
TRANSCRIPT OF PROCEEDINGS

**MARLBOROUGH SALMON FARM RELOCATION ADVISORY PANEL
PUBLIC HEARING**

**HELD AT
MARLBOROUGH CONVENTION CENTRE,
42A ALFRED ST, BLENHEIM,
ON 8 MAY 2017**

Appointed Panel Members:
Professor Peter Skelton, CNZM (Chairperson)
Mr Ron Crosby
Mr Alan Dormer, MNZM

[10.37 am]

5 CHAIRPERSON: Kia tatou katoa and welcome, everybody, to the fourth week of
hearings being conducted by the Marlborough Salmon Farm
Relocation Panel. The hearing is resumed from Wednesday of last
week and today we're going to receive presentations on behalf of the
10 Friends of Nelson Haven, Kenepuru and Central Sounds Residents
Association and the Pelorus Boating Club, to be followed by the Royal
Forest and Bird Protection Society, Hanneke Kroon and Jansen and
Oliver Brennan. Then there is a schedule for tomorrow as well. Can
everybody hear me? So, the sound system is working. Good. Very
well, Mr Ironside, I believe you're appearing for the Friends of Nelson
Haven and other groupings?

15 MR IRONSIDE: Yes.

CHAIRPERSON: Would you like to come --

20 MR IRONSIDE: Professor Skelton, members of the Panel --

CHAIRPERSON: I would like you to come here, please, because it's being recorded.
People who are giving evidence as well, if they would come to this
table when they're giving their evidence so that people can hear and
25 also because we have a contemporaneous transcript being taken. So,
over to you, Mr Ironside.

30 MR IRONSIDE: Yes, thank you. Well, as you've indicated, Professor Skelton, I appear
for the Friends of Nelson Haven and Tasman Bay Incorporated, the
Kenepuru and Central Sounds Residents Association Incorporated, and
also for the Pelorus Boating Club. The order of presentation will be
that I will speak to the memorandum that I filed on 1 May, a week ago,
and then I will ask Mr Schuckard, who is one of the expert witnesses
35 for the two societies and the boating club, to also speak to his additional
material that was filed last Monday. Mr Schuckard also has a
presentation that he will make to you via the computer and a
PowerPoint process. Then the next presentation will be from Dr
Michael Steven, who is a landscape architect, who will also speak to
40 the additional material that he has lodged. Then Ms Sylvia Allan will
talk to the planning implications, again by reference to the document
that was filed a week ago referred to as her speaking notes. I'll then
ask Mr Withell, who is the President of the Kenepuru Residents
Association, just to address you briefly. I will then also ask Hanneke
Kroon to make a presentation to you in relation to disease risks, and
then I will briefly sum up the presentation.

45 CHAIRPERSON: Just so I've got it clear, Hanneke Kroon, who is on our list for today at
4.00 pm, is she part of your case?

MR IRONSIDE: Yes.

CHAIRPERSON: So, is she coming after Forest and Bird?

5 MR IRONSIDE: She is coming before Forest and Bird, if that's convenient.

CHAIRPERSON: That's not what we've got here. I don't know whether Forest and Bird -- have you talked to Forest and Bird about that?

10 MR IRONSIDE: I wasn't aware that there was an issue so I haven't, no.

CHAIRPERSON: No. Well, I've made an assumption, which is obviously not correct, that Hanneke Kroon and Joop Jansen are here in their own right.

15 MR IRONSIDE: Hanneke Kroon is a member of the Kenepuru Residents Association and so that was the thinking behind her presentation being part of the Kenepuru presentation.

20 CHAIRPERSON: Yes, well, that is all right. It is just it would be preferable from our point of view to hear the whole of the case and the presentations before moving on to another party.

25 MR IRONSIDE: That is how I've outlined. That is the presentation that I was proposing to make. Can I also mention one other thing, which has been referred to in a memorandum that I filed on Friday? I don't know if that caught up with you or not.

CHAIRPERSON: Yes, we've seen that.

30 MR IRONSIDE: It is addressing two particular matters arising out of the hearing process to date. Mr Pengally who has an interest, obviously, in the Te Kopi Wildlife Sanctuary on the peninsula is flying in this morning. I think his plane arrives at 11.00 am. He will be coming here and he will be available to answer any questions that you may have or may not have for him in relation to the matter that I raised in that memorandum.

35 CHAIRPERSON: Yes. Thank you.

40 MR IRONSIDE: I've assumed that the pre-circulated material has been read by the Panel. I'm in your hands as to whether or not --

45 CHAIRPERSON: Some of it has, some of it hasn't. We've had an enormous amount to read. So, I would be grateful if you would just take us through your submission, please.

MR IRONSIDE: The submission that I filed really addresses one of the principal matters that the Minister needs to be satisfied about before he can propose regulations under this particular provision, section 360A of the Resource Management Act. That is whether or not this proposal, or the Marlborough Sounds Resource Management Plan as amended by this proposal, will continue to give effect to the New Zealand Coastal Policy Statement. It is a fundamentally important aspect of this matter because, in my submission, of the recent decision by the Supreme Court in **King Salmon** really explaining the role of the Coastal Policy Statement, and indeed other national policy statements, in the scheme of the RMA and the importance that that Coastal Policy Statement has in relation to managing the use and development of the coastal environment.

[10.45 am]

So, just by way of summary of that leading authority, I observe that the Supreme Court identified that the Resource Management Act was enacted as reforming legislation. It identified a specific overall objective, which is sustainable management of natural and physical resources, and it established structures and processes designed to promote that objective. It introduced a three-tiered management system, being national, regional and district systems, and established a hierarchy of planning documents. At the top of the hierarchy are those planning documents that are the responsibility of central government. That includes the New Zealand Coastal Policy Statement whose purpose is to state policies in order to achieve the purpose of the Act in relation to New Zealand's coastal environment. That Coastal Policy Statement is within the functions of the Minister of Conservation. That Minister plays a key role in the management of the coastal environment through preparation and recommendation of the Coastal Policy Statement, monitoring the effect and implementation of any current coastal policy statement, the approval of regional coastal plans and a shared responsibility with regional councils for controlling use of the coastal marine area.

The Resource Management Act requires that the various planning documents be prepared through structured processes that provide considerable opportunities for public input. To quote from the Supreme Court decision:

"Open processes and opportunities for public input were obviously seen as important values by the Act's framers."

5 The Act envisages the formulation and promulgation of a cascade of
planning documents, each intended to give effect to section 5 and part 2
more generally. These documents form an integral part of the
legislative framework of the Act. Further emphasising the importance
of the Coastal Policy Statement is the statutory direction that there shall
at all times be at least one Coastal Policy Statement in existence,
prepared and recommended following a prescribed consultation
process. The Coastal Policy Statement may state objectives and
policies about any of the matters specified in section 58 of the Act and
this includes, by way of example:

10
15 "National priorities for the preservation of the natural character of the
coastal environment of New Zealand, including protection from
inappropriate subdivision, use and development."

20 In relation to the challenge in that case to the board of inquiry's decision
to grant a change to the Marlborough Sounds Resource Management
Plan to allow a salmon farm to be developed in Port Gore, the Supreme
Court identified objectives 2 and 6 of the Coastal Policy Statement as
being particularly relevant. Objective 2 is concerned with preservation
of natural character and protection of natural features and landscape
values by recognising their contributing characteristics and qualities
and their location and distribution within the coastal environment. It
also contemplates that some areas may require protection from
inappropriate subdivision, use and development.

25
30 Objective 6 recognises that some developments that are important to
social, cultural and economic wellbeing can only occur in the coastal
environment. Further, that protection of the values of the coastal
environment does not preclude use and development in appropriate
places and forms and within appropriate limits, thereby recognising
that there will be places that are appropriate for development and others
that are not. Objective 6 also recognises that only a small proportion
of the coastal marine area is under formal protection and management
under the Act is an important means by which the natural resources of
the coastal marine area can be protected.

35
40 The Supreme Court then identified that 4 of the 29 policies of the
Coastal Policy Statement were particularly relevant to their
consideration. These were policy 7, which concerns strategic planning,
policy 8 concerning aquaculture, policy 13 concerning preservation of
natural character and policy 15 concerning natural features and natural
landscapes in the coastal environment.

5 Policy 7 has as its focus strategic planning and in my submission this is a highly important and relevant aspect of your consideration in this matter. It requires a regional or district-wide planning assessment by local authorities to identify areas of the coastal environment where particular activities and forms of subdivision, use and development are inappropriate or may be inappropriate without consideration of effects through a resource consent, notice of requirement or schedule 1 plan change process. Protection of such areas is to be provided through objectives, policies and rules. There is also a requirement to identify in planning instruments coastal processes, resources and values that are under threat or at risk from adverse cumulative effects and, where practicable, to include measures to assist in determining when activities causing adverse cumulative effects are to be avoided.

10
15 Policy 8 requires recognition of the significant existing and potential contribution of aquaculture to social, economic and cultural wellbeing by including in relevant plans provision for aquaculture in appropriate places in the coastal environment and by ensuring other development in the coastal environment does not make water quality unfit for aquaculture activities in areas approved for such use.

20
25 Policies 13 and 15 were considered together by the Supreme Court. The court noted that policies 13(1)(a) and (b) and 15(a) and (b) have a similar focus and structure. Local authorities are directed to avoid adverse effects of activities on natural character in areas of outstanding natural character or on outstanding natural features and outstanding natural landscapes. In other contexts, they are to avoid significant adverse effects and to avoid, remedy or mitigate other adverse effects of activities.

30
35 The Supreme Court then commented that the overall purpose of these provisions of the Coastal Policy Statement is to preserve the natural character of the coastal environment and to protect it from inappropriate subdivision and development, or to protect natural features and natural landscapes, including seascapes, from inappropriate subdivision, use and development. Areas which are outstanding receive the greatest protection, the requirement being to avoid adverse effects. Areas that are not outstanding receive less protection, the requirement being to avoid significant adverse effects and avoid, remedy or mitigate other adverse effects. The word "avoid" in this context has its ordinary meaning of "not allow" or "prevent the occurrence of".

5 Policies 13 and 15 also reinforce the approach to strategic planning at a regional level required by policy. Policy 13(1)(c) and (d) require local authorities to assess the natural character of the region's coastal environment by identifying at least areas of high natural character, and ensuring that regional policy statements and plans include objectives, policies and rules where they are required to preserve the natural character of particular areas. Policy 15(d) and (e) are to similar effect in relation to natural features and natural landscapes requiring protection.

10 Where the term "inappropriate" is used in the context of protecting areas from inappropriate use and development, then its natural meaning is that it should be assessed by reference to what it is that is sought to be protected. Its meaning in the context of the Coastal Policy Statement emerges from the way in which particular objectives and policies are expressed. By reference to objective 2, the requirement to identify particular areas in the context of preserving the natural character of the coastal environment and protecting natural features and landscape values makes it clear that what is to be regarded as inappropriate use and development relates back to the natural character and other attributes that are to be preserved or protected, adopting a strategic, region-wide approach. Use of the term "inappropriate" in policies 13(1)(a) and (b) and 15(a) and (b) bears the same meaning.

25 Similar comments were made in relation to use of the word "appropriate" in objective 6 and policies 6 and 8 of the Coastal Policy Statement. Where policy 8 refers to making provision for aquaculture activities in appropriate places in the coastal environment, the context suggests that "appropriate" is referring to suitability for the needs of aquaculture in a technical sense, for example water quality. By contrast, its use in objective 6 in the context of recognising that the protection of the values of the coastal environment does not preclude use and development in appropriate places and within appropriate limits, suggests that "appropriate" is not concerned simply with technical suitability for the particular activity but with a broader concept that encompasses other, environmental, considerations.

40 The Supreme Court summarised its views on interpretation of the Coastal Policy Statement by stating that the language of the relevant policies is significant and that the various policies are expressed in deliberately different ways. Some policies give decision-makers more flexibility or are less prescriptive than others. By contrast, other policies are expressed in more specific and directive terms, such as policies 13 and 15. The Supreme Court confirmed that these differences matter.

5 The Supreme Court then went on to say that when dealing with a plan change, a decision-maker must first identify those policies that are relevant, paying careful attention to the way in which they are expressed. Those expressed in more directive terms will carry greater weight and it may be that a policy is stated in such directive terms that the decision-maker has no option but to implement it. "Avoid" is a stronger direction than "take account of". I apologise for the typo there.

10 In paragraph 132 of the decision of the majority of the Supreme Court they then concluded on this aspect of the summary of the --

MR DORMER: Sorry, Mr Ironside, what was the paragraph?

15 MR IRONSIDE: 132.

CHAIRPERSON: Yes, carry on, thanks.

MR IRONSIDE: Concluded on this aspect of the summary of the New Zealand Coastal Policy Statement:

20 "Policies 13(1)(a) and (b) and 15(a) and (b) do, in our view, provide something in the nature of a bottom line. We consider that this is consistent with the definition of sustainable management in section 5(2), which, as we have said, contemplates protection as well as use and development. It is also consistent with classification of activities set out in section 87A of the Act, the last of which is activities that are prohibited. The Act contemplates that district plans may prohibit particular activities, either absolutely or in particular localities. If that is so, there is no obvious reason why a planning document which is higher in the hierarchy of planning documents should not contain policies which contemplate the prohibition of particular activities in certain localities."

30 That, in my submission, is a summary of the Supreme Court's decision in relation to the Coastal Policy Statement, its importance in RMA planning and decision-making, and I submit its importance to this Panel's consideration.

Turning, if I may, to a particular policy which was not at the forefront of the Supreme Court's consideration in relation to the matter concerning the Papatua salmon farm in Port Gore but was a matter of focus for the Environment Court in an appeal held recently, the **RJ Davidson Family Trust** appeal, which considered the application of policy 11, which is a policy directed at preserving indigenous biodiversity. Again, summarising the Environment Court's decision in the **Davidson** case, a further relevant policy in relation to this proposal is policy 11. That is because the Waitata Reach comprises foraging habitat for the king shag which as a species, or to use the language of policy 11 "a taxon", is endemic to the Marlborough Sounds and listed as threatened and at risk in relevant national and international threat classification lists.

[11.00 am]

The application of policy 11 in relation to habitat of the king shag in another part of the Pelorus Sound was recently considered by the Environment Court in the **Davidson Family Trust** appeal that concerned consent for a marine mussel farm off an unnamed promontory at the head of Beatrix Bay. The Court referred to a number of key issues identified in the preamble to the Coastal Policy Statement and stated that:

"These issues recognise that in their current state some areas in the coastal environment are not necessarily being managed sustainably."

In relation to policy 11, the Court identified that it directs that certain adverse effects of activities are simply to be avoided. If I just pause there and draw a distinction between the language of policy 11 and the language of policies 13 and 15, the language of policy 11 indicates that it is even more directive than policies 13 and 15, "Adverse effects are to be avoided". There is no qualifier of inappropriate development in policy 11. So by reference to policy 11, this includes adverse effects on certain threatened categories of taxa and on certain classes of habitat of indigenous fauna. Adverse effects of activities on a taxon would include injury to or death of individuals, and therefore reduction in population, but may also include reductions in the extent of occurrence or area of occupancy of that particular species and reduction in habitat area or quality. Those terms "extent of occurrence" and "area of occupancy", I have footnoted where those explanations can be found in the decision.

CHAIRPERSON: This is all out of **Davidson**, is it?

MR IRONSIDE: This is out of **Davidson**.

CHAIRPERSON: Thank you.

MR IRONSDIE: The Court concluded that consideration of adverse effects on the king shag is required under both policy 11(a)(i) and (ii). Policy 11(a)(iv) was also applicable and recognises that reduction in the quality or quantity of habitat may itself have consequences for a qualifying species, even if the consequences for individuals and/or populations are not yet known. These effects, all of these effects I add, are to be avoided.

5

10

15

The Court recorded the evidence that the closest main colony to Beatrix Bay is the Duffers Reef colony. I add this is also the closest colony to the Waitata Reach. A small colony was also recorded as having been established at Tawhitinui Bay point. The Court also referred to Dr Fisher's evidence that he considered the whole of the Marlborough Sounds to be significant habitat for king shags, inferring that this was in reliance on the IUCN Red List and policy 11(a)(i)(iv) directed at habitat protection, and that Pelorus Sound, or at least those parts mapped by Mr Schuckard in a 1991/92 study, are the core feeding areas for birds from the Duffers Reef colony.

20 CHAIRPERSON:

Mr Ironside, you say the Court also referred to Dr Fisher's evidence that he considered the whole of the Sounds to be a significant habitat. Did they make a finding about that?

25 MR IRONSDIE:

They made a finding that that was in accordance with policy 11.

25

CHAIRPERSON:

What was in accordance with it?

MR IRONSDIE:

That finding, inferring that Dr Fisher's evidence was based on policy 11 and then --

30

CHAIRPERSON:

Yes, but did the Court make a finding on Dr Fisher's opinion that the whole of the Sounds was a significant habitat?

MR IRONSDIE:

The Court endorsed that opinion as being in accordance with policy 11.

35

CHAIRPERSON:

That's not what I asked you.

MR IRONSDIE:

Well, I'll take you to the specific passage. I think that's the easiest way to deal with it.

40

CHAIRPERSON:

Paragraph 135.

MR IRONSDIE:

Paragraph 135 states:

5 "While Dr Fisher considered that the whole of the Marlborough Sounds was a significant habitat for king shags, in reliance, we suspect, on the IUCN Red List and on a policy in the NZCPS, he was also of the opinion that Pelorus Sound, or at least the parts shown on the 1991-1992 map by Mr Schuckard, are the core feeding areas for the birds from the Duffers Reef colony."

CHAIRPERSON: So there is no specific finding about --

10 MR IRONSDIE: Yes. The overall weighting under the Sounds Plan is at 282. Paragraph 277, for example, states:

15 "The point of policy 11 of the NZCPS is that if a species is at the limit of its range that it is automatically susceptible to stressors and any adverse effects on its habitat should be avoided. Applying that policy, we considered that this is a strong factor against granting consent."

CHAIRPERSON: That is the site-specific consent?

20 MR IRONSDIE: That is the site-specific consent, but the comment there is in relation to a species at the limit of its range, which the Court found to be the Marlborough Sounds.

CHAIRPERSON: Did it?

25 MR IRONSDIE: Yes.

CHAIRPERSON: The Court found the Marlborough Sounds was the limit of the king shag's range?

30 MR IRONSDIE: Yes, that it appears nowhere else.

CHAIRPERSON: The whole of the Sounds?

35 MR IRONSDIE: It appears nowhere else. It has no other habitat.

CHAIRPERSON: Yes, but that is not the limit of its range, is it?

MR IRONSDIE: Well --

40 CHAIRPERSON: I understood the limit of the range is where it moves and feeds.

MR IRONSDIE: It may be because there was a difference of opinion between the majority and the minority on that particular aspect but --

45 CHAIRPERSON: Yes. Thank you for that. We'll read the decision ourselves. Yes. Right, you continue, thank you, paragraph 9, "In the section discussing ..."

MR IRONSIDE: Yes. In the section discussing effects on king shag habitat and population, the Court recorded its earlier findings that the habitat of king shags has been degraded, mainly by land uses causing sedimentation and pollution, and by dredging, and reduced by installation of mussel farms. While acknowledging that the impact of a further mussel farm by itself will generally have less than minor impacts on that habitat, the cumulative effect of activities which have led to a degraded and reduced habitat are adverse and more than minor, and the trust's application can only add to those adverse effects on habitat.

5

10

15

20

The Court also recorded Dr Fisher's view that benthic changes resulting from the scale of existing mussel farming reduce the availability of significant feeding habitat. The Court confirmed that Dr Fisher's approach was consistent with policy 11, which is to avoid any adverse effect on threatened species and in particular to avoid adverse effects on the habitats of indigenous species at the limit of their natural range. That is the passage of paragraph 277 that I referred to a moment ago.

CHAIRPERSON: Yes, thank you.

MR IRONSIDE: I've also referred to paragraph 197. If I may just take a moment just to refer to that. I haven't footnoted paragraph 277 but in fact that --

25

CHAIRPERSON: I've got a note of it. Thank you.

MR IRONSIDE: Thank you. I say that that is the Court endorsing the application of policy 11 to the foraging habitat of the king shag which Dr Fisher informed the Court, and is here for Forest and Bird to inform this Panel, involves the Marlborough Sounds and, as Dr Fisher will explain to you, the classification of the Marlborough Sounds as an important bird area is based on the foraging area and depth of the king shag. That is the qualifying species that determines the extent of the Marlborough Sounds important bird area and that is the whole of the Marlborough Sounds.

30

35

CHAIRPERSON: Thank you.

MR IRONSIDE: Later the Court referred to a lack of information about population dynamics for this species and stated:

40

5 "The information given to us was completely inadequate to allow us to detect any trend in the population. At present, data on the number of breeding pairs, breeding success rates or even of the age and sex ratio of birds is almost completely lacking. In particular there is no data on the survival rates and population trends of mature female king shags. These last are particularly important because it is the likely preferred foraging grounds of females which mussel farms have been extended into over the last 10 to 15 years."

10 I'm just interpolating now but in my earlier written comments, which were lodged back in March, I mentioned that over the life of this Marlborough Sounds Resource Management Plan marine farming has extended from approximately 1,000 hectares to 2,500 hectares. So that is the extent of increase that has occurred during the life of the
15 Marlborough Sounds Resource Management Plan which is now, obviously as you're aware, currently under review and intended to be replaced by a variation to the Marlborough Environment Plan. That is specifically, in my submission, what the Court was directing itself to when it made that comment.

20 The Court then explained that the king shag satisfies the IUCN criteria for inclusion on the Red List, based on a population of less than 1,000 individuals and is restricted to four core breeding colonies. The Court's conclusion on the application of policy 11 was that because of the risk of stochastic events, waiting for a reduction in population is no longer
25 regarded as an appropriate trigger for protecting the taxon.

30 These are now my comments and not the Court's. The king shag is already subject to adverse effects of degradation and reduction in its habitat. Locating additional salmon farms in the Waitata Reach will not give effect to policy 11 of the Coastal Policy Statement. Further, the existing salmon farms in the Waitata Reach are required to adhere to a king shag management plan as part of their staged development. It would be inconsistent with policy 3 of the Coastal Policy Statement,
35 which is the policy dealing with the precautionary approach, to add further risk to a threatened species which is currently under observational management before that staged development has reached maximum permissible levels. Mr Schuckard will address you further on that particular matter.

40 CHAIRPERSON: Yes. Thank you. Carry on.

[11.15 am]

MR IRONSIDE: Turning to policies 13 and 15 and the Hudson Associates review, it is no exaggeration to say that on the fundamental question whether the Marlborough Sounds Plan as amended by the proposed regulations will continue to give effect to policies 13 and 15 of the NZCPS, the proposal is entirely reliant on the Hudson Associates review. For that assessment to provide a secure basis for a decision seeking to introduce salmon farming into areas of the Marlborough Sounds where it is currently prohibited, there would need to be a high degree of confidence in its validity and reliability. The submission is made that that degree of validity and reliability simply does not exist.

For example, the peer review by Drakeford Williams expresses significant concerns about some of the Hudson assessments. This is particularly the case in relation to adverse effects arising from development of the two proposed Blow Hole Point sites and the close proximity to each other of the Richmond South and Horseshoe Bay sites. There is also a difference in opinion over the natural character rating for the mid-channel Waitata site, and the extent of adverse effects on both natural character and landscape values for this site. There is also some difference in opinion over the rating of landscape values for the Tio Point site, and the proper assessment of this site in the context of the existing salmon farms at Te Pangu and Clay Point.

Complicating matters further is the fact that Marlborough District Council has embarked upon a strategic planning exercise of the kind contemplated by policy 11 and policies 13(1)(c) and (d) and 15(d) and (e) of the Coastal Policy Statement to provide a comprehensive, integrated set of maps, objectives, policies and rules intended to give effect to policies 13 and 15 of the current Coastal Policy Statement. The Marlborough Sounds Plan, the current plan which you're considering, was prepared when the Coastal Policy Statement 1994 was in force and the Marlborough Sounds Plan has not previously been reviewed to implement the Coastal Policy Statement 2010.

The Council's strategic planning response is to implement the 2010 Coastal Policy Statement through a new integrated RMA plan, incorporating a regional policy statement, regional coastal plan and regional and district plans, which is called the Marlborough Environment Plan. Significant effort has gone into preparing and notifying the Marlborough Environment Plan. Primary submissions have closed and a summary of those submissions is about to be notified, so Mr Hawes told you on day 1. This proposal to change the Marlborough Sounds Resource Management Plan by regulations does not have any rational link with the schedule 1 process currently underway for the Marlborough Environment Plan and risks undermining the integrated planning process that the council has embarked on.

5 If I can just pause there and just add, if I may, you are effectively being
asked through this process to advise the Minister on whether he should
parachute into the Coastal Marine Zone 1 of the Marlborough Sounds
Resource Management Plan a number of spot zones to enable salmon
farms to be located in those areas. At the same time, the Marlborough
District Council is considering submissions on natural character studies
and maps and landscape area studies and maps to determine what are
the areas in the coastal environment that should be preserved and
protected by reference to those directive policies of the NZCPS. It is
10 being asked to do that while a parallel process, which doesn't link with
it in any rational way, is going on which clearly has implications for
that mapping exercise. Where are marine farms currently? Well, we
know where they are currently but if this process matures to a
regulation which changes the plan, then we end up with a plan that is
15 changed at the eleventh hour after submissions have already been
heard, or certainly been lodged, on the strategic planning exercise that
was embarked on pursuant to policy 11.

20 That simply cannot, in my submission, amount to an appropriate use of
the regulation-making power because it undermines or it risks
undermining the strategic planning exercise that is currently underway.
If King Salmon wanted to develop salmon farms in these locations, or
it wants to do so, the answer is that it should become involved in the
process that is currently underway to develop a variation to the
25 Marlborough Environment Plan to determine where for the next 20
years and how and in what way aquaculture will be managed in the
Marlborough Sounds through the Marlborough Environment Plan, not
through an eleventh hour change to a plan which is currently under
review and is intended to be phased out.

30 CHAIRPERSON: Is it really an eleventh hour change? The Marlborough Environment
Plan submission process hasn't been completed yet so it is quite a way
down the track, isn't it?

35 MR IRONSIDE: Ms Allan will address you on what needs to occur before a plan can
even be notified under schedule 1.

CHAIRPERSON: We're well aware of that.

40 MR IRONSIDE: So to say that, there is probably two years of work that has gone into
the pre-notification of the Marlborough Environment Plan.

CHAIRPERSON: I wouldn't doubt it, Mr Ironside. I wouldn't doubt it for a minute but
45 the plain fact of the matter is that the identification of outstanding
landscapes is a matter, as Mr Hawes has told us, of some controversy
in terms of that proposed plan.

MR IRONSIDE: And this process will simply add to that controversy. That is all it will do.

CHAIRPERSON: Okay. Right.

5

MR IRONSIDE: Paragraph 16, I think I got to. Although the aquaculture provisions were not part of the Marlborough Environment Plan, as notified, those provisions have been advanced and are currently the subject of further pre-notification consultation. It is the council's intention that the aquaculture provisions be included in the Marlborough Environment Plan through a notified variation later this year, so that there will be a single, comprehensive, integrated planning instrument for the Marlborough region covering all of the council's planning responsibilities under part 5 of the Act. I make the submission that this achieves integrated management of natural and physical resources in the coastal environment and is consistent with policy 7 of the Coastal Policy Statement.

10

15

20

Hudson Associates were not the authors of the two district-wide studies that underpin the natural character and landscape mapping exercise that has been included in the Marlborough Environment Plan. Hudson Associates acknowledge these studies but state ... and I won't read those out but I've referred to what they say about them.

25

CHAIRPERSON: Don't bother, no. Yes.

MR IRONSIDE: By this approach, the Hudson Associates review, in my submission, fails to adopt an appropriate scale of reference for the assessment of landscape values. Dr Steven has spent quite some time explaining this at paragraphs 36 to 44 of his evidence and in his summary, which he will present today, at paragraphs 25 to 30. This is compounded by the use of a seven-point scale to rate landscape values as opposed to assessing the effects of a proposal through a process of scoring and averaging various components that contribute to an appreciation of those values. The approach is invalid and the resulting assessment unreliable. Dr Steven also identifies fundamental misconceptions in the approach adopted to assessing natural character. The review notes:

30

35

40

"This study considers marine and terrestrial environments together for the assessment of natural character baseline."

45

The assessments for each site also includes reference to aesthetic values. In my submission, that approach fails at a fundamental level to comprehend what policy 13(2) requires of an assessment of natural character in the coastal environment, which is a recognition that it does not include, is not the same as natural features and landscapes or amenity values.

5 The assessment of cumulative effects in the Hudson Associates review is so fundamentally flawed that I make the submission that it is surprising that the proposal has advanced this far, in light of the comments made in the Drakeford Williams peer review. It also makes the extraordinary statement that it has carried out an assessment of the cumulative effects of the five proposed salmon farms at a national, regional, reach and localised scale.

10 How a consideration at the national scale has been achieved is not explained, nor why it is relevant. However, it quickly becomes apparent that the Hudson Associates review focuses solely on the cumulative effects of the proposed new salmon farms in conjunction with existing salmon farms. It considers that it is able to do so by adopting the following reasoning, which I have quoted and I won't read it out to you but I've referred to the reasoning that was adopted at page 9 of the Hudson Associates review.

20 The Hudson Associates review then embarks on an evaluation of what the New Zealand King Salmon board of inquiry decided in relation to the proposal to establish five new salmon farms in the Waitata Reach. However, the basis for that evaluation is not that a threshold was established by that decision but that the board's decision constitutes some form of permitted baseline for this proposal.

25 I make the submission it is an extraordinary piece of analysis. First, it ignores what the board of inquiry actually said about the Waitata Reach as comprising one of the least modified parts of the Marlborough Sounds. This was in contrast to the many inlets and bays either side of Pelorus Sound where mussel farming has been developed, and I refer to two passages from the board of inquiry's decision and I won't read them but I refer you to them. It is simply not possible to ignore the effect of existing marine farm development in adjoining inlets and bays when assessing a proposal to extend marine farming development into less modified parts of the Marlborough Sounds, such as the Waitata Reach. Cumulative effects properly understood are always a relevant consideration and it is necessary to have a proper understanding of the relative importance of unmodified areas.

