going to move onto talk about species richness, just picking up on some of the points my friend Mr Maw has already covered and it's the reference to the reach catchment scale is I think a good segue into that. So that's what it comes down to, isn't it, that looking at it from a reach-scale perspective the species' richness result for you is outstanding as compared to the catchment scale?

10 A. Yes.

Q. Without the catchment scale, you still consider it very high, is that correct?

A. Yes, I do.

Q. But not outstanding?

A. Well, I have a problem with looking at outstanding at the catchment scale.

15 Q. I understand that?

A. For the reasons I've spelled out, so I'm not willing to make a determination because I don't think that's ecologically relevant to compare against that.

Q. And the other experts are saying that at the catchment scale, it's just high, not very high?

20 A. Yes, that's my understanding.

Q. Now, I'm sure I have read this somewhere, but if I haven't, just for my benefit because I was trying to my head around, when we look at the reach-scale, what we're focused, obviously we're focusing on a similar section of a river, are we sort of – we'll be focusing on in terms of the elements of habitat. Are we talking about, you know, depth, area, slope? What is it that, I'm just trying to get ahead of it?

A. What defines a reach?

Q. What defines a reach? I could Google it.

30 A. Legally, we would promote really that it means you don't have to head in the car to go somewhere else. It's not a very specific measurement. However, in the freshwater fish database there is an NZ reach number applied to every reach or node of a river within the river network. So, you would want a reach to cover the full range of mesohabitats, so the ripples, runs, pools. Each of those habitat features should be covered.

Q. But in every single river system it's going from a physical distance point of view, it's going to be a different –

A. It is, yes.

Q. – geographical area?

5 A. Reach in a graded river would be quite large.

Q. And I think we all understand catchment is much broader. Now, I think I've covered all those. I was going to ask a question about the outstandingness at the root level, but I think we've covered that. It was when we were talking about, we're talking about the species' richness?

10 A. Yes.

Q. Being outstanding at the reach level?

A. Yes.

Q. Now, just in terms of threat status, you've again traversed that. There's a difference in threats, threat status itself. My understanding of your evidence and the way that the joint written statement has recorded this issue is that it really adds to the mix of what mix of criteria you say lead to outstanding. So, this isn't a situation like the nevus where the threat status itself resulted in the tick for outstanding, have I got that correct?

15

A. I think it's a consideration.

20 Q. It's a consideration, but in itself in this river, it isn't sufficient for you to be telling the Court that a finding for outstanding on threat status alone is appropriate?

A. No. Unfortunately, it's relatively simple in terms of there is a high threat.

Q. That's how I understood your answers to Mr Maw. So, just in terms of, I'm moving quite quickly as you can tell, representativeness of habitat, again, is that another factor that contributes to outstanding, so in itself it doesn't result in a finding of outstanding in this case?

25

A. I think it would be very difficult to find representativeness as the sole criteria for (inaudible 10:50:13).

30 1050

Q. In any river, not just this river, is that what you're saying?

A. Yes.



Q. So, it's in contribution with all the other things that may apply and, in this case, those other things are the matters that were listed in the joint witness statement and in your evidence?

A. Yes.

5 Q. So, just in terms of diversity of habitat types, it's my understanding that all the experts agree that the river contains a high variety of habitat types, is that correct?

A. Yes.

10 Q. And I think you've answered this, but I just want to make sure I understood it correctly. You agree that there is insufficient data, I think it was in your rebuttal, to enable a national comparison of habitat quality with respect to indigenous fish. So, I think in your rebuttal you say you've made some inferences, namely the presence of the fish themselves. So, and I think Mr Maw asked you some questions about that, did I get those answers  
15 correct?

A. Yes, there is no national database of habitat.

Q. So, is this – when you talk about the presence of fish themselves, are we talking about both numbers and richness or we just talking about numbers?

20 A. We're talking about richness but in a comparative sense. Richness is a really good – has a really good relationship with habitat (inaudible 10:51:42) because the more different kinds of habitat, mesohabitats you have within the one habitat the more niches there are ecologically for different species.

25 Q. For different species. So, it –

A. (inaudible 10:51:52). So, richness is quite closely aligned with (inaudible 10:51:55).

Q. Connected to diversity of habitat types?

A. Yes.

30 Q. So, the more habitat – that makes sense to me. The more habitats we have, the more diverse habitats we have, the more likelihood is that we have a bit more – a great variety of species?

A. Yes, and that's a global ecological phenomenon.

- Q. And just in terms of the NCI question that Mr Maw asked, and again this is also in your rebuttal, my understanding, and we'll be hearing from (inaudible 10:52:27) in relation to this issue, but my understanding it's a measure of physical change to a system, to a river system. So, it's your view that if we have that incorporated into the WCO as the applicants have suggested, it will protect or help to protect the quality and quantum of habitat?
- 5
- A. Yeah, I think it's a measure of the state and then we can look at changes in state over time. What we have seen in braided rivers nationally, considered endangered naturally uncommon ecosystems because their extent is declining. So, the channel width is compressing.
- 10
- Q. I understand that.
- A. So, the NCI gives you an index measure that you can then compare.
- Q. But it itself doesn't measure the quality or condition of the river habitat at the kind of level you're talking about when you're looking at diversity in habitat types?
- 15
- A. Well, I think it does to a degree because it's not measurements of (inaudible 10:53:36) and channel (inaudible 10:53:40) and that contributes to the quantum (inaudible 10:53:44) habitats.
- 20
- Q. An indicator. But you'd still have to go and do a great level of analysis, wouldn't you, to determine whether or not the quality and condition of that habitat had changed?
- A. We would do that using the fish as proxy and I think we should continue to monitor (inaudible 10:54:01).
- 25
- Q. The NCI's not going to be the saviour of all things in terms of stopping us having to go out and do that (inaudible 10:54:09)?
- A. I think it's a good broad scale measure of whether (inaudible 10:54:14) extent (inaudible 10:54:14) channel width is constricting or not and that's quite a large risk for braided rivers.
- 30
- Q. And did you – you mention (inaudible 10:54:21) and sorry I might have missed the question and answer, but was that in relation to NCI being incorporated into the WCO and therefore holding the line, it's not necessarily going to enhance things from here (inaudible 10:54:39) today or hold the line from here?

A. Well, my understanding is that WCO can't require enhancement, and it is about maintaining the use (inaudible 10:54:50) outstanding (inaudible 10:54:50) it's about maintaining (inaudible 10:54:54).

5 Q. And I think it's the evidence in relation to NCI that we wouldn't be going backwards in time, we'd be looking at what exists today and (inaudible 10:55:03).

A. And taking a (inaudible 10:55:04).

1055

10 Q. Right, just a couple more things, just in terms of threats, so (inaudible cut along to the issue of threats as opposed to the threat risk (inaudible 10:55:20), my understanding from the expert evidence is that there is no debate about what the threats are (inaudible 10:55:30) two fish, is that your understanding?

A. Yes, I think so.

15 Q. It seems to me you all agree –

A. I think we are relatively agreed, yes.

Q. I mean it seems to me that the debate lies in what mechanism is best to address those threats?

A. Yes.

20 Q. Okay, so four fish, and it's a different scenario for birds and we've heard that in some of the submissions, but for indigenous (inaudible 10:55:52) fish, a WCO can be used, in your understanding it can be used to address all of the threats that were identified?

A. Yes.

25 Q. Can a plan also be used to address those threats?

A. Plans have limited timeframes don't they, subject to review and change.

30 Q. But also plans can be more flexibly altered so that new threats or changing threats could be addressed. So, is it your position that a WCO is not the only tool but one of the tools we should be using, and I think this is your words because you don't have confidence in the ability of the regional framework to deliver?

A. I don't, I don't think that's exactly my point, I think having reviewed the tank, notified tank plan, to my mind it doesn't adequately acknowledge the significance of the indigenous fish values in the river and that I haven't

seen provisions that flow through from that, look at really providing adequate protection and review.

Q. I hear that, could it though?

A. It could, yes, but it doesn't.

5 Q. So you're not saying there's any legal, I know you're not a lawyer or a planner, but you're not saying there is any legal or planning and ability on a regional planning framework to deliver, its just your opinion that the current provisions, the notified provisions, don't do that?

10 A. They don't do that, in my view, and regional plans are subject to change periodically.

Q. Has that been your, just out of interest, but has that been your experience elsewhere in New Zealand?

A. That regional plans change periodically?

15 Q. No, that – well, no, that regional plans don't deliver on the (inaudible 10:58:07) ecological outcomes that (inaudible 10:58:10) are wishing for in some places?

20 A. Yes I think (inaudible 10:58:14) presentation to the RNLA conference to that end that during the timeframe of the RNA and there being specific provisions in the act and regional plans that acknowledge (inaudible 10:58:26) species, watched the number of species in New Zealand of indigenous fish grow in their threat and their at-risk status.

Q. Do you think we should –

A. – and I think (inaudible 10:58:36)

Q. So is it your view that a use of WCO should be more widespread?

25 A. I think its my view that it is disappointing that it has been such a hard bar to cross for indigenous fish in WCO history. That would be closer to my view.

30 Q. So just a couple of, these aren't related to the topics that we've covered because that just pretty much takes us through the main headings, I just had a couple of things to just close on really. In his evidence, Dr Keesing, and in the reports that he refers to, he does a sort of ranking exercise. What's your view on that because you haven't, you've done a little bit of a ranking exercise but not to the same level that he has done, are you not a fan of the way thing – with that sort of process?

A. I think there's some problem with ranking and they come from the fact that we don't have a large number of species so the ranks don't discriminate well so as I said if you use say (inaudible 10:59:53) species richness, there would be 20 rivers and for a five that ranked one and then another 15 that ranked two, so how would you determine which is the best out of that and then there would be another 59 that ranked three. The ranks are two and the blocks, and they're not, you can't discriminate one from another. You can capture a bundle and I think that it's appropriate to do that.

10 1100

Q. So, you don't, just to conclude on that, you don't agree with the way that Dr Keesing has ranked the various attributes based on the thresholds that he's used?

A. No, I think I had quite a bit of problem with the ranking (inaudible 11:00:40).

Q. That's the way I read it, I just wanted to make sure, you know, people write evidence (inaudible 11:00:46) they don't always know exactly what they mean. But that's how I took from the evidence. And so, just looking at what the Tribunal looked at, you were involved in that process. They say that some aspects of native fish habitat are likely to be nationally significant but not nationally outstanding. They also say, and you can read the – you can go back to the report if you need to but I think this is the gist of it. They kind of say, they did look at everything in the round, so they didn't just rely on the evidence of one expert over another, they did look at things from a, if you like, more holistic perspective. Is that your understanding of what their decision or their recommendation said?

A. It's my understanding that those are the words the bit I find quite difficult is what is the difference between *nationally significant* and *nationally outstanding* because ecologically we don't have a threshold that tells us that and we know that the Ngaruroro was nationally significant, it's been found to be that (inaudible 11:02:06). I'm not sure what the difference between those two things is ecologically.

Q. So, I guess what this Court is being asked to do is to come up with a, I suppose (inaudible 11:02:24) a test, a – it probably will be a threshold. It

might just be specific to this river of what national outstandingness in relation to indigenous fish habitat means.

A. Right.

5 Q. That was sort of back to my first point, really. So, just to help a little bit with that, my understanding of your evidence is that your position on outstandingness is largely predicated, I'm not discounting the other things, but it's largely predicated on the basis that species richness is outstanding using the reach scale which you have done on a comparative basis. Is that – so, that's the key. If you can – if the Court agrees that  
10 you are correct and that looking at species richness from the reach scale, comparatively, is the appropriate test, threshold, then they should find that indigenous fish habitat values are outstanding?

A. I think it's a compelling test. I think the analysis is quite strong and rigorous and that the outcome is robust of that analysis. (inaudible  
15 11:03:43) –

Q. But I am correct, aren't I, species richness is the primary driver?

A. – consideration. In that brief consideration. But it is not the only consideration.

20 Q. No, no, I appreciate that. But without it, the others don't really have anything to hang themselves on, would that be correct?

A. There's a (inaudible 11:03:58) of data to test the other criteria that we agreed and that particular one, there is data, you can test it and we did test it. So, I have got a lot of confidence in the outcome of (inaudible  
11:04:10).

25 **CROSS-EXAMINATION: MS BLOMFIELD – NIL**

**CROSS-EXAMINATION: MR GARDNER**

Q. Good morning, Ms McArthur.

A. Morena.

30 Q. If I can take you again, like my friend Ms Atkins, to the joint witness statement (inaudible 11:04:43).

**WITNESS REFERRED TO COMMON BUNDLE**

A. Yes.

Q. Just having a look at the participants there on page 2?

A. Yes.

Q. We've got Dr Thomas Wilding, Dr Vaughan Keesing and yourself (inaudible 11:05:02), yes?

5 A. Yes.

1105

Q. Are those Dr Wilding and Dr Keesing and Dr Hix have been considered experts wouldn't they?

A. Well and myself, yes.

10 Q. And yourself of course. Sorry, but so four, so four acknowledged experts?

A. Well there was, everyone in the room was an expert

Q. – well yes but –

A. – fish experts and cultural experts.

15 Q. Yes, yes, that's right I should've gone into that. That's quite correct of course but looking at (inaudible 11:05:31) four experts in fish, fish ecology yes, in particular?

A. Yes.

20 Q. Is that – and just turning to your own statement of evidence for a moment, and your qualifications and experience. You say there, at paragraph 5, you held a role of Senior Science Water Flow so you're an expert in water quality as well as fish or is that one and the same thing?

A. Well this – that was the name of the role that I held at the Horizons Regional Council and it incorporated both water quality and fish ecology and I am an expert in those (inaudible 11:06:20) yes.

25 Q. Thank you but you acknowledge that Dr Wilding and Dr Keesing and Dr Hix are also experts in fish ecology?

A. Well they were in, experts (inaudible 11:06:31) so yes.

30 Q. And their views, what I'm getting to is that I mean they've all produced evidence, (inaudible 11:06:40) evidence but we have got (inaudible 11:06:42) evidence so (inaudible 11:06:48) expert and has assessed the expert's evidence and work relating to the two witness statements in the case of fish and has drawn the conclusions and properly so. So where – one of the things that's a little bit different I think looking at the joint witness statement is the (inaudible 11:07:13) and there's several places where

three experts agree and then two or three experts agree, so if you're a planner looking at this, would you agree that there's broad support for a particular proposition when two or three of the experts agree on a particular proposition?

5 A. I'm not a planner, the weighting of evidence comes to the decision makers.

Q. Yes but if the planner would make the same assessment themselves, a planner (inaudible 11:07:40)

A. I don't think I can have a view on that actually.

10 Q. No.

A. I'm not a planner so...

Q. No but I mean looking at it there would be broad support for a particular proposition with three experts, or two experts supported (inaudible 11:07:54)

15 A. I'm not sure it's a voting process.

Q. No, I've just got a plan has to make – the plan has to put together in evidence –

A. So I have no comment to make on the planner's opinion of the experts, same thing.

20 Q. All right so I'm not sure you can help me on that. That's all I have, thank you.

**CROSS-EXAMINATION: MS MAUGER – NIL**

**CROSS-EXAMINATION: MS KARENA – NIL**

**CROSS-EXAMINATION: MR MACGREGOR – NIL**

25 **RE-EXAMINATION: MR ANDERSON – NIL**

1110

**QUESTIONS FROM THE COURT: COMMISSIONER MABIN**

Q. Could you clarify for me, in, I'm looking at paragraphs 66, 67, 68 of your evidence-in-chief where you've (inaudible 11:10:33) quite a few numbers



of records that you examined, presence-absence records, 898 unique catchments, and you refer several times in your evidence to 6,000 waterways. What do you mean by, what's a waterway?

A. So, I took a waterway to be separate reaches of rivers within catchments.

5 So, for example a very large catchment system is comprised of a number of waterways. The way the data bases all this information is by, firstly by catchment, and then by river name within that catchment. There were more than 6,000 different river names in the data set within those 898 catchments.

10 Q. So, these 6,000 waterways are named rivers. So, there might be main stems and tributaries?

A. Some of them are unnamed tributaries, separate from another unnamed tributary.

Q. So, named and unnamed tributaries of some ways or rather?

15 A. Yes, they sit within the larger catchment. So, I think, I can't remember the exact number that the database has in terms of the catchments. I can find that out for you but I looked at 898 of them and within that were 6,000 different river names.

20 Q. River names, so it's, so reaches are smaller, reaches are a subcomponent?

A. (inaudible 11:12:04) under lineated by reach number and you can have multiple reaches within the same river and connect together to make (inaudible 11:12:12).

25 Q. So, I was interested in your, the reference to this, the different biogeographical histories of river catchments across the country and how that you, from what I understand you needed to take account of that in your assessment and I think the Ngaruroro River has it's sort of biogeographical character is the fact that it's been affected by volcanism?

A. Yes.

30 Q. So, what happens, what does that do to the river and how does that change the species that are living in the river?

A. So, some of those volcanic episodes that we had, such as Taupō blowing up pretty much obliterate everything for miles and buried it under ash (inaudible 11:13:22) localised extinctions (inaudible 11:13:25) species

affected by the large-scale volcanic disturbance. So, following that migratory fish go out and wash out as larvae into the coast, spend roughly 150 or so days (inaudible 11:13:43) and travelling about the coast without being able to recolonise rivers (inaudible 11:13:46). So, they have far less opportunity to have an isolate (inaudible 11:13:59) that are isolated for long periods of time (inaudible 11:14:03). There are some obviously (inaudible 11:14:05).

5

Q. So, would there be any difference the further downstream you are from the where the volcanic action occurred, so the Taupō pumice eruption fills the top catchment, wipes out the florists, fills the top catchment with ash and pumice and stuff. So, that then goes downstream and the passage of that downstream wipes out the fish?

10

A. To some degree I believe some of the rivers (inaudible 11:14:48) the fish will remain (inaudible 11:14:56) they are able to maintain population (inaudible 11:15:05).

15

1115

Q. So, has the whole of the Ngaruroro River been affected, a lot of your evidence relates to the downstream reaches some distance away from the top of the catchment that was severely affected, so is the –

20

A. I'm not sure to be honest, depending on what (inaudible 11:15:27) how affected the Ngaruroro has been, it's very close I would say, it has been quite majorly affected. I don't know if that's down to the sea level or not here, I'm not sure, (inaudible 11:15:38) pumice and ash layers were to (inaudible 11:15:43). So, it is possible that parts of the river did remain unaffected.

25

Q. I'm just trying to understand how that is the sort of key driver to the way in which your species richness, am I right, is affected in that river and so that sort of effect doesn't happen in South Island rivers, presumably, so –

30

A. So they're (inaudible 11:16:10) southerly Otago, Southland rivers really didn't suffer greatly from the volcanic eruptions, so they have a glaciation and all sorts of other stuff going on down there which brought isolated populations, it's just a completely different circumstance (inaudible 11:16:28).

- Q. So another sort of related issue of – that strikes me, you know, the volcanic activity is some sort of dramatic environmental change that affects the fish species in the river, are there any other dramatic environmental changes that need to be taken account of in the lower Ngaruroro River, in your assessment of the species richness and what have you?
- 5
- A. (inaudible 11:17:13) extension of the (inaudible 11:17:15) as well (inaudible 11:17:17) completely sure of the cause of that, but I've read data with differing opinions so there is obviously been some form of disturbance that's resulted in the extinction of the (inaudible 11:17:25).
- 10
- Q. What I am getting at is, you know, an environmental, a change in the physical environment, so for example I understand from other evidence that I've read that in 1867 there was a major flood –
- A. (inaudible 11:17:49) the channel (inaudible 11:17:44).
- 15
- Q. – that changed the channel so again, from what my understanding is that around about Roys Hill, the Ngaruroro use to then flow down through Karamu creek –
- A. Through the (inaudible 11:18:02), yes.
- Q. – (inaudible 11:18:02) Havelock North and into the Clive River, and it looks like a meandering river at least in the channel that is there today.
- 20
- A. Yes, I'm not sure that that would necessarily affect the species richness because we are still close enough to the coast that we get good recolonization from the coast but certainly it would have been a very major disturbance at the time.
- 25
- Q. So what we end up with though, it seems to me, is many kilometres of new habitat that hadn't been there before?
- A. I think we might have lost (inaudible 11:18:35) in that equation as well.
- Q. The river now from Roys Hill to Chesterhope Bridge is sort of braided or semi-braided?
- 30
- A. Yes and then below that this (inaudible 11:18:50).
- Q. – and it wasn't there before?
- A. Well I think that's only a recent geological history, I think over time braided rivers then to spray around like a fire hose that sort of go – they move

quite majorly, you'd have to ask Professor Fuller about that, he'd tell you all about it (inaudible 11:19:09).

5 Q. Turning to your paragraph 78, (inaudible 11:19:47) evidence in chief, you note that due to the limitations of the national fixed database, data (inaudible 11:19:59) was unable to evaluate whether the total fish in (inaudible 11:20:00) in the Ngaruroro was outstanding and relative to other rivers. So not necessarily just concentrating on the abundance data that those directly referred to there, how, can you sort of help the Court understand how to take account of the fact that in various ways this 10 national database provides more challenges perhaps than assistance in terms of getting to a decision about whether or not it is, you know, outstanding on a national comparative basis. So, how – in your view, how might the Court turn its mind to getting through the weeds of all that stuff that you were telling us about, the 6,000 rivers et cetera?

15 1120

A. I think the database provides us with very good information on species richness. So, (inaudible 11:21:13). It's very robust. There are a lot of records that grows by the day and it does cover a large proportion of New Zealand's rivers and streams over the many different types, and I think 20 that that data is quite robust and reliable. It has its limitations in there but it is a good dataset. In terms of abundance, we are starting to collect that data but it's – and that's what the national protocols were set out to do, to try and collect more abundance data so that we could actually understand populations better nationally and what they look like. But it's in early days 25 (inaudible 11:21:59). So, I think the species richness data is quite reliable and we rely on what it tells you. The abundance data, we just don't have it. It's just not the way that things were collected in the past and stored. So, when it comes to diversity, there are two parts to diversity. One of them is richness and the other is abundance or relative abundance of 30 species. So, you've got half of the picture of diversity quite well supported by data and the other half quite murky.

**QUESTIONS FROM THE COURT: COMMISSIONER EDMONDS**

Q. Good morning. I wonder if you could be given the draft order that Forest and Bird produced in the opening and actually, it might also be helpful if the map that you gave us this morning – so, I'm just a little unclear about the differentiation between the characteristics there are in this draft order in relation to indigenous fish for the lower river and the other part of the order that relates to the upper river and tributary. So, I just want to be clear about that. So, if you could look first at schedule 2?

**WITNESS REFERRED TO FOREST AND BIRD DRAFT ORDER****10 WITNESS REFERRED TO COMMON BUNDLE**

Q. And that's dealing with the lower Ngaruroro. And that's the dark blue in that plan that you have, as I understand it. And if you could look now at the column that refers to the outstanding characteristics or features and "Contribution to outstanding characteristics and features" heading. So, there's two elements to that, as you'll see. And then if you could slip down and look at first of all the habitat for indigenous fish and then the second line there "contribution to outstanding habitat for indigenous fish" in the upper and lower waters. So presumably those are both things you would support, I know in the way in which they are written in there described in there?

A. Yes I think without the upper catchment (inaudible 11:25:45) stage, that does (inaudible 11:25:47) on the lower catchment species riches.

Q. Counsel said –

A. That's the whole of catchment.

25 Q. Whole of catchment. So if we're thinking about that then if we could now have a look at perhaps we should go back up to the top and look at the natural state. Schedule 1A. And that is as I understand it the black-dashed line to what Forest and Bird is seeking, so looking now at the Schedule 1A nowhere on that page I think I've got this right, can I find a mention of habitat for indigenous fish or contribution to outstanding habitat for indigenous fish and in the upper rural waters. Now (inaudible 11:27:13) some weeks ago when I started reading for this I thought that perhaps that was an oversight?

- 5 A. We did traverse the issue of whether the upper catchment was outstanding for indigenous fish. Herein lies the problem it's splitting the catchment in half and looking at it ecologically which I had said I had difficulty with. I think from my perspective indigenous fish habitat of the catchment as a whole is outstanding, notwithstanding that the order is split into upper and lower I think you need to speak to the legal people about that, but that has always been my view and that was the view that I expressed in the Special Tribunal.
- 10 Q. So then from your perspective Schedule 1A (inaudible 11:28:13) the natural state Schedule 1A, that – how should that read?
- 15 A. Well it does certainly the upper catchment – if you do need to split it the upper catchment contributes to the values of the lower catchment because if the upper catchment wasn't so well forested the lower catchment would be (inaudible 11:28:34) water quality and (inaudible 11:28:39). I think if the water quality is being maintained in that natural state then that probably covers, covers the field in terms of that contribution and connectivity is the other one that's very important so the species that we find in the upper catchment which is largely tide fish, (inaudible 11:28:59) eel and (inaudible 11:29:01) have to migrate to be travelled between the sea and the upper catchment. That's a long way and they need to be able to get there. So to my mind as long as those things are adequately covered one wants (inaudible 11:29:16) to those contributions are covered. I'm not sure whether they need to be explicitly stated or not, is probably not for me to say.
- 20
- 25 Q. But if they were to be explicitly stated how would they read? Would they also say habitat or indigenous fish?
- A. Yeah, I suppose they would.
- 30 Q. And in terms of the contribution (inaudible 11:29:58) I notice the natural state just refers to outstanding characteristics or features, it does not get in to contribution. So, do you think the habitat for indigenous fish would adequately describe it?
- A. It's really those three things, as long as they were covered, but they may be covered adequately in conditions as opposed to characteristics or features.

1130

Q. Well, I am going to ask the planner some of these questions –

A. Not sure if I'm the best person to answer that question.

5 Q. So, that is fine. So, in schedule 1A we should just traverse that briefly, should we not, as well, and that too does not say anything about indigenous fish and should it, from your perspective?

A. Well, ecologically it's all one river, in terms of the fish moving around it and I think the habitat is outstanding and (inaudible 11:31:30).

**QUESTIONS FROM THE COURT: JUDGE DICKEY**

10 Q. Just one question from me. When you were answering questions from Ms Adkins, she referred you to Professor Keesing's evidence?

A. Yes.

15 Q. And I think it was paragraph 102 and just making, whether or not the river makes the top 10% and you responded to her question, you said that you had a problem with the analysis because it missed black flounder?

A. Yes.

Q. And I just wanted to see if I recorded your answer correctly. I think you said the missing element, the missing black flounder, if it was counted back in it would bring the river into the top 5%. Is that correct?

20 A. I can't recall the exact number but I did look at it (inaudible 11:33:17) –

Q. It is not in your reply, is it?

A. No, it's not in my, it's to the (inaudible 11:33:24). I wouldn't like to say the exact number without checking.

Q. All right, well are you able to check over the morning adjournment?

25 A. Yes.

**COURT ADJOURNS: 11.34 AM**

**COURT RESUMES: 11:59 AM**

**QUESTIONS FROM THE COURT CONTINUES: JUDGE DICKEY**

Q. How did you get on?

5 A. Thanks, your Honour. I believe it's in my rebuttal statement to the stage 2 hearing to the special tribunal. Now I have to assume here that it is the same analysis at 305 rivers in this hearing's evidence as was in the special tribunal evidence, I am not sure. I can't confirm definitely that that is the case. Dr Keesing would have to confirm that, that my paragraph 25 stated when North Island rivers are considered on the full species  
10 assemblage used as per Holmes 2019 the Ngaruroro River ranked first for indigenous fish species richness in Dr Keesing's river sample. (inaudible 12:00:24) fact that I am not entirely certain that it is the same analysis that is (inaudible 12:00:32) referring to in paragraph 102.

15 Q. So when he talks about in the top 10% nationally what does that mean in terms of what you have just said to me?

A. I don't think its referring to the same thing where I've said it ranks first –

Q. Right –

20 A. – No, I think its referring to the latter part of the paragraph when he's talking about any North Island only comparison, because I'm referring to North Island rivers.

Q. So –

A. – so it's the latter part of that.

25 Q. So coming back then to the question you were asked, when you accept you disagreed with his analysis because it didn't include black flounder, and you mentioned 5%, is the –

A. I can't be certain given what's in my evidence to the special tribunal, I can't be certain that 5% is the correct answer (inaudible 12:01:22) it's less than 10% –

Q. All right, so would you like to withdrawal that answer?

30 A. Yes, I would.

Q. Thank you for your evidence and you are free to go.

**QUESTIONS ARISING – NIL**



**WITNESS EXCUSED**

**LEGAL DISCUSSION – PRODUCED AND EXAMINED SITE MAP (12:04:02)**

**THE COURT: JUDGE HARVEY TO MR MACGREGOR**

Q. Mr MacGregor, I wonder if it might also be useful if it is possible to bring up the Māori Land Online site and we can see the blocks and the boundaries.

5 A. If I may, I need to also have our chairman of the (inaudible 12:29:50), he should be talking to us in terms of his whenua.

Q. Sorry, if we just go to the blocks search and put in (inaudible 12:29:56). And then you can zoom out and see exactly where it is to the river.

A. So, what you saw on the original presentation made by Greg was he took  
10 a vertical and the Google search in that search engine driven one. So, we started at Kuripāpango and at the top of (inaudible 12:30:33) for the Owhaoko C lands it's approximately 13 kilometres up the river, up the Ngaruroro on one side and approximately the same distance on the Taruarau. So, we're bounded by both rivers, the Ngaruroro and the  
15 Taruarau. And I'm just going to – before I go any further, I'll just also need to beg the indulgence of the Court. The question was asked of me yesterday that I could talk through all of the stuff and talk about some of the detail around the ownership of the Owhaoko C lands particularly. And I said: "Well, you know he's talking to the boy when the father's sitting  
20 here and the father being Mr Karena who knows this land intimately for a whole host of reasons." But we're approximately 19,000 hectares. That piece in the middle where Tom has got the cursor now, that's Ngāmatea Station. The little piece down to your right, that block down the bottom – there is a Department of Conservation owned area, oh,  
25 Crown area, that I understood was taken for a school site. I'm not too sure how that works, something to do with surveys and charging everyone. But that there is DOC estate. So, where the boundary is on the river, the Ngaruroro, that goes up approximately 13 kilometres, 13, 14 kilometres, up to what we call Rocking Point or Mount (inaudible  
30 12:31:59). That's our top block, Owhaoko C1 block. Come right back around onto the Taruarau river, come right back to the Taihape Road where we can access on top of Mount – oh, sorry, of the – we can access our land from the top of (inaudible 12:32:21) but that's hard yakka, it's walking and demonstration about how to ride a horse. And but also to

access at the bottom down by the Taruarau bridge, on the Taruarau we can access on what we call our C5 block. So, those lands are all in their state that they were since we inherited it and since we govern and manage it. We don't pollute. We haven't any of that. But I think at this  
5 time, I don't know whether it's appropriate Richard to have, you talk about the (inaudible 12:32:54).

**THE COURT: JUDGE DICKEY TO MR STEEDMAN**

A. I want – I did have a proper submission and I could do that and describe this within that. Is that – or do you just want to –

10 Q. I think it would just be helpful if could point out the areas that are of concern to you. So, for the record this is Mr Richard Steedman taking us through the Google Earth map.

A. So, it might pay if I just go right up to that and I can point to it. So, this was the top of the Owhaoko C blocks that we were just talking about over  
15 to the Taruarau. Owhaoko B and D Trusts, so the Owhaoko blocks were originally or eventually subdivided into four, A's, B's, C's and D's. That's why there are three trusts, one for the A block, one for the C blocks and one for B and D blocks. So, there was an error in Māori Land Online here, because there are two Owhaoko (inaudible 12:34:27). All right, so this  
20 which shows as being part of our lands is actually not. That is part of Ngāmatea Station. This block along here which is showing as non-Māori land is actually our part of Owhaoko (inaudible 12:34:47). So, this is this southern boundary of our blocks. Right, so this is the Rangitikei river here. This is the army lands here. The army lands, Kaimanawa horses.  
25 Rangitikei river. This is a triangle of DOC land and this is our southern boundary, yeah, here, in here. So, going straight across to the Rangitikei river and then following up the Mangamaire river. This is the Mangamaire up here. That's Rangitikei down here. We come right across here so all these big blocks, this is also showing as general land, non-Māori land.  
30 This is also Māori land this is a mistake, as part of our trust as is number one, (inaudible 12:35:59) and here we are hitting the Ngaruroro. This is a (inaudible 12:36:06) taken out of our lands Owhaoko D or B, hitting the Ngaruroro and also Owhaoko D3. So, on the Ngaruroro is actually this

area here and the full extent of the blocks is along here, down there and right across to the (inaudible 12:36:33). So, it's this area in particular in terms of the land trust.

**MR MACGREGOR:**

5 We don't have a (inaudible 12:36:57) from east Taupō. But the lands North, (inaudible 12:37:00) Owhaoko A Trust (inaudible 12:37:03) Owhaoko A is just split up 16,000 hectares of land administered by a separate trust. And of course, unless they're in the east Taupō which is by far the greater of the Māori land holders of that particular catchment. But I can only match things, I don't  
10 represent them in that sense, I'm not a trustee. Issues of concerns, I suppose in terms of Greg's kōrero about accessing the huts on DOC estate up to the (inaudible 12:37:33) et cetera, we do have issues for us. One of the main issues is illegal access. We have been coming across (inaudible 12:37:40). They also come up (inaudible 12:37:45), across onto our whenua without permission. I'm  
15 going to make that quite clear in this court. But no doubt important thing is that we agreed with Department of Conservation many years ago to allow access onto our land in case people got trapped up in the top of end DOC estate. We allowed that track to come across so they could exit safely. But more than actually, they're more now like accessing. But really that's one of our main  
20 issues is that. The second is that about the access and the canoers and the white water rafters on the river. There's really little places for them to camp apart from our own whenua (inaudible 12:38:22) and that raises a concern about people camping up. We don't allow fires and we're very careful about maintaining the health of the waterway, the land and the waterway. But this is  
25 a brief explanation on where the lands are, and I thank you for your time.

**COURT ADJOURNS: 1.03 PM**

**COURT RESUMES: 2.17 PM**

**MS ATKIN ADDRESSES THE COURT – ABSENCE OF COUNSEL (14:17:15)**

**LEGAL DISCUSSION**

**MR KARENA TO THE COURT:**

5 Q. Do you need the screens to make your addition Mr Karena?

A. No, no, just to let you know right at the top where (inaudible 14:18:12) from that location if you head right up to the Oamaru Valley on the true left of that – of the river there, you drop into the head waters of the Mohaka River which is the Oamaru River. And as you go down the Oamaru River  
10 you come to a river called the (inaudible 14:18:41) River and at this (inaudible 14:18:45) River there were two parasites there which is – the name of those parasites one was (inaudible 14:19:02) and the other was (14:19:03) on either side of the mouth of that stream, the (inaudible 14:19:07) and it was those canals was built by this ancestor (inaudible 14:19:16) and he came from Mahia to there to occupy that place due too  
15 far to go back home. And I just (inaudible 14:19:27) again.

**MS MAUGER**

First of all I've got an addition to make to Mr Karena's definition of (inaudible 14:19:56). We have most commonly – there are several names, the most  
20 common one is (inaudible 14:19:58) or (inaudible 14:20:02). So (inaudible 14:20:09) is the waves all of (inaudible 14:20:14) with a grey line, so you know out of (inaudible 14:20:20) you get the contraction down to (inaudible 14:20:22) and then (inaudible 14:20:23) was the third son of (inaudible 14:20:28) who on the way from Mahia to our river mouth dropped off three of the sons, the third  
25 of which was (inaudible 14:20:40) and he is the, I've got some wording here so I don't botch it up. "I've got three sons. In order to extend and establish the feeding grounds of whales and of other different kinds of fish he planted his children along the seacoast as (inaudible 14:21:03). He set out in his canoe and placed (inaudible 14:21:12) proceeding further south he left (inaudible  
30 14:21:16) at Awapuanui and on reaching on the river mouth of Ngaruroro near

the town of Clive in Hawke's Bay he placed his last son (inaudible 14:21:25). All of them were turned into rocks which can still be seen today." And that came from Mitchell's very well know and often quoted book *Takitimu*.

5 It's nearly lunchtime, so we get to the river mouth which is the bit that Mr Karena (inaudible 14:21:47) rapidly and we have – so at the river mouth of course (inaudible 14:22:00) been highly modified there are two modified channels, the Tutaekuri and what used to flow out here to the Whanganui (inaudible 14:22:12) where the plane landed and of course came up during the earthquake and so  
 10 on and so forth. So that's another big story. But the original mainstem of the Ngaruroro is now known as the Clive which you probably know about. And those of us who (inaudible 14:22:36) about these things refer to the Clive as the Ngaruroro (inaudible 14:22:40) old and original river mouth river. And then the mainstem of the – what's referred to as the Ngaruroro today is as you can see  
 15 a heavily modified straight tunnel channel. We have coming up from the – as was pointed out by Mr (inaudible 14;23:08). Is a cloud, (inaudible 14:23:12) is the flounder but refers to the abundance of flounder. There used to be 200 plus people to feed at (inaudible 14:23:24) took two hours to gather that fish and now I've been involved with monitoring for quite some time there and you can  
 20 set (inaudible 14:23:35) nets overnight and you're lucky if you get two. So yes.

So then I'd like to point out where the original Ngaruroro River Bridge was because I think part of the story of how our area was and how it is now, it's where my parents used to court and a lot of people did it was a great swimming  
 25 hole and modified in the sixties, so all of this land was taken in the public works and never returned to the Māori that it was removed from. We have the Chesterhope Bridge which people – I don't know how that name was derived, was now crossing the also known as the Pakowhai Bridge, the main crossing (inaudible 14:24:30). Right so looking at that all I can see is a lot of Māori  
 30 ownership but you may not see it as you're driving around. So there is a very novel concept being grown at the moment known as (inaudible 14:24:45) opposite the Pakowhai Dog – we call it dog park, it is actually referred to as a reservation, Pakowahi Reserve, so the (inaudible 14:24:53) Park is the

confluence of the (inaudible 14:24:55) which is zoned for Twyford, it's part of the Ngaruroro catchment.

1425

And in Twyford my grandmother, mum, who is here, her mother, remembers  
5 the Māori canoes were pulled up then gathered. So, it was a navigable  
waterway. It's very, very different today. So, we're looking at the conflu – at  
Hawea Park, confluence of the Raukere, the Karamū, and the Clive, the old  
(inaudible 14:25:21). And Hawea Park is, we're working on co-ownership  
10 between the hapū Ngāti Hawea and Ngāti Hori and Ngāti Hinemoa and regional  
council. We've got management plans in place that we're stuck with the Māori  
Land Court accepting that there can be such a novel concept of joint ownership.  
I'm just going to place that there, and hopefully you will notice Hawea Park as  
you drive by. It's in – it's only just early days with its establishment.

