

**BOARD OF INQUIRY
NEW ZEALAND KING SALMON REQUESTS FOR PLAN CHANGES AND
APPLICATIONS FOR RESOURCE CONSENTS**

IN THE MATTER of the Resource Management Act 1991 (the RMA)

AND

IN THE MATTER of a referral to a Board of Inquiry under Section 147 of the Act of requests for plan changes and applications for resource consents by The New Zealand King Salmon Company Limited

The Board of Inquiry

Retired Environment Judge Gordon Whiting (Chairperson)

Environment Commissioner Helen Beaumont (Board Member)

Mr Edward Ellison (Board Member)

Mr Mark Farnsworth (Board Member)

Mr Michael Briggs (Board Member)

Hearings: At Blenheim on 27-31 August; 3-7, 10-14, 17-21, 24-28 September; 1-2 October; at Waikawa Marae 3-5 October; at Portage 8 October; at Blenheim 9-12, 15-19 October.

Appearances: (for the purposes of cross-examination)

Mr D Nolan, Mr J Gardner-Hopkins, Mr J Marriner, and Ms R Balasingam for New Zealand King Salmon (**King Salmon**)

Mr P Beverley and Mr D Allen to assist the Board

Ms K Muller, Ms E Jamieson and Ms S Bradley for the Minister of Conservation

Mr W Heal for Sustain Our Sounds, Friends of Nelson Haven and Tasman Bay and Nelson Underwater Club

Mr S Quinn and Mr B Lupton for the Marlborough District Council

Ms B Tree for the Environmental Defence Society

Mr J Ironside for the Pelorus Wildlife Sanctuaries, J & R Buchanan, H Elkington and whānau

Mr M Hardy-Jones for Mr and Mrs Halstead

Ms S Grey for Pelorus Boating Club and others

Mr Caddie for the Kenepuru and Central Sounds Residents Association

Mr C Soderberg

Mr B Plaisier for Tui Nature Reserve Wildlife Park and Wildlife Trust

Mr F Hippolite for Ngati Koata Trust Board

Ms W McGuinness for McGuinness Institute

Mr S Browning

Mr D Boulton for Sustain our Sounds and Danny & Lyn Boulton and family

Mr J Brabant for Yachting New Zealand and Waikawa Boating Club 40

Mr J Winchester and Mr H Harwood for Interislander (Kiw Rail) Limited

Mrs J Hadley for East Bay Conservation Society

Ms K Ertel for Te Atiawa ki Manawhenua Te Tau Ihu Trust

Mr T Bennion for Tauhuaroa-Watson Whanau

Date: 22 February 2013

FINAL REPORT AND DECISION OF THE BOARD OF INQUIRY

DETERMINATION

A. The Plan Change

- 1. The Plan Change request is approved in part by allowing the Plan Change with respect to the proposed Papatua, Ngamahau, Waitata and Richmond Zones.**
- 2. The Plan Change request is rejected in part by declining the Plan Change with respect to the proposed Kaitapeha, Ruaomoko, Kaitira and Tapipi farms.**
- 3. The Plan Change is to be in accordance with Appendix 3 of this decision, but as amended by:**
 - (a) deleting all matters referring to the proposed Kaitapeha, Ruaomoko, Kaitira and Tapipi farms;**
 - (b) substituting the word [eight] with [four]; and**
 - (c) deleting the proposed Prohibited Activity Rule in Clause 16 and substituting it with the following as a new bullet point in Rule 35.5 Non-Complying Activities:**

“Marine farms within Coastal Marine Zone 3 other than marine farming provided for under Rule 35.4.2.10.1.”

B. The Concurrent Resource Consents

- 1. The resource consent application for Papatua is granted in terms of the Conditions of Consent as set out in Appendix 8.**
- 2. The resource consent application for Waitata is granted in terms of the Conditions of Consent as set out in Appendix 9.**

3. The resource consent application for Richmond is granted in terms of the Conditions of Consent as set out in Appendix 10.
4. The resource consent application for Ngamahau is granted in terms of the Conditions of Consent as set out in Appendix 11.
5. Because of the complexity of the Conditions of Consent and the number of iterative changes that have occurred since the commencement of the hearing, leave is given to the Marlborough District Council to apply within one week from receipt of this decision for amendments to correct any minor mistakes or defects

C. The White Horse Rock Application

1. The resource consent application for White Horse Rock is declined.

VOLUME ONE

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PREAMBLE

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Appendix C	New Zealand King Salmon – Suggested Minor and Technical Corrections

FINAL REPORT AND DECISION

Appendix 1	Map of Proposed Salmon Farm Locations
Appendix 2	Direction of the Minister of Conservation
Appendix 3	King Salmon Proposed Plan Change 24 (18 October 2012)
Appendix 4	King Salmon Proposed Draft Conditions of Consent
Appendix 5	List of Parties who gave Evidence and Representations
Appendix 6	Table of Contested Conditions of Consent
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Appendix 8	Final Conditions of Consent for Papatua
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PREAMBLE

[i] On 20 December 2012 this Board released, through the EPA, its Draft Decision and Report (**Draft Decision**) in accordance with Section 149Q(1) and (2) of the RMA.

[ii] In accordance with Section 149Q(3) of the RMA the EPA provided a copy of the Draft Decision to:

- [a] the applicant, New Zealand King Salmon (**King Salmon**);
- [b] the Marlborough District Council (**the Council**) as the Local Authority;
- [c] the persons who made submissions on the matter;
- [d] the Minister of Conservation; and
- [e] the Minister for the Environment.

[iii] In accordance with Section 149Q(4) of the RMA the EPA invited comments on minor and technical aspects of the Draft Decision from the persons who were provided with the report. No other person is entitled to make comments on the Draft Decision.

[iv] Section 149Q(5) of the RMA defines the nature or scope of the words “minor or technical aspects of the report”. Section 149Q(5) states:

- (5) Comments on minor and technical aspects of the report –
 - (a) include comments on minor and technical errors in the report, on the wording of conditions specified in the report, or that there are omissions in the report (for example, the report does not address a certain issue); but
 - (b) do not include comments on the board’s decision or its reasons for the decision.

[v] That the comments are constrained to address only minor or technical aspects and do not include comment on the decision or the reasons for the decision, means that the invitation does not extend to challenging the Board's findings or its reasons for those findings. Nor does it enable a person to redraft conditions or to propose substantive additions and deletions to the structure and content of the conditions. Comment on omissions must relate only to omissions of matters raised during the course of the hearing.

[vi] The time for the advancement of substantive changes to the Draft Conditions was at the hearing, when all parties had the ability to fairly debate the pros and cons of any proposed substantive change, and, if necessary call evidence on the issue.¹ It was for this reason that we emphasised before and during the hearing the efficacy and importance of all parties addressing the detail and content of the proposed conditions of consent at the hearing stage.

[vii] As for the decision, the comments should be directed to such matters as typographical errors, technical inaccuracies or inconsistencies or minor oversights. As for the conditions of consent, comments should be limited to such matters as correction of typographical errors, minor formatting corrections, minor changes in wording for consistency and/or to reduce ambiguity, updating references to figures and tables for accuracy and consistency;² and to ensure that the conditions are accurate and workable particularly from the Council's perspective.³

[viii] It would be wrong for us to give any weight or consideration to comments that exceed the constraints set out in Sections 149Q(4) and (5). It would equally be wrong for us to reassess the evidence or to again weigh and balance our findings.

THE COMMENTS

[ix] We received comments from 17 persons. Some of the comments were within scope, but others were outside the statutory constraints. To address those outside the statutory constraints would mean revisiting our decision. This we cannot do. We deal with each person's comment in turn.

¹ Final Report and Decision for the Upper North Island Grid Upgrade Proposal at [1580]

² 34th Memorandum of Counsel for King Salmon, 8 February 2013 at [4]

³ Memorandum of Counsel for the Council, 8 February 2013 at [2]

Mr Peter Rough

[x] Mr Rough was an expert landscape witness and not a person entitled to make comment under the Act. His concern was a failure to acknowledge his evidence as used in part of the decision. This was an oversight and has been corrected using the “slip rule”.

Ms Kristen Gerard for Kenepuru and Central Sounds Residential Association and family interests

[xi] Ms Gerard’s comments addressed minor typographical errors which have been corrected.

McGuinness Institute

[xii] The comments from the McGuinness Institute addressed a number of matters.

Paragraph [3]

[xiii] Paragraph [3] of the Draft Report states that in regard to production, King Salmon “currently has six farms in the Marlborough Sounds producing approximately 8,900 tonnes of King Salmon (also known as Chinook) per annum...”. The Institute’s comments pointed out that the figure of 8,900 tonnes per annum did not accurately reflect the evidence. They referred to the exhibit Dawson (e), being Mr Clarke’s actual figures of 7,660 tonnes for June 2011 and 7,032 tonnes for June 2012. They also referred to King Salmon’s report of 13 May 2011 and to Mr Clarke’s evidence of 12 June at [29] which estimated approximately 7,800 tonnes for the 2011/12 financial year and 7,200 tonnes for the 2012/13 financial year.

[xiv] The figure of 8,900 tonnes is taken from section 1.0 (Introduction) of the Assessment of Environmental Effects. It also aligns with the projected figures of 9,000 tonnes for 2012/13 as referred to in the “Overview” evidence of Mr Mark Gillard and Mr Mark Preece and the evidence of Mr Andrew Clark at [32]. In the interests of accuracy of historical production we propose to amend [3] to “approximately 7,000 to 7,500 tonnes”.

Feed/Fish tonnage Relationship

[xv] The comments state that the Draft Decision omits to account for the potential relationship between feed pellets and salmon tonnes to change significantly over time. The conditions control both mass of feed and percentage of nitrogen so no changes are required. There was no intention to control the tonnes of fish produced.

Dolphins

[xvi] The comments state that the Draft Decision omits to address adequately the risk to dolphins. We do not agree. The risk to dolphins has been considered and is addressed through the Marine Mammals and Shark Management Plan.

Economic

[xvii] The comments state that the Draft Decision omits to address the conclusions reached on economic benefit as altered by the granting of only four consents. We do not agree and refer to [267], [268], [1208] and [1228].

Condition 40

[xviii] We agree that for consistency and accuracy the word “associated” should be added to read “the consent holder shall remove all *associated* structures ...”. The relevant condition of consent for each farm has been changed. We have not added the removal of “fixtures” which would include the anchor blocks, as removal of these may disturb the seafloor. A decision on whether or not these should be removed should be made at the time.

Condition 41

[xix] We do not agree that “extruded pellets or similar” should be enlarged to specify the make up of the pellets as the controls set out in the conditions are adequate.

SoundsFish, Marlborough Recreational Fishers Association and Mr Des Boyce

[xx] Their comments took issue with our findings in [153] and [268] of the Draft Decision. Such comments are beyond the statutory constraints and we cannot revisit our findings.

[xxi] Concerning consent conditions, the comments considered the period over which the Baseline Plan is to be established is too short. Condition 74B requires that the monitoring or analysis required in terms of the Baseline Plan shall not be commenced until the Baseline Plan has been approved by the Marlborough District Council, after having regard to the recommendations of the Peer Review Panel. This provides sufficient constraints so no change is needed.

[xxii] The comments also sought the word “some” in [319] (line 7) and [322] (line 2) be substituted with “many”. We see no need. They are both relative terms and need to be considered in context.

Mr Martin Pinder

[xxiii] Mr Pinder sought in his comments a Noise Management Plan; conditions relating to recording of noise levels; and conditions relating to design and size of structures, navigational lighting and marking. We can understand the Pinders’ concerns. But these are all matters that should have been put forward at the substantive hearing so that they could have been addressed by evidence and/or submissions. They are outside the scope of comments as allowed under the RMA.

[xxiv] Mr Pinder also seeks conditions relating to the Residential Amenity Plan and input into the Social Impact Management Plan. Again these are matters that should have been raised at the substantive hearing.

[xxv] Some of the comments or requests may, by agreement, be included in the appropriate management plan for the Ngamahau farm after discussion with King Salmon.

[xxvi] Mr Pinder further sought clarification of Condition 93. This condition needs to be read in conjunction with Conditions 64 and 64A relating to marine mammal and shark management.

Mr Peter Beech

[xxvii] Mr Peter Beech has provided comments that address his reasons as to why our decision and reasons are wrong. The comments are outside the scope of comments as allowed under Sections 149Q (4) and (5) of the RMA.

Te Atiawa

[xxviii] The conditions in the Draft Decision identify Te Atiawa Te Manawhenua ki Te Tau Ihu Trust (**Te Atiawa Trust**) as the governance entity for Te Atiawa. They advise that the treaty settlement process may require new entities to be established. We thus accept their request to add each time the following words “(or their successors)” to any conditions that include the Trust.

Te Runanga o Ngati Kuia, Ngati Koata and Mr Raymond Smith

[xxix] Given the complex relationship between the iwi of Te Tau Ihu and the complexity of their interests, we consider it appropriate to deal with the comments made by these three parties together. Also, because of the complexities, we deem it necessary to make further comment. Any comment we do make will, in the final analysis, be subject to the statutory constraints.

[xxx] First the Board does not intend to, nor has it, made decisions on the areas of interest and responsibility of the respective iwi. That can only be made by iwi themselves. Iwi who can demonstrate their associations and rights to particular areas.

[xxxi] Te Atiawa Cultural Impact Assessment, at page 3, states that they have manawhenua and manamoana in Queen Charlotte Sound and Tory Channel and also hold manamoana and manawhenua interests in Port Gore.

[xxxii] At the hearing while sitting at Waikawa Marae, Mr James Gardner-Hopkins, Counsel for King Salmon, asked Mr Smith to confirm that the relief he sought for Ngati Kuia was limited to the farms in Te Hoiere/Pelorus Sound, which Mr Smith confirmed was the case.⁴ On the same page of the transcript, Ms Ertel, Counsel for Te Atiawa Trust, asked Mr Smith if he was aware of the Waitangi Tribunal’s finding that Te Atiawa held exclusive manawhenua and tangata whenua and kaitiaki

⁴ Transcript at 3086

status in Queen Charlotte Sound and Tory Channel following the Treaty. Mr Smith said he certainly did not agree. He also agreed that neither he nor Ngati Kuia had taken any steps in the High Court to review this finding.

[xxxiii] Ms Ertel noted that Mr Smith's answer to Mr Gardner-Hopkins confirmed that Ngati Kuia were only looking at the Pelorus Sound sites. Mr Smith replied that was not correct as they were neutral on the other sites – "we were neutral for reasons, we had concerns". He argued that being tangata whenua legitimised their rights to comment in a neutral way on Queen Charlotte Sound proposals. Mr Smith's main argument seems to be that there are no "exclusive" zones, that it is a collaborative process among iwi in Te Tau Ihu.

[xxxiv] We are satisfied that Ngati Kuia, in their evidence, were confining their focus to Te Hoiere/Pelorus Sound. We now address the parties' main concerns.

The Peer Review Panel and Tangata Whenua Panel

[xxxv] The inclusion of Te Atiawa Trust on the Peer Review Panel arose out of the negotiated settlement arrived at by Te Atiawa Trust during the hearing. The Tangata Whenua panel was an attempt by King Salmon, in the face of opposition by Ngati Koata and Ngati Kuia to the salmon farm applications, to make provision for iwi involvement (that iwi could choose to take up or decline) should the consents or some of them be approved for any of the Pelorus Sound farms. The conditions therefore make reference to all three iwi, but separately, to provide an opportunity for iwi to participate.

[xxxvi] Ngati Koata has maintained in their comments, that their omission from the Peer Review Panel may have been an oversight. This is of course not correct. King Salmon could not make a decision to include them without their agreement. The only course of action they had was to make provision for Ngati Koata and Ngati Kuia, that either iwi could choose to take up or decline, in the membership of a Tangata Whenua Panel.

[xxxvii] It may well be, that provision for a Pelorus Sound iwi representative on the Peer Review Panel would improve the workability of the conditions. Alternatively it may be that Ngati Koata and Ngati Kuia are included in selecting the Peer Review Panel representative. We consider the suggestion that Te Atiawa

Trust be included in the membership of the Tangata Whenua panel is also a sound idea.

[xxxviii] Making such a provision would in our view make the conditions inclusive. It would also avoid issues over manamoana and manawhenua status, and appropriately leaves the matter of principal interests in the representative areas in the hands of the iwi themselves to attend to as they see fit.

[xxxix] However, such a change to the decision conditions would amount to more than a minor or technical adjustment. We thus do not have jurisdiction. These are matters that should have been addressed at the hearing stage.

Preferential treatment of Te Atiawa Trust

[xl] The objection of Ngati Kuia made by Mr Smith regarding Te Atiawa Trust being a member of the Peer Review Panel overlooks the fact previously noted, that the Te Atiawa Trust engaged with King Salmon and negotiated a settlement which included membership of the Peer Review Panel.

Thirty-five year term

[xli] The issue raised by Ngati Kuia regarding the transfer of knowledge (matauranga) between generations was specifically addressed by this Board in our deliberations. The key to addressing this issue is ensuring that the two panels are properly engaged and tangata whenua interests are appropriately linked. We are not able to revisit the term of the consent.

King Shag Management Plan

[xlii] This is a new condition imposed by the Board to address potential effects on King Shag. As such this is the first opportunity the parties have had to consider how such conditions would work.

[xliii] We support the inclusion of Ngati Koata and Ngati Kuia in the Management Plan process relating to the King Shag monitoring. Such an inclusion would be consistent with the important place Te Kawau-a-Toru as a taonga have in their traditions and associations with Te Hoiere. Such an inclusion would also be consistent with the conditions relating to management plans for other matters

involving iwi. We amend Condition 11 of the Waitata and Richmond conditions of consent accordingly.

Mauri of the Moana

[xliv] We agree the function of kaitiakitanga is the process through which the mauri is properly addressed. To give effect to kaitiakitanga the appropriate engagement and inclusion of tangata whenua in the ongoing management and monitoring process is essential. However, this does not require a change to the conditions. It is a process that should be worked through by King Salmon and the Tangata Whenua Panel.

Waka Routes

[xlv] We agree that Condition 35 of the Conditions of Consent set out in Appendix 7 should be changed to require the consent holder to notify Ngati Koata of the initial placement of the first structures within the occupancy area of the farms in the Waitata Reach and any subsequent additions or establishment of the structures. This will require amending Condition 35 (now 29) of the conditions of consent for the Waitata and Richmond Farms by adding after the words “New Zealand” in the third line, the following “(and the Ngati Koata Trust Board (or their successors))”.

Sustain Our Sounds and Others

[xlvi] Sustain Our Sounds filed quite detailed comments on a number of issues. Unfortunately many, if not all, of the comments sought to relitigate some of our findings rather than suggest constructive minor technical changes. We address each in turn.

Planning Provisions

[xlvii] Part one addressed the objectives and anticipated environmental results in the Regional Policy Statement. The effects have all been considered in the context of those provisions. No specific changes are sought. The criticism amounts to more than minor or technical comments.

Precautionary approach

[xlvi] Part Two addresses the precautionary approach. While acknowledging failings in the assessment of effects, our finding in the Draft Decision was that this is not fatal to the grant of a more limited number of marine farm consents with stricter conditions. Again these comments are of more than a minor or technical nature and seek to relitigate.

Areas of significant ecological value

[xlix] Part Three addresses areas of significant ecological value. The Board is fully aware of the differences between the area directly beneath the farm, the wider area affected by the farm and the application area as defined by the plan change. These differences were fully considered in our determinations. Again the comments are more of a criticism of the decision rather than suggested constructive changes of a minor or technical nature. They are outside the scope of comments as constrained by the relevant provisions of the RMA.

Nitrogen discharges

[l] Part four addresses the nitrogen discharges and consequential effects. These were considered extensively in the Draft Decision. Again no changes are required.

King Shag

[li] Part five addresses King Shag and the potential for hysteresis. This evidence has all been assessed and no changes are required. The condition should be amended to clarify that surveys should be undertaken at least once every three years. King Salmon have offered an amendment to address the ambiguity as it exists, which we approve. One survey prior to the operation of the first new salmon farm is sufficient given the information already available.

Statistically Significant Decline

[lii] The concerns raised over the reference to a “statistically significant decline” are valid. It is a matter which has been addressed by King Salmon. We propose to

adopt the recommendation of King Salmon based on Dr Sagar's advice to them, namely a confidence level of $p < 0.05$.

Papatua site – Fallowing Regime

[liii] This matter was fully covered in the decision. Without restating the decision, King Salmon volunteered conditions restricting initial feed levels at this site. The conditions require monitoring and compliance with both benthic and water quality parameters. No change is required.

Appendix 6 – Seabed recovery

[liv] The contested issue with respect to seabed recovery was an issue that was covered in the Draft Decision quite extensively. It is more than a minor or technical matter. No change is required.

The term of the consent

[lv] We have addressed the term of the consent in the Draft Decision and made a finding. This is not a minor or technical matter. If there are unanticipated adverse effects the Council can address this through a Section 128 review.

Mr Danny and Mrs Lyn Boulton

[lvi] The comments of Mr and Mrs Boulton cover a range of matters. Again, unfortunately, many of the comments exceed being of a minor or technical nature and are an attempt to relitigate some of our findings.

Weight given to evidence

[lvii] Mr and Mrs Boulton have opined that the Board has not given adequate weight to the evidence presented and in some cases makes no mention of the evidence presented. This is not a minor or technical matter. It is just not possible to mention all of the evidence but all has been considered. This is a matter we have addressed in the Draft Decision at [72].

The Bottlenose dolphin

[lviii] The matter of the bottlenose dolphin and related issues have all been considered and addressed through the conditions of consent particularly the condition requiring a Marine Mammal and Shark Management Plan.

Appendix 6

[lix] The matters in the comments referring to Appendix 6 are more than minor or technical errors and do not warrant any changes to the Draft Decision.