Perhaps more fundamentally, the analysis ignores the outcome of the board's decision. Apart from the White Horse Rock site, all of the other sites proposed for the Waitata Reach were within CMZ 1, which as you know is where marine farming is prohibited. By refusing the plan changes for the Kaitira and Tapipi sites, the board was aware that those sites and the remainder of the Waitata Reach would remain zoned CMZ 1. No further salmon farming could occur there because of the CMZ 1 zoning. In my submission, that is why the decision to refuse consent for the White Horse Rock site, which was a CMZ 2 site within the Waitata Reach, is so significant. The board's decision was that even that site within the Waitata Reach should remain undeveloped as a salmon farm and that can only be by reference to cumulative effects from granting consent for the Waitata and Richmond farms.

I refer back to the Supreme Court's decision in terms of what the zoning considerations that were before the board of inquiry were and quote from paragraph 71 of the Supreme Court's decision in **King Salmon**.

[11.30 am]

I then go on at paragraph 27 to say that the board's decision cannot possibly be interpreted as somehow accepting that four salmon farms in the Waitata Reach was an appropriate level of development, which I remind you is fundamental to the Hudson Associates review. The cumulative effects assessment was apparently re-reviewed by Hudson Associates following the Drakeford Williams peer review and amendments made which state that:

"It was to incorporate legal advice provided by MPI which postdates the Drakeford Williams peer review."

I make the comment that it is not immediately apparent how the Hudson Associates review was influenced by the MPI advice, but to the extent that there was reliance placed on paragraph 13, in my view that paragraph fails to acknowledge the effect of the CMZ 1 zoning of the Waitata Reach, which, apart from the two sites, the Waitata and Richmond sites, which were zoned CMZ 3, remained in place following the board's decision. In a footnote I have referred to paragraph 13, I have quoted paragraph 13, and also --

CHAIRPERSON: That is paragraph 13 of the advice?

MR IRONSIDE: Of the MPI advice. There is an introductory document and then some specific answers to the questions that were asked. I'm referring to the introductory part, paragraph 13 of the introductory part.

CHAIRPERSON: Thank you. Yes.

MR IRONSDIE: I've also attached to this memorandum just the way in which the various opinions were. Mine was commissioned first, provided to the author of the MPI advice and Gascoigne Wicks.

5 CHAIRPERSON: You say that in your note.

MR IRONSDIE: Yes, thank you. That is why --

10 CHAIRPERSON: There is three sets of advice carried out.

MR IRONSDIE: This was the first occasion I had to comment on the MPI advice so that is why I have included it as an attachment to this memorandum. I hadn't previously had that opportunity.

15 CHAIRPERSON: No.

MR IRONSDIE: Other difficulties with the Hudson Associates cumulative effects assessment are referred to by Dr Steven. These include the fact that it is solely concerned with visual effects and then only of salmon farms. I have already commented on the differing views expressed in the Drakeford Williams peer review, which finds that cumulatively there will be high to very high adverse effects on natural character arising from the five additional salmon farms in the Waitata Reach.

25 If you would just excuse me a moment, I just want to grab a copy of the Marlborough Environment Plan, if I may.

30 To the extent that there are areas identified as having high or very high natural character in the Marlborough Environment Plan, Dr Steven identifies that policy 6.2.3 becomes a highly relevant consideration. That is a policy, obviously in chapter 6 of the Marlborough Environment Plan, which specifically addresses policy 13(1)(b), so the areas that are less than outstanding but have high natural character and how the new plan intends that those areas should be treated. It establishes a threshold whereby any reduction in the degree of natural character for such areas should be avoided. While the Hudson Associates review does not classify any of the sites as having high natural character, the Marlborough Environment Plan does classify the two Blow Hole Point sites as within an area of high natural character. The Richmond South and Horsehoe Bay sites appear to be close to areas identified as having high natural character and face the area of outstanding natural character that surrounds Maud Island. The Drakeford Williams peer review would assess the mid-channel Waitata site as within an area having high natural character, as indeed would

45 Dr Steven.

If I could just pause there. A matter that was drawn to my attention this morning by Ms Allan is that there is a further policy in chapter 6 of the Marlborough Environment Plan, policy 6.2.7, which addresses how those decision-makers or those having resort to chapter 6 provisions should assess cumulative effects under the Marlborough Environment Plan. It says:

"In assessing the cumulative effects of activities on the natural character of the coastal environment, consideration shall be given to (a) the effect of allowing more of the same or similar activity; (b) the result of allowing more of a particular effect whether from the same activity or from other activities causing the same or similar effect; and (c) the combined effects from all activities in the coastal or freshwater environment in the locality."

I make the submission that the Hudson Associates approach to cumulative effects, which is to only consider salmon farms and then only salmon farms in the Waitata Reach, would not be in accordance with that policy provision, 6.2.7. While you're referring to policy 6.2.7, it is also worth having a read of policy 626, which talks about the potential to enhance natural character in the coastal environment, which of course finds expression also in the Coastal Policy Statement under policy 14.

CHAIRPERSON: Yes, thank you.

MR IRONSIDE: Paragraph 30:

"What this points to is that the Waitata Reach and these sites will be the subject of further evaluation through the schedule 1 process. The major focus is likely to be whether the natural character of the coastal marine area is sufficiently identified for the purposes of policy 13.1(c) and (d) and whether there has been a sufficient recognition of natural landscapes, including seascapes, within the Marlborough Environment Plan for the purposes of policy 15(d) and (e)."

I just add, if I may, there that's a particular aspect of Dr Stevens' criticism of the studies that have been conducted to date is that they don't appropriately recognise the contribution of seascapes to both the assessment of natural character and the assessment of landscape values for the purposes of policies 13 and 15, which in the context of the Marlborough Sounds, Dr Steven will tell you you simply can't divorce seascapes from landscapes, they're so integrally linked. That's part of his major criticism of the mapping exercise that has been currently undertaken and why that submission process will need to take into account at the very least that submission.

Paragraph 31, "There's nothing in policy 7 --"

- CHAIRPERSON: No, you haven't finished paragraph 30 yet.
- 5 MR IRONSIDE: Oh, I do apologise. Thank you, Professor Skelton:
- "Ms Allan is right to caution against allowing this process to have an undermining and confounding effect on that process, the consideration under schedule 1, and to conclude that the regulation-making conferred by section 360A should not be used where it will interfere with a strategic planning exercise that is currently underway."
- 10 CHAIRPERSON: Yes, just pause there for a moment. Can I ask you this: this is Ms Allan's evidence, is it?
- 15 MR IRONSIDE: It is.
- CHAIRPERSON: So she's not putting this forward as a legal issue, she's putting it forward as an appropriate use of the regulation, is she, from a planning point of view?
- 20 MR IRONSIDE: Yes, from the point of view of policy 11 and how policy 11 --
- CHAIRPERSON: Yes, but as a planner, because that's what she is.
- 25 MR IRONSIDE: As a planner, yes, absolutely.
- CHAIRPERSON: She's not a lawyer?
- MR IRONSIDE: Correct.
- 30 CHAIRPERSON: Yes.
- MR IRONSIDE: She's far too sensible to have embarked on that particular career.
- 35 CHAIRPERSON: No.
- MR IRONSIDE: Yes, as a planner, as an expert planner.
- CHAIRPERSON: As distinct from a validity issue, for example?
- 40 MR IRONSIDE: Yes, because you then have to decide whether she's right about what policy 7 means and how it should be applied.
- CHAIRPERSON: Yes.
- 45 MR IRONSIDE: And if she is right, you then have to decide whether --
- CHAIRPERSON: What the consequence of that is.

MR IRONSIDE: What the consequences are.

CHAIRPERSON: Yes, thank you.

5

MR IRONSIDE: Paragraph 31:

10

"There is nothing in policy 7, 13 or 15 which endorses the site-specific evaluation carried out by Hudson Associates and nor has the Environment Court endorsed such assessments."

Dr Steven will address you about those matters:

15

"The Hudson Associates review does not provide a valid and reliable basis for implementing policies 13 and 15 of the Coastal Policy Statement in relation to the Marlborough Sounds Resource Management Plan."

CHAIRPERSON:
20

I get a bit nervous when people start using the word "valid". You mean legally valid or from the point of view of landscape architecture?

MR IRONSIDE: I mean able to rely on it. I'm referring to Dr Stevens' evidence because he --

25 CHAIRPERSON:

He talks about valid, yes.

MR IRONSIDE: -- defines what he means by "valid" and he defines what he means by reliable for the purposes of a landscape natural character assessment.

30 CHAIRPERSON:

It's in the context of that, isn't it?

MR IRONSIDE: Yes.

35 CHAIRPERSON:

Not legal validity?

MR IRONSIDE: Yes. My overall submission is if you accept what my experts are saying, then the question which I have asked on page 1 of the memorandum:

40

"Will the Marlborough Sounds Resource Management Plan, as amended by the proposed regulations, continue to give effect to the NZCPS?"

45

If you accept what my experts are saying, the answer will be no.

CHAIRPERSON: Yes. All right, thank you.

- MR IRONSDIE: Can I just very briefly mention that the Kenepuru Residents Association have an expert who will be taking part in the economists' caucusing? That's Mr Offen.
- 5 CHAIRPERSON: Yes.
- MR IRONSDIE: And so I've just mentioned his report and obviously he will have filed a caucusing report and will be undertaking the caucusing of experts, I think tomorrow.
- 10 CHAIRPERSON: Yes, tomorrow.
- MR IRONSDIE: Yes. If I skip to paragraph 34 just to acknowledge the written comment by the Pelorus Boating Club. I've given you the comment number, 0485, and of course you'll be aware from having viewed the chapter 9 provisions of the Marlborough Sounds Plan that recreational interests particularly in the CMZ 1 are important values that need to be taken into account. The Pelorus Boating Club's observations and comments are directed at their appreciation of the recreational attributes of these parts of the Marlborough Sounds.
- 15
20
- CHAIRPERSON: Yes, I'm sorry, the economic caucusing or meeting of experts is set down for 10.30 on Wednesday.
- 25 MR IRONSDIE: On Wednesday, yes, thank you.
- CHAIRPERSON: It's landscape tomorrow.
- MR IRONSDIE: Landscape tomorrow. Yes, thank you.
- 30 CHAIRPERSON: Yes.
- MR IRONSDIE: I'll pass over in a moment to Ms Kroon to address -- sorry, I won't pass you in a moment to Ms Kroon. I mentioned at the outset that once we've concluded with Mr Schuckard, Dr Steven and Ms Allan I will then briefly introduce Mr Withell and Ms Kroon and I also mentioned that Mr Pengally was hoping to be here.
- 35
- CHAIRPERSON: Yes.
- 40 MR IRONSDIE: And he's here now, yes. So those were my observations by way of introduction of the expert witnesses and I'm happy to answer any questions either now or at the end. I was proposing to move now to Mr Schuckard, but happy to respond to any particular matters if it's convenient.
- 45
- CHAIRPERSON: Yes, all right. I'll just see if my colleagues have any questions for you at this stage.

MR DORMER: Just pursuing the point made by our chairman, can I clarify in my own mind, is it your contention that the Minister's use of the section is unwise and therefore invalid?

5

[11.45 am]

MR DORMER: Or is your contention that the Minister's use of this section is invalid irrespective of its wisdom or otherwise?

10

MR IRONSIDE: It's my primary contention that the Minister's use of the section is invalid because the Marlborough Sounds Plan will not implement policies 7, 11, 13 and 15 if the proposed regulations are advanced.

15

It's my secondary submission that if you don't accept that, then it's an unwise use of a regulation-making power in circumstances where a strategic planning exercise is currently underway, which is not linked to this particular proposal in any way.

MR DORMER: And do you further contend that if it's unwise, it is therefore invalid?

20

MR IRONSIDE: If it's unwise, it gives rise to whether a rational decision-maker properly directing himself to the task at hand would consider nevertheless to proceed.

25

MR DORMER: That's nicely put, yes.

CHAIRPERSON: Is that it?

MR DORMER: Thank you, yes.

30

CHAIRPERSON: Ron.

MR CROSBY: Given the answers that you've just given to us and given that the Minister has exercised a decision-making power so far in embarking on the process, why would you not have sought a review of that decision, to embark on the process in the High Court?

35

MR IRONSIDE: Because we have confidence in the wisdom of this Panel to make a recommendation to the Minister, having consulted on an unwise proposal, that he should proceed no further with it and it saves everyone a great deal of time and trouble.

40

- MR CROSBY: A different issue: the proposition has been put to us by MPI and essentially through all the reports that you would have read or seen that the effects and in particular the effects that you identify are minor or less than minor. That seems to me to be the thrust of what those reports in total are saying. I don't want to get into -- and I know you've got answers to that and obviously you've already canvassed those very fully to us, but just can you assist us with the Supreme Court's expression that it made in relation to that issue of whether there was a minor effect? In particular what I'd like to know from you is whether you see that as different or having a different application in relation to policy 11 relating to the king shags, as contrasted to policies 13 and 15.
- MR IRONSIDE: I'm aware of the passage of the Supreme Court's decision, which was really the majority answering the minority --
- MR CROSBY: Yes, I suppose.
- CHAIRPERSON: That's right.
- MR IRONSIDE: -- to some extent. I would place policy 11 in the category of it being so fundamentally important that you don't add further risk to a species that is already identified as being at risk, that even minor adverse effects are to be avoided in relation to policy 11.
- MR CROSBY: I know you're about to carry on, but do you mind me just stopping you there?
- MR IRONSIDE: Certainly.
- MR CROSBY: Because one of the reasons why I asked the question was that the passage that you referred us to from the Environment Court identified or appeared to identify a difference in approach between a minor effect arising from one farm as contrasted with a cumulative effect. That would seem to me to clash with what you've just responded to.
- MR IRONSIDE: Well, the reason why the effects need to be considered in the round is not just the effects of the proposal in isolation, but the proposal in the context of both the existing environment and what are the effects that are already occurring in that existing environment. That's why I would say the policy 11 threshold has already been reached because of the degradation of the existing environment and the displacement that's already occurred through other marine farming structures.

5 So I'm saying that the cumulative impact is more than minor and has to be more than minor and that's consistent with the **Davidson** decision. But I also think that for any threatened species, a very careful consideration is required under policy 11, because what policy 11 is directed at is trying to prevent further loss of biodiversity and that can occur even through minor impacts.

10 MR CROSBY: One of the other arguments put to us was that this is a replacement argument and that the farms are in essence replacing what is there. The responses, as I understand and clearly understand from your witnesses' evidence, is that you can't take into account the Crail Bay farms, because in reality they haven't existed for some years, and in relation to the others that there is a difference by virtue of the intensity that is proposed.

15 But to an extent, does the reality of the existence of at least four acknowledged farms proposed to be being replaced have an effect in terms of considering those cumulative effects on the king shags, in other words, the proposition being that there are four that are producing effects at the present time on the benthos, presumably on water quality and in a structural sense and that all that is occurring, the proposition is that those are being moved?

25 MR IRONSIDE: The difficulty with that analysis, there's a number of things there and I'll come back to, if I may, the replacement idea, the concept of a replacement. But the difficulty with that analysis is that you're dealing with a species that is currently at risk or at threat, under threat, from existing environmental stressors, and to take what is currently occurring as some kind of baseline and provided you don't change that baseline in any way, that you're therefore appropriately acknowledging the risks that that species is facing is, in my respectful submission, not the correct way to approach policy 11.

35 The Coastal Policy Statement has a number of references throughout it to improving, enhancing and thereby reducing the level of threat that at-risk species are currently under. So to sort of take a rather simplistic analysis, that we've got four farms here and we're going to have four farms there doesn't recognise the fact that because of the environment that this particular species currently exists in and can't exist anywhere else and is under threat in its current environment, we should be looking to improve its environmental parameters, not to develop up to a hair's breadth of when it starts to go into decline.

5 You can't read the Davidson decision without really sensing that that's
what the Environment Court was really saying to everyone who's
involved with the Marlborough Sounds, that this can't go on. You've
gone from 1,000 to 2,500 hectares of marine farming space in the
course of 15 years. King shags have been a footnote in most decision-
making that's occurred. The Davidson case actually brings to
everyone's consciousness the fact that if you carry on doing what we've
been doing the last 10 to 15 years that you don't improve the plight of
the king shag at all, which surely is what we should be seeking to
10 achieve, improve and enhance biodiversity, try and reduce the level of
risk that that particular species is facing. So that's my response in
relation to policy 11.

15 Can I also respond to the, "This is a relocation proposal"? With respect,
I'm in Mr Dormer's camp on this. It's how much weight you can really
give to the fact that there are farms that were identified in 2012, 2013,
when the Board of Inquiry was assessing this matter, that were
problematic. How much weight you can really give to that to justify a
new planning exercise is, in my respectful submission, dubious.

20 MR DORMER: Did you say you were in Mr Dormer's camp?

MR IRONSIDE: Yes, I did.

25 MR DORMER: Oh, there you are. You're not alone.

MR IRONSIDE: I've been reading the transcript with interest.

30 MR DORMER: I wouldn't like it thought that I have a camp.

MR IRONSIDE: Oh sorry, I do apologise.

35 MR DORMER: If I expressed myself too exuberantly, I'd withdraw the comment. I
merely postulate --

MR IRONSIDE: I withdraw my comment as well. Thank you.

40 MR DORMER: I merely postulate arguments. As we explained to one of the witnesses
last week, we have to test in order to make sure that we properly
understand what is being said, and in that testing we sometimes may
appear to present a viewpoint that we haven't reached.

MR IRONSIDE: Yes, I apologise. I withdraw the comment.

45 Yes, just in relation to this concept of it being a relocation, there's just
a couple of observations in chapter 9 of the Plan. Page 9 --

MR CROSBY: Sorry, which Plan?

- MR IRONSIDE: The Marlborough Sounds Plan, 9-4.
- CHAIRPERSON: Chapter 9.
- 5 MR IRONSIDE: Page number 49-4.
- CHAIRPERSON: That's the MEP?
- 10 MR IRONSIDE: No, the Plan you're considering.
- CHAIRPERSON: Oh, the original Plan? Yes, okay.
- MR IRONSIDE: Halfway down the page there's a statement:
- 15 "The Marlborough Regional Policy Statement highlights a number of key considerations for assessing proposals to occupy areas of coastal space. Essentially public access and recreational use are identified as matters of prime importance for Marlborough. Any allocation for private benefit must not compromise these important values."
- 20
- Skip a paragraph:
- "Being able to use and develop the public resources of the coastal marine area is a privilege. Often people expect this as a right, particularly if they own land adjacent to the coastal marine area."
- 25
- Chapter 9-7:
- "Again, highlighting the importance of public access and recreational use is recognised in a number of the occupational policies above."
- 30
- [12.00 pm]**
- 35 "As required by the Marlborough Regional Policy Statement, Council sees the future wellbeing of Marlborough and particularly the Sounds area linked to an increase in the recreational use of coastal resources. It is therefore important to ensure that allocation for coastal space for private use does not occur at the expense of public access and recreation values. It is also important to remember that there are no inherent development rights within the coastal marine area."
- 40
- CHAIRPERSON: That's not a policy objective?
- 45 MR IRONSIDE: No, that's an explanation of the policy.
- CHAIRPERSON: That's an explanation of a policy?

MR IRONSIDE: Of the objectives and policies at 9-21.

CHAIRPERSON: Right, thank you.

5 MR IRONSIDE: And I've also, I think, highlighted in my earlier memorandum that
there's no concept of transfer in this Plan, transfer of sites, marine farm
10 sites. All sites are new sites, so there's no right for King Salmon to say,
"We can't farm in CMZ 2, therefore we need CMZ 1 sites". That's not
a thought process that this Plan allows to occur and there are a number
of values that need to be considered before the CMZ 1 can be
15 considered as an appropriate place for marine farming. The fact that
there are CMZ 2 sites that may no longer be able to be used or may no
longer be able to be used at their current production levels is, in my
respectful submission, of minor significance in the overall major
consideration of the values that underpin the CMZ 1.

CHAIRPERSON: Thanks very much, Mr Ironside. Now we're going to hear from --

20 MR IRONSIDE: Mr Schuckard.

CHAIRPERSON: -- Mr Schuckard. Thank you. Mr Schuckard, if you could position
yourself -- yes, one or the other. That's right.

25 MR SCHUCKARD: I've almost tried to eat it.

CHAIRPERSON: Oh, I wouldn't advise that. All right, thank you very much. Would you
continue, please, with your statement?

30 MR SCHUCKARD: Thank you, members of the Panel. Good morning. It's a long process
and I'm quite pleased to answer questions about the king shag evidence
that are presented for this process. As an introduction, which is maybe
slightly longer as an introduction, I prepared for you a PowerPoint
35 presentation and the PowerPoint presentation, this bring you probably
for this process of the Panel consultation as close to the king shags as
you can come. So if you allow me to present that PowerPoint
presentation.

CHAIRPERSON: Please do.

40 MR SCHUCKARD: Secondly, somewhere in the middle I will stop and will also provide
you with a piece of video that is of relevance to the overall presentation.

45 CHAIRPERSON: So the summary of your evidence that we've got here, are you going to
take us through that?

MR SCHUCKARD: We can probably go quite quickly through that one. Basically what has
not been addressed in the PowerPoint presentation, we can skim over
that one and let the process --

CHAIRPERSON: You want to do the PowerPoint presentation first?

MR SCHUCKARD: At the moment I'd like to, yes. Thank you.

5

CHAIRPERSON: Right, thank you. And that'll be available to us in due course?

MR SCHUCKARD: If at the end you would say that the quality is of such an outstanding standing that you would prefer a copy, I'm more than happy to share it with you.

10

MR DORMER: Oh, we can't possibly reach that view.

MR SCHUCKARD: I would almost say then it is maybe not even useful to start with it, but maybe this first bit, I will present you with a copy of it.

15

CHAIRPERSON: Thank you.

MR SCHUCKARD: So maybe I will actually change the setting slightly that I took from this one right in front of me. That's easier. I will go and sit in front of the table. That's better. So this is the PowerPoint that will address the king shag issues for which I presented the evidence-in-chief for the two organisations, that's Friends of Nelson Haven and for the Kenepuru Sounds Residents Association. Just kind of a brief overlook, this is looking at the sub-Antarctica and these blue-eyed shags, of which the king shag is one, are distributed all in a circle around Antarctica. They are definitely species that occur in the sub-Antarctic upwellings, including in New Zealand.

20

25

The New Zealand king shags, which is one of the 16 blue-eyed shags that are dispersed around Antarctica, is an endemic New Zealand bird species and it's only occurring in the Marlborough Sounds. As a part of the King Shag Management Plan, the total population was assessed in 2015 at 839 birds, of which 187 were breeding pairs or 45 per cent of the population. The bird counts were at this time higher than the previous counts because the methodology that was now available to do the assessment was condensed to a 40-minute over-flight over all the colonies, and within 40 minutes all the colonies of the whole Marlborough Sounds were counted.

30

35

Instead, in the past, you had to go by boat, you were weather dependent and sometimes there were maybe up to five or six weeks between the counts of the various colonies and that created some changes, possibly because maybe interaction between the various colonies and the various individuals. So what --

40

45

CHAIRPERSON: Mr Schuckard, is that the latest --

MR SCHUCKARD: Eight hundred and thirty-nine, that's the latest.

CHAIRPERSON: That's the latest that you have?

5 MR SCHUCKARD: Yes, yes, correct.

CHAIRPERSON: Right, thank you.

10 MR SCHUCKARD: According to the King Shag Management Plan, there is an obligation to do another survey according to the same protocol in February 2018. So that will be the first one that will effectively assessing a change in the baseline of 839. So at this moment, the 839 is the baseline. In February 2018, it's the first comparison, if there are any changes. The King Shag Management Plan allows for a protocol, what do we call a
15 significant change?

CHAIRPERSON: Right.

20 MR SCHUCKARD: This is the policy 11 of the Coastal Policy Statement. I will certainly spare you of reading every sentence in here, but highlight the most important part of it. The most important part is that policy 11 is:

25 "To protect indigenous biological diversity in the coastal environment and to avoid [and I tried to introduce some emphasis on that one] the adverse effect of the activities on indigenous taxa that are listed as threatened in the New Zealand Threat Classification."

30 They are on the table on the bottom in blue on the right. So in the National Threat Classification, king shag is nationally endangered, which is a subdivision of threatened. Secondly, if the taxa are listed in the International Union of Conservation of Nature - and that is on the right in red - and there they are vulnerable, which is another subdivision of being threatened. So king shag is in both listings a threatened
35 species.

40 So now the Duffer's Reef colony that is, with 35 per cent of all the birds, the biggest colony of king shags and both North Trio Islands and Duffer's Reef host up to 60 per cent of all the nests of the species. So in the bar graph on the left, the red single bar, that is the total number of individuals that was counted in 2015 compared to all the other colonies. On the right you see a nest survey that took not only place in 2015, but also there was last year a nest survey done as well and the nest survey showed that up to 60 per cent of all the nests are occurring
45 on Duffer's Reef and Trio Island.

5 What are the parameters of the distribution of king shags? One of them is that they are a real deep-diving species and we can say with confidence that 90 per cent of all the feeding shags are feeding in waters of up to 50 metres deep. How far do they fly? What is the distribution of king shags? The king shags fly as far away as 25 kilometres from the main colony and most of them are seen up to 12 kilometres from the colony. On the map on the right, we can see the main colonies, in this case Trio Islands, east of D'Urville Island. We can see underneath there Duffer's Reef. To the 2 o'clock from there, we can see a small colony, Sentinel Rock, and we see on the far right of the map, we see the colony of Duffer's Reef. All feeding shags are connected here with the most logical way of how they are flying between the feeding area and the colony.

10
15 I may say - and you can see that on the picture on the bottom - these shags are seldom flying over land. There's only one place where they do that. They always fly over sea and it is very likely that they need the cushion effect of the air under the wing basically to move between the feeding area and king shags. King shags are probably linked to the species where the maximum amount of energy is required to keep them in the air, because they have gone in evolutionary terms some modification. They are deep-diving and deep-diving and flying is not that is in evolutionary terms possible to compromise that in one species, so as such the flying capabilities have somewhat given way.

20
25 If you look at the Duffers Reef colony, the most important colony to assess for this application for this salmon farm relocation, then the departure direction from Duffers Reef are presented as follows: so we see the Blow Hole point and Chetwode which is in the direction north and northwest. We see Orchard Bay. That is the bay in Forsyth Island. That is northeast and east. We see next from there Forsyth and Beatrix Bay. That is southeast and south. And we see at the end the Waitata Reach, which is basically southwest and west.

30
35 So, if we now look at the application that's in front of us, the red bar graphs are the areas where the king shags from Duffers Reef are feeding, so that is in the direction of Blow Hole and Chetwode and into the Waitata Reach. So the Waitata Reach in this case, of the eight surveys that I've done of departures of king shags, the amount of birds that are moving in that direction is between 30 per cent and 72 per cent of all the birds that came from Duffers Reef.

5 If we now go to the International Union for Conservation of Nature, one of the listings that is specifically mentioned in Policy 11 of the Coastal Policy Statement, the distribution of a bird is provided as the extent of occurrence and it is quite a simple proposition. You have the waypoints where the birds are identified and you plot it on the map and that is presented as the extent of occurrence. Do we know that for the Marlborough Sounds? Most certainly we do. We have more than 1,000 waypoints in the Marlborough Sounds that has provided us with the sites of occurrence as we know it now.

10 [12.15 pm]

15 The second one is putting a line around the area of occurrence, and I left that off because it is not really contributing anything more.

20 The third one is the area of occupancy. That is another way of doing the assessment and it is a measure of the sum of the grid squares where king shags have been identified. And to give you kind of the same model on the bottom over here, that is the same distribution as we have seen in the first graph and we are basically counting all the grids where king shags have been identified. Do we know that for the Marlborough Sounds? We certainly do. We have at this stage around 607 grid squares where shags have been seen feeding.

25 So now, if you are amalgamating these important parameters that is driving that direction and the distance they fly from the colony and we put it over the map of the Marlborough Sounds, then the dark blue is the area that is less than 50 metres deep that we have seen in the previous one. That is about 90 per cent of all the shags are feeding. We overlay that with the grid squares of 500 by 500 metres, and we basically also acknowledge that up to 5 per cent that are in red are deeper than 50 metres, and we acknowledge that they fly as far as 25 kilometres to feed, then this is the distribution of the king shags that we know in the Marlborough Sounds.

35 To put it into context, that area that is correlating to the 25 kilometre distance to a diving depth of 50 metres and deeper, and the direction where they feed is around 1,300 square kilometres. That, members of the Panel, is the distribution of the threatened New Zealand King Shag.

5 If we now go to the king shags and we look at the prey species that they
are dependent on, with funding from Friends of Nelson Haven and the
Department of Conservation, we collected in 2011, regurgitations from
all the main colonies. That means that if shags are diving they fly back
to the colony and they are regurgitating those parts that they do not
digest. It is a slimy little ball which the hardest parts they do not digest
in the acid of the stomach are being contained and you have a little
sample of what has been eaten in the previous 24 hours. To give you
10 an impression of what these blobs look like, here are two examples.
And on the bottom-right you see two images of those interesting
otoliths that you can identify in these regurgitations.

15 So we have here another map of the Marlborough Sounds that I have
seen previously, and we collected on the four black dots. We collected
all the samples - 141 in total - and we have analysed them all. I must
say the analysis went to the speeches at this stage and hopefully that
will be finished in August. We also will correlate the size of the otolith
to the mass of the fish that has been digested, so at this stage it has only
gone to species level. Later on it will be possible to allocate also the
20 mass contribution of every prey species through the 24-hour meal that
the shag has taken.

25 Just to put it in context there has been one study done before this 2011
study. That was a study done by Lalas and Brown. They identified
predominantly a flounder called a Witch Flounder in their samples, and
I show you the site where they did a collection. My argument here is
that where that was a very useful contribution to the overall knowledge
of king shags, however, that sample is really taken at the edge of the
12 kilometres where most of the shags can be identified. So my
30 argument will be that it is on the edge of their distribution.

35 In total we identified 17 fish species, all bottom dwelling species that
were identified. I will not take you through all the species individually
but these are the species that are known to be what king shags are
feeding on.