15 So, then I'd like to touch on what Commissioner Mabin introduced, which was  
natural events and (inaudible 14:26:08). Over time there's been earthquakes,  
you know, 1931. There's a – I'm not sure, underneath the proposed WCOs that  
– the extent. So, I was going to mention the Paretua and the Kawerawera  
streams. Are they included in the proposal, the proposed WCO? So, they go  
20 past Bridge Pā, the two marae there are Mangaroa and Korongata. So,  
between – at some point in time, the pan was either fractured – this is from  
downstream from the (inaudible 14:26:55) – oh, not the (inaudible 14:26:56) –  
the (inaudible 14:26:58) with the water race. So, downstream of there is the  
Paretua, and which at a roadway outside Mangaroa marae becomes the  
25 Kawerawera. That typically dries up over summer and so to chase back the  
cause, the pan had been fractured on a neighbour's farm further upstream.  
There is supposition as to whether that was a natural event, or there has been  
discovery in a report of 2006 by Rob Aldrin that the whānau illegally put a digger  
through the pan and tried to repair it. But I just thought it was important because  
30 Rūaumoko, Ranginui and Papatūānuku's youngest unborn son is the one that  
stirs and creates earthquakes, right? So, you know it's a feature around here.  
So, that was the completion of what I had to add. Thank you.

1428

**RICHARD STEEDMAN (SWORN)**

So, kia ora no tatou, my name is Richard Steedman. I am the chair and one of the authorised representatives for the Owhaoko B & D Trust. I might stand up because I can talk louder, and I would like other people to hear what I am saying. I also have Ms Barbara Ball here today with me who is a fellow trustee. The trust has not retained a lawyer for this hearing process and because of this we have not complied strictly with the procedures, government and hearing process, and for this the trust does apologise. We thank you also for allowing our requests yesterday. Right, the Owhaoko B & D Trust Lands comprise 13,700 hectares on the west bank of the upper Ngaruroro awa, which of course I pointed out earlier, that is north of Ngāmatea Station. We are also the east bank of the upper Rangitikei awa and the upper regions and the source of the Taruarau awa lie in the centre of our land trusts, or our trust's lands.

These lands form part of Te Rohe Pōtae or Mōkai Pātea, that is the rohe of the confederation of iwi of Mōkai Pātea. It contains much of the whenua west of the Ngaruroro and all of the awa of Taruarau, that is above the confluents of the (inaudible 144330) stream which I have just pointed out. The two main iwi from the Mōkai Pātea side concerned in this subject area, are Ngāti Whitikaupeka (inaudible 144343), Mr Karena referred to, the Ngāti Whitikaupeka when they lived in the upper reaches of the Mohaka for a time and the Ngai Te (inaudible 14:44:03) iwi, and then the hapū concerned of those two iwi, Ngāti Whiti Tūturu, Ngai te Pokoiri and Ngāti Honomōkai. I just want to state here that some of those will be very familiar names from this side, which just again depicts how closely we are all related. I am the current chair of Te Rūnanga o Ngāti Hinemanu, Ngāti Whitikaupeka, and Ms Ball here is the chair of the joint environmental working party of Ngāti Whitikaupeka and Ngāti (inaudible 14:44:54) who in the normal course of events would be dealing with this issue on our behalf. Well that's the background.

1445

These are my points. Firstly, the position of the Owhaoko B&D Trust remains the same. We oppose the proposed water conservation order on the upper Ngaruroro River. There are clearly other options to the water conservation order which have already been submitted, which in our view are more cohesive,



collective, and representative of mana whenua and tangata whenua and all of us, but have not been advanced. Our second trust representative, Mr Mike Ross, will speak to this later during this hearing, he is not available today. Secondly, as a land trust we were never advised of this water conservation order process. Thanks to our whānaunga, Owhaoko C Trust, we became engaged but this engagement was too late for us to engage properly and we have been limited to a hearing process which has not been at all satisfactory for us, to ensure we are building a cohesive, collective, and representative pathway forward for our awa of Ngaruroro. As well as the Owhaoko C Trust, I also wish to mihi to the Owhaoko A Trust and East Taupō Lands Trust, and our whānaunga of Ngāmatea Station.

Thirdly, as an iwi that is in this case Ngāti Whitikaupeka, with mana whenua interests in this area and for us as Mōkai Pātea people the entity who play a leading part in this process, we have never been notified or engaged with for this process either directly or through our Environmental Working Party. We have been marginalised and, to borrow a term from our current Waitangi Tribunal process, we have been *invisibilised*. That's, we have used that as a historical term for our, the Waitangi hearing process that we are currently going through, but this of course is a current process. At an iwi level, I wish to mihi to those iwi, hapū, represented by Te Rūnanga o Ngāti Hinemanu, Ngai te Pukeiti me ngā Piringa Hapū, Ngāti Hinemokai me Ngāti Mahuika. On to the east bank of the Ngaruroro and to Ngāti Tūwharetoa to the north of us. Fourthly, at our submission at the actual hearing I recited in evidence a pātere called *taua hukia* to give our boundaries to the Mōkai Pātea Confederation. Even though we engaged late, I felt that it was necessary and of course totally logical and rational, that we should start by giving our boundaries, so that the Court would know who we are and where we are. I am not going to repeat it, but I have to say, I'm going to quote from it as I believe its full recital went straight over the then hearing's understanding, and thus I was quite disappointed. We were all quite disappointed. We felt that that did not make any difference to the hearing. So, I'm going to, I just would like to quote two wāhanga of this pātere. This is our pātere that gives our boundaries of ngā iwi o Mōkai Pātea.

1450

**PĀTERE GIVEN BY MR STEEDMAN**

Translated: “To the source of the Ngaruroro down towards Te Mahanga to Omahaki, to the mouth of Otamauri to Whanawhana, to the boundary as established by our ancestors. The second wāhanga”.

**5 PĀTERE GIVEN BY MR STEEDMAN**

“Return from there, he sends into Ngaruroro to Waitutaki. That is the meeting place of my ancestors Tamatea and Kahungunu, to Mākaroro”, (Māori 14:51:25). “Reaching to the top of Ruahine.” Fifthly, this document ki uta ki tai, (Māori 14:51:52). The Rangitikei catchment strategy and action plan. It has  
 10 been put together and lead by the four iwi of Mōkai Patea in association with our whānaunga iwi to the south, Ngāti Apa, so the five iwi of the Rangitikei awa. This was lead by us, this is our document, our Rangitikei catchment strategy and action plan and supported by the Ministry of environment, for the environment, supported by Horizons Regional Council and supported by the  
 15 Rangitikei District Council. I refer to this as an example of how we would normally work as an iwi, in a leadership but also a collaborative role. Sixthly, all our work as a trust since we engaged in this process has been to ask the applicants to engage with us, and indeed we thought that would happen when the Court asked the applicants to engage with us but they did not. We have  
 20 been able to put together some (inaudible 14:53:39) meetings, but nowhere near enough to even discuss the issues in a collaborative way. All we have got is a list of what we should talk about, this is not good enough as the applicant sail on to their water conservation order. Really at the end of it, the court, a court process, and when a court process is in place, it is too late to do a lot of  
 25 this work and we understand that and that’s why it would have been so much more preferable to have been able to engage prior to getting to this stage. Regardless, we are always open to collaboratively search out the most mana enhancing way forward for all of us and especially our awa of Ngaruroro. Lastly, and so that I do not end up on a negative note, as we are not a negative people,  
 30 Mr Mark Ross will be attending this hearing separately to present on the more technical aspects and especially alternative solutions such as Resource Management Act section 33 options. which we along with (inaudible 14:55:23) trusts deem to be a much better solution to what we are looking to attain here. Also I would like to just thank the two remaining applicants for at least meeting

with us. There were more than two applicants in the beginning, I don't know what's happened to them but at least Forest and Bird and Whitewater New Zealand have met with us and have started the ball rolling and thank you very much Tom for doing all the mapping work today as well. So you know again  
 5 we do not want to appear totally negative and we must still look forward to the future to work together.

**WAIATA GIVEN**

**THE COURT:**

Thank you Mr Steedman I'll just see if anyone has any questions for you.

10 **MR ANDERSON TO THE COURT:**

Q. I don't have any questions partly because that was mostly (inaudible  
 14:57:39) any questions.

A. You want some time to –

Q. I'm aware that Mr Steedman has got timing availability issues, so –

15 **THE COURT ADDRESSES MR STEEDMAN – AVAILABILITY NEXT WEEK**  
 (14:58:20)

**CROSS-EXAMINATION: MR ANDERSON – NIL**

**CROSS-EXAMINATION: MS EVELEIGH**

20 Q. Just one question, Tēnā koe Mr Steedman, the original application sought the recognition of cultural spiritual values and values in accordance with tikanga Māori, my understanding is that Owhaoko C, sorry B and D Trust doesn't wish to pursue recognition of those values, your preference is that the water conservation order not proceed and that you pursue other mechanisms, so I just wanted to clarify that that was correct?

25 A. Our position is that we are opposing water conservation order, that is because we don't believe it is the correct mechanism to move forward. What we believe is that there are other options to move forward that we could pursue and then all of the tikanga Māori and all of that, from each

of our areas that are involved in this come together to make something worthwhile for all of us.

**CROSS-EXAMINATION: MR ANDERSON**

5 Q. That provoked a question for me, you in your presentation indicated that, I forget the gentleman's name is it Mr Best was going to attend next week?

A. Mr Ross.

Q. Mr Ross I'm sorry.

A. Yes.

10 Q. Would he be the person to direct questions about those alternative methods to?

A. Yes, thanks for that question. Yes, he is the person that has moved the section 33 options and other options forward for the trust using his science and other background. And that's why – he unfortunately was unable to be here today.

1500

Q. That's fine.

A. He is at the moment at number 26 or 25 on the list for the list. He's also speaking for East Taupō Lands Trust, so he may be able to bring that up at that stage.

**CROSS-EXAMINATION: MS DOWNING – NIL**

**CROSS-EXAMINATION: MR MAW – NIL**

**CROSS-EXAMINATION: MS ATKINS – NIL**

**CROSS-EXAMINATION: MS BLOMFIELD – NIL**

25 **CROSS-EXAMINATION: MR GARDNER**

Q. Good afternoon, Mr Steedman, and thank you for your korero. Just picking up a couple of points there. You said that your tribe had never been notified or engaged with. That's correct, I heard that correctly, and

that you felt you'd been marginalised and invisibilised, I think were the words you used, and that you had asked the applicants to engage with you without success at least until recent years, is that a fair summary of your –

5 A. Once we were aware of the process, we began to engage with the applicants, and obviously engaged with the protests which were almost to the hearing stage from memory. But at that stage, we began to engage with the applicants themselves and we looked to engage with them for this process. I believe that the applicants – well, at the first point which I  
10 mentioned in my presentation when the Court, and I don't know the technical word for this, but the Court – we had an adjournment and left and openly asked the applicants to perhaps meet with us and that was not done, and so that was a major failure. However, since then, it was at least the two remaining applicants, we have been able to start a process  
15 of engagement.

Q. Thank you, Mr Steedman. It brings me to my question is that one of the things that people putting water conservation orders together, one of the things they're required to take into account is the needs of the community, and that's a very broadly defined term as I understand it, and (inaudible  
20 15:03:11). So, it would be correct for me to say that you haven't had the opportunity to put to the applicants what the needs of your – of the trust might be, is that a correct position, is that you haven't had that opportunity?

A. Yes.

## 25 **QUESTIONS FROM THE COURT: JUDGE HARVEY**

Q. Kia ora, Mr Steedman. It's nice to see you. I just want to understand correctly, were you notified of the Special Tribunal process at all?

A. (no audible answer 15:04:02)

Q. If the Special Tribunal process was the first hearing – no, not until – it was  
30 before the hearing but not at the beginning of the whole process?

A. (no audible answer 15:04:21)

Q. Now, I just want to understand you correctly, you say that the Court, I'm assuming it's the Special Tribunal, paused and asked or gave opportunity

for the applicants to meet with (inaudible 15:04:38) whenua and that opportunity was not taken up. Is that what you're saying?

A. That's right and we actually had a meeting on site at Ngāmatea Station. We had the Hawke's Bay Regional Council in attendance, of course they're not the applicants, of how we would get the applicants to come and meet with us as per. But obviously wasn't an order otherwise they would've done it but it was an indication that they should do it in that area.

1505

Q. Sure and when you finally started to engage together what was the reason given for that initial non-engagement, if any?

A. Sometimes Judge, as you'll be aware this happens so often that we don't even wanna know the reasons. One of the reasons that we do and I'm presuming this but I think I'm pretty safe, is the fact that we come from inland pātere. We are the people on the other side of the Ngaruroro River and by the time you get to the Ngaruroro River from here as you would know, we are in tiger country, that's where you come back out on to our big flat lands on the Mōkai Pātea side. Some years ago and every now and again the Hawke's Bay Regional Council will talk about a representation on a Māori subcommittee, I think it's a mana whenua committee, now at the end of the day we have part of our trust lands and obviously part of the Mōkai Pātea iwi lands are within that because the watershed goes through the middle of our trust lands. They – this group that's set up has not, has not contained people that represent us. Now I'm not saying that's totally the Hawke's Bay Regional Council's fault but there are a lot of committees that require representation and we do look to others are there are others on this side that are involved in that, but again what I suppose it has meant in some ways is that people are just not aware that we of the Mōkai Pātea have even an existence. As you'll know Judge, the summit of the Ruahine Range I mean over the river is deemed to be the boundary between the Hiritangi people and the Mōkai Pātea people. We jump over both sides of course but that is the boundary. It seems very easy to get to that line and just jump over and you'll be in Mōkai Pātea because again it's not very far, the first range of hills on this side is the Ruahine Range. But there are many (inaudible

15:07:59) Ranges on the other side all the way back to almost Taihape before you get to places that are easy to live upon. So it's actually quite a wide, wide boundary. So when we live in – I live in Moawhango personally, which is 30 minutes' drive from (inaudible 15:08:22) Station which of course again is pretty close – getting closer to (inaudible 15:08:29) and the Ngaruroro River but there's not – we are the last – Moawhango was the last settlement from Taihape before you get – actually get to the Ngaruroro River. So people are not going to automatically assume that that awa has anything to do with us especially when you come at it from (inaudible 15:08:53) there are plenty of people here that have connections there as well. What needs to happen of course is that all connections are understood so that we can all move forward and bring our own (inaudible 15:09:09) into the mix of these processes.

- 5
- 10
- 15 Q. Sure, I mean what I'm trying to understand is, setting aside the tribal affiliations and (inaudible 15:09:18) and those issues, the fact that the trust is a significant land owner bordering that river, taking into account the last decade of discussions and claims over fresh water, given the fact that the (inaudible 15:09:36) of their claims have been in a public domain before the Tribunal for a decade which you are painfully aware of, it just seems strange to me that a process like this when an application is made, it surprises me that one of the items on the list of tasks is to find out who amongst mana whenua have interests along these rivers, along this river that we have to engage with. I mean, it just seems unusual, given all of that background, as I say, the high publicity and high stakes involved in this whole debate about freshwater ownership and control, the Supreme Court cases coming out for pauakani, and the Māori river privatisations and so forth – sorry, the (inaudible 15:10:33) just surprises me that the costs mana whenua are not engaged from the get go, is what I'm trying to understand. That's not a question for you, not now.
- 20
- 25
- 30

1510

- A. And again – but I would like to say that, yes, it is a sad fact, really, and it is very sad for us. We try to be positive in our relationships and our engagements, and we constantly do end up being overlooked and

forgotten. And as I said in my submission, once you get to court with a special hearing, it's really just too late to get down to the nitty gritty and sort out something positive for all players.

Q. All right, thank you. Thank you for that (inaudible 15:11:29)

**5 THE COURT: JUDGE DICKEY**

Q. Mr Steedman, just to clarify one point that you made. You said that the position of the Trust is to oppose the proposed order on the upper Ngaruroro. Does the Trust have a position in respect of the order sought over the lower part of the river?

10 A. Officially, we don't have a position, because it's not – we don't feel that it's our place to speak for mana whenua here on the flats. I would just say that when we first became aware of this process, we were informed that even though the application was for the lower reaches of the Ngaruroro, what would happen is that the water conservation would not  
15 be granted on the lower part but would be granted on the upper part, and that is exactly what happened, which seems very, very ironic for many reasons.

Q. And then just – I know you've taken us through the extent of the Trust's landholding and the wider area in respect of which you've got an interest  
20 and an association. In the Special Tribunal report at page 53, it does map just the landholdings. Have you seen that map?

A. Yes.

Q. Is that correct from your perspective of the land – could I just show that to you, please? I know we're just talking physical landholdings, but I'm  
25 just interested in if it's correct.

A. Just current landholdings.

Q. It's got a key with minuscule writing on it, but I think it's discernible.

A. Yep. That depiction of whether your park will be in the Trusts land is appears to be correct. In fact, yes, that is correct.

30 Q. Thank you. Thank you for that. And I note your mention of other options, and let me just find it ... you think that there are clearly other options to an order, which have already been submitted, which are more cohesive, collective and representative of mana whenua, tangata whenua, and all



of us. Now, I know you've said that Mr Ross will address that in more detail, and I know you've also mentioned section 33?

A. Yes.

5 Q. But when you say "options", do you mean regulatory options, options that come from planning documents and the like, or do you mean – and you've mentioned 33, obviously, but do you have other options in mind that you think might be more effective?

1515

10 A. This is getting close to the edge for me, but I am aware that there is, I presume there still is a tank process –

Q. That's right.

15 A. – going on and I know that we have also discussed that process. Not quite sure what that would've entailed or where that would end up or where it will end up, but again with that collective discussion it did seem that it would be another option.

Q. But has the trust been involved in that process?

A. No we have not been. We didn't actually know about the tank process until we engaged in this process.

20 Q. I see, have you been – has the trust been involved in any of the recent Regional Council planning processes because I think there's another one, I think there's a plan change 9 and a plan change 7?

A. Yes, that's this Regional Council, yeah.

Q. Yes. So –

25 A. The only Regional Council that we regularly work with is Horizon, well Whanganui – well Manawatu-Whanganui Regional Council. I suppose what we need to do to really – what is – just put our hand up a little bit higher with this Regional Council. I feel that many people have looked at Owhaoko C which as I've mentioned has sort of led this on all of our behalf and they automatically then default well Owhaoko C is doing all of this  
30 work, that's not the case. But at the same time we're probably allowing Owhaoko C to do that. We probably need to put our hands up a little bit higher and engage.

Q. All right, okay.

A. One issue, sorry if I just finish. One big issue for us is resourcing of course. We have, as you've heard 13, nearly 14,000 hectares of land and we have very, very limited income. We don't pay rates because we are landlocked. All of our access is by helicopter at \$1,500 an hour plus  
 5 GST. We are fairly limited in what we can do, but that shouldn't mean that we are – would be overlooked of course.

Q. Well thank you for coming today and thank you for your evidence.

**CROSS-EXAMINATION: MR ANDERSON**

Q. I just want to start by acknowledging what you've said and express total  
 10 respect for what you've just said. I've got a couple of questions for you that I just want to ask you why things have been said in a certain way which you may or may not be able to help, but I want to ask you this. In the application for the water pump station which is in the bundle but I don't believe there's a printed out copy of it, there's a section on consultation.  
 15 You wouldn't have read that application?

A. (inaudible 15:18:49)

Q. In the application for the water pump station order, and I'll just read out one section that it says. It says: "During the preparation of this application the WCR proposal and the values identified for protection were discussed  
 20 with individuals representing the following groups' organisations." And in that it says: "The Māori Land Trusts, the (inaudible 15:19:15) Trust, East Taupō Lands Trust and the Owhaoko Trust Block representatives. Now I wasn't involved in that at all, can you help me with why that would be in because you're not aware of any consultation but from reading this, it says  
 25 that someone tried to do something with respect to the Owhaoko Block Trusts Group interests?"

A. Thank you. So first issue I would say is individuals, it should not say individuals. It should say the trust. But the main point –

Q. It says representatives, you're right, yeah.

30 A. That does say (inaudible 15:19:55)

Q. It says: "Owhaoko Trust Block representatives."

A. Yes, but where before about individuals it would be great –

Q. (inaudible 15:19:58) organisations.

A. – to turn up to an organisation and talk to a whole trust as a group. But you said that last phrase is Owhaoko Lands Trust?

1520

Q. The Owhaoko Trust block of representatives.

5 A. Right, so that's why when I (inaudible 15:20:19) before lunch, I said there are three trusts with the first word Owhaoko?

Q. Yep.

A. There's Owhaoko C, Owhaoko A, and Owhaoko B & D. We are all independent entities. Maybe what has happened is one – a person from one of the other trusts has been consulted. But that doesn't mean that we've been consulted – B & D, I mean.

10

Q. But as far as you are aware, that didn't include your trust, being B & D?

A. Well, as the chair of Owhaoko B & D, no person representing the Owhaoko B & D Trust was consulted.

15 Q. Were you the chair in 2000 – around that time that the consultation had happened?

A. What?

Q. Were you the chair around the time that consultation would have happened around 2000 – just before 2015?

20 A. If I wasn't, I would've been the deputy chair.

Q. And you would've been aware if that was going on?

A. (no audible response)

Q. Thank you.

A. So, that's just that assure, not understanding (inaudible 15:21:33) really, that, look, there's three (inaudible 15:21:33)

25

Q. Yeah, no, no –

A. But there are three Owhaoko Trusts, and all three in this instance, in any instance, need to be consulted.

Q. I'm not trying to be critical of you or anyone. I'm trying to understand – trying just to understand what's happened here.

30

A. Yeah.

Q. Now, the application goes on to say, which I'm a little mystified by this, it says: "Māori Land Trusts initially expressed concerns about what impact the (inaudible 15:22:02) would have on the current and future use of their

lands, but these concerns are now largely addressed.” I find, to me, that that jars very significantly with what you’ve just said. Have you got anything to comment about that statement?

**THE COURT: JUDGE DICKEY**

5 Can you just say where you were reading that from, please?

**MR ANDERSON:**

Sorry, this is in the application, and it’s in common bundle reference 0309. I don't think that the print – there’s one copy.

**THE COURT: JUDGE DICKEY**

10 Just so that we have a reference.

**MR ANDERSON:**

It’s page 96.

**CROSS-EXAMINATION CONTINUES: MR ANDERSON**

15 A. Somebody has talked to somebody (inaudible 15:22:41). But that’s not how the world goes round, especially these days.

Q. No, I understand that, and I think we can ask questions of other people about who that might – it would be useful to get to the bottom of what actually occurred here and to understand why it is you’re saying what you’re saying so clearly.

20

A. Can I just add in there that why I kept – in my submission I kept talking about land trusts and iwi. Although I am here today representing the land trust, the fact that the iwi have never been advised – obviously, no, because I’m the chair of that iwi entity as well – but that’s why I speak about the two layers. There’s the land (inaudible 15:23:30) know something, but (inaudible 15:23:30).

25

Q. I’m glad you asked that, because in the document, again on page 0308, it says – just for completeness, so you’ve got the context: “During the preparation of this application, (inaudible 15:23:48) the proposal and the values identified for protection were discussed with individuals

30

representing the following groups/organisation.” And also is in there “iwi/hapū”, which are Ngāti Tūwharetoa, Ngāti Kahungunu, and Kohupātiki Marae.

A. Kohupātiki, yep. (inaudible 15:24:12) that I’m one of those iwi.

5 Q. No, no, I’m not saying you’re one of those iwi, but I’m trying to understand – well, it seems like there may well be the wrong people we’ve spoken to, but from that, I take it there wasn’t no attempt to consult with hapū and iwi?

10 A. Well, there’s two iwi mentioned there, Tūwharetoa and Kahungunu, and then there’s a marae, Kohupātiki.

Q. Correct.

A. Or marae grouping, which is not an iwi. So, there are four iwi involved, and under all those iwi there are actually hapū. That’s why I didn’t need to Ngāti Kahungunu and (inaudible 15:24:55) to our hapū that we are on the both sides of the (inaudible: 15:24:59).

15 Q. Yeah, to repeat, I’m not attempting to be critical of you in the slightest. I’m trying to understand what is going on in these documents which says that at least some consultation was undertaken with iwi, hapū and the Land Trust. There’s a question of the adequacy of that clearly.

20 A. Yeah, so we – and I don’t like to leave unless I feel that I’ve explained things properly so there’s never any (inaudible 15:25:29).

1525

Q. And I don’t want to feel like I’m cutting you off (inaudible 15:25:31).

A. But yeah, we – for us on that other side of the Ngaruroro we are (inaudible 25 15:25:39) and (inaudible 15:25:40) are the two iwi involved and there are the land trusts that you already know.

Q. Yes.

A. And then I mentioned three hapū which are (inaudible 15:25:52). That’s how we would expect to be consulted. Some of those were already on this side as well but that’s again our (inaudible 15:26:07) between us, yep.

30

Q. No, I’m –

A. So, that’s what we would look to, saying, yep, it’s been done properly.

Q. Thank you, that’s helpful. Now, you also talked about a kind of a kick starting of consultation through the Special Tribunal process. Now, I

understand there was a meeting held on the 3<sup>rd</sup> of September 2018. Were you – did you – with an involvement was Kevin Hague the CEO of Forest and Bird and I think Mr Kay was present as well. Were you at that meeting?

5 A. In 2018?

Q. Yeah.

A. Where was that meeting?

Q. In Hastings.

A. Oh, yes, that's right. And that would've been the first time that we engaged, that's right, at the clubs in Hastings, that's right.

10 Q. And so, when you talked about a kind of an attempt at engagement, that's what you were kind of referring to?

A. Well, that's the first time we engaged. And I just can't remember, but Forest and Bird were there.

15 Q. Yeah, Fish & Game.

A. Oh, but, yep. Yeah, so that meeting took place.

Q. Yeah, okay.

A. And that is where we first floated the idea of a section 33 and it was stated that the parties would go away and look at that and they're still suggesting  
20 (inaudible 15:27:25).

#### **QUESTIONS FROM THE COURT: JUDGE DICKEY**

Q. Just one final point appears to me, Mr Steedman. Does the trust have an agreement with Department of Conservation covenanting land use?

A. Yes.

25 Q. It does?

A. Yes, we have a (inaudible 15:28:14) covenant which we signed in about – early 2000.

Q. And what's the term of that, is that 25 years?

A. It's forever but with a review every 25 years.

30 Q. And what do you understand that agreement limits you to in terms of using the land?

A. Well, off the top of my head I know that what we're signing up to there is (inaudible 15:29:02) from that now but that's (inaudible 15:29:07) what we were signing up to.

Q. And what do you think – what did you agree not to do?

5 A. Well, we (inaudible 15:29:20) forestry. We would not be mining. We can plant natives. What else (inaudible 15:29:41). In a general description, it allows us to keep our lands in a near to pristine state because we don't need to look elsewhere for other forms of income. (inaudible 15:30:05) not quite sure of the term now, but it involves a payment from that fund that allows – allowed this trust, our trust Owhaoko B and D, and this is 10 how I've always explained it, to engage with the outside world. You can imagine prior to that we were dealing with income close to zero perhaps 20, \$30,000 a year for 13,770 hectares of land that had no access – for which we had no access. So you can imagine that we weren't doing a lot 15 as a trust. What that fund did is it enabled us to put conservation values to the fore and gave us an ability to engage with the outside world because we had not up to that stage – we were a probably a – we were a very insular entity. We had no money and we couldn't anything. So that was the benefit of that.

20 Q. Well thank you for that, thank you I appreciate that. Thank you for your evidence, thank you for your attendant Ms Ball.

**QUESTIONS ARISING – NIL**

**WITNESS EXCUSED**

**COURT ADJOURNS: 3.32 PM**

25

**COURT RESUMES: 3.46 PM**

**MR ANDERSON CALLS**

**DR IAN FULLER (AFFIRMED)**

- 5 Q. Can you confirm your name is Ian Fuller?  
A. Yes.  
Q. And you attended (inaudible 15:47:47) on 1 October 2020?  
A. Correct.  
Q. And you signed a witness document of eight pages?  
10 A. Yes, (inaudible 15:47:56).  
Q. And you prepared a *Brief of Evidence in Chief* dated 1<sup>st</sup> September 2020 of some 16 pages?  
A. Yes.  
Q. And you also prepared a *Brief of Reply Evidence* dated  
15 27 November 2020 of some 24 pages?  
A. Yes.  
Q. Do you have any corrections to make to those documents?  
A. No.  
Q. Can you confirm the contents of those documents is true and correct to  
20 the best of your knowledge and understanding?  
A. Yes that's my knowledge, yes.  
Q. Can you please remain seated and answer any questions that my friends have.

**CROSS-EXAMINATION: MR MAW**

- 25 Q. Good afternoon, I've been waiting patiently all day. You're fairly late to the party with respect to the WCO and what triggered your invitation to said party was a paper that you prepared and was published in 2020 but the date on the top of the papers, 5 December 2019 and that paper is entitled *An Index to Assess the Extent and Success of River and*  
30 *Floodplain Restoration*. Have you got a copy of that with you today?  
A. I haven't, no.  
Q. And do you recognise this document?  
A. Yes, I do.



Q. And this is a copy of the paper that we were just discussing?

A. Yes, published last year.

Q. The –is the correct date for publishing the accepted day or is it different from the publishing date?

5 A. So, there are three dates you see there. It was originally submitted on the 5<sup>th</sup> of December 2019. It was revised for publication on the 5<sup>th</sup> of June 2020 and accepted for publication on the 8<sup>th</sup> of June 2020. And it was shortly after that date that it would've been published online, and it has since been published with page numbers and documents  
10 (inaudible 15:50:33). So, it's fully published now.

1550

Q. Thank you. Can you now produce that document as exhibit 4?

**EXHIBIT 4 PRODUCED – SPECIAL HISTORY PAPER**

15 Q. Now, in terms of the contents of this paper, the first clues that we can take from what it's about are perhaps found in the title, and it's about using an index to assess the extent and success of river and floodplain restoration. Then the second sentence of the title, "Recognising dynamic response trajectories and applying a process-based approach to managing river recovery." And so, the paper's about restoration and recovery, with an  
20 index to monitor progress in that regard?

A. Yes. To that – yes.

Q. Now, the way my brain works with these is that I like to read the conclusion first and then read it backwards. So, I've gone to the conclusion of the paper to find out a little more about what the (inaudible  
25 15:51:45) is about. And I started on page 11 in the conclusion section. There, the very last sentence states that: "The index provides a first cut" and it's in quote marks, it should say: "Assessment of modifications needed to rehabilitate engineered river systems, taking into account dynamic response trajectories and applying a process-based approach  
30 to inform management of river recovery." Perhaps that's where the title of the paper comes from. So, again, it's a tool to be used as a first cut for assessing restoration and recovery?

A. In this context, yes.

- Q. And in terms of what you mean by “first cut”, you do address that in the paper in the first instance on page 2, and the second, or on the right-hand column, last paragraph on the page there, it mentions the (inaudible 15:53:06) practitioners on the ground, the first cut answer to how the river, which they are tasked with managing, has changed, this behaving would be useful. Is it fair to say that it’s a broad-scale tool in this context to be used as a first cut for those purposes?
- 5
- A. In this context, and the intention in terms of which the article was written, yes.
- 10 Q. Would you then apply in the context of this paper the index to five rivers?
- A. Yes.
- Q. And you looked at the historic aerial photograph record to calculate an index of change from the river in either its unaltered form or the form at which the earliest photographs existed, to a present-day form?
- 15 A. In all but one example, yes. One example used an archive map.
- Q. And over that period of time, you were able to generate an index of change with respect to a range of parameters?
- A. Yep.
- Q. The purpose of which was then to perhaps enable some ongoing monitoring in relation to potential restoration programmes on these rivers?
- 20
- A. The objective was to provide indeed a monitoring index to assess the extent to which the river had been modified over – between the first and second assessment, from the original state of the river, shall we say, from the map, archive map, or the archive photo, and the current state.
- 25
- Q. When you were carrying out that assessment in that context, were you just looking at the first range or the first images available in the current state or did you track progression on the way through?
- A. In this context it was first and last, the first available and last.
- 30 1555
- Q. And further on in the paper on page 11, the end of the first paragraph on that page you discussed – you discuss assessing observed over expected using the NCI as a first cut assessment towards understanding

the extent of modification and requirements for remediation repair or recovery?

**THE COURT ADDRESSES MR MAW – WHERE ARE YOU? (15:55:54)**

**CROSS-EXAMINATION CONTINUES: MR MAW**

- 5 Q. Page 11.
- A. The question was?
- Q. That's a good question. In the context of this paper here, assessing observed over expected using the NCI as a first cut assessment towards understanding the extent of modification and requirements for
- 10 remediation repair or recovery?
- A. That's correct, as written. Yes.
- Q. So it wasn't in this context about maintaining the status quo?
- A. No it was about understanding the extent of – which these rivers in these contexts had been modified.
- 15 Q. Do you accept that what's proposed in relation to this WCO is using the NCI in a different way to the way in which it was used for the purposes of that paper?
- A. Mhm.
- Q. You've outlined in your evidence that an NCI had been used in some
- 20 other contexts, paragraphs 38 to 40?
- A. Yes.
- Q. Do any of those situations involve using NCI in a WCO context?
- A. No, no, the WCO does not apply to those rivers.
- Q. And do we have the examples that you refer to there use the NCI in a
- 25 planning context?
- A. Yes.
- Q. And which are those ones?
- A. All of them.
- Q. And in relation to those contexts the planning context, can you describe
- 30 perhaps using one as an example, how that's been used in the planning context?

A. Yeah so in terms of the Rangitikei Horizons Regional Council have used the assessment that were made and the assessment that was made for that purpose included first and last cut as per the published paper that we've been discussing as well as looking at the changes on a more recent  
5 decadal basis. The Regional Council have incorporated that information, that analysis into their – the scheme review for the Rangitikei River which is in progress.

Q. Being used to inform that process?

A. Yes, correct.

10 Q. It's not being used in a context of a rule and a plan in that context?

A. I couldn't comment on the details I'm aware that the river manager is using the – that work on Rangitikei as part of the scheme review. I can't comment further on the extent of plans or otherwise.

15 Q. And that would be consistent perhaps with some of the language in the paper about using the NCI as a first cut to assist with river management moving forward?

A. Yeah.

1600

20 Q. Now in your *Evidence in Chief* you then go on to describe how the NCI could be used in the context of a WCO and you point out that there, perhaps I'm paraphrasing here, some care would need to be taken in terms of identifying some relevant breaches of a river?

A. Yes.

25 Q. And you'd need to also be careful looking at the time period, and if I can draw your attention to paragraph 45?

A. Yes.

Q. The last sentence there you refer to either sustained period of low flow or a succession of floods could naturally impact on river form?

A. Correct.

30 Q. And does that perhaps give us a clue as to a need to be careful in terms of precisely when measurements are taken?

A. Yes, I think it's important to take into account the context that your reference images are drawn from and ideally the imagery that you would use in an NTI assessment would be air (inaudible 16:01:16) which is foam

at a consistent stage, consistent discharge of the river, to minimise the variability that could be attributed simply to level of water in the channel.

Q. It said that periods of sustained low flow may affect the measurement of the various characteristics?

5 A. I think if you refer to the evidence, the rebuttal evidence, there are some calculations towards the end of that, and tables one through to six which provide exemplars of the perimeters that could be measured in NCI and there variability between essentially a high flow and a low flow period. So, the 2010, the summer of 2010/11, was flowing following a period of higher  
10 flow whereas the summer of 2014/15 and 19/20 was flowing after a period of no air flow, so the type of variability is demonstrated there. So, yes, the immediate antecedent flow conditions will have an impact again which is why it is important to take the measurements as far as possible at a consistent flow and at a consistent time of year. And summer, or end of  
15 summer, would be an ideal time in terms of consistency, it's – if you're looking at full monitoring to monitor change it's important that you use a consistent based science.

Q. And again in terms of monitoring change, that's really the purpose of the tool, it's a tool to monitor change over time?

20 A. Correct, yes.

Q. And it looks backwards doesn't it, it doesn't look forwards?

A. It doesn't, no, it doesn't predict – it tells you about the change that has happened, observed, over expected as it were, from time one to time two.

Q. So, we've discussed two situations where there might be some natural variation in the various perimeters, being either sustained low flow to a  
25 succession of floods, are there some other natural events that may lead to some variations?

A. Potentially, I mean, you could have catastrophic natural events, natural disasters which may reset channel (inaudible 16:04:27), there was a  
30 reference to volcanic eruption and input and, should that happen, that would have a significant impact. The probability of such an event is very low of course, it's much more likely that (inaudible 16:04:39) of the channel system would be affected by a more significant flood.

Q. Now in your *Evidence in Chief* you set out some values which could be used in lieu of an assessment, because at that point in time you hadn't provided an assessment as to what the perimeters might be?

A. Right.

5 Q. Again, I suspect because of the timing of your involvement in this matter, and at that point in time you had made some recommendations around the percentage level of a change or decline that would need to be exceeded before there would be an (inaudible 16:05:35) decline in natural character and you captured that at your paragraph 47 and had referred to a 15 percent change which was the median and no more than  
10 40 percent change in an individual component?

A. Yes, as per – in just a note that reflected our current understanding of (inaudible 16:06:00) application would refer you to the rebuttal evidence and the exemplars in terms of the (inaudible 16:06:09) and in terms of the  
15 proportions, the percentages, the decline that we would be – it would be suggesting. That's on page 16 of that evidence at paragraph 62.

1605

Q. We will most certainly make our way to there but thank you for drawing attention to that. In your evidence-in-chief, so at that point you haven't  
20 actually carried out that assessment, but you did provide some evidence as to how the assessment might usefully be carried out?

A. Yes.

Q. And you noted again there that the values would need to be refined by assessing the NCI and sample reaches using aerial photography before  
25 and after a sustained dry period and before and after a significant flood event?

A. Yep. In fact, if I might – to clarify that, that is again to understand the natural variability in terms of the perimeters and to understand the impacts of high flow, low flow events.

30 Q. So, in a sense to set the boundaries within which natural variation they occur?

A. Yes, absolutely, yep.

Q. And you also noted at paragraph 58 that measurements should be made within coherent reaches of the river?

A. Sorry, say again?

Q. Your paragraph 58, you recorded that measurements should be made within six coherent reaches of the river?

5 A. Yes, that was a suggestion, the proposal. And I think there's – just referring, the six coherent reaches, I think I've referred to earlier in paragraph 34, page 11. Those represent – sorry, there was a question earlier this morning to regarding reach and I would define *reach* in this context as a (inaudible 16:08:19) length of river which has persistent characteristics and so you'll see the six coherent reaches, Omahaki to 10 Whanawhana to Matapiro, Matapiro to the top of the (inaudible 16:08:38), on top of that (inaudible 16:08:40) then to Fernhill bridge, Fernhill to Chesterhope, Chesterhope to (inaudible 16:08:45). Simply the purpose of that statement is to say that these are the coherent reaches. Whether or not the NCI would be applied on all of those would be a matter of 15 discretion.

Q. And whose discretion should be that, should that be?

A. That's a good question. I suspect it would be at the discretion of the Court to describe which reaches are most important in the WCO. My advice would be to focus on those reaches which are most likely to evidence 20 change. So, the most sensitive reaches then would be actually the reaches that we've done analysis on, again in the – as I've been referring to, to these tables. So, that's Whanawhana to Matapiro, Matapiro to the top of the (inaudible 16:09:56), the top of the (inaudible 16:09:58) to Fernhill bridge. The others rivers, the other segments, the other reaches 25 being of a confined nature, either naturally or artificially, are not likely to show any change, significant change because of that confinement, whether it be natural or artificial. So, my advice would be to focus on the less confined reaches where adjustments can take place.