Appendix 7

[lx] A number of matters contained in Appendix 7 (the Conditions of Consent) were referred to by Mr and Mrs Boulton:

- [a] Condition 11A⁵ - the King Shag Management Plan. Mr and Mrs Boulton sought that Condition 11A specifically name Mr Rob Shuckard as the expert to have input into the Management Plan. For Condition 11A to specifically name Mr Rob Shuckard as the expert to have input into the Management Plan would not be appropriate. To name a specified individual would not be consistent with the other conditions requiring input from experts;
- [b] To seek a change to the ES level at Richmond and Ngamahau is more than a minor or technical matter;
- [c] The measuring and monitoring of greywater has been addressed in the Joint Memorandum filed by Council and King Salmon; and
- [d] Draft Report and Reasons of the Board. The comments under this heading do not need to be addressed by changes to the Draft Decision other than the request for 8-10 years baseline monitoring. This is more than a minor or technical matter. In any event we do not agree for the reasons given in the Draft Decision.

⁵ Now Waitata/Richmond Final Condition 11

Dr Ian Henderson

[lxi] Dr Henderson was an expert witness. He was also a party. His comments address four matters.

Concerns about the SELFE model

[lxii] Concerns relating to the SELFE model that were raised at the hearing have all been considered by the Board. To revisit our findings and determination at this stage would be more than a minor or technical matter. No changes are required to the Draft Decision.

Concerns about the historical data on water quality

[lxiii] Again, these concerns, which were raised at the hearing, have all been considered by the Board. The comments go beyond matters of a minor or technical nature. No changes are required to the Draft Decision.

Concerns about the need for a “power analysis”

[lxiv] The requirement for “power analysis” in the design of the monitoring programme is best addressed by the individuals undertaking this work and then by the Peer Review Panel. Such detailed methodology is not required in the conditions of consent.

Condition 82⁶ headed “Biological Compensation”

[lxv] We agree that Condition 82 does not address biological compensation and the Board has not considered it to be compensation. The heading for the condition should for accuracy read “Benthic Biological Survey” as suggested by the Marlborough District Council.

Mr Cliff and Ms Karen Marchant and Ms Kristen Gerard and others

[lxvi] The main concerns of the above parties are focussed primarily on the service vessel required to manage the Papatua farm. They propose various conditions

⁶ Now Ngamahau Final Condition 67

relating to the service vessel that restricts where it could anchor; restricts its navigation; and addresses lighting and recreational issues of its crew.

[lxvii] It is our understanding from the evidence that it is not unique to have this type of vessel in Port Gore. Service vessels are common in the Marlborough Sounds tending to mussel farms and other marine farming and similar type activities. Port Gore is also a place of refuge for larger vessels in times of bad weather.

[lxviii] These concerns are outside the statutory scope of comments. They are not minor or technical matters. They are not omissions of issues that were raised at the hearing.

[lxix] Some of the concerns/requests may, by agreement, be included in the appropriate management plan for the Papatua farm after discussion with King Salmon.

Ms Claudia Janssen

[lxx] Ms Janssen's comments raised three matters that need addressing, namely:

- [a] The need for a "power analysis" in the monitoring programmes. The requirement for a "power analysis" in the design of the monitoring programmes is best addressed by the scientists undertaking this work, and then by the Peer Review Panel. Such detailed methodology is not required in the conditions of consent;
- [b] Environmental compensation - We agree that Condition 82 does not provide biological compensation. The heading is to be changed to read "Benthic Biological Survey" as suggested by the Marlborough District Council; and
- [c] Suggested changes requiring financial compensation are rejected as being more than minor or technical error and they should have been raised at the substantive hearing.

Minister of Conservation

[lxxi] Counsel for the Minister of Conservation filed quite detailed comments relating to the Draft Decision and conditions of consent. The comments were set out in tabulated form and for convenience we produce as **Appendix A** to this Preamble the table with an additional column showing our comments.

The Marlborough District Council

[lxxii] The Council has filed detailed comments. As Counsel for the Council pointed out⁷ the comments are primarily intended to ensure that the conditions are as accurate and workable as possible.

[lxxiii] We accept the Council's view of the need for accuracy and workability of the conditions of consent, as it is the Council who has the statutory function of administering and enforcing the conditions of consent. We are also mindful of the fact that the conditions are detailed and complex and have been developed through the involvement and input of a number of parties and experts.

[lxxiv] Bearing this in mind and the fact that the conditions will need to be incorporated into the Council's consent computer system, we have encouraged the Council and the Applicant to work together to settle the conditions for such a purpose. As a consequence the Council and the Applicant have produced a table with suggested changes to the wording of the conditions. We set out as **Appendix B** to this Preamble the table with an extra column showing our comments and/or findings where necessary. We are prepared to make changes which are outside scope by agreement of the parties. Where matters are beyond scope, we are not prepared to do so. We do not have jurisdiction. Also, it would be unfair to make important changes without the opportunity of submissions and/or evidence.

New Zealand King Salmon

[lxxv] Counsel for King Salmon filed a memorandum⁸ setting out King Salmon's comments on minor and technical aspects of the Draft Decision. Attached as

⁷ Memorandum of Counsel dated 8 February 2013 at [2]

⁸ 34th Memorandum of Counsel to the Board of Inquiry

Appendix 1 to the Memorandum is a table setting out its comments. We attach as **Appendix C** to this Preamble, that table.

[lxxvi] We propose to make the minor or technical corrections suggested by King Salmon as set out, save for the suggested changes to Condition 64⁹ – Marine Mammals and Sharks – which is to be amended in accordance with the Minister of Conservation’s comments.

CONCLUSION ON COMMENTS

[lxxvii] We thank the parties for their comments, particularly those who proposed constructive changes of a minor or technical nature. It will be noted that there are a considerable number of minor or technical changes to the conditions. This is not surprising as the conditions are quite complex. They morphed in an iterative way as the hearing progressed to address matters that were raised by the evidence.

[lxxviii] The number of changes also reflects the fact that many parties did not engage with the content of the conditions during the hearing. Those that did engage did so late in the hearing. We have incorporated the necessary changes to the Draft Decision in this Final Report to reflect those changes of a minor or technical nature that the Board has agreed to.

⁹ Now Papatua Final Condition 45, Waitata/Richmond/Ngamahau Final Condition 49

INTRODUCTION

[1] The top of the south, or Te Tau Ihu o Te Waka – *the prow of the canoe* – a place etched with the traditions of the tangata whenua. Marlborough Sounds sits between Tasman Bay to the west and Cloudy Bay to the east. The underpinning geomorphic structure of submerged river valleys forms very distinctive and convoluted networks of headlands and seascapes and a range of terrestrial and marine habitats. A complex mosaic of land use and landscapes has evolved as a direct result of time and human occupation, especially the last 150 years through farming, forestry, fishing, aquaculture, coastal settlement and more recently indigenous forest reversion.

[2] The commercial operation of aquaculture in the Marlborough Sounds is enabled by the Marlborough Sounds Resource Management Plan (**the Sounds Plan**) which was notified on 31 July 1995 and made operative in part in March 2003. Currently 575 marine farms have been consented. By far the majority of these are mussel farms but they encompass 59 species of fish, algae and other forms of aquatic life. The Plan splits the water space of the Sounds into two zones – Coastal Marine Zone 1 (**CMZ1**) and Coastal Marine Zone 2 (**CMZ2**). In CMZ1 no new marine farming is allowed. It is a prohibited activity. Aquaculture is enabled in CMZ2, once a resource consent has been granted.

[3] New Zealand King Salmon (**King Salmon**) is by far the largest producer of salmon in New Zealand. It currently has six salmon farms in the Marlborough Sounds, producing approximately 7,000 to 7,500 tonnes of King salmon (also known as Chinook) per annum, at Ruakaka Bay, Forsyth Bay, Waihinau, Otanerau, Te Pangu and Clay Point. Two small farms have recently been purchased at Crail Bay, but are not operational. The company now proposes to significantly increase its production.

[4] King Salmon proposes to establish and operate a further nine salmon farms in the Marlborough Sounds. Five are proposed to be located in Waitata Reach in Pelorus Sound, one in Port Gore, two in Queen Charlotte Sound at the entrance to Tory Channel, and one is located within the Tory Channel. The locations of the proposed salmon farms are illustrated in **Appendix 1**.¹⁰

¹⁰ Boffa EiC at Figure A1

[5] At eight of the sites, King Salmon seeks, by way of Plan Change 24 (**the Plan Change**), to change the current activity status of marine farming from prohibited to discretionary, and has lodged concurrent resource consent applications for each of those eight sites. One of the sites, White Horse Rock situated in the Waitata Reach, is not within an existing prohibited activity status area and a resource consent is sought for this site as a discretionary activity.

[6] King Salmon lodged its requests for plan changes and its applications for resource consents on 3 October 2011 with the Environmental Protection Authority (**EPA**).

[7] The King Salmon requests for plan changes comprised:

- [a] A plan change request (the *Main Plan Change* titled *Sustainably Growing King Salmon*) to create a new salmon farming zone (Coastal Marine Zone 3 – **CMZ3**) in eight specific areas in the Sounds Plan comprising the sites in the prohibited activity status area; and
- [b] A plan change request (the *Ancillary Plan Change*) addressing the plan provisions relating to the allocation of the right to apply for coastal permits for marine farming in the Sounds Plan. By memorandum dated 3 August 2012 King Salmon gave notice of its intention not to proceed with this request. We thus do not mention it further.

[8] The EPA deemed the proposals to be complete on 10 October 2011 in accordance with Section 88, Schedule 4 and Clause 22 of Schedule 1 of the Resource Management Act 1991 (the **RMA**). The EPA recommended to the Minister of Conservation (**the Minister**) that the King Salmon proposals involve matters of national significance, and thus should be considered by a Board of Inquiry. On 3 November 2011, the Minister referred the matter to this Board.

[9] As required under Section 149P(1)(a) of the RMA we have had regard to the Minister's reasons for making the direction to refer the matter to this Board, and we attach a copy of this direction as **Appendix 2**.

[10] By decision dated 10 February 2012, the Board accepted the Plan Change request. The Plan Change request and applications for resource consents were notified on 31 March 2012. The Plan Change request and the applications for resource consent (save for the White Horse Rock application) are to be processed as concurrent applications under Section 165ZN of the RMA. The White Horse Rock application is to be processed as a resource consent application.

[11] Under Section 149P(8) we are to:

- [a] Firstly, determine matters in relation to the plan change request; and
- [b] Secondly, determine matters in relation to the concurrent applications, based on our determination of matters in relation to the plan change request.

[12] For the purpose of the second determination, we are to process, consider and determine the concurrent applications as if a regional council acting under Section 165ZW of the RMA. Pursuant to Section 165ZW of the RMA, we are required to process the concurrent applications that the Plan Change requests relate to, on the basis that the activities for which the application are made are non-complying activities. The concurrent applications must then be considered and determined in accordance with the activity status as determined in our decision on the Plan Change request.

THE PLAN CHANGE

Context - Operative Plan and Changes Sought

[13] As a unitary authority, the Marlborough District Council (**the Council**) has the powers, functions and responsibilities of both a regional and district council. Under the RMA, it therefore has an obligation to prepare a Regional Policy Statement, a Coastal Plan, a District Plan, and such other Regional Plans as are necessary. With its dual responsibilities, the Council has promulgated a combined Regional, District and Coastal Plan (the Sounds Plan).

[14] The Sounds Plan sets out the significant issues for the Marlborough Sounds administrative area. The Plan then sets out Objectives, Policies and Methods, including Rules, to resolve those issues and to promote the sustainable management of natural and physical resources in the Marlborough Sounds.

[15] The Sounds Plan is comprised of three volumes:

- [a] Volume 1 – Contains the issues to be addressed by the Sounds Plan as a whole, the Objectives, Policies and Methods to be used in promoting sustainable management of the natural and physical resources of the Marlborough Sounds and the Environmental Results Anticipated from their implementation.
- [b] Volume 2 – Sets out the Rules to achieve the Objectives, Policies and Methods, including the assessment criteria for those activities subjected to resource consents. Volume 2 also contains the interpretation section which defines the words, terms and phrases used in the Plan.
- [c] Volume 3 – Contains the Planning Maps for the Sounds Plan.

[16] The Plan Change introduces a new Explanation, Policies, Methods, Zoning and Rules to the Sounds Plan, in order to recognise and provide for the development of salmon farms and the carrying out of salmon farming at the eight discrete locations. It also introduces new wording to the Issues and Explanation. The Plan Change as notified, has undergone some iterative changes as a consequence of the submissions filed, the facilitation process, the caucusing of experts and the hearing process. The final draft of the Plan Change is dated the 18th day of October 2012, and is attached as **Appendix 3**.

[17] The Plan Change seeks to introduce changes to Chapter 9 of Volume 1, headed *Coastal Marine*. It does not seek alterations to any other chapters in Volume 1. The Plan Change also seeks changes to the Rules in Chapter 35 of Volume 2, headed *Coastal Marine Zones*; and a new Appendix D3 to Volume 2. It finally proposes to introduce changes to Volume 3 – the Planning Maps.

[18] The Plan Change sites are all currently zoned CMZ1 in the Sounds Plan (apart from a small corner of the Waitata site which is currently in CMZ2). In the CMZ1, new marine farming is prohibited. The Plan Change creates a new zone which provides for the marine farming of salmon – CMZ3. Each of the CMZ3 sites (**the Plan Change sites**) is to be shown on the planning maps, with additional details being shown on plans of the sites in the new Appendix D3.

[19] The Plan Change alters the activity status of marine farming at each of the Plan Change sites from prohibited (under the CMZ1) to discretionary, provided the standards are complied with. It also sets out a number of assessment criteria to guide decision-makers with respect to any consent application.

Volume 1 – Issues, Objectives, Policies and Methods

Issues

[20] Each chapter in Volume 1 of the Sounds Plan, starts with a discussion of the relevant resource management issues. The Plan Change seeks to add a statement into Issue 9.2. This issue relates to the private occupation of the CMA. The Plan Change amendments refer to enabling the expansion of the salmon farming industry; and explaining that the Sounds Plan (as amended) provides for the establishment of new marine farms, that will contribute to the salmon farming industry, and specifically identified locations where adverse environmental effects can be satisfactorily avoided, remedied or mitigated.

[21] Issue 9.2 currently discusses the potential need for plan changes to provide for different marine farming species and structures (beyond the predominant mussels in the Marlborough Sounds). The Plan Change seeks to add to this discussion by stating that this has been achieved by provision for the expansion of the salmon farming industry (through the Plan Change).

Objectives

[22] No amendments are sought to the objectives of the Sounds Plan.

Policies

[23] The Plan Change seeks to introduce two new policies, which provide specific recognition and support for the proposed CMZ3 and its rules – one in relation to the private occupation of the CMA, and one in relation to alterations to the foreshore and seabed.

[24] The two new policies are proposed to be added under Issue 9.2, as proposed to be amended, and under existing Issue 9.4, which relates to alterations to the foreshore and seabed. Explanations are added for each of these new policies, as well as associated Methods of Implementation.

[25] The objective under Issue 9.2 is:

Objective 1 The accommodation of appropriate activities in the coastal marine area whilst avoiding, remedying or mitigating the adverse effects of those activities.

[26] A new Policy 1.15, with an explanation, is proposed to enable salmon farming through the CMZ3 and discretionary activity status in a limited number of specifically identified sites and appropriate locations. Policy 1.15 is proposed as follows:

Policy 1.15 Enable the marine farming of salmon by identifying [eight] appropriate sites in the plan as Coastal Marine Zone 3, where salmon farming is a discretionary activity.

[27] Recognition of the CMZ3 and its rules is also sought to be included in the Methods of Implementation, which seek to give effect to the Objectives and Policies by zoning and rules. It is proposed to add the following under the heading *Zoning*:

Zoning ...
In Coastal Marine Zone 3, the plan identifies [eight] appropriate sites to provide for the development of salmon farming in accordance with Policy 9.2.1.1.15.

[28] A new Explanation for this Method is proposed:

[Eight] specific sites suitable for new salmon farms have been identified in the Coastal Marine Zone 3.

[29] The Objective under Issue 9.4 is:

Objective 1 Protection of the coastal environment by avoiding, remedying or mitigating any adverse effects of activities that alter the foreshore or seabed.

[30] A new Policy 1.11, with an explanation, is proposed under this objective, to recognise the discretionary activity status in the CMZ3 for the expansion of salmon farming at appropriate sites:

Policy 1.11 Recognising (by way of discretionary activity status in the Coastal Marine Zone 3) provision for salmon farming at [eight] appropriate sites.

Some alteration to the foreshore and seabed is necessary to enable the continuation of normal coastal marine activities. The policies seek to provide a guide for their continuation while controlling the potentially significant adverse effects which can arise from any alteration to the foreshore and seabed. *Some alteration is also necessary to enable salmon farming at [eight] identified sites.*

Volumes 2 & 3 – Rules and Planning Maps

Rules

[31] The rules for both the operative CMZ1 and CMZ2 are contained in Chapter 35.0. The only differences between the two zones relate to the rules for marine farms and marine farming. All the collective rules (which cover both CMZ1 and CMZ2) are automatically available for use in the CMZ3. It is proposed only to introduce new rules where they will be specific to the proposed new zone. This mostly applies to the rules for marine farms and marine farming, although a new standard for noise from marine farming in the CMZ3 has also been proposed.

[32] We set out the following summary of the proposed new rules:

- [a] Each Plan Change site is proposed to be identified on the planning maps, showing its individual site number and name. Plans showing these amendments to the planning maps are attached to the Plan Change;
- [b] Each Plan Change site is 16.5ha in area, except for:
 - [i] Papatua, which is 91ha (this site is larger as it is proposed to be farmed using a rotational fallowing strategy, such that only a small proportion of the site will be used by salmon farm net pens at any one time); and
 - [ii] Ruaomoko, which is 14.1ha (this site is smaller in size to ensure there is sufficient separation from the path taken by the Interislander ferry);
- [c] Separate plans showing the Plan Change sites are proposed to be included in a new Appendix D3. On these plans, a cage area boundary is shown within each zoned area, where a proposed CMZ3 standard requires all salmon farm net pens to be located; and

[d] A specific new rule is proposed within Chapter 35.4 Discretionary Activities. The new discretionary activity proposed is:

- Marine farms and marine farming in Coastal Marine Zone Three complying with the standards specified in Rule 35.4.2.10.

Definitions

[33] Marine farms and marine farming are each separately defined in the Operative Plan as follows:

MARINE FARM	means any form of aquaculture characterised by the use of surface and/or sub-surface structures located in a coastal marine area.
MARINE FARMING	<p>Marine farming means the activity of breeding, hatching, cultivating, rearing, or ongrowing of fish, aquatic life, or seaweed for harvest (and includes spat catching and spat holding) when carried out on a marine farm; but does not include:</p> <ul style="list-style-type: none"> (a) Any such activity where fish, aquatic life or seaweed are not within the exclusion and continuous possession or control of the holder of a marine farming permit; or (b) Any such activity whether fish, aquatic life or seaweed being farmed, cannot be distinguished, or be kept separate, from naturally occurring fish aquatic life, or seaweed.

[34] Ms Sarah Dawson, the planning consultant for King Salmon, considered that the definitions were broad and imprecise. As such, it is not clear what range of specific activities associated with marine farms and marine farming are included within each of the operative definitions.

[35] As a result of this uncertainty, it is proposed, in the interests of clarity, for aspects of marine farms and marine farming within the CMZ3 to be addressed as part of one activity.

[36] Thus, it is proposed to add the following new Rule 35.4.2.10:

35.4.2.10 Marine Farms and Marine Farming in Coastal Marine Zone Three

Marine farms and marine farming in Coastal Marine Zone Three are Discretionary Activities provided they conform to the following standards and terms (notwithstanding other provisions of this Plan relating to Limited Discretionary, Discretionary or Non-Complying Activities).

In terms of this Rule, marine farms and marine farming shall include:

- a) All structures, activities in the coastal marine area, occupation of the common marine and coastal area, disturbance of or damage to the foreshore or seabed, and other ancillary activities and structures, associated with marine farms and marine farming;
- b) All discharges to water or air associated with marine farms and marine farming, but excluding the discharge of human sewage;
- c) The taking and use of coastal water associated with marine farms and marine farming.

[37] The effect of Rule 35.4.2.10 is to bundle all aspects of marine farms and marine farming within “marine farms and marine farming” for the CMZ3.

Prohibited Activities

[38] It is proposed to add the following as a new bullet point in Rule 35.6 *Prohibited Activities*:

- Marine Farms and Marine Farming in Coastal Marine Zone 3 which do not comply with Rule 35.4.2.10.1 Standard (a)

[39] The effect of this rule is to make all marine farming, other than the farming of King salmon, a prohibited activity in CMZ3.

[40] A range of other activities is currently permitted in the Coastal Marine Zones, provided standards are complied with, and the Plan Change does not amend these provisions.

Standards

[41] The following standards for discretionary activity under the zone are proposed in new Rule 35.4.2.10.1:

- [a] marine farming is limited to the farming of King salmon;
- [b] all salmon reared must be from roe sourced in New Zealand;
- [c] all salmon farms' cages (other than temporary pens for transferring salmon to or from the site) must be located within the Cage Area Boundaries;
- [d] the maximum area of salmon farm cages within any Plan Change site (other than temporary pens) is specified for each location;
- [e] within any CMZ3 site there can be no more than one barge, with a maximum footprint of 280m²;
- [f] the maximum height of any building or structure is 7.5m above the water level;
- [g] the initial and maximum annual feed discharges within each Plan Change site;
- [h] noise limits at specified noise boundaries; and
- [i] limitations on exterior lighting other than lighting required for navigational purposes.

[42] Existing operative standards for permitted and controlled activities in all the coastal marine zones would continue to apply, save for an amendment to the noise standard, which introduces an additional location at which the noise standard is to be measured. Noise is to be measured 250m from any marine farm surface structure, instead of the closest boundary of the Coastal Marine Zone (which would be at the CMZ3/CMZ1 boundary), and at the notional boundary of any existing dwelling.