40 If I take you to the five most important species that we have identified,
one is the Witch Flounder and I provide you here with a couple of bar
graphs that provide you the percentage of witch in the number of
regurgitations that we found and compare that with the Lalas and
Brown paper. So, as you can see, Lalas and Brown in red. In 100 per
cent of regurgitations they found Witch Flounder. If you're looking at
Duffers Reef on the grey bars, we found that also in higher numbers
but not as many as we've seen in Lalas and Brown.
45

5 The second species is an Opal fish, a bottom dwelling fish again and we identified it in all the four colonies where we collected these otoliths. We found Lemon Sole and Lalas and Brown also identified Lemon Sole as well, and we found Jock Stewart or also known as Scorpion fish. That was only identified in our samples and not by the Lalas and Brown study. New Zealand or true sole. That was also found in all the -- all bottom dwelling fish I may say. And the last one is Triple Fin. As you can imagine, a Triplefin is a rather small species and that will contribute in mass not as much as what a Witch Flounder will do.

10
15 So, if we now look at these samples in the overall context of the areas that we have identified, you can see on the left side in blue that is Admiralty Bay where the colonies of Trio Island and Stewart Island are identified, and there is an overwhelming amount of Witch Flounder identified in that area. We can describe Admiralty Bay as a rather flat bottom with clay and silt on the bottom, and I may say that it almost resembled a similarity with the samples that were provided by Lalas and Brown.

20
25 If we now go to the right to Sentinel Rock and Duffers Reef, we see a much more overall contribution of all the prey species that have been identified. The interesting question is now - and I can't answer that one - is the king shag effectively searching for particular prey that is more diverse or is basically the proposition whatever is in front of it is a part of the prey? That is a question that will be extremely important to answer.

30
35 If we now look at all this distribution of the prey species as a benthic species and what is known in the literature, we all can see - and keep in mind that on the left-hand side the access is provided in logarithmic units - that if the king shag is diving between 10 and 80 metres that all the prey species that are important, or that we know to be important at this stage, are basically creamed off at the top end of their distribution.

40 So the king shag and the prey are meeting each other right at the upper end of where they are going, and that's a very important conclusion. So every overlay the area where king shag is feeding and now you can see that most of prey species are caught in the upper end of their distribution.

45 So, if you're diving up to 80 metres deep and more generally 50 metres, the light conditions that are of relevance to make a connection between prey and predator are of fundamental importance. In these environments the king shag will go in darker environments and it is completely hunting with eye sight, so the light conditions in these areas is very important.

5 Now, there are two papers written that have identified the minimum amount that shags require to actually still identify their prey, and the upper one is already a reasonably old paper for Sara Bundless(?) of 1999 from the South Georgia Islands. And they identified that a close cousin of the king shag, the Imperial Shag, is diving with minimum light conditions of 0.5 lux.

10 A more recent study by an Argentinean team of scientists studied them on Cape Valdés in Punta León, and their deepest dive was up to 0.3 lux. Overlap but still quite close to each other, so we almost can now identify the minimum light conditions that are required to make that connection between prey and predator.

15 If we go to these two sites of Punta León or Cape Valdés and South Georgia Island, they are provided in red and in blue. And now the beauty at the moment is that the Argentineans have effectively connected a very ingenious little camera to the back of an Imperial Shag and that shag can effectively now take you under water and you can follow how it is effectively taking its prey.

20 Here are some pictures from that same paper. The scientists from the Argentinean study communicated that the shags rarely fitted environments where the light level is below. And the authors of that study are provided here and I've been in close contact with them for the last month or so.

25 So the next one is a diagram of basically what is effectively happening with a shag that is going under water. So, 100 lux is more or less the lightest condition and that is comparable to an overcast day up to 0.3 lux, and you can compare that with like a moon on a clear night. That is about 0.3 lux. So they are the flexibility or the environment where the king shag is feeding.

30 If we take that now a step further and now go on a little tiki tour under water with an Imperial Shag - and I must say I have to switch my PowerPoint slightly because this is not working and I have to take you to YouTube, but I will do that very quickly. And we go now to this one.

35 So here we are effectively on the back of an Imperial Shag and you are diving now 50 metres in 40 seconds. Obviously they've taken quite a few things out of that one but here it is still in the water column. And the bopping is coming because the enormous power of the propulsion that is caused by these legs that are much stronger than the muscles for flying. And here you're coming in the diving environment of a shag at 40 45 50 metres deep, 150 feet.

5 So here you can see it's reaching the bottom. From here the shag has around 80 seconds basically to look for food and that is what it is doing now. Yes. And here you can see it has caught a prey. Yes, and here you can quickly see it is a fish that's going around the bill. And now it takes 40 seconds again to come up. So the whole dive takes around 2 minutes and 40 seconds: 40 seconds to go down, 40 to come up and 80 seconds to look for prey; etc.

10 So that was a --

[12.30 pm]

CHAIRPERSON: That's not a king shag though, is it?

15 MR SCHUCKARD: That was the Imperial Shag.

CHAIRPERSON: Yes.

20 MR SCHUCKARD: That is *Phalacrocorax atriceps*. That's the one that is living -- because the king shag is endemic only in New Zealand and the Imperial Shag is living in South America as far north as Cape Valdez, which is 43 degrees south. The Marlborough Sounds is around 41 degrees south, so it's pretty comparable with the environment of the Marlborough Sounds.

25 CHAIRPERSON: Yes.

30 MR SCHUCKARD: I will go here from the current slides. So now I will continue with the presentation. So, a summary of what we just saw with an Imperial Shag, 2 minutes and 40 seconds that is how long a dive is lasting: 40 seconds to go under to 50 metres deep, 80 seconds to hunt for prey and 40 seconds to come up again.

35 Now, the message is the increase of chlorophyll A as a result of increased nitrogen levels that will adversely affect the available feeding area. It is a general proposition that when you add chlorophyll A as a reflection or a measurement of the amount of phytoplankton in the water that the light attenuation is decreasing.

40 The major question is now: how much is that affecting the king shag: how deep it can dive and how much it will shrink its feeding area, yes or no?

45 The Board of Inquiry in 2012 acknowledged that water clarity is affected by chlorophyll A and the concentrations were identified in the following part of the consent conditions:

"That the chlorophyll concentrations should not increase beyond 5 milligrams per cubic metre."

Then the question arises: is that a lot or not?

5

Later King Salmon, in combination with the Marlborough District Council decreased the 5 milligrams per cubic metre to 3.5 milligrams per cubic metre in three sequential months. So if we have three readings of that amount then the issue needs to be addressed.

10

The correlation between chlorophyll A and the small amount of light that the king shag still requires under water - either it being 0.3 lux or 0.5 lux - is presented in this graph. So where you have a low amount of chlorophyll the light attenuation is small and you're going up to, well, from 1 milligram up to 80 metres deep. However, if you have 5 milligrams of chlorophyll per cubic metre the minimum amount of light is not going any deeper than 20 metres deep.

15

20

The existing environment of the Marlborough Sounds is around 1 milligram per cubic metre of chlorophyll, and it is varying. It depends on the summer or winter differences and there are certain spikes for other reasons and it varies between 0.9 and 1.9 milligrams, most of the time it is hovering around the 1 milligram per cubic metre.

25

If you are starting to think, "What is that 1 milligram? How many areas are effectively available in the Waitata Reach if these shags or the most dominant area where they feed is from in the Waitata Reach up to 12 kilometres away?" Well, with 1 milligram of chlorophyll linked to the 0.3 lux the shags have around 6,000 hectares for their ability to search for food.

30

If you go to 2 milligrams, the area is already shrinking to maintain that 0.3 lux with 40 per cent and around 3,500 hectares is available to them at that stage.

35

If it got to 3.5 milligrams, the existing condition, then the area is effectively shrinking with 60 per cent. And last if the original consent condition of the Board of Inquiry was applied for this matter, then there is only 10 per cent available compared to 1 milligram of chlorophyll.

40

So, if we now transfer that into a spatial context, what you see here in yellow is the amount of area that is up to 50 metres and where that 0.5 lux or 0.3 lux is being maintained with 1 milligram of chlorophyll. So the total area here is around the 6,000 hectares.

45

If we increase chlorophyll to 2 milligrams, then 40 per cent of the area is shrunk, so to maintain that 0.3 lux then this is the area of 2 milligrams and if it shrinks to 3.5 then 60 per cent of the feeding area has disappeared and, last, if it is 5 milligrams there is only 10 per cent left of the original area of 6,000 hectares.

5

CHAIRPERSON: Mr Schuckard, would you go back to the previous graph you showed us where you talked about - I think you said - 3.5 milligrams is the existing condition were the words you used.

10

MR SCHUCKARD: Correct.

CHAIRPERSON: What do you mean by that? What do you mean by "existing condition"?

15

MR SCHUCKARD: That is what I showed in the previous slide where the Board of Inquiry said 5 milligrams of chlorophyll per cubic metre in the consent condition. Later on King Salmon, in consultation with the Marlborough District Council, changed that and that changed it that if they measure, with their measuring devices in three consecutive months, 3.5, then the issue needs to be addressed and then the regulator needs to talk with the consent holder. What will happen then is not sure.

20

CHAIRPERSON: So the consents for the farms that the Board of Inquiry approved had originally 5 milligrams?

25

MR SCHUCKARD: Correct.

CHAIRPERSON: And that was later reduced to the 3.5?

30

MR SCHUCKARD: In three sequential months, yes, correct.

CHAIRPERSON: Was that a change in conditions or a voluntary reduction?

35

MR SCHUCKARD: My understanding is it is a change in the condition.

CHAIRPERSON: Right.

MR SCHUCKARD: But I'm not 100 per cent sure on that one.

40

CHAIRPERSON: No. Okay.

MR SCHUCKARD: And what the outcome of the 3.5 milligrams will be is not entirely clear to me either. They need to go and consult but what it means I don't know. They probably first have to establish if the increase to 3.5 milligram is a result of the consent holder.

45

MR DORMER: Sorry, why are you referring to an increase to 3.5?

MR SCHUCKARD: Because at the moment the Marlborough Sounds has 1 milligram per cubic metre.

5

MR DORMER: I had recorded a note as you were talking that the existing was 0.9 - 1.9.

MR SCHUCKARD: Correct. But in general those are the spikes that go up and down, most of the time it is hovering around the 1 milligram. I provided in my evidence-in-chief the two stations that are located in the Waitata Reach, and the graph that is presented in my evidence-in-chief is basically providing you with the levels of chlorophyll by the stations, PL6 and PL7, how much they will change over time. And that is on my page 54 or my bullet 142.

10
15

MR DORMER: I'm just resolving my confusion. So it's hovering around 1 most of the time now, and so the 3.5 which you described as an existing is not existing in reality, is it?

20

MR SCHUCKARD: No.

CHAIRPERSON: No.

MR SCHUCKARD: It has been measured but it has been measured more to the inside, but then only on small occasions. But certainly if you are accepting that the outer Sounds north of Maud Island is an environment on its own that is not necessarily the same as the inner Sounds, where you're more dealing with a river inflow where more nutrients are provided and more stratified water columns, that is a different environment. I'm only focusing on the Waitata Reach, the area northeast of Maud Island, up to 12 kilometres from the Duffers Reef colony.

25
30

CHAIRPERSON: Is that 12 kilometres in a circle? How do you measure the 12 kilometres or where do you measure it?

35

MR SCHUCKARD: The 12 kilometres are measured as to how long the shags are flying.

CHAIRPERSON: Yes, I understand that but in any direction?

40

MR SCHUCKARD: Into the Waitata Reach, so the Waitata Reach is the sector west and southwest from Duffers Reef.

CHAIRPERSON: Right, west and southwest then.

45

MR SCHUCKARD: West and southwest from Duffers Reef, correct.

CHAIRPERSON: Thank you.

- MR SCHUCKARD: And that brings me to that bar graph where I showed in red what areas are they flying to, and the biggest area they're flying to is the Waitata Reach.
- 5 CHAIRPERSON: But they fly west and southwest from Duffers Reef?
- MR SCHUCKARD: Most of the shags.
- 10 CHAIRPERSON: Yes, which is their roosting area.
- MR SCHUCKARD: The roosting area is Duffers Reef and the breeding colony, correct.
- CHAIRPERSON: Thank you.
- 15 MR CROSBY: Just while you're on that figure 1.2 at page 54 of your evidence, at paragraph 142 you talk about --
- MR SCHUCKARD: Sorry, Mr Crosby, what ...?
- 20 MR CROSBY: At paragraph 142 at the top of page 54.
- MR SCHUCKARD: My evidence-in-chief?
- 25 MR CROSBY: Yes, that's right. Yes.
- MR SCHUCKARD: There's numbers.
- MR CROSBY: Yes, paragraph 142. It's the one you referred us to. You took us to page 54, all right?
- 30 MR SCHUCKARD: Yes.
- MR CROSBY: Yes. And you took us to the figure 1.2.
- 35 MR SCHUCKARD: I'm confused with 1.2 because my evidence-in-chief has numerical data from 1 - 154. What is 1.2? Oh, figure 1.2?
- MR CROSBY: Yes.
- 40 MR SCHUCKARD: My apologies, I thought it was paragraph 1.2.
- MR CROSBY: No, figure 1.2.
- 45 MR SCHUCKARD: Yes.
- MR CROSBY: All I just want to get clarity from you was that I can see PLS6 Waitata Reach. I just couldn't pick up PLS7. Where is that?

MR SCHUCKARD: That is probably a little bit distorted but it is the Ninepin Rock one, just south of the Chetwode Island.

5 MR CROSBY: Right. Thank you.

MR SCHUCKARD: I think if you will look very carefully then you will read the "7" over there, but anyway it is the three red dots that are all established in the Waitata Reach northeast of Maud Island. They are PL6 and PL7 and the data provided in that graph are related to these stations.

10

MR CROSBY: Right. You just said "three" you meant two, did you?

MR SCHUCKARD: The two graphs.

15

MR CROSBY: Yes, but the two points. You just said "three".

MR SCHUCKARD: Oh, sorry, two, PL6 and PL7.

20 MR CROSBY: Yes. Thank you.

MR SCHUCKARD: So now the question arises: how do we address loss of feeding habitat? And to take you a bit back in time there was at the time - when the Board of Inquiry was addressing the similar issues as well - a discussion between Commissioner Beaumont, a part of the Panel at that time, and Mr Sakha(?) who was the king shag expert for the applicant King Salmon. Commissioner Beaumont asked the risk following a loss of habitat, and Mr Sakha answered to her:

25

30 "I would consider a loss of up to 5 per cent as being no risk and then increasing risk as the percentage of habitat loss goes up."

35 So, if you now go back to the same graph again we can't accept that the Waitata Reach is an unmodified pristine environment. That is not the case. In the Waitata Reach and predominantly in the bays on either side, there is already 305 hectares of mussel farms but if you take the overall footprint of mussel farms, which is 550 metres on either side, we can probably establish an estimated footprint of mussel farming of 705 hectares, which is already around 12 per cent of the 6,000 hectares that are used by king shags to feed.

40

5 And if we now go back to the court ruling that Mr Ironside was already referring to - that was the Davidson case - the court had adequate information to find or predict that the king shag habitat will change by shell drop and sedimentation; second, the effect of farm accumulate are likely to be adverse with a probability between 66 per cent and 100 per cent, and it is likely as not that there will be adverse effects on the population of New Zealand King Shags and their prey. That was the information that the court decided that was sufficient to not grant that consent.

10 If we now go back to our two graphs - and I have provided here the 2 milligram and the 1 milligram - and we overlay that with the area that is already occupied by the salmon farms in existence in the Waitata Reach, and the footprint of mussel farming in the Waitata Reach as well, then we have already an area of 12 per cent of king shag feeding habitat that is not suitable for feeding.

15 If we now go and put this in a wider position and we surmise a general proposition of the bottom of the Waitata Reach, and we see the impact of salmon farming on the left and the impact of mussel farming on the right, we may really wonder what the future is for this species with the information that has been gathered so far and we have not been able to identify of these two activities if they or have not an adverse effect as what is required by Coastal Policy Statement 11 as such.

20 So, my overall assessment is that policy 11 of the Coastal Policy Statement to protect or to avoid adverse effects of activities on threatened species, it is my submission that it has --

25
30 CHAIRPERSON: That is your opinion.

MR SCHUCKARD: That's what I said.

[12.45 pm]

35 CHAIRPERSON: It's your opinion please, not your submission. You're an expert witness, Mr Schuckard. You don't make submissions. You give opinions.

40 MR SCHUCKARD: That's correct.

CHAIRPERSON: Yes. I accept you're giving your opinion.

MR SCHUCKARD: Yes. I may be used to giving evidence in front of the court and maybe that's where I got my confusion.

45 CHAIRPERSON: Well, I am sure in front of the court you wouldn't get away with saying "submission".

MR SCHUCKARD: I take your point.

CHAIRPERSON: Yes, so your expert opinion is ...?

5 MR SCHUCKARD: That the proposed relocation of salmon farms in the Marlborough
Sounds has an unacceptable adverse effect on the wellbeing of the
threatened king shag. And my acknowledgement goes to my dear late
friend, Danny Boulton, who took me on endless trips over to all the
colonies, and Friends of Nelson Haven for funding it, the Department
10 of Conservation for funding and transport, my friend Kelvin Floyd who
did many hours of cartographic work, Tui Nature Reserve who has
since 2014 done the transport to Duffers Reef, and numerous people
who shared their information about king shag records. Thank you very
much.

15 CHAIRPERSON: Thank you very much, Mr Schuckard.

MR DORMER: I've read some other material about this subject and it is suggested that
the population of the birds has grown over the last ten years. Is that a
20 correct understanding?

MR SCHUCKARD: I think at the beginning of my presentation I alluded to that this
assessment that was done in 2015 was quite different from all the
previous assessment.

25 MR DORMER: Yes, more accurate you think?

MR SCHUCKARD: Yes. We did the whole population - the whole species. We counted
them in 40 minutes compared to in the past where sometimes, because
30 of adverse weather conditions, I was not able to go out and sometimes
it was five or six weeks. So if there has been interaction between the
colonies where certain individuals move between colonies then that can
distort the numbers that are counted, where it was a suitable number to
still provide information if they fit within the threatened status of the
35 IUCN.

However, to make a comparison then the 839 provides an increase in
numbers I am not so sure about. I can present you the paper that is
written as a result of this 839. And once in 1997 we were able as a kind
40 of a resolve with Mr Boulton, we were coming back in 1997, starting
in White Rocks in the Queen Charlotte, and while we were coming and
passing all the colonies there was a strong indication that the birds had
not left up until 9 o'clock or 10 o'clock, so we were able at that time to
do a similar assessment from a boat, which is also not as accurate. The
45 numbers coming from that one compared to this assessment by plane
are less different as to what the figures of 675 look like compared to
839. So I am very careful. Let's say I would hesitate to make that
statement.

CHAIRPERSON: Hesitate to make what statement?

5 MR SCHUCKARD: That there is an increase in individuals based on the 839 compared to the 645 or 675 that was presented in 2002. That goes back then to 1997 where the main colonies were counted and the numbers are overlapping, but it was not a total count.

10 MR DORMER: And are you able to form a view as to whether the numbers might be declining?

15 MR SCHUCKARD: No, sir, because we have just established -- that is a very fundamental question that was at the essence of the Board of Inquiry to basically allow Waitata Reach and Richmond Bay to go ahead. However, there needs to be provision of a king shag management plan that reaches a baseline and we start to assess from the baseline if there is a decrease or, for another argument, an increase in the numbers. The baseline has been now established on A39 and we haven't done a second survey yet, so I can't answer that.

20 MR DORMER: Thank you.

MR SCHUCKARD: A pleasure.

25 MR CROSBY: The only question that I've got - and thank you Mr Schuckard for what you've put before us - is just I'm intrigued, do you keep a record of the observations? In other words, is it a photographic thing that you go back and analyse later or is it something that you count as you're flying and are you flying by helicopter, by plane?

30 MR SCHUCKARD: It's a record. We have used an Auckland company Aerial Surveys and because it was the first time ever there was also an allowance. They survey was paid by King Salmon and we also did a survey on the nesting birds, and with the nesting birds there was a possibility to have a three-dimensional picture, so that you really easily can see the nests or is there a chick in there or is it a shadow.

40 The images that are provided are made by Eco cam. That's all provided in the paper these details. And the images are probably maybe a foot wide and extremely accurate. And the most interesting thing was, when they made two flights to create a three-dimensional picture that you could see there was no disturbance at all, because they were flying from the south and came back from the north to get the overlay and there was no disturbance whatsoever. All the pictures that were made

45 at that time are in the file of the applicant, the Marlborough District Council and us having made the survey.

MR CROSBY: Thank you.

CHAIRPERSON: So the count is actually done from aerial photography, is it?

5 MR SCHUCKARD: No, the counts were to avoid any ambiguity around the counting and make that as neutral as possible, a team of three people - including myself - did the count. And they were David Melville, Mr Graeme Taylor from the Department of Conservation and myself. So all three together we did the counts and we were surprised how close we were.

10 CHAIRPERSON: Yes. But you didn't answer my question.

MR SCHUCKARD: Oh, sorry.

15 CHAIRPERSON: The count is done from aerial photography or from actually seeing the birds on the ground?

MR SCHUCKARD: From the photographs.

20 CHAIRPERSON: From the photographs?

MR SCHUCKARD: From the photographs.

CHAIRPERSON: Yes, right.

25 MR SCHUCKARD: The aerial company had a couple of GPS points and they started to tick right before they entered the colony and they create a stable environment from 300 feet. And one of the more important parts was: was this something we can do in the future, and is it creating disturbance? And I can honestly say that the overfly did not create any
30 disturbance at all.

CHAIRPERSON: Really?

35 MR SCHUCKARD: Nothing. We could even see the images of white-fronted terns that were sitting on the flight up north and coming down south, and they have not moved a bit.

40 CHAIRPERSON: Thank you very much, Mr Schuckard. I think we'll see you another day with the other experts on the subject.

MR SCHUCKARD: Probably near Duffers Reef.

CHAIRPERSON: Yes. Thank you.

45 MR SCHUCKARD: Thank you.

CHAIRPERSON: Yes, we're scheduled to adjourn at 1.00 pm but we'll go to 1.30 pm today and we'll take half an hour for the break.

Now, Dr Steven. Yes, thank you.

5 DR STEVEN: Good afternoon. What I would like to do is refer to the summary of my evidence, which was lodged on 1 May. Do you have that, sirs?

CHAIRPERSON: I've got something here. It's an 18-page document.

10 DR STEVEN: That's the one.

CHAIRPERSON: Yes. Thank you.

15 DR STEVEN: I will read through this but if I might just start with paragraph 2, just to outline the focus of this document. The document identifies aspects of the landscape and natural character assessment undertaken by Mr Hudson, for the Ministry for Primary Industries but in my opinion render his assessment invalid or unreliable for the purposes of considering the landscape and natural character aspects of the proposal before the Panel. In particular, I refer to flaws in the theoretical and methodological foundations of Mr Hudson's assessment, and the flaws in the work of other practitioners whose work Mr Hudson relies upon in reaching his conclusions.

25 Now, I would like to stop there and refer briefly to these terms "validity" and "reliability", which I have defined on the last page of the report. The question came up of Mr Ironside, did he mean invalid in a legal sense. As I'm using the terms here, I'm using them as tests of what we might refer to as the trustworthiness of qualitative studies, of which a landscape assessment is an example. Quantitative and qualitative studies each have their own traditions, their own paradigms and their own processes for testing the trustworthiness: how can we rely on the findings of these studies? And for the purposes of qualitative studies we use the test of validity and reliability. So they are technical terms used in the context of investigations, such as landscape assessments.

35 So, moving on to paragraph 5, landscape assessment best practice --

40 MR DORMER: Sorry, Dr Steven, you said you were referring to validity and reliability?

DR STEVEN: Reliability.

45 CHAIRPERSON: And he's got at the end notes to say what he means by that.

MR DORMER: Yes.

DR STEVEN: And I've defined what I mean by those terms in the endnotes and refer to these also in my evidence-in-chief.

CHAIRPERSON: Yes. Thank you. Carry on.

5

DR STEVEN: So, introduction to landscape assessment best practice. There is currently no comprehensive best practice code for landscape assessment in New Zealand. Such guidelines as do exist are outlined in the NZILA 2010 document, Best Practice Note: Landscape Assessment and Sustainable Management. And I understand members of the Panel have been provided with a copy of this by Mr Davies.

10

15

In my opinion, this is a rudimentary and inadequate set of guidelines. These guidelines were to be the subject of a major review and revision this year, in a project to be funded by the Ministry for the Environment. However, the support for the project has been withdrawn by the Ministry and the future of the project is uncertain. In my opinion, statements - such as those made by Mr Hudson and Ms Williams in her peer review - to the effect that Mr Hudson's assessment follows NZILA best practice methodology cannot be taken as giving Mr Hudson's assessment any endorsement as to the validity and reliability of his findings.

20

25

The inadequacy of the NZILA guidelines, when applied to assessments that may assist in resolving the matter before the Panel, is compounded by Mr Hudson's failure to understand and apply them correctly in several key respects.

30

In the absence of adequate, professional best practice guidelines, I consider it critical for assessors to have recourse to relevant decisions of the court that address conceptual definitions and assessment practice. Mr Hudson has failed to do this, as I have identified in my evidence.

35

40

Secondly, critical thinking and considered analysis, particularly with respect to understanding relevant statutory provisions, such as New Zealand Coastal Policy Statement policies 13 and 15, the application of relevant assessment principles drawn from decisions of the court, and the basic tests of validity and reliability as they apply to assessment methodology.

[1.00 pm]

45

In my opinion, Mr Hudson's assessment falls short with respect to each of these points, diminishing the trustworthiness of his assessment as the basis for decision-making on landscape and natural character matters.

5 Scope of reported assessments: in the executive summary section of his
report, Mr Hudson refers to the scope of his assessment as having
considered 17 potential new salmon farm sites - and I will pass over
the quotations for the Panel to read. Mr Hudson does not report on his
assessment of the sites that were rejected. In the absence of this
information, there is no basis for understanding Mr Hudson's criteria
for rejecting potential sites, and how rejected sites compared with his
10 preferred sites with respect to effects on landscape and natural
character.

15 In the Hudson document - A Review of Proposed Marine Farming
Sites: Preliminary Thoughts, dated 4 December, 2015 - Mr Hudson
addresses an initial assessment of proposed 16 sites in a mere 3 pages
of written analysis. It is unclear whether further analysis was
undertaken. In the absence of this information, and the inability to
compare his analysis of rejected and selected sites, I regard the
reliability of Mr Hudson's assessment as compromised.

20 I note that Hudson's 4 December report recorded his "significant
reservations" about Site 125 Mid-channel Waitata North, yet the site
made it through to the final nine. How Mr Hudson's significant
reservations were allayed is not discussed.

25 Benefits of salmon farm removal. Mr Hudson refers to benefits - being
increases in natural character at the site scale - that will accrue through
the removal of existing salmon farms at Crail Bay, Waihinau, and
Ruakaka.

30 Setting aside Ruakaka, which I have not assessed, given the
acknowledged low performance of the farms at Waihinau and Crail
Bay, I do not regard the prospect of seven salmon farms in the Waitata
Reach as a net beneficial outcome, overall. The removal of the Crail
Bay and Waihinau sites results only in site specific beneficial effects in
35 locations still subject to intensive marine farm development. The
adverse effects arising from relocation impact upon the natural
character and landscape value of the Waitata Reach generally.

40 I note with respect to the sites to be removed, Mr Hudson rates the
effects of removal on landscape value rather more highly than he
assesses any of the landscape baseline value of the proposed sites. Four
of the sites to be removed are given a post-proposal landscape value of
high or very high. Only one of the nine proposed sites is evaluated as
having a high pre-proposal landscape value rating, and this is not
45 credible, in my opinion.

5 Reliance on untested assessments conducted by other professionals: the
operative Marlborough Sounds Resource Management Plan does not
address the identification of outstanding natural features and
landscapes. Rather, it identifies what are termed Areas of Outstanding
Landscape Value. As the Environment Court has determined, Areas of
Outstanding Landscape Value are not synonymous with outstanding
10 natural features and landscapes as understood in the context of section
6(b) and Coastal Statement Policy 15. Until such time as the proposed
Marlborough Environmental Plan is operative, resource management
matters require further, original assessments to identify ONFL, as
understood in current resource management practice.

15 Rather than conduct his own assessments of the ONFL of Waitata
Reach, Mr Hudson has instead relied upon the proposed Marlborough
Environmental Plan that is in turn informed by landscape and natural
character assessments undertaken by Boffa Miskell Ltd in 2014 and
2015.

20 However, Mr Hudson states in the executive summary that nothing in
his work should be taken as endorsing that categorization. While in
principle qualifying his reliance upon the Boffa Miskell studies, Mr
Hudson appears to offer no original assessment of outstanding natural
features and landscapes or natural character, other than at the scale of
the site. At the broader, landscape scale, his reliance upon the Boffa
25 Miskell findings and the proposed Marlborough Environmental Plan
appears complete, unqualified and uncritical.

30 In my opinion, there are significant flaws in the assessment of
landscape and natural character undertaken by Boffa Miskell Ltd.
Many of these flaws are addressed in a report I prepared to accompany
client submissions on the Marlborough Environmental Plan to the
Marlborough District Council, and this report was appended to my
primary evidence.

35 Significant among the issues I have identified with the Boffa Miskell
studies are: first, the failure of assessors to clearly define and
differentiate the concepts of landscape and natural character. This
failure is also evident in Mr Hudson's assessments, where baseline
ratings of natural character and landscape appear to be drawn from the
40 same sets of data, with little differentiation in the factors applied to
assessing each concept; second, the failure of assessors to understand
the relationship between landscape and seascape in coastal
environments, particularly as this relationship informs the spatial
definition of landscapes, as understood in the context of outstanding
45 natural landscapes and seascapes referred to in Policy 15 of the Coastal
Policy Statement; and third, the failure of assessors to differentiate
between the two distinct concepts of natural features and natural
landscapes.