1610

30 Q. (inaudible 16:10:35) on your evidence in chief, you go about 49, you make a recommendation as to the frequency of monitoring which should occur, and who is it that should be doing the monitoring?

A. I believe Hawkes Bay Regional Council are tasked with environmental management of the river, and I would imagine it would be in their interest

to make those assessments. However, it may be that other bodies, agencies would be in a position to undertake that analysis, that assessment.

5 Q. WCO can't require a council to carry out particular monitoring, though, can it?

A. I'm not familiar enough with the details of the WCO order, the law, and so forth.

10 Q. All right, having prepared and filed your evidence in chief, it's fair to say that there was some criticism made of the evidence by other experts, and you sought to address that criticism by filing some rebuttal evidence. And in that rebuttal evidence, you took the subsequent step of seeking to calculate a set of values that could be used in an order?

A. Yes.

Q. And you did so for three stretches of – three reaches of the river?

15 A. Yes.

Q. And you undertook that task by looking at the previous 10 years' data, as I understand, with respect to each of those three reaches?

A. Yes.

20 Q. In your opinion, does a 10-year period give a sufficient range within which to calculate the natural variability that might occur with respect to the parameters that you are seeking protection for?

25 A. The – in actual fact, just to correct you, it's 10 years and five years. So, there's the data, the aerial photos were collected in 2010-11, 2014-15, and 2019-20. So (inaudible 16:13:07) years you could, in terms of the (inaudible 16:13:09) you could look at 10 years. So, five years, I think, was my suggestion in the evidence in chief, and we presented evidence here for five-year intervals, being the ideal, I think.

30 Q. So, back to the question, the question that I put was – and I'll reframe it into the five-year period, does the five-year period give sufficient time to identify the natural range of variation that may occur within a river system?

A. Yes, I believe so.

Q. Within that period, did you identify any significant flood events?



A. Well, yes, as I referred to earlier in (inaudible 16:14:02) the hydrograph at the appendices, where significant flows are identified during the time of aerial photo collection. And as I mentioned, there is a flow, 884 cubic metres per second, during the 2010-11 collection phase, whereas the  
5 lower, much lower flows during the subsequent phases of photo collection.

Q. And did you look back at the historic hydrograph of the river to put into context the flow of 880 cubic metres?

A. Not in that immediate context, no, so it was just simply, you know, the  
10 flow, the stage at the point of aerial photo collection in this context, with one, one could do that, one could analyse the, or look at the flood sequence.

Q. And that may result in a wider range of variation and thus a change to the index?

A. Potentially yes, potentially. If you have a flood-rich phase there may be  
15 more, a greater degree of dynamism and I think, so just coming back to the question of five years, under shall we say normal conditions, five years would probably be appropriate but if there is a flood-rich with a succession of large floods changing the morphology of the river additional  
20 assessments could be made to assess the extent to which the morphology was changing in response to those larger flood events. So, it's important to understand that the river's respond to flood-rich and flood-poor phases, linked particularly with climate episodes, climate phases, climate changes.

25 1615

Q. So, you mention climate change. How have you factored in the potential for climate change to affect the index in your setting of the parameters?

A. Well, as I say normally five years would be, should be fine, should be  
30 acceptable, reasonable. Exactly what or how the climate change affects the Hawke's Bay Region, there have obviously been predictions for (inaudible 16:16:32) extremes, particularly drier summers, clarity of (inaudible 16:16:38) but punctuated by episodic storm events. As we mentioned earlier, it's not a forecasting tool it's a tool which looks back at the changes that have happened over time between successive periods.

So, five years would be in the first instance and that could've been reviewed subsequently, and if as I say, if there were significant events I would anticipate that a collection of data following a significant event should be performed within that five year period.

5 Q. So, in the event that some of these events occur, so the more extreme events, would you agree calculate the parameters to set the out-of-bounds of what's happening in terms of change?

A. I think, again it's a question of looking at the parameters, looking at how they're changing, and tracking them, understanding that natural  
10 variability, and understanding the behaviour of the river better.

Q. And again that reflects the use of the NCI as a measuring tool?

A. As a measuring tool, as a monitoring tool, yes.

Q. Now, having calculated some parameters which reflect the natural degree of change preserved over the proceeding two five-year periods, if I  
15 understand that correctly, you've recorded those parameters and encapsulated them in a table in paragraph 64 of your rebuttal evidence?

A. Yes.

Q. And there you have drafted a clause to be inserted into the water conservation order?

20 A. Yes.

Q. Now, before I go to far with this questioning, I'm assuming that you've drafted this clause here. So, you've put it together and can answer some questions on it, in terms of how it might work?

A. Yes, within – yes.

25 Q. Right, so this is a clause which you recommend to be inserted into the WCO and in terms of how a water conservation order words, it places some restrictions on the council in terms of what it can do when processing resource consents.

A. Right.

30 Q. So, section 217 of the Resource Management Act says that, I'm paraphrasing, the original council can't grant a resource consent contrary to a water conservation order?

A. Mhm.

Q. And that, the essence of that is then captured but in the context of these details, in the way that you've drafted this restriction. So, here you say that no consent may be granted or (inaudible 16:20:03) included in the plan, that would have the effect of these parameters being exceeded?

5 A. Correct, yes.

1620

Q. So when somebody, an applicant comes along to apply for a resource consent, to undertake an activity that may or may not have an effect on either average channel width, grading index or the area of unvegetated bar in the river, that applicant will need to prepare an assessment for the environmental effects?

A. Yes.

Q. And in that assessment they will need to somehow predict whether their activity is going to exceed these thresholds set out in the WCO?

15 A. Mmm.

Q. Now we've heard from you that the NCI can't be used as a predictive tool and what I'm struggling to understand is how does an applicant go about that exercise when the purpose of the NCI tool is a measuring and monitoring tool not a future predicting tool?

20 A. So attention would be need to be made towards the parameters that are being measured so grading index, for example, vegetated, unvegetated bars, channel width and say for example a resource consent is submitted or whatever to plant adjacent to the river within the active river bed then it could be – it can be inferred that that will – is likely to have an impact on active channel width and area of unvegetated bar. So that would need to be taken into account. So if the activity is likely to adversely affect the morphology of the river then it should not be granted.

25 Q. Now there's a fair bit of that answer that I might just need to unpack so we might just need to step through that. So you would anticipate that an applicant will assess the effect that their activity would have?

30 A. Mhm.

Q. They wouldn't be able though to calculate the precise effect it would have on the NCI, that's a thing which will happen later when the measurements were taken?

A. That's right so the NCI is – yes, you're right in terms of monitoring what's happened over time. Yes. But in terms of the activity and I think the effect of that activity could be understood to be likely to have an impact on the morphology. The NCI is not the tool in that sense to predict that. It's –  
5 as we've said it's a monitoring tool to assess the changes. So I guess in terms of a realistic scenario, consent shall not be granted where it's likely that the parameters that are being assessed by the NCI would be likely to be adversely affected beyond those scores.

Q. Which we can't predict?

10 A. Which we can't predict but we should be able to infer if there is – someone with expertise within the applicant or the agency granting the application should understand the dynamics of the river and be able to understand the likely impact of say gravel extraction, planting, narrowing and so forth.

Q. Now when you – you understand that the Hawke's Bay Regional Council  
15 undertakes some beach raking in various stretches of the river?

A. Yeah. Yes.

Q. Does any of that beach raking occur within the areas that you recommend it to be included in the order?

A. I understand it does, yes.

20 Q. So when you look at that beach raking I understand has been occurring since 1999 give or take, and so it was occurring over a period of time that you calculated the parameters for the index (inaudible 16:24:43)?

A. Yes.

Q. The Regional Council and the purpose of the beach raking is to ensure  
25 that (inaudible 16:24:53) weeds and invasive weeds species don't take hold at those reaches of the river, the consequence of which is that the beach raking will be influencing the calculation of these parameters? Sorry, I didn't catch –

A. There will be influence in the parameters. By clearing the bars of  
30 vegetation, keeping the vegetative bars, sorry, keeping the bars clear of vegetation, yes, I guess that would be maintaining the morphology of the river, maintaining the nature of the river in its current state.

1625

- Q. So, if the Regional Council was to stop the beach raking, then the parameters that have been calculated would accurately reflect the natural variation that would be occurring?
- A. It would depend if other ways at managing weeds were adopted.
- 5 Q. But again, the WCO can't require the Council to adopt other methods, and nor can it require the Council to continue its beach raking?
- A. Right.
- Q. Now, staying with your rebuttal at your paragraph 48, you make an observation in relation to some live edge projection works undertaken by the Regional Council, and you attach some photographs in your evidence. And when I look at those photographs, there's no scale on those to really calculate what area or distance we're looking at?
- 10 A. No, there isn't. That is an oversight. I guess the Google Maps gives an option to zoom in to look at in a live context. Those are willow poles that have been planted, so an estimation, an approximation of the scale could be made in terms of those dimensions, or you could go to Google Earth and look at the site to get a better impression of scale.
- 15 Q. Yes, what I'm grappling with there is, I can't see the full width of the river there to provide some context for how much encroachment there is into the (inaudible 16:27:37) channel, not that I'm suggesting the planting –
- 20 A. If you go to Google Maps there, you'll be able to find that location.
- Q. So, the location that you've identified in your figure 3, was that in an area where you've calculated an NCI value?
- A. Yes.
- 25 Q. And so, you've taken into account in that calculation the narrowing of the river and that being one of the natural processes, such as it is, which occurs?
- A. Well, in terms of the width parameter, there is a small change there in width as a result, yes.
- 30 Q. Do you accept that the Regional Council has functions in addition to managing riverbeds, and there are different purposes for which regional councils have to manage riverbeds?
- A. Yes, in terms of flood management, is my understanding, as well as habitat.

Q. And your understanding is that the planting that you're referring to here is part of the flood management activities of the Council?

A. I imagine it would be part of erosion control, trying to maintain the width of the fairway there. The point of that is that there is potential for encroachment into the active river channel bed.

5

Q. So, when you think about that and you think about the beach raking that's taking place, the river's winning as a result of the Council's involvement, isn't it?

A. Sorry, say again?

10

Q. So, the Council's undertaking a range of activities?

A. Yes.

Q. It's undertaking some flood protection works?

A. Yes.

Q. It's also undertaking a significant beach raking activity –

15

A. Yes.

Q. – to remove invasive weed species?

A. Yes.

Q. And the area covered by the beach raking is significantly larger than that covered by the live edge protection?

20

A. Yes, it would be, I imagine, yes.

1630

Q. I want to understand now some of your evidence dealing with changes in flows on the river and potential effects on braiding characteristics et cetera. I want to start at paragraph 45 of your rebuttal, and in the middle of that paragraph you note that because the Waitaki clearly has been significantly affected by modest changes in the flow regime, do you have a good understanding of the Waitaki River?

25

A. I have a reasonable understanding of the Waitaki River from what I have read, I have not conducted research on the Waitaki River.

30

Q. Part of that sentence that caught my eye was the description of that river being one subjected to modest changes in the flow regime, are there a number of dams on the Waitaki?

A. Yes, that's right, yes.

Q. In fact it's probably one of the most dammed rivers in New Zealand?

A. Yes.

Q. And it would be one of the rivers in New Zealand where the flow has been most significantly modified as a result of those dams?

A. Yes, there has been modification, yes.

5 Q. Just in terms of the scale of, in terms of how you describe that modification, that – in your professional view, that’s a modest change in a flow regime?

A. In terms of the way the flow is modified, the tops of the floods are, are taken off, generally speaking, and that reduces the frequency of, I guess, 10 the more moderate floods that can rework the bed of the river. It won’t stop the very large floods, but it will have an effect on the more modest channel forming floods as a consequence.

Q. And is the effect of damming the main stem of that river that’s affecting those modest floods?

15 A. Yes, yes that’s right.

Q. Now I want to take you back to your *Evidence in Chief*, if you have that handy, in paragraph 53 there you state: “It’s imperative to protect flows above 3-3.” Have you calculated what the number of 3-3 flood events are each year within the Ngaruroro River?

20 A. No, I haven’t.

Q. Have you conducted any analysis as to what level of abstraction would cause a material change in 3-3 flows?

A. No, I haven’t conducted any hydrological analysis, my evidence is focused upon the (inaudible 16:33:40).

25 Q. Thank you Professor Fuller, no more questions.

### **CROSS-EXAMINATION: MS ATKINS**

Q. Good afternoon, is it Dr Fuller or Mr Fuller?

A. Professor.

Q. Professor Fuller, beg your pardon. I just heard him say that just then, 30 went in one ear and out the other. I just wanted to ask you two questions, and the reason I wanted to ask you them was because they are matters raised in the evidence, or supplementary evidence, of Dr Keesing who I

think you met at, or you might have already known, that you were at the joint witness conferencing session with him?

A. Yes.

5 Q. So just, again, a similar style to the way was asking questions of Ms McArthur, what high level (inaudible 16:34:56) just to bring us back to some first principles, do you agree with Dr Keesing's evidence that the NCI doesn't provide sufficient information on the quality of habitat, to be a habitat index? I ask that question because in your evidence-in-chief, and this is what Dr Keesing's referring to, you talk about something called  
10 a *habitat quality index* as being one in the same as an NCI.

A. Right, yes, so that's simply a matter of (inaudible 16:35:35). So, habitat quality index was a term which was required of us to use instead of NCI or natural character index by a particular journal during the earlier days, and so I made the point in terms of referring to habitat quality index to  
15 simply – I clarified that these are one in the same, NCI and HQI are one in the same as observed over expected.

1635

Q. That's what – my understanding. So, when Dr Keesing says that an NCI does not provide sufficient information on the quality of habitat, do you  
20 agree with what he's saying there?

A. Well, in my paragraph 16, I agree that – with his assertion that the NCI (inaudible 16:36:38) snapshot of that difference. It is not the intention to use the NCI beyond an assessment of the natural character and physical template for river habitat.

25 Q. So, I think you are, you and him, are saying the same thing, perhaps in a slightly different way. But you're both agreeing that the purpose of it isn't to provide information on the quality of habitat?

A. At the (inaudible 16:37:07) scale?

Q. At the (inaudible 16:17:09) scale.

30 A. Oh, yes at the (inaudible 16:37:11) scale –

Q. At the scale that Dr Keesing has done and the other ecologists have done their assessment?

A. Yes, the NCI is at a larger coherent reach scale.



Q. And just to clarify, because I don't think it's got lost in translation but I just think we just need to all be clear, that it is not your evidence that the NCI measures outstandingness, that is not its intention?

A. Correct.

5 Q. So, in his supplementary evidence, Dr Kessing on that issue of outstandingness says that it doesn't assist the Court in forming its view or just making a decision on the issue of outstandingness. So, you'd agree with that as well, it's got a different purpose altogether?

10 A. It – yes, the NCI is for monitoring. It isn't for assessing whether a river is outstanding or not.

Q. I just wanted to make sure we've kind of finished on that sort of more big picture note and the questions I had around the condition, the clause in the order, Mr Maw's already asked you about those, so thank you.

**CROSS-EXAMINATION: MS BLOMFIELD – NIL**

15 **CROSS-EXAMINATION: MR GARDNER**

Q. Good afternoon, Professor. I'm only working off your paper. (inaudible 16:35:56). You've got that in front of you still?

**WITNESS REFERRED TO COMMON BUNDLE**

20 Q. You haven't had much chance to not have it in front of you, I suppose. Now, it's true to say this – well, it may not be true, you can confirm or otherwise. This paper, it derives from some work you did in the Wellington region in about 2014 on some rivers in Wellington, is that correct or?

25 A. From a range of locations. Some of it was from the Wellington region. Others was from the Rangitikei, also Motueka and colleagues contributed from overseas.

Q. Work started in about 2014, is that accurate, (inaudible 16:39:35)?

A. I would need to check –

Q. I think I saw that somewhere, (inaudible 16:39:39). But just a rough –

30 A. That's in table 1, 2006, 2016, 2012, Waikanae, photos from 1952, 2010, 2016 and 2017. So, yep.

Q. So, roughly (inaudible 16:39:59) been in the last sort of few years, it's relatively recent in other words, this concept?

A. Yes, the time periods are specified in table 1 on page 4 of that.

1640

5 Q. And so, this paper you've had published is really the first time this concept of NCI has been aired?

A. In the international literature, yes. It was published – well, an earlier version was published in a proceedings, conference proceedings volume, a couple of years prior, 2016 or so. So, this is the first international, yeah.

10 Q. So, relatively recent, and there hasn't really been in that time much opportunity for somebody to come up with something that might criticise it or counter it or that sort of thing?

A. Well, this index is built on a number of other indices which have been developed in Europe, in Australia, and those are identified in the introduction to the paper. So, this is a refinement, a development of a tool, and the intention of this index is to build on those other approaches and make an approach which is more easily used and utilised by non-specialists, with minimum investment of time and resource, using aerial photos as opposed to detailed field measurements.

20 Q. So, would it be fair to say that there may be some criticism in the future to it, such as we've heard, such as you have from Dr Keating and others, and that there may be some criticism coming in the future (inaudible 16:41:58).

A. As is the nature with any research article, one would expect criticism and development and discussion. That's the nature of research and science and publication.

25 Q. So, it's the nature of science that there would be some criticism coming up. So, it's really – it's not – it's a technology that's really (inaudible 16:42:23), I guess you'd say. Is that accurate?

30 A. No, I don't think that's accurate at all. I think technology, the technology in terms of the aerial photos is there and has been demonstrated and used in geomorphology for decades.

Q. Well, we'll come to that in a moment, but perhaps we'll phrase it this way, by saying do you think the Court should be cautious in applying the

methodology, given its – particularly with the paper on it is relatively new and there is some criticism of it, even within this – the experts who have given expert in this court? Perhaps the Court should be a little bit cautious in –

5 A. I don't think there's any need for that level of caution. As I say, the index is using a proven resource in terms of aerial photos. It's using – it's coming out of a stable of tools, monitoring tools, that have been published in the scientific literature over the last decade or more. It's using principles that were introduced into the research literature back in 2005, 10 which is the concept of the erodible corridor and giving the river room to move. So, it is very much grounded in established, good practice and established scientific evidence. So, whilst it is a new way of using that evidence and putting the tool in the hands of practitioners, I do not think it poses a risk in any way.

15 Q. So, the tool is relatively new, is that what you're saying, or elements of the tool are new, is what you've just told me?

A. Well, the NCI as the NCI, a discrete monitoring tool, in itself, observed (inaudible 16:44:19) is a new approach, but it is grounded on, it is built on a foundation which is well established.

20 Q. So, if a practitioner came to apply this tool, I think one of the – well, perhaps I can start at the end and say it looks to me, just sitting back here looking with my colleague here, looking at it from the point of view of a policy analyst, we're looking – we're saying to ourselves: "Isn't this just a little bit subjective in its approach?" What do you say in response to that?

25 A. Not at all. I think the advantage, or the strength, of this approach is its objectivity, because the parameters that you would use that are relevant for your river that you're working on you're measuring those in an objective way and you're producing an objective ratio between the parameter at time 1 and time 2, so you're not – it's not involving subjective 30 interpretation.

1645

Q. No I'm sure it's not intended to, but I – if you could just take the example on page 6 of the paper, in table 4, where you talk about bank full width? Table 4.

A. Table 4.

Q. So it's the third item down is bank full width.

A. Yeah. Yes, (inaudible 16:45:52) channel (inaudible 16:45:54) unvegetated – yes.

5 Q. Bank (inaudible 16:46:00) doesn't appear in table 3 on – it maybe selected for the (inaudible 16:46:05) River, but it does for the (inaudible 16:46:09) River, that's – so there's a little bit of subjectivity or – and what parameters are selected is there not?

10 A. So the parameters that would be measured would be assessed as appropriate for the reach and as appropriate for the nature of the river. So one would not use a sinuosity index on a graded river and similarly one would not use a braided index on a meandering river. So – in that sense, if that's what you mean by subjectivity in terms of which parameters you measure –

15 Q. Well there's – this discretion there's a judgement to be made, an assessment to be made as to what parameters to use for a start, so –

A. What is appropriate, you would use what is appropriate for that river and that would be an informed judgement made by the practitioner.

20 Q. But if we're looking, just taking this bank or width, we need to establish what that is, is that the width of the river between the banks?

A. Bank top to bank top.

Q. Bank top to bank top. So bank to bank. But all rivers have banks don't they?

A. Yes.

25 Q. So but bank fill doesn't appear – the Motueka River doesn't appear to have banks according to this table, is that –

30 A. The – that's – we didn't use the bank full width we used the active channel width as opposed to the – they are essentially one and the same. So the active channel is the area for the channel between the banks which maybe vegetated, unvegetated, wet, dry.

Q. All right, so again a judgement to be made there as to whether bank fill or active channel but coming back to bank fill with back to bank, are you aware of a considerable amount of litigation that's been in both this court, the Environment Court and in the High Court as to where the banks of the

river are? Are you aware of that litigation? There's been considerable contention as to where the banks are, so one (inaudible 16:48:30) different experts differing as to where the bank should be and –

5 A. I am aware that there is discretion. My definition would be morphologically different.

10 Q. Being in amongst the river morphologist I think there's some differences there, so one person – one morphologist might say it's such and such and another saying well no the banks are here and it's somewhere else because I think some of this litigation the banks aren't – where the banks are isn't at all clear so it's no real distinctive banks in some cases, that's the reality of it, isn't it?

15 A. Yes, I'm not familiar enough with the debate to be able to comment in detail but I would as if – my understanding of (inaudible 16:49:18) morphology is that a riverbank is a morphological feature and so it is a – it's defined based on the cross profile of the river and the river corridor, shall we say the flood plane as a whole and the bank top is where you have that break in slope between the flood plane and the channel corridor. And so that's on one side and then on the other side you have a similar breaking slope. So that –

20 Q. Yes I understand that.

A. – that would be the conventional. Text book definition of a riverbank is a breaking slope.

1650

25 Q. But if there's problems with the width of a bank, there are also going to be problems in (inaudible 16:50:09) the extent of a floodplain, now, aren't there, that may lead to some differences amongst the morphologists?

30 A. In terms of where the floodplain ends and begins, I guess there are – there will be matters of conjecture and dispute. And what floodplain are we talking about? Are we talking about the 10-year floodplain, the 50-year floodplain, the 100-year floodplain, the 500-year floodplain, the 1000-year floodplain?

Q. A good choice of floodplains to pick from?

A. There's a range of floodplains that we could refer to, mmm.

Q. There's only one in the table. That's all I have, thank you, Professor Fuller.

**CROSS-EXAMINATION: MS MAUGER – NIL**

**CROSS-EXAMINATION: MR KARENA – NIL**

**5 RE-EXAMINATION: MR ANDERSON – NIL**

**QUESTIONS FROM THE COURT: COMMISSIONER MABIN**

Q. Just sort of picking up on the question of the bankfull width of the channel and the active channel width, which goes to the table where you've got "active channel width", just referring to the – I think I heard you say that  
10 basically active channel width and bankfull width are roughly the same?

A. One and the same, yeah.

Q. Similar measures. So in table 4 of your paper for the Erbo River –

A. Ebro River.

Q. Ebro River, you offer, you give active channel width and bankfull width?

15 A. Yes.

Q. They're very different.

A. That's true, they are. So, in terms of the – I'm thinking that that – that's a very good point. In this context, in the Ebro River, let me just check the Ebro River... so, my colleague will have distinguished between bankfull  
20 width and active channel width in that context. And I'm thinking that the bankfull width – yeah, I'd have to – let me just read that through again –

Q. It doesn't matter. For the purposes of what I want to say next, it doesn't matter too much.

A. Right. That is a product of – it may be a product of the Spanish  
25 interpretation that's got lost in translation, that I've missed, and so, that could well be an error on my part.

Q. So, let's go to the table in the water conservation order at 9.4, where your proposed table with the various NCI scores –

A. Right.

30 Q. You have a – the first one there is "average channel width"?

A. Yes, average channel width.

Q. So, what is that?

A. What does that mean, active channel width?

5 Q. Is that the width of the channel, or the – or something that's more like the bank to bank, which might be the bankfull?

A. So, that's – so, the active channel width is between the vegetated edges of the channel, so from the active gravel, effectively, where the river is reworking. You've got the – it comprises the unvegetated bars, and it comprises the wetted channel. So, that (inaudible 16:54:10)

10 Q. I think in a Canterbury context, where I come from, it would be called the fairway?

A. Probably. I'm just trying to think in some contexts whether the fairway would also include the adjacent vegetated bars and berms. That's the only – my hesitation would be if the fairway includes the berms, then that's not intended in the active channel width. So, the active channel width does not include the berms adjacent to the river, the active channel.

15 Q. So, turning this – operationalising this, some suitably qualified professional working out for the purposes of a resource consent application what the average channel width is at the specified cross-sectional locations, how accurately does that edge need to be defined, what's the measurement that can be accepted in that?

20 A. I think the, well that all depends on the quality of your aerial photos in terms of the areas associated with that, but we can – in terms of pixel size and so on we can be fairly precise with very high resolution imagery, so

25 –  
1655

Q. Yes, I can think of situations where Willows might have been planted over the, along the bank of the river, and you can't see under the canopy to where the bank actually is and there might be, you know, a Willow tree, it might be 5 metres across, so is it, you know, plus or minus 2 metres?

30 A. Well if you are measuring a consistent location, so again, as an earlier discussion, the locations that you would be measuring your active width from should be consistent between dates so that if you have gone over, overhanging (inaudible 16:56:07) strip, that that is accommodated in that

sense so that you are taking the same location to define your (inaudible 16:56:19) channel width.

5 Q. Willows can loose their leaves also in winter, so you get a better – if your aerial photography happens to be in winter, your width is going to be, look, be much more accurate –

A. Well that's –

Q. – measure?

10 A. Yes, yes, that's true but as I said, you know, the idea would be, you know, you'd take your measurements at the same per – same time of year, so that you don't have those sorts of variables.

Q. So, staying on that line of your table, you're allowing across there a point 7, point 2, point 1 variation in the NCI score, what does that – what would that likely translate into, in terms of metres on the ground given the width of the channel that you'll be familiar with?

15 A. Yes –

Q. – assessed?

A. – so you'll be looking at probably, let's say, a couple of metres maybe, a metre perhaps, one or two at most.

20 Q. So that gets back to my original point, how accurately does that have to be assessed for you to be able to detect the signal amongst the –

A. Yes.

Q. – amongst the measurement error?

A. Yes, yes, yes and I think –

Q. You're only allowing a 1% change in one case?

25 A. That's right but that's, as I say, if you're using the same locations then you should be able to measure to that level of precision using the available imagery, that should be feasible which again is why it's important to use consistent flows, you know, take your measurements at consistent flows, at consistent times of year, at consistent locations. So  
30 it will be important to establish, you know, lengths or widths, shall we say locations where you are measuring those widths and that's where you measure and if you – the problem then becomes if you deviate between those locations, you may – that's when you may introduce the sort of errors that you're referring to, so that's why it would be important to – if



you will, you know, benchmark the locations where you take the measurements.

Q. Are you aware whether the regional council already does cross-section monitoring?

5 A. Yes they do measure cross-sections and they'll use the benchmarks to repeat surveys along those sections, yes.

Q. Would that be an appropriate place to set up your NCI monitoring?

A. Yes, it would be a start. I would suggest that possibly a greater frequency may be required, I'm not familiar with the spacing of the cross-sections exactly in the Hawke's Bay, is it 500 metres?

10

Q. I found – in front of me I've got a map which I found of what they do –

A. Right.

Q. – and I can't, there's probably about a kilometre spacing (inaudible 16:59:39).

15 A. I would say it plumages to distant, I would say (inaudible 16:59:48) we've been using a couple hundred metres (inaudible 16:59:51) metres.

Q. So, would you think it appropriate for you to identify the cross-sections that should be the number of cross-sections in each of these sub-breaches that should be –

20 A. It wouldn't necessarily have to be –

Q. – measured (inaudible 17:00:03)

A. – I could but it wouldn't necessarily have to fall to me to do that. Someone who is familiar with the river would be able to identify appropriate points and spacings without any problem. Again, that is the utility of this technique, it doesn't require highly specialised user, in that sense.

25

1700

Q. Yes, I can see that, yes. I can see that. Changing tack, you've heard a lot of mention of the Ngaruroro being a braided river?

A. Yes.

30 Q. I'd be interested in your definition of what a braided river is to a fluvial geomorphologist like yourself, and, obviously, do you think the term is being used consistent with what you would define it as?

A. Yes, for the most part. So, my understanding of a braided river is one that is multi-threaded, with those wetter channels separated by bars,

active bars, mid-channel bars. And that's what I see in reaches – not all, not throughout the entire length of the Ngaruroro, but certainly there are braided reaches, braided segments of that river. And the river is – where it – so, downstream from the lower gorge and where confinement allows, the river is – would naturally be in a braided form, with the exception of the lowermost part of the river, where the channel is a single thread as it flows out to the coast.

5

Q. So, when I was looking through your evidence in chief, and I can't remember exactly where, but it seemed to me that actually only, in terms of, presumably, the way you define it, that there wasn't very much actual braided river in terms of the tight fluvial geomorphologist's definition, that a lot of it was semi-braided or, I don't know, just some of it a wandering gravel bed river, or ... ?

10

A. There are reaches which would be all of the above, yes. There's a mixture, a plethora of river forms on the Ngaruroro from the source to sink, according to the boundary conditions that allow the river to develop into its equilibrium form at that particular point along its course.

15

Q. And you're quite welcome to tell me I'm splitting hairs, for the purposes that your NCI is put to, it doesn't really matter? Does it really matter whether it's a braided river or not?

20

A. No.

Q. It's a gravel bed river; there are multiple channels in it; it's unstable (inaudible 17:03:02)

A. Well, again, coming back to the paper that's been referred to, the rivers that the NCI was used on ranged from braided, as the Motueka was, through to meandering, as is the Ebro, and through to anastomosing, which is in terms of the Sava River in Croatia. So, again, the tool can be used on any type of river. It is a monitoring tool to assess change in that river form from time 1 to time 2, and it doesn't matter what the nature of the river is. It's looking at monitoring the changes from time 1 to time 2.

25

30

Q. So, it's a two-dimensional assessment?

A. Yes. It is two-dimensional, yes.

Q. What about the third dimension? What about bed level change?

A. I could ask, “What about bed level change?” in terms of – no, the NCI doesn’t, it’s not tailored to pick out three dimensions and volumetric changes. A full three-dimensional morphological budget could be constructed for the river using high resolution satellite techniques, LIDAR, for example, or structure from motion photogrammetry can be used to produce models of the river, the active river, the active channel, the bare gravel and the wetter channel. And a morphological budget could be built. But that’s way beyond the scope of the NCI as a monitoring tool.

1705

10 Q. So, if, say for example, a river (inaudible 17:05:08) –

A. Yes.

Q. – (inaudible 17:05:10), what would that do to the NCI score?

A. That would increase the, likely, I would say, likely increase the (inaudible 17:05:19) index. It would likely increase the area of unvegetated bars. It would likely increase the channel width. So, that would be picked up the NCI and there would be a positive change in those perimeters.

15 Q. And if the bed was degrading, (inaudible 17:05:42)?

A. Would reverse, yep. So, there – likely to be a reduction, yeah.

Q. So, do you know whether the Ngaruroro is doing either of those?

20 A. To be honest, I don’t know what the status of the bed levels are and what the trajectory is. I do know that gravel is extracted and that that has had an impact on the river form from the 1950’s to the present. But what it is today and the trajectory today, I can’t comment on.

Q. So, you think that a five year gap between the aerial photography is suitable?

25 A. Yes.

Q. So, is that designed to pick up, you know, a natural trend in the way in which the NCI might be varying?

A. I think five years, it provides for a regular assessment without letting things get, you know, if there is a degradation, without letting the degradation go too far or too long (inaudible 17:07:08) for intervention in a timely manner. I think a (inaudible 17:07:13) assessment, you know, every 10 years may be too long. But as I mentioned, it does depend the flood regime and flood richness of the environment.

Q. So, would one of the purposes of this regular photography assessment be to separate that signal from the noise, so you've got a noisy natural environment where the NCI is dropping backwards and forwards depending on floods and things, and you're trying to detect a 1% change in that?

5

A. Mhm.

Q. How much data would you need to be able to know that your – that the NCI score that you detected in your measurement was actually real, that it was outside the trend of natural variability?

10

A. So, that's where the figures are useful in terms of page 17 of my supplementary rebuttal evidence. So, those provide the range of natural variability based on the last five year assessments which includes a big flood. So, that's the – those are the natural ranges one would expect in this river at this time (inaudible 17:08:41). So, changes with those limits could be argued to represent a degradation as a consequence of over extraction or whatever it might be or planting or intervention in some form or other.

15

Q. Your 2010/11 imagery was acquired shortly after an 800 cubic flood event?

20

A. Yes.

Q. And so, that would have presumably flushed out the riverbed and made it look – given it really, you know, NCI scores?

A. Yes, it would've done. Which is why the extent of change following that event that year is much bigger as a consequence. So, that really is why we need to set the – so, that – have an understanding of the natural variability and as we've got here, making an assessment of that natural variability, so the changes in those so the changes in those widths, so, on paragraph 65, changes in the brady index of up to 22 per cent, changes in unvegetated by-area of up to 14 per cent would be construed as being within the natural range of variability.

25

30

1710

Q. So, what's the key driver of NCI, in your view, NCI change? What's the key thing that makes it different, makes (inaudible 17:10:30)?

- A. So, river – is a holistic assessment of river morphology. So, river morphology, or geomorphology, responds to a variety of boundary variables, effectively. So, these are natural; these are artificial. So, naturally, floods and the magnitude and frequency of floods, artificially, then, gravel extraction, vegetation, plantings and so on, confinimentary stop banks, directing dimension into the river in some form. So, there are artificial and natural drivers of river geomorphology which an NCI would detect and pick up. So, in terms of – in answer to your question, at a natural level, it's floods, and at an artificial level, it's flood engineering.
- 5
- 10 Q. All right, if it's floods, what is the braided riverbed, the event that resets the braided river, that turns everything over, that moves sediment, that creates a new template on which your NCI scores are going to vary? What's that flood?
- A. So, that would normally be what's referred to as the Q233 flood, the bankfull flood.
- 15
- Q. The mean annual flood?
- A. Yes, the mean – well, it's bigger than the mean annual. So, Q233 is every two and a half years.
- Q. That's the hydrological definition of a mean annual flood?
- 20 A. Yes.
- Q. It's the one that occurs every 2.33 years?
- A. Yes, yeah, okay.
- Q. So, have you – you haven't done any hydrological analysis of –
- A. No. No, I haven't.
- 25 Q. – of how many of those floods, or whether those floods go bank to bank in the Ngaruroro?
- A. No, I haven't done any hydrological analysis.
- Q. So, the – okay. So, what flood event – how does – talk me through the way in which bed movement occurs in a flood?
- 30 A. So, during a flood event?
- Q. Yes.
- A. So, the initial – there are what's called two phases of transport, phase 1 and phase 2. The first is where you have incipient motion, effectively, so, you have the movement, winnowing of finer substrates, so, sands, from

in between the gravels, and then stage 2 is where you have a break-up of the armouring of the riverbed. So, the riverbed is Ngaruroro gravel, and that's structured in a certain way. It's armoured; it's imbricated. And for that material to move, that armour needs to be disrupted and broken, and once it does, then that is the onset of gravel movement in the river. So, once that gravel is then mobile, it tends to move as a series of pulses or waves or sheets coming down through the river as a coherent wave of bed material. And then, during the waning stage of the hydrograph, that material will be deposited once the energy for transporting it has been reduced below critical.

Q. So, do you think it's important to know when that event occurs, so that you know – so, when you've got your aerial photography, you know that there's been some – it might have been two years since one of those events occurred, or five years, or a year?

A. Yes, so I think that would be, you know would be useful, would be important to again understand the antecedent conditions prior to your survey, and as I say if there were to be a particularly large flood where there's a complete resetting of the river bed and that's a 10 year flood or a 20 year flood, then it might useful, prudent, to take a, make an assessment to assess the impact of that flood on the morphology.

1715

Q. So, have we got enough in front of us in terms of making a decision in relation to this NCI, that that, what is put into the water conservation order will actually achieve the purpose that you want it to achieve in a practicable way?

A. I believe so. I believe that we have the, you know, if we committed to a five year assessment you would expect these natural variability in the flow, and natural changes, and that's going on in terms of the context that we referred to in paragraphs C1 and deviation from that, from that natural variability can be used as a flag to say, well you know, degradation is happening, intervention is required, moratorium on gravel extraction or planting may be required. However, that's to be managed, but as a monitoring tool I believe that the NCI is fit for purpose to assess the

changes in coherent reaches over time, to provide a holistic assessment of river general morphology.

**QUESTIONS ARISING – NIL**

**WITNESS EXCUSED**

**5 COURT ADJOURNS: 5.21 PM**

**COURT RESUMES ON THURSDAY 11 FEBRUARY 2021 AT 9:36 AM**

**KARAKIA TĪMATANGA**

**MR ANDERSON CALLS**

**DES HARRY VINCENT SMITH (SWORN)**

- 5 Q. Can you please confirm your name is Des Harry Vincent Smith?  
A. That's correct.  
Q. And that you (inaudible 09:37:55) some 16 pages, I think it was dated 28 May 2020?  
A. Yes, I did.
- 10 Q. And you prepared some evidence in reply dated 14 January 2021 which ran some 11 pages?  
A. Yes, I did.  
Q. Can you confirm if that – do you have any corrections to make to that evidence?  
A. Sorry?  
Q. Do you have any corrections to make to the evidence?  
A. No, no I don't.  
Q. And you confirm that's true and correct to the best of your knowledge and understanding?  
A. Yes, I do.

**JUDGE DICKEY:**

Is there a joint witness statement too?

**MR ANDERSON:**

Oh, sorry, yes there is. Just bear with me for a moment.

**25 CROSS-EXAMINATION CONTINUES: MR ANDERSON**

- Q. Did you attend (inaudible 09:38:41) from the 9<sup>th</sup> of March 2020?  
A. Yes, I did.  
Q. And did you sign a joint witness statement running to some 12 pages?  
A. Yes, I did.



Q. And can you also confirm that's true and correct to the best of your knowledge and understanding?

A. Yes, I can.

**CROSS-EXAMINATION: MS EVELEIGH – NIL**

**5 CROSS-EXAMINATION: MS DOWNING**

Q. Good morning, Dr Smith.

A. Good morning.

Q. Just brief questions. So, in Dr Craig's evidence he talks about a statistical method for modelling banded dotterel populations and I just wondering whether you had an opinion on the method that he uses as compared to other methods that can be employed?