Non-Compliance with Standards

[43] Non-compliance with the standards defaults to a non-complying activity, except for the species standard as discussed above.

Assessment Criteria

[44] The list of assessment criteria relate to:

- [a] The benefits of marine farming;
- [b] The values of significance to tangata whenua;
- [c] Public access in the vicinity of the farm;
- [d] Seabed and foreshore disturbance from the anchoring systems;
- [e] Structural safety and security;
- [f] Adverse effects from the structures and other facilities on navigational safety, landscape, natural character, visual amenity values, marine mammals, pelagic fish and seabirds;
- [g] Effects of discharges to coastal water in relation to seabed deposition, water quality, ecological effects, associated cumulative effects, staging and adaptive management provisions;
- [h] Biosecurity and disease risks;
- [i] Adverse effects from submerged artificial lighting;
- [j] Operational practices relating to shark and marine mammal interactions, waste materials and debris, and fuel and oil storage and use;
- [k] Noise emission management;

- [l] Management of discharges to air from diesel and petrol power equipment;
- [m] Management of any adverse effects of odour discharges; and
- [n] Taking, use and discharge of coastal water for marine farming activities.

THE CONCURRENT RESOURCE CONSENT APPLICATIONS

What is Sought

[45] King Salmon has made concurrent applications for resource consents (coastal permits) for all farms other than White Horse Rock in Waitata Reach. The resource consent applications cover all activities that come within the definitions of “marine farms” and “marine farming” as proposed in the CMZ3. Each application seeks a term of 35 years.

[46] The applications are comprehensive and cover both the proposed physical components and the operation of the farm. These aspects include the:

- [a] Location and proposed farm layout plans;
- [b] Description of, and placement of, all of the farm structures;
- [c] Activities proposed for each site, including the taking of and discharges of coastal water;
- [d] Proposed management measures for the management of such matters as biosecurity and disease risks, and the effects on sea birds, predators and marine mammals; and
- [e] Proposed mitigation measures to mitigate effects on the environment, including effects on the water, the seabed, natural character, landscape and amenity.

Conditions of Consent

[47] Many aspects of the proposals as set out in the application have been reflected in a set of proposed conditions. Conditions which have, like the Plan Change, been through an iterative process as a consequence of the facilitation workshops, the expert caucusing and the hearing.

[48] The proposed conditions are based on the premise that one overarching coastal permit application would be granted for each farm, covering the full suite of proposed activities contained within the definition of “marine farms” and “marine farming” proposed for the CMZ3.

[49] The conditions have been the subject of discussion and debate during the hearing. This was to be expected, as many of the conditions relate to the mitigation of adverse effects on the environment. The nature, scale and measure of the actual and potential effects on the environment were intensely debated, as was the question whether the proposed conditions of consent adequately achieved the appropriate level of remedy and mitigation.

[50] In some cases the parties agreed to the wording of the proposed conditions, while at the same time not accepting that the mitigation was adequate. In other cases the parties could not agree on the wording. We discuss the conditions of consent when we discuss the particular effects in contention to which they relate.

[51] There will need to be separate sets of conditions for each farm approved. However, for succinctness, we attach the final version of the Draft Conditions as proposed by King Salmon as **Appendix 4** which have been written as though they are for one farm, and where there are differences between farms, these are all shown. While Appendix 4 has been overtaken by further iterative changes we propose to retain Appendix 4 in this Final Report and Decision to enable ease of understanding the iterative process.

[52] The proposed conditions have been grouped according to the various activities proposed to be contained within the overarching coastal permit, plus a set of general conditions that apply across the activities, as follows:

TERM

A. Lapse (Condition 1A)

B. Occupancy and Activity

- Lapse period (Condition 1A)
- Occupation and activity area (Conditions 1 – 2)
- Salmon stock (Condition 4)
- Noise (Conditions 6 – 9)
- Submerged artificial lighting (Condition 10)
- King Shag roosting site – buffer area (Papatua, Waitata and White Horse Rock Farms) (Condition 11)

C. Structures

- Location of structures for benthic monitoring (Condition 16)
- Design and size of structures (Conditions 18 – 22)
- Colours and materials for structures (Conditions 23 – 25)
- Council to be informed of installation of structures (Condition 26)
- Marine farm navigational lighting and marking (Condition 27)
- Structural engineering (Conditions 28 – 33)
- Navigational safety (Conditions 33 – 39)
- Removal of Farm Structures (Condition 40)

D. Discharge of Feed, Marine Fouling and Antifouling to Coastal Water

- Feed discharge limits (Conditions 41 – 45)
- Environmental Quality Standards (EQS) (Condition 46)
- Environmental Quality Standards (EQS) – seabed deposition (Conditions 47 – 48)
- Environmental Quality Standards (EQS) – copper and zinc levels (Conditions 49 – 50)

- Environmental Quality Standards (EQS) – water column (Conditions 51 – 52)

E. Discharge of Greywater to Coastal Water (Condition 53)

F. General (Condition 58)

- Exercise of this consent in accordance with information provided (Condition 59)
- Odour management (Condition 61)
- Marine mammal management (Conditions 64 and 64A)
- Biosecurity management (Conditions 65 – 67)

G. Marine Environmental Monitoring, Adaptive Management and Reporting

- Matters to be addressed (Condition 69)
- Purposes (Condition 70)
- Plans and process (Conditions 71 – 76)
- Contents of baseline plan (Condition 77)
- Contents of baseline report (Condition 78)
- Contents of MEM-AMP (Condition 79)
- Monitoring to be included in MEM-AMP (Condition 80)
- Contents of annual report (Condition 81)
- Biological compensation (Ngamahau site only) (Condition 82)
- Peer Review Panel (Condition 83 – 88)

H. Social Impact Management (Conditions 89 – 90)

I. Tourism and Recreation (Condition 90A)

J. Tangata Whenua (Conditions 91A – 93)

K. Review of Conditions by Consent Authority (Condition 94)

L. Other Matters (Conditions 95 – 97)

M. Figures

Adaptive Management

[53] The proposed conditions of consent are underlain by various management plans taking, a now well known, adaptive management approach. It is undisputed from the evidence that the environmental effects associated with salmon farming are largely driven by the stocking densities and associated feed usage. It is proposed to endeavour to maintain environmental effects within acceptable limits through various management measures.

[54] Three primary adaptive management approaches are proposed:

- [a] **Staged development** - Sites are proposed to be developed in a staged manner, with expansion contingent on compliance with pre-defined seabed and environmental quality standards (EQS to be specified in the consent conditions) and on regular reviews of wide-scale water column and wider eco-system monitoring results;
- [b] **Tiered approach to monitoring** - Monitoring effort is proposed to increase if and when sites approach or exceed the EQS or in response to other identified environmental issues. Likewise, monitoring intensity may decrease with evidence of sustained compliance and stability;
- [c] **Ongoing adaptive management** - The farms are proposed to be managed adaptively long-term, in response to environmental monitoring results. Any breaches of the consent condition standards will be addressed and management responses implemented to ensure the farm becomes compliant. Any other adverse effects identified through monitoring, including from the wide scale water column and wider ecosystem monitoring, can also be addressed by adaptive management approaches.

[55] We discuss in more detail the adaptive management approach and the associated conditions of consent when we discuss the environmental effects that they relate to.

THE WHITE HORSE ROCK APPLICATION

[56] The site for the White Horse Rock application is situated in the CMZ2. It was agreed by all that the proposal, as it complies with the appropriate zone standards, should be considered as a discretionary activity. Apart from the process, this application is to be considered on its merits by the application of the CMZ2 provisions of the Sounds Plan.

[57] The application is similar to the concurrent applications and is subject to similar proposed conditions of consent.

PRE-HEARING PROCESS

Friend of the Submitter

[58] Prior to notification of the plan changes and applications, the EPA appointed an independent planning consultant, to act as a Friend of the Submitter. He provided advice to submitters on matters of process and assisted with the coordination of submitters who had common interests.

Facilitation Meetings

[59] At our direction, a series of facilitated pre-hearing hui/meetings were held between King Salmon and submitters in July and August 2012. Independent facilitators were appointed by the EPA to facilitate these meetings and hui. King Salmon also independently undertook other meetings and discussions with submitters. We have had regard to the reports filed by the independent facilitators following these meetings.

Caucusing of Experts

[60] At our direction a programme of expert caucusing was undertaken, prior to and during the hearing, on the following topics:

- Landscape and natural character
- Social impact
- Water column and modeling

- Navigation
- Disease risk and Biosecurity
- Economics
- Planning (in terms of relevant policy provisions, consent conditions and plan change provisions).

[61] The caucusing prior to the hearing was facilitated by Environment Commissioner Marlene Oliver. The caucusing during the hearing was facilitated by Mr Grant Eccles (independent planner assisting the Board) and Mr David Allen (counsel assisting the Board). The joint witness statements from the expert caucusing were made available to all parties and we have had regard to them in coming to our determination.

Submissions

[62] The EPA received 1,221 submissions on the King Salmon plan changes and consent applications before the closure of the submission period on 2 May 2012. A further 51 submissions were received after the closure of submissions. At our meeting on 31 May 2012, we granted a waiver to all of the late submissions to allow them to be accepted.

[63] A Summary of Submissions Report, dated 15 May 2012, was made available to all parties on 21 May 2012. There were 22 further submissions received to the plan changes, including five late further submissions. At our meeting on 28 & 29 June 2012, we granted a waiver to all of the late further submissions that had been received to allow them to be accepted.

[64] The majority (approximately 725) of the submissions received were in opposition to both the plan change and all of the resource consent applications. Approximately 358 of the submissions were in support. Approximately 118 submissions indicated mixed positions in terms of the plan change and resource consent applications, with the remaining submissions either supporting in part, opposing in part, neutral or not stating a position.

[65] The submissions covered a wide range of issues. We have grouped the submissions according to the matters to which they relate. That grouping is summarised in the following table:

Issue	Explanation
Administrative	EPA process is rushed. Lack of accessible information. Disparity in resources available to applicant and the public to ensure all information is understood
Amenity	Adverse effects on amenity values including visual, noise, odour, traffic, lighting and intrinsic values
Natural Character	Change in character of the area from open space/recreational to industrial
Consent Term	Inappropriate to allow for a 35-year term of consent
Cultural values	Effects on cultural values including traditional Maori interaction with the marine environment and customary interests
Cumulative effects	Potential for adverse cumulative effects when considering existing discharges, including land-based activities
Economic benefits	Economic benefits both regionally and nationally. Creation of jobs
Habitat	Damage to habitat of species including King Shag and Hector's Dolphin
Misinformation	Potential for misleading or incorrect information in terms of scale of effects and benefits. Lack of baseline monitoring
Navigational Hazards	Potential for safety hazard for marine transport, both recreational and commercial
Ownership	Foreign owned company takes bulk of the gain and environmental and other costs borne by NZ
Plan Integrity	Adverse effects to the integrity of the Sounds Plan, particularly where it currently prohibits aquaculture
Precedent	Potential for precedent to be set, allowing more aquaculture to be established in the currently prohibited areas of the Sounds
Recreation	Adverse effects on recreation including access to public space, fishing and pleasure boating
Sustainable Farming	Better to develop sustainable fish farms than continue to farm wild fish supplies
Sustainable Management	Inconsistent with the principle of sustainable management

Tourism	Adverse effects to the tourism industry
Water quality	Adverse effects to water quality from contaminants including fish, food and excretion. Potential for nitrification/eutrophication of the water column and deposition of phosphates with associated increase in risk of harmful algal blooms

The issues identified in the above table are discussed later in the decision where we give reasons for our determination on the matters of issue.

[66] In the period following the closure of further submissions, and prior to the start of the hearing, a number of parties withdrew their submissions.¹¹

THE HEARING

[67] The hearing took place over a period of 37 days at Blenheim, the Waikawa Marae and Portage. We read and/or heard evidence and/or representations from approximately 181 witnesses and submitters. Many of the witnesses who gave evidence were cross-examined, sometimes at length. We attach as **Appendix 5** to this decision a list of all the witnesses and those who made representations. We received over 10,400 pages of evidence and there were 4,147 pages of transcript. There were also many pages of maps and photographs in the 84 exhibits.

[68] We heard from expert witnesses on a wide-ranging number of contested topics, including:

- [a] The economic benefits of the proposal;
- [b] The effects on the benthos and water column arising from the nutrient inputs;
- [c] The effects on pelagic fish, marine mammals and birds;
- [d] The effects on the natural character and landscape characteristics of the Sounds;

¹¹ The Swampy Mussel Company (1000), Laura Honey (0972), L & T Gledhill as Trustees of The Ngamahau Trust (0233 & FS0005), Tory Channel Homesteaders (1051), Warren Gledhill (0828), Barbara Gledhill (0144), NZ King Salmon (1057) – withdrew that part of their submissions that sought a modification to the proposed salmon farm site at Ngamahau Bay

- [e] Biosecurity and disease risks;
- [f] Maori cultural issues; and
- [g] The integrity of the Sounds Plan.

[69] In addition to expert evidence many residents and users of the Sounds gave evidence or made representations. All of the representations and the evidence, whether it be classified as expert or non-expert, is of importance. We must consider it all. It is the weight that we give to evidence that assists us in our determination. Weight can be influenced by a number of factors, such as credibility, reliability, relevance, and in some cases, expertise.

[70] The best known feature that distinguishes the evidence of the expert from that of a lay person is that the expert is permitted to offer opinions as to the meaning and implications of other evidence in their field of expertise. Such a witness must have the knowledge and experience sufficient to entitle him or her to be held out as an expert.

[71] In some areas of disagreement, years of study and experience must count. Everyone is entitled to a view, but it must be based on fact or knowledge. Not all views should be accorded equal weight, especially when they need to be grounded, for example, on scientific knowledge or experience, or cultural understanding. Sometimes the transition between expert and general knowledge and local experience can be blurred, in which case less weight may be given to expert or technical knowledge.

[72] The volume of evidence was such that it is just not possible to mention or refer in this decision to all the evidence, or all of the many witnesses who gave evidence. For those we do not mention, we mean no disrespect. In coming to our determination, we have taken into account all of the evidence, the representations, submissions, and further submissions.

CONSIDERATION OF MATTERS BY BOARD AND DRAFT REPORT PURSUANT TO SECTION 149P OF THE RMA

[73] The Board, in considering these matters:

- [a] Must have regard to the Minister's reasons for making a direction (Section 149P(1)(a) of the RMA); and
- [b] Must consider any information provided to it by the EPA under Section 149G (Section 149P(1)(b)); and
- [c] Where the matter is an application for a resource consent, must apply Sections 104 to 112, and 138A of the RMA (Section 149P(2)); and
- [d] Where the matters relate to a change to the Regional Plan;
 - [i] Must apply Clause 10(1) to (3) of Schedule 1 (Section 149P(6)(a)); and
 - [ii] May exercise, if appropriate, the powers under Section 293 (Section 149P(6)(b)); and
 - [iii] Must apply Sections 66 to 70B, and 77A to 77D of the RMA as if it were a regional council (Section 149P(6)(c)).
- [e] Where the matter relates to a concurrent consent application:
 - [i] Firstly, determine matters in relation to the plan change request; and
 - [ii] Secondly, determine matters in relation to the concurrent application based on the Board's determination of the matters in relation to the plan change request (Section 149P(8)).

[74] Pursuant to Section 149Q of the RMA, we are to prepare a draft decision and produce a draft written report which must:

- [a] State the Board's draft decision;
- [b] Give reasons for the decision;
- [c] Include a statement of the principal issues that were in contention; and

- [d] Include the main findings on the principal issues that were in contention.

OVERVIEW OF STATUTORY BASIS FOR DECISION

Part II of the Resource Management Act

[75] Section 5 has been described as the lodestar of the RMA.¹² It guides decision-making under the RMA towards the overarching purpose of sustainable management and directs decision-makers to manage resources so that the reasonably foreseeable needs of future generations can be met and the life supporting capacity of the ecosystem protected.

[76] Part II is a framework against which all the functions, powers, and duties under the RMA are to be exercised for the purposes of giving effect to the RMA. There are no qualifications or exceptions. Any exercise of discretionary judgment is impliedly to be done for the statutory purpose.¹³ The provisions for the various planning instruments required under the RMA also confirm the priority of Part II, by making all considerations *subject to Part II* – see for example Sections 51, 61, 66 and 74. The consideration of applications for resource consents is guided by Sections 104 and 105.

[77] Section 5 is an enabling provision, setting out the yardstick for normative decisions that will ensure the sustainable management of the environment. The Privy Council decision of *McGuire v Hastings District Council* requires that decisions made under Section 5 are to be directed by Sections 6, 7 and 8, which set out requirements for the preservation and protection of certain values. Issues under Sections 6 to 8 apply from different perspectives and in different combinations of each other depending on the particular case.¹⁴

[78] We identify the provisions of Section 6 to 8 that we consider the most relevant:

- [a] Section 6 – Matters of National Importance that must be recognised and provided for:

¹² *Lee v Auckland City Council* [1995] NZRMA 241 (PT) at [248]

¹³ *RFBPS v Manawatu-Whanganui Regional Council*, A086/95 (PT) at 24

¹⁴ [2002] 2 NZLR 577

- The preservation of the natural character of the coastal environment from inappropriate subdivision, use, and development – *Section 6(a)*
- The protection of outstanding natural features and landscapes from inappropriate subdivision, use, and development – *Section 6(b)*
- The protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna – *Section 6(c)*
- The maintenance and enhancement of public access to and along the coastal marine area – *Section 6(d)*
- The relationship of Maori and their culture and traditions with their ancestral lands, water, sites, waahi tapu, and other taonga – *Section 6(e)*

[b] Section 7 – Other Matters that must be had regard to:

- Kaitiakitanga – *Section 7(a)*
- The ethic of stewardship – *Section 7(aa)*
- The efficient use and development of natural and physical resources – *Section 7(b)*
- The maintenance and enhancement of amenity values – *Section 7(c)*
- Intrinsic values of ecosystems – *Section 7(d)*
- Maintenance and enhancement of the quality of the environment – *Section 7(f)*
- Any finite characteristics of natural and physical resources – *Section 7(g)*
- The effects of climate change – *Section 7(i)*

[c] Section 8 – Treaty of Waitangi – the requirements to take into account the principles of the Treaty of Waitangi (Te Tiriti o Waitangi).

[79] We discuss, where necessary, the Part II provisions when we discuss the contested issues that particular provisions apply to. When considering both Plan Change provisions and resource consent applications, the purpose of the RMA as defined in Section 5 is not the starting point, but the finishing point to be considered in the overall exercise of discretion.¹⁵

[80] It is well accepted that applying Section 5 involves an overall broad judgment of whether a proposal would promote the sustainable management of natural and physical resources. The RMA has a single purpose. It also allows for the balancing of conflicting considerations in terms of their relative significance or proportion in the final outcome.¹⁶

[81] There are of course specific provisions in the RMA that apply to plan changes and resource consent applications. We propose to address those provisions in those parts of the decision that address the Plan Change and resource consent applications.

The Statutory Instruments

[82] The RMA directs decision-makers to variably “give effect to”, “not be inconsistent with”, “consider”, or “have regard” to the various statutory instruments when making decisions on Plan provisions or resource consents. We address in the hierarchical order the relevant statutory instruments.

The New Zealand Coastal Policy Statement (Coastal Policy Statement)

[83] The objectives of the Coastal Policy Statement are of a high and overarching level and are given more specific effect through the more detailed policies that follow. The instrument addresses the characteristics, qualities and uses of the coastal environment, and the challenges that arise from the tension between development and maintaining the ecological integrity, natural character, cultural and recreational values of the coastal environment.

¹⁵ *Canterbury Regional Council v Christchurch City Council*, C217/01

¹⁶ *Trio Holdings v Marlborough District Council*, [1997] NZRMA 97

[84] The objectives seek to:

- Safe-guard the integrity, form, functioning and resilience of the coastal environment and sustain its ecosystems – *Objective 1*
- Preserve the natural character of the coastal environment – *Objective 2*
- Make provision for Maori interests – *Objective 3*
- Maintain and enhance public open space – *Objective 4*
- Manage coastal hazards – *Objective 5*
- Enable people and communities to provide for their social, economic and cultural well-being through subdivision, use, and development – *Objective 6*
- Recognise and provide for New Zealand's international obligations – *Objective 7*

[85] There then follows 29 more focused policies that address:

- The Treaty of Waitangi, tangata whenua and Maori heritage – *Policy 2*
- The precautionary approach – *Policy 3*
- The integrated management of natural and physical resources in the coastal environment and activities that affect the coastal environment – *Policy 4*
- Consider effects on land or water in the coastal environment held or managed under other Acts – *Policy 5*
- The need for and the management of activities in the coastal environment while at the same time considering how adverse effects of development can be avoided – *Policy 6*
- The need for a strategic approach when preparing regional policy statements and plans – *Policy 7*

- The existing and potential contribution of aquaculture to the social, economic and cultural well-being of people and communities – *Policy 8*
- The protection of indigenous biological diversity in the coastal environment and the avoidance of effects on threatened species – *Policy 11*
- The need to control harmful aquatic organisms – *Policy 12*
- The preservation of natural character – *Policy 13*
- The restoration of natural character – *Policy 14*
- The protection of natural features and natural landscapes and the avoidance of effects on outstanding features and landscapes – *Policy 15*
- The identification and protection of historic heritage – *Policy 17*
- The recognition of the public use and appreciation of public open space – *Policy 18*
- The enhancement of water quality – *Policy 21*
- To manage the discharge of contaminants – *Policy 23*

[86] We will discuss, where necessary, in more detail the relevant provisions as they are to be applied to the contested issues and to the discretionary exercise of our decision.

The Marlborough Regional Policy Statement (Regional Policy Statement)

[87] The Regional Policy Statement was made operative on 28 August 1995, early in the development of resource management policy under the RMA. The Council has been in the process of reviewing it for several years. The document gives a limited degree of guidance to decision-makers.