5 I concur with the Boffa Miskell 2015 assessment in regarding the
locality of both the Blow Hole Point sites as being within an
outstanding natural landscape/seascape and, as such, subject to Coastal
Policy Statement Policy 15. However, more generally, I regard the
10 Boffa Miskell studies of natural character and landscape significance
to be unreliable sources for the purposes of Mr Hudson's assessment.
While I agree with some of the Boffa Miskell Ltd findings, a careful,
informed analysis reveals many aspects to the Boffa Miskell Ltd
assessments to lack trustworthiness and credibility. The natural
15 character and landscape provisions of the proposed Marlborough
Environment Plan that derive from these studies are as yet untested
through the process of public hearings and Environment Court
decisions - an issue acknowledged by Mr Hudson. To the extent that
the Boffa Miskell studies are significantly flawed, these flaws carry
through into Mr Hudson's own work, and the consequent validity and
reliability of his assessment.

20 Failure to adopt a landscape frame of reference 24. Mr Hudson has
adopted what I regard as an inappropriate approach to the definition of
the spatial contexts within which the proposal is to be considered. I
consider Mr Hudson's spatial scales - as distinct from ratings scales,
which I shall discuss in the next section - of analysis for both landscape
25 and natural character to be invalid. With respect to landscape, Mr
Hudson's approach is not supported by decisions of the Environment
Court. And I have discussed this at further length at paragraph 37 of
my primary evidence.

30 I have addressed the identification of an appropriate landscape frame
of reference - the Waitata Reach - in paragraphs 27 - 44 of my evidence.
All landscape experts appearing before the New Zealand King Salmon
Board of Inquiry accepted the Waitata Reach as being the relevant unit
of analysis for the assessment of landscapes, and I have referred to that
35 area in figure 1 of my primary evidence.

40 Rather than adopting a landscape frame of reference, Mr Hudson has
addressed the current issue solely at the scale of the site - meaning
individual salmon farm sites. Mr Hudson's assessment of site 34, North
Blow Hole Point, provides an example of how the site-level scale of
assessment is incorrectly applied.

5 The site scale of assessment and analysis is not an appropriate or
sufficient spatial frame of reference for considering the current matter
with respect to either Coastal Policy Statement Policy 13 on the
preservation of natural character or Policy 15 on natural features and
landscapes. This approach is also contrary to long established guidance
provided by the court regarding appropriate spatial scales for landscape
assessment. What the court has referred to as "Slice and dice"
approaches, whereby small, unexceptional areas are excised from
outstanding natural landscapes have generally been expressly rejected
10 by the court as inconsistent with the meaning of landscape in terms of
section 6.

CHAIRPERSON: Six and 6B.

15 DR STEVEN: 6B. Policy 15 of the policy statement requires that the adverse effects
of inappropriate use and development are to be considered with respect
to outstanding natural landscapes and outstanding natural features and
to natural landscapes and to natural features of the coastal environment
generally, not specific sites.

20 Invalid use of rating scales. Mr Hudson's use of a rating scale for the
assessment of site specific effects on both landscape value and natural
character is both confused and confusing and reveals a fundamental
misunderstanding of the use of and limitations of rating scales. While
25 the use of scales can bring considerable utility to the reporting of
assessments, it is necessary to design and apply scales according to the
purpose to which they are expected to serve. Mr Hudson's approach to
the use of a rating scale is outlined in his methodology section where
he refers to the use of a 7-point scoring scale.

30 Moving down to 32. The application of rating scales, and not
necessarily a 7-point scale, has been misunderstood by Mr Hudson.
The NZILA guidelines state, and I have given a quote there to the
effect, that they are all about the assessment of degrees or significance
35 of effects. These brief statements refer to the use of scales for assessing
degrees of the significance of effects. The NZILA guidelines did not
address the assessment of natural character, nor was the scale intended
for the assessment of landscape value or landscape significance. There
is currently no NZILA endorsed best practice guide for undertaking
40 landscape and visual effects assessments.

[1.15 pm]

45 In the absence of a more comprehensive locally produced guideline,
NZ practitioners are increasingly drawing upon the UK publication,
"Guidelines for Landscape and Visual Impact Assessment" 3rd
Edition, which I have referred to as the GLVIA guidelines and I have
a copy of them here should the Panel wish to look at them.

5 The GLVIA guidelines suggest four levels of significance rather than seven: major, moderate, minor and negligible. In my opinion, seven degrees of significance for landscape and effects cannot be differentiated and the use of a 7-level scale implies a greater degree of accuracy than is possible.

CHAIRPERSON: Am I right that the UK guidelines still addresses effects?

10 DR STEVEN: They address effects but they recommend a 4-range scale.

CHAIRPERSON: Yes, instead of seven. So they don't overcome the criticism you have that there are no scales for assessing the landscape?

15 DR STEVEN: They don't address the evaluation of landscape at all. This document is solely concerned with landscape and visual effects, so its and effects based methodology not an evaluation of significance.

CHAIRPERSON: Thank you. Yes, carry on.

20 DR STEVEN: Ms Williams in her peer review of the Hudson assessment questions how Mr Hudson's 7-point rating scale translates into RMA terminology concerning the level of adversity of effects. Ms Williams' attempt to elicit a clearer basis for assessing the significance of effects from Mr Hudson has been less than helpful in my opinion. The critical bit is the piece that I've emboldened at the bottom of that quote.

30 36. Further confusion arises concerning the manner in which Mr Hudson applies scales to landscape evaluation. With respect to each of natural science, perceptual/sensory and associative factors. It is not clear whether Mr Hudson is rating the value attributed to these aspects of the landscape or the significance of adverse effects on these aspects. The purpose of the scale in this context should be to rate the significance of effects associated with the proposal, not the value associated with the basis line landscape. It is not standard practice to rate landscape significance according to a 7-range scale. There are just two levels of landscape significance relevant to assessments undertaken with respect to coastal policy statement policy 15 and these are outstanding and not outstanding.

40 Mr Hudson's approach appears to rate each of the three broad factor categories of landscape value, these being natural science, perceptual/sensory and associative on the 7-point scale. In my experience this is an unprecedented approach to landscape evaluation and now that has no theoretical or methodological support that I am aware of.

45 Mr Hudson's assessment is unsupported by any analysis explaining his

method, in particular how he is able to differentiate 7 degrees of natural science value, perceptual/sensory, which is essentially aesthetic value, and associative value in his base line assessments. In my opinion it is not possible to do so. Any pretence that it can be done reveals a flawed understanding of assessment practice. A 7-range scale - I refer to this in figure 3 of my primary evidence - may be used for assessing levels of natural character in the coastal environment. But the technique applied by Mr Hudson in assessing natural character with reference to a scale is not explained and some of his natural character assessments are not credible. My approach to the assessment of natural character is set out in appendix B to my main evidence.

In summary, I consider the manner in which Mr Hudson has applied rating scales to his assessment is flawed. Any sense of reliability in his assessment that may arise from what may appear to be a robust, technically sound analysis is not justified in my opinion.

Invalid assessment of natural character and effects of the proposal on natural character. Mr Hudson's understanding of natural character appears to follow the same flawed reasoning that I have identified in the Boffa Miskell (2014) study of natural character. The key issue is the failure to clearly differentiate between landscape and factors influencing landscape value on the one hand and natural character and factors influencing the expression of natural character essentially are a descriptive - as distinct from evaluative - process on the other. This is evident in the frequent reference to values when discussing natural character, including natural science values and aesthetic value. Natural character assessment is not an evaluative exercise and aesthetics plays no part in the assessment of natural character.

Throughout Mr Hudson's assessment he refers to the notion that the Waitata Reach is a working landscape as if the description had some basis in policy. There is no basis in policy for this description and I consider it to be contrary to assessments of natural character, including assessments reported by Mr Hudson. I address this at paragraphs 111 to 117 of my evidence. All the evidence confirms my opinion that with reference to my 7-range scale of natural character the Waitata Reach landscape/seascape can be regarded as a natural landscape/seascape. Mr Hudson has departed from evolving practice in the assessment of coastal natural character by attempting a combined terrestrial and marine rating of natural character. Mr Hudson's conclusions on the baseline level of natural character for each proposed relocation site is prefaced by words to that effect, which I will leave.

This approach displays a flawed understanding of evolving methods for the assessment of natural character and the effects of the proposal on natural character. Combining terrestrial and marine rankings is methodologically difficult, if not an impossible task, in my opinion.

Mr Hudson does not explain how he achieves his combined rankings. The outcome is a meaningless average that distorts the actual rate or actual state of natural character when each context, that is terrestrial and marine, is considered separately. Referring to the level of change in natural character at each site, Mr Hudson acknowledges - and I will pass over that quote - the proposed Marlborough Environment Plan proposes a provision for assessing whether an adverse effect is a significant adverse effect in terms of New Zealand coastal policy statement policy 15. Now, Mr Ironside also addressed that in his submissions so I will pass over that and move to paragraph 47.

None of the sites assessed by Mr Hudson are given a high natural character rating, but the basis for Mr Hudson's natural character ratings are flawed and unreliable. The most obvious example of a location that should receive a high natural character rating is the mid Waitata Reach locality that Mr Hudson gives a moderate rating. This is implausible and reflects the flawed approach adopted by Mr Hudson as reflected in a further statement from his evidence or his report that I have quoted here.

Failure to consider the scope of cumulative effects. I address Mr Hudson's assessment of cumulative effects at paragraph 147 to 152 of my evidence. The following paragraphs summarise the main errors in his approach. Reporting on the cumulative effects of five new salmon farms in the Waitata Reach - a further quote from Mr Hudson I'll pass over - the reference to assessments of effects having been conducted at a range of scales is misleading if not in fact wrong. In my opinion reference to the assessment of landscape natural character and visual amenity effects at the national scale is an irrelevant matter and one that Mr Hudson does not address with any critical objective analysis, anyway. While it is appropriate to assess landscape significance at a regional - that is Marlborough - scale adverse effects should then be assessed with respect to the landscapes so identified. The Waitata Reach is a valid landscape/seascape defined at the regional scale of analysis. Adverse effects on landscape value are assessed relative to this landscape, not the entire region and certainly not the entire nation.

Adverse effects on natural character are assessed relative to an appropriately scaled extent of the coastal environment. Mr Hudson's site scale of analysis is not sufficient as I have discussed at paragraphs 97 through 107 of my evidence. It is not standard practice to assess cumulative effects on natural character at the scale of the region, and certainly not nationally.

Mr Hudson's approach to assessing cumulative effects is set out on pages 10 to 11 of his report. The main flaw in his method is that he appears to assess cumulative effects solely with respect to visibility, and in particular whether individual farms are seen simultaneously,

5 successively or sequentially. This approach demonstrates a failure to differentiate between the assessment of adverse effects on each of: (1) the biophysical landscape/seascape, (2) natural character, and (3) visual amenity. While there is a relationship between these areas of effect, they must be assessed separately, and different techniques applied.

10 Mr Hudson appears to conflate the concepts of landscape, natural character and visual effects, with the implication that the manner in which effects - such as effects on natural character - are seen by a viewer has a bearing on whether effects are adverse or otherwise. Effects on the biophysical landscape/seascape, and natural character can be established as an objective fact irrespective of visibility.

15 I address the correct approach to the assessment of natural character effects at paragraph 161 of my evidence. Briefly, natural character effects derive from human induced changes to any or all of natural elements, natural patterns and natural processes. Such changes can be verified as a matter of fact and exist irrespective of whether they are observed, and if observed, from what distance.

20 I refer to a further reference to Mr Hudson's focus on visual effects that has been relied upon by the planner, Ms Lojkine.

25 A further flaw in Mr Hudson's approach is his assessment of cumulative effects only with regard to the proposed salmon farm sites, individually and in relationship to each other. Existing modifications to landscape and natural character within the Waitata Reach - the effects of which will be compounded by the proposed farms - are not recognised or addressed as part of the wider issue of cumulative effects. This is a significant shortcoming in Mr Hudson's assessment.

35 There is an apparent focus upon whether the areas affected are identified as outstanding with respect to landscape value or natural character in the proposed Marlborough Environmental Plan.

[1.30 pm]

40 This may be an oblique reference to the implications of the Supreme Court's interpretation of Coastal Policy Statement 13(a), requiring the avoidance of:

"...adverse effects of activities on natural character in areas of the coastal environment with outstanding natural character."

45 Nowhere in Mr Hudson's report does he acknowledge Policy Statement 13(b) which refers to all other areas of the coastal environment. That is all areas that are not found to be outstanding.

5 For the purpose of the current matter, I consider all five proposed relocation sites - and this is restricted to Waitata Reach - within the same landscape and same area of the coastal marine environment - the Waitata Reach - and not, as Mr Hudson suggests, within five discrete areas, each one subject to a narrowly focused assessment at the scale of the site.

10 Ms Williams, in her peer review of the Hudson report, concludes that cumulative effects on natural character will be high. I have quoted Ms Williams' discussion on that briefly.

15 Finally, Panel, I would like to turn to a few matters raised in the submissions of Gascoigne Wicks for King Salmon. At paragraph 51(a) Mr Davies refers to my comments on the distinction between a feature and landscapes and seascapes, suggesting that I exclude a feature from the definition of landscape and seascape. Understanding the distinction between a natural feature and a natural landscape is a significant issue in this matter. It is not entirely accurate to claim I define a feature as excluding the landscape/seascape. A feature is a discrete bounded and readily differentiated and recognised element in a landscape, a distinctive part of a landscape generally of geomorphological origin. I have a footnote there to further discussion on this matter in my main evidence, including a section taken from the Environment Court's decision on **KPF Investments Limited v Marlborough District Council** that dealt with the distinction between a feature and a landscape.

30 Effects on features are less of an issue in this matter than effects on landscape/ seascapes. I am critical of the Boffa Miskell (2015) landscape study in failing to clearly differentiate features from landscapes. Most areas defined as outstanding natural features in the BML (2015) study do not qualify as features in the sense I define above. This has significant implications for the protection of valued landscapes/ seascapes in the Sounds. In the Sounds, seascapes are an integral part of landscapes, but natural features do not include adjacent seascapes, as features are defined by their geomorphology. In defining the Marlborough Sounds as a collection of features, rather than landscapes, the Boffa Miskell (2015) landscape assessment has largely excluded areas of seascape from consideration as outstanding natural landscape. Apart from the Outer Sounds ONL, all outstanding areas are defined in the Boffa Miskell study - erroneously in my opinion - as natural features. This is not a credible approach in my opinion.

45 At paragraph 51(c) Mr Davies referred to the avoidance, remediation or mitigation by the use of colour. My response, form and colour may be regarded as minor mitigation insofar as aesthetic considerations relating to landscape in an aesthetic sense are concerned. But form and colour have no bearing upon adverse effects relating to natural

character. Natural character is a function of the expression of natural elements, natural patterns and natural processes, and aesthetic considerations are not relevant in mitigating adverse effects on natural character.

5

Paragraph 51(d) of the Gascoigne Wicks submissions referring to my comments on values. I suspect Mr Davies is referring to my paragraph 79 and sub-paragraphs, although my evaluation of the landscape significance of the Waitata Reach is covered more completely in paragraphs 76 to 86 of my main evidence. Mr Davies is correct in stating that I consider the qualities that make the Waitata Reach outstanding are found throughout the Marlborough Sounds. Mr Hudson acknowledges this too.

10

15

At the regional scale, the outstanding qualities of the Sounds are not uniformly distributed. Some areas are less outstanding than others, and some areas are less than outstanding. However, it is my opinion that the Waitata Reach is a natural landscape/seascape within which the valued characteristics and qualities are evident at the level of outstanding.

20

25

At paragraph 51(f) I understand Mr Davies to question whether I have undertaken a regional assessment in reaching my conclusion that the Waitata Reach is an outstanding natural landscape/seascape. If he means a study such as that undertaken by Boffa Miskell (2015), the simple answer is no, but this issue identifies the relevance of landscape specific assessments in matters such as this. Specific assessments of landscape significance are often required in resolving matters before the Environment Court. Not every landscape architect offering an opinion on landscape significance has had the opportunity to undertake a comprehensive district or regional study. One-off, location specific evaluations have often been required, particularly in circumstances where the local authority has not identified outstanding natural features and landscapes within the district or region.

30

35

40

It is my opinion that such assessments are necessary and valid, particularly where the assessor has a wide range of experience in assessing landscapes throughout New Zealand, and makes his or her assumptions, methods and analysis clear. Landscapes are dynamic, not static, and community values change over time. Even in circumstances where district and regional assessments may have been undertaken, specific re-evaluations may be called for from time to time.

45

CHAIRPERSON: Thank you very much, Dr Steven.

(off mic conversation)

CHAIRPERSON: I think we will take the lunch adjournment. If you wouldn't mind

staying Dr Steven?

DR STEVEN: No, not at all.

5 CHAIRPERSON: We may want to ask you some questions. So we will adjourn now until 2.15 pm. Thank you.

ADJOURNED [1.38 pm]

10 **RESUMED** [2.19 pm]

CHAIRPERSON: This hearing is now resumed.

MR DORMER: No questions.

15 CHAIRPERSON: No questions from you.

DR STEVEN: Professor, I wonder if I might just briefly pre-empt a matter that Mr Davies may raise with you, concerning my standing as a registered landscape architect. When I --

20 CHAIRPERSON: Well, he hasn't done that to date.

DR STEVEN: He may do it at some point, sir.

25 CHAIRPERSON: Well, he's had his turn.

DR STEVEN: That's fine, I just wanted to clarify the issue in case it was raised.

30 CHAIRPERSON: I think I'm right in saying it hasn't been. I don't recall him raising that.

DR STEVEN: No, I thought Mr Davies might raise it at some point, sir.

CHAIRPERSON: Mr Davies has made his submissions.

35 DR STEVEN: Very good.

CHAIRPERSON: Yes.

40 DR STEVEN: We'll let it lie.

CHAIRPERSON: Thank you.

MR CROSBY: Dr Stevens, on the overhead there is the plan from the present Operative Marlborough Sounds Resource Management Plan, showing the areas, what is described and you have discussed that, the areas of outstanding landscape value that are identified on that map. I may be being unfair, but I can't recall seeing in your evidence any assessment or appreciation of why it is that you think that there are exclusions of Waitata Reach and, in particular, exclusions of the Blow Hole Point areas from that identification of areas of outstanding landscape value in the Operative Plan at the present time.

DR STEVEN: I think I have actually included an excerpt of that map in my evidence, but I make the point that areas of outstanding landscape value were identified as a consequence of studies that were undertaken prior to the Resource Management Act in 1991, and I actually give a reference to those studies, the principal author being Earl Bennett of the Ministry of Works at that time. And they were done in accordance with a process of landscape assessment which has been somewhat discredited since that time, and I think that underpins decisions of the court which state that areas of outstanding landscape value are not synonymous with outstanding natural landscapes. That concept came with Section 6B of the RMA and evolving assessment practice has identified outstanding natural landscapes according to a rather more comprehensive and holistic set of factors than were -- that underpinned this particular assessment that identified AOLV.

MR CROSBY: The question though that I was asking you was did you turn your mind to why there were gaps for Waitata, Northern Waitata Reach and, in particular, the Blow Hole Point areas in that identification. I know you have just explained again you don't accept the basis on which the identification was done, but did you turn your mind to why there were gaps in the Northern Waitata Reach area or the Blow Hole Point area?

DR STEVEN: I think it can be accounted for by a number of factors. It was done, was it 30 years ago? It was done according to a different model of landscape assessment, and certainly our understanding of what should be assessed and how has been influenced in recent years by Policy 15 of the New Zealand Coastal Policy Statement. It was a reasonable assessment of its time but, as I said, it pre-dates the RMA and certainly pre-dates the New Zealand Coastal Policy Statements, both of them.

MR CROSBY: In terms of the Blow Hole Point area and the rather unusual demarcation that excludes the entry point to Pelorus Sound, would that have been impacted under those types of assessments that were then being used by the existence of the pine plantations in that locality, that have been referred to by Mr Hudson?

DR STEVEN: I really can't speak for Mr Bennett and the principles that he used to identify his areas, but clearly his approach differs markedly from that of Boffa Miskell Limited who have identified that area as an area of outstanding natural landscape and, indeed, an outstanding natural feature. So I would put the differences down to changing philosophies and methods of landscape assessment, certainly informed by a couple of decades of Environment Court decisions on what constitutes outstandingness and what constitutes a feature and a landscape in these terms.

5

10

MR CROSBY: In terms of the Hudson material that's been put before us, there is quite an emphasis which you are critical of because it's a site-by-site basis, and I appreciate you haven't attempted that yourself. But there is an emphasis on the existence of the pine plantations at the Blow Hole site locations. Do you have a view as to whether there is any impact, either from their existence or from their potential removal, as has been outlined in a memorandum to us today, by spraying? Do you have any view personally in terms of the effect of that on your general assessment that the area has outstanding natural landscape values?

15

20

DR STEVEN: Well, I think it's important to differentiate between natural character and its assessment and landscape.

MR CROSBY: I'm not asking about natural character.

25

DR STEVEN: Yes, well my criticism of Mr Hudson was with regard to his use of the terrestrial environment of Blow Hole North to influence his assessment of the natural character of that site. That was the purpose of my criticism, it was directed at his natural character assessment, rather than the landscape assessment.

30

MR CROSBY: All right, can we put that to one side?

DR STEVEN: Yes.

35

MR CROSBY: And what I am interested in knowing is whether, in your opinion, there is or should be, taking into account any impact in terms of assessing the significance of this location at Blow Hole Point, the existence of either the pine plantation in its present form or in its about to be sprayed form?

40

DR STEVEN: Certainly the removal of the pines will work to increase the natural character of the terrestrial part of Te Kopi Peninsula, and in time will serve to enhance aesthetic values as well and, more than likely, natural science values of the area, as biodiversity, natural biodiversity returns. That said, it is a well-established principle that areas of exotic pine plantation are not antithetical, either to natural character or to outstanding natural landscapes. And I think the Mackenzie Basin is a good example of how a holistic view is necessary when assessing outstanding natural landscapes, particularly for their aesthetic value.

5

10

MR CROSBY: Thank you. One final point; in your evidence-in-chief, have you got that in front of you?

15

DR STEVEN: I have.

MR CROSBY: And you have referred to it again today; there is reference to the Environment Court's decision stating this in **KPF Investments v Marlborough District Council**:

20

"We hold that the word 'landscape' is being used in Section 6B primarily in the picturesque sense of an area that can be seen at a glance."

25

And then in the next paragraph you give other examples of similar definitions. The rest of your evidence, in terms of addressing the Waitata Reach area, talks about or appears to talk about that as being "a landscape".

30

DR STEVEN: That's correct.

MR CROSBY: Visible, do you say, "at a glance"?

35

DR STEVEN: Well, a glance, I think, is a lay term open to some interpretation. I mean, I glance around me, I can see if I'm in a landscape, a glance can take in a very extensive area of landscape.

MR CROSBY: Well, let's use the other examples, out of fairness, that you gave.

40

DR STEVEN: Yes.

MR CROSBY: Which is:

45

"Usually a landscape is that portion of land or territory which the eye can comprehend in a single view."

Was one of your other examples, or:

"Landscape is the assemblage of human and natural phenomena contained within one's field of view outdoors."

5 What I am just wondering is who do we apply those definitions; the Environment Court, what you could see at a glance; your other descriptions of "comprehend in a single view" or "within one's field of view", when Waitata Reach is 12 kilometres long?

10 DR STEVEN: That's correct, it is 12 kilometres long and standing on Maud Island at the gun battery, one's field of view extends to the Chetwode Islands. I think that we have to take those definitions with a certain, how can I say this; a "field of view" is not precisely defined in scientific terms. A field of view is what we can generally see when we stand in one place and look about us. And certainly, given the predominance of
15 marine traffic within the Waitata Reach, one's field of view encompasses the entire Waitata Reach. I think it's a reasonable analogy to use the idea of a visual catchment in the same way that we might use the term "a water shed" or water catchment to define one's field of view. It's all that we can see from one point in space.

20

[2.30 pm]

25 But, indeed, even that's not strictly correct because we don't stand still, we move through space; we're always looking about us and taking in stimuli. So it is the composite of what we see when we look about us from a particular area or a sequence of positions. If I might add, sir, it would be wrong to take that idea of landscape in the picturesque sense as meaning landscape as a painting, ie a framed section of a landscape that is just held as a particular viewpoint. It does not mean that; it is
30 not landscape in the sense of a framed painting.

MR CROSBY: Thank you, Dr Steven.

35 CHAIRPERSON: Thank you very much, Dr Steven; we'll look forward to seeing you again in the expert caucusing meeting. Thank you for coming today.

DR STEVEN: Thank you.

40 CHAIRPERSON: Sylvia Allan. Thank you, Ms Allan.

MS ALLAN: Good afternoon. I wonder if I could just make one small typographic correction to my evidence?

45 CHAIRPERSON: I'm just wondering if people can hear.

MS ALLAN: Is that better?

FEMALE SPEAKER: No.

CHAIRPERSON: You might have to speak up a bit; you're used to that.

MS ALLAN: Right, is that better?

5 CHAIRPERSON: Is that better? All right, now you want to make a correction?

MS ALLAN: I just wanted to make one typographic correction on page 16 of my
10 evidence.

CHAIRPERSON: Page?

MS ALLAN: 16.

15 CHAIRPERSON: Of your original evidence?

MS ALLAN: Yes.

CHAIRPERSON: Okay.

20 MS ALLAN: Paragraph 54, the first word in the second line should be "one" rather
than "are".

CHAIRPERSON: "Are".

25 MS ALLAN: "One".

CHAIRPERSON: The second line, yes. I must admit I thought you were going to correct
30 a couple of references where you were talking of Tawhitinui Reach,
rather than Waitata Reach?

MS ALLAN: Oh.

CHAIRPERSON: Are they corrections we should make?

35 MS ALLAN: Yes, you should.

CHAIRPERSON: Thank you.

40 MS ALLAN: And there are other small typos as well; I apologise for that.

CHAIRPERSON: All right, thank you.

MS ALLAN: So I've prepared a very small, short summary, but I've made reference
45 in it to where in the body of the evidence my opinions are derived from.

CHAIRPERSON: Yes.

MS ALLAN:

5 So if I start at paragraph 2. As will be understood from reading my full
evidence, I have concerns that the use of regulations in the current
circumstances to effectively provide for new salmon farms is a misuse
of the Resource Management Act's regulatory powers in relation to
aquaculture. Not only does it extend the powers of Section 360A
beyond their reasonable application, but the application makes changes
to the Operative Sounds Plan that are patently inconsistent with other
recent decisions made under the RMA and that plan applying to the
10 Waitata Reach in Pelorus Sound, where the proposed new sites are
largely clustered. What I am referring to there is both the Board of
Inquiry decision and the Environment Court.

15 The new farms enabled by this regulation cannot be characterised as
anything other than new farms. They are in a different location, occupy
more space and the proposed discharges are at a much greater intensity
than those they replace. The fact that consents are still needed for farms
to operate on the chosen sites is of little significance. The restricted
discretionary status and non-notification provisions mean consenting is
a straightforward process of no risk to an applicant.

20 My evidence provides a description of the environment within which
the majority of new sites are proposed to be inserted. The area is one
of the few parts of the Sounds that are still largely natural; that is an
important gateway into the Sounds and is a treasured landscape with
high values. The extent to which these values are RMA Section 6 and
25 7 values and how the New Zealand Coastal Policy Statement 2010
applies, is currently open due to the current stage of the review of the
Marlborough Regional Policy Statement and Statutory Plan Provisions.

30 In the meantime, in addition to the New Zealand Coastal Policy
Statement, the Operative Plan Provisions in the Sounds Plan and the
RPS are the principal basis for evaluation. Although King Salmon's
legal counsel has pointed out a series of cases which indicate that the
courts have, in some circumstances, considered that the current RPS
35 and Sounds Plan mean all things to all people, that comment has been
applied only at policy level and it does not include the mapping, zoning
and rules. It is notable that the regulations proposed to change the
zoning of parts of the coastal marine area which are currently entirely
off limits for marine farming, because the Sounds Plan has identified
40 them as areas where marine farming will have a significant adverse
effect on a range of environmental attributes. The Sounds Plan
currently includes some map provisions which contribute to an
understanding of this zoning.

5 Overriding prohibited activity status is, in my opinion, a very
significant matter that requires an RMA Schedule 1 or, depending on
the circumstances, a Part 6A process. This is even more the case, given
10 that the currently prohibited activity requires use of public space for
occupation, access and to receive the discharges. My evidence has set
out what I have always understood to be the schema of the RMA. This
is based on my long involvement as a practitioner using the legislation
and the instruments developed under it, but it's also based on the stated
15 requirements of the RMA itself and case law which is developed under
it. In particular, my evidence emphasises the importance of the policy
flow from RMA Part 2 to National Policy Statements through RPS to
Regional and District Plans. The importance of National Policy
Statements is paramount and, in this case, the relevant National Policy
Statement is the New Zealand Coastal Policy Statement.

20 I have raised specific concerns in relation to the use of regulations as
in this proposal in the wider RMA context. These concerns include use
of the Minister of Aquaculture's power to exert normal process of
policy and plan development, particularly given that such a process is
currently being undertaken by the responsible council; the narrow brief
25 of the Minister of Aquaculture in the RMA and the limitation in relation
to judgements which are needed to align regulations with substantive
local policy and the proposed salmon farms' environmental
implications within the RMA.

30 The application on non-RMA government policy without
reconciliation with RMA government policy, as expressed in the New
Zealand Coastal Policy Statement, and that would include a Schedule
1 process. The undertaking of what is, effectively, a significant plan
change excising the Minister of Conservation's normal role on planned
35 processes and, finally, the inconsistency of this proposal with the
decision of the RMA Board of Inquiry process on King Salmon's 2014
private plan change request, which is so recent that first monitoring
results are not yet available.

40 All are important matters that raise issues of the integrity of the process
and the acceptability of the outcome, if that is to proceed with any of
the rezonings. I have also strong concerns about precedent, given the
nature and extent of this proposal.

5 I have set out three options for approaches that, in my opinion, would
have been far preferable. These are expanded in my evidence and are:
to rely on the current plan review process, which I consider the most
appropriate. Initiate a private plan change to the Operative Plan. There
are a number of ways by which this could be progressed. The main
shortcoming would be the stage in the process which would dovetail
10 this into the proposal plan, however in this respect the process would
be no worse than the current amendment to the Operative Plan, and it
may be better depending on the timing. And to seek consents for a
more modest proposal.