A. Yes, I do. I, in my rebuttal evidence, compared this to a paper that's been published by (inaudible 09:39:54) on the same topic and they used what you call *generalised mixed effects models* and they tied in 33 river systems in the South Island. They didn't use the North Island data because they felt that it wasn't – well, it didn't have as many counts, so it wasn't comparable or replicable. Theirs is a really strong analytical technique that's, you know, used with other variables like, you know, perhaps production, landscape around the outside or time or, you know, present absence of predators. In Dr Grey's paper he uses Leslie matrix modelling which is strongly dependent on the input parameters and these need to be rigorously defined. So, some people use that type of modelling. Well, they will actually undertake studies to estimate things like age related survival and age related (inaudible 09:41:06), they'll be their own studies, you know, banding studies over years to get the information to provide a reliable estimate on the perimeter. So, you've got to be very careful with this type of modelling, just to throw anything in there off the cuff or based on, you know, just reading a bunch of papers and coming up with some numbers. Because there's a deterministic models and they will rely very heavily on those parameters. The other thing that surprised me about this is he only used – he only analysed five of the 33 rivers, so it's not clear from my perspective how they were

selected and why and why he didn't perhaps ask the previous authors for their data and analyse the lot. And I believe the rivers have been analysed individually, not pulled together like the other analysis. You know, so they're all thrown into the blender if you like. Some of the model outputs in that paper, and it's an appendix to Dr Craig's evidence, I find really, really hard to understand. You know, like some of them – like, particularly figure A1.4. I don't understand how you get that point of inflex in the graph when there's absolutely no data points in that location. That just defies imagination and I can't think of a biological explanation for the shape of that curve, personally I can't, I can be corrected. But this manuscript in my mind would really need to explain all that very, very carefully and explain the biological rationale for that too. And the figure A1.5 is very similar actually. I don't understand that point of inflex. I'm not saying – I'm not to say I'm, you know, there is no reason for it but they need to be carefully described in this manuscript because that to me looks like that data should have a curve sort of to it similar to figure 2 in his manuscript, you know. But I don't understand. It almost looks to me like there's been a, you know, it almost sort of the one half for the data and another one for the next data. Oh, I don't know. To me it's very confusing this paper.

Q. Thank you, Dr Smith. Now moving onto whio, are you able to explain to the Court anything about the habitat requirements of whio?

A. Yeah, sure, yeah. So, whio their primary habitat requirements in New Zealand are inland streams, most commonly in alpine or montane areas. They require, you know, generally a high degree of water quality and they're usually in a sort of pool, (inaudible 09:44:11) sequences, you know, so there's, you know, slower areas and then faster moving areas. But those areas might vary. They also require forested habitat. They utilise the river for foraging but they also – they nest on the river's edge in the forested habitat. It's also probably good for them to have a bunch of adjacent valleys they can move between, you know, that have similar habitat. In particular, their fledglings if they just burst they can sort of, you know, go to those other areas.

0945

Q. Thank you, Dr Smith. And just the same questions but in relation to banded dotterel, what are their preferences or requirements such as (inaudible 09:45:03)?

5 A. So, banded dotterel, they tend to nest and (inaudible 09:45:11) in the shingle. So, they need open ground whereas to nest and they, they (inaudible 09:45:25) a lot and they tend to be more common in areas where there's a lot of braiding and a lot of unvegetated bars or burns, you know, because the vegetation takes away the travel that they need to nest and they also need these sort of, because they're a short-legged wader they need, you know, backwaters and seepages and wet sand and things that they can forage because they are not going to get into a deep channel. They can't wade in a deep channel.

10

**CROSS-EXAMINATION: MR MAW**

Q. Do you have your evidence-in-chief with you?

15 A. Yes, I do.

Q. I would like to take you to your paragraph 21.

A. Yes.

**WITNESS REFERRED TO EVIDENCE-IN-CHIEF**

Q. There you note that in making your assessment for who blue duck in the upper river, you've relied largely on the evidence of Dr McClellan. Now Dr McClellan hasn't given evidence before this Court, has she?

20

A. No.

Q. And so I can't ask her any questions about her evidence?

A. No.

25 Q. And the special tribunal in not providing an order with respect to avifauna values, hasn't accepted her evidence has it?

A. I guess not.

Q. With respect to who blue duck in the upper river, have you conducted any surveys in relation to bird numbers?

30 A. No, I haven't. I don't believe anybody has recently.

Q. Sorry, I didn't catch that.

A. I, yeah, I just – sorry, one of the things that I note in this is that it doesn't seem there's been a catch-up of my survey of blue duck, whio. Yeah, it would be a good thing to happen.

Q. It would be helpful to have that survey?

5 A. Yes, it would.

Q. It would certainly help for conduction a national comparative assessment to understand how many birds are actually present in the upper river?

A. Yes, it would.

10 Q. Did you recommend to the applicant that it would be helpful for them to carry out such a survey?

A. I didn't specifically recommend that, other than putting that recommendation in my evidence.

Q. And that's captured in your paragraph 12, I think it was, when we highlight that full catchment survey as required, last sentence?

15 A. Yes.

Q. So, in your evidence you've done your best to cobble together some information in relation to bird statistics from other people?

20 A. That is correct. Largely based on expert opinion of people that are familiar with the area but not actual counts. Just their, I guess, just sitting down and thinking their years of being on the river and what they remember.

0950

Q. And there's reference in your evidence to some opinion of Mr Chames, paragraph 22?

25 A. Yes.

Q. And again, Mr Chames hasn't produced any evidence before this Court, has he?

A. No.

Q. And so, I can't ask him any questions about his estimates?

30 A. No.

Q. His estimates are not included in any published literature?

A. No.

Q. So, in your paragraph 24 where you go on to provide your opinion in relation to the percentage of ducks that might be present in this

catchment, you're simply relying on some information unpublished from some other people not before this court?

A. Yes, I am, yes.

5 Q. And even when you undertake that exercise just based on the raw data, the population doesn't get close to the 5% threshold?

A. The – so, which exercise, sorry, can you – is there a paragraph you can point me to or?

Q. Yeah, paragraph 24.

10 A. Well, I disagree, I do. 3.9% to me as an ecologist is not that far from 5%. And when you build in the uncertainty, I did estimate a confidence interval. I don't, you know, given the uncertainty in the data, I wouldn't personally consider 3.9% a mile away from 5%. It's not 1%, you know.

Q. So, when you're referring to your 3.9%, that's the North Island population?

A. Yes.

15 Q. And that population, did that include reference to the most recent increases in bird numbers at various locations around New Zealand?

A. No, it didn't. Not recent ones, no. I believe it was based on the numbers that were provided and discussed in the evidence by Dr McClellan and Dr Craig.

20 Q. Are you aware that there's been, or that there are 150% more blue duck now compared to 2011?

A. Yes, I believe that, you know, I understand it's been some really good increases in blue duck in some places. I also understand there's been distributional declines in others, mhm.

25 Q. And that increase was captured in a press release from the Department of Conservation last year, wasn't it?

A. I'm not – to be honest, I'm not exactly sure which press release you're referring to. Sure, yep, I can see this.

30 Q. You recognise that that's press release from the Department of Conservation?

A. Yes.

Q. And the date on it is the 15<sup>th</sup> of July 2020?

A. Yes.

**EXHIBIT 5 PRODUCED – PRESS RELEASE FROM DEPARTMENT OF  
CONSERVATION DATED 15 JULY 2020**

0955

**CROSS-EXAMINATION CONTINUES: MR MAW**

- 5 Q. You'd accept that that level of increase is a significant increase?  
A. Yes.
- Q. And the increase there is attributed to the security sites in terms of where  
the numbers are increasing?  
A. Most likely. I don't have that information in front of me. But I do – I am  
10 aware of the whio recovery strategy and the use of security sites.
- Q. So, in terms of the percentage of the overall population, assuming that  
the Ngaruroro population is staying the same, the percentage of that  
population compared to the whole will actually be decreasing but the total  
number of birds is increasing?
- 15 A. I couldn't possibly comment on that. As I say, there's been no survey of  
the Ngaruroro river for all I know. John Chames and Bill (inaudible  
09:56:31) might have massively underestimated the numbers, they might  
have overestimated it. I know that – I've heard that some of the iwi groups  
and (inaudible 09:56:41) people are trapping up there. So, I could not  
20 comment on that.
- Q. And that's really just a function of the lack of the full catchment survey at  
this point in time?  
A. Yes, I guess so, mhm.
- Q. In your evidence have you assessed on a comparative basis the  
25 population in the Ngaruroro compared to other rivers in the North Island?  
A. Of whio?  
Q. Yes.  
A. No. No, I just did that assessment and reached the overall figure.
- Q. Now, you mentioned recovery strategies in relation to whio and it's true  
30 isn't it that the Department of Conservation has published a strategy  
dated 2009 and entitled: "Whio/blue duck recovery plan."  
A. Yes.  
Q. And you're familiar with that document?

A. I have read it, yes.

Q. And you've got a copy with you?

**WITNESS REFERRED TO WHIO/BLUE DUCK RECOVERY PLAN 2009-2019**

A. I believe so, in here somewhere, I hope so.

5 Q. And just to make sure we're looking at the same document that I've just handed out.

A. Sure.

Q. That we're looking at the same thing?

A. Yep, I'm looking at the version you gave me, yep, which is the same as  
10 the one I had.

1000

Q. I now produce this document as Exhibit 6.

A. Thank you, it is Exhibit 6 Blue Duck Recover Plan 2009 to 2019  
Observation.

15 **EXHIBIT 6 PRODUCED – BLUE DUCK RECOVERY PLAN 2009 TO 2019  
OBSERVATION**

**CROSS-EXAMINATION CONTINUES: MR MAW**

Q. Now, there are a number of places I want to take you to in this document  
and I want to start on page 11 of the document. Perhaps before we do  
20 that, could you just explain for the Court's benefit what this document is?

A. It's a threatened species recovery plan. I will be written by the recovery  
group from various stakeholders to guide the management of the blue  
duck, whio, between 2009 and 2019.

Q. And in that document, the authors assess the agents of decline and  
25 threats with respect to whio and they include that assessment on  
pages 11 and 12 of the document. And there you'll see in third paragraph  
down, that it's stoats that are considered to be the most important agent  
of decline for both the North Island and South Island whio populations?

A. Yes, and I completely agree as I've said throughout my evidence and  
30 rebuttal statement.

Q. Now, in terms of this recovery plan, what the plan does is then identify  
some sites and there are two levels of sites, security sites and recovery  
sites, where the recovery effort will be focussed and with respect to the

security sites, those are addressed in section 5.11 on page 21 of the document.

A. Yes?

5 Q. There in the first paragraph in the document notes that eight security sites will be established for who conservation to secure key populations from extinction.

A. Yes.

Q. And those key populations are then recorded in the table, table 2, that one with that table.

10 A. Yes.

Q. And that table captures four security sites in the North Island and four in the South Island?

A. Yes.

15 Q. And when you look at the North Island key populations, is the Ngaruroro River included within that list?

A. No.

20 Q. Section 5.12 on page 23 when – fix up the recovery sites and those recovery sites are described as including existing second priority managed sites and new sites where predateive management is being undertaken or will be undertaken and then the list of those recovery sites is included in table 3 on page 24?

A. Yes.

Q. And when you look through that list, is the Ngaruroro River included in the list of recovery sites?

25 A. No, but I would've thought given the data, the efficiency would've been hard to classify it into any of these sites.

#### **THE COURT:**

Q. I missed what you said?

30 A. I've given the data, the efficiency, the Ngaruroro road the lack of attachment wide survey it would've been very difficult to, you know, include it in their ranking to put it any of these sites and they would've just been acting on sites they had a lot of information for.



**CROSS-EXAMINATION CONTINUES: MR MAW**

- 5 Q. When you were thinking about the relative population size, the number of birds and the Ngaruroro based on the information that you had seen, how does that compare to other North Island rivers? Have you looked at any data in relation to a comparison?
- A. I think I already answered that question.
- 1005
- Q. And you've conducted no comparative assessment?
- A. Yes. I believe I've already answered that question. I did make some comparisons with the South Island.
- 10 Q. Yes. In your paragraph 27.
- A. Paragraph 27?
- Q. Over the page you referred to the Department of Conservation's Whio Manager database and you referred there to the 12 pairs of blue duck in the Arthurs Pass National Park?
- 15 A. Yes.
- Q. So when you looked at Whio Manager did you look at the results for other rivers, could have been North Island based rivers?
- A. No.
- 20 Q. In your evidence at paragraph 31 you note that the upper catchment has the potential to contribute greatly to the recovery of whio and blue duck in the North Island and the quality of this habitat needs to be protected. Do you understand that the purpose of a WCO is not to enhance an environment?
- 25 A. I understand it's more about the water conversation and flow reachings.
- Q. When you think about the threats to whio and blue duck we discussed earlier that the stoats are the key threat?
- A. At the moment they're the key threat. At the moment.
- Q. And as far as you understand a WCO –
- 30 A. I'd call them the dominant threat.
- Q. So you'd call it the "dominant threat"?
- A. Yes.
- Q. And as far as you understand, a WCO can't require active protection or pest management measures to be taken?

A. Yes, I understand that. But I still think, as I put in my evidence, that stoats are the current dominant threat but habitat loss could potentially be a dominant threat at any point.

Q. So you're really concerned about the potential for that loss?

5 A. Well I think – my opinion is this, and it doesn't just relate to whio. I'm involved in a lot of predator free 2050 work, is that in order to – if you take away all the habitats in New Zealand from the wildlife then you can kill all the stoats and cats that you want but you will not bring back the wildlife, and that's a fact, and so you have to have the habitats in place. There's  
10 no point in chapping grass and paddock, you're not going to get kākāpō in it. So, you need to have the habitats in place in order for predator control being effective in restoring whio and other wildlife is completely dependant on the habitat being intact.

1010

15 Q. And as we've seen by the success of recovery plan and the numbers being reported, improvements can occur in the absence NNCO, can't they?

A. Clearly, yes. I'm sort of delving outside my area of expertise here but presumably a lot of those places under heavily protected land types such  
20 as, you know, Crown conservation land.

Q. I want to move on to the lower river now.

A. Sure.

Q. Address the lower river from paragraph 32 onwards in your evidence-in-chief?

25 A. Yes.

Q. And again, you've relied here on the evidence of Dr McClellan?

A. Yes, I did, and Dr Hughie, but they'd given, provided extensive summaries on, you know, on the information that was available on these species, including species list. There was a lot of information, they were  
30 good resources for this.

Q. Now, Dr Hughie is before this Court, so I can ask him some questions –

A. Yes, you can.

Q. – you see my challenge with not being able to ask Dr McClellan some questions. So, essentially your paragraph 33 where you're referring to

the conclusions of Dr McClellan and Dr Hughie, or perhaps I should put it a different way. Is it fair to say that you're relying on the opinions expressed by those two doctors?

5 A. No, I am not relying on opinions, I am relying on the data that they had provided in their evidence.

Q. So, you've taken that and then carried out your own analysis for the purposes of your evidence?

A. Yes.

10 Q. So, when it comes to the banded dotterel, where in your evidence have you compared the population estimates for the lower Ngaruroro River with other rivers in New Zealand?

A. Nowhere, that's an enormous job. Nowhere, but I'm not sure that I needed to do that.

15 Q. And likewise with the black-fronted dotterel, in your evidence you haven't carried out any comparative assessment?

A. No, I'm not sure that I needed to really do that.

Q. In your evidence you refer to the South Island pied oystercatcher?

A. Yes.

20 Q. And you note that the Ngaruroro River is the only currently known breeding population in the North Island?

A. Yes.

Q. And you note that it's the current northern range limit for the breeding of that bird?

A. Yes.

25 Q. You may have to help my education here, but bird species throughout New Zealand presumably will all have a northern extent of their breeding range?

A. Yes.

1015

30 Q. So, the simple existence of that northern edge doesn't in and of itself mean that a species' presence in a particular location stands out, simply a function of the biological spread of the species?

A. I actually disagree in my expert opinion on that. I believe when you're considering the context of the river, you've got to consider the context of

the species throughout its range. And I believe in a species conservation you've got to be very careful about range contractions because when you get range contractions of species, you start to increase their vulnerability to stochasticity or random events in their – and their, you know, decline.

5 It's not like – it's the same reason why, you know, put things on islands, you know, you want them spread out so that, you know, if for some reason or other there's a disease or something that the population's resilient and often species that are imperilled will start to decline, the range will start to decline. Like, for instance, the classic example in my career was the loss  
10 of mohua from the Marlborough Sound. You know, and that was a loss of it from its northern extent and that was a big blow to the conservation of mohua in my opinion.

Q. So, applying that logic, you'd look to protect the northern and potentially the southern edges of the – of each species that's present?

15 A. Well, ideally, I mean, you know, resourcing and all that – ideally, you'll protect them across their range. You wouldn't neglect the centre but ideally you'd protect them across their range, yes.

Q. When you say wouldn't protect the centre –

A. No, I would protect the centre, I wouldn't ignore it. Ideally, you'd, you  
20 know, you'd try to resource their protection across their range.

Q. With limited resourcing, where would you focus your efforts?

A. Well, with limited resourcing you would focus your efforts on what you consider the most important locations. But ideally – but that's not ideal. But you certainly wouldn't do things to negate the safety of the  
25 populations on the edge of their distribution.

Q. I want to ask you some questions now about some of the threats to the values that you discussed in your evidence. We've discussed in the context of the upper river the threat of mammalian predation. With respect to birds in the lower river, is it fair to say that mammalian predation  
30 presents the greatest risk to the population?

A. I think for the lower river it's more difficult. It's definitely a key threat but there are a number of key threats. Weed infestation to impact habitats, you know, like I say, a lot them – like, the banded dotterel are dependant on the bare gravel and if they get weeds. Flurry regime is important

because, like I say, you know, the small waders is, you know, they need – they can't, you know, forage in a deep channel. All that type of thing. But also I do quite a bit of (inaudible 10:18:51) surveys in Canterbury associated with gravel extraction consents and everything and in Canterbury we have a huge problem, as you probably read in the papers, of wilful destruction of braided river birds and so there – you know, and recreational disturbance. So, I believe that the threats on the – yeah, there's a lot of different key threats for these birds. I mean, the introduced predators and important but I think there's a whole suite of things going on for them.

5 Q. How familiar are you with the lower Ngaruroro river?

A. Not that familiar, yeah. I'm not – I haven't done a survey of the Ngaruroro river, yeah.

10 Q. So, you haven't seen the effect of the beach raking in person?

15 A. I've read about it. I haven't seen it. Oh, I've seen pictures, photos and the various things.

Q. From your understanding and that from which you've read, that beach raking, the purpose is to remove the weeds, replace the weed species from the braided reaches of the river?

20 A. Yes.

1020

Q. And from that which you've read, would you describe that as having been significantly successful?

A. Yes, I think it looks good. Yeah.

25 Q. You mentioned potential threats in terms of changes of flows in the river, what's your understanding as to the current flows in the river?

A. Well, I'm not a hydrologist so they're not detailed but, yeah. But my understanding is that they're fairly natural, yeah based on the stuff read in Professor Fuller's evidence and various things.

30 Q. So, in preparing your evidence, your presumption has been that the lower river is in a natural state?

A. I haven't presumed that, no and I wouldn't say I presumed that and like I say, I'm not a hydrologist but I have – it does appear to me that's it in a

quite a good state for braided river birds given their numbers and the types that are.

Q. Now, I appreciate you're not a hydrologist so you're not aware of just the level of abstraction of water occurring through the lower reaches?

5 A. I have read some statements on that and we have water restrictions in Canterbury and – but I couldn't give you the exact figure off the top of my head and yeah, it's not ...

Q. When you think about the bird population that exists now, so based on the literature that you've read, is it fair to say that the bird population is thriving despite the levels of abstraction?

10 A. I don't – I wouldn't say that. It's, you know, as – again, you're taking me outside my area of expertise but perhaps that, the current levels of abstraction haven't destroyed the character of the river for the birds. Like, you know, but you're taking me outside of my area of expertise but that's also possible.

Q. So, apart from saying, I guess at a fairly generic level, that changes and flows might have an affect on bird populations, you can't tell us precisely what level of changes of flows might have an effect?

20 A. Not off the top of my head but I mean just more – I can answer more generic questions obviously if the level of braiding falls, you know, if there's no back waters or it falls, you know, and things like that. If it reached that point. So, I can answer more generically but I can't give you specific water quantities.

Q. So, the level of restriction or prohibition is necessary to protect the birds, that would be outside of your area of expertise?

25 A. Yes, my evidence is primarily around whether or not, you know, the outstanding character of the river for birds.

Q. Now, you've produced some rebuttal evidence.

A. Yes, I did.

30 Q. At paragraph 38 of your rebuttal evidence, if I could perhaps take you there?

A. Okay. Hang on, yes?

Q. There you've weighted into the topic of the NCI?

A. Yes.

Q. Now, do you consider yourself an expert with respect to the NCI?

A. No. I read Professor Fuller's evidence and, you know, yeah ...

Q. So, we should strike those paragraphs out of your evidence given you aren't an expert?

5 A. The reason why I've put them in there is that it seemed to me it was a useful framework, and there needs to be a framework, to characterise some of the attributes that were important to the birds, the level of braiding, amount of (inaudible 10:25:27) bars and things like that and I thought it was an important framework because nowhere else had I seen  
10 a framework provided.

1025

Q. The difficulty here is you have said to me today that you haven't actually provided any evidence about what parameters there might need to be to provide those protections. So, what it is that should be picked up in the  
15 NCI?

A. Well, I did and when I answered that other lawyers, I said that they require, you know, (inaudible 10:25:58) bars for breeding and I said that generally breeding where there's a high level of braiding and those things are included in this index.

20 Q. So, and so far as there is a connection between the index and habitats, you wouldn't have any expertise in terms of assisting the Court as to the level of correlation between the parameters in the NCI and the amount habitat required for protection?

A. Not without going and doing some more work.

25 **CROSS-EXAMINATION: MR ATKINS – NIL**

**CROSS-EXAMINATION: MR GARDNER – NIL**

**CROSS-EXAMINATION: MS MAUGER**

Q. (inaudible 10:27:18) Dr Smith.

A. Kia ora.

30 Q. (inaudible 10:27:20) write down some notes (inaudible 10:27:24) in court. Just following up on (inaudible 10:27:26) are you aware that – of the work

the Makirikiri (inaudible 10:27:33) and the (inaudible 10:27:35) trapping network what your (inaudible 10:27:38) leading to the (inaudible 10:27:39)?

5 A. I am aware of it. I don't know the details. I remember you telling me about it at the joint witness caucusing.

Q. So, it's run by a (inaudible 10:27:49) are you aware that it's run by volunteers as part of the larger (inaudible 10:27:57) Pōtae (inaudible 10:28:00) and (inaudible 10:28:02) surveyed by DOC and (inaudible 10:28:05) four times since the 22<sup>nd</sup> (inaudible 10:28:10)?

10 A. I wasn't aware of that specific detail.

Q. Yeah. So, referring to the table on page 24, table 3, fourth line down (inaudible 10:28:20)?

#### **WITNESS REFERRED TO DOCUMENT**

A. Sorry, are we in the – which document?

15 Q. We're in the (inaudible 10:28:26).

A. Okay, and what page?

Q. 24.

A. Yes?

Q. So, one, two, three, fourth line, table 3?

20 A. Yeah?

Q. Te Pōtae o Kawarua should be Te Pōtae o Awarua.

A. Okay.

Q. So, the entire project covers the northern rohe. Those few troops I mentioned do feed into the (inaudible 10:28:55).

25 A. Yes, right okay.

Q. In respect of the (inaudible 10:29:03) –

A. So, I know –

Q. – clarification.

30 A. Yeah, I know Dr McClellan is obviously not here but, in her evidence that I reviewed, she did mention some DOC surveys but they, but it was – and she – and there were numbers, but it wasn't a whole attachment. Yeah.

Q. No, there's a bunch of amazing volunteers in here (inaudible 10:29:26).

A. Oh, I bet. I know.

Q. (inaudible 10:29:29).



A. Yeah, I take my hat off to them.

Q. Yeah, that (inaudible 10:29:32).

A. Yeah.

Q. It just happened.

5 A. Yeah, I know, you know, just what one of their groups is going around, you know, it's just incredible.

Q. (inaudible 10:29:40) ask that there.

**CROSS-EXAMINATION: MR MACGREGOR – NIL**

**RE-EXAMINATION: MR ANDERSON**

10 Q. My friend, Mr Maw, asked you some questions about flow regimes and the extent to which that might impact on the bird habitat. And you said it wasn't total in your expertise. Can you comment on the extent to which the current flow regimes are contributing towards the maintenance of the existing bird populations for the (inaudible 10:30:17)?

15 1030

A. Yes. I would just comment that there's obviously the beach raking occurring which is controlling weeds but there's clearly enough fresh (inaudible 10:30:30) coming through to also clear weeds out and maintain that non-vegetated habitat because I'm quite clear that the beach raking alone would do it everywhere. Also they are obviously providing the ruffle sequences needed and the variety of different types of channels that are required for the short leg and the long legged waders.

20

Q. So do you have any comment to make about whether maintaining those current flow regimes would maintain the populations?

25 A. I think they would clearly maintain the populations because the population is amongst the highest counts of banded dotterel so they're clearly doing well in this lower Ngaruroro River. Yes.

**CROSS-EXAMINATION: COMMISSIONER MABIN**

Q. Good morning.

30 A. Good morning.

Q. Could you help me understand the threat classification system that you referred to a couple of times in your evidence-in-chief. How has that been developed and how does it work?

5 A. Basically it's driven by an expert panel and they get together and they explore the available data and whatever researches have been undertaken on the species and then they make an assessment of the future of the species, usually in relation to the next three generations or 30 years and they can put qualified on it like data poor, things like this and then they assign threats to it. Like whether it's a threat nationally critical or threat nationally vulnerable. By that is a block of at risks. At risk declining, at risk recovering and that type of thing.

10 Q. So a generation, you mentioned these are three generations, so roughly in bird parlance a generation is 10 years?

15 A. Oh, no. It varies widely between birds. No, you even could not, yes, it varies widely between birds. Generation time. Some birds are very long lived like albatross for instance. And some only live for a few years.

Q. But three generations of whatever bird, that could be totally variant?

A. That's a rule of thumb but they may bring in other considerations.

Q. Is it a data driven exercise?

20 A. Yes it is. It's a data driven exercise but they make judgements on the quality of the data and then ultimately they need to make a decision for the management of the species. So they may, they assign a threat status with the qualifier. With qualifiers about the quality of the data.

25 Q. So can they do things, like, to my simple mind it would be like plotting a trend of abundance of a species over time and then modelling where that is going and therefore making a threat classification based on that sort of pattern?

30 A. They'll definitely rely on that type of work that's been done and there may be people, you know depending on the recovery group or the species considered, that undertakes that work, yes. If they have the data.

Q. Your beach raking has come up a couple of times and like you, I come from Canterbury. I haven't heard of beach raking down there. Does that occur?

A. No.

Q. Does ECan do that?

A. No.

Q. do you think it's a good technique?

5 A. It sounds like it, yes. I might suggest it to them. They have a lot of gravel at –

Q. Or does ECan instead do aerial spraying?

A. Well –

1035

10 Q. To try and achieve the same ends and if – I know they do do aerial spraying, which would be better?

A. Yeah, they also do a lot of ground-based control. They subcontract a lot, you know, Christchurch is obviously quite a big centre. And so, they have a lot of contractors, you know, going out and even cutting (inaudible 10:35:26) as well as aerial spraying. They, you know, they tend to those type of contracts, yeah.

15

Q. You mentioned that dotterels are short-legged and therefore require shallow water?

A. Yes.

Q. Shallow water environments?

20 A. So, (inaudible 10:35:52) stilts and things can deal with it but –

Q. Stilts (inaudible 10:35:55) the beach obviously. So, with the dotterels, would it be fair to say that they do better when flows are low?

A. No, not necessarily, no. I mean, obviously any floods or – will, you know, take out their nests. But they're used to that, they can reclutch several times. But in the – I guess it's the advantage of the braided rivers is that even when there's reasonably high flows, but you're not at the fresh stage, there's all sorts of side channels and stuff because of the level of braiding and – which creates a whole different range of sequences. Like, I've been doing some surveys in the (inaudible 10:36:41) this season for gravel extraction and there might be quite a high flow but you just get a little back water thing and they're almost where the pebbles are sticking out, you know, and you'll see there'd been a, you know, there's been (inaudible 10:36:53).

30

**QUESTIONS FROM THE COURT: COMMISSIONER EDMONDS**

Q. Kia ora. I just have one thing you might help me with.

A. Certainly.

5 Q. In terms of the distribution of whio, I just wondered how that worked out in terms of length of water and I see that this press release that we were given, exhibit 5, do you have that?

**WITNESS REFERRED TO EXHIBIT 5 – PRESS RELEASE FROM DEPARTMENT OF CONSERVATION DATED 15 JULY 2020**

A. I've got that right here.

10 Q. Under the conservation issue, four bullet points down, it refers to pairs occupying approximately a kilometre of water and then goes on to say that they fiercely defend their territories and they need a lot of river to sustain the large populations. I just wondering if you could elaborate on that from your knowledge of whio?

15 A. So, that's referring to, I guess, the home range size of a breeding pair when they're breeding. And so, yeah, it's basically saying you wouldn't, you know, you wouldn't get them 500 metres apart. They're roughly, you know, if they're able – if they're – you know, there was predator control and they were able to occupy the entire length of river they – they'd be –  
20 you know, they could probably achieve a density of breeding pair every kilometre. And so, obviously the more river and catchment the better. So, smaller rivers and smaller catchments will only support a few whio whereas bigger areas of river with large catchments will be able to support many more.

25 Q. So, in terms of the flowing in the water and some of the attributes you mention, and presumably all rivers are not equal –

A. No, no they're not.

Q. So, what are we talking about in terms of the river that we are dealing with?

30 A. Well, my understanding is it's a huge – the upper Ngaruroro is a huge catchment with large areas of suitable habitat for whio and in fact I do refer in my evidence somewhere to a published paper in the (inaudible 10:39:20) in the 60's. It talks about at that time whio being ubiquitous in the upper Ngaruroro. So, yeah, it suggests –

Q. So, it is not just the main stem (inaudible 10:39:39)?

A. No, it's the tributaries in the upper catchment, yes.

Q. Will also be suitable?

A. Yes.

**5 WITNESS EXCUSED**

**MR ANDERSON CALLS****THOMAS JAMES KAY (AFFIRMED)**

Q. Can you please confirm that your name is Thomas James Kay?

A. That's correct.

5 Q. And that you prepared a brief of rebuttal evidence dated 21 December 2020 spanning some 21 pages?

A. Yes, that is correct.

Q. You didn't attend any (inaudible 10:41:14), did you?

A. I did not.

10 Q. Can you confirm that the brief of rebuttal evidence that you (inaudible 10:41:18), do you have any corrections to make to your evidence?

A. No.

Q. Can you please confirm that the contents of that is true and correct to the best of your knowledge and understanding?

15 A. Yes.

**CROSS-EXAMINATION: MR MAW**

Q. Good morning.

A. Good morning.

20 Q. I just want to understand first the basis, or the capacity within which you're giving your evidence to the Court and make sure that I've correctly understood that. So, you're giving your evidence in your capacity as advocate for Forest and Bird?

A. Yes, that is correct.

25 Q. Now, in your evidence you take issue with the riverbed management that the Hawke's Bay Regional Council is undertaking in some parts of the lower Ngaruroro River?

A. That is correct.

Q. And you've attached a series of photographs showing some bed stabilization works that the council has carried out over a period of time?

30 A. Yes.

Q. And you've done that in a series of photographs?

A. Yes.

**WITNESS REFERRED TO PHOTOGRAPHS**

Q. Now, none of those photographs have a scale on them, do they?

A. They do not.

Q. And so, it's difficult to see the extent of the plantings that you are putting in the red box in comparison to the full extent of the river?

5 A. It is in the sense that there is not an exact scale. However, as was mentioned by Professor Fuller yesterday, they were willow poles and the size of those is pretty easily approximated. There's also Google Map reference to all of those locations and if the Court wanted a set of those images with scale bars then that could be done pretty easily.

10 Q. But what's missing from these photographs is the full extent of the river just to get a feel for what level of encroachment exists?

A. Yes, but some of them, I mean, figure 8 for instance does show the full extent of the river and the extent of the planting down that reach. If you look at the Google Maps reference, it's just downstream of Maraekākaho.  
15 If you've looked at that section of river, there's a big U-bend and you can actually kind of appreciate how much of that bend is covered with planting there. So, some of the images have that sense of scale. Others, yes, they don't.

Q. And why is it, as far as you're aware, that the council is undertaking this  
20 planting?

A. So, it's part of well, claim to be part of the – nah, let me rephrase that. It is part of the council's flood management programme and as you'll see from the appendices that I've put in, the council has justified their planting that is in the riverbed under their, their flood protection programme.

25 Q. Do you accept that one of the functions of a regional council is to manage the beds of rivers to manage or mitigate the effects of natural hazards?

A. Yes.

Q. And a flood would be a natural hazard?

A. Yes.

30 Q. And so, this purpose was consistent with that function?

A. The purpose of the council or this activity?

Q. The purpose of stabilising riverbanks.

A. Stabilising riverbanks, yes. Possibly not riverbeds.

1045

Q. And this work's part of an overall programme that the council undertakes in terms of its management of the lower Ngaruroro river?

A. Yes.

5 Q. So, whilst there may be some encroachment at a level that we can't easily determine looking at these photographs in terms of willows being planted in the river, when you think about the work that the council's undertaking, particularly the beach raking, isn't it fair to say that the effects, the positive effects of the beach raking more than outweigh the effects of some limited (inaudible 10:45:44) planting?

10 A. There's a lot to unpack in that question. So, as I've said, the first part of that, the extent of the planting I think is relatively apparent from the images and can be attained quite easily. The second part of that question, is this planting offset by beach raking, unless I've missed another part there, the beach raking, I think as you've heard, does seem  
15 to have a positive impact on the management of the river from an ecological perspective. Obviously, it's undertaken at non-breeding times of the year, birds and all that kind of stuff, to help prevent the establishment of weeds in the river. But I think that is kind of separate to the activity being undertaken here in that the flood management plan that  
20 HBRC has doesn't talk about maintaining a certain area of active riverbed, so it prescribes some things that the council will do, including raking of the active bed and it also has some limitations on what they won't do. And my interpretation is that this falls under those activities that they won't do and beach raking falls under the activities that they will do. So, it's not  
25 a balancing act that the council is undertaking, it's not we'll take some here and we'll, you know, clear some over there, it's, as you say, a combination of activities and limitations that exist in that plan that should be used to control the river for flood protection but also for, you know, as the RMA says, maintenance of natural character and things like that.

30 Q. Given the populations of towns downstream of various parts of the lower river, do you accept that the flood protection works are an important part of the council's function in this location?

A. Yes, I do accept that flood protection works are an important of what the council does. You probably grasped from the evidence of



Professor Fuller and – seeing as you took a keen interest in that paper, it probably became apparent to you that flood protection management or flood protection programmes around the world are changing towards widening of river corridors and giving rivers room to move again, to actually flood their channels. And I mean, there's pretty obvious examples recently where we've had corridors that have been maintained for flood protection that have not sufficed Whanganui, Edgecumbe, (inaudible 10:48:52) was close. I mean, they I guess flooded recently, obviously that was a stock tank bursting, but yeah. So, it's an important part of what the council does. But I can't – yeah, narrowing of flood plains is generally not in everyone's best interest necessarily.

Q. You have no expertise in river engineering for flood management purposes?

A. No, I do not have expertise in river engineering but I have some familiarity with the natural character index and you will have seen from my statement of expertise at the start of my document, recognising of course that I am here in the capacity as an advocate for Forest and Bird and I do have experience with the ecology and geomorphology to some degree, of rivers.

20 1050

**CROSS-EXAMINATION: MS ATKINS – NIL**

**CROSS-EXAMINATION: MR GARDNER – NIL**

**RE-EXAMINATION: MR ANDERSON – NIL**

**QUESTIONS FROM THE COURT: COMMISSIONER MABIN**

25 Q. You have given us some time series images of the planting and growth of (inaudible 10:50:36) in the river there?

A. Yes.

Q. What proportion of the available gravel river bed has been affected by that?

- A. I haven't gone through a process of actually mapping those areas as a proportion of the riverbed. Some of them are, I mean I would have to look at all the references again in terms of locations, but the lower reaches of the river (inaudible 10:51:13) Professor Fuller's evidence I think that lower section is an average of 300 metres wide. So, when you look at some of these images of planting in the riverbed you're potentially losing a couple of metres through these time periods from various lengths of river. Obviously, some of them are very short and then some are much longer, possibly a couple of hundred metres, such is the kind of *figure 8* in particular, and *figure 6* and *figure 3*. So, proportion of area probably relatively small, proportion of width would depend on the location but I think the important thing to note here is that cumulative impact or potential cumulative impact, and this is a pretty good example of what has happened over many decades in many New Zealand rivers, in terms of reducing the width of rivers as you would be aware with Canterbury rivers.
- 5
- 10
- 15
- Q. Have you looked at any aerial photography earlier than 2010 –
- A. Yes.
- Q. – so, at these sites, has the planting occurred in areas that have never vegetated before?
- 20
- A. Great question. So, I can't quite remember which paragraph of my evidence it is, I might be able to just find it for you. I have looked at imagery from before these years, so there is some imagery available of the year 2000. It doesn't go quite as far upstream as some of this, and there is some imagery that I've put together from 1950 and both of those images, these areas all of them I have checked, and can't quite recall which paragraph it is but there is only about 27 paragraphs in my evidence so it should be quite easy to find. All of those locations have never been river bank or, you know, (inaudible 10:53:40) planting or anything like that, they were all previously areas of active channel. Yep,
- 25
- 30
- Q. That was the crux of my question, and so I understand from what you have said that you are working with the NCI or in your case the HQI, in your thesis research?
- A. Yes, so –

Q. Have you carried out an NCI or HQI analysis on these sites, so that we – you know, you could kind of quantify what that example of an effect on an NCI might be?

5 A. So, no I haven't done it individually for these particular reaches. I just note that paragraph is paragraph 22 by the way, in terms of where I refer to the previously unvegetated nature of these bits of river. I haven't done analysis just for those reaches, as Professor Fuller said yesterday – so, my thesis work that I've been doing does actually look at that very smaller reach scale. I've been looking at how ripples, pools, and runs change within a reach over time in response to something like (inaudible 10:55:00) tracking or engineering in a riverbed, so I've crossed several hundred metres. Obviously, in doing that I've looked at Professor Fuller and others' work on much longer sections of river, but it's important that – you know, you could do an NCI analysis of a small reach where the council has put willows in the riverbed, but you would kind of be saying well, you know, we're just going to arbitrarily pick the start of where they've started planting and the end of where they've started planting and then it will look like, you know, the river's getting much narrower whereas if you push that out further and you use an average, it will kind of mellow out. So, it really depends on the scale you want to look at and if you're doing it as Professor Fuller said yesterday, looking at that longer reach and trying to maintain the character of a big section of river, you'd want to be looking at that whole section and you know, kind of average through there.

10

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25 **QUESTIONS ARISING – NIL**

**WITNESS EXCUSED**

**ROYAL FOREST AND BIRD PROTECTION SOCIETY OF NEW ZEALAND**

**CASE CONCLUDES**

1100

30

**MS EVELEIGH READS LEGAL SUBMISSIONS**

“These submissions are...to be determined”. Now, the following section sets out a summary of issues and contention, that is broadly what I ran through with you on the first day of the hearing. It might be useful for me to run through that again just to orientate you before I carry on further in my submissions. Alternatively, I’m happy if you just want to read through that.