[88] The Regional Policy Statement is stated as providing a community-based vision and direction for the management of the natural and physical resources of Marlborough. Five regionally significant objectives are identified. The Key Issues

Report, provided to the Board by the Council pursuant to Section 149G(3), identifies the following three as of particular relevance:

- The protection of water ecosystems – *Part 5*
- Community wellbeing – *Part 7*
- The protection of visual features – *Part 8*

[89] The Regional Policy Statement addresses the tension between the requirement for a community to be able to provide for its economic wellbeing from natural and physical resources and the need to ensure that those uses are sustainable and do not have significant adverse effects on the environment. Generally it gives overall broad guidance, but gives more specific direction in the following areas:

- [a] That allocation of space for aquaculture will be based on marine habitat sustainability, habitat protection, landscape protection, navigation and safety, and compatibility with other adjoining activities – Policy 7.2.10(d);
- [b] The importance of public access to, and recreational use of, the marine resources of the district, for the wellbeing of its community – Policy 7.2.10; and
- [c] The importance of retaining the open, natural character of Marlborough's coastal environment, including the land and water ecosystems of the coast – Policy 8.1.6.

[90] Again, we will discuss, where necessary, the relevant provisions when we discuss the contested issues to which they have relevance.

The Marlborough Sounds Resource Management Plan (the Sounds Plan)

[91] The Sounds Plan is an operative combined district and regional plan. As we have said, the Sounds Plan contains three volumes and was made operative in part, subject to some outstanding appeals, in March 2003. It became fully operative on 25 August 2011.

[92] Volume 1 contains the Issues, Objectives, Policies and Methods. The Key Issues Report has identified a number of chapters in Volume 1 that are relevant. They are:

- Natural Character – *Chapter 2*
- Indigenous Vegetation and Habitats of Indigenous Fauna – *Chapter 4*
- Landscape – *Chapter 5*
- Tangata Whenua and Heritage – *Chapter 6*
- Public Access – *Chapter 8*
- Coastal Marine – *Chapter 9*
- Hazardous Substances and Facilities – *Chapter 17*
- Water Transportation – *Chapter 19*
- Outdoor Advertising – *Chapter 21*
- Noise – *Chapter 22*

[93] Again, we will discuss, where necessary, the relevant provisions when we discuss the contested issues to which they relate.

The Nelson-Marlborough Conservation Management Strategy

[94] The Strategy, prepared by the Department of Conservation, sets out objectives and policies for the integrated management of the conservation estate in the Nelson-Marlborough conservancy, which includes the Marlborough Sounds. Generally the provisions provide broad effects based guidance on conservation matters. The Strategy is of particular assistance where it promulgates the outcomes sought for reserve land and the functioning of ecosystems in the Sounds. We address the relevant provisions as they are applied to the contested issues.

The Ngati Koata Management Plan

[95] This Plan prepared at the behest of Ngati Koata is a comprehensive document that addresses in some detail the environmental issues of particular

relevance to Maori and more particularly, Ngati Koata. Its provisions provide guidance on cultural issues and the involvement of iwi on such issues.

[96] We assess this document when we consider tangata whenua issues.

PRINCIPLE ISSUES IN CONTENTION

Legal Matters

[97] A number of legal matters, or quasi-legal matters, were raised by the submitters during the course of the hearing. Some of those matters were overarching, in the sense that they related to both the Plan Change and the resource consent applications. Other matters were more particular to specific issues that arose either with respect of the Plan Change, or with respect to the resource consent applications.

[98] The overarching legal matters included the:

- Legal context
- Process
- Privatisation of public space versus rights to use the public water space
- Marine and Coastal Area (Takutai Moana) Act 2011 (**Takutai Moana Act**)
- Alternatives
- Precautionary principle and adaptive management
- Consultation

[99] The more specific matters included:

- The jurisdiction with respect to prohibited activity status for species other than salmon
- Precedent

- Spot zoning
- Compliance with relevant planning instruments
- Definition of “most appropriate”
- Unlawful delegation of power

Contested Effects

[100] The following effects were contested by way of evidence and submissions at the hearing:

- Economic impacts (benefits)
- Seabed/benthic impacts
- Water quality and ecosystem impacts
- Pelagic fish, marine mammals and sharks
- Seabirds
- Biosecurity and disease
- Natural character, landscape and visual amenity
- Cultural effects
- Amenity effects (noise, air quality and odour)
- Tourism and recreation
- Social impacts
- Navigation and engineering

OVERARCHING LEGAL MATTERS

The Legal Context

[101] We have two legal tests or frameworks to apply:

- [a] The tests applying to plan changes to a regional plan, which must be applied to the Board's consideration of the Plan Change, which applies to eight of the proposed sites; and
- [b] The tests applying to the resource consents, to be applied to the eight concurrent consents (if the Plan Change is approved for those sites) and the White Horse Rock consent application.

[102] The Plan Change must be determined before the concurrent consents, but there is no statutory priority to be given to the White Horse Rock application. It could be determined before or after the Plan Change and concurrent consents. For reasons that will become clear, we propose to deal with the White Horse Rock application after the concurrent applications.

[103] The aquaculture reforms enacted, in 2011, were aimed at “kick-starting” the aquaculture industry to reach a \$1b potential by 2025.¹⁷ This and several other changes were enacted to streamline the application process for marine farms. These changes were aimed at the regions in New Zealand where Parliament encouraged, through the legislation, the aquaculture industry.

[104] Cabinet papers discussing the direction that the aquaculture reforms should take, commented on the scale of change required to each region's regional coastal plan (to achieve the reform objectives). Marlborough was rated as in need of “moderate” change and, of direct relevance, the current state of aquaculture provisions in the Sounds Plan were described as:¹⁸

Generally ready, but spatial prohibitions on new aquaculture are limiting opportunities for growth. Subpart 4 of Part 7 of the RMA, which contains the concurrent application provisions, was specifically enacted to address this issue.

¹⁷ CAB MIN (10) 9/2, at [1.2]

¹⁸ CAB Paper, Office of the Minister of Fisheries and Agriculture, Economic and Infrastructure Committee, *Aquaculture Reform Paper 2: Further Proposals and Report Back*, at [59]

[105] Without this reform, applicants were required to go through a two-stage process. First, to amend the Sounds Plan, and then to apply for consent. Having amended the Plan, an applicant would have no right of priority in applying for consent for the new zone because of the default “first-in, first-served” rule which applied.

[106] There is no ambiguity in respect of Parliament’s intention in enacting the enabling reforms contained in Subpart 4. The provisions specifically facilitate the process for applicants who seek to amend the prohibited activity status in a zone.

[107] We recognise, that notwithstanding these enabling reforms, we are required to apply the relevant provisions of the RMA and the relevant statutory instruments against which we must assess the Plan Change and concurrent applications. The reforms do no more than facilitate a process within which the environmental issues can be considered within the relevant statutory framework.

The Process

[108] Many submitters have criticised the process of King Salmon “by-passing” the Council and applying directly to the EPA for a Board of Inquiry. This is not strictly a legal issue. But because it was raised by a large number of submitters, we feel that we should address it.

[109] The concerns of the many submitters are encapsulated in the submissions of Mr Heal, Counsel for Sustain Our Sounds, when he said:¹⁹

The situation of course, heavily favours the applicant who may be able to push the application through without proper scrutiny or submission. This situation of course puts the Board in an extremely difficult position. Not only have the parties not had sufficient time to address the issues, the unreasonably constrained time limit within which the Board must assimilate, comprehend and adjudicate on a very large quantity of evidence, including some very difficult technical evidence, does not give one the greatest of confidence that outcomes will be adequately considered, even given the very best efforts of the Board.

[110] As for the process, Parliament has enacted amendments to the RMA to enable proposals to be heard direct by a Board of Inquiry, or by the Environment Court. This Board of Inquiry process is one of a number of new mechanisms available for any applicant. This is what King Salmon has done. The Minister of

¹⁹ Heal Opening Submissions at [6:04]

Conservation has referred the matter to this Board because she considered the matters proposed by King Salmon are a proposal of national significance. Thus, this Board has been seized with the proposal and must consider it on its merits within the relevant statutory framework.

[111] As for the concerns raised by the submitters as reflected by Mr Heal above we say:

- [a] We have done all that is possible to give all submitters sufficient time and support, within the statutory constraints, to present their concerns. This included:
 - [i] the appointment of a Friend of Submitter on matters of process;
 - [ii] the appointment of a facilitator to facilitate meetings on issues;
 - [iii] the appointment of expert witnesses to independently peer review the water column modeling – an important issue to many submitters; and
 - [iv] an extension of time to the submitters to file evidence.
- [b] We are satisfied that the large volume of evidence and information put before us provides a sufficient basis for us to make an informed decision; and
- [c] The extension of time granted by the Minister will more than enable us to ‘assimilate, comprehend and adjudicate’ on the large quantity of evidence and oral representations given during the hearing.

Privatisation of Public Space – Rights to use Public Water Space

[112] A large number of submitters raised concerns about King Salmon “privatising” public water space for its own commercial gain, and without payment of any “rental” or occupation charge. Allied to these concerns, various submitters

have also raised various “rights” to use the public water space for their own use, including:

- [a] The right to access;
- [b] The right to undertake an activity; and
- [c] The right to occupy.

[113] The tension between these rights and the right to occupy is not new with respect to structures in the coastal marine area, including aquaculture proposals.²⁰ We acknowledge this tension. The right of access is a common law right codified within the Takutai Moana Act. There is also a presumption of public access to the coastal marine area codified in the RMA. However, in limited circumstances, the RMA enables the granting of occupation rights which may include the ability to restrict public access. Section 12(2) of the RMA includes the ability to authorise an applicant to occupy a part of the common marine and coastal area, where occupation is reasonably necessary to undertake a consented activity. The RMA includes the ability to authorise an applicant to occupy²¹ an area of the coastal marine area, where occupation is reasonably necessary to undertake a consented activity.²²

[114] King Salmon seeks exclusive occupation in respect of its marine farming structures to the extent that it is “reasonably necessary” to undertake the activity of salmon farming at each site. This is consistent with case law:²³

Under s. 12, therefore, it is the physical occupation in the CMA of the structures for the activity of marine farming which is required to be reasonably necessary. It is self-evident that the occupation by marine structures of the CMA is reasonably necessary for carrying on the activity of aquaculture.

²⁰ For a discussion of the challenges associated with including Objectives and Policies in the New Zealand Coastal Policy Statement that support aquaculture, see: P Beverley & A Cameron, *Aquaculture and the New Zealand Coastal Policy Statement*, Buddle Findlay, March 2007

²¹ A right to occupy, includes the characteristics of a property right (but is not itself a property right) being: the ‘right to exclude’, the ‘right to possession’, the ‘right to non-derogation of use’, and the ‘right to transfer’: Water Rights and Sustainability, *Public Property and Private Use Rights: Exclusive Occupation of the Coastal Marine Area in New Zealand*, Robert Makgill

²² **Auckland Regional Council** EnvC Auckland A109/2000 14 September 2000

²³ **Golden Bay Marine Farmers & Ors v Tasman District Council** EnvC Wellington W42/2001 27 April 2001 at [284]; **Marlborough District Council v Valuer General** [2008] 1 NZLR 690 (HC)

In the space beyond what is required for the structures, no exclusive occupation of the coastal marine area is sought or required.

[115] Thus, the RMA has specifically provided for a decision-maker to authorise a right to occupy a portion of the common marine and coastal area. This can include:

- [a] Allowing a port company to reclaim, for all time, an area of public water space and use it for port purposes;
- [b] Granting consent to bach or crib private owners to construct jetties or wharves in the public water space, primarily to serve their own properties;
- [c] Granting consent to establish substantial marinas in the public water space for use by individual members of the public for their private yachts and launches; and
- [d] Granting consent to boating clubs or private individuals to place moorings in the public water space for the personal use of club members or private individuals.

[116] As far as the payment for rental or occupancy charges are concerned, this is dealt with in the RMA. It is dealt with in the following way:

- [a] A coastal occupation charge may only be imposed on a person occupying the coastal marine area if it is provided for in the regional coastal plan.²⁴ In considering whether to impose coastal occupation charges under its regional coastal plan, a regional council must have regard to both the extent that the public benefits from the coastal marine area are lost or gained, and the extent to which private benefit is obtained from the occupation of the coastal marine area;²⁵
- [b] If a regional council then considers that a coastal occupation charging regime should be included, it must specify in the Regional Coastal Plan the circumstances when it would be imposed (and when the Regional Council would consider waiving a charge), the level of

²⁴ Section 64A(4) of the RMA

²⁵ Section 64A(1) of the RMA

charges to be paid, and the way in which the money received will be used (which is limited to users that promote the sustainable management of the coastal marine area);²⁶ and

- [c] Charges for occupation can also be introduced through various price-based space allocation mechanisms, such as tendering.

[117] At present, none of these options are in force in the Marlborough Sounds. The Council apparently anticipates introducing a presumably comprehensive coastal occupation charging regime in the future.²⁷ However, there has been no proposal released for consultation. It would be wrong for us to consider the question of occupation charges in isolation to this Plan Change and applications for resource consents. The question of occupancy charges, the manner in which they are imposed and the quantum, needs to be addressed in an overarching way after full consultation with all stakeholders.

The Takutai Moana Act

[118] Ms Grey, counsel for Pelorus Boating Club and others, contended that the Takutai Moana Act overrides the RMA and prevents us from approving a private plan change request and concurrent consents enabling exclusive occupation for a marine farm where the operative plan prohibits marine farms, and instead enables public access and navigation.²⁸ This submission was supported by Mr Bennion for the Tahuaroa-Watson whanau,²⁹ Mr Smith for Ngati Kuia,³⁰ and Mr Beech for Guardians of the Sounds.³¹

[119] For the reasons given by Mr Nolan at his closing submissions, we reject the contention:

- [a] In terms of the approach to interpretation, to the extent that there may be apparent inconsistencies between legislation, the Courts will try to interpret the provisions in a way that allows them to be read together;³²

²⁶ Section 64A(3) of the RMA

²⁷ Marlborough District Council *Section 149G Report*

²⁸ Grey, Opening submissions at [66]

²⁹ Transcript at 3016

³⁰ Transcript at 3070

³¹ Transcript 3132

³² *Statute Law in New Zealand* Burrows & Carter (4th Edition) at 449

- [b] The principle that general provisions do not derogate from specific ones is also relevant:³³

[W]here there are general words in a later Act capable of reasonable and sensible application without extending them to subjects specially dealt with by earlier legislation, you are not to hold that earlier and special legislation indirectly repealed, altered, or derogated from merely by force of such general words without any indication of a particular intention to do so.

- [c] Since it was enacted in 1991, the RMA has allowed private plan changes to be made to change the status of activities, including from prohibited to some other status. There is no legal bar preventing anyone from seeking to change a plan at any time, except in certain cases where the request is frivolous or vexatious, or has been considered in the last 2 years;³⁴
- [d] The Takutai Moana Act was enacted in 2011.³⁵ Section 11 accords the common marine and coastal area a special status –it cannot be owned by the Crown or any other person;³⁶
- [e] However, the special status accorded by the Takutai Moana Act to the common marine and coastal area is specifically recorded as not affecting (as relevant):³⁷

- (c) any power to impose, by or under an enactment, a prohibition, limitation, or restriction in respect of a part of the common marine and coastal area; or
- (d) any power or duty, by or under an enactment, to grant resource consents or permits (including the power to impose charges) within any part of the common marine and coastal area; or
- (e) any power, by or under an enactment, to accord a status of any kind to a part of the common marine and coastal area, or to set aside a part of the common marine and coastal area for a specific purpose;

³³ *Seward v Vera Cruz (Owner)* (1884) 10App Cas 59 at 68 (HL) per Lord Selbourne

³⁴ Clause 25 (4) of the First Schedule

³⁵ The same year that the Aquaculture Reforms were enacted

³⁶ This differs to the position under the previous Foreshore and Seabed Act 2004

³⁷ Section 11(5) Takutai Moana Act

- [f] These provisions explicitly preserve the ability of a regional council (or this Board) to impose, under the provisions of the RMA, a restriction (including of public access) by way of a plan change or resource consent. The fact that these proceedings concern a private plan change rather than a council-initiated one does not change that;
- [g] In addition, the rights of public access and navigation which Ms Grey says must be preserved are common law rights codified in Sections 26 and 27 of the Takutai Moana Act. However, in those very provisions themselves, they are not expressed as absolute – they are each subject to any authorized restrictions and prohibitions that are imposed by or under an enactment, which must include the RMA; and
- [h] Further, while the aquaculture provisions in the RMA were updated on 1 October 2011 – after the Takutai Moana Act came into law, both were being considered as Bills by Parliament at the same time.³⁸ The result was the provision for plan changes and concurrent consents specifically where aquaculture is presently prohibited, which would be redundant if Ms Grey’s approach were to be adopted – as every marine farm involves exclusive occupation to some extent.

[120] Further, it has been held³⁹ that resource consents do not grant proprietary rights.

Alternatives

[121] A legal issue raised by many other submitters is the extent to which King Salmon has, or should have considered alternative means of producing salmon. Various suggested alternatives have been put forward, both by way of submission and in evidence. These include:

³⁸ The Departmental Report on the Aquaculture Reforms stated at 9: “We note that if the Marine and Coastal Area (Takutai Moana) Bill is passed ahead of this Bill there will be a need to consider whether there are any drafting implications for this Bill.”

³⁹ See *Save the Point v Wellington City Council* EnvC 82/07 at [217] and *Environs Holdings Limited v Northland Regional Council* A34/09 at [10] (in respect of the old Foreshore and Seabed Act)

- [a] The conversion of existing marine farms within the CMZ2 or discretionary activity locations within the CMZ2;
- [b] Utilizing mid-bay sites for salmon farming;
- [c] Expansion of the existing farms owned by King Salmon;
- [d] Farming onshore in a closed containment system;
- [e] Farming offshore in exposed waters;
- [f] Farming in other regions in New Zealand; and
- [g] Waiting for the Council's planned review process.

[122] The suggested alternatives have been put forward by way of submission, without any evidence, apart from cross-examination, demonstrating that any such sites or alternatives are practical or suitable for salmon. Nor was there any evidence relating to an effects assessment of such alternatives. On the other hand, we did hear a considerable amount of evidence from King Salmon on alternative sites and methods. The evidence produced by King Salmon addressed the possibilities raised by the submitters and was subject to quite rigorous cross-examination from a number of counsel and individual parties.

[123] First we consider the law that we must apply when considering alternatives.

The Plan Change

[124] The primary instrument for this proposal, except the White Horse Rock site, is a private plan change, and as such the issue of alternatives does not form part of that evaluation. The Courts have consistently held that there is no requirement for a consideration of alternatives as part of the consideration of a site specific plan

change.⁴⁰ In *Brown v Dunedin City Council*, the High Court considered the earlier Environment Court decisions on the issue and stated that:⁴¹

I am satisfied that the theme running through the Environment Court decision is legally correct: s32(1) does not contemplate that determination of a site specific proposed plan change will involve a comparison with alternative sites. As indicated in *Hodge*, when the wording of s32(1)(a)(ii) (and, it might be added, the expression “*principal alternative means*” in s32(1)(b)) is compared with the wording of s171(1)(a) and clause 1(b) of the Fourth Schedule it appears that such a comparison was not contemplated by Parliament. It is also logical that the assessment should be confined to the subject site. Other sites would not be before the Court and the Court would not have the ability to control the zoning of those sites. Under those circumstances it would be unrealistic and unfair to expect those supporting a site specific plan change to undertake the mammoth task of eliminating all other potential alternative sites within the district. In this respect a site specific plan change can be contrasted with a full district wide review of a plan pursuant to s79(2) of the Act.

The Resource Consent Applications

[125] With regard to the applications for resource consents, it is now well settled that there is no general statutory obligation on an applicant to consider alternatives. The relevant provisions relating to the assessment of environmental effects only require a description of any possible alternative locations or methods for undertaking an activity if it is likely to result in any significant adverse effect on the environment.⁴²

[126] In *Director-General of Conservation (Nelson-Marlborough Conservancy) & Ors v Marlborough District Council & TrustPower Limited*⁴³ the Environment Court discussed the statutory directions and case law relating to the need for and the extent of a consideration of alternatives. We apply the following passage from that decision being the Court’s finding following that discussion:⁴⁴

It seems to us that whether alternatives should be considered depends firstly on a finding of fact as to whether or not there are significant adverse effects on the environment. If there are significant adverse effects on the

⁴⁰ See, for example, *Brown v Dunedin City Council* [2003] NZRMA 420 (HC); *GUS Properties Limited v Marlborough District Council* PT Decision W75/1994 5 August 1994; *Terrace Tower (New Zealand) Pty Ltd v Queenstown Lakes District Council* [2001] NZRMA 23 EnvC Canterbury; *Canterbury Regional Council v Christchurch City Council* EnvC Christchurch C217/2001 6 December 2001

⁴¹ [2003] NZRMA 420 (HC) at [16]

⁴² Refer Section 88 and Schedule 4 of the RMA: see also *Meridian Energy Limited v Central Otago District Council and Otago Regional Council* (HC) CIV-20090412-000980 at [148]

⁴³ [2010] EnvC403

⁴⁴ Ibid at [690]

environment, particularly if they involve matters of national importance, it is a question of fact in each case as to whether or not an applicant should be required to look at alternatives, and the extent to which such an enquiry, including the undertaking of a cost/benefit analysis, should be carried out.

[127] Assuming the requirement for a consideration of alternatives is triggered, we consider the evidence, submissions and representations as they relate to each of the suggested alternatives.

Use of the CMZ2 Zone

[128] Many submitters expressed the opinion that the current provisions of the Sounds Plan made adequate provision for the expansion of aquaculture within the confines of the CMZ2; especially the conversion of existing mussel farms to salmon farms. The way King Salmon had approached the option to use the CMZ2, for the expansion of salmon farming was therefore subjected to close examination.