15 I see no basis to provide special treatment for the sites to be phased out
or to use them as a lever for new salmon farms. Under the heading of
the relevant statutory test, I provide my expert opinion in relation to
some of the conditions that the Panel will have to report to the Minister
on, in terms of Section 360B. I raised concerns in terms of the planning
application of all the matters my evidence covers and particularly the
20 matters which the New Zealand Coastal Policy Statement requires
decision makers to consider, many of which are directed to be given
effect to in regional coastal plans. My evidence tabulates my opinion
on those matters.

25 Finally, I have provided an RMA Part 2 assessment. I consider the
regulations to be inconsistent with a number of the matters discussed,
as it's not clear to me whether Part 2 is directly relevant, even though
the proponents of the rezoning by regulation place heavy weight on
Part 2 matters such as economic wellbeing and efficient use of
resources.

30 My overall conclusion is that the proposal is a misuse of RMA
regulatory provisions. It is so out of kilter with normal RMA processes
of which several are available to King Salmon, and of such significance
that, in my opinion, the Panel should not be recommending the use of
regulations for this purpose.

35 CHAIRPERSON: Thank you, Ms Allan. Have you any questions?

MR DORMER: No, thank you.

40 CHAIRPERSON: Ron?

MR CROSBY: No, I don't think so.

45 CHAIRPERSON: Going to that last statement you made and it's sort of repetitious of
something you said right at the beginning really.

MS ALLAN: Yes.

- CHAIRPERSON: When would be an appropriate use of this regulation making power?
- MS ALLAN: Oh, I have set that out in my evidence.
- 5 CHAIRPERSON: Well, could you remind me about that, please?
- MS ALLAN: Yes. Normally, regulations are for quite, I guess, small-scale considerations or considerations where standardisation is appropriate.
- 10 CHAIRPERSON: But this is very specific, isn't it, this regulation making power?
- MS ALLAN: It is and it's very broad and I accept that.
- CHAIRPERSON: Well, it's specific for salmon farming in the Marlborough Sounds.
- 15 MS ALLAN: Are you talking about the specific proposal within the regulation or the regulation itself?
- CHAIRPERSON: I'm talking about you say it's not appropriate to use the regulation making powers, because there are other ways of doing it.
- 20 MS ALLAN: Yes.
- CHAIRPERSON: I understand that.
- 25 MS ALLAN: Yes.
- CHAIRPERSON: When would it be appropriate to use this very specific power? Because parliament has provided it, hasn't it?
- 30 MS ALLAN: Yes.
- CHAIRPERSON: Yes.
- 35 MS ALLAN: Perhaps if I turn to - I can't quite remember where exactly in my evidence --
- CHAIRPERSON: Oh, I'm sorry. Yes, I just haven't got it in front of me either myself.
- 40 MS ALLAN: I have said, for instance, on paragraph 70.
- CHAIRPERSON: Yes.

- 5 MS ALLAN: It might have been expected that the regulatory powers could have been used to develop additional safeguards for monitoring, protection, allocation between competing parties or other methods akin to the wider regulatory powers in Section 360. The regional or national significance clause in Section 360B(2)(c) doesn't lead to an expectation of new zoning provisions or intensive and localised allocation of areas of coastal space.
- 10 CHAIRPERSON: Right, yes.
- MS ALLAN: And somewhere else in my evidence I have described what other things are regulated under the RMA as examples of what I think is appropriate.
- 15 CHAIRPERSON: Oh, yes. Just to clarify another point, on page 4 of your evidence today, the third of three options that you referred to in paragraph 9 and the third of them is "seek consents for a more modest proposal", well they can't, can they, because it's prohibited?
- 20 MS ALLAN: It depends on where they were seeking.
- CHAIRPERSON: But in the areas that are claimed to be more appropriate for this kind of farming, as I understand it, it's largely prohibited.
- 25 MS ALLAN: So there is --
- CHAIRPERSON: Fast flowing, deep water areas.
- 30 MS ALLAN: Yes. There's plenty of CM2 areas though that could be looked at for a less intensive farming proposal, and one that's less clustered.
- [2.45 pm]**
- 35 CHAIRPERSON: Right.
- MS ALLAN: One of the options is to look at the existing mussel farm sites, for instance, and some of those are in deeper water and probably with faster currents, but they are already taken up by mussel farming, so they are not available at the moment for King Salmon to use.
- 40 CHAIRPERSON: Well, that wouldn't be very practical then, would it?
- MS ALLAN: Well, it could, depending on the economic circumstances that both parties would be involved in.
- 45 CHAIRPERSON: Right.

MS ALLAN: And of course that could be a temporary bridge while the main plan process goes on as well, so they could seek a short-term consent and relocate the farms at some future time if better sites became available in a proper planning context.

5

CHAIRPERSON: You say in paragraph 6 - and I'm sorry, I've sort of gone back a bit here:

"Overriding prohibited activity status is, in my opinion, a very significant matter. It requires an RMA Schedule 1 process or a Part 6A."

10

Why do you say that?

MS ALLAN: Well, prohibited activities are quite rarely used in plans and when they are used, they are usually there for a very important reason.

15

CHAIRPERSON: Yes.

MS ALLAN: And in this case we've got a stated reason in the existing Sounds Plan which is that the effects are too significant and so, in my opinion, where you are making a change like that you should be going through a full process.

20

CHAIRPERSON: You don't regard this as a full process?

25

MS ALLAN: Well, it's a process that has been set up but there are, with respect, some shortcomings. For instance, apart from yourselves testing the expert evidence that's brought in front of you, there is no opportunity for cross-examination, for instance; there are no appeal rights and, given the significance, I do think those are shortcomings.

30

CHAIRPERSON: Right. Now, one other matter I would like to ask you about in your capacity as a planner, Ms Allan, if I may. The proposed plan changes which are set out in the proposal provide for these activities at the various locations stated to be what is described as limited discretionary activities, which I am taking to mean restricted, and I think there is a footnote to that effect.

35

MS ALLAN: Yes.

40

CHAIRPERSON: Provided they comply with a lot of requirements set out in a subsequent subparagraph, I am looking at page 73 of the proposal. Have you got it?

MS ALLAN: Yes.

45

- CHAIRPERSON: In 35.3.31(b) it refers to the consent holder complying with a number of what are called standards that are listed in an Appendix D4, and they are very comprehensive and quite lengthy. Have you ever seen a plan drafted in that way before, where you have got a whole lot of conditions that you would expect to find as conditions of a resource consent, identified in the plan itself?
- 5
- MS ALLAN: It's unusual but I have seen it and I think you find something similar in the Tasman Resource Management Plan, and it's grown out of processes and it's grown out of managing uncertainties. And I think it's fair to say that it's grown out of processes that have been well tested at plan change level.
- 10
- CHAIRPERSON: Yes.
- 15
- MS ALLAN: So that these management plan type things and standards --
- CHAIRPERSON: This isn't a management plan we're talking about here; it's a set of requirements akin to conditions of a consent, as I read it.
- 20
- MS ALLAN: Yes.
- CHAIRPERSON: Yes.
- 25
- MS ALLAN: That's right and, again, something similar has been inserted through the previous Board of Inquiry proposal.
- CHAIRPERSON: Yes, that's what I'm told.
- 30
- MS ALLAN: But it is unusual.
- CHAIRPERSON: Yes. What concerns me a little bit about it - and I am still sort of contemplating it - is if there was a breach of one of those in the future or more, that renders the activity no longer a restricted discretionary activity, doesn't it? Or is that really a legal question?
- 35
- MS ALLAN: I think it's probably a legal question, but my view on it would be that any activity operating within that circumstance, if it couldn't get back into compliance, it would have to close down or be fined or whatever. It would have to remain compliant.
- 40
- CHAIRPERSON: But it would be a breach, yes. The thing that I am contemplating thinking out around is, these appear to be conditions precedent to the status of the activity.
- 45
- MS ALLAN: Yes.

- CHAIRPERSON: Now, if you don't comply with a condition precedent to the status of the activity, you lose the status, don't you?
- 5 MS ALLAN: Yes, and I haven't ... I think in this plan there is a non-complying activity, and if you are not meeting the conditions, you become non-complying.
- CHAIRPERSON: So then there would have to be a further application for consent?
- 10 MS ALLAN: There would have to, yes.
- CHAIRPERSON: Yes. Whereas if they were conditions of a consent it would simply be a matter of dealing with a breach of the condition, wouldn't it?
- 15 MS ALLAN: It would be.
- CHAIRPERSON: Which I would have thought was more appropriate.
- 20 MS ALLAN: Yes, and I think you would want the status then to be fully discretionary so that you could tailor your conditions.
- CHAIRPERSON: Yes. All right, thank you very much for that.
- 25 MS ALLAN: Thank you.
- CHAIRPERSON: Yes.
- MR IRONSIDE: Mr Withell will address you briefly, if that is convenient?
- 30 CHAIRPERSON: Oh, yes, thank you. Now, I'm sorry, you are?
- MR WITHELL: Ross Withell, I'm the President of the Kenepuru and Central Sounds Residents' Association.
- 35 CHAIRPERSON: Yes. Withell, is it?
- MR WITHELL: Yes.
- 40 CHAIRPERSON: Yes, Mr Withell.
- MR WITHELL: Well, if we start off, the submission that was filed, there are a couple of minor errors, as you will have noticed, that were missed by our usually very vigilant proofreader. Paragraph 57 refers to Dr Steven's also finds after careful and "thorough" review, not "through" review, as is written here.
- 45 CHAIRPERSON: Yes, I think we would take that as meaning thorough.

MR WITHELL: The other was a similar one where "is" and "the" were run together in a later paragraph, paragraph 126.

CHAIRPERSON: Right.

5

MR WITHELL: I take it you people have had the submission?

CHAIRPERSON: Yes, we have.

10 MR WITHELL: Basically, I don't intend to read through the whole lot.

CHAIRPERSON: No.

15 MR WITHELL: Just to bring out one or two points. Firstly, we all took part in the Board of Inquiry and sat through a lot of this process, and we thought that the application for more space was finalised in that. However, in our comments on the Board of Inquiry and, as has been emphasised by other people here today, paragraph number 20 still notes "no monitoring reports" from the two new farms that were consented at that stage.

20

CHAIRPERSON: Yes.

25 MR WITHELL: Again, and the benthic issues, paragraphs 66 and 67 of our submission, and in the water column issues, paragraphs 76 and 81, and then paragraph 84. To my mind, we are many years ahead in this application; we are too soon and no way have these two consented farms anywhere near reached their full input or full discharge and, as such, the water column and the benthic issues are still untested.

30

CHAIRPERSON: Yes. I think, incidentally, we have been told that the first series of monitoring reports will be available this month, I'm not quite sure. Soon, I believe.

35 MR WITHELL: Very good.

CHAIRPERSON: Yes.

40 MR WITHELL: But it's still -- that's at the very early stage of the adaptive management process.

CHAIRPERSON: Yes.

45 MR WITHELL: And it will be some time before the adaptive management has run its full course to the full --

CHAIRPERSON: Yes, it may never happen, might it?

MR WITHELL: Well, it may not, but that test --

CHAIRPERSON: Depending on the monitoring.

5 MR WITHELL: That's right.

CHAIRPERSON: Yes.

10 MR WITHELL: And if the monitoring does not come up to what is expected, then we are jumping the gun in trying to apply for more.

CHAIRPERSON: Yes, you make a point that's already been made several times.

15 MR WITHELL: Thank you. I don't know whether there are any other questions you people would wish to raise from this?

CHAIRPERSON: Well, that's all you wanted to say to us today?

20 MR WITHELL: That's all I want to emphasise.

CHAIRPERSON: Thank you.

25 MR WITHELL: We have already ... we had Dr Steven, we have our man taking part in the financial review tomorrow or the next day, I think it is, and Hanneke Kroon will be conducting the other part of our submission today.

CHAIRPERSON: Thank you very much, Mr Withell. Just wait there, please.

30 MR DORMER: No, thank you, sir.

CHAIRPERSON: No?

MR CROSBY: No.

35 CHAIRPERSON: All right, thank you for coming and seeing us today.

MR WITHELL: Thank you.

CHAIRPERSON: Now.

40 MR IRONSIDE: Ms Kroon.

CHAIRPERSON: Yes.

45 MS KROON: We also have a few slides. Good afternoon.

CHAIRPERSON: I wonder if you could either move your seat or move the microphone.

- MS KROON: I need to touch --
- CHAIRPERSON: I realise, so just move the microphone over, yes.
- 5 MS KROON: Yes.
- CHAIRPERSON: Now, can I be clear about this? You are here today as part of another case or on your own behalf?
- 10 MS KROON: Just as part of the Kenepuru and Central Sounds Residents' Association submission and presentation today.
- CHAIRPERSON: Right.
- 15 MS KROON: And later in the afternoon I will talk to you about my own submission. Right?
- CHAIRPERSON: Well, is there going to be any duplication?
- 20 MS KROON: No.
- CHAIRPERSON: Because if there is, we are not going to hear you twice.
- MS KROON: No.
- 25 CHAIRPERSON: You are going to talk about two different things?
- MS KROON: Totally.
- 30 CHAIRPERSON: All right.
- MS KROON: All right. So disease and disease risk.
- CHAIRPERSON: Oh, you are talking now about disease risk, did you say?
- 35 MS KROON: This one, this is the section about disease and disease risk, yes.
- [3.00 pm]**
- 40 CHAIRPERSON: Yes. And have you some qualifications in this regard, just to remind me?
- MS KROON: Okay.
- 45 CHAIRPERSON: If you can just tell me briefly what they are?

- MS KROON: I will tell you who I am. Let me introduce myself. My husband Joop and I are blue water sailors and sailed our sailboat from the Netherlands to New Zealand.
- 5 CHAIRPERSON: Yes.
- MS KROON: Where we arrived at the end of 1994. I have a Masters of Science degree in electrical engineering from a Dutch university, which still comes in handy as I maintain the Sounds Community Connect Wireless Internet. We lived and worked and Auckland until we retired. Since 10 2012 we have lived here in the Pelorus Sound and were submitters in the Board of Inquiry process, all right.
- CHAIRPERSON: So what qualifies you to talk about disease risk?
- 15 MS KROON: Okay, in 2015 I wrote a paper with Andrew Caddie of the KCSRA on Salmon Farming Mortality in the Marlborough Sounds. I also agreed to become the MPI Biosecurity Liaison Person for the Kenepuru and Central Sounds Residents' Association. I have also participated in the 20 Marlborough Salmon Working Group as a community representative for KCSRA. Okay, that's the credentials.
- CHAIRPERSON: Okay, thank you.
- 25 MS KROON: All right, I'm not a disease specialist.
- CHAIRPERSON: No.
- MS KROON: But I do have a Masters of Science degree, yes.
- 30 CHAIRPERSON: Yes.
- MS KROON: And I can assure you, if you are the second woman of your university to graduate as an electrical engineer, then you have to have some 35 perseverance.
- CHAIRPERSON: Some what?
- MS KROON: Perseverance.
- 40 CHAIRPERSON: Oh, we're all degree holders, we know that means.
- MR DORMER: But we don't have the experience of fighting sexist prejudice, do we?
- 45 MS KROON: Not likely.
- CHAIRPERSON: Right.

MS KROON: So, location issues. I put up this temperature graph which shows the temperature for between 2013 and 2016 for Tory Channel, that's the yellow and blue, and the blue and purple is the Waitata Reach two points, as you can see below. These are measurements done by the Marlborough District Council. The publicly available scientific evidence demonstrates that the Marlborough Sounds environment does not consistently provide optimal environmental conditions for growing king salmon for long periods. Most importantly, the sea water temperature should be between 12 and 17 degrees Celsius, while 15 degrees Celsius is the optimum growing temperature for king salmon.

This picture, a bit grainy, but NIWA wouldn't provide me with a nicer one, shows what happens in summer with the temperatures. So at the bottom is the Cook Strait entrance and you see on the grey on the right-hand side, that is the bottom of the south of the North Island, of Wellington Harbour, and on the left-hand side, it's grainy, but couldn't do any better, is the Marlborough Sounds. Now, the blue water, this is 19 to 22 March, so that was the end of summer; autumn actually. So the blue water is 15 degrees, the green water is 16, yellow 16 and a half and the red water is over 17 degrees. As you can see, on the left-hand side there is mostly red, which is the Pelorus Sound and Admiralty Bay, and the Queen Charlotte Sound, a bit lower, is a mix of green, yellow and red, once you get to Picton, and there is a small green dot in the Tory Channel.

What I am trying to show here is that there is a mixing of the warmer water of the Tasman Sea with the cooler water coming from the Pacific. And there is a clear change in temperature in the gradient as you go further into or further north. That explains why Tory Channel has the right temperatures for growing salmon and the Pelorus Sound actually is marginally, at best.

Okay, this picture, you must have seen this before. This comes out of Mark Gillard's evidence for the Board of Inquiry, and it shows in sort of yellowish colours the different temperatures of the water. So below you see the Tory Channel with acceptable water temperatures; you see the Queen Charlotte and there again it's too warm once you get to Picton; it's marginally acceptable in the middle; acceptable once you're out into Cook Strait. At the Pelorus Sound you can see that actually the whole of the Pelorus Sound is marginal, at best, and too warm for most areas.

I'll try this, I don't know how it works.

CHAIRPERSON: I think we have already had evidence on this.

MS KROON: What I wanted to point out is that even Maud Island --

- CHAIRPERSON: Ms Kroon, I am sorry to interrupt you, but we have actually had quite a lot of evidence about this already.
- 5 MS KROON: All right, you will have to listen to me as well.
- CHAIRPERSON: Yes.
- MS KROON: Don't worry about it.
- 10 CHAIRPERSON: Yes.
- MS KROON: Maud Island, as you can see, it is on that between marginal and too warm as well, yes?
- 15 CHAIRPERSON: Yes.
- MS KROON: So some of the proposed new salmon farms are actually in areas unsuited for salmon farming.
- 20 CHAIRPERSON: So King Salmon is going to put them in the wrong place?
- MS KROON: Yes, all of them. Basically, all of the farms in the Pelorus Sound are in the wrong place.
- 25 CHAIRPERSON: But there are two new ones there, aren't there?
- MS KROON: All of them, sorry.
- CHAIRPERSON: The ones that have just been consented are in the wrong place.
- 30 MS KROON: The ones that they just started to operate are also in the wrong place.
- CHAIRPERSON: So the Board of Inquiry got it wrong too?
- 35 MS KROON: Yes.
- CHAIRPERSON: Is that what you are saying?
- MS KROON: That is my opinion.
- 40 CHAIRPERSON: Okay, yes.
- MS KROON: So even if the Board of Inquiry had properly looked at this picture, they would have understood that marginal is probably not good enough for salmon farming.
- 45 CHAIRPERSON: All right.

MS KROON:

5 So that all the farms in the Pelorus Sound are, at best, marginal. All
right, other location issues. The depth should be over 40 metres.
Except for the main navigation channels, the central Marlborough
10 Sounds is too shallow, with a depth of 30 metres in the central bays.
High current areas for proposed new site are being advocated, as it
disperses the salmon farm waste over a large area and allows much
higher stocking densities. However, it's a myth that the water is cooler
when the current is faster. These conditions increase the disease risk
both to farmed fish and thus transference will blow back to wild fish.
So the moment the location isn't optimal, suboptimal, so the water
15 temperature is suboptimal, then that increases the disease risks and,
therefore, also the disease risks to the other marine creatures in the
Marlborough Sounds.

20 Further, in the Marlborough Sounds the two high current channels are,
we believe, too precious ecologically and also act as the main
navigation routes in and out of the sounds. Finally, according to
international best practice for salmon farming, salmon farms should not
be sited in areas subject to algal blooms, nor in marine habitat for
endangered species such as the king shag, nor in areas in high demand
for other public uses, such as tourism, recreation, transport or marine
reserves.

25 Okay, so now we continue with disease and mortality. Fish disease
risk assessment is one of the reports commissioned for MPI, written by
Dr Diggles. In essence, Dr Diggles has merely updated his 2012 report
written for New Zealand King Salmon and used at the Board of Inquiry.
At that time the contention was that New Zealand had benefited from
30 an absence of any known salmon pathogens. This time around the
situation has changed somewhat with respect to the known salmon
diseases in New Zealand. It is indisputable that existing New Zealand
King Salmon farm sites in the Marlborough Sounds have been infected
with previously unknown rickettsia and tenacibaculum pathogens since
35 2012.

5 This New Zealand King Salmon sourced graph clearly shows that
within the last few years the salmon mortality has increased from 4 per
cent in 2010 to 11 per cent in 2012, to a high of 18.7 per cent in 2015,
and with the hope of 11 per cent mortality only in 2017 and beyond.
Looking at the graph, it's clear that the salmon mortality is not in a
management control. Worse, it seems 11 per cent total mortality is now
the new norm and not seen by New Zealand King Salmon as worthy of
reporting as an unusual mortality event. Compare this to 2012 when
an 11 per cent total mortality resulted in a full scale disease
10 investigation. The mass mortalities of the last five years have cost
millions of dollars in loss of earnings every year, and have seriously
undermined the clean, green reputation of the Sounds. These repeated
mortality events underline why MPI put in place controlled area notices
aimed at trying to stop the spread of these previously unreported
15 pathogens.

[3.15 pm]

20 The investigation report produced in 2013 by MPI did not find a
specific disease, but made the following recommendations. No cause
for the mortality event was identified by the investigation, however in
retrospect sampling was only carried out after peak mortality. Further
investigation to identify the cause of this annual mortality increase and
whether it is related to the external ulcers, heart pathology and
25 suspected intracellular parasites is recommended in the future.

30 As far as we can ascertain to date, that recommendation finding was
not followed up in 2013, nor in 2014 by MPI Biosecurity or King
Salmon. As far as we can ascertain, King Salmon did not see fit to
hand over to MPI any more diseased salmon for further investigation,
despite the mounting mortality rate over this period. As you can see,
2013, 15.6 per cent of the salmon dead; 2014, 14.5, slightly better; still
pretty bad. With their actions our feel is that they risk infecting the
wild fish and other sea life in the Marlborough Sounds such as the
35 nearby scallop beds, scallops.

5 Scallop diseases in New Zealand during 2015, an investigation by MPI. The MPI report states that the scallop specimens from Pelorus Sound collected in August/September 2015 were sourced from Waitata Bay and Ketu Bay. These showed a high load of rickettsia-like bacterium in the gills and digestive gland. These organisms are common in New Zealand shellfish and cause major disruption to the gills, which in bivalves function primarily as a feeding organ. Note that the specimens collected from North West Bay and Horseshoe Bay, also in the Pelorus Sound, earlier in the year also had high loadings of an opportunistic bacterium, in this case, *Vibrio splendidus*. So those scallops did not have the rickettsia-like organisms in them. They were not found. So, I'm saying in the Waitata Reach in the north there were the Rickettsia in the scallops and further south there were these *Vibrio splendidus*.

15 We contend and recommend to the Advisory Panel that an independently scientific review be carried out to ascertain if the Rickettsia-like bacteria found in the scallops is similar to the New Zealand RLO - Rickettsia-like organisms - now found in the farmed salmon. After genetic sequencing, the Rickettsia-like organisms can be compared just as the New Zealand RLO has been found to be very similar to the Tasmanian RLO found in Atlantic salmon farmed in Tasmania. KCSRA can understand the unease expressed by the commercial scallop representative organisation CSEC over the implications of this massive increase in salmon farming so close to already stressed scallop beds. Ketu Bay is one of the main bays for scallops in the Pelorus.

30 Other disease transference or blowback risks. Dr Diggles has updated his report with a risk assessment of the risk of wild fish stocks getting infected with the *Piscirickettsia* pathogen. He found it was low but unacceptable risk to take if the farmed salmon are clinically diseased and show signs of this disease. But then he goes on to assess the risk as an acceptable, very low risk if the salmon are only sub-clinically diseased. In other words, not showing clear symptoms. What is not explained by Dr Diggles is how he can be certain that sub-clinical infections do not progress to clinical infections or, more likely, a mix of minor and severe cases of the disease.

40 We are concerned that no evidence has been produced by MPI or NZKS to the Panel on this aspect. From an article in the New Zealand Journal of Marine and Freshwater Research in October 2016 we note the following paragraph:

- 5 "Examination of ten moribund fish in the summer of 2015 revealed multiple areas of ulceration over all areas of the body including fins and mouth in eight of the ten fish. As these fish presented with skin lesions, *Piscirickettsia salmonis* was included as a differential diagnosis. Testing for this agent was conducted and a *Rickettsia*-like organism was detected in all fish."
- In our view --
- 10 CHAIRPERSON: Where was that?
- MS KROON: I read it. The article was in the New Zealand Journal of Marine and Freshwater Research.
- 15 CHAIRPERSON: Yes, but where were the fish?
- MS KROON: They're dead fish.
- CHAIRPERSON: Where were they?
- 20 MS KROON: Okay, the moribund fish were collected by MPI Biosecurity after King Salmon alerted them to an unusual mortality event that had happened.
- CHAIRPERSON: But you said it was fresh water?
- 25 MS KROON: No, it's not fresh water.
- CHAIRPERSON: It's not fresh water. I thought I understood you to say that.
- 30 MS KROON: No. I just quoted the exact sentence from the article, so the fish is salmon and these salmon were collected from the Waihinau farm, I think.
- CHAIRPERSON: Oh, right.
- 35 MS KROON: Okay, that is not made clear in the article.
- CHAIRPERSON: It's not made clear?
- 40 MS KROON: That is not made clear but --
- CHAIRPERSON: Where they came from?
- MS KROON: I think so.
- 45 CHAIRPERSON: Where they came from is not made clear?

- MS KROON: No, it's not made clear in the article, but they were from New Zealand King Salmon's farms, yes. That's where they came from and that is when they finally found out what the disease was that these salmon were suffering from.
- 5 CHAIRPERSON: When was that?
- MS KROON: King Salmon --
- 10 CHAIRPERSON: When was it? Just tell me.
- MS KROON: -- alerted MPI Biosecurity around 1 May again, so after the event.
- CHAIRPERSON: But when?
- 15 MS KROON: 2015.
- CHAIRPERSON: Oh.
- 20 MS KROON: So that's only two years ago. So in 2012 MPI investigated salmon disease.
- CHAIRPERSON: Yes, we know that.
- 25 MS KROON: Didn't find anything. In 2015 they did it again and this time they did find what the fish were dying of. They also then retested the 2012 fish and found that they had the same disease, which was a bacteria, or at least pathogens. In our view, the above descriptions sound a bit worse than sub-clinically infected salmon. So, I'll read it again. It was the fish had multiple areas of ulceration over all areas of the body, including fins and mouth, in eight of the ten fish. So, we also think this does not sound like sub-clinically infected salmon to us.
- 30
- 35 If so, then in our view the Marlborough Sounds marine environment has already been subjected to an unacceptable risk due to the uncontrolled salmon infections with the Rickettsia-like organism for several years. As a prevention response, Dr Diggles recommends use of best practice methods to control known risk factors, including maximising water quality, using brood stock that have never been exposed to sea water, rearing fish at lower densities, allowing farms in a given region to fallow, controlling actual parasites that may act as vectors, and avoiding horizontal transmission between year classes by holding single year classes of fish at any given site.
- 40

- 5 To date, as far as we can ascertain, New Zealand King Salmon does not practise single year classes on all its farms. It does not practise rotational fallowing of its farms and has not implemented best management practice at all its farms. Accordingly, it comes as no surprise to the association that a *Piscirickettsia* disease outbreak is still not under control.
- CHAIRPERSON: Have you got much more?
- 10 MS KROON: Yes.
- CHAIRPERSON: Are you still on the matter of disease?
- MS KROON: Yes, in any case the report of Dr Diggles.
- 15 CHAIRPERSON: What?
- MS KROON: The report of Dr Diggles.
- 20 CHAIRPERSON: Yes, but he's an expert, isn't he?
- MS KROON: Dr Diggles, yes.
- CHAIRPERSON: And you're not?
- 25 MS KROON: No.
- CHAIRPERSON: So what's the point --
- 30 MS KROON: But I can make comments.
- CHAIRPERSON: Well, yes, but it's a matter of the weight we give to that.
- MS KROON: That's up to you.
- 35 CHAIRPERSON: Yes.
- MS KROON: Algal blooms and harmful algal blooms.
- 40 CHAIRPERSON: We've had an awful lot of evidence on algal blooms, too, I'm sorry.
- MS KROON: You will hear it from me as well.
- CHAIRPERSON: Well, I'm not sure that we do. Are you an expert --
- 45 MS KROON: I think I have the right to --
- CHAIRPERSON: Are you an expert on algal blooms?

MS KROON: I am no --

CHAIRPERSON: Because we've had expert evidence.

5

MS KROON: I am no expert on algal blooms. We do not have to provide evidence here necessarily. We provide comments. We talk to our written comments.

10 CHAIRPERSON: Yes.

MS KROON: In my case, that is done. Okay. We'll skip the algal blooms and we go on to the sea lice.

15 Sea lice. Several species of sea lice occur in the wild in New Zealand. They are present in numbers in the Mahau Sound section of the Pelorus Sound, as a residents' association member found out when a couple recently latched on to his legs. In Kaikoura, commercial fishermen have been fined for leaving set nets for over 24 hours in the water. This is not allowed as it attracts sea lice to the caught fish. Sea lice infestations in salmon farms are worldwide a growing problem and cause a significant loss of salmon production. Several methods have been tried to eliminate the sea lice, but it seems not to be working. The treatment costs combined with the cost of lost production are now so high that land-based or closed-containment farming becomes a financially viable alternative.

20

25

[3.30 pm]

30 The slide shows Dr Diggles' assessment of the risk assessment of the sea lice. On top, the likelihood of release into salmon farms he considers low. The likelihood of exposure and establishment is seen as moderate, so what he is saying is that it's not a high risk that sea lice will get into the salmon farms and the salmon will harbour the sea lice. But once they are in the farm, then the risk of exposure and establishment, so back to the wild fish, is moderate.

35

40 Then in his appendix, where he does the risk assessment and has his own methodology for that, he shows a table where on the left-hand side he sets out likelihood of release - so that's the top line - low, and I put a line there, and then on the top he says likelihood of exposure and that's moderate. So then you're supposed to just see where the lines cross and that gives you your resulting risk or the combined assessment for the combination of release and exposure. The unfortunate thing you will see there is that there is nothing in that square. He has not filled it in.