**MS EVELEIGH CONTINUES READING LEGAL SUBMISSIONS AT PARAGRAPH 6**

“So, the first issue...through the order”.

**JUDGE DICKEY:**

So, how would you change your submission here in clause 10?

**MS EVELEIGH:**

Actually, it can probably stand other than just to say that I’ve had confirmation from the regional council that that drafting wasn’t intended.

**JUDGE DICKEY:**

And?

**MS EVELEIGH:**

And otherwise the paragraph can stand. So, Whitewater’s position is that the same prohibitions and restrictions, in relation to water quantity and quality and damming, should apply to those rivers. I haven’t yet seen the revised draft order for the regional council, so I reserve my client’s position in respect of the drafting.

**MS EVELEIGH CONTINUES READING LEGAL SUBMISSIONS AT PARAGRAPH 11**

“In relation to...quantum of (inaudible 11:31:35) extraction”.

**COURT ADJOURNS: 11.31 AM**

**COURT RESUMES: 11.59 PM**

**MS EVELEIGH CONTINUES TO READ LEGAL SUBMISSIONS AT PARAGRAPH 60**

"I anticipate that...the relevant kawenata".

**5 THE COURT TO MS EVELEIGH:**

Q. Can I just ask, in the draft we have been provided with, I do not – is it in there?

A. That – it doesn't appear in there and I come on to say to that. So, no it –

Q. Right, can you just tell me now?

10 A. Yeah. It's not included in there primarily because we see that that – that there's still some work to be done on the drafting of that. In hindsight, it might have been better if it was included perhaps with a note that the drafting was to be considered further.

15 Q. So, I am sorry I am asking you to go ahead but when might that work occur?

A. I think what we need to do is to hear from those submitters, what they have to say to the Court.

Q. Alright, thank you.

**MS EVELEIGH CONTINUES TO READ LEGAL SUBMISSIONS**

20 "I have noted...prohibitions and restrictions".

**THE COURT TO MS EVELEIGH:**

25 Q. Before I invite my colleagues to ask any questions, I just wondered if you could help me out with the application in part two to this proceeding? So, you advise at para 24 of your submissions that section 199 applies notwithstanding anything to the contrary in part two and that qualifies the reference to the purpose of an order as I understand it. You then quote from Rangitata and speak of, I think you concluded a measure of identifying what is contrary and what is not contrary to part two. So, in this case, what provisions in part two do you say, does Whitewater say,

the order conservation is contrary to, for example, so the order? Or should I put it the other way around, it is not contrary to?

A. Yeah, I will just seek to –

5 Q. And if there is some evidence to which you could refer us, that would be helpful?

A. I actually recall that the sections are identified in Mr Anderson's submissions.

Q. Can you take me to where they are, I had a quick look earlier and I –

A. Perhaps they're not there.

10 Q. No, I am sure they are, but I just could not immediately locate them.

A. So, they're at paragraph 149 and 150. So, those identify the non-contrary parts of part two.

15 Q. So, then when we look at the section 6, which I will find when I eventually navigate my way to the right page, so is it considered that section 6(e) is not relevant?

A. No, I agree that that would be relevant.

Q. It would be relevant, alright and what about section 8?

A. I would agree that would also be relevant.

20 Q. And is there any evidence that addresses those matters that you could point us to?

A. I mean, no not from that evidence. Oh, sorry it is addressed in Mr Carlyon's planning evidence.

Q. Can you take me to that please?

1230

25 A. So he addresses it, I'm at page 1570 of the common bundle, and he addresses part 2 from paragraphs 93 to 106. At 101 he addresses 6(e) and from 104 he addresses section 8.

30 Q. So the concern I had, is that because 101 seems to just refer to Operation Pātiki who were applicants and with no particular reference to the iwi who are attending this hearing. But that's maybe a question I could ask of him, and the same for section –

A. Section 104, yes.

Q. So the court would be assisted, and I signal to the parties, the court would be assisted by some evidence with regard to those matters. Unless there's other evidence that we're not aware of.

A. I can't think of any off the top of the head.

## 5 QUESTIONS FROM THE COURT: COMMISSIONER EDMONDS

Q. I just have the one question. Sorry. I'm looking at all of the submissions and I'll just find yours. And here I've marked the piece I wanted to ask you about. Can you find it is Ms Anderson's submission? Sorry, I'm just looking at your page 18 and particularly paragraph 65 and you've put forward a series of considerations that you consider we should have regard to. So these aren't drawn from caselaw?

A. No, they're not.

Q. So I wonder if you could just talk me through these?

A. Certainly. So in terms of the first one, that is how the caselaw has looked at the planning documents previously and it's also what the special tribunal looked at and they considered that order was compatible with the provisions of the planning documents. That's not the exact wording of the special tribunal but that is what they considered. Whether there was any conflict between the planning provisions and the draft order.

Q. So that's looking down rather than –

A. I think it's looking at how the two sit side by side.

Q. Side by side?

A. Yes.

Q. So not according either any priority. Is that what you're saying?

A. No. I think it's comparing the two.

Q. So can we move on to the –

A. And so the second one's whether the order would preclude any outcomes promoted by the planning document. My impression is that, and obviously at the moment we're in a bit of a state of flux because the TANK plan change has been notified and submissions received but it's at an early stage. It anticipates high flow storage but doesn't – and makes damming a discretionary activity from recollection. It doesn't only provide for storage in the upper Ngaruroro, so there are other options that could

be pursued to make use of that high flow allocation that's anticipated by the plan. And finally, whether aspirations be used in development of waters are already constrained by the existing planning framework, or in this case the proposed planning framework. The (inaudible 12:35:22) plan change recognises limits on groundwater and surface water allocation from the Ngaruroro. And so, it would it would impose limits as to how much further development would be enabled under those plans and that's reflected in I think Ms Drury's evidence for (inaudible 12:35:44) NZ where she says they have aspirations but those are tempered by an understanding of, you know, how far they can go within the planning documents.

1235

Q. We could spend a lot of time analysing all of the documents that we have been provided with. I mean, there is the operative document and then there is a whole lot of other things, some of which (inaudible 12:26:13) look very different when they pop out there in the process?

A. That's right, yep.

Q. So, I am just wondering how helpful some of this is, which it can be in the context of opposes that are long way from working their way through to the end.

A. That's right, mhm. I've covered it because it's a matter identified in section 212 that the Court's to have regard to. That's subject to, you know, the presumption of protection and so it's a question of how much weight you would put on that and therefore I think how much detail you would undertake those comparisons with. There's planning evidence which details what the plan is considered to be, the relevant provisions.

Q. Yes, extensive provisions, yes. So, coming back then, you mentioning *weighting*, what weighting then do you think we should be giving some of these documents?

A. I think less weight where it's a proposed plan, which I understand has been subject to extensive submissions. Ultimately, it's a matter to be had regard to. Yeah, I wouldn't afford them particular weight.

Q. So, is there any case law on that point?

A. In terms of how much weight to afford to planning documents particularly?



Q. In the context of a water conservation order?

A. There is to the extent that, I guess, just because there is a planning document that might already deal with that, with the issue. That doesn't mean that you wouldn't apply an order over the top. Let me find you that.

5 I understand it's the Special Tribunal and (inaudible 12:38:53).

Q. So, when you say it is the Special Tribunal, did they go to the Environment Court?

**THE COURT: COMMISSIONER EDMONDS:**

I don't think it did, did it?

10 **MS EVELEIGH:**

No.

**THE COURT: JUDGE DICKEY**

Q. So, just – the Court with it at all in the context of an order?

15 A. I would have to have a look into that in a little bit more detail. I know some of the court decisions do – I'm sure that some of them do touch on the planning provisions but I think there's no clear guidance as to the weight that's been applied to those. I think it's more an identification of what the planning provisions say. But I would need to specifically check that to be clear on that point.

20 Q. Thank you, yes. That would be good. So, I think Mr Anderson had some submissions to make on this point?

A. Mhm.

Q. Did you have a look at those?

A. Yes, I have.

25 Q. And?

A. And I just can't locate my copy at the moment. So, if you're looking at Mr Anderson's submissions, they're from paragraph 209. So, that doesn't, obviously doesn't refer you to any specific Environment Court authorities.

30 1240

**MR ANDERSON TO THE COURT:**

Q. Is it worth me just jumping up and putting my two cents worth in or not?

A. Absolutely.

5 Q. The case law review we did only revealed two cases which really touched  
on this issue and that was Rangitata and the Oriki District Tribunal. None  
of those are particularly helpful to the enquiry you're trying to make. I  
don't think they actually answer the question you're asking. In Rangitata,  
the consideration was not particularly enlightening, that was the  
10 Environment Court decision of Rangitata. I will – I can dig it out and refer  
it, refer you to that. In Oriki, which was a sticky Tribunal decision which  
I'm, and I will check this, but I don't think it was appealed to the  
Environment Court. But the special Tribunal in that case was not troubled  
by – they had a careful look at the planning submissions, but they weren't,  
and I'll have to check whether they were notified or not and they're not  
15 until the (inaudible 12:42:06) of you asking about weight but they weren't  
troubled by putting in provisions which weren't entirely consistent with the  
– with those in the planning framework. Which (inaudible 12:42:16)  
decision acknowledged of lesser weight but that seems to be consistent  
with the idea that the WCO was the plug in the bar. So, it doesn't have  
20 to be consistent with what the regional plan says as long as you take it  
into account and I think – yeah, I'm not sure I can take it much further  
than that except in terms of the specific question about what case law  
there is around the weighting of the different lands in the – where they are  
in the framework because I don't think that, I don't think any case quite  
25 actually specifically addresses that issue. Sorry, none of the ones that  
we'd found in our search through address that issue as far as I'm aware.

**COMMISSIONER EDMONDS TO MS EVELEIGH:**

30 Q. So, just one last question that I had an unfortunately I did not put a marker  
in your submission, but I think it was in relation to the Rangitata decision  
where it talked about, I guess, the situation. You find something is an  
outstanding characteristic if you do not have any restrictions or  
prohibitions that relate to it. Here we are, I have finally found it in 20 –  
sorry, page 13 and at the top of the page it is at the end of the quoted

paragraph 20. So, there it talks about the outstanding characteristics that you might have in your order and then it talks about without restrictions or prohibitions it would be toothless, and I just wanted to explore that statement. Particularly, in terms of the hierarchy of plans which plainly documents which Mr Anderson has just referred to. If you just find that there are outstanding characteristics and put them in an order, does it necessarily follow that you have to have restrictions or prohibitions before the mere broader sort of policy identification the outstanding characteristics would have in the weight?

5

10 A. Yes. I think it's necessary to have the prohibitions and restrictions to meet the purpose of a water conservation order which is both to recognise and then to sustain those characteristics. So an order that just recognised wouldn't meet the purpose of sustaining the characteristics. Does that answer your question?

15 1245

Q. Well that's your answer to my question. This was a question I was going to ask your planning with some due course because he alludes to that sort of policy indication and being a potential benefit that wouldn't mean necessarily the water conservation order was toothless. But you're taking a different perspective on it.

20

A. Yes I am perhaps, yes. So in terms of whether it's toothless, I do agree that there will be policy implications under the, particularly the NPS requirements but also regional policy statements and regional plans will have provisions around outstanding freshwater bodies and it's likely to hook in through there. But I think, yes, I maintain the submission that it doesn't meet the purpose of a water conservation order just to identify the outstanding characteristics.

25

Q. So I suppose when you look at PC7, and I'm not sure what stage that's at, but that does have outstanding values identified. So if you had those outstanding values, sorry, you have outstanding values in a water conservation order, wouldn't they trump the ones that are in this PC7 that they might need to be renewed and amended?

30

A. I'm not sure if it's a case of trumping. I guess yes, because of the direction that the plan documents can't be inconsistent with a water conservation

order. So it's a yes. I think it would be necessary. I don't know that they would have to be reviewed, but when they were reviewed it would be necessary, I'm sure, that identification of outstanding characteristics is consistent with what's identified in the order.

5 Q. And in a resource consenting process and waiting.

A. Mhm. It would be relevant, but I guess without the restrictions and prohibitions, the section 104 process is subject to a number of other considerations which is not just sustaining but outstanding characteristics.

10 **QUESTIONS FROM THE COURT: JUDGE HARVEY**

Q. Now we have the joint witness statements et cetera, but what I'm interested in is, is there anything on the record that explains chapter and verse the process for engaging with Māori?

15 A. There is not on your record at the moment and Mr Carlyon will address that when he presents his evidence. It was addressed in supplementary evidence he presented to the special tribunal. Yes, Mr Carlyon had a key role in that consultation so he's able to speak to that in detail.

20 Q. Because you would have heard Mr Steedman talk about which of the iwi are involved in the upper reaches especially, and also which are the specific hapū and so we're just keen to understand how that process unfolded, how the various groups were identified and to what extent were there individuals actually or claiming to represent iwi and hapū who have a direct interest. Because of course, there's a distinction which sometimes can overlap, between landowners and mana whenua. Do you  
25 know what I mean?

A. Yes I do.

Q. That sometimes, usually you're both. Sometimes it's not the case. Or just because an iwi or hapū aren't owners of the land nearby doesn't mean to say they don't have any role.

30 A. Absolutely. And I think given his involvement with the process I'm probably best to leave it to Mr Carlyon to take you through the detail of that.

1250

Q. At paragraph 89 of your submission you talk about the WCO adding another layer to these planning documents?

A. Mhm.

5 Q. You do not understand how iwi and hapū would look at that and grimace, especially when they are under-resourced or not resourced at all. It is another level of engagement that they are required to be drawn into to protect their interests.

10 A. Yes, I definitely recognise that and have heard that from them also. I guess in my submissions I've tried to address it from two angles, and I hope that that's read in the round. The first is in terms of practically what would it mean for activities and the second is, yeah, the issues of having something imposed on you even if the actual terms of that don't conflict with what you're already doing.

Q. Now, at paragraph 95 you quote this proposed clause?

15 A. Mhm.

Q. And perhaps my questions are best (inaudible 12:51:38) but the first sentence there: "Nothing in this order prevents the exercise of kāwanata". I know what it means, I am not sure it makes sense?

A. Okay.

20 Q. It should probably say: "Prevents the exercise of the duties, rights and obligations under the kāwanata".

A. Mhm.

Q. And then that reference to interests of Māori landowners, that too probably does not cut it. It is too narrow and confining.

25 A. Mhm, yep.

Q. Anyway, those are just observations.

A. And I think we recognise that the clause is likely to need work in terms of the drafting, in terms of what that encapsulates. So, it's certainly intended as a starting point.

30 Q. Sure, and I think it is your witness who says they are to do that, he has been engaged in this process since 2012?

A. That's right, that's Mr Carlyon.

**THE COURT: COMMISSIONER MABIN**

Q. I just had one question. Turning to the proposed order as it relates to requirements to protect water quality?

A. Mhm.

5 Q. Clause 11.3: “And from the commencement of this order, shall include at least monthly monitoring of the perimeters contained.” So, what is your expectation of who would do that monthly monitoring?

A. That it’s the regional council but I appreciate that the order can’t direct monitoring, that those terms have come from the joint witness statement  
10 for water quality, but I perhaps need to consider that a bit further.

Q. Yeah, I can understand the scientific sense of that being there but perhaps you need to consider how you get that in, if you cannot require them, region to do it?

A. That’s right and it might be that it just needs to sit, that trend analysis  
15 should use all available data.

Q. Which then weakens that pretty considerably because the available data may not be suitable to do the trend analysis with.

**THE COURT: JUDGE DICKEY**

What I just want to discuss with parties at the moment is progress and where  
20 we sit in relation to those who are presenting evidence. Now, Ms Atkins, I have had a – you have informed Ms (inaudible 12:55:12), and thank you for that, that you won’t be here tomorrow.

**COURT ADJOURNS: 12:59 PM**

**COURT RESUMES: 2.17 PM****THE COURT: JUDGE DICKEY TO MS EVELEIGH**

Q. Now Ms Eveleigh, before you begin I've just got a follow up question, sorry. It just relates to part 2 and when we were discussing the elements  
5 of part 2. I think you – I made a note that you accepted the section 6(e) and 6(8) were relevant. What I should have done is ask you one step further and ask you this, is it the position of Whitewater New Zealand that the proposed water conservation order is not contrary to those matters?

A. I think it is the position that it's not contrary but at the moment on the  
10 drafting of the order I think there's some inconsistency which could be further resolved by improvements to the drafting. The court has indicated that it would benefit from some further evidence in that regard, and if that's to be produced I'd like to consider the planner's position (inaudible 14:19:31).

15 Q. Well evidence and perhaps submissions. So yes, that would be helpful. So you have something in your hand which I'm rather excited about.

A. I have two copies of the maps. A version that reflects the special  
tribunal's order and a version that reflects the order proposed by the applicants.

20 1420

Q. I think that we should read these into the record by way of exhibits.

A. Yes.

Q. If you can produce them? So I'll have exhibit 7 which is the proposed  
25 order as set out by the special tribunal. And exhibit 8, the proposed order from Forest and Bird and Whitewater New Zealand.

**EXHIBIT 7 PRODUCED – PROPOSED ORDER OF SPECIAL TRIBUNAL****EXHIBIT 8 PRODUCED – PROPOSED ORDER FROM FOREST AND BIRD AND WHITEWATER NEW ZEALAND**

Q. So just before you talk to them, just so I'm clear, the version proposed by  
30 Forest and Bird and Whitewater, am I correct in understanding that Whitewater is only concerned about the upper Ngaruroro?

A. That's correct.

Q. And Forest and Bird, both, obviously. Thank you. What would you –

- A. Hopefully they are relatively self-explanatory, but just in terms of the special tribunal's order. So we've now only particularly highlighted the main stems of the Ngaruroro and Turua Roads. The blue area catches all of the catchment of those waters. So the special tribunal version applies to the full catchment of those waters above the Whanawhana Cableway. We've included map references and shown all of the relevant map references on each map just so it's easier to align the two and anticipating that preference is they will be on the regional council's map. We have changed all the coordinates to NZTM references. The special tribunal's version of the order only has one map reference to the Whanawhana Cableway. It's based on NZ Topo 50 references but it appears that those aren't readily accessible or used by those who have been preparing maps either for the applicants or for the regional council. So for consistency we've used the NZTM references but the point is Whanawhana is as per the special tribunal's order. And then in terms of the applicants' version the various colours correspond to the waters that are identified in the schedules. So in blue we have the schedule 1A waters which are natural state. The green are the schedule 1B waters which are upper Ngaruroro, not natural state. The pink river line is the schedule 2 waters which is the main stem of the lower Ngaruroro and then the orange is the schedule 3 which is the tributaries to the lower Ngaruroro. The map references that we'll insert into the applicants' version of the draft order are those wherever the colours change. So one at Whanawhana, Turua Road confluence and just above the confluence of Or Wash Creek.
- Q. We'll have a look at in the break, thank you.
- A. Can you see first, witness 4, Whitewater New Zealand is Dr Rankin?



**MS EVELEIGH CALLS****DOUGLAS ALEXANDER RANKIN (AFFIRMED)**

Q. Can you confirm that your name is Douglas Alexander Rankin?

A. That's correct.

5 Q. And there's no joint witness statement relevant to your evidence. Can you confirm that you've prepared a statement of evidence dated the 18<sup>th</sup> of June 2020 which is seven pages?

A. I have.

10 Q. And a statement of evidence in reply dated the 14<sup>th</sup> of January 2021 is some five pages?

A. I have.

1425

Q. Do you have any corrections to make to that evidence?

A. I do not.

15 Q. Can you please confirm that it's true and correct to the best of your knowledge and belief?

A. I do.

**CROSS-EXAMINATION: MR ANDERSON – NIL****CROSS-EXAMINATION: MS DOWNING – NIL****20 CROSS-EXAMINATION: MR MAW**

Q. Good afternoon Dr Rankin.

A. Good afternoon.

25 Q. Now, reading your evidence-in-chief and your rebuttal evidence, it strikes me that your primary concern is the potential for dams of any scale on any of the tribute trees to the Ngaruroro waters.

A. It is.

Q. I've understood your evidence correctly in that regard?

A. Yes.

30 Q. And in terms of your concerns at paragraph 17 of your evidence-in-chief, you explain there that you are concerned that any dams have the potential

to diminish the wilderness and scenic values. You note that: “Impounding water and taking substantial flows for storage from side streams can impact on the natural flow variability and flow magnitude and the natural bedload and sediment transport processes needed to retain white-water features and white-water value downstream of such impoundment.” So, again there you're expanding out some of the reasons as to why you are of the view there should be an absolute prohibition on damming of any tribute trees. Now, you will have read the evidence that has been filed by the Regional Council?

5

10 A. I have.

Q. And you've referred to some of that evidence in your paragraph 11, particularly Dr Wilding and Dr Hix and Dr Mitchell's planning evidence. Now, having read the evidence, particularly that of Dr Wilding, it's clear that the council is not seeking an open ability to enable damming of the tribute trees. That's not what that evidence is about. Dr Wilding, his evidence speaks about the effects of dams of different scales, doesn't it?

15

A. It does.

Q. And it's only the small dams that he considers might potentially be able to be constructed provided they don't have any effects on the outstanding characters characteristics. His evidence is that large dams would have effects on those sorts of characteristics and so, the Regional Council's not pursuing relief here to enable large dams to be constructed on the main stems. Your concerns with dams, is it fair to say that – or do you agree that the concern is with large dams which affect flow variability on the river?

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A. It is but it is also relevant to small dams. So, one example where it's relevant to small dams is that their mere presence in an otherwise essentially pristine catchment has significant bearing on the wild and scenic and natural character of that resource. And so, many white-water boaters would just not be happy with that proposition. Even small dams, because they represent that they're often visible and they represent an intrusion into an otherwise pristine environment and that pristine environment is one reason in part why the Ngaruroro is outstanding, especially in terms of having a combination with the other values which

30

are there which contribute (inaudible 14:29:58). Does that answer your question?

Q. If a damn was constructed in a way where it wasn't visible, would that affect the way in which it would be perceived in the environment?

5 1430

A. It still would. Just its mere presence is an intrusion and depending on its size and its scope, it could still have significant bearing and impacts on the downstream flows, downstream of that point. So, one of the difficulties for us is that there's no data presented to give us an idea of just what the scope of those dams might be. And so, besides pointing out that it's critical to us that there be no damns, if there were to be dams, in the absence of being able to quantify what the impacts might be, our preference is just to simply say: "Look, it's much simpler and clearer and less ambiguous if there's no possibility of dams." Because then we know that our outstanding rivers would remain intact and be maintained.

10

Q. So, in that sense, it's an absolute prohibition being sought?

15

A. It is effectively, yes, yes. Clearly, if you did have a very, very small dam, it may not even impact. Like, for example take required for stock water or something like that. That's clearly not going to have an impact. But it just seems strange to us that, from Whitewater users point of view, that the proposition of dams would even be entertained especially they're only of a small nature because the question will be, well, what's going to be the need or use of the water at a small level especially given some of the constraints that we're confronted with and the interests of other party with regards to water takes.

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Q. So, when you read the evidence of Dr Wilding, the example of a small dam that he gives is a small dam for stock water drinking purposes and that's the scale of dam that he has in his mind that he considers there should be opportunity for and that the order shouldn't cut across that. So, insofar as that's concerned, you accept that that scale of dam is unlikely to affect the values that are being protected by the order?

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A. I do as long as it's an unobtrusive dam and that it is actually only at that scale. So, in a general sense, perhaps just to elaborate a little bit more on my evidence, what I was getting at there was, was that looking to the

future and looking at the interests of parties, it's clear that there's a possibility of trying to keep open options for the future for more water. And so, naturally we as white-water boaters look on that and say, well, that's for future dams and empowerments to produce more water for irrigation and such like. And we know from experiences in other rivers that they can have major impacts on our resources, putting aside this (inaudible 14:33:17). So, yes, I think that I will say that for a really small dam, just for purposes of stock water and such like, which we've already agreed to anyhow in the order, that it's probably not going to happen (inaudible 14:33:31) except unless it was really intrusive and the impact was severely (inaudible 14:33:38).

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Q. Yes, and that's where perhaps the wording of the order needs to be carefully considered to ensure that on the one hand there's not an absolute prohibition from that very small dam occurring but on the other hand not leaving the door ajar for these large dams that may very well have the effects that you're concerned about?

A. Perhaps that's one way of dealing with the issue. I think our preference is clear and our preference would be just don't include it if it's merely only for a very, very small take. There's already allowance made for that as I understand in the order and that's all that would essentially be needed.

20  
Q. So, provided the order enables that very small dam for those limited purposes and you're of the opinion that the characteristics which support the outstanding Whitewater values could be protected?

A. I think they could. I think we'd prefer to reserve our position and seize some hard data to say what is the size of the take, so to ensure that in fact from a small tributary it would only be a minor take from that tributary because all of the flows from these from the tributaries all add to the water and flow down the river as you travel down the river. So, you know, if you had a situation for example where you had a plethora of small dams, all combined in some way to allow a larger take, then that might infringe on things. But again, in the absence of (inaudible 14:35:18), it's really hard to assess and then confirm and say with hand on heart look, that will be fine.

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1435

Q. Have you had an opportunity to consider the draft order that the Regional Council is pursuing?

A. I have to confess; I haven't seen the version of it (inaudible 14:35:55).

5 Q. And so far as that order protects the values, the outstanding values related to the white-water and I'm using the wrong language, I'll start again. The white-water kayaking and rafting amend to the recreation value. So, as long as those values are protected, your key consideration or key concern is that those values are protected from the effects of damming of the tribute trees?

10 A. Yes.

Q. One final question, possibly one of curiosity but we'll see where we go with it. You've indicated in your evidence-in-chief that you have kayaked or paddled on a number of outstanding wild and scenic rivers overseas?

A. I have.

15 Q. And you note there that you've paddled in the Grand Canyon at the Colorado River?

A. I have, yes.

Q. Now, my understanding is that's a very heavily dammed river including upstream of the Grand Canyon, so my question –

20 A. Indeed, it is.

Q. Sorry, I didn't catch that, it is?

A. Sorry, indeed it is.

Q. So, the presence of a dam in and of itself doesn't necessarily detract from the outstanding values, does it?

25 A. It does because the dam is an unnatural feature in what was the Grand Canyon dam, it has impounded Grand Canyon dam which was the dam which provides the outlet water port running down the Grand Canyon. So, that flow is constrained. It no longer flows in its natural flow regime which vary from massive flows to very low flows and  
30 some are (inaudible 14:38:22). That's 50 metres per second. In the spring shore, it would be far higher than that. So, it does in some ways.

**CROSS-EXAMINATION: MS ATKINS – NIL**

**CROSS-EXAMINATION: MR GARDNER– NIL**

**CROSS-EXAMINATION: MS BLOMFIELD – NIL**

**CROSS-EXAMINATION: MS MAUGER– NIL**

**CROSS-EXAMINATION: MR MACGREGOR – NIL**

**5 RE-EXAMINATION: MS EVELEIGH – NIL**

**QUESTIONS FROM THE COURT – NIL**

**WITNESS EXCUSED**

**MS EVELEIGH CALLS****GREGORY JOHN CARLYON (AFFIRMED)**

Q. Can you confirm that your name is Gregory John Carlyon?

A. Yes, it's Carlyon.

5 1440

Q. Carlyon, sorry Mr Carlyon. And you've been involved in the expert witness conferencing or planners, producing a joint witness statement dated the 17<sup>th</sup> and 18<sup>th</sup> of March 2020 which is 65 pages and a further statement dated 17<sup>th</sup> of December 2020 of 14 pages?

10 A. I have.

Q. And you've produced evidence dated the 2<sup>nd</sup> of June 2020, 184 pages and supplementary evidence dated the 15<sup>th</sup> of June 2020 of 11 pages?

A. That's correct.

Q. Do you have any corrections to make to that evidence?

15 A. Not at this stage, thank you.

Q. Can you confirm that the evidence is true and correct to the best of your knowledge and belief?

A. Yes, I do.

20 Q. Before I hand you over to my friends, I have a couple of questions arising from questions that the Court has had regarding consultation. So, the first question relates to the approach of the (inaudible 14:41:24) when first developing the order and what that approach was to undertaking consultation and then perhaps once you've answered that, just to signal that I'm going to break it into parts, so if we could then come to talk through the detail of the consultation that was undertaken.

25

A. Thank you. Can I just confirm that you're going to circulate my proof of evidence in that regard as the second part?

Q. Yes, that's right. So, that's if you address the – yeah, the approach first of all.

30 **WITNESS ADDRESSES THE COURT (14:41:56)**

Thank you. With your Honour's permission, I wonder whether before I start a general description, I could make a very brief comment to Mr Macgregor and

the team here in response to the feedback they provided yesterday in the evidence?

**WITNESS TO MR MACGREGOR:**

Thank you, Mr Macgregor, (inaudible 14:42:18) to your whānau, to your trust  
5 and to the iwi, you have my apology. Aroha mai for the way in which we have  
represented issues that has left you in a space where you feel that those  
matters are not addressed. It's particularly the case that you have identified  
impacts which don't allow you to exercise your kaitiakitanga and rangatiratanga  
10 obligations and that as a consequence, it's difficult to operationalise your own  
tikanga and kawa on those lands that you administer or own or are a party to.  
And I say also in association with that, that through the time that I've been  
involved in this process, which is 2012 to now, that I and the team that's worked  
with me and the co-applicants that I've worked for, have only ever been treated  
15 with aroha and warmth by those interests no matter what the dispute has been  
and right through to today. So, thank you. Now, perhaps if I start at 2012 and  
talk in a general context and then as Ms Eveleigh identified, I will go through  
some of the example documentation that supports the general approach that  
was taken. So, in 2012, my –

**THE COURT:**

20 Q. Have you got a written statement that is going to –

A. I have.

Q. – encapsulate this?

**MS EVELEIGH ADDRESSES THE COURT – PRODUCING STATEMENT**

(14:44:14)

25 **MS EVELEIGH:**

So, what I'm producing is the supplementary statement of evidence that  
Mr Carlyon gave to the Special Tribunal. It's a – not a supplementary statement  
prepared (inaudible 14:44:37) to this court.



**EXAMINATION CONTINUES: MS EVELEIGH**

Q. Mr Carlyon, do you recognise the document before you as your supplementary evidence to the Special Tribunal dated 15<sup>th</sup> of November 2017?

5 **WITNESS REFERRED TO EXHIBIT 9 – SUPPLEMENTARY EVIDENCE OF GREGORY CARLYON TO SPECIAL TRIBUNAL DATED 15 NOVEMBER 2017**

A. Yes, I do.

1445

10 Q. And within that statement of evidence you respond to matters that have been raised in the special tribunal in relation to consultation and that's in the first section of your evidence primarily from paragraphs 8 to 24. I now produce that document as exhibit 9.

15 **EXHIBIT 9 PRODUCED – SUPPLEMENTARY EVIDENCE OF GREGORY CARLYON TO SPECIAL TRIBUNAL DATED 15 NOVEMBER 2017**

**WITNESS TO THE COURT:**

Your Honour, is it acceptable that I diverge from this evidence to provide context in response to Judge Harvey's comments in particular over this last two days?

**THE COURT: JUDGE DICKEY**

20 As you wish.

**MR CARLYON:**

Thank you. So perhaps if I take you in that evidence statement to page 8 and by way of brief background the parties when they initially came together, that's Forest and Bird and Fish and Game at that time, they were very clear in the very first discussions that having iwi deeply engaged in the water conservation order was a priority and something that they would commit significant resource to. And that is coming from two NGOs and we were later to have two other NGOs and a tanga whenua [*sic*] party join the co-applicants and that principle remained the same throughout the process. And to put the time in context, the project started in 2012 and the bulk of the application was prepared over 2012 and '13. The decision to lodge was made in 2015 by the combined co-

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30

applicants. It was held by the minister through until 2017 and we have arrived at this point now in 2021. I was saying to someone yesterday, you know, in the time one of my children has left primary school and got a degree. So we also took the view that the very starting point should be with the community who had an interest in Ngaruroro River and that occurred on a day which Jenny Mauger organised called the “Love our River Day” at Kuripapanga and I attended on behalf of the co-applicants to represent the potential for a water conservation order. So that was a day where landowners and those with a stake in the awa came together to talk about what was important to them and there was affirmation from that meeting that it should be progressed further. The next key step taken by the co-applicants was a hui at Kohupātiki Marae which we showed the bench yesterday at the mouth of the, well it’s the Clive, but originally the Ngaruroro River and that was attended by approximately 60 to 70 people. That was a day long hui where we talked about the challenges, methodology of a water conservation order, which I would have to say in all fairness was a foreign concept to the vast majority of those who attended and I’d also say for Bryce Johnson, who at that time was leading the project, he was the Chief Executive of Fish and Game at the time, that was his first ever attendance on a marae and he is not a young man. And so it was challenging for a number of parties to be coming together with iwi at that time and from that hui came the confirmation that Kohupātiki would come on board to the project as a co-applicant , particularly to express those values that they held closely in relation to the lower river and that recognised that there had been almost total loss of the biophysical values, but that those values had never left them and needed to be represented and honoured in this process. Arki and Margie McGuire were here earlier in the hearing just to tai toko the representation from their whānau but also in relation to WCO. The premise also included the view that whether it was iwi, hapū or trusts and incorporations, that we should, as a group, I’m using the (inaudible 14:50:10) just to cut to it but we should go where we were invited and we should ensure that there was an open channel of communication throughout the project which four, five groups, an awful lot of work and a great deal of expenditure was committed to. And that, I think, is represented in the example of the Owhaoko C Trusts and the work that was undertaken there and the documentation is included at the annex of the

statement of evidence that you've got there. But that included a series of hui with the trustees, included invitations to be on the awa together, both in the lower river and particularly through the area in which Owahaoko C Trust had interests. It had at least four meetings and I had extensive communication with the trust chairs through that time with the trust secretary and with other trustees and that's represented in the documentation. And that spanned a period in which that trust had three chairs. So, the period from 2012 to now is representative of that challenge of having a relationship and when we first met with Ana Apatu, who was the chair at the outset, it was very clear from the trustees that they did not support a WCO and were not particularly interested in supporting that and there are a number of reasons for that. One is that it was an institution being advanced from principally pākehā interests but also, that there were other priorities for the trust in terms of managing their interests using other mechanisms or with other challenges that were in front of them. And we continued that exercise. The view of the co-applicants through until lodging of the applications was that they needed to get to the place of lodging the application with either positive support which might have included other iwi interest joining the application or at worst mutual positions in relation to the WCO. And I am firmly of the view had that been the case, had there been negative feedback in the lead up to that decision to lodge, that the co-applicants would've held the application back and investigated the issues that was raised through that feedback. And it's very clear that there a number of other trust interests in the upper river and there was no mistake by the WCO co-applicants that if they dealt with (inaudible 14:53:16) C then they had the tick for other interests, A, B and D. There was no misunderstanding about that. And I think that for Mr McGregor, who's opposition to the WCO, has been clear and consistent for the last, I would guess right throughout, but since I've been engaging with him his position has been very clear. We've never represented their interests in any other way other than the way they have expressed it to us. So, our position, the co-applicants' position, has been that they are not going to represent or misrepresent Māori rights and interests in this process. So, that included amendments to the order around the recognition of outstanding values associated with Māori cultural values because that was for Māori to speak to, not the remaining co-applicants. So, those discussions occurred solidly through

until 2013, early '14. They were quiet through the period to 2015 when the application was sitting in (inaudible 14:54:37) and that was a period in which there are a number of things going on for Kahungunu interests but also for the co-applicants in relation to the future status of WCO's and their place within the Act. In relation to the East Taupō Lands Trust, and I – for your information, I'll perhaps just, , I think you've got a black and white version, and I think that goes to the budget that my clients have got for this project, but the second to last page of your statement or of my statement of evidence, has a not very helpful colour map of the land only interests and if it's helpful to the bench, we'll get that replicated in colour for you.

1455

#### **THE COURT ADDRESSES MR CARYLOIN – COLOUR DIAGRAM (14:55:28)**

##### **MR CARLYON:**

So, with East Taupō Lands Trust, which we showed you in the presentation yesterday, might have been the day before now, I spent a day and a half with the then chair of that trust working our way right through that landscape and talking about the commonality of values in relation to protection of that landscape and the desires and interests for that trust and the interests that are generated by the protection of outstanding values through to the water conservation order. So, I have worked directly with the chair of that trust at that time and I also had worked with Doug Gartner, who was the trust administrator at that time at least, and not in recent times.

##### **THE COURT: JUDGE HARVEY**

- Q. Which trust are you talking about?
- 25 A. East Taupō Lands Trust.
- Q. Now, you talked about a hui of 60 or 70 people –
- A. Yes.
- Q. – was that at Kohupātiki?
- A. Yes, it was your Honour.
- 30 Q. Now, you understand the distinction between an ahu whenua trust and the mana whenua, they are not always the same.

A. Yes, I do and that has been made very clear to me by a number of trust representatives on a regular basis and yes, we've just done our best to work our way through that but recognise that issue.

5 Q. You may have been here earlier when Mr Steedman talked about Ngāti Whitikaupeka as being one of the tribes?

A. Yes.

Q. And their marae is Moawhango, have you heard a hui there?

A. No, we have not been to Moawhango. I have worked with Mr Steedman very closely over a number of years on other projects in the vicinity of his  
10 marae as a consequence of this project. So, the management plan for the Aorangi Awarua block, which he talked about with great reverence yesterday, and also the management plan that he produced for the Rangitikei River, they requested that we review that and provide feedback before that was lodged with the Regional Council and other stakeholders.  
15 And so, we have worked with them and I understand the concern that Mr Steedman has about being the forgotten side of the maunga and of that Ruahine divide but I share that place and attachment with him. So, I know where he is, and the Rangitikei is my home too. So, we have gone where we have needed to go, but as I indicated in that apology at the  
20 start, there is a lot more that we could have done. There is no question about that, but I think the context is one of a group of (inaudible 14:58:46) with a limited budget, working over period of 10 years now on a very complex project which has been very heavily opposed at great cost and legitimately that opposition, you know, should exist but that is the context  
25 in which I think some of these things are occurring. And if I can return to the statement of evidence there, just very briefly, there's a number of things I'd like to highlight to you. So, Mr Tomoana, who is the chair of Ngāti Kahungunu, he worked with Bostock companies to produce a statement in opposition to the WCO and represented the view that we  
30 were somehow, because of Kohupātiki's interest and co-applicant status that we were somehow joining (inaudible 14:59:46) iwi and hapū to the application when that is just blatantly not been the case. I'm just going to my notes, referring briefly if that's alright. It's come up quite consistently in feedback from the Māori interests to this proceeding that they will need

to represent their views through their formal channels. And as I say in the evidence there, we received a great deal of information communication and that goes on today about where people stood and what they felt and how they were with the work that was being undertaken

5 by the co-applicants, but at no time did we take the view that that is a signature for either a further co-applicant or support for the application itself and that hasn't been represented to the court in that way. At paragraph 13, I think this goes to the heart of the concerns raised by Mr Macgregor and I've thought very hard about this over a, quite a long

10 period. I'm not sure other than the feedback that I've provided now, what more that I can say other than the record that we have is very clear about engagement with Owhaoko C and that we made a number of attempts to join those interests to that dialogue, those other landowning interests to that dialogue, but were unsuccessful. That doesn't take away at all from

15 the completely reasonable view of Mr Macgregor in relation to the position of the trust as at today.