[129] Mr Craig Potton in his submission summed up the thoughts of many of the submitters:⁴⁵

If King Salmon wish to expand it would be reasonable to ask them to buy out an existing mussel farm in the outer sounds

[130] His thoughts were echoed by the submission of Thomas and Jan Sharp who noted:⁴⁶

The Marlborough Sounds Resource Management Plan already makes provision for marine farming and any expansion of these activities should occur within the areas set aside for these purposes.

[131] Mr Quinn submitted that King Salmon had failed to adequately demonstrate that their aspirations could not be met through the current provisions of the Sounds Plan.⁴⁷ Mr Pere Hawes told us that one of the options King Salmon had was the conversion of existing marine farms (mussel farms) in CMZ2 through discretionary activity resource consent applications in accordance with Rule 35.4.2.9 of the Sounds Plan.⁴⁸

⁴⁵ Transcript at 2522

⁴⁶ Submission 0324

⁴⁷ Quinn Opening Submission at [91]

⁴⁸ Hawes EiC at [351]

[132] Mr Hawes also referenced reports of the Cawthron Institute for two recent applications for the conversion of mussel farms to finfish farms in the CMZ2, which concluded that the sites under application were suitable for a change to either salmon farming, or other finfish species.⁴⁹ He was of the opinion that the granting of these resource consent applications, even though they are currently subject to appeals, demonstrates that the conversion of existing marine farms in the CMZ2 is a viable option.

[133] Similarly Mr Brosnan was of the opinion that the conversion of existing mussel farms into polyculture activities (including finfish polyculture) was gaining increasing interest within the Marlborough Sounds.⁵⁰ He expressed the view that these applications call into question the evidence of Mr Gillard that existing sites within the CMZ2 are not physically suitable for salmon farming due to temperature, exposure, landscape and other matters. He observed that King Salmon was not seeking to relinquish their existing salmon farms in low flow areas such as Crail Bay, Waihinu Bay, Forsyth Bay, Ruakaka and Otanerau Bay. He also pointed out what he considered to be the apparent contradiction between the King Salmon selection process, that demonstrated that most of their existing sites were not suitable, and King Salmon's contention that it is a real "success story" achieved by farming mostly in the CMZ2.⁵¹

[134] Mr Mark Gillard told us that as a result of his considerable experience, coupled with the number of salmon farm investigations he had carried out, he knew that salmon required very particular conditions in order to be able to be farmed efficiently.⁵² The first set involve: water temperature, depth, and current. Without the right combination of these physical characteristics, salmon will not successfully grow (but rather will perform poorly or possibly die). The second is exposure. From a technical perspective, farms cannot be exposed to open water wave conditions as they will fail.⁵³

[135] Mr Gillard had focused on the CMZ2 areas, including existing mussel farm and bare water sites to determine their suitability for salmon farming. In his rebuttal evidence, he provided us with a detailed account of the considerations that King

⁴⁹ Ibid at Appendix 13 & Appendix 14

⁵⁰ Brosnan EiC at [106]

⁵¹ Quinn Opening Submission at [93]

⁵² Gillard EiC at [B]

⁵³ Ibid at [C]

Salmon gave to the conversion of mussel sites.⁵⁴ He came to the conclusion that there are only very limited parts of the Marlborough Sounds in which salmon could be commercially grown. In terms of the CMZ2 he said:⁵⁵

- (a) Small number of mussel farms that are potentially suitable to convert to salmon farms have been converted, or are unavailable.
- (b) Conversions, are usually not ideal and many conversions have not been successful.
- (c) We continue to farm some lower flow conversions, but they are not as productive and face higher mortalities.
- (d) In short, the existing CMZ2 zone is not suitable physically for salmon farming. We had to look to CMZ1 area.

[136] Mr Gillard acknowledged that there were a small number of possible CMZ2 sites that King Salmon had worked hard to try and purchase, but the consent holders were unwilling to sell or no reasonable agreement could be reached. However, even if King Salmon had been able to secure the available CMZ2 sites, King Salmon would still be seeking additional farms to meet the demand.⁵⁶

[137] King Salmon provided us with a detailed account, based on years of farming experience, on the limitations of CMZ2 low flow sites. This was refuted by many submitters but not by evidence.

[138] In closing Mr Nolan observed that the evidence established that there has been a major shift in the understanding of salmon farming since the 1990s, when the CMZ1 and CMZ2 boundaries were made, and that it is now realised that the CMZ2 is generally not suitable for salmon farming.⁵⁷

Finding

[139] On the evidence we find that:

- [a] Overall, the CMZ2 has major limitations for salmon farming extension;

⁵⁴ Ibid at [37] – [52]

⁵⁵ Ibid at [G]

⁵⁶ Gillard EiR at [4.4]

⁵⁷ King Salmon Closing Submission at [4.19]

- [b] There are few mussel farms in the CMZ2 suitable for conversion; and
- [c] Even if it had been possible to secure the limited number of farms for conversion King Salmon would need to be looking for other areas to meet its anticipated demand.

Utilizing Mid Bay Sites in the CMZ2 for Salmon Farming

[140] Mr Hawes told us that further opportunities existed for King Salmon to pursue their growth options in CMZ2 through the creation of new mid-bay farms (farms beyond 200m from Mean Low Water Springs). Such farms would be non-complying activities in accordance with Rule 35.5 of the Coastal Marine Zone Rules.⁵⁸ Mr Brosnan likewise questioned why mid-bay applications had been dismissed by King Salmon on the basis that they would likely be strongly challenged during the application process.⁵⁹ He gave us the impression that this method had been untested with the statement:⁶⁰

... that according to the Council's records, no applications for mid-bay salmon farms in the CMZ2 Zone have been received and processed by the Council.

[141] Mr Quinn submitted that King Salmon had completely misunderstood the rules in the Sounds Plan when rejecting the mid-bay option.⁶¹ Mr Hawes addressed the planning issues associated with the mid-bay option in some detail. In his view the rationale for King Salmon's approach to mid-bay sites was based on the premise that the applications would be challenged during the resource consent process. He went on to suggest that Mr Gillard's concern arises from the precedent set by the Kuku Mara line of decisions. These decisions related to five non-complying resource consent applications to farm mussels beyond 200 metres from shore in Beatrix, Forsyth and Admiralty Bays. These applications were refused by the Council, decisions that were subsequently upheld by the Environment Court. The principal reason for refusing the consent applications was the importance of Admiralty Bay as a winter habitat for Dusky Dolphins.⁶²

⁵⁸ Hawes EiC at [357]

⁵⁹ Brosnan EiC at [107]

⁶⁰ Ibid at [108]

⁶¹ Quinn Opening Submission at [96]

⁶² Hawes EiC at [358]

[142] Mr Hawes had also reviewed the provisions of the Sounds Plan, concluding that there is some expectation that applications would be made for salmon farms in mid-bay situations in spite of the non-complying status. He relied on the explanation to the methods in Section 9.2.2 of the Plan.⁶³ This section states:⁶⁴

Rules ...

Within Coastal Marine Zone 2 out to 50 metres from mean low water mark, and beyond 200 metres from mean low water mark, marine farms are noncomplying activities. In those areas marine farming involving fin fish farming may be appropriate and it is recognised that consent may be granted by a resource consent application.

[143] In his rebuttal evidence Mr Gillard further explained why mid-bay sites were not appropriate:⁶⁵

[a] From a physical perspective;

[b] From a community perspective; and

[c] Because of opposition to and the history of unsuccessful applications.

Finding

[144] Mr Gillard impressed as an experienced and credible witness and we accept his evidence. We find that there are very few suitable sites in CMZ2 even when mid-bay options are considered.

Expansion of Existing Farms – Greater Intensification or Double-Parking

[145] One option suggested was for King Salmon to seek consent to expand their production at each of the current sites. Mr Hawes addressed this matter. He told us that one of the options for King Salmon was to expand one or more of the existing farms located in the CMZ2. This could be done either by the addition of extra cages or through the use of larger cages. This option would require consent applications, assessed under the provisions of the Sounds Plan.⁶⁶

⁶³ Ibid at [360]

⁶⁴ Sounds Plan at 9-8

⁶⁵ Gillard rebuttal at [5.8]–[5.15]

⁶⁶ Hawes EiC at [350]

[146] Mr Gillard told us in his rebuttal evidence, that “double-parking” was not a realistic alternative, as salmon farms cannot be expanded or double parked without significant cumulative effects.⁶⁷ We agree.

Land Based Closed System Aquaculture

[147] The representations of the Marlborough Recreational Fishers Association and others, addressed the matter of land based, closed containment aquaculture. They relied on a report entitled *Technologies for a viable salmon aquaculture: an examination of land-based closed containment aquaculture*⁶⁸ by Dr Andrew Wright, to demonstrate that closed containment aquaculture is both technically and economically feasible.⁶⁹

[148] Mr Preece told us that King Salmon has had first-hand experience with growing fish to a harvestable size in a freshwater land-based facility and that internationally there are a number of small-scale operators that use closed containment systems to grow salmon to harvest. He pointed out that currently there are no large scale land-based seawater farms in New Zealand. It was his opinion that they were generally not suited to the New Zealand way of farming. Mr Preece also expressed the opinion that the combination of the capital investment, the high operating costs, and the high degree of technical skill required limited land-based closed containment aquaculture systems to hatcheries and small producers.⁷⁰

[149] Mr Preece acknowledged that over the last 18 months the commercial application of land-based systems had received considerable attention and debate. He pointed out that Dr Wright’s report bases all options around a 100 tonne model which was scaled up to 1,000 tonnes and then 100,000 tonnes. Dr Wright concluded that closed containment systems are technologically feasible using proven and reliable off-the-shelf equipment and that large operations are also technically feasible.

[150] Mr Preece stated that it came down to a matter of economics and scale. He opined that Dr Wright’s figures were overly optimistic in a New Zealand context and that the operating costs of a closed containment system would be double King Salmon’s current operating costs for sea farms. Mr Preece did concede that there

⁶⁷ Gillard EiR at [6.7]

⁶⁸ Commissioned by Save Our Salmon – a Canadian marine conservation foundation.

⁶⁹ Marlborough Recreational Fishers Association, Soundfish and Boyce submission at [15.4]

⁷⁰ Preece EiC at [143] - [147]

may come a day when closed containment systems are considered economically viable in New Zealand, however, King Salmon do not consider this method an option for the foreseeable future.⁷¹

Sea Based Closed System Aquaculture

[151] Mr Anderson submitted that salmon farming should be practiced in a closed system where waste and pollutants are removed.⁷² Mr Hardyment made a similar submission.⁷³

[152] Mr Gillard, under cross-examination, told us that King Salmon had considered wholly contained sea pens but considered that they are not economically viable at this time.⁷⁴

Finding

[153] We find on the evidence that land based closed system aquaculture and water based closed system aquaculture are not viable options for King Salmon to pursue at this time.

Open Ocean Farming

[154] Mr Gillard stated in evidence that from a technical perspective, farms cannot be exposed to open wave conditions – they will fail. Marlborough Recreational Fishers and others held a different view and in their representations offered to us the following factors to back their claim:⁷⁵

- [a] A mussel farm is planned for a deep water site in Pegasus Bay, 14 km offshore;
- [b] A consent has been granted for a large-scale aquaculture operation on the west side of D’urville Island, and another in Clifford Bay; and
- [c] Overseas there are many fish farms in deep water.

⁷¹ Ibid at [148] - [151]

⁷² Anderson Submission 0115 at 5

⁷³ Hardyment submission 0291

⁷⁴ Transcript at 812

⁷⁵ Boyce/Marlborough Recreational Fishers/Soundfish submission at [15.1]

[155] They went on to state that to hasten the development of offshore farming there should be the establishment of commercial-scale offshore demonstration farms where technologies can be tested.⁷⁶

[156] Mr Gillard could see the benefits in open ocean farming but unfortunately the technologies were not yet available to cope with open wave conditions.⁷⁷

Finding

[157] We are satisfied on evidence that open sea farming is not, as yet, a reasonable alternative.

Ocean Ranching

[158] Ocean ranching had been considered by King Salmon but discounted following experience with inadequate returns of adult fish.

Farming in other Regions of New Zealand

[159] Many submitters contended that King Salmon should look elsewhere in New Zealand for more appropriate sites as the Marlborough Sounds “already have enough farms”.⁷⁸

[160] Mr Gillard outlined the investigations King Salmon have undertaken into possible alternative farm sites throughout New Zealand. The net result of their investigations was that they were unable to identify any suitable sites outside the Marlborough region.

[161] In summary Mr Gillard provided us with the following:⁷⁹

[a] North Island:

- [i] Around the North Island coast the temperatures are generally too high, and this region is outside the natural range of King Salmon in New Zealand;

⁷⁶ Ibid at [15.3]

⁷⁷ Transcript at 812

⁷⁸ Robb Representation at [15.3]

⁷⁹ Gillard at [53] – [54]

[b] South Island:

- [i] The Tasman and Golden Bays water temperatures are too high and the ocean conditions too extreme;
- [ii] The West Coast is too exposed;
- [iii] Fiordland would potentially be an ideal location for salmon farming but the area is a significant wilderness area within a National Park and World Heritage Site;
- [iv] The East Coast is too exposed;
- [v] Otago Harbour is too constrained by depth and boat traffic;
- [vi] In Akaroa Harbour the water temperatures are suitable however this harbour is already the site of a boutique salmon farming operation in the only area that has flows and depths suitable for salmon farming;
- [vii] Port Underwood is a relatively protected and shallow embayment with low flows and at times, high sediment levels; and
- [viii] In Admiralty Bay the water temperatures are marginal and in conjunction with low water current flows, this bay is considered unsuitable for farming salmon.

[c] Stewart Island - Big Glory Bay - Sanford Ltd has a salmon in this Bay. It is a very low flow site.

[162] Mr Gillard told us that after eliminating other potential New Zealand sites, King Salmon concentrated on areas within the Marlborough region including the Marlborough Sounds.⁸⁰

⁸⁰ Gillard EiC at [57]

Finding

[163] We are satisfied that King Salmon has undertaken an appropriate analysis of the New Zealand alternatives.

Alternative Process - Waiting for the Council's Review of the Sounds Plan

[164] Many submitters, with the Council taking a lead, advocated that King Salmon should have waited for the Council to complete its review of the Sounds Plan. They claimed that this process should have been adopted rather than the concurrent application process before the Board. We doubt very much, that an alternative process to one that is also available to a proponent under the provisions of the RMA, falls within the ambit of alternatives which normally relate to alternative sites or methods. Notwithstanding, because so many parties raised the issue, we address it.

[165] The issue needs to be considered in context. In 2007 King Salmon identified to the Council that it needed additional space in the CMZ1 Zone to meet its demand and because of the species requirements of King Salmon. The evidence of Mrs Gillard, Clark and Preece, all touch on demand and supply issues. At that time the CMZ1 prohibition precluded any right to make an application. Between 2008 and October 2011 King Salmon was unable to apply for new sites in the CMZ1 Zone. During that period King Salmon attempted to move forward by working on several planning initiatives with the Council including a private plan change⁸¹ to establish a priority regime for future plan change requests.

[166] With the current legislation in the pipeline, King Salmon commenced discussions on this proposal with Council in September 2010. Background work for the proposal was carried out so that the necessary applications could be lodged as soon as the legislation became operative on 1 October 2011. It is now some five years since King Salmon submitted to the Council in 2007.

[167] In any event, using the review is not an attractive option. Mr Jerram and Mr Hawes made it clear in their evidence that the Council does not support any

⁸¹ PC16

modification of the CMZ1 boundaries. Mr Jerram confirmed under cross-examination that in his view:⁸²

The whole idea of a prohibited zone is that it is prohibited in perpetuity I would have said.

[168] Mr Hawes told us in his statement of evidence that the Council has already decided not to amend the spatial extent of the CMZ1. It would appear that this decision had been made without any consultation with King Salmon or the marine farming industry. We are satisfied that King Salmon had really no alternative but to use the present process.

[169] Even if the review process was adopted, we were told by Mr Hawes that the draft Review will not be ready for notification until at least July 2013.⁸³ He agreed that hearings would be unlikely to occur until sometime during 2014. Any appeal to the Environment Court would unlikely to be determined before 2017.

[170] Because of the Council's and others opposition to the proposals, it seems more than likely that the process would run the full gamut. This effectively means waiting another five years for an almost identical hearing to get sites zoned. If they were zoned, a further consent application would have to be lodged before anyone else to ensure priority: this could take another 18 months to 2 years.

[171] To compel King Salmon to wait for the review process would be tantamount to committing it to what the Environment Court termed "review paralysis".⁸⁴ That is, standing a matter down until all proceedings under a yet to be proposed plan has been determined. The opportunity for a privately initiated plan change is intended to sidestep such paralysis, and applicants for a plan change are entitled to an expeditious determination of their request.

Finding

[172] We find that to compel such an alternative would be inappropriate. Furthermore, it would defeat the purpose of the enactment of Subpart 4 of Part 7A of the RMA.

⁸² Transcript at 1562

⁸³ Transcript at 2012

⁸⁴ *Kennedy Bush Road Neighbourhood Association v Christchurch City Council*, EnvC W063/97. See also *Countdown Properties (Northland) Limited v Dunedin City Council* [1994] NZRMA 145 at [150] (HC)

The Precautionary Principle and Adaptive Management

[173] Many of the submitters referred to the precautionary principle. Mr Heal in his opening said:⁸⁵

As a signatory to the Convention on Biodiversity (1992), this country has a responsibility to adhere to the intention of the principle enshrined therein requiring decision makers to apply the “precautionary principle”. It is also referred to in the New Zealand Coastal Policy Statement (Policy 3). The precautionary principle, or the precautionary approach requires that if an action or policy has a suspected risk of causing harm to the public or to the environment, in the absence of scientific consensus that action or policy is harmful, the burden of proof that it is not harmful falls on those taking the action. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing measures to prevent environmental degradation.

[174] We accept that the precautionary approach has been applied in resource management proceedings. It is important to understand what it actually means, at law, and to apply it correctly. The precautionary approach is derived from international law. Perhaps the most well known is Principle 15 of the *Rio Declaration 1992* which states that:

Principle 15

In order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation.

[175] Although the RMA does not expressly prescribe adoption of the precautionary principle, the Courts have held that there is a precautionary approach inherent in the structure of the RMA, and in particular in the definition of “effect” in Section 3;⁸⁶ the definition of “environment” in Section 5(2)(1), and Section 104(1)(a) of the RMA.⁸⁷ The basic premise is that decision makers should be cautious in circumstances of uncertainty, and it has been held that:⁸⁸

The precautionary approach may be applied in making the judgment where, on the totality of the evidence, [the Court] finds that due to scientific

⁸⁵ Heal Transcript at 1011

⁸⁶ The inherency of the principle in the RMA was considered in *Shirley Primary School v Christchurch City Council*, [1999] NZRMA 66 at [220] – [222]), and *Foreworld Developments Limited v Napier City Council*, EnvC Wellington W29/2006 at [30]

⁸⁷ See also *McIntyre v Christchurch City Council*, [1996] NZRMA 289

⁸⁸ *Ngati Kahu Ki Whangaroa Co-operative Society Limited v Northland Regional Council*, [2001] NZRMA 299 at [161]

uncertainty, exercise of the consent would be likely to cause serious or irreversible harm to the environment.

[176] In *Sea-Tow Limited v Auckland Regional Council* the Environment Court set out the general principles derived from a number of Environment Court and High Court decisions to guide the application of the precautionary approach in RMA applications.⁸⁹ In summary they are:

- [a] A careful balanced judgment is required; in some cases that may only be achieved by adopting a precautionary approach;⁹⁰
- [b] The precautionary approach may be applied to influence the exercise of a discretion to the extent consistent with the purpose of the RMA;⁹¹
- [c] Even if there is a dispute of material fact, that does not necessarily mean that the precautionary approach must be adopted; rather the obligation is to consider the evidence;⁹² and
- [d] A precautionary approach should only be applied where there is scientific uncertainty or ignorance about the scope or nature of the relevant environmental harm; there needs to be a plausible basis, not just suspicion or innuendo, for adopting the precautionary approach.⁹³

[177] The measure of risk and its assessment and the acceptable degree of risk avoidance are matters of fact in each particular case.⁹⁴ The RMA is not a “no risk” statute and it is necessary to take a pragmatic approach to both the risk itself and its prevention.⁹⁵

[178] Importantly, the application of the precautionary approach under the RMA does not result in a reversed burden of proof as suggested by Mr Heal in the quote

⁸⁹ EnvC A066/06 at [462]

⁹⁰ *Rotorua Bore Users Association Incorporated v Bay of Plenty Regional Council*, EnvC A138/98

⁹¹ *McIntyre v Christchurch City Council* [1996] NZRMA 289 (PT)

⁹² *Greenpeace New Zealand Incorporated v Minister of Fisheries*, HC Wellington, CP492/93

⁹³ *Aquamarine Limited v Southland Regional Council*, EnvC C126/97 and *Transpower New Zealand Limited v Rodney District Council*, A085/94 (PT)

⁹⁴ *Land Air Water Association v Waikato Regional Council*, EnvC A110/01

⁹⁵ *Envirowaste Services Limited v Auckland Council* [2011] NZEnvC 130 at [64]–[65]

previously cited. After considering the principles as to the burden of proof, the Court in *Shirley Primary School* noted that:⁹⁶

... If the appropriate standard of proof is on a sliding scale between the balance of probabilities and beyond reasonable doubt, depending on the impact of the effect, the fact is that the appropriate caution has been exercised when deciding under s 104(1)(a) what the effects are to be considered under s 105. If the Court applies the “precautionary principle” as another matter under section 104(1)(i) then the need for caution will have been considered twice.

[179] It is the precautionary approach that has, at least in part, given rise to what has become known as the “adaptive management” approach. This provides for ongoing monitoring of the effects of an activity, in order to promote careful and informed environmental decision-making, on the best information available. It is a precautionary technique that provides a pragmatic way forward, enabling development while securing the ongoing protection of the environment, in complex cases where there are ecological or technological uncertainties as to the effects of the proposal.