45

5 There are problems with this table. There are several problems with this table. One problem which is in his methodology is that he has two levels above the 50 per cent, which is moderate and high, and then he has four levels of risk which go from negligible to low. So the 50 per cent should actually be in the middle and normally these tables have five rows and five columns, so there is a clear middle, and not six.

10 What you also see is that in the bottom row that is filled in it goes from negligible to high and there is no moderate. So moderate to moderate combine to low but high and high combine to high. How can that be? There are inconsistencies in this table and this table is used for every risk assessment that Dr Diggles does in his report.

15 However, Dr Diggles estimates that there is still only a low potential risk that the farmed Chinook salmon get infected with sea lice. The potential risk of exposing the wild fish once infected is estimated as moderate, which combines according to table 5 in his appendix 1 to a combined risk as a blank square, which Dr Diggles interprets as low. The square is left blank as there are inconsistencies in this table that cannot be reconciled. KCSRA queries the validity of this risk assessment. King Salmon seems confident that sea lice infestations will not become a problem if production volumes and intensity of farming effort massively expands. The residents' association's contrary view is that it seems only a matter of time before sea lice become a problem in the salmon farms here as new farms are added and increased production is concentrated in just two locations in the Sounds.

25 In conclusion, KCSRA believes the enhanced disease risks arising from massively increased salmon production alone outweigh the economic benefits hoped for by King Salmon employees and shareholders from this environmentally unsustainable proposal.

CHAIRPERSON: Thank you very much. Have you got any questions?

35 MR DORMER: No, thank you.

MR CROSBY: No, thank you.

40 CHAIRPERSON: Thank you very much, Ms Kroon. We'll see you later. Thank you. Now, is that everything that you wanted to put before us?

MALE SPEAKER: Just finally, Mr Skelton, Mr Pengelly is here.

45 CHAIRPERSON: Oh, yes.

MALE SPEAKER: Come forward, Mr Pengelly, please. His information is included in a memorandum filed on Friday.

CHAIRPERSON: Yes, we've seen that. Thank you. Now, Mr Pengelly, I think you've provided us with some material about the intentions of the trust that's dealing with the pine plantations, the Blow Hole Point area.

5 MR PENGELLY: Mm hmm.

CHAIRPERSON: Yes. You are a trustee, are you?

10 MR PENGELLY: Yes, I am, yes.

CHAIRPERSON: Yes, so you can tell us first hand what's proposed there?

MR PENGELLY: Sure. Okay.

15 CHAIRPERSON: If you'd just briefly do that, please.

MR PENGELLY: Sure. Yes, the peninsula of Te Kopi is 560 hectares and our plan is to turn that piece of land into a nationally significant wildlife sanctuary through pest eradication and weed eradication and also the construction of a predator or pest-proof fence across the very narrow part of the property which connects on to the main outer arm of the Pelorus.

20
25
30 So, yes, in terms of the pine trees, we were approached by the Marlborough Sounds Restoration Trust. They've obviously obtained some funding to eradicate the pine trees as they've done in other places in the Sounds, so they decided to start out at the very end of the Pelorus, which is the headland, and we agreed to participate in that programme. We've got quite a lot of scattered pine trees through existing native forest and pasture land and there's obviously two plantation blocks of pine trees that are at least 40, maybe 45, years old, one on Blow Hole Point and one on Paparoa Point. So, yes, we were quite keen to pursue that and get rid of the pine trees altogether so the whole peninsula will be pine free, basically.

35
40 So, after agreeing to that we did some more investigation into the work that the Marlborough Sounds Restoration Trust has done so far and found that some of the funding was coming from New Zealand King Salmon. So we decided to put it on hold for a while because we didn't want any part of that funding from them at all because we disagree with what they're doing out there. We also own the smaller block in Waihinau Bay, which is about 4½ hectares, which most people refer to as Bulwer Lodge, and we have the Waihinau Bay salmon farm almost directly adjacent to the property.

5 So, yes, after discussion with the Marlborough Sounds Restoration Trust, they went back and had a trust board meeting and have now decided to no longer take New Zealand King Salmon funding to do any pine eradication work in the Sounds. We agreed to proceed with that, so they've had contractors working on the northern part of the peninsula for two weeks earlier this year and they're coming back in August to do some more ground control, which is drilling and poisoning pine trees directly. In November and December of this year, the plan is to aerially spray the two plantation blocks, the one on Paparoa and the one on Blow Hole Point, and hopefully kill those two plantations. Unfortunately, they can't be logged or recovered economically and it would be quite detrimental to the landscape out there to actually retrieve the logs, so this seems to be the best way forward.

15 So, once the light gets into the forest itself, the native plants and trees will grow quite quickly. There's already pockets of native bush within some of them and the odd individual tree scattered through, so it'll extend quite quickly. So these areas will be fenced off and we're working quite closely with DoC in terms of the predator fence and species recovery and translocation programmes in the future for critically endangered species such as takahē, kiwi and possibly hopefully in the future maybe tuatara. These are all, of course, in consultation with iwi. That's pretty much the pine tree eradication, just to confirm what we're doing there.

25 CHAIRPERSON: All right, thank you very much.

MR PENGELLY: If I could say as well, just quickly, that the 560 hectares of Te Kopi, there's now part of a future plan also to eradicate pests all the way back to the saddle in Elaine Bay which is approximately 13,000 hectares. We're looking at using new technologies available to eradicate pests and weeds and hopefully bolster the wildlife out there. There are other people in the area that are working on similar projects of all different sizes, so we've got a lot of community support out there to run this programme. We've formed a charitable trust called the French Pass Charitable Trust which takes in Admiralty Bay and the Pelorus Sound as well.

40 CHAIRPERSON: All right, thank you. Any questions? No.

MR PENGELLY: Thank you.

CHAIRPERSON: Thank you very much for coming, Mr Pengelly.

45 MR PENGELLY: No problem, thank you.

MR IRONSIDE: Thank you for your indulgence. We've run over of time slightly but that is it for the Friends and Kenepuru and Central Sounds.

CHAIRPERSON: All right, Mr Ironside. Thank you for your presentations. We come next to Forest and Bird.

5 (off mic conversation)

[3.45 pm]

10 CHAIRPERSON: Who have we got here?

MS GEPP: Good afternoon, Professor, members of the Panel. My name is Sally Gepp. I'm employed by the Royal Forest and Bird Protection Society as an environmental lawyer and I have Dr Fisher here with me who's an avifauna ecologist and has particular experience and expertise in the king shags.

15 CHAIRPERSON: The king shags, yes.

MS GEPP: Does the Panel have the legal submissions that were filed last week?

20 CHAIRPERSON: Yes.

MS GEPP: Excellent.

25 CHAIRPERSON: I haven't had a chance to read those.

MS GEPP: That's not a problem. I'll go through them and try and just focus on the key areas. We will do our best to at least keep within our time and see if we can make up a little bit of time.

30 Dr Fisher hasn't prepared a presentation for you as such because he's already filed evidence and also a statement of areas of agreement and disagreement with the other experts. Do you have that statement as well?

35 CHAIRPERSON: I think we do, yes.

MS GEPP: Excellent. He's proposing to just go through that and also --

40 CHAIRPERSON: Go through what?

MS GEPP: The statement of areas of agreement and disagreement rather than present a --

45 CHAIRPERSON: But we're going to do that in the caucusing meeting.

MS GEPP: All right. In that case, he would like to just point out the new response that he has to the new evidence on king shag that was put on the website by MPI following their presentation at the start of the hearing process because that's not a matter that his evidence covers.

5

CHAIRPERSON: I'm not aware of the new evidence.

MS GEPP: That's the Cawthron statement regarding the recolonization of the decommissioned ... David Taylor, yes; one of the Taylor's.

10

CHAIRPERSON: I think we've only just seen that.

MS GEPP: I see. All right.

15

CHAIRPERSON: Yes. Anyway, he can do that but we'll leave his discussion of his agreements and disagreements until we do the caucusing with the other experts.

20

MS GEPP: All right. In that case, I'll leave it to him to just bring up any particular key points that he wants to make and then answer your questions.

CHAIRPERSON: Yes.

25

MS GEPP: I'll start at the introduction to the legal submissions. Findings of the Supreme Court and subsequent Environment and High Court decisions confirm that environmental bottom lines established through directive provisions in the New Zealand Coastal Policy Statement cannot be overridden by an overall broad judgment. Those bottom lines require avoidance of adverse effects on outstanding natural landscapes, areas of outstanding natural character and on identified indigenous biodiversity and must be given effect to by plan changes in the Marlborough Sounds including changes actioned by ministerial regulation.

30

35

Evidence before the Panel confirms MPI's proposal disregards those bottom lines and so fails on the merits. In particular, the proposed salmon farms will adversely affect the threatened indigenous New Zealand King Shag and so do not give effect to the New Zealand Coastal Policy Statement.

40

5 It also fails in terms of jurisdiction. The Minister's power under section
306A to C of the Act is not unfettered. Plan amendments must not be
inconsistent with and are subject to the other provisions of the RMA
and must give effect to the Coastal Policy Statement and the
Marlborough Sounds Regional Policy Statement. Ad hoc spot zoning
for salmon farms in areas with outstanding landscape, natural character
and biodiversity values, as a restricted discretionary activity, with
matters of discretion excluding consideration of those factors, does not
10 comply with those requirements. Prohibition on notification as part of
the proposed provisions raises issues of natural justice.

15 The proposal undermines Marlborough Council's ability to ensure
integrated management and strategic planning of the Sounds.
Provision of sites for salmon farming should form part of a wider
regional assessment of appropriate and inappropriate areas for
aquaculture as per policy 7 of the Coastal Policy Statement. The policy
7 exercise is currently underway. Impropriety of process is emphasised
by an evitable two-step planning process to incorporate changes made
by regulations to the outdated Operative Plan under the section 360A
20 into the new -- it should say "plan" at the end of paragraph 4.

25 These submissions are adopted without repeating Forest and Birds
original submission and don't set out, in any detail, the environmental
affects; that's left to Dr Fisher. The Environmental Defence Society's
submissions and evidence on landscape and natural character impacts
are adopted rather than being addressed and repeated in these
submissions.

30 The issues addressed are the scope of the regulation power, the law on
the application of the regulation-making power, the application of the
regulation-making power in relation to strategic planning and king
shag, the proposed provisions, the overstatement of effects in terms of
new farms as opposed to relocation and conclusion and relief.

35 The scope of the regulation power. The prerequisites for using section
360A are that the Minister must be satisfied that the proposed
regulations are necessary or desirable for the management of
aquaculture activities in accordance with the Government's policy for
aquaculture in the coastal marine area. The matters to be addressed by
40 the proposed regulations are of regional and national significance and
the Regional Coastal Plan to be amended by the proposed regulations
will continue to give effect to any national policy statement, the New
Zealand Coastal Policy Statement and any regional policy statement.
In addition, any amendments made must not be inconsistent with and
45 are subject to the other provisions of the RMA.

- 5 The first of those things I'm going to focus on is the Government's aquaculture strategy. I'm diverging from my written submissions now. MPI has advised that the reference to Government policy in section 360A is to its aquaculture strategy. Has a copy of that strategy been provided to you?
- CHAIRPERSON: I think so, yes.
- 10 MS GEPP: I have a copy here if it would be --
- CHAIRPERSON: I just can't lay my hand on it at the moment but I think we have seen it.
- 15 MS GEPP: All right. I have a copy here if it would assist. The Government's aquaculture strategy includes the following principle. Government should only intervene where we add value and where industry and others cannot act alone. Intervention by section 360A, in this case, is plainly at odds with that principle. Common sense interpretation of the requirement to add value is to make a positive contribution. Government intervention providing for site specific rezoning, while a plan review providing for inter alia a regional approach to aquaculture, undermines the integrated and strategic management. It results in inequitable access to and opportunity for resource use. Intervention resulting in those outcomes does not add value. Further --
- 20
- 25 CHAIRPERSON: That would be all right if the regional process was providing for aquaculture but it's not, is it, at the moment?
- MS GEPP: It's in the process of promulgating provisions.
- 30 CHAIRPERSON: We're told there is some work being done but there's a gap, isn't there?
- MS GEPP: There's a gap that's about to be filled once the provisions have been written, yes.
- 35 CHAIRPERSON: They may or may not be.
- MS GEPP: They will have to be. There would be a deficiency in the plan that would be able to be challenged if the plan was simply silent on aquaculture.
- 40
- MR DORMER: We could take issue with your use of the word "about", couldn't we?
- CHAIRPERSON: Yes.
- 45 MS GEPP: About to be.
- CHAIRPERSON: Yes.

- MS GEPP: Yes. It's all relative I suppose.
- CHAIRPERSON: Yes.
- 5 MS GEPP: Yes, but they are in the process of undertaking a full plan review as required by the Act and to leave aquaculture out of it would, in my submission, result in an invalid plan. It's simply not going to happen.
- 10 Further, the word "cannot" is directive.
- CHAIRPERSON: I want to take you up on that because if there were no provision made, then the Operative Plan would continue, wouldn't it?
- MS GEPP: The Operative Plan can't continue in terms of the requirement to review plans every ten years.
- 15 CHAIRPERSON: Why not? It continues until it is superseded.
- MR DORMER: I thought they'd removed the requirement to review every ten years. Did that get taken off?
- 20 CHAIRPERSON: No. You can still do that but until it is reviewed, the Operative Plan provision would remain.
- MS GEPP: That's right; until it's reviewed, the Operative Plan remains valid and the Operative Plan makes provision for aquaculture.
- CHAIRPERSON: Yes, it does. The proposed plan doesn't, as things stand.
- 30 MS GEPP: Only parts of the proposed plan have been written, so, in that sense, it doesn't yet but --
- CHAIRPERSON: There's a whole chapter left out, isn't there?
- 35 MS GEPP: Yes, but it's on a temporary basis while consultation is ongoing. I don't accept the proposition that aquaculture is missing from the proposed plan. It's simply a matter that is not yet in there.
- MR DORMER: It's not missing; it's just not there.
- 40 CHAIRPERSON: It's not there, yes.

- MS GEPP: The proposed plan, parts of it are yet to be developed. It's often the case that a proposed plan is developed in stages. For example, water quality provisions are often left to a later stage because of changes in the national direction that need to be addressed in the regional provisions, but it's a matter that I understand the Marlborough District Council is working on. It's just that the new provisions aren't there yet but, in the meantime, the Operative Plan makes provision for aquaculture.
- 5
- CHAIRPERSON: They're not there yet because of this process. Isn't that right?
- 10
- MS GEPP: I have no knowledge of that being the reason why they're not there yet.
- CHAIRPERSON: You don't?
- 15
- MS GEPP: I don't, no.
- CHAIRPERSON: I would pursue that with the Marlborough District Council.
- 20
- MS GEPP: I will read the transcript of that with interest.
- I'm at paragraph 11. In referring to the statement, Government should only intervene where we add value and where industry and others cannot act alone. On a plain reading, this requires that industry and others' ability to act alone is not possible. That's not the case here. Private applicant opportunity to apply for a concurrent application is specifically provided for in subpart 4, part 7A RMA. The section 360A power was not intended to be used as a vehicle for the Minister to undertake the role and cost of a private applicant and circumvent subpart 4. It's available to New Zealand King Salmon to use the subpart 4 process or to participate in the current plan review.
- 25
- 30
- The Government's aquaculture strategy also states that it will work with regional councils to ensure planning to identify opportunities for aquaculture growth including through identifying new growing areas in appropriate places and provision to enable better use of existing space, and build understanding of the environmental effects of aquaculture to support consistent decision-making and community comfort.
- 35
- 40

5 Use of ministerial regulation-making power to amend an outdated
Operative Plan currently under review to provide for ad hoc site
specific zoning is not working with Marlborough District Council. It
does not support consistent decision making. Issues regarding
integration of amendments to the Operative Plan into the proposed plan
were addressed by Mr Hawes for Marlborough Council. A two-step
process is unavoidable. This is inefficient and will result in additional
cost. A strategy of working with Marlborough District Council would
see Government contributing to and supporting the plan review
10 process.

15 In implementing its strategy, Government must adhere to the law,
including giving effect to environmental bottom lines in the Coastal
Policy Statement. The Government strategy confirms that aquaculture
must occur within environmental limits. The Coastal Policy Statement
provides direction on appropriate and inappropriate locations for
activities in the coastal environment. A proposal providing for
activities with adverse environmental effects, where those effects are
required to be avoided, cannot be a proper interpretation and
20 implementation of this principle.

25 The law on the application of the regulation-making power. Pursuant
to 360A(1)(b), any regulations must not be inconsistent with and are
subject to the rest of the RMA.

30 Section 31(g)(a) requires Marlborough Council to establish and
implement objectives, policies and methods for maintaining
indigenous biological diversity. That function is to be provided for in
regional plans, including the Regional Coastal Plan. Maintenance in
indigenous biodiversity is a mandatory obligation.

CHAIRPERSON: But regional plans aren't mandatory, are they?

35 MS GEPP: Regional coastal plans are.

CHAIRPERSON: But regional plans aren't.

MS GEPP: Not insofar as above the coastal marine area but that doesn't apply in
40 this case.

CHAIRPERSON: Yes.

MS GEPP: Paragraph 16. Pursuant to section 360B(2)(c)(3), the Regional Coastal Plan, as amended by any regulations, must give effect to the Coastal Policy Statement. Failure to do so is an error of law. It must also give effect to the Regional Policy Statement. However, the relevant
5 Regional Policy Statement is arguably outdated. It predates the Coastal Policy Statement and is currently subject to review. Context demands that the Panel's and Minister's focus should be the Coastal Policy Statement.

10 You've heard a fair bit about the Environmental Defence Society and King Salmon case. I will adopt Mr Ironside's submissions in that regard and in addition to the submissions that are made here and I'll move on to paragraph 19.

15 The Supreme Court concluded the requirement to avoid adverse effects and significant adverse effects and policies 13 and 15 of the Coastal Policy Statement provide something in the nature of a bottom line. The same applies to policy 11 which is framed in the same directive terms and as Mr Ironside observed, it's actually in even more directive terms
20 because it isn't subject to the inappropriate development proviso.

CHAIRPERSON: Yes. I noted that point from him this morning.

MS GEPP: It requires that in order to protect indigenous biological diversity in the coastal environment, adverse effects on particular taxa ecosystem types and high biodiversity value areas must be avoided and significant adverse effects on other areas with biodiversity value must be avoided.

[4.00 pm]

30 Those findings apply to your recommendations and to the Minister's decision. Counsel for New Zealand King Salmon's apparent inference that this Panel can apply an overall judgement approach is plainly at odds with the view of the Supreme Court. The Environment Court
35 decision referred to related to provision for regionally significant infrastructure and has been appealed.

40 In my submission, interpolating here, it's clearly contrary to the Supreme Court's decision and it should be the Supreme Court's findings that are the focus of this Panel's analysis of the lawfulness of the proposed provisions.

CHAIRPERSON: The Supreme Court's decision relates to a very specific provision in the New Zealand Coastal Policy Statement, doesn't it?

45 MS GEPP: It relates primarily to policies 8, 13 and 15 but also draws on a range of the other policies.

- CHAIRPERSON: Yes, but it said that the Board of Inquiry was wrong in saying that it could apply the overall broad judgment approach in circumstances where there was a superior planning instrument; a specific policy about the avoidance of adverse effects on, in this case, landscape.
- 5 MS GEPP: Yes, that's right.
- CHAIRPERSON: That's the burden of the Supreme Court judgment, isn't it?
- 10 MS GEPP: That's the narrowest aspect of the ratio, yes, but the way in which the decision is drafted makes it clear that it's intended to be a broad effect and it expresses broad statements about the effect of the Coastal Policy Statement and directive provisions within it which make it equally applicable to policy 11.
- 15 CHAIRPERSON: Yes, but it hasn't overruled Justice Gregg's judgment in the **New Zealand Rail** case on the overall broad judgment approach, has it?
- 20 MS GEPP: It does say in relation to the New Zealand Rail case that the New Zealand Rail case is often misinterpreted in the way that it applied --
- CHAIRPERSON: It hasn't overruled it, has it? If it has, you point to me where it did that.
- 25 MS GEPP: I think there's more nuance to that issue than that because I think that the Supreme Court is expressing, with a certain degree of respect and politeness, the view that the **New Zealand Rail** case is wrong.
- CHAIRPERSON: It doesn't say that and you would expect it to, wouldn't you, if it thought it was wrong?
- 30 MS GEPP: I would refer you, sir, and I'm sure you're already aware of it, to paragraph 147 of the Supreme Court's decision which says:
- 35 "We should make explicit a point that is implicit in what we have just said. In **New Zealand Rail**, Justice Gregg said."
- Then there is a quote and then says:
- 40 "This passage may be interpreted in a way that does not accurately reflect the proper relationship between section 6, in particular section 6(a) and (b) and section 5."
- What the Supreme Court's decision certainly does do is reject the overall broad judgment approach where there is a directive provision of a higher order policy document.
- 45 CHAIRPERSON: Which is the proposition I put to you in the first place.

MS GEPP: Whether it overrules **New Zealand Rail** on that point?

CHAIRPERSON: Only where there is a specific higher order policy direction, which is what you've just said.

5

MS GEPP: Yes. I don't disagree that it's related to implementation of a higher order provision.

CHAIRPERSON: No. Outside of, in this case, the issues that are contained within the New Zealand Coastal Policy Statement and the various directions that are contained. Outside of those, it would still be appropriate for us to apply part 2 of the Act for other purposes, wouldn't it?

10

MS GEPP: Yes, I'd agree with that.

15

CHAIRPERSON: Yes, okay. That's where I wanted to get to with you.

MR DORMER: I've just been reading paragraph 37 through to 43 of the King Salmon decision but what were the paragraphs you referred to?

20

MS GEPP: New Zealand Rail is 147 but 142 is the other reference to New Zealand Rail.

CHAIRPERSON: Yes, thank you, Ms Gepp. Would you continue? Applying the regulation-making power.

25

MS GEPP: Yes. Before I move to that, you asked Mr Ironside this morning about the -- sorry, I think it might have been Mr Crosby asked about the comment in King Salmon about minor effects which he said was a response to the minority and which I agree with. In response to that, I would refer the Panel to paragraph 145 and I think that's the paragraph the Panel was referring to. I just note that the actual wording is:

30

"It is improbable that it would be necessary to prohibit an activity that has a minor or transitory adverse effect in order to preserve the natural character of the coastal environment, even where that natural character is outstanding."

35

Just two observations on that. It's not saying minor effects are always acceptable. It's saying the reverse, that it's improbable that it's necessary to prohibit them in all cases.

40

Secondly, that may be correct for natural character, but whether they would have reached the same view in the case of a threatened species that's already subject to degradation of its habitat, maybe a different finding would be made.

45

CHAIRPERSON: That's Mr Ironside. Policy 11, isn't it?

MS GEPP: That's right.

CHAIRPERSON: Yes. Thank you.

5

MS GEPP: I'm at paragraph 21, sir. There are two critical issues when it comes to applying the regulation-making power. These relate to strategic planning in king shags. The proposal does not implement policy 7 of the Coastal Policy Statement which provides a process for strategic planning in the coastal environment. I've set out policy 7 there.

10

15

This proposal is aptly described as ad hoc. Its focus is narrow and it ignores the wider context in terms of both effects and strategic provision for aquaculture. Significant gaps in the supporting technical information and obvious inefficiencies resulting from attempting to amend an outdated plan, subject to review, indicate the proposal has been rushed through. Ad hoc rezoning to enable King Salmon farms in areas where aquaculture is prohibited under the Operative Plan, while the policy 7 process is being undertaken, is the opposite of strategic planning.

20

25

Reference to identification of inappropriate locations in policy 7 reinforces the requirement to avoid adverse effects in policies 11, 13 and 15 of the Coastal Policy Statement. Inappropriate is contextual and depends on what's sought to be protected. The Coastal Policy Statement's provisions must be read together. Eleven, 13 and 15 require protection of landscapes, natural character and indigenous biodiversity and identifies specific adverse effects that must be avoided.

30

35

Reading policy 7, 11, 13 and 15 together, it's clearly inappropriate to provide for salmon farms in areas where those adverse effects will result or to provide for them without the ability to assess and control those effects where they may result.

I would like to delete paragraph 26.

CHAIRPERSON: You want to delete it?

40

MS GEPP: Yes. King shag, paragraph 27. The Waitata Reach relocation sites fall within the foraging range of the king shag breeding colony at Duffers Reef and the satellite colony at Tawhitinui. The king shag is endemic to New Zealand. It's nationally endangered and it's identified as vulnerable by the International Union for Conservation of Nature and the Red List. It's naturally rare and its population is small. Policy 11(a)(1), (2) and (4) criteria apply. Adverse effects of activities must be avoided on the king shag itself and on its habitat. Policy 11 is absolute. There is no exception for appropriate activities.

45

5 The proposal suggests that the proposed sites will not have an adverse effect on the king shag or its habitat because the proposed pen areas are either entirely or partially at depth towards the end range or outside the foraging depth preferred by 74 per cent of king shags but the technical inadequacies of that assessment have been addressed by Dr Fisher.

10 No assessment of the cumulative effects of exclusion of foraging areas by all proposed relocation sites, other existing aquaculture activities and other marine structures has been undertaken. Given the extent of the depositional footprints of the proposed farms, the cumulative excluded area is likely to be extensive. In the absence of such an assessment, it's reasonable to conclude that the proposal will adversely affect the king shag and its habitat. Dr Fisher and Mr Schuckard hold that view. Counsel's for King Salmon contention that the evidence all points to the fact that the proposal won't adversely affect king shag is an overstatement and incorrect.

20 This raises questions as to the validity of the proposed relocation site and the proposed provisions. Forest and Bird says the relocation sites are not appropriate. Adverse effects on king shag must be avoided. In the Davidson decision, which you've heard from Mr Ironside about, they noted the degradation caused by existing aquaculture. While acknowledging that the impact of a marine farm in that context, a mussel farm, by itself, will generally have less than minor impacts on habitat. The cumulative effect of activities which have led to a degraded and reduced habitat are adverse and more than minor and the Trust's application, it was said, can only add to those adverse effects on habitat. The proposed farms must similarly contribute to those adverse effects.

35 At this point, I had intended to take you to the Davidson decision but as Mr Ironside has done that, I'd just like to give you some paragraph references, if that's acceptable.

CHAIRPERSON: Yes.

40 MS GEPP: In relation to policy 11, the relevant paragraphs are 162 to 165 and 277. This is all specifically in relation to king shag. In relation to cumulative effects, 197 and 204. In relation to policy 3, the precautionary principle, 279 to 281. In relation to habitat decline as a key issue, 286. I've got a note here; respond to Court question, paragraph 164. I just have to look at 164 to remind myself what the question was that was being asked.

45 Yes. Sir, you asked whether Dr Fisher's evidence was accepted that the whole area was significant as opposed to the Court having simply recorded that evidence.

CHAIRPERSON: Yes, I remember that.

MS GEPP: At paragraph 164, the Court says --

5

CHAIRPERSON: These are all references to Davidson.

MS GEPP: Those are all references to the Davidson decision, yes.

10

CHAIRPERSON: Yes, thank you.

MS GEPP: That means that the issue emphasised so strongly by the appellant, whether the site's classification is a significant area for king shag is correct, is not really relevant, at least, to policies 11(a)(1) and (2) of the Coastal Policy Statement. What I understand the Court to be saying there is the focus here is on policy 11, so the significance questions essentially fall by the wayside.

15

20

At paragraph 31, given the king shag's vulnerability, a precautionary approach to planning and decision-making under policy 3 of the Coastal Policy Statement is appropriate.

[4.15 pm]

25

Skipping the quote; the coastal environment is specifically recognised to include habitat of indigenous species, that the effects of aquaculture, including salmon farming, are uncertain, unknown or little understood appears to be agreed between the experts. This uncertainty has been extensively examined by the Environment Court. The king shag population is below 1,000 and we've heard it's somewhere in the region of 800. Any decline in population could set this species on the path to extinction. In Davidson, the Court said:

30

35

"Waiting for a reduction in population is no longer regarded as an appropriate trigger for protecting taxon. A precautionary approach is appropriate."

40

Application of a precautionary approach to the cumulative effects of multiple activities was recently confirmed by the Environment Court in the freshwater context due to the complexity of that environment. That's the Environmental Defence Society and Manuwatu/Whanganui Regional Council decision.

45

The marine environment is equally as complex. Effects of multiple activities are uncertain and difficult to assess with significant potential adverse effect. The same approach should apply and zoning for salmon farming at the proposed sites should not be provided for.

5 Second, the proposed limited matters of discretion, and those are in
appendix A to the consultation document, do not include effects on
indigenous biodiversity. This is a really key issue for Forest and Bird
in that if this proposal proceeds, there will be no reconsideration at all.
There'll be no legal ability to consider effects on king shag or any other
indigenous biodiversity and potentially impose conditions if consent is
granted or decline consent if that's appropriate, for example, should the
king shag monitoring that's being undertaken demonstrate that consent
shouldn't be granted. In my submission, that essentially turns this into
10 a controlled activity with respect to impacts on indigenous biodiversity.

15 Dr Fisher's evidence is that the specific salmon farms proposed for the
Waitata Reach risk adverse effects on the threatened New Zealand
King Shag and its habitat. This means that the proposed provisions
provide for grant of consent for an activity contrary to policy 11 and
section 31(g)(a) of the Act. That does not give effect to policy 11 and
is inconsistent with section 31(g)(a).

20 An issue that arose during the course of the hearing relates to the
overstatement of positive benefits. The claimed benefit is that the
existing farms will be discontinued so the adverse effects of them will
cease. This issue arose during questioning by Commissioner Dormer
who exposed the overstatement of positive effects by MPI and New
25 Zealand King Salmon. Proximity of the existing farms expiry dates
compared with uncertainty of renewal or continuation of those
operations, due to issues leading to the current proposal, questions the
extent to which the perceived positive effects of discontinuation of the
existing farms should be considered. It cannot be assumed that the
existing farms will be provided with consents past their expiry date and,
30 as a matter of law, it cannot. There's a reference there to the Port Gore
marine farms and Marlborough District Council decision.

35 If applications to continue the existing marine farms are made, the
environment against which the applications will be assessed does not
include the activities authorised by the consents for the existing marine
farms. Just to add a further comment there; those new applications
will, of course, now be assessed in the context of the New Zealand
Coastal Policy Statement and evolving understanding of the impacts of
40 aquaculture.