Q. When you say: "The efforts were unsuccessful," what do you mean exactly?

A. So our goal at the outset was to at the very least have conversations and to compare notes and to understand what it was that's driving the parties.

20 Because I've heard a lot of interesting things about what drives the co-applicant clients that I've represented over these last few years, and nothing is better than having those conversations face to face. And that was the initial goal and the next step was to share the values held by the parties and understand where there was any common ground. And if

25 there was common ground then how could those things be represented? So we have spoken with the Owhaoko C team others, Mr Steedman and his team and his team about ways in which the co-applicants could support their mahi but also potentially take a role in the WCO that hasn't

30 been envisaged yet. And I'm deliberately not looking Ms Eveleigh in the eye while I say this, but one of the propositions that we had put at the initial part of the process was in response to the fact that for the current 15 water conservation orders I heard Ms McArthur talk about 6,000 rivers or streams the other day. So there's 15 conservation orders in place in

New Zealand at this time and two more on the books. There's a tremendous challenge that once those orders are obtained generally by community agencies at significant cost, that the parties are exhausted and that the WCOs drop into a vacuum, a regulatory vacuum to some degree, and the proposition advanced to Owhaoko C, to Kahungunu, the tribal trust out of Hastings, to other iwi parties that we had talked about, was that that there would be effectively a governance entity set up for the water conservation order. The part 9 doesn't provide for that. I recognise that. But that that government's entity could ensure that the interests identified by that order are advocated into a regulatory processes like the plan change 9 exercise underway now, that parties could come together on a formal basis and we had put the proposition that that could be chaired by iwi and driven by iwi and that the co-applicants would sit under that mantle. So that has not – I'm not for a second suggesting that that's acceptable to those trusts or the iwi more generally, it's clearly not. But those propositions were advanced as a reasonably innovative way to ensure that this wasn't a one stop tick box exercise.

1505

Q. You say at paragraph 15 for example that – you refer to the participation of the trust's chair of that time in the signing ceremony prior to acknowledgement of the application?

A. Yes.

A. Just so I can be clear, when was that?

A. There's a photo sitting in the documentation, that's (inaudible 15:05:50). So, that is the second to last page in the brief. It shows the passing of time, the only party remaining from that photo is Doug Rankin who was the previous witness and he's at the back there and he's got more hair.

Q. So, this was signed in 2015 you say?

A. That's correct. At the end of 2015.

Q. So, I would assume that there would be resolution on the books of the trust authorising (inaudible 15:06:46)?

A. Yes. I think the past point I'd make, unless there's any questions in relation to that, is at paragraph 71. The regional council has a regional planning committee mandated by a treaty settlement. And the decision

on the regional council's position in relation to the water conservation order was brought before that regional planning committee, which is made of representatives of the hapū and iwi throughout this rohe and it is split 50/50 with the regional council. And the position of the regional planning committee was one of naturality in relation to the water conservation order and the chairman of HBRC went on to say: "I understand and respect the difficult position the regional planning committee is in but this water conservation order is absolute nonsense and a waste of ratepayers' money." And I think that view is a reasonable articulation of the boil over within council and within the community that occurred in the couple of years following that time. (inaudible 15:08:56) could speak to any of the correspondence that's attached there but it really, for this particular brief, was only a sample of the correspondence and in response to the directions of the Special Tribunal.

15 Q. Now, you would have heard the other day Mr (inaudible 15:09:13) referred to Ngāti Hinemanu?

A. Yes, I did.

Q. Do you know where their marae are?

A. No, I don't

20 Q. One is Omahu.

A. Yes.

Q. The other one is Winiata in Taihape.

A. Yes.

Q. Had (inaudible 15:09:26) been held there for Ngāti Hinemanu?

25 A. No, and thank you for putting it back in context for me. I should've mentioned it earlier. It was made very clear to the co-applicants through the process of engagement that talking to those hapū that are associated with Omahu marae was critically important. We made a number of attempts to do that and Ms (inaudible 15:09:51) recall that we sought her assistance to help us with that process. But we were unable to conclude anything that I considered to be a serious dialogue at that very important place.

1510

Q. And there was no discussion with Ngāti Hinemanu at Winiata?



A. No, there was not.

Q. You'll be aware that the East Taupō Lands Trust also in terms of tribe or rohe affiliates with Ngāti Tūwharetoa. Was any dialogue held with the board?

5 A. Yes. I went directly to the Tūwharetoa Māori Trust Board and was directed straight back to the East Taupō Lands Trust. So there was no further requirement for engagement with them and in actual fact at that time Jim Maniapoto was sitting on both of those agencies. He's passed now, but we re-engaged through the East Taupō process.

10 **THE COURT: JUDGE DICKEY**

Q. Can you just outline please what particular paragraphs, just by reference to the numbering, you particularly want us to look at?

A. Perhaps paragraphs 8 and 9 in relation to the chair of Ngāti Kahungunu's views as he'd expressed them. Paragraph 12 where we make it very clear that the co-applicants do not speak for tangata whenua. Paragraph 15 13 to 15 where we examine Mr Macgregor's concerns and 16 and 17 in the same vein. And then paragraph 71 which is a response to the evidence of Mr Palmer, the chief executive of the regional council.

**CROSS-EXAMINATION: MR ANDERSON – NIL**

20 **CROSS-EXAMINATION: MS DOWNING – NIL**

**CROSS-EXAMINATION: MR MAW**

Q. Good afternoon. You have been involved in this process since its inception?

A. I have.

25 Q. And that was 2011, 2012?

A. The latter part of 2011 and into 2012, yes.

Q. And when you were originally engaged, what capacity were you engaged in?

A. My company was engaged to assist the project overall. My associate, Alastair Beveridge, was involved as project manager and providing that oversight and I was involved as a planner throughout.

5 Q. And since that time have the roles that you have fulfilled changed, or have you simply been providing planning support?

A. I think throughout I've been providing planning support. But the project management to the project. I think that to a reasonable extent concluded when the application was lodged.

10 Q. Since that time have you been essentially the de facto project manager of the application?

A. No, I have not.

Q. You haven't described your history in evidence given before other tribunals as being the project manager for this process?

15 A. That's quite conceivably the case. Can you give me an example Sir?  
1515

Q. I will be able to at some point shortly. You're in charge of negotiation and I should say consultation with respect to the application?

20 A. I assisted the co-applicants with their consultation and was involved in a number of negotiations, but the co-applicants made their own decisions and led the negotiations or the outputs that drive their interests.

Q. In relation to your consultation with iwi interests, did you lead the charge there as well?

A. Yes, at the direction of the clients, absolutely. I think I have just described that, and the correspondence demonstrates that's the case.

25 Q. Well, so you were heavily involved in that particular consultation?

A. Yes, I think that would be fair to say.

Q. And since you've been engaged, you've been focussed on ensuring that a WCO is made for this river?

30 A. No, I've been involved in providing the planning advice and ensuring that an application is at the standard that would assist the co-applicants with obtaining of a conservation order.

Q. Now, you've produced some evidence for this hearing, your evidence-in-chief. Have you have a copy of that with you?

A. Yes, I do. Thank you.

**WITNESS REFERRED TO EVIDENCE IN CHIEF**

- 5 Q. At paragraph 53 and there following, you traverse in your evidence what you understand outstanding to mean and you traverse some of the case law that you've heard a little more about throughout the course of this hearing. And if I can take you to your paragraph 59, so the last paragraph in that section, there you say that: For valuations purposes, a useful concept for both ecological and planning purposes might be irreplaceability." Is the concept of irreplaceability one that you've seen reference to in any of the decisions that you've read and traversed in your earlier evidence?
- 10 A. We've, my team, I've been involved directly in one approach and as a peer reviewer in another, have undertaken planning assessments to address outstanding fresh water bodies issues and while there is a body of case law which has been traversed by legal counsel in the last few days, there is not a significant body of thinking that at this planning and policy level about addressing the issues of outstanding-ness. And the concept of irreplaceability was one that was advanced to the Bay of Plenty Regional Council when they were asking for the development of a set of criteria that would allow them to think about what was an outstanding water body in the NPS context for their region.
- 15 Q. So, just staying on the NPS context, do you see a difference in the outstanding freshwater bodies assessments required at a regional planning level compared to that required for a water conservation order?
- 20 A. Yes, I do.
- 25 Q. And which would set the bar higher so to speak?
- A. A water conversation order, that's in the national context in particular.
- Q. So, coming back to this concept of irreplaceability, is there a danger that each and every water body might be seen to be irreplaceable in terms of values that each water body holds?
- 30 A. Yes, I think the danger is more in adopting a particular single criteria and applying that as the holy grail and the advice that we've given and my understanding of the approaches undertaken by regional councils, at least in this space, has been to undertake evaluative assessments against a range of criteria of which that might be one.

Q. Next in your evidence you move onto consider the threats to outstanding values. If I can take you to your paragraph 64?

A. Yes.

1520

5 Q. Towards the end of that paragraph, in fact the last sentence there, you note that the determination of a WCO must be focused on the outstandingness of the value themselves with the methods, et predator control, water quality standards to protect them expressed as clauses within the order. Now I was curious at your reference to predator control  
10 in this context and I have not seen any reference to predatory control in the methods being put forward in this water conservation order. Is that because a water conservation order can't require a positive action from a third party.

A. There's an error in my evidence. I don't think it's possible to have a  
15 direction like that contained in the clause of the water conservation order. I think I would have been referring more colloquially to the mechanisms that are required to provide for those values in and out of the order. My apologies.

Q. Let's move on now to the statutory assessment, a copy of which you put  
20 in your evidence. I want to take you right through to your paragraph 144. There you note that the provisions in the draft order align with the outstanding court bodies' plan change and tactic plan change objectives as shown in table 2. It's your opinion, your evidence, that there was a line in between what's thought in the WCO and those planning  
25 provisions?

A. Yes, it is my evidence and that remains my view and that's consistent with the summary of findings from the special tribunal at their paragraph 61.

Q. You then go on at your paragraph 145 to express some concern despite that degree of alignment?

30 A. Yes.

Q. I want to understand a little further what it is that's giving rise to your concerns in that regard in light of the prohibitions sought for the lower river? So starting with the minimum flow transcription, which I think is in clause 9(4) of –

A. Mr Maw, do I need to have the document in front of me or are we talking about a general sense.

Q. No. It will assist now. So what I'm referring to is the application's marked up version of the order. Do you have a copy of that?

5 A. No, I do not have that in front of me. I have my version but I'm conscious there are a lot of versions in circulation.

Q. It would assist if the witness could be given a copy of the version that my friend handed up in opening.

**WITNESS REFERRED TO VERSION HANDED UP IN OPENING**

10 Q. Hopefully that looks familiar to you?

A. Yes it does.

Q. Very good. Now the first restriction that I wish to discuss as at clause 9.5. And that's the minimum flow cut off restriction, if I can put it that way?

A. Yes.

15 Q. Now coming back to your paragraph 145, is it an issue over the minimum flow that's causing you some concern?

A. I think there are a number of concerns that have emerged over the decade long period that I've been involved with this process and it started with research produced by the regional council that identifies that in actual  
20 fact the minimum flow for trough should be 4.2 Q nets. For torrent fish I think it was 3.8 but following that assurances from the Regional Council team in dialogue that the co-applicants had with them that the minimum flow would land somewhere beyond three in order to provide for ecosystem health. Ultimately, the proposed plan has arrived at the flow  
25 as it was originally contained and sitting behind that are a number of submissions from parties who identified that plan change nine in the tank process was the way to address sustainability issues in the river. But those submissions still containing a desire for flows below that minimum flow, takes below that minimum flow for exceptional purposes and other  
30 methods. And alongside that, the plan is due for hearing in May. There are 240 submissions and there is a long way to go before it can be relied on in my view.

1525

Q. So, in the meantime the operative plan prevails, remains in place, what's the minimum flow in the operative plan?

A. Two, four.

Q. So, no change there?

5 A. No there is no change there.

Q. And then when you think about the order and what's sought, 2,400 again so again alignment across the cooperative plan and that which has been notified in tank and with the WCO?

10 A. Yes. I think you'll recall that the original application has notified, talked about, 4.2 cubic metres per second and that relied on the Regional Council's science which has been the foundation behind the decision making that the co-applicants have undertaken but that that was removed as part of the discussions with the Regional Council about applying narrative standards which would ensure sustainable management within that harbour. Particularly, in the lower river.

Q. Do you see a danger with a WCO setting the limit at 2,400 that that is then seen and the perpetuity as the limit required to sustain these outstanding values if they're found to exist?

20 A. No because the order specifically identifies that the Regional Council through the regional plan process could elevate that volume in order to provide for sustainable outcomes in the river. And I take you there to clause 9.6 which specifically says: "This clause does not restrict a regional plan from imposing rules that set higher minimum flows or that reduce the allocable volume for any of the water bodies referred to in this order."

25 Q. There is a danger though, isn't there, in that the number that's in the order is seen to be the number which sustains the values?

30 A. Yes, that would be unfortunate, but I think that's been part of the process for the co-applicants to come to grips with the view that the regional planning function is one for the Regional Council.

Q. Now, in your last sentence in paragraph 145 you note that: "This places those outstanding values at risk of degradation." Now, I'm struggling to understand precisely what you mean there in terms of what is placing

these values at risk of further degradation when there is alignment between the documents.

5 A. Well, there's two issues. The first is the one I've already mentioned that while there might be alignment in a hypothetical context, there can be no guarantees that that is the case, or will be the case, after perhaps two or three or four more years that it will take to progress tank to conclusion. And in the meantime, the Regional Council has recognised publicly that key resources associated with the Ngaruroro awa are degraded and degrading.

10 Q. You're familiar with the NPSFM 2020?

A. Yes, I am.

Q. How would you describe that with reference to the 2017 NPSFM in terms of the level of protection that will be afforded to freshwater resources?

1530

15 A. Well, I think I would direct you to the joint witness caucusing for the planners which – I haven't got it open in front of me but I recall that we agreed that it was far more robust on the needs of ecosystems and ecosystem health and the primary interests of the awa over other interests and the hierarchy that's contained within it.

20 Q. And the two plan changes, the outstanding water bodies plan change and the tank plan change, will both be considered through the lens of the new NPS?

A. Well, I'm not sure that that's the case. I'm not sure whether the Regional Council has landed on the way that it will incorporate or address  
25 the 2020 NPS.

Q. But the obligation is to give effect to that document?

A. Yes, yes. That's my understanding but I haven't seen anything from the Regional Council that says it is working through a process to ensure that it's going to effect to in this consideration of plan change nine or indeed,  
30 the plan change seven, the outstanding freshwater bodies plan change which, as I understand, it is due for a decision release imminently.

Q. So, that new NPS further lessens the risk that the plan changes will be watered down further from an ecological perspective, doesn't it?

A. Well, I hope so except that we are onto the, I might have the number wrong, it's either third or fourth, but iteration of the NPSFM and the Regional Council's own state of environment monitoring through that time from 2011 indicates an ongoing decline in key environmental parameters.

5 And some of the core concepts that were present in the first iteration are still present today, Te Mana o te Wai being one of them and the challenges are still not addressed. So, that's a decade.

Q. It's fair to say though, isn't it, that the way that Te Mana o te Wai has now been framed up in the NPSFM gives it far greater teeth than it did in the earlier versions?

10

A. Yeah, that's my view too.

Q. The hierarchy of obligations makes that, I think, very clearly in the new NPS?

A. Yes, it does.

15 Q. And the new NPSFM significantly elaborates on the way in which regional councils are to negotiate with tangata whenua in relation to the management of freshwater resources.

A. Yes, it does but I think some of those instruments have been available and the potential for collaborative and engagement processes has been there for a considerable period now and the Regional Council has put that to good effect with it's regional planning committee as an example.

20

Q. And the way in which Te Mana o te Wai is to be given its meaning, its kawa, at a local level will require further dialogue?

A. Yes, that's very clearly the case.

25 **THE COURT ADDRESSES MR MAW – TIMING (15:33:40)**

**COURT ADJOURNS: 3.34 PM**



**COURT RESUMES: 3:54 PM****CROSS-EXAMINATION CONTINUES: MR MAW**

Q. Mr Carlyon, I have some questions just about the marked up order that a copy was provided to you?

5 A. Yes.

Q. And if we can just turn to clause 11 to start with?

A. Yes.

Q. In clause 11.1 there is the phrase: "The deterioration of the existing state of water quality", and then clause 11.2 uses a slightly different phrase:  
10 "Degraded beyond the existing state". Is that a drafting error or is that an intentional change in language with respect to the way in which you've described the state in clause 11.2?

A. Well, it's not my drafting now. It's a – it's drafting by committee effectively as consequence of joint witness statements and agreements made  
15 through that process. But on my reading, it's something that could be responded to and clarified so there's consistency.

Q. But should – in your planning there it should be referring to the same phrase, 11.2 is referring to 11.1?

A. Yes, I think that's fair.

20 Q. In 11.3, so paragraph B, Commissioner Mabin asked a question in relation to the obligation for the monitoring in relation to this clause and again a WCO can't impose an obligation on a third party with respect to actions such as monitoring, can it?

A. No, that's correct. But the provisions contained in 11.2 and 11.3 were  
25 authored by the regional council team as I understand it as part of the water quality joint witness statement. Have I got – oh, I may have that wrong, sir.

Q. Some of the drafting that has made its way into order comes from the joint witness statement but not all of it. But again, from a planning perspective,  
30 it would be important to respect the obligation for the fact that you can't place such an obligation on a third party?

A. No, this simply sets out the methodology that was recommended by the team of water quality specialists, including regional council leadership.

Q. If we can move through to the schedules now, schedule 1B?

A. Can I perhaps just come back to that one very briefly or – it's entirely your...

Q. So, clause 11.3?

5 A. Yes, and I guess clause 11.3 and 2 give effect to clause 11.1 and so it's the means by which the regional council can ascertain whether or not there are impacts occurring within that area and it logically sits with the regional council to undertake that as part of its state environment monitoring which it does routinely.

10 Q. Noting that the council does currently have an obligation to undertake the state of environment monitoring and noting that the methodologies used from time to time change but that a WCO stays in place perpetuity, wouldn't it be best not to have the methodology required in the order?

15 Q. Yes, but that's a – I actually mean no. Yes, no. I think there's significant value in having that methodology laid out in order that – for consent decision making purposes down the line for the parties making a consent application or those making a decision, at the very best information available to them for that determination. And it's the advice of the water quality specialists to this proceedings that this is the best methodology available to us at the present time. And I suspect that if an alternate  
20 methodology came available and that was, you know, much better by comparison that you could contemplate an amendment to the order to provide for that with little concern amongst the parties who have interest.

Q. Do you have any experience with seeking to amend a WCO?

25 A. Well, I have seen from some distance the attempt to amend to WCO's but they normally involve building a dam in a river, not amending a provision that deals with monitoring.

Q. It's still a relatively significant undertaking though, isn't it?

30 A. Yes, I'm just at the present time watching the tank process and obviously have been intimately involved in plan making processes for a long time and they're equally cumbersome but in their own way.

Q. But did they get a schedule 1B?

A. Yes.

1600

Q. I'm unclear as to whether you're holding the drafting pen at this point or the committee is, but I'll try with my questions.

A. Yes. Sorry, I just want to clarify, you're talking about schedule 1B now?

5 Q. 1B, yes. And this schedule's dealing with waters that are not in their natural state but are waters that contribute to the outstanding values?

A. Yes.

Q. You can see a reference in the right-hand column to the conditions that apply and there's a reference to "natural state clause 5" which strikes me as perhaps an error, that reference to clause 5 appears in this column?

10 A. I think that may be the case as a consequence of those tables splitting from 1 into 1A and 1B. I think Ms Eveleigh identified there are a number of areas which required attention, including the legal submissions.

Q. I want to move onto schedule 2 now.

A. Yes.

15 Q. And you'll see the middle column there, that records the outstanding characteristics or features?

A. Yes.

Q. And contributions et cetera. And the last entry in that column refers to "contribution to outstanding habitat for indigenous fish in the upper  
20 Ngaruroro waters"?

A. Yes.

Q. There's been no evidence before this panel or before this court in relation to an outstanding indigenous fish habitat in the upper river, has there?

25 A. No, I don't recall it being a focus of attention from expert witnesses. I think the provision deals with a outstanding habitat for indigenous fish, not an outstanding indigenous fish value.

Q. And there's been no evidence as to the outstanding habitat for indigenous fish in the upper river given before this court?

30 A. Not that I can recall at this time. I think there's been a significant amount of evidence in relation to the interconnectedness of the river from source to sea and that was a principle driver for the application from the co-applicants, to recognise that range of values which either are outstanding in their own right or contribute to others. And that would be the driver in that space.

Q. Special tribunal though made an order with respect to protecting habitat for indigenous fish in the upper river?

A. No.

Q. And that finding wasn't challenged by the co-applicants, was it?

5 A. No.

Q. Can you turn over the page to schedule 3?

A. Yes.

Q. And you'll see there that the bottom row of that table refers to tributaries on the lower river?

10 A. Yes.

Q. And two values or two outstanding characteristics or features contributed to are recorded in the middle column?

A. Yes.

Q. Starting with habitat for avifauna. There's no evidence before this court setting out the contribution that the tributaries make to the habitat for avifauna, is there?

15

A. Not that I recall but there was significant evidence from a range of parties in relation to that matter before the special tribunal.

Q. That evidence is not before this court?

20 A. That's correct.

Q. And in relation to the habitat for indigenous fish, Ms McArthur did not address in her evidence the contribution that the tributaries make to that value, did she?

A. Not that I recall.

25 1605

### **CROSS-EXAMINATION: MS ATKINS**

Q. Good afternoon. Look, just a couple of questions from me because most of the things that I was going to talk to you about Mr Maw's covered with you or you dealt with at the beginning. So, just two things. Firstly, just in terms of the difference of view between the ecological experts around the way to approach indigenous fish habitat assessment, obviously that's a matter for the Court determine so I'm not going to put the ultimate question to you. But in your experience dealing with planning and policy

30

assessments that you mention in your evidence and you mentioned this morning, on the issue of outstandingness, have you experienced the approach taken by Ms McArthur to look at fish richness at the reach scale elsewhere?

5 A. No, I have not.

Q. And then my second question was it comes through in the joint witness statement and one of the disagreements between a lot of the experts, including the planning experts, is regarding the way in which the threats that seem to be largely agreed exist should be (inaudible 16:06:36) and I think you are one of the witnesses that have said that you are concerned with regard to managing those threats through existing mechanisms. Have I understood your evidence correctly?

A. I think that's a fair assessment.

Q. So, I just wanted to draw down a little bit just to sort of get a better sense of where that concern derives from. So, is it because you don't consider the existing mechanisms are adequate, in other words, are they failing at the moment?

A. I think that's evident in the regional council's own assessment of the situation.

20 Q. Is that because they aren't in place – I guess – oh, maybe I should've asked it in the other order. So, are there existing mechanisms that could be put in place, or existing ways to put mechanisms in place, but that's not happening?

A. I think that's entirely conceivable but also very hypothetical because the situation we're dealing with is the (inaudible 16:07:45) that we are in.

Q. Yes, I understand that. I guess what I'm saying is that in an ideal world, it could be the case that the matters the water conservation order is seeking to address, the threats that it's seeking to protect the values from, could be dealt with by the existing planning framework that exists both in the Resource Management Act and elsewhere?

30 A. I think that's entirely conceivable and that's a possibility. We talked a little earlier about the implementation of Te Mana of te Wai and so that possibility has been there for some years now. So, yes, it's possible in an ideal world. But I think that we're living in world where there are

significant competitive pressures for scarce resource and SOE monitoring is indicating that we're not succeeding at current implementation of techniques.

5 Q. So, taking that a little bit further, because of the way in which the water conservation order operates and the purpose for which it is put in place, in your opinion is it a better mechanism to address those matters because it doesn't have such the same problem as dealing with competing values as regional planning does?

10 A. Well, I think this forum is an indication that the WCO application still has to address and deal with those competing values.

Q. But in a different way?

15 A. Yes, and I think that the strength of the instrument is its longevity, the focus on protection, you know, as a paramount requirement and the direction that it gives to communities as consequence of this process around the way in which outstanding need to be provided for over the longer term.

1610

20 Q. So, as an example of that, when you think about the way in which this court has to look at the needs of the community and primary and secondary interests it needs, it's quite different than the loft process that's undertaken through NPS objective setting exercise, (inaudible 16:10:24) all value setting exercises, is that your understanding?

A. I'm in danger of digging a hole for myself but I wonder whether it is that different in actual fact given the hierarchy associated with the NPSFM –

25 Q. The new one?

A. The new one and that the direction, very clear direction, that that gives in relation to the health and wellbeing of water bodies with the third in the list being the ability of people in communities to provide for their social, economic and cultural wellbeing now and in the future. So, there's a very clear hierarchy in place and that sits, in my view, quite consistently with the part nine provisions.

30

Q. But perhaps not so much so 10 years ago when this process began?

A. That may have been the case.

**CROSS-EXAMINATION: MR GARDNER**

Q. Good afternoon Mr Carlyon. I'll take you initially to your evidence-in-chief.

**WITNESS REFERRED TO EVIDENCE-IN-CHIEF STATEMENT**

A. Yes.

5 Q. And we'll start at paragraph 9, where you say you've been involved in the application process since 2012 and later on you go and see, met with a large number of interested parties, whoever are stakeholders throughout the development of the application and familiar with the issues highlighted?

10 A. Yes.

Q. So, can I take you then to Exhibit 9 which you produced just a few moments ago and page 17 of that?

**WITNESS REFERRED TO EXHIBIT 9 - SUPPLEMENTARY EVIDENCE OF GREGORY CARLYON TO SPECIAL TRIBUNAL DATED 15 NOVEMBER**

15 **2017**

A. Yes?

20 Q. Perhaps if you put this document into context, if you turn just to the (inaudible 16:12:04) of the cover page, it says it was produced on the 15<sup>th</sup> of November 2017. So, I think it's been stated before that the Special Tribunal hearing took place in two parts, didn't it?

A. That's correct.

Q. Now, the upper river and the lower river, that's correct and so, this document was produced during the hearing for the upper river, the first hearing, wasn't it?

25 A. Yes, that's correct.

Q. So, during the hearing, not after the hearing or before the hearing –

A. No, I can't recall exactly but I know it was in that period, yes.

30 Q. So, it was during the hearing, yes. So, what I wish to say to you is that Federated Farmers made its submissions after the date this was produced, you wouldn't disagree with that?

A. I – look, I could not, I could not make that assertion –

Q. No, it's not big point it's just –

A. – so I'm sorry, I can't do that.

- Q. – (inaudible 16:12:55) section but the (inaudible 16:12:56) the further that it goes (inaudible 16:12:58) etched in my mind I – this is getting away from the subject but I was due to – there was due to be a presentation myself and I wound up indisposed in hospital suddenly so they went  
5 without me. But anyway, we're here now so, so just a context, this is produced during the stage one hearing and there was subsequently a stage two hearing. So, turning to page 17, there you have a consultation summary update. So, this is all the consultation that took place in the lead up to the first hearing. So, a consultation about the lower hearing,  
10 the lower river as well, is that correct?
- A. Yeah, yes it is but it was a response to the specific questions and directions from the Special Tribunal and that largely focussed in the space of tangata whenua interests.
- Q. Sorry, the – this response focussed on the –
- 15 A. Largely responded to that.
- Q. Largely. There is a – there is reference to Ms Dayson's evidence, isn't there about –
- A. Yes, that's correct.
- Q. So, we'll cover that in a moment. So, it's largely – that's alright. So, in  
20 this annex 1 on page 17 there's reference there to Mike Glazebrook and Jack Roberts, both of whom was reference to them being farmers, is that correct?
- A. That's correct.
- Q. So, of the consultation that took place, you only talked to – spoke to two  
25 farmers in that time, is that correct?
- A. No, we spoke to a very large number of farmers in a very large number of forums over the life of developing the conservation order and through the hearing process.
- Q. Because that doesn't align with what Ms Dayson says, does it, she says  
30 that – well how many farmers are there in a catchment, do you know, or?
- A. I cannot tell you.
- Q. No. What if I was to say there's 428?
- A. That's possible in the upper catchment there's –
- Q. This is both catchments.



A. – a small number in the upper catchment, so the upper Ngaruroro waters, Whanawhana up, it might be something in the order of 20 to 25.

1615

5 Q. A fewer number (inaudible 16:15:02) but the Ngaruroro catchment is a whole, more than 400 (inaudible 16:15:10)?

A. Yes. I accept your –

Q. Have you read Mr Mattich's evidence?

A. Yes I have.

10 Q. So you'd be familiar with the fact that he discusses farming in the Ngaruroro catchment in his evidence, that's paragraph 7.6 to 7.26. you're familiar with what he says in there?

A. I read it some time ago so I would need it in front of me if you're going to ask a specific question.

15 Q. Well I just wondered if you're familiar with it because you haven't produced any rebuttal evidence against it, against what Mr Mattich says, have you.

A. Yes I am. Yes, there was no provision for me to provide rebuttal evidence in relation to his evidence. Are you talking about evidence-in-chief?

Q. Yes.

20 A. Or the more recent statement?

Q. That's your evidence, it's Mr Mattich's evidence-in-chief. Mr Mattich did produce some rebuttal evidence as well and he discusses some farming matters in there as well at paragraph 4.8 in particular and 5.2 and 5.3. That's correct, isn't it?

25 A. That's possibly the case. Again, I haven't got it in front of me so I would need to sight it. But –

Q. You've got no criticism of what's – Mr Mattich says in those?

A. I would need to see that –

Q. Well you said you've seen it?

30 A. – because there is some differences of opinion between Mr Mattich and I in the range of context. So –

Q. On the factual stuff though. There's no criticism of what was said before –

A. I'm sorry. You would have to lay that out for me so that I can make sure that I'm correct in any agreement I make.

Q. We'll leave it at that. So let's have a quick look again. All right. No, we'll leave that there. We know where Mr Mattich's – so if the court knows whereabouts in Mr Mattich's evidence the factual number of things we can leave it at that. So if we turn to paragraphs 24 and 25 of your evidence-in-chief. There you talk about needs, the needs of – needs generally. So you say that there's concern from some parts of the community that the needs of primary and secondary industry and community are not provided for?

A. That's correct.

Q. Did you say that? yes. And in your opinion the current activities define, identified by industry (inaudible 16:18:00) are not undermined by the WCA as a consequence of the drafting of the order. And you go on to say you recognise that future broadscale aspirations, mega culture industries described in your field documents and evidence may be impacted by control that's related to (inaudible 16:18:15) discharges and dammings. Is that what you say there?

A. Yes I do.

Q. So as regards needs, would you agree to meet with me that future needs are relevant if they can be quantified?

A. Yes, I think so.

Q. Yes. And you may recall in the second hearing Federated Farmers did produce a case as to what might happen with climate change which appears to be quantified by NIWA. The effects of climate change. Would you agree with that?

A. Yes, I understand that in a board sense in the Hawke's Bay context.

Q. So that might lead to (inaudible 16:18:56) to a greater need for water and they may need more water to say, to grow crops, that sort of thing, to maintain their levels of production. Would you accept that?

A. Yes I do and I've seen evidence from a number of industry parties identifying their future growth aspirations which in turn will require more water resource.

Q. So they can be quantified?

A. Yes.

Q. But Forest and Bird, the applicants haven't set about quantifying it?

5 A. It's my view that the best party to speak to the issues in which they're expert is that party and we identified two farmer groups and industry body groups on a number of occasions that we needed to receive material that we could analyse for there to be any constructive discussion in that space.

Q. Sorry, could you just repeat that?

10 A. I think the point is that Federated Farmers or those farmers who are speaking to their future aspirations are the best parties to lay them out in sufficient detail to allow an assessment against the provisions of the order.

1620

Q. And you don't think there is any onus or any responsibility on the applicants to demonstrate to what future needs might be?

15 A. Not at that level, no. And it would be highly problematic to do that in the context of the feedback that we did get from industry groups as we went through the process on behalf of the co-applicants.

20 Q. So, it would be fair to say that you are – that the applicants' attempts to consult Federated Farmers were sparse, should we say, that is a fair comment, isn't it?

A. No, I don't think it is. I think it was a measured and considered response to the feedback that was given from industry bodies to the co-applicants from the application's outset.

25 Q. So, one of the outcomes of the strong case (inaudible 16:21:03) first hearing was an approach by Fish & Game, by Mr (inaudible 16:21:11) in fact of Fish & Game, a belated approached to Federated Farmers, very late in the piece wasn't it?

A. I'm not sure. You'd need to talk to Mr (inaudible 16:21:19) about that.

30 Q. So, we will move back away from consultation. So, and we have had a look at needs, so thank you for your responses in that, that is useful. And I just wanted to have a quick look at the threats. You talk about threats at paragraph 60 of your evidence-in-chief and you say, start at paragraph 60: "The Special Tribunal decision reflected a view that the presence of a threat was a consideration in terms of a determination to apply with water

conservation order.” So, at paragraph 60 you are saying it was a consideration but in paragraph 64 you say: “Basing a determination to apply a WCO principally on the presence of (inaudible 16:22:09) threat is problematic for a number of reasons.” And so, you moved from saying that the Tribunal (inaudible 16:22:15) its consideration to say it was their principal consideration. Is that – which is it I guess is the question?

5  
A. Well, I think it’s both. Legal counsel responded to the issue of whether or not the threat test and threats were relevant for the purposes of making a determination. And my point at paragraph 64 is that there are a number of threats present and they’ve been largely identified by the regional council. And that, as I say midway through that paragraph, waiting until a given threat is of an intensity that it would warrant one to making an application for a water conservation order, is likely to be the reason that it gets declined because that value is no longer outstanding. And we’re facing that exact challenge in relation to the Taruarau and a number of other sites where the regional council and the industry bodies have made the case that the value is so degraded, or degraded below outstanding, that it doesn’t warrant protection and that line appears to be a very fine one.

10  
15  
20 Q. Yes, I think – coming back to the question that I was seeking an answer to as to whether the – in your opinion, having read the decision, probably more than once like myself, but having read the decision whether the Special Tribunal applied the presence of a threat as a consideration or whether it applied it as their principal consideration, which of those two alternatives, or something in between?

25 A. I’m not sure how to respond to that. I think it’s more complex than that.

Q. Perhaps it’s a legal question (inaudible 16:24:05).

A. I think it would be better responded to by that team because my very superficial response to it is that in the upper river where the threat is lower because there are significant interests providing for the presence of those values, so the threat is potentially lower, the order was made. But in the lower river, we’re putting aside the contention around the presence of outstanding values and the threats are clearly evident to those values, the order was not made.

30

- Q. So, just a couple more questions. Paragraph 86, you talk about cultural and spiritual values, so: “Determination of presence of outstanding cultural or spiritual values, tangata whenua, rests entirely with tangata whenua.” Do you agree with me that there could be cultural values, tangata whenua, recent time with tangata whenua, do you agree with me there could be cultural and spiritual values tied up with the land and the Ngaruroro catchment that aren’t associated with tangata whenua? Could there be other cultural and spiritual values, you think, that people might have?
- 5
- 10 1625
- A. Without a shadow of a doubt I’m sure that is the case. We’ve spoken to a number of landowners up there, the Roberts family, the Apatus, any number of others that are farming within that landscape who have a very deep connection, are stewards in relation to that environment and have been there over many generations. So I’m sure that is the case.
- 15
- Q. And those spiritual and cultural values should be, there may be needs associated with that as well, mightn’t there?
- A. Sorry, were you asking me what those needs might be?
- Q. There may be needs associated with this cultural and spiritual values held by tangata whenua, there may be needs associated cultural and spiritual values held by others as well, mightn’t there?
- 20
- A. Yes. But I wouldn’t want to be caught conflating those two things. I think they’re entirely separate –
- Q. I’m sure they are. But they nevertheless exist, you would agree with that, wouldn’t you?
- 25
- A. That’s a possibility that there are needs associated with maintaining that connection to the land.
- Q. Which should be reflected?
- A. In the order itself?
- 30
- Q. It should be looked at whether they should be reflected or not? All right. So just moving on to paragraph 164, right near the very end you talk about the TANK process and you say there: “The regional council is hoping and reliant on a early stage process. Submissions not yet closed. Undertaken

in a collaborative framework where a significant conflict remains in the views of parties who participated.” We’ve moved on, haven’t we?

A. I’m sorry, just, I think I might have the wrong paragraph?

Q. 164 in the evidence-in-chief? Right near the very end, in the conclusions.

5 A. Yes, I’m there now.

Q. So you say: “In relation to TANK every encounter has heavily relied on a early stage process. Undertaken in a collaborative framework,” et cetera. So there. But you’re aware I’m sure, and I’m sure the court is already, that that plan change has now been notified, the plan change in the line?

10 A. Yes, I’m aware that it’s been notified but that submissions have been lodged and further submissions have been lodged and that a hearing is scheduled for perhaps May of this year.

Q. And the provisions in plan change 9 had immediate effect, didn’t they, by and large as I’m sure they all do?

15 A. Yes. They are relevant matters in a determination.

Q. It’s just a matter of course, so they’re in effect now, aren’t they?

A. Yes. To some degree that’s the case.

Q. To some degree. What does that mean?

A. Well it means it’s a relevant consideration in any consent decision that  
20 flows out of the council.

Q. The rules will be in effect, won't they?

A. Yes.

Q. Any rules will be in effect?

A. But there’s a hierarchy between the existing plan and the proposed plan.

25 Q. I think that’s all I have on that. So just coming back to paragraph 9, oh, paragraph 6 I think it is.

A. Sorry, paragraph 6?

Q. Paragraph 6. Just looking, I just want to come back and another brief (inaudible 16:28:35) at the consultation. Yes. You say you’ve: “Acted as  
30 a decision maker in a number of proceedings, have been involved extensively as a facilitator and chair for community engagement in the consent review processes with respect to freshwater.”

A. Yes.

- Q. And you said, I think earlier, in response to a question from my friend, Mr Maw, that you've been to a lot of these, you've been heavily involved in the consultation but the lead you've been taken, I didn't quite catch the name, but I presume it was, well, Mr Bryce Johnson, was it?
- 5 A. Inside my company was Mr Alastair Beveridge.
- Q. Yes, yes. But you were there and a lot of others?
- A. Yes I was. But that's clearly the role of a planner in those types of proceedings.
- Q. Oh, indeed there are, yes, yes. So that's, no, just, no, I think that's all I
- 10 have. So thank you very much Mr Carlyon, it's been very useful and thank you your Honour, that's all the questions I have.