[180] The use of adaptive management in New Zealand has developed through a number of Environment Court cases dealing with the impacts of proposed mussel farms.⁹⁷ It has since been applied in a range of other contexts involving potential effects and complex ecological systems including:

- [a] impacts on riverbed vegetation and geomorphology;⁹⁸
- [b] effects arising from the use of geothermal fluid for power generation;⁹⁹
- [c] effects arising from the installation and operation of tide turbines;¹⁰⁰
and
- [d] marine farming applications.¹⁰¹

⁹⁶ [1999] NZRMA 66 at [223]

⁹⁷ *Golden Bay Marine Farmers v Tasman District Council*, W19/2003; *Minister of Conservation v Tasman District Council*, HC Nelson, CIV2003-485-1072; *Golden Bay Marine Farmers v Tasman District Council*, W089/2004

⁹⁸ *Lower Waitaki River Management Society Incorporated v Canterbury Regional Council*, C80/2009

⁹⁹ *Geotherm Group Limited & Ors v Waikato Regional Council*, A047/2006; *Geotherm Group Limited v Waikato Regional Council* [2003] 9 ELRNZ 75

¹⁰⁰ *Crest Energy Kaipara Limited v Northland Regional Council*, A132/2009

[181] After considering the principles applied in these cases for adaptive management to be appropriate in this instance we must be satisfied that:

- [a] There will be good baseline information about the receiving environment;
- [b] The conditions provide for effective monitoring of adverse effects using appropriate indicators;
- [c] Thresholds are set to trigger remedial action before the effects become overly damaging; and
- [d] Effects that might arise can be remedied before they become irreversible.

[182] We propose to apply an adaptive management approach in the context of the above principles.

Consultation

[183] Many submitters raised the issue of consultation. It was contended by many that the consultation carried out by King Salmon with potentially affected parties was inadequate. Concerns relating to the consultation process were raised generally, and in particular by iwi in relation to cultural matters.

Requirement to Consult

[184] As was pointed out by Mr Nolan in his closing submissions the RMA is abundantly clear.¹⁰² There is no legal requirement on an applicant to undergo consultation prior to lodgment of any private plan change request or application for resource consent.

[185] Under Clause 3 Schedule 1 of the RMA, there is a requirement for local authorities to consult with certain specified parties during the preparation of a

¹⁰¹ *Biomarine Limited v Auckland Regional Council*, A14/2007, and *Clifford Bay Marine Farms Limited v Marlborough District Council*, C131/2003

¹⁰² Nolan, Closing submissions at [9.9] and following

Council initiated Plan Change. However, there is no corresponding provision in Part II Schedule 1 of the RMA which relates to private Plan Change requests.

[186] In addition the scheme of Part II Schedule 1 of the RMA reinforces that there is no consultation requirement on the applicant for a private Plan Change.¹⁰³ For example, Clause 23 allows a local authority to request further information regarding “the nature of any consultation undertaken or required to be undertaken.” The reference to “any consultation undertaken” is non-mandatory and is consistent with the language used in Schedule 4 (in respect of resource consent applications).

[187] In respect of a resource consent, Section 36A(1)(a) of the RMA clearly states that an application for a resource consent (or the local authority) does not “have a duty under this Act to consult any person about the application.”

[188] The RMA requires that a resource consent application is to include an assessment of effects. Schedule 4 of the RMA requires that assessment to identify those consulted with, the consultation undertaken and any response. It does not impose an obligation on an applicant to consult. In *Crest Energy Kaipara Ltd & Ors v Northland Regional Council*¹⁰⁴ the Court noted that rather than being an absolute requirement of the RMA, consultation is:¹⁰⁵

... something on which information is invited when applications are put forward, because it assists the consent authority and the court to understand the extent to which (amongst other things) assessment of effects on the environment might have been undertaken. That is, it assists the consent authority to decide whether it is confident that actual and potential effects are adequately understood, assessed, and dealt with in terms of proffered avoidance, remediation, or mitigation ...

[189] It is in this context that we consider the consultation carried out by King Salmon. We are also conscious of the fact that discussions do not stop at the commencement of the hearing process. The hearing process itself can provide an opportunity for issues to be raised and concerns taken into account. Iterative improvements to a proposal are the result of ongoing dialogue and an improved understanding of the issues.

¹⁰³ *Briggs v Kapiti District Council* [2011] NZEnvC57

¹⁰⁴ A132/2009

¹⁰⁵ Ibid at [197]

[190] Notwithstanding the legal position, King Salmon did carry out a process of consultation in two phases – the pre-lodgment phase and the post-lodgment phase. We now turn to consider the consultation process undertaken by King Salmon.

The Consultation Process

Iwi Consultation

[191] Iwi consultation is important to enable decision-makers to understand the cultural effects of an activity, particularly as regards the matters falling within Sections 6(e), 7(a) and 8 of the RMA.

[192] The relevant provisions set out in the statutory documents provide a clear direction around consultation and engagement with tangata whenua, to ensure that consultation is early, customary values and views of tangata whenua are heard and understood and that the function of kaitiakitanga is taken into account.

[193] In particular, Policy 2 of the Coastal Policy Statement provides clear guidance on the importance of recognising and providing for tangata whenua interest in the coastal environment. Of particular importance is achieving engagement that is early, meaningful and in accord with the tikanga of the tangata whenua of the place.

[194] The King Salmon proposal involves sites located across the Sounds, an area that has multiple iwi interests which in some instances overlay each other. Mr Gillard believed it was important to engage with iwi at an early stage, even if they could not reveal to iwi their specific sites.

[195] One of the concerns of King Salmon about full disclosure was that identifying aquaculture space would have put the Government under pressure to gazette the proposed sites.¹⁰⁶ Mr Gillard told us that by virtue of the Crown's commitment to provide Maori with 20% of all marine farming space created around New Zealand coasts and harbours, iwi in his view are potential marine farmers and therefore competitors.¹⁰⁷

[196] Mr Gillard outlined the timelines of iwi consultation, that began in February 2011 with a presentation to the Te Tau Ihu o Te Waka a Maui Fisheries Forum. In

¹⁰⁶ Gillard EiR [11.6]

¹⁰⁷ Gillard EiR [C]

April 2011 King Salmon sent letters to all relevant iwi organisations including general information about the proposal and the location of the zones sought to be re-zoned, and offering to meet further with them. King Salmon received and acted on responses from Ngati Apa and Ngati Koata.

[197] Mr Gillard explained that in late May 2011 King Salmon contacted each of the eight iwi leaders or their delegated authority to find a common location where King Salmon could meet with them together. The parties spoken to agreed to a joint meeting and procedures and that Te Tau Ihu o Te Waka a Maui Fisheries Forum would be an appropriate venue.¹⁰⁸ King Salmon continued to engage individually with each of the iwi in an effort to address iwi specific concerns.¹⁰⁹ King Salmon corresponded with the Forum in October 2011 (around the time of lodgement of the applications) and met with the Forum in December 2011.

[198] From this consultation Ngati Apa, Ngati Rarua and Ngati Tama indicated they did not wish to submit nor did they ultimately do so.¹¹⁰

[199] Two iwi respondents acknowledged through submissions and evidence the King Salmon efforts to consult. Sharyn Smith from Ngati Kuia Charitable Trust noted the professionalism of King Salmon representatives and the written evidence and explanations provided to the Trust. Te Atiawa Trust considered that despite a late start to engagement with the Trust, King Salmon approached its relationship with Te Atiawa in an open and constructive manner resulting in the resolution of Te Atiawa concerns with the effects of the proposed activity.¹¹¹ This was evidenced by the production of a Cultural Impact Assessment (CIA) by Te Atiawa. The consultation process culminated with an agreement between the Te Atiawa Trust and the withdrawal of their submission in opposition. However a number of whanau and hapu members of Te Atiawa lodged submissions in opposition and expressed concern that they were not consulted by King Salmon. In this regard Te Atiawa Trust recognised that individuals, whanau and hapu may independently take steps to protect their customary rights as they deem necessary.

[200] Mr Gillard also provided a detailed account of communications with Ngati Koata Trust Board and their representatives. Engagement was constrained due to communication and iwi recognition issues that were in part historical. King Salmon

¹⁰⁸ Gillard EiR [12.18]

¹⁰⁹ Gillard EiR [12.20] - [12.48]

¹¹⁰ Gillard EiR [12.28]

¹¹¹ CIA at 3

endeavoured to address these matters during the hearing by withdrawing an *Iwi Interests* report lodged as part of the applications and apologising for any hurt caused to Ngati Koata. For their part the Ngati Koata Trust Board remained firmly opposed to the King Salmon farm proposals for the Waitata Reach, and expressed frustration at the level of endeavour that Ngati Koata had to go to defend their mana in these proceedings.

[201] The Tahuaroa-Watson Whanau, who are a hapu of Te Atiawa, were not party to the agreement that their mandated iwi authority, the Te Atiawa Trust, entered into with King Salmon. Their counsel, Mr Bennion, opined that differing consultation requirements apply for plan changes and resource consents and that King Salmon had conflated and confused the two.¹¹² Mr Bennion referred to the provisions for private plan changes under Part II of the First Schedule and in particular Clause 23 which refers to consultation “required to be undertaken”. This, he suggested, appears to mean that consultation may be required where a proposal warrants it. In this respect he opined that Policy 2 of the Coastal Policy Statement creates expectations around consultation for proposals affecting Maori in the coastal marine area, and that for various reasons the consultation carried out by King Salmon was inconsistent with that policy.¹¹³

[202] Mr Ironside¹¹⁴ pointed out that an application for protected customary rights under the Takutai Moana Act is a claim that those rights existed in 1840 and have been continuously exercised in the intervening 170 odd years. He said holders of such protected customary rights are very unlikely to be modern iwi organisations and are more likely to be historic hapu and whanau who have exercised such rights for at least 170 years.¹¹⁵

[203] Mr Mikaere¹¹⁶ was particularly critical of the consultation process that King Salmon had followed. He considered that given vital site location information was withheld, that the exercise was a “telling” rather than a consultation and that what might be available to Maori is the leavings after the eyes had been picked out.¹¹⁷

¹¹² Submission at [3.3]

¹¹³ Submission at [3.17]

¹¹⁴ For Pelorus Wildlife Sanctuaries Limited, James and Rea Buchanan, and Hori Turi Ekington and Whanau

¹¹⁵ Transcript at 823

¹¹⁶ For Pelorus Wildlife Sanctuaries Limited, James and Rea Buchanan, and Hori Turi Ekington and Whanau

¹¹⁷ Mikaere EiC at [28] - [34]

Finding on Iwi Consultation

[204] Some tangata whenua were not satisfied with the consultation process, which was partly confounded by information on the proposed sites being withheld until lodgement for commercial reasons. Attempts were made to engage with iwi both before and after lodgement, as detailed in the evidence of Mr Gillard. However, some approaches made were not responded to by some iwi. Consultation is a two-way process.

[205] Notwithstanding the grievances of some iwi over the consultation process, the pre-hearing process and the hearing itself have enabled further opportunities for the parties to communicate and present their concerns to the Board.

[206] While the consultation process was not ideal, we are satisfied that on the information presented to us we are in a position to make an informed decision.

General Consultation

[207] Prior to lodgment in October 2011, it is clear that King Salmon engaged with the Council and the Department of Conservation at officer level. It also engaged with the community on a number of levels.¹¹⁸

[208] During the first phase of King Salmon's community engagement, it chose, for commercial reasons, not to reveal the site locations. Mr Cardwell explained that this was nothing new for marine farm applications and the reasons for it.¹¹⁹ It was the company's position that while, for commercial reasons, it could not reveal the sites, it understood the concerns of the community about expansion in a general sense. It therefore endeavoured to impart knowledge about the reason for the proposal, and sought to identify the possible effects.¹²⁰

[209] King Salmon engaged experts to assist it through aspects of the first stage of the process, including Mr Cardwell (who was engaged to assist in consultation); Mr Baines (who was engaged in relation to social impacts); and Mr Bamford (who was engaged in relation to tourism and recreation effects). All three met with

¹¹⁸ Caldwell EiC at [11] – [16]; Gillard EiC at [111] – [112]

¹¹⁹ Transcript at 1074

¹²⁰ Nolan closing submissions at [4.57(b)]

individuals and representative groups for the purposes of informing site selection and identifying and considering the effects of the application.

[210] Following lodgment, there was wide publicity. This included:

- [a] the entire application being loaded onto the EPA website;
- [b] a front-page article and map of the sites in the local newspaper; and
- [c] a “go-live” consultation programme¹²¹ that included sending letters and emails to a database list of potentially effected or interested parties. A total of 98 letters were sent.¹²² The letters were followed up by Mr Cardwell and Mr Gillard, while Mr Baines and Mr Bamford both continued with their engagement and consultation and extended it to people at the site locations.¹²³

[211] Further action included a letter-drop attaching a Marlborough Sounds map identifying each proposed site to landowners within a 2km radius or 4km line of sight of each of the proposed sites.¹²⁴ Engagement with the community occurred throughout the 5-month period before formal notification at the end of March 2012.

[212] For the Council, Mr Quinn contended that the consultation was inadequate and that this contributed to the high level of opposition to the proposals. Mr Quinn submitted that there was a lack of meaningful consultation, particularly with regard to the site-specific consultation which was limited to owners and occupiers of land within a short radius of each proposal.¹²⁵

[213] Many of the concerns regarding consultation and raised by the submitters were focused around the integrity of the Sounds Plan and the certainty the community placed on the prohibited zone in the document. There was also concern expressed that this process is a rapid and “fast-track” process which placed limitations on the capacity of the community to respond to large amounts of scientific and technical information.¹²⁶

¹²¹ Transcript at 1066

¹²² Ibid at 1117

¹²³ Baines EiC at [38]; Bamford EiC at [45]

¹²⁴ Cardwell EiC at [31]

¹²⁵ Quinn opening submissions at [25] – [26]

¹²⁶ Caddie Submissions Transcript at 3196

[214] Mr Plaisier of the Tui Nature Reserve Wildlife Park and Wildlife Trust, spoke of the difficulties lay people had in dealing with the overwhelming amount of technical detail that went with the proposal. An issue that he said was compounded by the non-disclosure of sites by King Salmon until after lodgment.

[215] Mr Gillard addressed the consultation process in his evidence. He stated that he undertook much of it personally, notwithstanding that Mr Cardwell, Mr Baines and Mr Bamford were also engaged. He explained the reason why King Salmon did not disclose the sites prior to lodgment. The company had just been through their first Environment Court hearing, in respect of the resource consent for the White Horse Rock site, and was aware that the applications had to be supported by significant technical and expert work.¹²⁷ He pointed out that the company anticipated controversy as their sites were largely going to be located in the CMZ1 and knew that until they had lodged resource consents, they would not have priority in respect of the sites. The concern was that not only competitors, but also neighbours and interest groups, might try and “spike” a site by seeking consent for a mooring or some other occupation at the location.¹²⁸ He emphasised the significant cost in investigating those sites and getting them to a point ready for lodgment, and the commercial sensitivity around releasing information about them.¹²⁹

[216] Full consultation, he told us, began following lodgment of the applications on 3 October 2011.¹³⁰ Specific consultation was conducted with potentially affected people for each of the proposed sites. This typically involved ongoing discussions and on site meetings to resolve or identify ways to mitigate the concerns of the affected parties. The consultation included:

- [a] Contacting a cross-section of organisations and individuals in the regional community, including the Council;
- [b] Taking a “no surprises” approach in making every effort to consult regularly, both on the project in dealing with emerging issues as they were identified;¹³¹

¹²⁷ Plaisier EiC at [107]

¹²⁸ Plaisier EiC at [109]

¹²⁹ Plaisier EiR at [11.2]

¹³⁰ Plaisier EiC at [110]

¹³¹ Cardwell EiC at [11] – [16]

- [c] Facilitating meetings between experts and the stakeholders such as the Marlborough Recreational Fishers Association;¹³²
- [d] Consulting with the large ferry companies, Strait Shipping and Interislander;¹³³
- [e] Mr Cardwell was a point of contact for adjacent landowners and he facilitated meetings with tourism, and attended residents, environmental groups, recreational boating and fishing group meetings;
- [f] Providing site maps of the proposed applications;
- [g] Using the EPA website; and
- [h] Using media releases and responses.

[217] Notwithstanding the evidence King Salmon adduced on their efforts to consult, there was a lot of criticism from many of the affected parties. This criticism included:

- [a] Its decision not to disclose the sites until lodgment for commercial reasons;
- [b] Alleged failures to consult widely enough;
- [c] A failure to adequately explain the proposal at the facilitated meetings; and
- [d] A failure by those engaged to assist King Salmon to adequately identify those likely to be affected.

Finding

[218] We can understand the concerns of King Salmon about identifying the proposed sites because of the commercial sensitivity that arose out of the legislative

¹³² Ibid EiC at [19]; Gillard EiC at [137]

¹³³ Gillard EiC at [137] – [140]

framework for obtaining approvals combined with the large cost of investigating and preparing for resource consent applications.

[219] We also acknowledge the difficulty that the community would have in responding to these applications under the legislative time constraints.

[220] We are satisfied on the evidence that King Salmon has made genuine endeavours to consult with the Council, with the Department of Conservation, with community and recreational and tourism groups, and with people likely to be affected. Clearly, not everyone who should have been contacted was contacted. This is inevitable when the effects of the proposal influence an area such as the Marlborough Sounds with its wide community of interest.

[221] However, we are satisfied that comprehensive consultation initiatives were undertaken, such as the use of the newspaper and other media which would have enabled people to respond.

[222] Further, notwithstanding the constraints in time, all parties have had an opportunity to make submissions and to appear before us. Many have taken advantage of that opportunity. We have heard their concerns and are able to take them into account in coming to our decision.

CONTESTED EFFECTS

ASSESSMENT OF ACTUAL AND POTENTIAL ECONOMIC EFFECTS

Introduction

[223] The proposal would enable King Salmon to grow its business and meet the demand for salmon locally and overseas, with wider economic benefits for the region and New Zealand. There was considerable debate however as to the extent of these economic benefits.

[224] Dr Douglas Fairgray, for King Salmon, had assessed the economic impacts of the proposal, using an “input/output” model. Professor Tim Hazledine, for the Council, was critical of the model used by Dr Fairgray, but did not present a model of his own. He did provide a partial contribution towards a cost/benefit analysis. There was a large quantitative difference between the economic gains projected by Dr Fairgray and those projected by Professor Hazledine.

[225] Dr William Kaye-Blake, at the request of King Salmon, provided a peer review of the economic evidence. This assisted us with an understanding of the limitations of the various approaches, and provided a basis upon which we could assess the quantitative difference.

[226] We also heard quite trenchant criticism from Ms Wendy McGuinness, particularly with regard to global demand and price for King Salmon’s product on the world market. Mr Soderberg was critical of the validity of the base data used by Dr Fairgray in his input/output model.

[227] Finally, we heard from Mr Offen, a chartered accountant, who maintained that Dr Fairgray’s analysis overstated the benefits to a significant degree.

Economics and the Resource Management Act

[228] It is now well accepted that economics is one of the many threads that weaves its way through the provisions of the RMA to guide decision-makers towards the single purpose of the RMA – sustainable management of resources. Economic efficiency is part of our consideration under Section 7(b) in assessing the efficient use of resources.

[229] More importantly, Section 5 of the RMA emphasises managing of the use, development and protection of natural and physical resources in a way that enables people and communities to provide for their social, economic and cultural well-being.

[230] The economic thread contained within the RMA continues through the hierarchical statutory instruments. The relevant provisions of the statutory instruments include:

[a] The New Zealand Coastal Policy Statement:

[i] Objective 6 to enable people and communities to provide for their social, economic, and cultural well-being and their health and safety, through subdivision, use, and development. Relevantly, this objective recognises that:

(a) The protection of the values of the coastal environment does not preclude use and development in appropriate places and forms, and within appropriate limits;

(b) Some uses and developments which depend upon the use of natural and physical resources in the coastal environment are important to the social, economic, and cultural well-being of people and communities; and

(c) Functionally, some uses and developments can only be located on the coast or in the coastal marine area.

[ii] Policy 6 promotes the efficient use of occupied space.

[iii] Policy 8 specifically recognises the significance of the existing and potential contribution, of aquaculture to the social, economic and cultural well-being of people and communities. It directs that Regional Policy Statements and regional coastal plans make provision for aquaculture activities in appropriate places in the coastal environment,

and take account of the social and economic benefits of aquaculture.

[b] The Marlborough Regional Policy Statement

[i] The Regional Policy Statement establishes the environmental limits within which people and the communities can operate. It also seeks to enable people and communities to provide for their social, economic and cultural well-being within those environmental limits:

[1] Chapter 7 addresses community well-being. There are a number of enabling objectives and policies that are of direct relevance:

- (a) Objective 7.1.2 seeks to maintain and enhance the quality of life of the people of Marlborough, while ensuring that the activities do not adversely affect the environment;
- (b) Objective 7.1.9 enables present and future generations to provide for their well-being by allowing use, development and the protection of resources;
- (c) Policy 7.1.10 addresses the appropriate type, scale and location of activities including through clustering and buffer zones;
- (d) Policy 7.1.12 ensures that no undue barriers are placed on the establishment of new activities (including new primary production species) provided the life supporting capacity of ecosystems is safeguarded; and
- (e) Policy 7.2.10 highlights a number of key considerations for assessing proposals to occupy areas of coastal space. Essentially,

public access and recreational use are identified as a matter of prime importance for Marlborough. Space for aquaculture must consider marine habitat sustainability, landscape, navigation and compatibility with neighbours. Any allocation for private benefit must not compromise these important values.