5 Counsel for New Zealand King Salmon agreed the proposed farms should stand on their own two feet with the exception of cumulative effects ie a cumulative effects analysis should consider only 6 farms, not 12. To the extent they're relevant, contended, positive cumulative effects are overstated because as identified by Commissioner Dormer, the existing farms may not continue irrespective of the outcome of the proposal. The effects of the proposed farms are entirely different and cannot be traded off and rejuvenation of the area beneath discontinued farms takes time.

10 Dr Fisher's evidence disagrees with MPI's and New Zealand King Salmon's contention that king shag predominate prey is the first species to return and this is the subject of the new evidence and Dr Fisher's response to it.

15 Proposed provisions; section 32. No section 32 report has been provided. The public and the Panel are required to assess detailed proposed provisions on their face without any indication as to why MPI considers them to be lawful, efficient and effective. The proposals consultation process is restricted. The public has a single opportunity to assess the provisions and provide comments. No merits appeal opportunity applies. These factors emphasise the importance of provision of all information at the outset of the process. Failure to do so can compromise this fair and just process.

25 Public participation is further curtailed through the proposed non-notification of subsequent consent applications. This is opposed. The matters being addressed are of regional and national significance as section 6 matters of national importance, the outstanding landscapes, coastal, natural character and king shag and its habitat. It's not appropriate to exclude public input of specific farm operations. Those are not the focus of this consultation process.

30 I think I've already addressed you on the fact that it's effectively a controlled activity because of the matters over which discretion is reserved. I just note that landscape and natural character are similarly excluded from the matters of discretion.

35 In conclusion, the proposal is opposed as it falls outside the scope of the 360A power. It undermines Marlborough District Council's ability to undertake a comprehensive and strategic review and update of its approach to aquaculture and it provides for activities with effects contrary to policies 11, 13 and 15 of the Coastal Policy Statement.

40 Forest and Bird respectively submits that the Panel should recommend that no amendments be made to the Operative Plan and that allocation of space for an operation of aquaculture, including salmon farming, be left to the Regional Plan Review.

- CHAIRPERSON: Thank you, Ms Gepp. We're going to take a brief adjournment now for about ten minutes or quarter of an hour. Just before we do that, is Oliver Brennan here? You're scheduled to be heard at 5.00 pm, Mr Brennan. Are you still happy about that? You've got not much option really, I suppose.
- 5
- (off mic conversation)
- 10 CHAIRPERSON: Then we have Hanneke Kroon and Joop Jansen coming again. How long are you likely to be, Ms Kroon when you come again?
- MS KROON: Half an hour.
- 15 CHAIRPERSON: Right, I might hold you to that. All right. We'll adjourn now and we'll resume at about 4.35 pm and we'll complete your case and then we'll deal with the other two.
- MS GEPP: Yes, thanks, sir.
- 20 CHAIRPERSON: Thank you.
- ADJOURNED [4.20 pm]**
- 25 **RESUMED [4.34 pm]**
- CHAIRPERSON: All right, this hearing is resumed. Thank you. Have you any questions for Ms Gepp?
- 30 MR DORMER: No, thank you. But thank you very much.
- MS GEPP: Thank you.
- MR CROSBY No, that's very clear. The arguments are very clear.
- 35 MS GEPP: Thank you.
- CHAIRPERSON: I just want to ask you a question about section 32.
- 40 MS GEPP: Yes.
- CHAIRPERSON: I think from my recollection, the regulation-making powers require that a section 32 analysis or evaluation is done and so the issue here is what is the appropriate time for that because I don't think there's -- unless you can point this to me, I don't think there's anything in the RMA that stipulates that.
- 45

- MS GEPP: Section 32(5) is relevant to that. If I could just borrow my friend's copy.
- 5 CHAIRPERSON: Okay. Section 32(5) that talks about the person who must have particular regard to the evaluation report.
- MS GEPP: Yes, and that would, in this case, be the Minister.
- 10 CHAIRPERSON: Thank you. So it's ...
- MS GEPP: So, yes, it's as soon as reasonably practicable or by the time of the public notification.
- 15 CHAIRPERSON: After the proposal is ... And that's in the case of a regulation, isn't it?
- MS GEPP: Yes. And I understand the Environmental Defence Society will be addressing you further on the timing point in relation to section 32 tomorrow.
- 20 CHAIRPERSON: All right, okay. So they're going to address it. All right, thank you for that.
- MS GEPP: Thank you.
- 25 CHAIRPERSON: Now, we're going to hear from you now, Dr Fisher.
- MS GEPP: Does the Panel have a copy of Dr Fisher's supplementary statement to hand?
- 30 CHAIRPERSON: No, I don't think so.
- MS GEPP: It's dated 2 May 2017. It's the areas of agreement and disagreement.
- 35 CHAIRPERSON: That one.
- MS GEPP: Yes.
- CHAIRPERSON: Sorry. Yes, I've got that. I've got it on here somewhere.
- 40 MS GEPP: Excellent.
- CHAIRPERSON: Yes.
- 45 DR FISHER: Thank you. Tēnā koutou. I would like to provide a short statement from that supplementary statement from 2 May. I'd actually like to start at paragraph 34. The David Taylor - Cawthron assessment of shifts in benthic community composition over time --

CHAIRPERSON: Sorry, I'm having considerable difficulty. I don't know whether it's the sound or just whether it's the way you're speaking. I'm having considerable difficulty hearing you.

5 MR DORMER: Just slow down a bit probably would help.

CHAIRPERSON: Just if you slow it down a bit that would be good.

DR FISHER: Sorry.

10

CHAIRPERSON: Thank you.

DR FISHER: Paragraph 34. The David Taylor - Cawthron assessment of shifts in benthic community composition over time indicates the potential increase in abundance of polychaete worms within a year of following which could provide feeding grounds for flatfish species. Both salmon and mussel farms create eutrophic conditions supporting pollution tolerance, polychaete worms and other opportunistic fauna.

15

20

However, the habitat structure and physical chemical states associated with eutrophic conditions and of farms would be unsuitable for which flounder and other flatfish to hide from predators and therefore not necessarily provide alternative feeding grounds for king shags. King shags also prey on epibenthic fauna, however the circumstance of this prey capture and the relative importance in that is unknown.

25

I'd like to just spend a bit more time talking about that in terms of what we saw on the video footage shown by Mr Schuckard, if that's okay.

30 CHAIRPERSON: Yes.

DR FISHER: In the video film we saw the king shag diving to the bottom of the seabed and then we saw it actually going along the seabed. And basically what it's actually doing in terms of -- for king shags is it's actually searching for actual flatfish species that are actually hiding in the benthos and it's actually -- when the actual fish is disturbed it's actually catching the fish as the fish actually tries to escape. So it actually learns that the physical cue for that particular species to actually try and capture the fish as it's escaping. It's in some ways actually using the seabed to trap the actual flatfish species itself. So it's actually taking its prey by surprise, if you like.

35

40

5 As referred in terms of the actual size of the king shag, it's a very large bird and it's specialised in swimming rather than flying and it's specialised -- its large size allows it to hold its breath effectively for quite a substantial amount of time to dive deep. Because of that large -- its large size it's unable to actually swim fast in pursuit of small fish in the open water column as opposed to the smaller shag species that you find sitting around mussel farms that can potentially swim into the shallows and actually chase prey -- actively chase prey. In this instance the king shag is trapping prey on the seabed.

10 I guess looking in terms of the other species of shags it's quite easy to get confused with in terms of when you see dolphins herding balls of fish they're actually pushing fish up to the surface and that's actually trapping the fish as well, and that's when the other birds are taking advantage of it, so it's a different approach really. I just thought I'd like to elaborate on that there.

15 So just moving on to paragraph 36. There's no evidence to date based on the few sightings of king shags foraging around mussels and salmon farms to support the suggestion that king shags would take advantage of an influx of flatfish to feed in fallow mussel or salmon farms if that were to occur.

20 Studies are required to assess the prey resource and availability to king shags in their natural benthic habitats, also in fallow marine farms and potential increase in flatfish that may be attracted to suitable habitat adjacent to fallow sites.

25 As I've said there, we've seen on various evidence in terms of there's over 1,000 sightings of king shags across the Marlborough Sounds and I was involved with a study in 2010. We spent nearly two years and we worked in an area with a high density of mussel farms and we were on the water basically every month for two weeks a month and we were actually surveying the distribution of king shag actually around mussel farms and also in terms of its foraging behaviour. Over that course of time we didn't find any king shags actually foraging within farms. There are a handful of sightings over the last 30 years that show that king shags do occasionally dive in amongst mussel farms and potentially may feed on fish, but it's certainly not an important area in terms of foraging. That's based on what information we know at present. So obviously because of the lack of information that we have it's still open to debate, which is what's been occurring in the Environment Court at the moment.

30
35
40
45 I'm just going to move to paragraph 39 because a lot of the other information that's been discussed here in my evidence has been covered by Mr Schuckard in his evidence.

In conclusion there is insufficient information to assess adverse effects on the king shag. There is almost no information to describe the baseline for a stable population, breeding success, and with respect to the changing prey resource and marine productivity.

5

So that's an important point in terms of most of the information we have is looking at effects in the benthic environment relating to consent conditions and monitoring our own farms, but we don't actually have really any information to look at the -- in terms of, I guess, I'd like to describe it more as actually high marine predators in terms of the effects of the marine predators that are preying on the prey species and so on. It's basically through the food chain. We don't have much or really any information on the baseline or the monitoring for that aspect.

10

With the limited baseline monitoring of key wildlife species and a limited biophysical model for assessing assimilative capacity the adaptive management stage approach and associated monitoring is inappropriate for conserving a threatened species that is endemic to the Marlborough Sounds and adapted to surviving in this unique marine environment.

15

20

[4.45 pm]

In summary -- I'll save that to later that I put in terms of my final opinion.

25

CHAIRPERSON: Sorry, I'm not quite clear from what you're saying. You say an adaptive management approach is inappropriate for an endangered species, is that what you say?

30

DR FISHER: Yes.

CHAIRPERSON: Why is that?

35

DR FISHER: Because in this instance when we're dealing with a threatened species it's quite clear from the evidence that I'm party to and the knowledge that I have, and in my opinion, the effects are actually more than minor. So the actual activity itself in terms of actually -- the timeframes that the adaptive management approach would work in terms of when -- in terms of actually monitoring might actually give you an indication -- sorry the timeframes in terms of the monitoring would indicate a change in the population it could be too late in terms of the response of the threatened species, the king shag.

40

CHAIRPERSON: Right. So it's a matter of timing for the -- if the adaptive management was adjusted for a shorter timeline it might, in a timely fashion, show a change.

45

- DR FISHER: If we had sufficient monitoring baseline information, which we don't at present have that, so we're uninformed basically in terms of what an appropriate timeframe might actually be as well.
- 5 CHAIRPERSON: We're ill-informed?
- DR FISHER: Yes.
- CHAIRPERSON: About what the appropriate time --
- 10 DR FISHER: Yes, because there's inappropriate monitoring information.
- CHAIRPERSON: Okay. Right, that's what you wanted to tell us today?
- 15 DR FISHER: Thank you.
- CHAIRPERSON: Thank you.
- MR DORMER: Thank you, if I may. How high are the shags when they dive into the water customarily? Are they flying sort of 100 feet in the air or --
- 20 CHAIRPERSON: No, they actually dive from the surface. So they fly and then they land on the surface and that's partly, I guess, another point that I didn't mention is when they're on the surface they have no idea of what's actually below them in terms of the distribution of prey because they obviously can't -- they can't see the seabed.
- 25 MR DORMER: That was going to be my next question.
- 30 DR FISHER: So, yes, it's a good question though. And this is why some of the studies that Mr Schuckard has mentioned about other leucocarbo shags where they've actually put video cameras in and dive logs on them they've actually showed that for some of the individuals their dive profiles are basically the same, so they're diving to the same -- basically
- 35 the same placed habitats time over time. We think that basically shows that certainly some birds are actually learning places that are good to feed. So they'll fly into an area where they know they've been before and caught prey but basically they're diving down in it and just actually assessing what's there when they get to the bottom. So it's quite
- 40 opportunistic.

Another factor to bring in here is that because they're feeding on a prey resource that that can vary -- it does vary over space and time that when we're looking at foraging -- when we have records of a foraging area where there's king shags now in the Marlborough plan they've been identified as core feeding areas. Just because we're not seeing king shags foraging in other areas doesn't mean to say that it's important because potentially there could be prey there that king shags are foraging on. In the future years, the prey distribution could increase in that area. And also you get king shags that actually will move from colonies and start a new colony. So it's important that we try and protect areas within the wider extent of the king shag habitat so that there's opportunity for the population to expand beyond being a threatened species into feeding areas that are within the foraging range and depth.

MR DORMER: Can I paraphrase you without much injustice by noting that they seem to be intelligent animals?

DR FISHER: Correct.

MR DORMER: Creatures of habit to a degree in that they will return to traditional feeding grounds?

DR FISHER: Yes, to some extent. What we actually found though, and again it's partly timeframes, what we found with the studies that we did around mussel farms, because we basically did an area which transects in the same areas over the study, we found that the sightings of king shags that we had -- like in one survey they'd been seen in other areas. Basically throughout the survey they didn't frequently return to the same area. So basically I guess the point is that if you go out and survey an area and you find a king shag foraging then that's obviously an area where it's foraging but it could potentially be foraging in other areas as well.

So I guess in terms of the surveys, just doing one survey is not representative of the foraging areas and that's one of the shortcomings of the evidence that we have, is that there haven't been sufficient surveys over successive years to really establish basically where the key -- there's been some really important work done by Mr Schuckard obviously in terms of showing that the king shags from Duffers Reef are mainly foraging the Pelorus Sound, and there's some explanations in terms of the wind direction, actually using the wind to actually help them fly back to the colony and so on. But again we're just -- the monitoring of information is very limited what we have.

- MR DORMER: It was amazing to realise - amazing for me because I'm very ignorant on these things - to see the shag swimming along the bottom looking for its prey. And I hadn't realised the degree to which light was important. Clearly it is, isn't it?
- 5 DR FISHER: Yes.
- MR DORMER: If you can't see the prey, you can't catch it. And Mr Schuckard's concern was that the more pollutant there is in the water the harder it is it's going to be for the shag to see its prey. Now from what I'm told by folk who dive is that it gets darker as one gets deeper.
- 10 DR FISHER: Correct.
- 15 MR DORMER: So the light factor would therefore, I imagine, be less important when the shag is diving into waters of 10 or 20 metres or 30 metres than it would be when he's foraging 50 metres down. Is that a fair assumption?
- DR FISHER: No, it's not, no.
- 20 MR DORMER: Why not?
- DR FISHER: I actually dove down to 50 metres myself as it happens, but -- so in terms of where the king shags are foraging, and what you've said, the light factor is critical actually and so at 50 metres is there still light in the areas where the king shags are foraging and essentially if you look at the Marlborough Sounds itself, in terms of light levels and actual -- things like phytoplankton, I guess you can compare it to -- and if you look at all the other -- where all the other shag colonies are found those conditions are similar to essentially oligotrophic conditions. I'm not sure if you understand that terminology.
- 25 MR DORMER: I have an understanding of it but it may well not be the same as yours.
- 30 DR FISHER: So basically in those conditions there are nutrients present but at fairly low levels and that in itself in terms of -- has an impact on light levels, so I guess from our perspective one of the interesting issues is, is that - and Mr Schuckard pointed at that - there are natural fluctuations in light levels, in terms of plankton blooms as well. And we see that within the Sounds and those effects are actually driven by bigger scale oceanic currents as well. So that's a factor that again we're not really -- it's brought up with the water temperature as well actually. That's the factor that kind of links into in terms of actual changes in light levels based on increases in plankton and water temperatures, which is something we need to consider as well as the effects from the proposed farms.
- 35 DR FISHER: So basically in those conditions there are nutrients present but at fairly low levels and that in itself in terms of -- has an impact on light levels, so I guess from our perspective one of the interesting issues is, is that - and Mr Schuckard pointed at that - there are natural fluctuations in light levels, in terms of plankton blooms as well. And we see that within the Sounds and those effects are actually driven by bigger scale oceanic currents as well. So that's a factor that again we're not really -- it's brought up with the water temperature as well actually. That's the factor that kind of links into in terms of actual changes in light levels based on increases in plankton and water temperatures, which is something we need to consider as well as the effects from the proposed farms.
- 40 DR FISHER: So basically in those conditions there are nutrients present but at fairly low levels and that in itself in terms of -- has an impact on light levels, so I guess from our perspective one of the interesting issues is, is that - and Mr Schuckard pointed at that - there are natural fluctuations in light levels, in terms of plankton blooms as well. And we see that within the Sounds and those effects are actually driven by bigger scale oceanic currents as well. So that's a factor that again we're not really -- it's brought up with the water temperature as well actually. That's the factor that kind of links into in terms of actual changes in light levels based on increases in plankton and water temperatures, which is something we need to consider as well as the effects from the proposed farms.
- 45

CHAIRPERSON: So what you're saying is that you mightn't actually have as good a light at 20 metres as you have at 50 metres depending on the water quality.

DR FISHER: That's correct. In certain areas that's correct, yes.

5

MR DORMER: Is there anything to suggest that the birds would prefer more foraging time at the bottom and therefore dive into shallower waters to give them more hunting time?

10 DR FISHER: That's a really good question that. It's probably one more for Mr Schuckard actually because he's done more of the analysis and it's potentially something that you might be able to look at. I've not looked at it myself in terms of looking at the distribution of foraging records with depth. To answer that question you need to do a comprehensive study. It would be a very good PhD actually for someone to do.

15

MR DORMER: Too old for that.

20 DR FISHER: Well, I'm not suggesting you but I mean we talk about it, there are a number of important areas that would make somebody a good PhD that could involve the industry and universities to look at. But that aside, in terms of diving depths, as Mr Schuckard has said, the king shag is feeding at basically its maximum range when it's diving deep, but what also was mentioned was the sexual dimorphism in the king shag. Well, in all of the species of shags that the group is part of and that's quite common in birds in general. I guess the implication of that is that the body size affects how much oxygen your lungs can hold. So the larger males have larger lungs and they have a great capacity to dive deeper and stay longer.

25

30 So this is one of the contentions, and again it's been published on in some of the other species of shags that female shags basically forage in shallower habitats and they're actually -- they can't actually dive deeper so they're actually limited to foraging in shallow habitat. In terms of -
35 - I mean the actual reason for that from an evolution point of view is that there's less competition between male and female shags. You see that in albatrosses and other birds. They have different dispersal for males and females so it's trying to reduce competition and king shags are specialised feeders so they don't have competition from many other birds basically, any other seabirds, so they're the king of the habitat.

40

5 So that's one of the points we've raised in our evidence that because of
the effects from mussel farms occupying most of the coastal ribbon
then that shallower habitat is being occupied by mussel farms and now
the salmon farms in open water are also basically potentially -- well,
they will have effect in the open water and any other effects from other
types of fishing, from basically trawling and dredging you're disturbing
open water habitats so the effects are compounded. We don't actually
know what the effects are on, in particular, female king shags, and that's
10 why we need more information to basically be able to get a better
understanding of -- to answer your question really, how important is
the shallow habitat for king shags.

MR DORMER: Thank you very much indeed, doctor.

15 DR FISHER: Thank you.

MR CROSBY: I've only got one question really, doctor. What sort of distance do they
travel? And I know obviously that's going to give -- particularly given
what you've just been saying, it will vary depending on the depth that
20 they've had to dive. But is there any information from those film
studies that have been done as to the distances that they'll travel and
their 80 seconds when they're done?

DR FISHER: It's more of a question for Mr Schuckard. To be truthful, I can't really
25 answer it definitively. I've seen the published papers and the dive
profiles but based on my own observations in terms of seeing birds dive
and then surfacing again, it's generally within 100 metres or so from
where it dives. So not typically too far. There's only a certain distance
that you can swim in 40 seconds or so.

30 MR DORMER: I couldn't swim 100 metres in 40 seconds.

DR FISHER: No, nor me.

35 MR CROSBY: Thank you.

CHAIRPERSON: Thank you very much.

DR FISHER: Thank you.

40 CHAIRPERSON: We'll see you again later.

MS GEPP: Thank you, Commissioner. Can we just get some clarity before we
45 leave on the caucusing that is proposed? Is what's proposed more of a
hot-tub style of where the witnesses will be here before the Panel?

[5.00 pm]

- CHAIRPERSON: We'll have their material and we'll just do question and answer and, yes.
- 5 MS GEPP: Thank you. That will help Dr Fisher to be prepared.
- CHAIRPERSON: We won't record that.
- MS GEPP: I see.
- 10 CHAIRPERSON: But it will be a public process but we won't be recording it because it would be better just to have a free-for-all, I think.
- MS GEPP: I wonder if it might be useful to record it. If it's going to be public then perhaps it should be something that the --
- 15 CHAIRPERSON: I just thought it would be difficult. It might be easier -- there'll be all sorts of interjections and perhaps, and that sort of thing.
- MS GEPP: I see. Yes, well certainly I suppose it's just that many of the participants in this process aren't local and can't be here for everything.
- 20 CHAIRPERSON: That's unfortunate.
- MS GEPP: If it's going to be an aspect of the evidence that the Panel is taking into account.
- 25 CHAIRPERSON: I think it's more -- well, I see it more as of assistance to us in evaluating the evidence that's already been given. It really replaces, I guess, in a way, the cross-examination lack. Not that we'll be cross-examining but at least we'll be -- I mean normally hot-tubbing's done without anybody present, isn't it?
- 30 MS GEPP: That's right, and then the record that is produced would be available to everybody and would form part of the bundle of evidence.
- 35 CHAIRPERSON: Is there a verbatim record of hot-tubbing?
- MS GEPP: To the extent that transcripts are normally taken, which they're not always, I would expect that it would be. It's something to --
- 40 CHAIRPERSON: I think it might just inhibit us a bit but however I'll give some thought to that.
- MS GEPP: Thank you, sir.
- 45 MR DORMER: Our transcription service has really got it mixed up a few times, hasn't it? I've been mistaken for you, for example.

CHAIRPERSON: I don't know how that could possibly happen.

MS GEPP: Thank you. Thank you very much to you all.

5 CHAIRPERSON: We're going to hear from you now, Mr Brennan. All right.

MR BRENNAN: All right, good evening. I'm from Waitata Bay.

CHAIRPERSON: From?

10

MR BRENNAN: I'm from Waitata Bay. I live there currently and work at Waitata Bay Lodge.

CHAIRPERSON: You work at Waitata Bay Lodge?

15

MR BRENNAN: Yes. And in the wider Sounds area.

CHAIRPERSON: Doing what?

20 MR BRENNAN: Labouring, digger driving and a bit of building.

CHAIRPERSON: Right.

25 MR BRENNAN: Today I'll be representing the permanent and part-time residents of Camp Bay, Waitata Bay.

30 I would like to oppose the relocation of all six salmon farms that New Zealand King Salmon is applying for. I would kindly like to decline New Zealand King Salmon's offer due to the pollution the salmon farms will produce and the effects on the surrounding marine life and ecology, the community effects due to the damages salmon farms cause to food sources, tourism and existing income.

35 Pollution the salmon farms will produce an effect on the surrounding marine life. I feel New Zealand King Salmon are applying for high flow farms to hide the damage and pollution that the farms will do to the surrounding marine life and ecology. By having a high flow farm New Zealand King Salmon is able to contain more fish whilst occupying the same amount of surface area. It is to my understanding
40 that a salmon farm in a low flow area has to be moved after X amount of years because of the damage to the sea floor beneath it due to the dense population of fish.

5 A high flow farm have larger fish, larger feed amounts, and overall more toxic waste produced. New Zealand King Salmon claims the high flow farms have a benthic footprint that meets the requirements but the truth is high flow farms have an overall larger benthic footprint. The effects however might not be seen as directly as a low flow farm; the increased rate of flow in a high flow farm washes the toxic waste produced by the farm away to an unknown location.

10 In my opinion, a salmon farm can only have a negative effect on its surrounding environment. The more fish the larger the farm is and the worse for the environment. By adding additional salmon farms to the area the complete ecology and marine food chain will be changed. The questions I would like to ask is: where will the waste from the salmon farm wash to? What effects will that added waste have on the marine life and ecology?

15 If a low flow farm damages its direct surroundings it can be noticed and moved but if a high flow farm damages its nearby surroundings with a more or less blanket effect when and at what point will it be recognised when a high flow farm should be moved?

20 Community effects due to the salmon farms. The community of the outer Pelorus Sound is a community that relies on the sea to provide food and income. With the addition of any salmon farm fishing spots, seafood, income and tourism are all negatively affected upsetting the residents of the community.

25 Food. Introducing the salmon farms could affect and reduce several food sources for the local community and almost certainly will return no food. Fish and other seafood is a staple food of the local community and it would upset a lot of locals to see the food that the sea provides decline.

30 Tourism. The area has an increased number of tourists, which come to the area for its amazing scenery, marine life and seafood. If any of these are affected tourism will strongly be affected. As a resident of Waitata Bay Lodge I have seen this first hand with the blue cod limit dropping over the years, to the current limit of two fish per person. Also a current ban on scallops has seen recreational fishers stop coming to the area.

35 Apart from the marine life damage the farm could cause, the look of the salmon farms is not appealing to most. This is a point not to be missed. With several farms nearby the tranquillity and natural beauty of the area will be drastically changed for the worst.

5 Income. New Zealand King Salmon claims it brings jobs and income to the area, but of the several existing salmon farms in the area the majority of the workers do not come from the direct surroundings. The community will not receive additional revenue. New Zealand King Salmon will receive it however. It will reduce tourism and the sea's productivity reducing the community's income.

10 I feel allowing the relocation of the salmon farms will bring minimal income to the area. The salmon farms will negatively affect the community by affecting the community's existing income, food sources and sceneries. The questions I would like to ask is: what would New Zealand King Salmon do to compensate the community's losses? Apart from the increased income New Zealand King Salmon is claiming to bring to the area are there any other positives that the salmon farms could bring to the community?

15 Overall the additional salmon farms to the area will negatively affect the marine life, food sources, tourism, scenery and will have no significant income/benefits to the area or residents.

20 In conclusion, I, Oliver Brennan, on behalf of Waitata Bay Lodge, permanent and part-time residents of the Marlborough Sounds community, would like to oppose the relocation of all six salmon farms. I strongly would like to oppose the mid-reach one especially due to the negative effects it will have on the marine life, food sources, tourism, scenery and non-beneficial to the community. I would appreciate it if a public vote was had on which farms, if any, to be relocated, including the option to reduce the total amount of New Zealand King Salmon farms in the wider Sounds area.

25 If any of these farms are selected for relocation further more detailed tests done to see if the sites are suitable and then the findings be made public, the community to be compensated for their losses caused by any New Zealand King Salmon farms and jobs, the salmon farms created are to be offered within the community first, it is publicly made clear at what point New Zealand King Salmon will stop applying for additional salmon farms and how much pollution they are currently creating. Thank you.

30 40 CHAIRPERSON: Yes, thank you very much, Mr Brennan. Have you any questions?

MR DORMER: Just a mild point of contention, Mr Brennan. I've never seen in any resource consent or any book of rules about what you can and can't do that preference for employment is given to folk from the locality rather than folk who come in from outside. I think that would be very hard to convince me on and even harder perhaps to enforce.

45 MR BRENNAN: What do you mean by that, sorry?

- MR DORMER: I understood you to say that it won't increase employment for the locals because many of the workers will be from outside.
- 5 MR BRENNAN: Yes, like say they're moving the salmon farms to the Waitata Reach it would be more common for the workers to come from, say, Havelock or further afield than the direct surroundings.
- 10 MR DORMER: But did I take you to suggest that if it was to be approved there should be some kind of condition requiring that only real locals get employed?
- 15 MR BRENNAN: Yes, I did a little read of the benefits that the salmon farms will bring to the area and it's saying it will bring employment to the area, but of the existing salmon farms most of the workers don't come from the direct area.
- 20 MR DORMER: Bringing employment to the area doesn't mean providing employment for locals, does it? I mean you might create jobs and those jobs will be taken by folk who don't live here.
- MR BRENNAN: Yes, I suppose it's the definition of "area", isn't it? How wide does that area source from?
- 25 MR DORMER: We had a lady give evidence on behalf of the company on day one and she was a Vietnamese student living here. She was employed by King Salmon and that enables folk to attend the local technical college or whatever. Is that a good thing?
- 30 MR BRENNAN: Sorry, what do you mean by that, sorry?
- MR DORMER: Is it good that there's work for some of the students?
- MR BRENNAN: Yes, I believe so.
- 35 MR DORMER: Just a word of advice, if I may? There will never be a rule that says that jobs have to go to locals first.
- MR BRENNAN: Yes, I agree with that.
- 40 MR DORMER: Thank you, sir.
- MR CROSBY: Just out of interest, you mentioned Camp Bay. Is that where Waitata Lodge is?
- 45 MR BRENNAN: Yes, Camp Bay is a smaller bay of Waitata Bay.
- MR CROSBY: Right.

- MR BRENNAN: Yes, and we were --
- MR CROSBY: And is that accessed by a public road or is that a private road?
- 5 MR BRENNAN: Public road, but private road down to the actual bay.
- MR CROSBY: Yes that's what I meant. So ridgeline down to the bay is private access?
- MR BRENNAN: Yes, actually. Yes.
- 10 MR CROSBY: Thank you.
- CHAIRPERSON: Mr Brennan, did you lodge a written comment originally in March?
- 15 MR BRENNAN: Yes, I think so. Like a submission?
- CHAIRPERSON: Yes.
- MR BRENNAN: Yes, I did but had a bit of trouble with the application process.
- 20 CHAIRPERSON: I just can't find it. I've got one by Isaac Brennan. Is that any relation to you?
- MR BRENNAN: Yes, he's my brother.
- 25 CHAIRPERSON: He's your brother?
- MR BRENNAN: Yes.
- 30 CHAIRPERSON: Are you speaking -- I mean I've looked at his submission. It's not quite what you were reading out from there so I assume you've got your own one, have you?
- MR BRENNAN: Yes. This is it here, if you would like a copy of it.
- 35 CHAIRPERSON: We'll find it somewhere but I just couldn't find it in the electronic versions I've got here. But anyway I know who Isaac is now.
- MR BRENNAN: Yes.
- 40 CHAIRPERSON: Thank you very much.
- MR BRENNAN: No worries.
- 45 CHAIRPERSON: Thank you for coming.
- MR BRENNAN: Thank you.