**CROSS-EXAMINATION: MS BLOMFIELD – NIL**

1630

**CROSS-EXAMINATION: MS MAUGER**

- 15 Q. I just want to go back to, I can't even remember how we met.
- A. It was at Horizons Regional Council.
- Q. Oh.
- A. Nearly two decades ago.
- Q. (inaudible 16:30:28). So, fast-forward to end of 2011, and this discussion
- 20 starts, and then we invite you to *Love Our River Day*?
- A. Yes.
- Q. Number four, which is an annual *Love Our River Day* that kaitiaki (inaudible 16:30:50)?
- A. Yes.
- 25 Q. And our first one was on Valentine's Day, so hence the name. So, it was the 18<sup>th</sup> of February and I noticed that something in your evidence here is a slight error, the date?
- A. Thank you.
- Q. That's on page 17 under (inaudible 16:31:13). Right, so question. At that
- 30 time there was – thank you for coming on that day. We've got quite a compressive format for bringing people at the river together, so thank you for your attendance that day. Although – I'm not sure how I make this into

a question. I do recall that there was general agreement in the concepting principle on the day that – from those present but it seems to me that you might have interpreted that as, like, let's go, like, it's, you know, as a formalising process. So, in principle I would confer with you that there was that sense of let's explore what this is, but I don't recall anything more definitive. At that same meeting – then a wee time lapse, I hear from you, and I think you invited me to bring together that day, at (inaudible 16:32:22)?

5 A. Yes.

10 Q. Thank you for that. It was an honour.

A. It was for the rest of us too, thank you.

15 Q. So, I racked my brain and I thought how many tangata whenua do I know, individuals and organisations relating to the awa that we should bring together. So, that did involve (inaudible 16:32:44) before the RPC existed. And I think, you know, quite a number of people which left you with a list, a contact list et cetera?

A. Yes.

20 Q. Addresses, and at the time I remember contacting Tūwharetoa who said they couldn't attend that day, but good to hear that that was continued, picked up on.

A. Yes.

Q. And that brings me to another error that you've got in your supplementary evidence, page 17?

A. Yes.

25 **WITNESS REFERRED TO COMMON BUNDLE**

Q. East Taupō Lands Trust. There's (inaudible 16:33:20).

A. My apologies.

30 Q. That's okay. Right, so – but this is where my qualms begin that personally, it's not about me, but hearing from the applicants regarding the WCO progress updates and the actual mechanics and where you're at with things, that didn't occur (inaudible 16:33:55) –

A. Right.

Q. – through any of the various (inaudible 16:33:58) I'm not aware.

A. Right.



Q. And the way that I personally heard was through the public announcement, so that was like, “cool”. So, question, I’m not sure how to turn that into a question but you do (inaudible 16:34:17) that they, the public, that (inaudible 16:34:19) determined to go where you have been invited. I’m not sure how (inaudible 16:34:25) not clear around the structure that was preceding (inaudible 16:34:36) application. So, anyway, and then fast-forward again to we’re in 2017. So, this is, like, five years later. I invite myself to a public hearing, public consultation?

A. Yes.

10 Q. So, common ground sought the water conservation order?

A. Yes.

Q. So, I think you know we’re still there, that the five years of trying to figure out, you know, that’s – you agree that’s quite a lapse?

1635

15 A. Yes, yes and if it had been a lapse of five years, I would agree with you but I think there were – I can’t recall now, sorry, but I recall that there is a number of offers made to have – to bring iwi interests onto the river, both for the lower jetboating session, I’m not sure that you attended that, but equally we ran a session from Kuripāpango down to the get out points, and I think you attend that with us?

20

Q. Yes, which is one of the points I’m getting (inaudible 16:35:33).

A. In that period. And then, I’m not sure if you recall but we had a number of discussions about the importance of engagement with those hapū associated with Omahu marae?

25

Q. Yeah.

A. And you know, assistance from you to help us get through what was a really difficult time there.

Q. Yes, well, that is absolutely right. So, the jetboat, I can’t remember the date about that, but in the rafting trip, I tried it – for it to not be me but then I ended up going on it.

30

A. I’m pleased that you did.

Q. Yeah, thank you. But in terms of the formalising approach, as a (inaudible 16:36:15) trustee, I did extend this information that you had shared with me to the trust that although that was an informal process –

A. Yes.

Q. – there was nothing that (inaudible 16:36:30) correspondence and I would  
 – I've got a – I don't know if it's an apology or not but when you're land  
 owner of a block and when you're from the hapū that the – Judge Harvey  
 5 has quite rightly pointed out, but extends from basically (inaudible  
 16:36:50) from Heretaunga to Taupō is two and a half hours drive, so in  
 my case, I didn't know all the land blocks that have been referred to  
 (inaudible 16:37:06) personally. So, I definitely knew about (inaudible  
 16:37:12) but (inaudible 16:37:15) referring to, property schedules and  
 10 things like that (inaudible 16:37:21) Māori Land Court (inaudible  
 16:37:22) from this point on, anyone involved with wanting to get  
 something done with tangata whenua, as the Judge rightly pointed out,  
 there should be (inaudible 16:37:35) some information, not leaving it an  
 individual (inaudible 16:37:40). So, have I got a question, it's more like  
 15 can we use best practice from now on, might be a question?

A. (no audible answer 16:37:48).

Q. Yep, so that involves – because there's – anyway, the Judge has pointed  
 out the reasons why.

A. Yes.

20 Q. So, in terms of attempting to meet with the hapū of Omahu, yeah, again,  
 I suppose in the time – the duration, 2011 until now, what has matured in  
 the representation and management of te ao Māori (inaudible 16:38:30).  
 So, I don't know an apology's necessarily warranted, but (inaudible  
 16:38:30), so respectfully. I've got a question around who your project  
 25 manager has been, I might have wrongly assumed it was you?

A. It was (inaudible 16:38:41).

Q. It was (inaudible 16:38:42)?

A. Yeah, so, and I think you know (inaudible 16:38:45) well?

Q. (inaudible 16:38:45).

30 **CROSS-EXAMINATION: MR MACGREGOR**

Q. Kia ora tātou. (inaudible 16:39:21) tike te awa (inaudible 16:39:29). I've  
 got a couple of questions if I may. I just need – by the evidence, the

supplementary, exhibit 9. I mean I don't mean to be pedantic but let's go to the summary on page – oh, let's go to page 1.

**WITNESS REFERRED TO COMMON BUNDLE**

5 Q. You made some reference to te Ngāhewa and just recognise (inaudible 16:39:48) and with respect to Ms Reneta Apatu, that's Mr, the late Mr Reneta Apatu, maumau (inaudible 16:40:00) losing that boy, but anyway we've covered those adjustments there in the document. Mr Carlyon, in your supplementary you made reference to the timing so I'd like you just to confirm to the court that in your initial engagements in the Owhaoko C Trust 2011, 2012, you were dealing with the then chair, Mr Murry Apatu?

10 1640

A. That's correct Sir.

Q. Intervening period after that, 2015 approximately, you were dealing with the new chair of the Owhaoko C Trust, Mr Koro Te Whaiti?

15 A. That's correct Sir.

Q. And now you're (inaudible 16:40:43)?

A. Yes, I'm very aware of that too, sir.

Q. You're not agreed, Mr Carlyon, that within the whole process in those initial years leading up to and beyond '15 to 2017, there may have been elements of miscommunication in this whole process?

20

A. Oh, yeah. I agree with you and I tried to lay that out at the start of my evidence. And I think that we could've done a lot better as a team, I could certainly have done a lot better in engaging with you and a number of other Māori interests through that period.

25 Q. One last question. (inaudible 16:41:25) but one last question. With reference to the Whitewater submission, Whitewater paper that was produced today, paragraph 95, (inaudible 16:41:38) Mr Carlyon has recommended that the draft order be amended to include the following clause (inaudible 16:41:45). I'll quote: "Nothing in this order prevents the exercise of kāwanatanga (inaudible 16:41:50) the order acknowledges the rights and interests of Māori landowners exercising their mana whenua kaitiaki obligations in this (inaudible 16:41:58)."

30

A. Yes.

Q. Could I acknowledge that that is probably a way forward and a path for the trust of my colleague – my colleague trust, (inaudible 16:42:13)?

A. Certainly.

**RE-EXAMINATION: MS EVELEIGH – NIL**

**5 QUESTIONS FROM THE COURT: COMMISSIONER EDMONDS:**

Q. So, in answering one of the questions when you said that a driver for the application was the interconnectedness that was (inaudible 16:43:04) and I'm aware that there a lot of planning documents and a lot of material, for example on the MFE website talking about ki uta ki tai, from the mountains to the sea?

10

A. Yes.

Q. Does the current duration of the NPS also deal with that concept under the banner of Te Mana o te Wai or separately?

15

A. I think if that concept was better explored and articulated it could easily encompass that notion of mountains to sea in management. The co-applicants spend a great deal of time working through a determination about what values were outstanding at what site and I think that's set out in evidence, so it wasn't a universal the river is outstanding for (inaudible 16:44:04) values over its length, it was very particular about where values were present.

20

Q. So, how does that relate to the interconnectedness point then, your answer to that question?

25

A. Yes, I think it comes back to – I think the question might have come from Mr Maw, but – when he was talking about the schedules, and he was talking about the requirement for habitat quality in order to provide for the outstanding bird values that were present or for any one of those values we explored very hard in relation to trout values, for example, whether there was a relationship right through the awa and a significant amount of money was spent on research to make that – a determination that there was no link in relation to fish migration through the river. The upper river has an outstanding trout fishery but that's not supported by a trout fishery

30

in the lower river, but it is supported by the ability for trout to be able to migrate through that system.

1645

Q. So, I'm just having a look at exhibit 8. Do you have exhibit 8 there?

5 **WITNESS REFERRED TO EXHIBIT 8**

A. Not in front of me.

Q. So, just building on what you have said there, so is that the reason then that you do not have that mountains to the sea concept in terms of the order as now sought in terms of the lower end of the river?

10 A. From Chesterhope through to Waitangi estuary I think you're talking about?

Q. Yes.

A. That's because the co-applicants, Ngāti Hori, were unable to sustain their involvement in the process to this point and there were no other parties to pick up those values and speak to them. So, the point I made a little earlier was that the values are – the biophysical values are quite degraded through that part of the river from a number of perspectives and – but the values held by (inaudible 16:46:36) and Margie and her people are just as strong as they ever were but they are unable to represent in here.

20

Q. So, yesterday we had Ms McArthur and I did ask Ms McArthur a number of questions about the indigenous fish and she did make quite a point of the connectedness to the sea issue and I just need to explore a little with you, answers and questions from Mr Maw, I just need to understand the order that we have in front of us and in the same ways I asked the questions yesterday of Ms McArthur. I just need to understand what it is that you're supporting in planning terms. So, if we could just have a look at schedule 2 and with the lower river. I think the question you were asked by Mr Maw about the evidence in front of us – but I just want to understand your planning position. So, schedule 2 we've got those two matters, we've got the habitat one and then we've got the contribution to the outstanding habitat for indigenous fish in the upper Ngaruroro waters.

25

30

A. Yes.

Q. So, could you explain to me where you're sitting on that?

A. I'm sorry, I might be missing the point. Are you talking about why isn't the section from Chesterhope bridge to Waitangi estuary included in terms of its –

5 Q. No, no, sorry. I have moved away from that. I am trying to understand. I mean, the answer may well be – you kept referring to a committee effort going on somewhere else. But I just want to understand in terms of the evidence you've circulated previously why you've abandoned having reference to particular things?

A. So, the avifauna itself or the –

10 Q. No, I'm thinking of the indigenous fish at this point.

A. Yes, that was the question you asked Ms McArthur yesterday, wasn't it?

Q. Yes, so I am asking you the same question.

A. I thought about that when – obviously when you were talking with Ms McArthur, I think you indicated you were going to be asking me that as well at that time.

15 Q. Yes, I was trying to signal (inaudible 16:49:28) to you to prepare.

A. You did signal it?

Q. Yes.

A. And I think – I have thought about this, you know, over this last 24 hours and I think it would be logical to have it included in that list and – but I cannot reconcile why it's not there. I apologise that I can't give you a more definitive view of how it has escaped from that list or not been included in that list. But it is logical that it sits there if the evidence of Ms McArthur is accepted that there are outstanding values associated with that indigenous fish population.

25 1650

Q. And you're now talking about in the schedules that refer to the upper river. That is that?

A. Yes, yes.

30 Q. And I think she suggested that you might have the flip side of schedule 2 at the bottom where you refer to the contribution to the outstanding habitat of indigenous fish in the lower waters?

A. That's correct. Yes.

Q. And so is that something that you're supporting in planning terms?

A. Yes it is.

Q. And that's based on, in terms of the evidence, is that in Ms McArthur's evidence?

5 A. Yes it sits with Ms McArthur's evidence. I've read the evidence of the regional council witness in particular. I obviously haven't seen it before this hearing.

Q. So are you contradicting the responses you gave to Mr Maw or are you elaborating on reflection and elaborating further? Are you changing your evidence?

10 A. I'm sorry, but I'm not sure that I was answering the same question with Mr Maw. But perhaps I was.

Q. It's been a long afternoon and I've got the sun on my back so I wouldn't be sure either.

15 A. Yes. What's in the back of my mind from a planning perspective is that you potentially get to the same place in spite of values either contributing or outstanding in their own right being within the schedules. They should be as accurate as possible on the back of the evidence that's been provided but I don't think it's fatal that they're not there. But it is sensible if the evidence demonstrates it if values are outstanding or contributing values for them to be included.

20 Q. And just going back to (inaudible 16:52:03) tying the mountains to the sea (inaudible 16:52:05) but your thoughts on that are weakened at all by the fact that we're not, in terms of what is now in front of us, it's not proposed that it extend to the sea, by the applicant?

25 A. That would be from a planning perspective, not from my client's perspective. That would be my strong preference both an ecosystem context but in a planning context, that that connection was made through to the estuary.

30 Q. But if that connection were not to be made through to the estuary and the way in which we have it shown on this plan, which is now the proposition, would you still feel that these values or these outstanding values ought to be in these schedules?

A. Yes I do.

Q. You do? Thank you. I just have another line of questioning which is following up on some of the questions that I asked this morning in relation to the priority that you might give to a water conservation order and I've had a bit of a look at what happens in terms of the hierarchy of documents and where a water conservation order sits with that. So I don't know whether you have the RMA in front of you?

A. No, I do not.

Q. Section 60 – we could either do it on the RPS or the regional plan. I think they're both the same. Perhaps we just need to double check that. I'm not sure about that. So we could either look at section 62 subsection 3, that's the RPS has got that. Para 89 the Judge tells me.

**THE COURT: JUDGE DICKEY**

Q. Para 89. Paraphrase those provisions.

A. In my evidence-in-chief?

Q. Yes. Yes.

**QUESTIONS FROM THE COURT CONTINUES: COMMISSIONER EDMONDS**

Q. Okay, so in 89 you conveniently refer to both the RPS and plans, so that's helpful. And I did check that and they do appear to be the same. So, those planning documents in terms of the hierarchy mustn't be inconsistent in the water conservation order. It's different, as you acknowledge, in terms of an NPS where you have to give effect to it. So, what would you see as might be the practical difference when you're applying a test of not inconsistent with any water conservation order as opposed to giving an effect to?

A. Well, when I've been looking, I think I identified in evidence that I saw common ground, not differences, in the (inaudible 16:56:14) significant majority of that assessment. In relation 2020 NPS there are some real challenges there, but I have formed the view that it was not inconsistent with the application and that's the place that I've come from through the Special Tribunal hearing and through evidence into this hearing.



Q. So, if an order were made and it listed a whole lot of things in terms of what's outstanding along the lines proposed if (inaudible 16:57:01) –

A. Yes, yes.

5 Q. – underlining that point, it's a hypothetical (inaudible 16:57:06). And if both things were not carried through into these (inaudible 16:57:14) order documents, (inaudible 16:57:19) –

A. Regional plan, yes.

Q. Regional plan. Would you say then that those other documents were inconsistent?

10 A. Yes, I would.

Q. You would?

A. I think there's an imperative to bring that direction across into those lower order documents and I think that's been part of the very real concern expressed by Hawke's Bay Regional Council and within the community over a number of years now.

15

Q. So, just moving onto these plans that are busily making their way through the process, so you have got this plan change 7 and plan change 9?

A. That's right, yes.

Q. And you know, we are constantly had this problem where things are trying to – they're a long way behind –

20

A. Yes.

Q. – they don't catch up, they are out of sync. So, sometimes that is because the council decides that they're not going to traverse those things now, they will do that through a later process. Sometimes they say: "Oh no, we don't have scope to change (inaudible 16:58:40) now, so this is all we can do and we'll come back to it someday maybe, we'll see." Is that – has that been your experience with the –

25

A. It must certainly has been. That includes the implementation of the NPS at 2014 and its variation in 2017, yet alone water conservation orders, the reluctance to bring those mechanisms into play because of the very real challenges that they do pose to communities and the conflict that it generated as a consequence.

30

Q. So –

A. There's another challenge sitting there for the documentation that the regional council's advancing through both (inaudible 16:59:29) water bodies and plan change 9 and that while the sentiment expressed is one of: "We have..." I'm using lots of we's, but: "We have provided for your interests..." This being the co-applicant's interests in relation to the outstanding values: "... at the heart of it, if the planning and policy process is about providing for values, you would need to recognise their presence and the regional council has not done so." So, the ability to provide for an outstanding value in a document like the RPS or the regional plan is quite diminished if you don't recognise this status or the type of value that is present.

1700

Q. So just moving on from there then, is, I think somewhere in your evidence you express the hope that that would be the benefit of having those outstanding characteristics in the water conservation order. Did I see that in your evidence somewhere?

A. Yes. I'm sure that that would have come through in this evidence and all other evidence that I've produced. And that is a point of contention again expressed in this community, that decisions about awa like the Ngaruroro are decisions for a local community, not one for, I think I'm quoting them, not one for outsiders. And I clearly don't hold that view. I think there are a set of national imperatives and directions and there is an obligation to implement them in a timely fashion.

Q. So I think the Whitewater counsel, Ms Eveleigh, she did suggest that recognising the values didn't really take you very far. You needed to recognise and provide for them when I asked the question earlier in the day.

A. I think the (inaudible 17:01:40) divisions might talk about recognise and protect even. I'm not sure of the exact wording but I think there is a requirement to take that next step. Yes, recognition of them is, is the first step. But a determination is then required as to whether what the protection mechanism is for that particular value and as the order is set out that will change from the upper waters to the lower river, lower waters, depending on the threat that is present or the context in which that value

is present. So if I use perhaps the simplest value, the outstanding landscape values, which I don't believe to be in contention or I don't understand to be in contention, they are not particularly challenged by threats that might be present and they need a different response to the value associated with protecting the habitat of avifauna in the lower Ngaruroro through the braided river section where there are a number of challenges or threats to that resource

5  
Q. So you're suggesting that you can have a tailored response in terms of your restrictions and prohibitions and other provisions that you have?

10 A. Yes. And I think that the order is framed in that way. They are an evolution of a mechanism that hasn't changed significantly for some period of time so you'll see in this order drafting that looks like the previous 10 or 15 orders, but this order addressed water quality where previous orders have largely dealt with damming or diversion and so that was a new challenge for drafting purposes. Yes, I think they could easily adopt a nuanced response and key amongst them might be the recognition of tangata whenua values and the exercise of rangatiratanga from those upland Māori landowners and interests.

15  
Q. So you don't – in terms of protection and with a view to protection, that could be partial rather than?

20 A. I don't think I'm suggesting that. I think the protection needs to be on a whole. You're not half pregnant. It's either protected or it's not in terms of the value and I think what I'm saying, and I'm clearly not articulating well, is that the way to protect that might differ from place to place and by value.

25  
Q. And you think the draft order does that?

A. Yes, I think in its current state it is very close to that and notwithstanding the drafting issues that have been discussed over this last few days.

1705

30 **QUESTIONS FROM THE COURT: JUDGE DICKEY**

Q. Mr Carlyon, you may have heard my discussion with Ms Eveleigh around the part two matters, and the reference to your evidence when you address part two. Were you here for that discussion?

A. Yes, I was.

**THE COURT ADDRESSES COUNSEL – FIND PAGE NUMBER (17:05:38)**

**QUESTIONS FROM THE COURT: JUDGE DICKEY**

5 Q. So, is it your evidence that the draft order is not contrary to section 6(e) and section 8?

10 A. I think there are significant challenges generated by the application in relation to 6(e) and eight, without the resolution of the issues that have been raised by tangata whenua for this hearing, and I was just going to say that I think those challenges are further highlighted by the directions contained in the NPSFM and a number of the core principles, I think they're six principles there but there are three in particular that relate to the rights and interests of iwi.

Q. And did the second, the further (inaudible 17:07:29) plans highlight those issues?

15 A. No, it –

Q. Just when we went through what –

20 A. – we simply set them out and concluded helpfully that we didn't always agree with each other, but the key principles for consideration from my point of view, within that framework for mana whakahaere, kaitiakitanga which we've talked about, and manaakitanga.

Q. So, is it your evidence that as matters stand the draft water conservation order does not sit comfortably with those matters?

25 A. I think that is a fair description of the position that I hold. I think it would be, it could be contemplated that as you might do with other provisions of part two that where they are repugnant to the WCO cause, so to speak and the lawyers have spoken much better to this than I have, that would move with the part nine priority. I think that we owe better consideration to those issues than to describe non-compliance with section 6 and section 8 and those principles contained in the NPSFM as repugnant to  
30 the WCO application.

1710

**QUESTIONS ARISING – NIL**

**WITNESS EXCUSED**

**APPLICANT CASE CONCLUDES**

**COURT ADJOURNS: 5.12 PM**

5

**COURT RESUMES FRIDAY 12 FEBRUARY 2021 AT 9:37 AM****KARAKIA TĪMATANGA****EXHIBIT 10 PRODUCED – HAWKE’S BAY REGIONAL COUNCIL ORDER**5 **MAP****MS DOWNING READS LEGAL SUBMISSIONS**

“May it please...the Ngaruroro river.”

**MS DOWNING CALLS****PROFESSOR KENNETH FREDERICK DAVID HUGHEY (SWORN)**

- 10 Q. Good morning, Professor Hughey.  
A. Good morning.  
Q. Can you confirm that Kenneth Frederick David Hughey is your full name?  
A. I can.  
Q. And you prepared a brief of evidence dated 18<sup>th</sup> of June 2020 of about  
15 72 pages?  
A. I have.  
Q. And you have the qualifications and experience as set out in your  
paragraph 2 to 12 of your evidence-in-chief?  
A. I can. Could I please address to paragraph 3, please?  
20 Q. I was just going to move on to that.  
A. You’ll come to that?  
Q. Do you have any corrections to make to that evidence?  
A. Just two. The first is in addition to para 3, actually to para 2. During the  
period of September to November 2020 I undertook the role of Deputy  
25 Director General, Biodiversity and Engagement for Te Papa Atawhai, the  
Department of Conservation. And on page 29, a very minor correction,  
para 71. Fifth line should read: “Paragraph 45 of my evidence (cross out  
the *and* and replace with */*, please.)” I apologise for that.

**MR ANDERSON TO WITNESS:**

- 30 Q. Sorry, could you repeat that correction or mistake?

A. That last one?

Q. Yep.

A. So – sorry, I’ll just find it again. Para 71 on page 29. On the fifth line of that paragraph that begins: “Paragraph 45...” After the bracket, please  
5 cross out *and* and replace with *I*.

**EXAMINATION CONTINUES: MS DOWNING**

Q. Can you please confirm your evidence is true and correct to the best of your knowledge?

A. I can.

10 Q. And have you read the supplementary evidence of John Laurence Craig dated 2<sup>nd</sup> of February 2021?

A. I have.

Q. And can you confirm you signed a joint witness statement on avifauna dated 9<sup>th</sup> to 10 March 2020?

15 A. I can confirm that.

**CROSS-EXAMINATION: MR ANDERSON**

Q. Are you able to put your hands on Dr Craig’s supplementary evidence, which is this in particular – sorry.

**WITNESS REFERRED TO COMMON BUNDLE**

20 A. Yes, I can.

Q. Now, that document isn’t numbered or have pages on it, does it?

A. No.

Q. Can you go to the introduction and on second page is the introduction, and there’s a sentence that starts above “reliance on outcomes”?

25 A. Sorry, I didn’t hear –

Q. The second of the introduction?

A. Yes.

Q. There’s a paragraph that starts: “The reliance on outcomes.”

A. Yes.

30 Q. The last sentence of that paragraph says: “(inaudible 10:23:21) it is crucial to have fully justified ranking system with transparent science behind.

This also needs to be for full transparency to have the accompanying assumptions declared as it required by IUCN.”

**THE COURT: JUDGE DICKEY TO MR ANDERSON:**

Q. I’m just – can you just pause and –

5 A. Sorry.

Q. Where are you exactly?

A. Have you got Mr Craig’s supplementary –

Q. I have, just now, yes.

A. The introduction –

10 Q. The report that is attached to it?

A. Yep, the introduction runs to the second page. On the second page the first new paragraph starts: “A reliance on outcomes...”

Q. Yes.

15 A. And the last sentence of that paragraph which starts: “As Williams 2009 argued...”

Q. Thank you.

**CROSS-EXAMINATION CONTINUES: MR ANDERSON**

Q. Now, I read that as an implied criticism of the Department’s approach to threat classification, would you agree with that?

20 A. I see it as a challenge to the threat classification system, yes.

Q. And can I also take you to the conclusion of that paper, and in the fourth paragraph – the third paragraph starts: “The implications of determined threat status...” Have you got that?

A. Mhm, I do.

25 1025

Q. And again, if you read that paragraph in its entirety, would you agree that continues to challenge the threat classification –

A. Allow me a moment?

Q. Certainly.

30 A. I’ve now read the paragraph, Mr Anderson. I do believe that there are aspects that I could helpfully clarify.

Q. Thank you. In your evidence-in-chief you have attached an appendix 2.



A. I have.

Q. Are you able to just briefly explain that appendix and how the New Zealand threat classification works?

5 A. I think I can. Your Honour, the threat classification system is used by the Department of Conservation on or in its role in giving effect to the Conservation Act 1987 and helping prioritise its conservation efforts with respect to birds, animals, plant species. To do this it needs to know which species are under most threat and as such has developed a system which is described in the referenced article that I quote in appendix 2, Townsend  
10 et al 2008, in order to undertake that process. Development of the system took time and involved people from both inside and outside of the Department. It was widely debated before being settled upon. It differs slightly to some other international systems and in my opinion and many others, for good reason. New Zealand is considered a global biodiversity  
15 hot spot and it has many species that have unique characteristics and contexts which made some of the existing classification systems not as useable within the New Zealand context. So in that sense the system was developed and has been operating since that time. It uses expert panels far broader, and I need to emphasis this Mr Anderson, far broader  
20 than just DOC officials. It encompasses experts from a wide variety of sources and runs a thorough process of examining all of the available, or best available evidence that has in front of this. It does that every five years for every one of the classification lists, for example, birds. That is its responsibility and the system is managed appropriately by the  
25 Department of Conservation given its duties under the Conservation Act. The expert panels assess each species using the best available evidence against three primary criteria. Threatened, at risk and not threatened. And they calculate or assign where the species sit in accordance with whether or not there have been population changes that have occurred  
30 over 10 years or three generations, whichever is the longer. Sir, the appendix then goes on to provide relatively minute detail into every one of the sub classifications and there are many, and that is because of the unique context within which many New Zealand species sit. I'm happy to amplify that if needed.

1030

Q. I think I might ask you a couple of questions first before we do that. On page 51 of your evidence-in-chief, that's page 223 of the common bundle, you there have a table of all the bird species that have been found on the lower Ngaruroro. I think the best way – I'm going to explore whether the best way of kind of explaining how this works might be to take you to the line which says: "Shallow water band for dotterel." And I wonder if you could explain to the court the way in which a threat classification works for that particular species?

5  
10 A. Certainly. So the expert panel gathers evidence from a wide range of sources. It seeks it out by publicly advertising that the threat classification system will again be applied to birds. It invites experts to contribute and then it meets. And this meeting occurs both virtually and face to face.

Q. I don't want to interrupt you unnecessarily but it would be helpful if you could explain the length of time between the two, between the – would I quite correctly refer to it as an updating of the classification?

15  
A. Yes. So reviews occur every five years. The last one occurred in 2016. The report was published in 2017. The current review, the 2021 review, is occurring now. submissions have been called for and a wide range of submissions have been received.

20  
Q. I know that now is probably an opportune time for me to pass the witness this document.

#### **WITNESS REFERRED TO REPORT**

A. I have that report.

25  
Q. Can you make sure the witness gets – because we haven't completely copied the documents so it's only excerpts of it. Is this document familiar to you?

A. It is.

Q. Is this the document you just referred to?

30  
A. It is.

Q. Can you just record for the court that it's not – is it a complete document?

A. No it's not.

Q. Can you just record the pages that are present in the document you have?

A. So the pages that you have submitted as this exhibit are in effect pages 1, 7, 11 and 22.

Q. Thank you. Can you please carry on your description of banded dotterel?

5 A. So the expert panels meet, your Honour, on a five yearly basis to examine and review the situation with regard to each species and as requested I will refer to the banded dotterel deliberations. These though are just symptomatic of every other deliberation which occurs with every other species that is considered. But in this case, like any other species, it will come out with a different determination. So in 2016 the expert panel and  
10 a membership of that panel is listed on the title page, I can tell you that over half of the panel is external to the Department of Conservation and represents others that are private consultants, variably retired NIWA scientists from Te Papa and from other sources, but as noted the whole process is facilitated by Te Papa Atawhai the Department of  
15 Conservation. The panel meets, gathers all the information and then looks to see where that information situates a particular species in relation to any of the threat classifications so defined and outlined in the Townsend 2008 report. In the case of the banded dotterel, and I might just add here Sir in case there's any confusion, in Australia, because that's where many of the birds migrate over winter, it has a different name.  
20 It's called the double banded plover. But we're in New Zealand so I'll stick with that. Thank you. In the case of the banded dotterel, the evidence before the expert panel led them to conclude that the population of the species sat in the row, so your Honour, if on page 11 you move down to the row headed D in bold caps, row D: "Moderate to large population and moderate to high ongoing or predicted decline." The panel found that the population sits within the range of five to 20,000 mature individuals and the predicted decline was 30 to 70%. Therefore, it was defined as national vulnerable with the subscript underneath the D of "D1/1." Five to  
25 20,000 mature individuals, predicted decline, 30%. That is the process used for all species evaluated.

1035

Q. Can you explain the predicted decline element of it? I'm particularly interested in the timeframe over which that decline is considered.

A. I can. So going to my evidence-in-chief at page 53 where we were just at, so that's appendix 2, the last sentence on page 53: "Note that population changes are calculated over 10 years or three generations, whichever is the longer." In this case generation time is therefore very important because in fact there is considerable evidence that the generation time of banded dotterel is relatively long.

Q. Can you elaborate on that?

A. Yes I can. There have been various estimates by different experts over the years around the longevity of banded dotterel. Some people have suggested a relatively shorter longevity, maybe eight to 10 years. Others have suggested 15. But in fact there is evidence that they live until at least 20 years old and if that is the case, and according to the population modelling that can be undertaken, for example, in the Leslie matrix approach, then we need to be using the highest known age of a species. I know your Honour, a little about this 19 years or 20 years old bird because it so happens I was the person who banded that bird away back in the mid 1980s as a young chick. It was recovered 19 years later alive, it was banded on the Ashley River in North Canterbury. It was retrieved alive 19 years later and then released. It has not been seen again which doesn't mean a lot because that particular bird only had a metal band on its leg. Those bands can be hard to see and unless the bird is recovered then over time it will die and just disappear. The point, Sir, is that there is a record and this is from a wild bird, not a protected population bird, that they live until at least 19 years and therefore in any modelling that has sourced New Zealand banding office data, which is managed by the Department of Conservation, that length of time should be used in the model.

Q. Can I take you to paragraph 50 of the evidence of Mr Craig? That will be in the folders in front of you. Have you got Mr Craig's evidence there?

A. I may have that one. If you just allow me a moment please?

Q. It's tab 27 if you can't.

A. So could you direct me here please?

1040

- Q. It's got tab numbers in front of you and if you go to the one that records tab 27 and in that – is that document part of the evidence of John Laurence Craig?
- A. It does.
- 5 Q. Can you go to paragraph 50 of that evidence, which is the number in the top right is 1767?
- A. I have.
- Q. Can you go to paragraph 50 of that?
- A. Yes.
- 10 Q. And can you just read that?
- A. "Determining population change" –
- Q. No, I don't need – you don't have to read it out. You can just read it to yourself.
- A. Thank you.
- 15 Q. Can you summarise that paragraph?
- A. Essentially, it's saying that there is a standard approach to undertaking population modelling and they describe the IUCN generation time calculator, which by the way I have not used but I'm sure it's reputable being from the IUCN. And then they describe the particular dates or the particular figure that they chose, they note that there's a difference in the estimates and then suggest that trends over the past 20 years should be used.
- 20 Q. Do you have any comment to make about that in terms of generation length – length of generation of the birds?
- 25 A. Yes, I do, your Honour. I do want to add though at this point, I'm not a widely published person with regard to population ecology. I do have a basic, I think, and working understanding of most of the key population models and have applied them in my working life, including in my time with Te Papa Atawhai, to a variety of species but working in support to others.
- 30 Q. Thank you for that.
- A. Having said that, it is clear to me that age will effect age-selected effects, our understanding of generation time and that if we had of used, or if Dr Craig had of used the longer age of 19, then that would have used the

generation time and it's likely that rather than trends over 13 years, then it would've been in excess of 20 plus because generation time extends and therefore rather than 10 years or three generations, it's actually pushed out to probably way beyond, or beyond 20 years.

5 Q. Now, what effect does that have on the New Zealand threat classification in terms of the declining (inaudible 10:43:11)?

A. So, what that means in terms of what the expert panel would be thinking about, is that they would take account of a longer timeframe than they might on other shorter-lived species. So, in that case, they would be  
10 interested in determining trends over 10, 20, 30 year timeframe rather than a much shorter one, therefore taking a more holistic view of what is happening to that bird's conservation over time. I'm not sure – could I amplify that a little more?

Q. Yes please.

15 A. What that – the implication of that is that a short timeframe evaluation where there is an assumed shorter lifespan of the bird would not likely pick up the longer term trends that emerge if we take a longer-lived bird as defining how we should examine its trends over time.

Q. Have you got any comment to make on how significant that effect might  
20 be?

A. Without doing the modelling, no, I don't.

Q. Can we return to the threat classification that you were going through before and you'd got to explaining in relation to your table in your appendix 2?

25 A. Appendix 2.

1045

Q. Did you have anything to add to that?

A. Not to the appendix 2 or to where you refer, sorry, were referring me to in  
30 page 51 at appendix 1 where each of the species threat classification statuses for those species occurring on the (inaudible 10:45:21).

Q. Now, there are – on this page 11 of the "Conservation status of New Zealand birds, 2016" paper, can you produce this document?

**EXHIBIT 11 PRODUCED – CONSERVATION STATUS OF NEW ZEALAND BIRDS, 2016, EXCERPTS ONLY, PAGES 1, 7, 11 AND 22**

Q. If you go to the table on the bottom of page 11 and locate banded dotterel?

A. Yes.

Q. Now, on the far right there is a column called “qualifiers”?

5 A. Yes, that’s correct.

Q. And next to banded dotterel there’s the words *DP*?

A. Mhm.

Q. Have you got that?

A. Yes, I have.

10 Q. Can you explain those words?

A. Yes, so these qualifiers are very important for every single bird species. In this particular case, *DP* stands for *data pour* which means that while we have used the best available information, it is far from perfect but we have to proceed with the best available information and the qualifier is therefore data pour.

15

Q. And how would that qualifier be used in practice or by the public?

A. So, the way I understand this from discussing the threat classification system with the administrators is that when they are reviewing the data, they seek to find absolutely the best, most reliable data and that’s what they seek to use. But quite frequently, the data has limitations around it, for example not all of the rivers have been surveyed in this case, not all of the (inaudible 10:47:53) sites have been counted every year. So, therefore there is some uncertainty. So, data pour often links to uncertainty, sometimes it just links to a basic lack of knowledge about the species. So, the expert panel uses it that way. How would others then use that, for example if a conservation manager, a council official or other were to look at that, my guess is they would have a look and find out that this indeed was a threatened and at risk bird species, they would find that it is a D11 in that case and they would know that there is a data pour qualifier which means there’s a level of uncertainty around that but the best available information lends us to believe that it sits within that category.

25

30

Q. And now, in relation to banded dotterel, you’ve presented this useful paper on page 54 of your evidence?

A. Yes.

Q. And can you locate where on that table banded dotterel have landed (inaudible 10:49:09) 2016 evaluation?

5 A. Yes, I think I can. And so, what we see here is, and my apologies your Honour, this is quite a complex table, this is a complex system with many categories. So, just trying to lead you through it, then if we have a look at the column or the row where the number 5,000 – so, it's the second row down, 5,000 to 20,000 sits, so that's the sixth column across, 5 to 20,000. So, I've already described that the expert panel considered the population to be within that range and then over its over piece of work it sought to estimate the decline that could be occurring or was thought to have occurred over time. And what you'll note from a D-1-1 classification is that it is predicted to decline by 30 to 70%. So that's column 2, you'll see the increase or decline rates. You will not see one there that says 30 to 70% but what that shows is that there are two boxes combined which together make it nationally vulnerable. So in the column under the 5 to 20,000 number, if we go down to that, it's either blue or grey, I'm not too good at my colours, but where the capitalised initials N and V are then the banded dotterel sits within that range and is therefore defined as being a nationally vulnerable species.

1050

Q. And in order for that to change there are two parameters that?

25 A. So in order for it to change, which is being considered through the review process for all species, and we do change classifications quite frequently and so this report undertaken for 2016 does describe which species changed between the five yearly reviews, the report to be published as a result of the 2021 review will do exactly the same. Some species will change their classification. And that will be for a variety of reasons. More information, better management, worsening trends, a whole variety of things. In order for those to change they will have had to have gone back to the criteria, relooked at the new information and made a decision accordingly.

30

Q. Thank you. In terms of the transparency of the process, it's a public process?



- A. Okay. So the process as it operates is advertised publicly. It's on a variety of websites, the call for information. There is a threat classification system website. The Department of Conservation advertises it. It is notified through special interest groups, for example, Birds New Zealand, the Ornithological Society and there's a very large contact list. So in that sense it's really well-known to the people who specialise in bird ecology and bird population ecology. The workings of the groups have had limited exposure over the years. I think that's very fair to say. Since 2019 however, we have been endeavouring to make fully available all of the discussions around the findings of the expert panel except wherein so far they may go to locate highly endangered species thus putting them at risk to people who might want to collect them or otherwise. But I can tell you that since 2019 that material has and will be publicly available.
- 5
- 10
- Q. Have you got any comments about the number of submissions that would normally arrive in relation to these things?
- 15
- A. No, I'm sorry I don't know.
- Q. Now the same process would have been gone through with the black-fronted dotterel which is also on page 51?
- A. Mhm, that's correct.
- 20
- Q. And that ended up with a different threat status?
- A. That's right. Yes that's exactly correct. Naturally uncommon native species.
- Q. And another species on there is the South Island pied oyster catcher?
- A. That is correct.
- 25
- Q. And that's also got a different threat classification?
- A. Yes. It's at risk, declining. And I think the reason for that is that over relatively more recent times our observations have been through winter wade accounts, it's a wading bird, long legged one, that numbers have been declining and therefore it has received that classification.
- 30
- Q. You were here yesterday when Dr Smith gave evidence.
- A. Mhm.
- 1055
- Q. He commented on the importance of the Ngaruroro population of (inaudible 10:55:16), did you have any comment to make about that?