[c] The Marlborough Sounds Resource Management Plan:

- [i] Chapter 9 – this chapter addresses coastal marine matters with Chapter 9.1.2 addressing aquaculture management. This chapter is of limited use as it principally considers the old aquaculture management area regime and does not address Policy 8 of the Coastal Policy Statement; and
- [ii] Objective 9.2.1.1 addresses the location of appropriate activities in the coastal marine area whilst avoiding, remedying or mitigating the adverse effects of those activities.

[231] It is within the above statutory framework that we apply our findings on the economic evidence.

Preliminary Matters

[232] The submissions and cross-examination raised three preliminary issues that we need to address.

The Validity of the Employment Figures

[233] The validity of the employment figures used by Dr Fairgray was called into question by a number of the submissions. In King Salmon's application it was noted that if the proposal were to proceed, the likely additional employment would be 112 to 152.¹³⁴ Dr Fairgray, in evaluating the wider economic impacts, provided an estimate of 600 (in terms of his modified employment count (MEC), by 2021).¹³⁵

¹³⁴ New Zealand King Salmon Report at 38

¹³⁵ Fairgray EiC at [3.26]

This based on an economic impact report he had prepared and did not rely on the predicted employment recorded in the application.

[234] Mr Clark, King Salmon's Chief Financial Officer, in rebuttal evidence, provided us with updated employment figures of 375.¹³⁶ Dr Fairgray responded to the updated employment figures by revising his estimates, noting that the proposal would result in 400 MEC's for the northern South Island for the 2011/2021 period.¹³⁷ The combined, estimated, employment gain total, including indirect and induced, would he said be 1,150 for the 2011/2021 period.

[235] Through cross-examination and submissions to us, it was implied that some inappropriate collusion had occurred. Mr Clark's figure of 375¹³⁸ as the added employment for King Salmon by 2021 is the best evidence before us of the likely additional employment figures. Mr Clark had checked the basis of the figures for his reply evidence and was tested on it in cross-examination, when he explained his original error.¹³⁹

[236] Dr Fairgray's revised estimate based on the figure of 375 is in our view appropriate. We find that there was no inappropriate collusion or attempt to mislead the Board.

The Validity of the Base Data

[237] Dr Fairgray used detailed data provided by King Salmon, on a confidential basis, for his economic assessment. A number of the submitters questioned the validity of the data.¹⁴⁰

[238] Professor Leader, representing the Marlborough Recreation Fishers Association & Ors, submitted that there was little hard evidence for substantial economic returns to the Marlborough region. He emphasised that the information provided by King Salmon to Dr Fairgray was confidential, and accordingly, a detailed inspection of the data was not available to the other parties.¹⁴¹

¹³⁶ Clark EiR at [6.2]

¹³⁷ Fairgray Supplementary Evidence Table 3.8

¹³⁸ Clark EiR at [6.2]

¹³⁹ Transcript at 969

¹⁴⁰ For example McGrath submission 0041, Terry submission 0591, Ward submission 1217

¹⁴¹ Transcript at 3342

[239] The Kenepuru & Central Sounds Residents Association reiterated Professor Leader's submission and expressed concern to us that they could not transparently review the claims of King Salmon as the input data was based on confidential information that could not be audited.¹⁴²

[240] The Association's concerns were taken up by Mr Soderberg when he cross-examined Dr Fairgray at length as to his verification of the documentation he received from King Salmon.

[241] We acknowledge that the other parties did not have the advantage of the confidential information supplied to Dr Fairgray by King Salmon. We are surprised that an appropriate application was not made for the release of the information subject to constraining its publication. If such an application had been made, that could have been addressed under strict conditions as to use and publication. Notwithstanding the criticism, we have no reason to doubt the validity of the data used by Dr Fairgray.

The Demand For and Sale Price of King Salmon's Product

[242] As justification for its proposal, King Salmon relied on the fact that there will be a demand for an additional 10,000 to 12,000 tonnes of Chinook from New Zealand by 2020. This is based on the evidence of Mr Ragnar Nyostoyl, an experienced market analysis in the international seafood industry, particularly salmon and trout. A number of submitters took issue with Mr Nyostoyl's conclusions.

[243] Ms McGuinness told us that while the global supply projections of New Zealand King Salmon can be relied upon, the demand data and price information trends were inadequate. Therefore, Dr Fairgray's conclusions over revenue and profit could not be relied upon. She held the belief that more information was required on demand, risk, prices, and a deeper understanding of the relationship between global supply and price.¹⁴³

[244] Mr Nyostoyl told us that he was not comfortable presenting evidence on demand going beyond 8 to 10 years. It would thus not be appropriate for him to

¹⁴² Kenepuru & Central Sounds Residents Association Submission at [61]

¹⁴³ McGuinness EiC at [7.5] and final statement at [1]

forecast economic demand for 35 years away.¹⁴⁴ He agreed with Ms McGuinness that the farmed salmon industry is volatile, but there is no contradiction between a volatile industry, and a sustainable and profitable industry.

[245] In addressing Ms McGuinness's other concerns over the need for a deeper and broader analysis, Mr Nyostoyl recorded that the salmon industry is still a relatively new industry, but nonetheless, over the last 35 years, the increase in demand had surpassed all expectations.¹⁴⁵

Finding

[246] We understand the difficulties in forecasting future demand and price on the world market. Any prognostication must necessarily be subject to the vagaries of international markets and pricing.

[247] However, Mr Nyostoyl is an experienced analyst and consultant within the world aquaculture and seafood sector. He acknowledged the limitations of his prognosis and was not prepared to forecast beyond 10 years.

[248] We are satisfied that based on present and past trends, that sufficient demand exists in the global market for Chinook salmon to justify King Salmon's decision in making these applications.

The Evidence of Dr Fairgray

[249] Dr Fairgray told us the benefits of the proposed salmon farms would include:¹⁴⁶

- [a] Substantial and ongoing positive economic impacts on the economies of the Marlborough and Nelson regions, in particular, and also on the national economy; and
- [b] The additional activity would significantly expand the established salmon farming and processing sector and enable it to grow significantly faster than the wider regional economies.

¹⁴⁴ Nyostoyl EiR at [3.6]

¹⁴⁵ Ibid at [3.12]

¹⁴⁶ Fairgray EiC at [C] – [D]

[250] To assess the likely economic impacts of the proposed new salmon farms, Dr Fairgray constructed an input/output model.¹⁴⁷ The model generated values for “economic output” and “valued added”, which show the contribution to the regional and national economy in a manner closely akin to GDP, as well as the employment generated by the proposal. These three parameters are predicted for the “direct impacts” of salmon farming and the processing itself, as well as the “indirect impacts” (which arise because additional activity in the salmon sector will generate higher levels of activity in industries which serve or draw from that sector).

[251] Finally, the model predicts “induced impacts” which arise because the higher levels of employment and income (from other direct and indirect impacts) generate higher expenditure levels by households.¹⁴⁸

[252] Dr Fairgray told us that the salmon farming industry already plays a significant role in the Marlborough and Nelson regional economies, and a lesser role within the Tasman District.¹⁴⁹ He estimated that if the nine proposed farms were implemented, and assuming King Salmon’s total production level reached approximately 22,500 tonnes (which is comparable with the maximum sustainable yield figures supplied by Cawthron), then the national level impacts would be:

- [a] Capital expenditure to develop the farms, estimated at \$40m including some \$29m within the Marlborough and Nelson economies;¹⁵⁰
- [b] Capital expenditure to develop a processing factory in Picton. If that were to proceed (potentially if output exceeds 15,000 tonnes) of at least \$6m;¹⁵¹ and
- [c] A total construction effect (for new farms and factory), estimated at \$66m in total output (including \$29m direct), \$30m in value added (including \$13m direct), and 430 to 450 person years of employment (including 200 direct).¹⁵²

¹⁴⁷ Ibid EiC at [3.4] – [3.10]

¹⁴⁸ Ibid EiC at [1.15]

¹⁴⁹ Ibid EiC at [3.13] and Table 3-2

¹⁵⁰ Ibid EiC at [3.19]

¹⁵¹ Ibid EiC at [3.20]

¹⁵² Ibid EiC at [3.20]

[253] The economic impacts projected by Dr Fairgray would largely occur in the northern South Island, and particularly the Nelson and Marlborough regions.¹⁵³ Dr Fairgray estimated that the expansion of this sector would contribute a significant share of total growth in the northern South Island over the 2010/2026 period (4.9%) in net terms – especially in the Marlborough economy (10%).¹⁵⁴ This, he told us, represents significant economic benefits to the regions and nationally which would be ongoing and cumulative over time.¹⁵⁵ Overall, he estimated that the total cumulative impact from 2010/2036 would be \$1,106m.¹⁵⁶

[254] Applying his 20% margin, he indicated a figure of \$880m. Dr Fairgray also considered the prospect of adverse economic effects. He considered that these did not pose a material risk. In particular:

- [a] The potential for negative effects associated with the growth of the sector, such as competitive (or crowding out) impacts on other sectors (e.g. higher costs and reduced availability) because of increased competition for labour and capital, was considered to be low;¹⁵⁷
- [b] Similarly, the analysis did not anticipate negative effects on the economy from the greater concentration of the salmon farming sector within King Salmon, or the Marlborough and Nelson regions;¹⁵⁸ and
- [c] Opportunity costs associated with the proposal were considered by him to be low, given the relatively high returns (and positive economic impact) from salmon farming, and the ability of other activities to occur elsewhere in the coastal environment.¹⁵⁹ Conversely, he opined that the opportunity cost of not enabling salmon farming through the proposal would be relatively high because it is an efficient activity, and because of the limited opportunities in the coastal environment elsewhere.¹⁶⁰

¹⁵³ Ibid EiC at [3.28] – [3.30]

¹⁵⁴ Ibid EiC at [3.34]

¹⁵⁵ Ibid EiC at [3.38] – [3.43]

¹⁵⁶ Ibid EiC at Table 3-11

¹⁵⁷ Ibid EiC at [E]

¹⁵⁸ Ibid EiC at [E]

¹⁵⁹ Ibid EiC at [H]

¹⁶⁰ Ibid EiC at [I]

The Evidence of Professor Hazledine

[255] Professor Hazledine contended that Dr Fairgray’s economic impact analysis substantially over-estimated the likely impacts of the King Salmon proposal on the economy. He contended that the input/output methodology, which Dr Fairgray applied, overstated the direct and flow-on effects (value added and employment) through the economy of the expansion of salmon farming and processing.

[256] Professor Hazledine pointed out that a well-known failing of multiplier models is that they are, literally, one-sided. They include only demand effects, which are allowed to cascade through the modelled economy with no constraint from supply or from prices and markets generally.¹⁶¹

[257] Professor Hazledine favoured a cost/benefit analysis approach to assessing the King Salmon proposal. He acknowledged that he had not undertaken a quantified cost/benefit analysis, and that there is not sufficient information to quantify or monetize all of the costs of the King Salmon proposal.¹⁶²

[258] Professor Hazledine’s contribution toward a cost/benefit analysis is his partial assessment of benefits. Professor Hazledine carried out a partial cost/benefit analysis using what he termed “middle-of-the-road” figures for the likely farmed salmon production increases, should King Salmon’s proposal be approved in whole or in part.¹⁶³

[259] Professor Hazledine provided his estimates, as annual \$ benefit arising from additional salmon farming activities at his estimated production level, as:¹⁶⁴

- [a] A 50% share of the additional profit from salmon farming activity (15m per annum) which would accrue to New Zealand shareholders, equal to \$7.5m per annum;
- [b] A benefit of \$0.7m for additional King Salmon employees who would have better jobs. He allowed for an average of 5% improvement in their wages – that is, 5% of \$48,000 or \$2,400 per additional King Salmon employee; and

¹⁶¹ Hazledine EiC at [111]

¹⁶² Ibid EiC at [33]

¹⁶³ Ibid EiC at [60.6]

¹⁶⁴ Ibid EiC at [100] & Table 2

[c] Unspecified benefits to other employees and businesses in Marlborough and Nelson of \$0.75m per annum, which he allowed for on the assumption that these would not exceed the “primary benefits” from the additional wages of \$0.75m.

[260] Combining his three figures suggested a total benefit of \$9m annually – \$7.5m + \$0.75m + \$0.75m – which includes \$8.25m indirect benefit.

[261] Professor Hazledine also contended that the negative economic impacts (in terms of competition for labour and capital) were understated in Dr Fairgray’s analysis. He assumed that the additional farms would generate no net additional employment in the region. This is on the basis that all new employees to King Salmon would be drawn from other existing positions.

The Evidence of Dr Kaye-Blake

[262] While Dr Kaye-Blake adopted a more conservative view, he nevertheless considered that we could use the direct impacts from Dr Fairgray’s analysis and double it, to obtain a reasonable estimate of the total economic impacts.¹⁶⁵ Adopting this approach, the corresponding direct impact (i.e. excluding direct and induced effects) produced by Dr Fairgray is \$297m.¹⁶⁶ Applying Dr Kaye-Blake’s approach indicates a figure of total impacts of \$594m.

Evaluation and Finding

[263] It is difficult to evaluate evidence, particularly expert evidence, when the experts espouse different methodologies as Dr Fairgray, Dr Kaye-Blake and Professor Hazledine have done. We do not propose to be led into a debate as to the respective merits of cost/benefit analysis versus an analysis based on an input/output model.

[264] Both have their uses and limitations. A cost/benefit analysis faces the difficulty of accurately quantifying in numerical terms social, cultural, ecological and other similar impacts on the coastal environment. It was for this reason that Dr Fairgray chose to use the input/output model. On the other hand, input/output tables are static. They do not respond to relative price changes that shift the composition

¹⁶⁵ Kaye-Blake EiR at [9.5]

¹⁶⁶ Ibid EiC at Table 3-11

of inputs or outputs. They do not change the mix of inputs used to produce a certain level of output.¹⁶⁷ The limitations were described in some detail by Dr Kaye-Blake. He told us that there was no single right answer, and the key is to use them correctly and acknowledge their strengths and weaknesses.¹⁶⁸

[265] Professor Hazledine provided a good description of a cost/benefit analysis, but did not deliver us one. Dr Fairgray provided a standard input/output analysis which according to Dr Kaye-Blake provided a “good source” for understanding the direct value added from the King Salmon proposal, although it most likely overstated the direct and indirect impacts.

[266] Dr Kaye-Blake provided to us, what we thought was a fair and balanced view. We accept his conclusion when he said:¹⁶⁹

From all the evidence I have reviewed, I consider it is safe for the Board to conclude that there will be significant economic or market benefits arising from the NZKS proposal. The benefits will extend over the life of the project, which is intended to be a continuing activity than a one-off event. The exact size of those effects can be debated. In my opinion they would not be as high as predicted using multipliers derived from an input/output analysis, as Dr Fairgray has done, nor would they be as low as the various benefits identified by Professor Hazledine (in particular) or Mr Offen. I believe that the Board could safely use the direct impacts from Dr Fairgray's analysis and double them to obtain a reasonable estimate of total economic impacts.

[267] We are conscious that the economic impact has been modeled on all nine farms being approved and thus, the likelihood of a processing plant being built at Picton to take the overload from the present Nelson processing plant. We are satisfied that the economic impact from all nine farms being approved, would be considerable, although it is not possible to put a figure on it. Dr Kaye-Blake's suggestion would, in our view, be somewhere close.

[268] Each of the farms individually would have economic benefit at a local, regional, and to a much lesser extent, a national level. We accordingly find that in exercising our judgment, each of the farms, both individually and collectively, would be of economic benefit.

¹⁶⁷ Ibid EiR at [2.3]

¹⁶⁸ Ibid EiR at [9.1]

¹⁶⁹ Ibid EiR at [9.5]

ECOLOGY

Introduction

[269] Mr Davidson outlined the “big ecological picture” and illustrated it with some spectacular photographs. We reproduce his words here:¹⁷⁰

The Marlborough Sounds is a convoluted 1722 km of coastline supporting a diverse and exciting marine environment. This intricate coastline has been formed as the headwaters of the former Pelorus and Queen Charlotte Valleys were submerged by tectonic forces and sea level changes. The distinctive submerged river valley coastline has formed a range of shore types ranging from sheltered bays and estuaries located in the inner Sounds to wave exposed open bays, channels, tidal passages supporting some of the most exposed coast in the world. Biophysical factors including geology, tide, currents, sedimentation, temperature, salinity and variation in wave exposure and depth have created a highly complex marine environment. This physical complexity has resulted in a unique assemblage of species, habitats and communities. No other coastal area in New Zealand exhibits this enormous range of habitat complexity.

The Sounds provides habitat for species ranging from those found nowhere else in the world such as the chiton (*Notoplax latamina*) to species common and widespread such as the recreationally important blue cod. Many species that inhabit this area are important as habitat formers. Animals such as the bryozoan coral *Galeopsis porcellanicus* can form a 3-dimensional biological skin over the sea floor, providing habitat for juvenile fish and a wide range of prey for fish. Many species such as hydroids require particular environments to flourish, such as high water flow habitats found in passages and entrances (e.g. Tory Channel entrance). Species new to science such as a new species of worm found near Picton Harbour are still being discovered in the Sounds

Some species are only found in particular areas of the Sounds such as the ancient giant lampshell found in shallow areas of East Bay. The Sounds also supports habitats critical to birds such as the king shag found nowhere else in the world and habitat for a small group of the rarest dolphin in the world (Hector's dolphin).

[270] Mr Davidson, and a number of both ecological and lay witnesses, noted the deterioration in the marine environment and the associated biological values of the Sounds since the arrival of humans.¹⁷¹

The Salmon Farm Operation

[271] King salmon (*Oncorhynchus tshawytscha*) is the largest of the Pacific salmon and may grow up to 59kg. It is quite different to Atlantic salmon, the main

¹⁷⁰ Davidson EiC at [27] – [29]

¹⁷¹ Davidson EiC at [30]

species farmed internationally, in terms of its biology, physiology and animal husbandry. Mr Preece told us that the company is the largest grower of King Salmon in the world and the only producer harvesting fish 52 weeks of the year, thus supplying the market all year round.¹⁷²

[272] Smolt (juvenile fish) is transferred from the freshwater hatcheries to the sea from October to December and from April to June. The fish are grown in steel sea pens within grower nets, enclosed in turn within predator nets. Seals are known to patrol the cages to try to find a weakness or hole in the netting. In the wild salmon mature within three to five years, spawn and then die. As they approach maturation the fish stop feeding and undergo physiological changes. Maturing fish are of lower value in the market and are often diverted from the premium supply channels. Underwater lighting is common practice to increase production and delay maturation.¹⁷³

[273] Mr Gillard explained that the salmon require a particular combination of conditions to grow successfully within the farms – cooler water temperatures (ideally 12 to 17°C), deep water (at least 30m and ideally 40m or more), and higher currents. Open water wave conditions are avoided as the technology employed on the farms does not stand up to ocean swells and it is difficult to reliably service the farms.¹⁷⁴

[274] Feeding is one of the most important operations on the farms and the highest proportion of the running costs. Logically, the objective is to maximise the growth of the salmon while minimising the wastage of feed – uneaten loss is estimated at 0.1%.¹⁷⁵ The fish are fed pellets with 100kg of dry feed yielding about 30kg salmon fillets.¹⁷⁶ The pellets are typically 25% oil and 38% protein being made up using 10% fishmeal and 7% fish oil – the remainder being poultry and mammalian meat meals plant protein and carbohydrate. Micronutrients are added to promote fish health and synthesized astaxanthin (a naturally occurring carotenoid pigment) is added for health and flesh colour.¹⁷⁷

¹⁷² Preece EiC at [13] – [16]

¹⁷³ Preece EiC salmon 101 at [17] – [50]

¹⁷⁴ Gillard EiC at [20]

¹⁷⁵ Preece EiC salmon 101 at [57] – [60] and [66]

¹⁷⁶ Preece EiC farm operation at [9]

¹⁷⁷ Wybourne EiC at [14], [23], [40] and [50] – [51]

[275] King Salmon does not use antibiotics (except for one trial in Waihinau Bay in 2000), lice treatments or anthelmintics (anti parasitic drugs) although it is possible that such treatments may be necessary in the future. Mr Preece explained that mortalities (morts) do occur as a result of predator damage, congenital defects, runting and natural attrition. The morts are counted, classified (to ensure early detection of problems) and stored in sealed bins before disposal by landfill or rendering.¹⁷⁸

[276] Biosecurity is a priority to reduce the risk of disease and King Salmon has an action plan in the event of a major disease outbreak – the “bio-secure approach”. Depending on the pathogen or other agent this would involve:

- [a] Fallowing the site;
- [b] Having fish of only one age class on the farm;
- [c] Quarantining one or a “group” of farms; and
- [d] Using separate equipment (service vessels and processing facilities) for a group of farms.

[277] A critical aspect of the bio-secure approach is the ability to isolate each of three groups of farms – Waitata Reach, Port Gore and Queen Charlotte Sound/Tory Channel.¹⁷⁹ The Papatua site is particularly important as King Salmon could operate a separate supply and processing chain from the Kapiti Coast or Wellington.¹⁸⁰

[278] Harvesting is carried out by confining the fish within pontoons, anaesthetising and killing with a blow to the head. The main artery in the throat is cut and the fish placed into an ice slurry for trucking and immediate processing. Following processing and packaging the fish are distributed to domestic and export markets.¹⁸¹

[279] King Salmon presently has an average production of 8,750 million tonnes per annum. The proposed 9 farms would increase the maximum conceivable total

¹⁷⁸ Preece EiC salmon 101 at [62] – [63] and [67] – [68]

¹⁷⁹ Preece EiC farm operation at [84] – [95]

¹⁸⁰ Preece rebuttal at [14.11]

¹⁸¹ Preece EiC salmon 101 at [72] – [76]

annual production to 27,000 to 29,000 tonnes. Should a bio-secure approach be adopted the total annual production would be 21,000 to 22,000 tonnes.¹⁸²

[280] Mr Preece considered King Salmon to have a commitment to minimising its environmental impact and a strong culture of innovation. In support he listed various changes and improvement in practice in response to complaints or incidents. He pointed out that the Global Aquaculture Performance Index, an overall measure of sustainability of production, scored New Zealand as the top performer out of the 22 countries assessed for Chinook salmon.¹⁸³

The Statutory Context

[281] The sustainable management of the marine environment is at the heart of this proposal as King Salmon seeks to use the natural resources and ecosystem services provided by the waters of the Marlborough Sounds. Section 5 of the Act defines its purpose as promoting the sustainable management of natural and physical resources. Use, development and protection of these resources are enabled subject to retaining the ability to meet the needs of future generations, safeguarding the life supporting capacity of the ecosystem and the familiar mantra of impact assessment and management, “avoiding, remedying or mitigating any adverse effects” on the environment.