[5.15 pm]

- CHAIRPERSON: Now finally today we're going back to Hanneke Kroon and Joop Jansen please.
- 5 MR JANSEN: It will be two statements. For some reason we were put together. We have two separate submissions as well.
- CHAIRPERSON: All right.
- 10 MR JANSEN: I should be no longer than, hopefully, 20 minutes, depending on interruptions of course.
- CHAIRPERSON: So you're not associated with Hanneke Kroon in any way?
- 15 MR JANSEN: Yes. My wife.
- CHAIRPERSON: She's your wife. Well why don't you come and be together?
- 20 MR JANSEN: Because we have totally different --
- CHAIRPERSON: You've got different views?
- MR JANSEN: No, not different views necessarily. That's possible, of course.
- 25 CHAIRPERSON: Of course it is.
- MR JANSEN: Not in this case, not different views but totally different statements. We are not covering the same --
- 30 CHAIRPERSON: You're not covering the same ground, that's all I'm worried about.
- MR JANSEN: No.
- 35 CHAIRPERSON: Right, thank you.
- MR JANSEN: I don't really know exactly what kind of ground she is going to cover and she doesn't know what I'm going to cover so -- is this working?
- 40 CHAIRPERSON: Yes.
- MR JANSEN: Okay. My name is Joop Jansen and I am and have been for 12 years a resident of Elie Bay, a side bay of Crail Bay in the Pelorus Sound. The Sound in which the proposed salmon farm expansion will have the biggest impact.
- 45

5 I am also a member of the Kenepuru and Central Sounds Resident Association and have, as an active member of the marine committee, helped prepare several aquaculture submissions concerning mussel farming, and have represented the Association in two hearings. In 2012 I was deeply involved in the Board of Inquiry process concerning the large scale salmon farm expansion by NZKS. Both activities have provided me with a thorough inside of the pros and cons of aquaculture in general and salmon farming, in particular.

10 As far as my personal tertiary education is concerned, I have studied physics at the Technical University of Twente in the Netherlands and as such I am very well trained in how to conduct scientific research and how to interpret research results. As a scientist I am not impressed with the standard of the reports used to defend the proposed expansion of
15 salmon farming in the Sounds.

I have not been able to read the whole avalanche of documentation, but the ones I have read - Disease Risk, Water Column and Landscape - struck me as being produced with a firm eye on the final conclusion, being that salmon farming poses no risk/is not detrimental to the ecology of the Sounds. Without that conclusion the authors probably would not get paid for their effort.

20 CHAIRPERSON: You've got no evidence to support that statement, have you?

25 MR JANSEN: Come again?

CHAIRPERSON: That's being very critical --

30 MR JANSEN: It is critical, yes.

CHAIRPERSON: -- of professional people saying they're only saying something because they're getting paid.

35 MR JANSEN: Well, that's a matter of opinion as well. Sorry.

CHAIRPERSON: What?

MR JANSEN: Professional people.

40 CHAIRPERSON: Well, they are, aren't they?

MR JANSEN: I'm not so sure.

45 CHAIRPERSON: Oh, aren't you?

MR JANSEN: Well, we'll come to that.

CHAIRPERSON: You know what their credentials are.

MR JANSEN: Yes. I know what they studied.

5 MR DORMER: I've spent a lifetime in this area of the law calling expert witnesses and
time and time again heard them being criticised as hired guns, people
for hire. Yes, they are for hire insofar as we hire them to give an
opinion. If my client and I don't like the opinion they give us we don't
10 call them. It would be quite unfair to suggest that any significant
proportion of the professional qualified witnesses that come before
panels like us are appearing because they're being paid.

MR JANSEN: I beg to differ, sorry. Like I said I've been in two hearings and I have
15 in all these hearings not been impressed with the scientific standard of
the reporting.

CHAIRPERSON: So you say.

MR DORMER: So you say, well, we'll --

20 MR JANSEN: So I say. And that's why I'm here. I'm here to tell my side of the story.

MR DORMER: You're just being warned that's all that there are three of us here with a
25 lifetime's experience of this area of the law and our lifetime's
experience is significantly different to that which you're outlining.

MR JANSEN: But I'm a scientist.

30 CHAIRPERSON: Well, you're not an expert on king shags, are you?

MR JANSEN: And you cannot make claim to be a scientist, you're all lawyers. That's
a different kettle of fish.

35 CHAIRPERSON: You're not an expert in king shags? You're not an expert in landscape?

MR JANSEN: I'm a scientist. As a scientist I'm able to read reports and see if there's
any scientific significance in it. And I've read reports by experts in
which there was a lot of nonsense, but with a lot of jargon, so it's
40 difficult to see that. Can I progress?

CHAIRPERSON: All right, that's your view. We've warned you of the consequences of
that. Let's proceed.

45 MR JANSEN: Consequences? We'll get to that as well.

CHAIRPERSON: Yes.

MR JANSEN: I would qualify such reports as pseudo-scientific and sometimes even a disgrace to science. But let me assure you this kind of reporting happens a lot when aquaculture is concerned.

5 Specific concerns. In the MPI website describing this hearing it is mentioned that the purpose of this hearing is not reiterating what was stated in the submissions, but dwell on the other reasons why one should oppose the expansion of salmon farming and/or criticise the RMA process that this hearing is part of. This makes sense.

10 You have, of course, thoroughly studied all submissions and therefore it must be crystal clear to you that salmon farming in the Marlborough Sounds is not a good proposition. That being the case, leads automatically to the conclusion that any expansion or relocation of salmon farming should not be under taken.

15 So in this statement I am not going to elaborate on the following subjects:

20 (1) The hazard to navigation that the mid-channel farm poses, when they stick to the navigation light systems that is currently in use for marine farming in the Sounds. A system that consists mainly of some weak white lights haphazardly placed on a farm.

25 (2) The fact that at least part of the salmon feed has to be fish protein, to be able to claim any health benefits associated with salmon consumption. Fish protein that has to be sourced from overseas, contributing to the worldwide over-fishing problem. By the way, are you aware that a few years ago, but not too long ago, in 2013 the Norwegian Government put out a warning concerning overindulging on farmed salmon products? Women of child-bearing age should not eat farmed salmon more than twice a week due to potential toxicity. How one can link health benefits to toxicity is beyond me. No such warnings are necessary for wild salmon.

30 (3) The heavy pollution of the seabed underneath salmon farms, whether they are in low flow, no flow or fast flow areas, resulting, in the end, in dead zones. And when that has happened the whole RMA show can start again because NZKS will want to move its farms again.

35 (4) The plight of the king shags, a critically endangered bird, unique to the Sounds and casually sacrificed on the altar of misguided economic gain.

5 (5) The pollution of the water column will be less obvious as that of the benthic, but it will spread through the whole of the Pelorus Sound, according to NIWA, where it will trigger algal blooms, like it does now in the Queen Charlotte. These might be toxic or not, that part is a game of Russian Roulette, but either way it won't make the recreational fishermen and the mussel farmers very happy.

10 (6) The degradation of an outstanding natural landscape by plonking a number of ugly unnatural structures right in front of it. And they will be ugly, whatever the company promises, and they will be noisy, because salmon need feeding barges every day. Barges with generators and water-blasting equipment for cleaning.

15 By the way it came to my attention that you have visited the area in a helicopter. Is that correct?

CHAIRPERSON: Yes.

20 MR JANSEN: That gives you a nice overview and it is quick, which is good if you have only limited time to spare. But it is not the way that most visitors visit the area. They come in small boats and from sea level a barge and a farm obstructing the otherwise limitless horizon of the Pelorus entrance degrades the view and the landscape and seascape. When this hearing is over - and it almost is - you should perhaps take a day off and sail from Havelock to the Waitata Reach on a sunny day just to get a feel for the area so you really know what it is you are advising the Minister about.

30 (7) Salmon, like humans, are capable of developing disease. Also, like humans, the occurrence and spread of disease is more likely when the target species is densely packed together, is subjected to uncomfortable temperatures, is fed a limited and unnatural diet and lives in a polluted environment. NZKS and MPI are still playing down the influence of the Rickettsia bacteria, but over the years it has become clearer and clearer that this pathogen is the main cause of the mass salmon mortalities in 2012, 2013, 2014, 2015 and in 2016.

5 An unusual salmon mortality, by law, has to be reported, but it is up to
MPI to do something with the information. Both NZKS and MPI try
their damndest to keep all unusual salmon mortality off everybody's
radar screen. A case in point is the latest report, which is concerned
with the mortality in 2015 - the worst so far - and the subsequent
controlled area notice. This report was draft-ready in October 2016
and has been languishing in peer reviews and drawers ever since. It is
fair to assume the information in the report is so damning that it would
10 have a negative impact on NZKS's bid for a salmon farm expansion.
Word has it, it's due for release in a couple of weeks, which coincides
nicely with the end of the RMA process. I am quite sure the Minister
will ignore it.

15 (8) Why expand a doomed industry in an already fragile environment
like the Pelorus Sound? An environment that is already fragile due to
other aquaculture - like mussel farming - forestry run-off and over
fishing, and is on the verge of collapsing. For more info, see MDC's
State of the Environment report 2015, page 150. An industry that is
doomed because of a water temperature that exceeds 17 degrees
20 Celsius for several month's each year, stressing the salmon and together
with a self-polluted environment makes them vulnerable to disease,
resulting in mass mortalities. Hence NZKS's urgent need to move their
farms to cleaner places. A slash and burn way of farming, a primitive
practice long since abandoned in the modern world, but not by
25 companies like NZKS. As a country we should not prop up a poorly
run company that has no future - remember global warming - but has
the means to tip the Sounds environment into the abyss.

30 The process. And with that I have arrived at the meat and bones of my
statement: the process, the RMA process, the dance we are performing
at the moment. A dance that has to be performed according to the law
and for which MPI has written the music and of which the outcome is
certain. When the music stops the only chairs left will be occupied by
MPI and NZKS and we are all supposed to go home happy that we have
35 been allowed to participate in this democratic process.

40 A process that was sold to all stakeholders, by MPI, as open and
unbiased, but it was, from the start anything but. Halfway through the
working group stage it was clear to all participants that years of
preparation by MPI and NZKS had gone into it.

[5.30 pm]

5 And because of this long preparation they were able to confront the work group members with thousands of pages of reports written by so-called experts and full of specialist jargon. Within the tight timeframe it was only possible to read and understand a fraction. MPI kept maintaining that they were just an independent facilitator of the discussion, but from the reports it was clear they were in favour of a massive expansion of salmon farming in the Sounds.

10 All three reports I have read - more or less - and tried to make sense of were obviously written with the end conclusion firmly in mind. An end conclusion that should show that salmon farming expansion is not a problem. In a proper scientific report you are supposed to investigate the facts, interpret them and then draw conclusions. Not the other way around: formulate your conclusion and then manipulate the facts so they suit your need.

15 As an example I would like to present the report on salmon disease by Dr Diggles. He gives lots of facts, adds even more references to show how scientific everything is and then at the end he produces a number of risk assessment diagrams - you have seen it on the screen - without any references at all and which are deeply flawed. It would take hours and a few other experts to point out all the flaws and come up with something better, but in all diagrams: (a) the median is missing, (b) the diagrams are non-linear and are used in a linear way, and worst of all (c) the environmental risk and the economic risk are mixed together resulting in a nonsensical structure. These mistakes make the whole risk assessment meaningless and without that this report ends up without any useful conclusion.

20 Another example is the NIWA water column report. This report produces all the feed and salmon waste data supplied by NZKS. The data is run through the NIWA biophysical model which shows where the salmon pollution ends up in the Pelorus. The authors draw very few conclusions from the results, so I cannot fault them on that, but it strongly diminishes the value of the report.

25 What makes the value even less is the fact that the input data, supplied by NZKS, is suspect. For instance - and I'll show you a picture if I can get it out of the machine. That's the picture. These plastic rings are the Crail Bay salmon farms. You might think this is the Waitata Reach and, ahead of schedule, the farms have already been relocated. I hope everybody can see the rings.

30 MR DORMER: No.

35 MR JANSEN: Let's see if I can zoom in. It must be possible. These.

CHAIRPERSON: What are we looking at?

MR JANSEN: This is three salmon farms.

5 CHAIRPERSON: Oh, sorry. On the -- yes.

MR JANSEN: The salmon farms from Crail Bay.

CHAIRPERSON: Yes.

10

MR JANSEN: Or is New Zealand -- NZKS is having a tryout of raising salmon onshore? No. These farms have simply been dumped on the beach in a remote corner of Clova Bay, and have been there since 2015 at least; a very sloppy way of disposing of unwanted farms. But wait, there's more. According to the feed data given to NIWA, supplied by NZKS, the krill-bait farms are going to receive 1,600 tonnes of salmon feed in 2017 and 2018. That will make a nice little heap on the foreshore, and the birds, rats and mice will have a feast. I guess they must've been feeding their salmon here in 2015 and 2016 as well. Easy to do, you can just dump it with a truck. No need of a barge.

15

20

25

30

My overall opinion of the RMA process using the 360 regulation is very negative. Looking back, I would characterise the board of inquiry process in 2012 as a farce in which the central government had absolute the upper hand in determining the outcome. But at least there were serious discussions and the experts could be cross-examined. The process we are in now goes beyond a farce. It's a joke; a sick joke. Over \$1 million of tax-payer money has been wasted on a process that has a predetermined outcome, determined by MPI and the Minister. The public has no say whatsoever. Any opposition will be, and has been in the working group, pushed aside.

35

40

And even if, pro forma, some of the critique finds its way in the final advice to the Minister, he can simply ignore it, because it's only an advice, no more. Thousands of hours of unpaid work by alarmed citizens will disappear in the black hole of this advice, never to be seen again. All our arguments to save what's left of the ecology of the Sounds and to defend the marine environment are going to be trumped by very dubious, short-term economic gain. The government, equipped with the largest blinkers possible, only have eye for the goal of \$1 billion turnover by aquaculture by 2025. What happens after that date, they don't seem to care. These politicians seem to be willing to take the risk of a total collapse of the Sound marine ecology.

5 We, the Sounds' residents, are not willing to take that risk. And that's
the only reason I'm participating in this joke of a democratic process.
My influence on the outcome will be zero. I realise that. But there is
always the judicial review following the unavoidable executive order
of the Minister. That review will put a date that the expansion, will be
set in concrete past the date of the general election. And when the
people of New Zealand are willing to relegate the jokers that are in
power now to the opposition benches and we have a change of
government, then, and only then, might the outcome of this process be
10 reversed. If that puts NZKS out of business, so much the better.

CHAIRPERSON: Thank you, Mr Jansen. Do we have any questions?

15 MR DORMER: No, thank you.

CHAIRPERSON: I just have, not a question about what you've said, but I've looked up
the written comment that is made in both your name and your wife's
name, but it doesn't bear any relationship to what you've told us here
today. Did you put another statement in?

20 MR JANSEN: No. You should --

CHAIRPERSON: So this is all new, is it?

25 MR JANSEN: Well, like I said in the beginning, if you read the instruction
manual -- oh, sorry, the --

MS KROON: The notes for the submission.

30 MR JANSEN: Yes, the notes for the submissions in this hearing --

CHAIRPERSON: Yes. Yes.

35 MR JANSEN: -- it says, "Don't reiterate what you've said in your submission, but
come up with new arguments, and --"

CHAIRPERSON: Okay.

40 MR JANSEN: "-- give your meaning and your opinion about the RMA process". So
that's what I have done this time.

CHAIRPERSON: All right. So I can take it that the written submission, which I'm looking
at now --

45 MR JANSEN: Yes, yes, yes.

CHAIRPERSON: -- that was put in by you and your wife, is your original?

- MR JANSEN: That's the original submission.
- CHAIRPERSON: You were both jointly involved in that?
- 5 MR JANSEN: No. No, no, no, no.
- CHAIRPERSON: Well, why has it --
- MR JANSEN: She has got a -- she's got a totally different one.
- 10 MS KROON: I have my own submission, but unfortunately, as I have told Louise they put the wrong names on today's schedule. In truth, you might never have found my submission because they misspelt my last name.
- 15 CHAIRPERSON: That's quite right. That's what I'm looking at now. So you didn't put anything else in, though, yourself, in your own name?
- MR JANSEN: Yes.
- 20 CHAIRPERSON: Well, I can't find that.
- MR JANSEN: No, but my name was spelled wrong. I thought it would tacky to mention that in my statement, but it's spelled with an A and not an E.
- 25 MR CROSBY: Yes, no, I've got yours.
- CHAIRPERSON: Oh, we've found it now.
- MR JANSEN: Good.
- 30 CHAIRPERSON: All right. That explains his position to me. Thank you very much, Mr Jansen. What number was that under?
- MR CROSBY: His number is 346 and hers is 360.
- 35 CHAIRPERSON: 346. Yes. Well, what's 493 then?
- MR CROSBY: I'm not sure.
- 40 CHAIRPERSON: That's hers.
- MR CROSBY: Oh, right. Okay.
- CHAIRPERSON: No, this is 493.
- 45 MR CROSBY: Yes. Yes. That's correct.
- CHAIRPERSON: This is 493.

MR CROSBY: Yes.

CHAIRPERSON: Yes. Now, what you've just put in front of us --

5 MS KROON: I'm not going to talk about that.

CHAIRPERSON: -- is your original submission.

10 MS KROON: No, it is not.

CHAIRPERSON: Well, it's the one I've got here.

MS KROON: No.

15 CHAIRPERSON: I'm sorry.

MS KROON: It's not my original submission. It's not.

20 CHAIRPERSON: Well, it --

MS KROON: How could it be? The first is an analysis of all the submissions about how it's been introduced, and that's page 3.

25 MR CROSBY: Well, I think the first two paragraphs are just the same.

CHAIRPERSON: Yes, the first two paragraphs are the same.

MS KROON: Yes, well, that's just the introduction.

30 CHAIRPERSON: Yes. Right. Okay.

MS KROON: And I will keep that.

35 CHAIRPERSON: Well, where do you want to start from today.

MS KROON: So, we'll start at page 6, NZKS and mussel farming.

CHAIRPERSON: Page 6?

40 MR CROSBY: Yes.

CHAIRPERSON: Okay.

45 (off mic conversation)

- 5 MS KROON: Have you seen this picture? I received it from the Marlborough District Council. This is to show that New Zealand King Salmon here has gone into mussel farming. King Salmon has applied for a new mussel farm, Blow Hole Point South. It must be the most coveted water space in the Pelorus Sound. The same water space is claimed for a salmon farm, that's the red one, a King Salmon mussel farm, that's the blue one, I believe ... yes, blue -- and a Marlborough Aquaculture Ltd mussel farm, and that is the green one.
- 10 MR CROSBY: Are you able to provide us with the dates of those applications?
- MS KROON: Yes, they are recent. So the MAL application went in, I think, October 2016.
- 15 MR CROSBY: Right. Yes. We're aware of that one.
- MS KROON: And it was -- they needed to provide more evidence, or they didn't provide enough information --
- 20 MR CROSBY: Right. Yes.
- MS KROON: -- so it was returned to them. And then King Salmon put in an application, and it got notified. And I'm not sure exactly when they put it in, but in any ways, that -- the submissions have closed on that one, whereas the submissions close on 15 May for the Marlborough Aquaculture Ltd mussel farm.
- [5.45 pm]**
- 30 MR CROSBY: Right.
- CHAIRPERSON: Yes.
- 35 MR CROSBY: No, look, thank you for that. We were aware of the Marlborough Aquaculture Ltd application, but we weren't aware of the other one. So, thank you.
- MS KROON: You weren't aware of the King Salmon --
- 40 MR CROSBY: No.
- CHAIRPERSON: No.
- 45 MS KROON: -- application? Basically, King Salmon there goes for double parking. You might have heard of the term.
- MR CROSBY: Yes.

- MS KROON: Because the mussel farmers were quite enraged about it. Yes.
- CHAIRPERSON: Oh, well. We'll --
- 5 MS KROON: There is a few issues with it.
- CHAIRPERSON: -- get to the heart of it.
- MS KROON: But in any case, I just wanted to show you that some of this --
- 10 MR CROSBY: That's all right. In terms of --
- MS KROON: -- aquaculture space is much coveted these days.
- 15 MR CROSBY: Yes. Have you looked at these on the Marlborough District Council website or not?
- MS KROON: Of course.
- 20 MR CROSBY: You have. Yes. So, the date of closing of submissions for the New Zealand King Salmon, that's already passed, has it?
- MS KROON: Yes.
- 25 MR CROSBY: It has. Right.
- MS KROON: It's closed.
- MR CROSBY: Thank you.
- 30 MS KROON: I put in a submission, don't worry. All right. So --
- CHAIRPERSON: Alternative facts.
- 35 MS KROON: Yes. NZKS and the alternative facts, as we know those are used nowadays. The first one is New Zealand King Salmon is the world's largest aquaculture producer of the King Salmon salmon. All right. Now, the file in 2012 showed -- unfortunately the picture, it didn't,
- 40 on -- when I produced the slide, but now it doesn't show the bottom area. So how do you ... I'm not sure. I could shift it anywhere.
- CHAIRPERSON: All right. That works. You --
- MS KROON: Yes. Does it?
- 45 CHAIRPERSON: Yes, on the screen.
- MR DORMER: It blew up there. Yes.

MS KROON: Okay. Yes. That's those numbers, but all the way at the bottom it should be the ... it should be the ... no. I just -- it just didn't come through, and I was too tired to actually see that it didn't. Oh great. These numbers are the statistics from about 2000 to 2012 -- 2011. All right. So what we see here is that in the past Canada was a big producer of king salmon, yes? Chile also produced some king salmon and -- yes, was also quite a producer of king salmon. And then the bottom brown one is New Zealand, and a sliver is the United States. Now, all these countries have stopped farming the species. Chile has stopped by now too. Right. So, great, king salmon, we are the world's largest producer of the stuff. Also, you can see there ... okay. That's the whole of New Zealand. All right.

5

10

15

20

25

But why, when New Zealand only produces, you know, not even 15,000 tonnes of salmon per year, are we the largest producer? Why did Canada and Chile stop farming king salmon, and the USA before that? What's the reasons? Well, the low food-conversion rate, or is it sensitivity to certain diseases, for instance? Why does New Zealand King Salmon farm king salmon? Well, they actually have no choice, as in New Zealand you can only farm king salmon. Atlantic salmon was never -- it never naturalised, and it isn't allowed in for farming. In Tasmania they farm the Atlantic salmon. So, you know, you can make it sound like a virtue; it doesn't have to be. Right. From ... don't worry, I'm not going to explain the whole picture again.

CHAIRPERSON: No.

MS KROON: No.

30

CHAIRPERSON: We've been over that.

MS KROON: Yes. Right.

35

CHAIRPERSON: Yes.

MS KROON:

5 So, from the second half of the 2016 report to the stock exchange. What they -- King Salmon announces key fish performance metrics were in line with expectations for the period. So that's the second half of 2016. But feed-conversion ratio and mortality at 1.76 and 4.6 percent, respectively. Looking at this picture, the mortality rate for 2016 over the whole of the year was on average -- was 13.7 percent. Here they claim 4.6 percent. That's what they announced for the second half. That sounds a lot better, but, of course, it only tells half the story. From -- I think it was Grant Rosewarne's submission, but I could be wrong, they said -- he said there were no further mortality problems with the Waihinau Farm in 2016. Why? Well, there were no fish in 2016 in the Waihinau Farm, except a few in November and December. Am I right, Mark? So that solves the mortality problem in a way, but I wouldn't think that's the whole truth. The trouble is, though, the mortality is still 13.7 percent. So where were the fish dying this time, if not in Waihinau and not in Forsyth? Yes.

20 So here we have Ruakaka, and this is the 2016 period. So, over 2016 they would have salmon which were stuck in there in May 2015, probably, and then they are grown to full size, and harvesting should take place from August onwards; July, August, or March. And from May '16 onwards they would put new smolts in for the next year's cycle. It's also what I mean when I say that they do not do single-year class salmon farming in all their farms. Yes. Problem is, though, from May to December these smolts, they grow from -- I think they're 100 grams to 1 kg. And so the feed thrown in for the smalls will be increasing month by month. And from December '15 up to when they are ready for harvesting, July 2016, you would expect the feed levels to go up month by month, wouldn't you, as these fish should be harvested weighing 3 kg about?

35 Well, not in this case. I think this is where -- how the feeds that would have been if the fish had not been dying. There would've been a steady increase in how much feed would have been distributed into the farm. But unfortunately in March ... I can go back in. But -- okay. If I could go back I could show you that ... oh, it's just there. My guess is about two-thirds of the salmon actually died in the Ruakaka Farm between January and March 2016. So, so much for Grant Rosewarne's telling us, "No further mortality problems". At least not in Waihinau. All right.

- 5 Now, all mass mortalities happened during summer and beginning of autumn. Could it have something to do with higher water temperatures, which stresses the salmon who cannot regulate their own body temperature? Is it because the optimal growth temperature for the *Piscirickettsia salmonis* is 15 - 18 degrees Celsius, which corresponds with water temperatures reported during most disease outbreaks in salmonid culture according to Dr Diggles? Okay. You'll remember this graph.
- 10 CHAIRPERSON: Yes, we do.
- MS KROON: It shows the temperatures --
- 15 CHAIRPERSON: Do we need to go over it again?
- MS KROON: No, I'm not. I just want to point out that in this case we only see Pelorus and Tory Channel, and the Ruakaka Farm would have its graph -- it's temperature in-between the two, but over the 17 degrees.
- 20 CHAIRPERSON: Right.
- MS KROON: All right. Low flow happens all year round, not just in summer. It is water temperature that varies, and it's highest at the end of the summer. It is sustained high water temperature, not low flow, that correlates with
- 25 the mass mortalities. Right. Well, then the swap order for the relocation farms.
- CHAIRPERSON: Yes.
- 30 MS KROON: You've seen from Mark Preece --
- CHAIRPERSON: Yes.
- MS KROON: -- King Salmon last week, they -- if it's up to him, or up to King Salmon,
- 35 the first ones to be relocated is Crail Bay two times.
- CHAIRPERSON: Yes.

MS KROON: Yes? Followed by Waihinau, then Forsyth, Otanerau, and the last one would be Ruakaka. The order that MPI would like to relocate these farms is Ruakaka, Otanerau, Waihinau, Forsyth, Crail Bay. Well, what's the reasoning, I wondered? According to me, King Salmon first relocated those farms that are not in use, as it gives the biggest economic benefit, which is the only consideration for King Salmon and their shareholders. MPI, well, first relocate Ruakaka, as its consent expires in 2021 and it cannot be renewed. New farms will have new licence terms, probably between 20 and 35 years, an added bonus to this whole relocation process. That's why it's new farms, not relocated farms. Okay.

Community representatives, us; do not relocate any of the low-flow farms. Instead, apply all the benthic guidelines in farm with ecological carrying capacity of the site. Unsuitable sites, such as Crail Bay, can be used to grow mussels. And we've just seen that King Salmon is branching out into the mussel industry, so they can start straight away in Crail Bay.

MR DORMER: You can't make that assumption.

MS KROON: Why? They put in an application. You must admit --

[6.00 pm]

MR DORMER: No.

MS KROON: -- that looks like they want--

MR DORMER: I'll tell you -- I'll tell you the tactical reason why I would do that if I was advising King Salmon. If somebody else got their application in first, they would have a right of priority in time. And then they'd be able to say to King Salmon, "You can't proceed with this because we've got a permit for a mussel farm. However, if you'd like to give us \$5 million, we'll surrender it". So it's a --

MS KROON: Money.

MR DORMER: -- it's a bargaining position?

MS KROON: Yes.

MR DORMER: And so King Salmon, if I was acting for them --

MS KROON: Yes. And in the meantime they put the people of the Marlborough Sounds through more submissions. They put the Council through this charade of a submission process.

MR DORMER: You may raise those difficulties. All I'm saying to you is that the fact that they filed an application does not suggest that King Salmon want to put a mussel farm there. There are other explanations for that action.

5 MS KROON: Oh, yes. But, of course, in their submission -- in their application they make it sound like that is what they're intending to do. All right.

CHAIRPERSON: Right.

10 MS KROON: The future for the Marlborough Sounds. Imagine that today's proposal for -- from MPI was for five marine reserves in the Waitata Reach instead of five salmon farms. Would we still have to discuss the possible negative environmental impacts on the endangered king shag? These birds do not feed on the marine farms, but they might find marine reserves excellent feeding grounds. Imagine what a marine reserve can do for the health of this kind of birds, which are in such bad shape at this moment, how it would improve the biodiversity and ecosystems. There is only one marine reserve in the South, Long Island in the Queen Charlotte Sound. I quote from the Marlborough Sounds cruising guide.
15 "The diving and snorkelling here is exceptional with fish, crays and paua ranging in sizes that are considered rare outside of a marine reserve." I could go on and on about the benefits.

20 But do you know it's going to be a reality in another part of New Zealand? Remember about a year ago the government announced plans for two recreational fishing parks, one off the Hauraki Gulf, and the other for the Marlborough Sounds? A year on and the government just announced the follow-up plans for the Hauraki Gulf, 13 -- yes, 13 new marine protected areas; and for the Marlborough Sounds, up to six new salmon farms. What would people of Marlborough prefer, six marine protected areas, or six new salmon farms? The advice to the Minister of Primary Industries has to be, "Do not proceed with this proposal for salmon farm relocation in the Marlborough Sounds".
25 Okay. Thank you.

30 CHAIRPERSON: Thank you very much. Do you have any questions?

MR CROSBY: Thank you, no.

40 MR DORMER: No.

CHAIRPERSON: Have you?

45 MR DORMER: No. No.

CHAIRPERSON: Thank you very much for coming back, and thank you for your presentation. That completes the hearings for today. These hearings are now adjourned until 9 am tomorrow morning, 9 May, when we will begin by hearing from Jim Goulding. So we'll see you tomorrow morning. Thank you.

5

**MATTER ADJOURNED AT 6.04 PM UNTIL
TUESDAY, 9 MAY 2017**