- 5 A. Yes, I do. I agree with Dr Smith's view in this regard. I think conservation management principles, certainly all of those that I have read and have been promoting or implementing through my working career, have emphasised the importance of the full range of which a species naturally occupies, and for the same reasons as Dr Smith announced and I can summarise, when we begin to contract a range so we expose what remains of that range even if it is the core to increasing likelihood that other threats, for example climate change, may have on those populations. So, outliers are really important and there is a lot of scientific literature that has been published in that space.
- 10 Q. I'm going to change tack now and ask you a couple of different questions. Now, can you – I'm just going to ask you to find the evidence of Ian Fuller in that – I'll just give a tab reference number now. Can you go to – is your rebuttal in a page in the top right corner, so has the evidence-in-chief got a number in the top right corner?
- 15 A. No.
- Q. Can you go to page 7 of his evidence-in-chief please?
- A. Yes.
- Q. Now, on that page there are some cross-references of the Rangitata river?
- 20 A. Mhm.
- Q. Are you familiar with the Rangitata river?
- A. Very.
- Q. Can you explain what those two photographs show?
- 25 A. What they show to me is two – I'm going to assume they're vertical aerial photos of the riverbed and berm margins, the left being from 1937 and the right being in the period 2016/18. I don't have red lines on mine, it's black and white, but I get the, what those lines are showing and they're attempting to measure the active riverbed or channel width.
- 30 Q. And can you comment on the change that's been made in relation to the – in between the two photos?
- A. Well, there's no question to me that what those – examination of those two photos to me shows that the area of active riverbed has reduced hugely over time.

Q. Now, the Rangitata's got a water conservation order on it?

A. It has.

Q. And there are – are there any avifauna values associated with that water conservation order in the Rangitata?

5 A. Yes, there are.

Q. Can you briefly describe those?

A. So, the Rangitata contains a wide diversity of bird-life, chief amongst those are threatened and at risk species, most notably the wrybill, which only breeds in the South Island, and the black-fronted tern, but notably  
10 also there are substantial numbers of black-billed gull, banded dotterel, pied stilt, South Island pied oyster catchers.

1100

Q. The reduction in the floor plain area, have you got any comment to make on what impact that would have on the birds that are present there?

15 A. I think I can make some general observations about the likely impact. I'll break it into two groups of birds. So firstly, I'll deal with what I would describe as the colonial nesting species. It's like a bunch of birds living in an apartment. So dense colonies, nesting in relatively small areas of ground and the others are what I describe as isolated pairs. They're  
20 territory holding bird species. A banded dotterel is a territory holding bird species. A black billed gull or black hunted tern is a colonial nesting species. I'll deal with the colonial nesting species first. My view is that they are more likely to be tolerant to that sort of change because they can nest in relatively small areas in very large numbers. And so if I look at  
25 the 1937 picture and the 2016 picture I can see space where colonies could easily establish. Turning though to isolated nesting species or territorial species which have defended territories and home (**inaudible** 11:01:32) terms. So one is – a home range is the area within which an isolated pair naturally might forage for food. The territory is normally  
30 smaller. That's their defence area where they don't want other members of that species present. My view would be that the habitat change that, sorry. That the habitat that is there is 2016 is substantially less than that in 1937 and as a result there is less habitat for those isolated pairs of

birds to nest on and there is likely a substantially reduced number of birds in that area. All other things being equal.

5 Q. Now in your experience of – do you have any comment to make on the commonness of this reduction in the width of braided rivers in New Zealand?

A. I do. It's an extremely common occurrence and most of the braided rivers, if not all of those that I have worked on, have been subject to flood protection works which have reduced the width of the beds, variably I might add. Some by a relatively small degree, some to a very large degree.

10

Q. And you've read Dr Fuller's evidence obviously?

A. I have.

Q. Have you had the opportunity to consider his evidence regarding NCI?

A. I have read it and thought about it and found it intriguing.

15

Q. If it's beyond your expertise to comment on it, feel free, but do you have any comment to make about its appropriateness?

A. Allow me please some thinking time.

Q. Certainly.

20

A. My view is that the index does have potential to record change over time, particularly of active riverbed width. Similar to what is shown here and as applied by Professor Fuller in that Rangitata work. So I can see the potential for that to be applied. I listened to the debates really carefully but that would be my conclusion.

25 Q. Thank you. There's just one other matter I'd like to briefly talk to you about. Have you got Mr Jout's evidence there?

A. I have Dr Jout's evidence.

Q. Can you go to paragraph 47 of that evidence please?

A. Yes.

Q. There he talks about the change from a river going from braided to single.

30

A. Yes he does.

1105

Q. If that happened can you comment on the impact that would have the on the avifauna that were present in the previously braided river?

A. I think I can. I think it would be disastrous, virtually all of the braided river bird-life, in my view, would disappear. There would no longer be the habitat that they need there. I could perhaps illustrate it by a real world example, and that's of the Opihi river in south Canterbury where there is a significant dam on one of the two main stem branches of that river, Lake Opuha. As a result of that dam, many of the flood flows have been significantly attenuated, not surprisingly they're (inaudible 11:06:06) in that dam, and largely as a result of that, the middle to lower reaches of the Opihi have become less braided and highly vegetated over time to the point where in my opinion it has shifted from being a very important braided river for wildlife to one that is now relatively unimportant.

**CROSS-EXAMINATION: MS EVELEIGH – NIL**

**MR MAW ADDRESSES THE COURT: JUDGE DICKEY: (11:06:50)**

A. Thank you, your Honour. Perhaps at this juncture before I progress with questions, I'm somewhat troubled by the leading of what appears to be further evidence-in-chief by my friend and I've been sitting contemplating whether I should have objected a little earlier in relation to that, which we've just seen unfold. We've had a significant timetable in place for producing expert evidence to this proceeding and the information that's now thought to be led by parties who are essentially on the same side is the parties who are calling with witness and may potentially put counsel witnesses into a difficult position having not had the opportunity to consider technical evidence such as that which has just been led. In contemplating what I might or need to do about that, and I don't yet have the answer for that, but I just want to signal at this point that I am troubled by that which has just unfolded.

Q. Well, I think the best portion of it related to the classification of the threat status of species and was in Dr Hughey's evidence and as I understand it, the thinking is that Dr Craig called into question that in his papers so I am inclined to think that that response in the context of a paper that came in the supplementary statement is fair. The latter part of the examination as it related to responding to statements of evidence that have been in

place for some time, I am less comfortable with in the sense of whether or not that leaves you in an embarrassing situation. And I did allow Mr Anderson the latitude to go through that given that this is an inquiry and it is important that we get the position from all parties. But if you feel that your witnesses might need – well, I mean, we are inevitably – we are going to have the weekend so there will be some time for them to reflect and if it were to change in aspect of your opening then you could add to that on Monday if you thought that was necessary. But otherwise, I would just prefer to keep going and just allow you some latitude in terms of your response.

A. Thank you, your Honour.

**CROSS-EXAMINATION: MR MAW**

Q. I'll just start with your evidence-in-chief.

**WITNESS REFERRED TO COMMON BUNDLE**

15 Q. If I can take you to paragraph – actually, I'll take you to page 14 of the document which has figure 1 on it. Do you have that in front of you?

A. Yes Sir.

1110

20 Q. And I think you've plotted the four key threatened in that risk bird species recorded in the Ngaruroro over a series of surveys, 1962 to 2019?

A. (no audible answer 11:10:24)

Q. And when you look at the results from that survey is it fair to say that there's been a significant increase in each of those four species in the latter two surveys?

25 A. I believe that to be the case.

Q. Just in terms of that timeframe we're talking about, a difference between 1993 through to two surveys conducted relatively closely together, 2018, 2019?

A. I agree.

30 Q. Do you accept that that time period where the significant increase has occurred coincides with the period of time that the regional council has been undertaking beach raking on the river?

A. I do.

- Q. Would you turn over the page now to your figure 2, and here you have plotted the species numbers on the other two braided rivers in the Hawke's Bay by way of a comparative assessment using the 2020 data, it might be the 2019 data reported 2020?
- 5 A. That is correct.
- Q. And when we look at that graph there you'll see that total bird numbers for the Tukituki for what banded dotterel and for black-fronted dotterel exceed those from the Ngaruroro?
- A. Yes Sir.
- 10 Q. Now when you looked at the data to prepare this figure did you look back at time to see whether the population for birds on the Tukituki has been relatively constant or whether the populations on the Tukituki also increased significantly over that time?
- A. Yes Sir, I had had a, what I would describe as a reasonable examination
- 15 of the data that I have had available to me.
- Q. You'd accept that the populations of birds on the Tukituki haven't shown the same significant increase as those on the Ngaruroro over that period of time?
- A. I do, I did make that observation myself, yes.
- 20 Q. And that's because there is no beach raking taking place on the Tukituki, isn't it?
- A. It will be part of the reason. There could be other reason as well. But yes, in my mind beach raking does play a significant role in helping explain that potential for that, sorry. That increase.
- 25 Q. Going over one more page you've plotted in your figure 3 some information outlining numbers of birds per kilometre in riverbed and again that's using the most recent data set and again you've shown a comparative assessment between the three Hawke's Bay rivers?
- A. That's correct.
- 30 Q. When you reviewed the data in preparation for this figure you would have looked at the percentages or the numbers per kilometre for the previous surveys, and because the numbers have increased significantly in the Ngaruroro in the latter surveys, that correlates with an increase in the number of bird species per kilometre, doesn't it?

A. Not the number of bird species, Sir. The number of birds per species. Sorry, just trying to be a bit pedantic, but it's important. So loosely yes, that would be the answer that in part the higher density, if I can describe it that way, of banded dotterel on the Ngaruroro is helped by habitat management.

5

1115

Q. So if you were to plot the same bird numbers per kilometre using the data from the earlier years you would see the average numbers roughly halve for the Ngaruroro, given that the actual counts have essentially doubled over that period?

10

A. Yes Sir.

Q. But the numbers with respect to the Tukituki would stay fairly constant?

A. One would expect that to be the case.

**COURT ADJOURNS: 11.16 AM**

15



**COURT RESUMES: 11.40 AM****CROSS-EXAMINATION CONTINUES: MR MAW**

- 5 Q. In your paragraph 38 of your evidence-in-chief you describe the increase in numbers of birds on the Ngaruroro and you say there in the last paragraph that the numbers have increased dramatically. With respect to these particular birds, so the four species in question, have you seen a dramatic increase anywhere else in New Zealand over this period of time?
- 10 A. Of the many rivers that I am aware of and involved with in some form or another, it would be hard to think of others that approach this rate of increase. I might add though that I don't have all of that data in front of me but if I think about much of the work that Te Papa Atawhai is undertaking on the Tasman River for example, the upper Rangitata and some rivers I am involved with in North Canterbury, then certainly this
- 15 river has performed very well.
- Q. And with respect to the other rivers that you mentioned, the work that's been carried out, that's of a conservation nature?
- A. It is.
- Q. And is predator controlled, isn't it?
- 20 A. Mostly it is predator control related. There is some experimental work occurring in Canterbury with beach raking or similar and also as was heard over the last couple of days with other forms of terrestrial weed control, whether that be through herbicidal application or mechanical removal of weeds on rivers that I'm involved with in North Canterbury.
- 25 Q. So reflecting back over the time period from 1993 through to 2019, so the last two tranches of bird surveys on the Ngaruroro, do you accept that there haven't been significant changes in the flow regime for the river over that period?
- A. I haven't looked in detail at the flow regime of the Ngaruroro over that
- 30 period. I think I'll leave it at that. I haven't looked.
- Q. You're not aware of any literature which would indicate that flows have increased over that period of time?

A. I haven't examined in detail literature around the – any changes in flows of the river. I have used the (inaudible 11:44:22) website extensively to examine comparative flows across braided rivers in New Zealand but have not looked at temporal changes in detail.

5 Q. Based on your experience looking broadly at rivers across New Zealand, is it fair to say that levels of abstraction have increased over that period of time?

A. It is.

1145

10 Q. Now, in your evidence-in-chief, you outline a river values assessment system, or RVAS, excuse my pronunciation if that's not correct, assessment that you've undertaken historically on the Ngaruroro river and you refer to that report and it's results in your paragraph 64?

A. I do.

15 Q. And there you note that the Ngaruroro was a regionally important river for native birds, a ranking which in your opinion equated to the river being of important value to braided river birds. When you undertook that assessment back in 2012, did you assess any other rivers in the Hawke's Bay?

20 A. Yes, we assessed, I'll put it in quotation marks, "all significant rivers in Hawke's Bay".

Q. And how did the Ngaruroro river compare to those other rivers at that point in time?

A. At that point in time, it was similar to a number of others but ranked lower  
25 than the Tukituki.

Q. And at that point in time you didn't classify the Ngaruroro river as an outstanding river nationally, it didn't reach that threshold, did it?

A. That is correct.

Q. But in your opinion, it's become outstanding over the last eight years?

30 A. Yes, in my opinion, and one of the features of RVAS is that it is updatable with new information over time and in my view the changed threat classification which occurred in 2016 and the population estimates around that time that we've been talking earlier today meant that the banded dotterel in particular met a criterium which is specified within the

river values assessment system which puts it up over the threshold bar into being a waterway of national significance.

Q. And it was both of those elements that contributed to that elevation, so the increase of numbers and the threat classification?

5 A. That is correct. A combination of features were put together to come up with a weighted evidence view which is built around a multi-criteria system.

10 Q. I want to take you to your paragraph 71 now and paragraph 71 is in the part of your evidence where you assess the overall importance of the river to bird-life, including for banded dotterel. You note there in subparagraph B that the river's level of importance with likely be maintained as populations of threatened and at risk bird species decline elsewhere but maintain more than their relative status on the Ngaruroro. In order for that proposition to hold true, the current conditions on the river, as in the beach raking, would need to continue, wouldn't it?

15 A. In my view, the current conditions on the river would need to be sustained. There is a variety of means by which that could be achieved, however, of which one is beach raking.

1150

20 Q. I want to take you to your paragraph 93 where you outline the different requirements for the full range of bird guilds that need to be taken into account and there your final sentence you note that most species require bare shingle areas for nesting and roosting”?

A. I do.

25 Q. And the beach raking is designed precisely to achieve that surface.

A. With respect, an unintended benefit, in my view, has been of benefit to birds. But the prime reason for the beach raking is for flood control. So yes, it has a benefit but I haven't seen that that benefit has derived from an explicit policy direction.

30 Q. I want to take you to your paragraph 99 now and that paragraph occurs in the part of your evidence where you're dealing with habitat related needs of species and communities.

A. Yes.

- Q. And there you refer to some human intervention such as damming or abstraction of water being proposed. You note that: “Various levels of protection may be able to be maintained by implementing an appropriate flow regime designed to maximise the amount of natural protection for nesting birds against all forms of predators.” And so it’s not a question of simply maintaining the natural, the current flow regime, it’s more nuanced than that, isn’t it?
- 5
- A. In order to achieve long term ongoing conservation gains, then yes, an integrated approach is required which by necessity has nuanced work in various places and according to various priority needs.
- 10
- Q. You then go on in your evidence to address nesting and at paragraph 101 you note that: “Islands that are substantially devoid of standing vegetation, particularly exotic species such as willow, lupin and gorse, correlated with breeding success as in it’s at its highest”?
- 15
- A. Yes I do. I might add that work that we have been investing in, this is not DOC work by the way, this is work wearing my Water Zone Committee hat in North Canterbury, where we have cleared islands of vegetation in the Hurunui and Waiiau Uwha Rivers in this last nesting season has been singularly unsuccessful and that’s because rats have got onto those islands. So in and of itself weed clearance or the maintenance of a weed free status is not enough on its own.
- 20
- Q. And the beach raking that occurs in the Hawke’s Bay is ensuring that the exotic species that you’ve specifically referred to here are not taking hold in the lower Ngaruroro River?
- 25
- A. I’ve observed that to be the case.
- 1155
- Q. In your paragraph 102 you go on to list the main threats for nesting habitat and you note in subparagraph A the encroachment of exotic vegetation onto islands used for nesting. And again, the beach raking ensures that such encroachment is not occurring in the lower Ngaruroro?
- 30
- A. I agree.
- Q. And likewise, in relation to subparagraph B, the exotic vegetation creating habitat for rabbits and other mammalian predators, that’s been addressed

through the beach raking such that the exotic vegetation is not establishing?

A. I agree in as far as that statement goes as long as we then address subparagraph C, they fit together in other words.

5 Q. Now, you've not undertaken any modelling on the Ngaruroro river that indicates that braided reaches of the river will increase as flows increase?

A. No, I have not.

10 Q. I want to take you to section 12 of your evidence, paragraph 120. And there again you note that the biggest threat to habitat is the rapid spread and growth of exotic vegetation. And based on your experience on the Ngaruroro river, awaiting for nature to do its bit through floods isn't enough to clear this type of vegetation, is it?

15 A. Under the current pattern of flows, which we discussed earlier and I acknowledged I don't have a full record in front of me, then what I am aware of from other work elsewhere is that there are time periods where rivers flood more frequently than at other time periods. For example, through a (inaudible 11:58:08) period as opposed to (inaudible 11:58:10). In those sort of circumstances, nature can do that work. At other times though, it needs a helping hand, we find that increasingly in conservation management. And in this instance, beach raking does provide that helping hand.

20 Q. So, in the absence of the beach raking numbers could drop back to their 1993 numbers?

25 A. Without other compensatory conservation measures, for example predator control, and without some other way of manipulating flows to achieve the same ends, then hypothetically that could be the case.

30 Q. I want to take you to your paragraph 121 now. And you note there that there are three main means to help ensure flow variability, and in your subparagraph C you refer to freshes being harvested and you note that in your opinion, at least part – probably at least half of their flow should be retained in the river system. So, it's not a question of keeping the entirety of a fresh or all freshes in the river that would be necessary to sustain the values, but what you're referring to here is that you can't knock off or knock out all of the freshes?

- A. This is an incredibly complex area of work. I've worked with a number of scientists in this space. Mostly from NIWA and mostly, I have to acknowledge, on rivers in North Canterbury, central and South Canterbury. And also to an extent on the Wairau River in Marlborough.
- 5 What we have observed over time with modelling is that removal of freshes removed variability and that variability is important for maintaining a dynamic aquatic environment, particularly in the cases of freshes for the food producing role that occurs. And in that instance we're talking about the foods, for example, that banded dotterels, like black-fronted
- 10 dotterels and other wildlife would feed on. So in my view all freshes that are important, I think your question is, are all freshes important? I think they are. And then the subpart of that, and I'm picking it a bit further, is could we take some flow out of some freshes and still perform that service? Is that a fair response? Because I haven't answered that latter
- 15 response yet.

1200

- Q. Well when you say in your evidence, at least part, probably at least half of the flow is to be retained in the system," is that what you're referring to?
- 20 A. In the latter part of the answer, yes. The first part was saying that actually all freshes perform a function.

**CROSS-EXAMINATION: MR GRAY – NIL**

**CROSS-EXAMINATION: MR GARDNER – NIL**

**CROSS-EXAMINATION: MS MAUGER**

- 25 Q. I'm just curious around the population status (inaudible 12:02:23). Where it's great to know it's quite an egalitarian sort of way of bringing the experts avifauna and ecological people together, but we're in a era where traditional knowledge is (inaudible 12:02:42) submissions. So I just wondered how in your selection of experts that you accommodate
- 30 (inaudible 12:02:53) Māori and those people who are repositories of such knowledge?

- A. That's a totally rare question, so thank you. I think it's one that, to be fair, the Department does not perform that well in but it's one that I think we're moving on relatively quickly. So perhaps I can give a couple of examples. So, excuse me your Honour if you feel I'm being a little bit general here
- 5 but I think it's important to talk about the Department's philosophy in this space. So in giving effect to the principles we have been slow in many spaces. We are committed to a review of the conservation legislation, the full range of legislation including the Wildlife Act and Minister Allen is particularly ambitious in that space, fully supported by the Department.
- 10 That will not occur tomorrow. I would imagine it will be a similar timeframe to RMA reviews. But more particularly in this space we have begun to discuss through the recently released New Zealand Biodiversity strategy the opportunity to include more formal recognition which I think then complements the threat classification system of a taonga species
- 15 recognition approach. Which would then reflect the mātauranga and the, if I can call it this, the more western sort of approaches. And bringing those together. So those discussions have begun. They are occurring in earnest but they will not be completed quickly. In terms of the current round, I have had no involvement in the selection of the panel members
- 20 for the expert panel regarding birds. What I can say is though, I have been invited and have asked to be invited, into a review into the learnings from the current round of this process and I have a number of issues that you have raised in mind as well as others because we're always learning as we proceed down this pathway and we are committed to that learning.
- 25 Q. And in addition, this is what I'd like to compliment. This is a statement in general but my (inaudible 12:05:42) we are gathered here under the mana of our ancestral river, the Ngaruroro, and while lots of people are now accommodating the correct pronunciation, Ngaruroro, it is actually really important we uphold the mana within which we are all gathered
- 30 here today.
- Q. Ka pai.
- Q. Whether there will be a water conservation order applied or not, that river has (inaudible 12:06:14). So her, his, its name, Ngā ngaru, the waves, o ngā (inaudible 12:06:22) Upokororo, upok is the head, roro the brain. So

the Grayling has, is distinguished by its large brain. (inaudible 12:06:33) as a Grayling (inaudible 12:06:36) now extinct, (inaudible 12:06:39) is not related to the Grayling of (inaudible 12:06:42). So anyway, it's still referred to as a Grayling here. So Upoko, head, roro. Roro. And I

5 encourage everyone to just get your roro on, your brain on, be really helpful. Thank you. To uphold the mana of our awa. In saying that Ngaruroro is a food basket and my (inaudible 12:07:07) that you might have done at school, this before paper and plastic tapes, are Nā tō rourou, nā taku rourou ka ora ai te iwi. So with your food basket and my food

10 basket people thrive. So to distinguish, a rourou is a food basket, a roro is a brain. We are talking about the waves of the shoaling Upokororo, the Grayling. So Ngaruroro please (inaudible 12:07:43). Thank you.

**CROSS-EXAMINATION: MR MACGREGOR – NIL**

**RE-EXAMINATION: MS DOWNING – NIL**

15 **QUESTIONS FROM THE COURT:**

**QUESTIONS FROM THE COURT: COMMISSIONER MABIN**

Q. Professor Hughey, so you gave us some very helpful information about determining the generation cycle of birds. So you're obviously using that in a, well I presume using that in a scientific context. Does it have a similar

20 connotation to what we would talk about in human terms?

A. Yes it does. And actuaries use this sort of information all the time in terms of calculating life insurance and pay outs and all of those sorts of things. So there is a direct analogy across into the way we think about life spans for humans and the goings on in that space.

25 Q. So you gave us some estimates of generation times for the banded dotterel. I know it as a double banded plover, having done a bit of bird watching in Australia. So you gave estimates of eight to 10 years, maybe 15 years, what were they based on?

A. So they're based on data that was accumulated and gathered by other

30 researchers. So Dr Craig usefully summarises those. For example,



Rachel Campbell has done some work in that space. However, some of that didn't take advantage of the full range of data that's available through the New Zealand Banding Office where total compiled efforts of many, many, many people, citizens, scientists, researchers and others have submitted that information and over time it gathers a more useful form because it extends the size of the database with which we can analyse. So, some of those earlier estimates couldn't take advantage for example of the more recent information that we have.

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10 Q. So, with your 20, 19 year old bird that you banded in the – actually, it is – yeah, so let's say 20 years old for round numbers. So, that is a – is that – so, you think that should become the generation number?

A. I think it should be. The age with which we use to calculate the generation number should be an age that is recognised through science as being the likely or most likely age to which a bird in the wild would live and one of the ways that would test that would be to run some sensitivity analysis using different age structures and cohorts to consider that question. I have not seen people do that.

20 Q. So, it strikes me that that bird is obviously a long-lived bird and it's one bird?

A. Mhm.

25 Q. Now, you know a lucky human might get to be 100 years old. Should that be the human generation because that is a lucky long-lived human, no. So, why – you have got one bird in the banding programme that gives you an age of – that you know this one managed to eek out and exist for at least 19 years, so that should become the generation cycle for the whole bird, for the whole population?

30 A. So, that's a totality appropriate question. The scientific literature and method that is used routinely in this space does make that requirement and I acknowledge warts and all because I think what we would find is that in managed populations, for example where a bird, and I'll talk about different species, where maybe a species doesn't migrate, it perhaps then doesn't suffer some of the consequences of having to fly across the sea to a place, lovely place that it may be, like Australia, but there are various

(inaudible 12:12:33) that is strikes on the way. So, a more highly managed population actually might have a number of birds in that population that actually exceed that age. We don't know yet because we've yet to actually assemble the data that would provide that information for us with any certainty. So, in the absence of that, we use what the scientific method requires of us and in terms of using it within the model that Dr Craig and some others, then what we should be really using is a good understanding of the population dynamics of each species. Actually, we do not have a good understanding of the population dynamics of this species year by year by year by year, which we have of other species, for example kakapo where we know every single bird by its name, every single bird by where it was born and we have the DNA mapped of every single bird. So, we go from that species to one like banded dotterel and we have to use something and so we use that in the absence of perfect information.

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Q. So, it sounds like doing a bird census is not as simple as doing a human census?

A. No.

Q. So, there is a – I note that your dotterel, the accepted guess, best guess of the population is 19,000 which is just 1,000 below the threshold change in your threat classification scale. And – but quite a few other population measures that Dr Craig talks about are considerably higher than that. And in fact, of all the ones that he – I can't remember whether he – what he landed on as a total population, but there were quite a few other estimates, aren't there, so the threat classification assessment rejected those?

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A. So, the threat classification system has in terms of its application two banded dotterel has learnt over time. So, as we move forward as we do with most species conservation, we get more and better and more confident about our information with a lower level of uncertainty which allows us to draw more meaningful conclusions. That's where I believe we are heading in the banded dotterel space, so that we're becoming increasingly comfortable but we still recognise the DP, the data (inaudible 12:15:12), that there are still uncertainties in that data. So, if we look at

the 19,000 estimate that you talked about, there was some recent work published in Australia which has examined migratory wader species from what they call the *South East Asian Flyway* and they've done, in my view, a very comprehensive piece of work. Careful modelling, careful use of expert panels, and careful peer review, and it's in that report which is relatively recent that we get the 19,000, I think 19,600, estimate where we can say with an increasing level of confidence that at that time that was a likely number. Bearing in mind though, that we still think that numbers are overall decreasing over time, so that if we take 2016 to now and numbers are decreasing, that's most probably the case but not wanting to come to a preconceived idea about what the expert panel might come up with but certainly that is the prediction, then it is reasonably likely that numbers might be a bit lower than that and therefore more in that five to 20,000 range. Hence, in response to Mr Maw where questioned me about the relative importance of the Ngaruroro with regard to it being like a stronghold and being sustained over time it becomes increasingly important as a relatively safer habitat.

Q. So, yes, and that sort of – I was interested in your figure 1, which (inaudible 12:17:14) and the fact that you feel there is definitely an increase in the population of all those birds in the Ngaruroro. It looks like the South Island Pied Oystercatcher turns up in the mid-1980s. Any reason why it had not been there before? It's a pretty obvious bird.

A. Yes, it's a very obvious bird and no, I can think of no obvious reason. Range expansion is not unknown in birds and other critters for that matter, and a suitable habitat occurs, there is no reason as I pointed out again in response to other – well actually, in my evidence, there is a degree of opportunism displayed by some of these species. Here was an opportunity, let's take advantage of it. I won't joke that the Hawke's Bay climate is better than the Canterbury climate. So, there are nevertheless those opportunities and birds will take advantage of those.

Q. So, where is the next place you find the Pied Oystercatcher between, heading south?

A. Okay, so north and south island rivers in relatively large numbers on a river, for example like the Wairau in Blenheim, well it's not in Blenheim

that flows past Blenheim, and then all of the significant east coast rivers to the south, but also on western South Island rivers, and of course some in the Tasman area. I would acknowledge though that significant numbers of South Island Pied Oystercatchers also nest on some farmland areas and also in some high-country areas.

5

Q. So, there is a gap between the Wairau and Ngaruroro?

A. That we are aware of at the moment.

Q. And it is not on the Tuki?

A. Not that we are aware of at the moment.

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Q. Turning to your table two and your table, (inaudible 12:19:14) table, is it table three – no, table two and table one. The reproduction that I have got has clipped off some of the numbers in table one. So, it shows me that the river, the total river bed area for the Ngaruroro is, in table one, in hectares all I can see is 350?

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A. In mine it says 3,500. So, somehow in the printing there should be –

Q. Because the –

A. Most of those should have four digits, certainly the top two should be – and that's probably the two most important for you there at the moment, is the Ngaruroro is 3,500 and the Tukituki is 5,600.

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Q. Yeah, because when I turn over to table 2, the aerial open riverbed is 1,597 which is considerably more than the total riverbed area back in table 1, so that confuses me. So, really if I add a zero to all those numbers in table 1 –

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A. We – I will talk to my counsel and so somehow in copying, because my copy certainly has all of the correct data in it, it's not simply a matter of adding a zero. I could – that would take me about 20 seconds. I could just read you the numbers to add if that would be helpful?

Q. Well, that is probably the quickest way.

30

A. Okay. So, table 1 on page 11 in the final column, for the Ngaruroro it is 3,500, for the Tukituki it is – I won't keep reading the names and rivers out, it's 5,600, for the Tūtaekuri it's 813, I am reading them out, apologies, then the Ruamahanga is 276. Moving to the South Island rivers, the Wairau is 6,800, the Clarence is 4,200, the Hurunui is 3,000, the Waiau,

which has just had its name changed by the way to the Waiau Uwha, is 5,400, the Ashley is 3,600, the – well, it should be the (inaudible 12:21:54) of course is 32,100, the Rangitata is 18,100 and the Ahuriri is 4,400.

5 Q. Right, okay, that clears that up because the – it was – yeah. So, you are just relying on numbers that Wilson provided, Wilson 2001 –

A. That is (inaudible 12:22:27).

Q. – provided, so you haven't checked for yourself what the total riverbed area that might be available for birds along the Ngaruroro actually is?

10 A. No, I have been out onto the river on several occasions and there is a substantial significant area of excellent bird habitat.

Q. So, about 35 square kilometres. Yeah, it is obviously not in evidence, I didn't (inaudible 12:23:01) had a quick look for myself and I got to 15 which is like half that, so but you are relying on Wilson?

15 A. Yes, as far as I know – and I, well I've just said that – as far as I know, Wilson has undertaken the most recent New Zealand wide study into this parameter. I'm aware of no one else who has done that work.

Q. We have heard other evidence to suggest that there 160 odd braided rivers in New Zealand?

A. Yes.

20 Q. How many of those are in the North Island?

A. Of what I would call real braided rivers, very few. A few in the Hawke's Bay, one or two in the east coast which I have visited, Ruamahanga has very short reach that might be considered braided, there are one or two places on the Manawatū river that at a stretch might  
25 be considered braided, but really there's in North Island, the Hawke's Bay is the home of braided rivers.

Q. I can't remember precisely where I read it in the evidence but someone I heard say 30 rivers (inaudible 12:24:36) North Island rivers (inaudible 12:24:37).

30 A. Yeah, so I think it's an important question and I think we have to be careful about how we can contextualise it. So, when I am talking braided rivers, I'm not talking a stream, I'm talking a river that braids, has a significant flow and provides habitat extensively for fish, birds and other, I guess,

nature. As I said there are very few of those in the North Island. It's almost a handful.

1225

Q. Are you familiar with the Waiapu River?

5 A. I am. That's one in the East Coast that I have in fact examined as part of the river values assessment system. I might add that the day I was there, and I've been there on a number of occasions, but the day I was formally there it was blowing a hurricane, as it can do, an incredible dust storm. It is one of the ones that actually is reasonably significant. I could not  
10 formally survey it on that day. I visited it with a number of other ornithologists and in fact the expert panel when we were doing the East Coast Poverty Bay work and there were banded dotterel on that river in reasonable numbers. But that is one – and the East Coast area is very, that is the one that stands out. Poverty Bay East Coast.

15 Q. So you've talked to us about the RVAS assessment tool that you developed. I think it's a tool that you developed, is that right?

A. I worked with two others on its development. Dr Kaye Booth who was working as an independent consultant at the time and Mr Neil Deans who was working at the time for Fish and Game Nelson Marlborough who  
20 subsequently moved on to various ministerial office roles and currently works for the Department of Conservation. The three of us developed it but I managed that process of development and we have published it in a range of international and domestic journals.

Q. So it's a tool that others can use?

25 A. that's correct.

Q. How much does it depend on the person that's doing it? So if you were to give me the RVAS tool and how to do it and I went off and did it on the Ngaruroro, would I come out with the same number?

A. If you did it as an individual, you might, but the power of the tool is in its,  
30 both in its transparency and in its commitment to share expertise and knowledge. And so we go to enormous lengths to pool together expert panels that reflect the regional local expertise that is in the area of interest that we have worked on. So with respect to Hawke's Bay for example, for worked with the regional council, then with the ecological society,

independent experts, a large number of people and we used a transparent team process and everything was made transparent so that there's nothing there that could be described as a black box. It's all totally open and transparent. So the short answer is, yes you could have a go, you may well succeed, but the power and strength is in the involvement of an expert panel and a transparency and collegiality that goes with that.

5

Q. So the 2012 assessment you did was that process?

A. Yes.

Q. Has that been repeated?

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A. Not that I am aware of for the Hawke's Bay.

Q. So when you said that if you would think now that it would come out as outstanding rather than the 2012 assessment which was regionally important, so your judgement that it would come out as a high classification now is your personal judgement, it's not based on a full-scale assessment?

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A. That's correct. And a totally valid question. The reason I say that is because the other contributory information that goes into the system, so the River Values Assessment System uses the best available evidence. Absolutely acknowledges that need. And so the best available evidence with respect to the designation of the banded dotterel has changed as a result of the threat classification system and that in and of itself has gone through a thorough review process. So it's simply a matter of not even having to make a judgement call. It's a matter of just pulling that revised information across into the spreadsheet which then changes the designation of that river. Because we use the best available example, sorry, the best available information. So, an expert panel wouldn't be needed to make a judgement call around that because that call has been made elsewhere. If, however, it was a subjective part of the river values assessment system then it would not be appropriate for me to do that on my own. It would require, in my view, the pulling together of an expert panel.

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Q. But we have heard, we have been given evidence that suggests that that classification might be open to question?

A. You have been –

Q. We have not tested that yet but –

A. No, you have been given evidence and what I have been, I think but  
5 maybe not as clearly as I would've hoped, what I have been suggesting  
is that there is a transparent national threat classification system process  
and the 2016 finding of that. I've explained before within the threats  
classification system led to the D11 classification and that we're now  
going through another round. That other round will take on board at least  
two pieces of work that have occurred subsequent to the 2016 round.  
10 Namely the work, and I applaud Dr Craig for doing the work I might argue  
about some of the contents but actually I applaud the work, so that will be  
part of the expert panel's deliberations as will the other published work  
that has occurred over that time. It is not my place at the moment, and I  
don't sit on that panel, to say what is better or what is worse and where  
15 that final deliberation will leave the threat classification panel to arrive in  
terms of the banded dotterel classification.

#### **QUESTIONS FROM THE COURT: COMMISSIONER EDMONDS**

Q. I just have one, and it's partly in relation to your paragraph 122 where you  
talk about (inaudible 12:32:17) possible to then develop relationships  
20 between (inaudible 12:32:23) gone on to say that you are unaware of any  
work that's been done on the river that would inform that relationship, but  
do you have any general observations you can make without being  
informed by such a piece of work as you are mentioning there.

A. Okay, so thank you for the question Commissioner. Um, in my view there  
25 are tools: three dimensional modelling, weighted usable area sorts of  
approaches, that have been used on multiple other rivers particularly  
within a development context, that could have been applied on the  
Ngaruroro, but your question is having walked out of the river what do you  
think?

30 Q. Yep, that is absolutely it.

A. So, even though I'd seen the river on a number of occasions on previous  
visits, when I went out and walked on a number of sites I would have to  
say I was pretty amazed. I just thought this is a great place, I felt pretty



empowered by what I, the sort of feeling I got, the mauri of the system just seemed to be working and so as a bit of an ecologist and I have studied aquatic invertebrates so I'm not just a birdy person, lifted up a few rocks as you do and I was amazed by the aquatic food life under those stones. So, I thought yep this is pretty good. Now, that was early January when I did that, so the river would've been on a declining average hydrograph getting into the drier parts of summer which we can see occurring here, but I felt the food supply there was just a super abundant food supply. Now, birds like banded dotterel do not spend all of their time feeding in water. Some birds, like Wrybill for example which is my little bird, they mostly feed in water. Banded dotterel it's quite mixed. Again, a little bit more opportunistic, but what I observed there was an incredible food supply not just for banded dotterel but for black-fronted dotterel, for Caspian terns, the pied stilts for Oystercatchers and others. So, my feeling was that at the flows I was observing on that occasion, and a couple of other times I had been there, there was a really good food supply. So, feeding is obviously a vital element for these birds and so are some other attributes. But that was my feeling on those days.

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20 Q. Thank you.

**QUESTIONS FROM THE COURT: JUDGE DICKEY – NIL****QUESTIONS ARISING – NIL****DIRECTOR'S CASE COMPLETE****MR MAW:**

25 What I thought I might helpfully do is provide you a copy of the order that the council seeks and you may reflect on that over the weekend ahead of opening. If that would assist.

30 **EXHIBIT 12 PRODUCED – HAWKE'S BAY REGIONAL COUNCIL ORDER SOUGHT**

**THE COURT: JUDGE DICKEY**

That is presumably to be read with exhibit 10?

**MR MAW:**

5 Yes, that is correct. And just a couple of observations there with respect to the order. You'll see some highlighting in it in a bluey aqua colour. That highlighting represents changes from the version that was provided in the joint memorandum of 23 December 2020. And in relation to the map, just a point of clarification in relation to the main stem of the Ngaruroro, excuse my pronunciation. I'll keep working on it. Ngaruroro. We'll get there. The main stem between the Kuripāpango and the (inaudible 12:38:04), so the area between the two yellow dots, perhaps another way to describe it, that area of the main stem is not included in the natural state. It's in the non-natural state waters. And likewise for the (inaudible 12:38:38) between the two yellow dots, the main stem of that river falls within the non-natural state waters. Where the difficulty arises is that it's just the point at which the colour coding changes and a question was asked for one of my friends this morning as to whether the main stems were included in the natural state or the non-natural state waters.

**THE COURT: JUDGE DICKEY**

20 Sorry, I was making a note and then trying to find it. So the second point you made, sorry, is?

**MR MAW:**

25 So you will see two dots on the (inaudible 12:39:14), that's at the confluence of the Ngaruroro and the, there's an upper extent as well. And you'll see that with respect to the (inaudible 12:39:33) there's an interface between the blue shading and the, don't know if I can describe the other colour, brownish? Insofar as the main stem of the (inaudible 12:39:43) is concerned it is in the non-natural state up to the yellow dot. And that should become apparent when read in conjunction with the schedules in the water that I've handed up. That is all pending opening on Monday morning. Thank you.

30 **COURT ADJOURNS: 12.41 PM**