[282] Within Part II of the Act we must recognise and provide for matters of national importance. Section 6(c) relating to the protection of significant habitat is particularly relevant given the presence of threatened species such as King Shag and Hector’s dolphin. Under Section 7 we must have particular regard to (d) the intrinsic value of ecosystems, (f) the quality of the environment, (g) the finite characteristics of the natural resource and (i) the effects of climate change. Obviously there is also some overlap with provisions addressing natural character and amenity values.

[283] A number of relevant matters are addressed in the Coastal Policy Statement where the principle of ecological integrity, contained within Objective 1, has been woven through a number of the policy provisions:

¹⁸² Preece EiC salmon 101 at [83] – [87]

¹⁸³ Preece rebuttal at [3.1] – [4.5]

- [a] Policy 3 promotes the precautionary approach effects are uncertain but potentially significantly adverse;
- [b] Policy 4 provides for integrated management in situations where significant cumulative effects are occurring or anticipated;
- [c] Policy 8 recognises the significant contribution of aquaculture to community well-being and the need for maintaining good water quality;
- [d] Policy 11 looks to protect biodiversity by avoiding adverse effects on any threatened taxa and avoiding significant adverse effects on important habitats of indigenous species;
- [e] Policy 12 addresses biosecurity and the introduction or spread of harmful exotic organisms; and
- [f] Policy 23 addresses the discharge of contaminants with particular regard to the sensitivity of the receiving environment and its assimilative capacity, and seeks to avoid significant adverse effects on ecosystems after reasonable mixing.

[284] The Regional Policy Statement largely restates the matters considered under the Act. It is now an older document and has little to add to the provisions since enunciated of the Coastal Policy Statement. For completeness we note that Objective 5.3.2 promotes good water quality in the marine environment and Policy 5.3.5 urges measures to avoid, remedy or mitigate the effects of contaminants within the coastal marine area. Marine farming is noted as a potential source of waste discharges. Objective 5.3.10 seeks to maintain and enhance species diversity and the integrity of marine habitats and Policy 5.3.11 points to the needs to avoid, remedy or mitigate any habitat disruption. Potential damage from displacement, smothering or destruction is noted.

[285] Chapter 9 of the Marlborough Sounds Resource Management Plan deals with the coastal marine area. In Section 9.2.1 on occupation of public space, Objective 1 seeks the accommodation of appropriate activities while avoiding, remedying or mitigating adverse effects. Policy 1.1 targets conservation and ecological values, marine habitats and sustainability, and water quality. Policy 1.12

enables a range of activities including marine farming in “appropriate places”. Section 9.3.2, on natural and physical resources, has Objective 1 seeking the maintenance of water quality at a level that enables the gathering or cultivation of shellfish. Policy 1.1 is to avoid the discharge of contaminants where they would modify, damage or destroy any significant ecological value. Policy 1.3 seeks to prevent any discharge limiting the consumption of seafood. Policy 1.4 repeats “the avoid, remedy and mitigate adverse effects” specifically on bird-breeding and nursery areas, feeding patterns, habitats important to the survival of indigenous species, wildlife and marine biota, and the intrinsic value of ecosystems; as well as existing lawful activities such as marine farming, fishing, recreation and tourism.

[286] The habitats of indigenous flora and fauna are addressed more specifically in Chapter 4 of the Sounds Plan. Objective 1 seeks the protection of significant indigenous flora and fauna and their habitat from adverse effects of use and development. Policy 1.1 promotes the identification of areas of significant values and Policy 1.2 seeks to avoid, remedy or mitigate effects on these areas. The anticipated environmental result is the maintenance and enhancement of populations of rare and endangered species.

[287] The Nelson-Marlborough Conservation Management Strategy notes the importance of the Marlborough Sounds for elephant fish spawning areas, shallow brachiopod beds, extensive horse mussel beds, Hector’s dolphin and tube worm mounds. The overall objective for the coastal marine area is to promote the sound management of coastal and marine ecosystems. The Strategy has more specific objectives relating to the protection of native plants and animals from disturbance, maintaining the full diversity of species and communities in the region, and minimising threats to biota from pollution.

[288] The Ngati Koata Iwi Management Plan has an overall vision:

... to ensure that the environment and human activities are culturally managed in harmony with the appreciation that the natural world is dynamic, fragile and finite.

[289] Chapter 8 addresses coastal waters and identifies taonga of importance including Te Kawau a Toru (King Shag), the tuatara, Te Ata (dolphin), other dolphins, stingrays, and killer whales. Objective 8.32.1 is to maintain or enhance water quality for the gathering or cultivating of shellfish. Objective 8.32.2 seeks to protect the coastal environment by avoiding, remedying or mitigating significant

adverse effects that alter or modify the foreshore or seabed. Supporting policies specify Ngati Koata involvement in management and planning, sites of spiritual or cultural significance, and ecological systems of importance (as specified in the Sounds Plan). Chapter 10 on flora and fauna notes the great variety of indigenous fauna and species of significance. Objective 10.13 seeks the protection of significant flora and fauna and habitats and provision for tangata whenua perspectives, values and use. Supporting policies promote shared management, establishment of mataitai, protection from unsustainable harvesting, control of pests and research for long term protection.

Seabed/benthic Effects

Effects on the seabed and benthic habitat

[290] The operation of a salmon farm concentrates organic material – including faeces from salmon, uneaten food pellets, and biofouling material – on the seabed beneath and within the immediate vicinity of the farm. The extent of such deposition and the associated enrichment depends largely on the stocking density and strength of the currents at each farm.

The Position of the Parties

[291] King Salmon submitted that the environmental effects of such deposition were well understood and could be modelled and managed so that the benthic communities under the farms could effectively “process” the material. They maintained that site selection had largely avoided particularly sensitive or ecologically significant habitats, the total affected area would be small in a regional context and the changes are reversible. King Salmon acknowledged “pronounced” effects directly beneath the cages and proposed maximum enrichment levels within defined zones to be imposed through the conditions of consent.¹⁸⁴

[292] A number of submitters have expressed concern at the excessive enrichment allowed beneath the farms, particularly where there are areas of ecological significance, and challenged the easy reversibility of the effects on benthic habitat and the associated biota. There was considerable scepticism as to the effectiveness of the proposed conditions incorporating an adaptive management approach and (initially) few sanctions for not meeting the proposed maximum enrichment

¹⁸⁴ Nolan and Gardner-Hopkins opening submissions at [12.1] – [12.22]

levels.¹⁸⁵ Sustain our Sounds submitted that the level of enrichment allowed under the proposed conditions was “unsustainable for the ecology of the Sounds”.¹⁸⁶

[293] We heard and viewed evidence from a number of witnesses with respect to the benthic environment. Mr Rob Davidson, a marine biologist, provided an overview of the ecological attributes of the marine environment of the Marlborough Sounds. Dr Dave Taylor, an ecologist with expertise in intertidal and sub-tidal rocky-shore ecology, was involved with site selection and effects on ecologically important habitats beyond the primary depositional footprint of the farms. Mr Nigel Keeley, an ecologist with extensive experience in seabed enrichment and the ecological effects of aquaculture, dealt with potential effects on the benthic habitat beneath the farms and introduced the “enrichment scale”. Dr Neil Hartstein, a physical oceanographer, modelled and discussed the depositional footprints. Mr Danny Boulton, a tourism operator at French Pass and an experienced diver with an interest in underwater film and photography provided video footage and commentary on underwater features within the Marlborough Sounds. Dr Shaw Mead, an ecologist, with a background in coastal oceanography, marine ecology and aquaculture assessed the effects both close to and beyond the proposed farms.

Site selection and ecological significance of the benthic habitat

[294] The seabed of the Sounds is dominated by soft mud and silts, followed by pebble/shell/sand, smaller areas of boulder/cobbles. Reef habitat is the least abundant and accounts for only 10% – 21% of the coastline.¹⁸⁷ Dr Taylor noted that the proposed sites were predominantly located over the, more common, soft sediments and avoided reef habitats that typically had higher biological diversity and ecological importance.¹⁸⁸ Dive surveys were carried out to estimate the area of reef, boulders, cobbles, shell and mud on the seabed. Ecologically important habitats and species (such as hydroids, bryozoan beds, horse mussels and red algal beds) were identified and any issues for fisheries (such as the presence of scallops) were noted. The seabed habitats at each site were characterised and mapped following depth profiling, sediment sampling, video transects, drop camera images and side scan sonar.¹⁸⁹ Ecologically important habitat was noted on the deep

¹⁸⁵ Ironside opening submissions at [61] – [69]; Sustain our Sounds submission 0061; Danny & Lyn Boulton submission 0702; East Bay Conservation Society submission 1036.

¹⁸⁶ Heal opening submissions at [13.30]

¹⁸⁷ Taylor EiC at [35] – [38]

¹⁸⁸ Taylor EiC at [17] – [18]

¹⁸⁹ Taylor EiC at [20] – [25]

boulder and cobble reef between Ruaomoko and Kaitapeha; tree hydroids and biogenic clumps at Ngamahau; and patches of reef inshore from White Horse Rock.¹⁹⁰ Dr Taylor relied on Mr Davidson for the identification of significant ecological features beyond the proposed sites.

[295] Mr Davidson's evidence drew heavily on his recently published report¹⁹¹ identifying ecologically significant marine sites within the Sounds. The Davidson report is based on known information on areas of ecological values and notes that many areas remain unknown or poorly described.¹⁹² It was Mr Davidson's evidence that none of the proposed farms were located directly above known areas of significant ecological value. Addressing significant ecological areas close to individual farm sites he noted:

- [a] Papatua is close to an area of dense beds of horse mussels, scallops and red algae, as well as a variety of other species associated with this community, along the coast to the south west (from the southern edge of Pig Bay to Hunia). There is another significant, and large, area of horse mussels and associated encrusting species to the north west although the present condition of this area is unknown;¹⁹³
- [b] Ngamahau is close to significant sites, to the east and the west, containing dense hydroid dominated communities.¹⁹⁴ Within the application area there are significant areas of biogenic clumps comprising bryozoans, sponges and hydroids. The biogenic clumps within the cage area were of biological value but not considered significant; and¹⁹⁵
- [c] Ruaomoko is approximately 600m north of significant site running along the south coast of Arapaoa Island with a community dominated by bryozoan mounds, hydroids, sponges and ascidians.¹⁹⁶ In addition

¹⁹⁰ Taylor EiC at [41]

¹⁹¹ Exhibit Davidson 1 – Rob Davidson, Clinton Duffy, Peter Gaze, Andrew Baxter, Sam DuFresne, Shannel Courtney, Peter Hamill (September 2011) *Ecologically significant marine sites in Marlborough, New Zealand*. Coordinated by Davidson Environmental Limited for Marlborough District Council and Department of Conservation

¹⁹² Exhibit Davidson 1 at 7

¹⁹³ Davidson EiC at [66] – [68]

¹⁹⁴ Davidson EiC at [76]

¹⁹⁵ Davidson EiC at [91] – [94]

¹⁹⁶ Davidson EiC at [73] – [75]

there are tubeworm mounds and reef outcrops located within the application area although beyond the cage boundaries.¹⁹⁷

[296] The key issue for Mr Davidson was the need to monitor any “notable biological features” in the vicinity of the proposed farms.¹⁹⁸

[297] Mr Boulton considered there to be ecologically significant species and habitat at all of the proposed farm sites. He was concerned that the accumulation of particulate and dissolved pollutants would destroy these habitats and impact on productive recreational fishing grounds.¹⁹⁹ Based on his own observations while diving in the Pelorus he found sites close to the proposed farms to be of ecological significance with bryozoans, sponges, ascidians, horse mussels and hydroids present. He also noted the presence of blue cod.²⁰⁰ Similarly he considered the proposed Ruaomoko and Kaitapeha farms to be located over sites of ecological significance.²⁰¹ During cross-examination Mr Boulton accepted that his dive locations (for the video evidence) were some 250m to 800m away from the cage boundaries (except at White Horse Rock where the dive was immediately beneath the farm) and at depths of up to 30m.²⁰²

[298] Dr Mead had viewed and assessed Mr Boulton’s video clips and considered them to illustrate areas of comparable, or higher, biodiversity to those sites classified as ecological significant in the Davidson report. Further he considered it to be very likely that much of the Marlborough Sounds would be classified as ecologically significant and should be afforded appropriate protection and management.²⁰³ During cross-examination Dr Mead agreed that he had not dived at any of the proposed sites and nor had he collected any images or samples, he relied on the information and evidence collected by others. He also accepted that Mr Boulton’s dive sites were outside of the cage boundaries of the proposed farms and at shallower depths.²⁰⁴

[299] In his rebuttal Dr Taylor acknowledged the presence of habitat with ecologically important species inshore of the proposed sites and that these areas

¹⁹⁷ Davidson EiC at [90]

¹⁹⁸ Davidson EiC at [99]

¹⁹⁹ Boulton EiC at [30] – [32]

²⁰⁰ Boulton EiC at [58]

²⁰¹ Boulton EiC at [98] – [99]

²⁰² Transcript at 663 – 669

²⁰³ Mead EiC at [20] – [21]

²⁰⁴ Transcript at 696 – 699

would be “noticeably” affected. However, given the results of reef monitoring close to (some within 100m) existing farms he did not consider these effects were likely to become adverse.²⁰⁵

[300] During cross-examination Mr Davidson was asked about the possibility of ecologically significant areas in the vicinity of the farms. He characterised the site investigation work as thorough and methodical and opined that there was very good information on the benthic habitat under and around the proposed sites.²⁰⁶ He was satisfied that the farms were not located over important habitats such as those in the depicted in the “beautiful footage that Danny Boulton collected of those reefs and rock coasts adjacent to the farms”.²⁰⁷ In response to questions from the Board Mr Davidson confirmed that he was satisfied with the proposed condition addressing the monitoring of “notable biological features”.²⁰⁸

[301] Mr Keeley acknowledged that positioning the farms in high flow areas, typically supporting a higher abundance of both benthic and pelagic species compared with more sheltered sites, did increase the risk of conflict with biological values. However, he argued that the high flow environments would buffer or protect the habitat more than was possible in the more sheltered bays and inlets.²⁰⁹

Discussion and Findings

[302] The Davidson report draws together known information on sites of ecological significance within the Marlborough Sounds. Given this report and the detailed site survey work, mapping the habitats beneath the farms, we are confident that no significant ecological sites are located beneath or very close to the farms. While there are small features of some biological value beneath some of the proposed sites and all sites provide habitat for a range of species, the loss of these is considered to be minor given the careful siting and relatively small footprint of the farms.

[303] There are significant ecological sites and some notable biological features located within one kilometre of some of the proposed farms, such as the reef feature between Ruaomoko and Kaitapeha, as noted by Dr Taylor and Mr Davidson. King

²⁰⁵ Taylor Rebuttal at [25] – [27]

²⁰⁶ Transcript at 539 – 544

²⁰⁷ Transcript at 549

²⁰⁸ Transcript at 557 and Condition 70(b)

²⁰⁹ Transcript at 445 – 446

Salmon acknowledge the potential for effects on these features and appropriate monitoring has been included in the proposed conditions.

Enrichment and Modelling of Impacts on the Seabed

[304] Mr Keeley described the enrichment effects of farm derived biodeposits along a gradient from “natural” to “azoic”, corresponding to numerical enrichment stages (**ES**) from 1 to 7. He made a distinction between the “primary depositional footprint”, as the area directly exposed to farm derived organic deposits, and “far field” effects. Directly beneath the cages “highly impacted” conditions are evident with the effects decreasing with distance from the cage boundaries. The level of effects is directly related to the farming intensity, in particular, the amount of feed over the preceding 6 to 12 months. Natural background conditions can be expected within about 150m of the cages at low flow (**LF**) sites, that is, the seabed effects are localised. At higher flow (**HF**) sites there is a correspondingly larger and more diffuse depositional footprint.²¹⁰

[305] Given the importance of the Enrichment Scale to the conditions governing the management of effects on the seabed we set this out in full:²¹¹

General description	Environmental characteristics
1. Natural/pristine conditions	LF – unpolluted or unenriched reference site HF – as for LF but infauna richness and abundance naturally higher and % organic matter slightly lower
2. Minor enrichment – low level enrichment that can occur naturally	LF & HF – minor increase in abundance possible, richness usually greater, sediment chemistry largely unaffected
3. Moderate enrichment – clearly impacted with significant community change	LF & HF – notable increase in abundance, lower richness and diversity, opportunistic species (Capitellid worms) begin to dominate
4. High enrichment – transition between moderate effects and peak macrofauna abundance	LF – quite high abundance, further reduced diversity, opportunistic species dominate but other taxa still persist, major sediment chemistry changes (approaching hypoxia) HF – very high abundance while richness and diversity not necessarily reduced

²¹⁰ Keeley EiC at [24] – [35]

²¹¹ Keeley EiC Table 1 and Appendix 1 at 27

General description	Environmental characteristics
5. Very high enrichment – peak macrofauna abundance	LF – very high numbers of one or two opportunistic species (Capitellid worms, nematodes), very low richness, major sediment chemistry changes (hypoxia, moderate oxygen stress), bacterial mat evident, out-gassing when sediments disturbed HF – extreme abundance opportunistic species (10x LF densities), significantly reduced diversity, moderate richness, sediment organic content elevated, bacterial mat formation and out-gassing possible
6. Excessive enrichment – transition between peak abundance and azoic (devoid of any organisms)	LF – abundances of opportunistic species severely reduced from peak, richness and diversity low, organic matter very high HF – total infauna abundance reduced, opportunistic species strongly dominant, richness and diversity substantially reduced, elevated organic matter and sulphide in sediments, bacterial mat formation and out-gassing likely
7. Severe enrichment – anoxic and azoic (no longer capable of supporting life)	LF – none or only trace numbers of infauna, spontaneous outgassing, bacterial mats present, organic matter very high HF – has not been observed but assumed similar to LF

[306] The relationship between the ES and a number of enrichment indicators (including infauna statistics, sediment chemistry and organic loading) has been numerically described. ES scores are calculated for each group of variables and a weighted average determined for each sample. The average score for the sampling location is given by the average of the replicate samples.²¹² In response to questions from the Board Mr Keeley explained that there were characteristics differences in the enrichment responses between low and high flow sites. While the sampling and survey methods would be the same the relationships between the environmental variables and the enrichment score would be different. He noted that the enrichment scores are heavily weighted towards the parameters describing the biological communities (rather than the sediment chemistry and organic loading).²¹³

[307] During cross-examination Mr Keeley clarified that ES levels above 1 were not necessarily induced by some external impact or activity and that some naturally muddy areas would always have been up to about ES 2.5.²¹⁴ In response to questions from the Board Mr Keeley characterised the scale as being “oriented

²¹² Keeley EiC Appendix 1 Draft Monitoring Plan

²¹³ Transcript at 505 – 506

²¹⁴ Transcript at 470 and Keeley rebuttal at [20.5]

around enrichment” whether naturally occurring or derived from some direct input such as a marine farm.²¹⁵

[308] The primary driver of the level of impact is the mass of feed used. The amount of feed wasted (estimated at less than 0.5%), the feed conversion ratio (feed into growth versus faeces), and the type of feed are minor factors. The extent of the impact is directly related to the depth and water velocity at each site – the greater the depth and the swifter the current the more widely dispersed the organic material beyond the farm. Particles may also biodegrade or become assimilated within the water column. At high flow sites the seabed deposits may be re-suspended, promoting the supply of oxygen to the sediments and supporting life. Hence at low flow sites the effects on the seabed are typically highly localised and more pronounced. High flow sites have a larger and more diffuse footprint with extremely high abundances of opportunistic taxa.²¹⁶

[309] The depositional footprints for each site were predicted using a model (DEPOMOD v2.2) and the site specific physical properties of each site. A maximum enrichment stage of ES 5.0 and a maximum depositional footprint (ES \geq 3) of 20 hectares was defined as “acceptable” and the corresponding feed level (predicted sustainable feed level or PSFL) determined. The recommended initial feed level (**RIFL**) was then set at 75% of the PSFL. The maximum enrichment level of ES 5.0 was chosen as it is the point of peak infauna abundance (and therefore maximum assimilation of farm produced waste) beyond which the population starts to collapse. The maximum enrichment stage also took into account the optimum utilisation of space and “farming economics”. The maximum conceivable feed level (**MCFL**) was also determined (generally some 50% greater than the PSFL).²¹⁷

[310] Exceptions to this general approach (i.e. ES 5.0 and 20ha) were made at the two highest flow sites, Waitata and Ruaomoko, where the total footprint size was increased to 24 and 30 hectares respectively. Enrichment at these sites is predicted to be less than ES 5.0 as a result of the very high current flows. At Papatua (a low flow site) enrichment to ES 6.0 is proposed with a rotational or fallowing approach over a maximum area of 38 hectares. Different parts of the Papatua site would be at varying stages of recovery.²¹⁸

²¹⁵ Transcript at 504 – 505

²¹⁶ Keeley EiC at [38] – [46]

²¹⁷ Keeley EiC at [47] – [52] and Table 10

²¹⁸ Keeley EiC at [53], [55.1], [83] and Table 7

[311] The model predictions of the extent of the depositional footprints, using the MCFL (the worst case scenario), are summarised below:²¹⁹

Farm Site	Max distance (m)	Area ES \geq 5 (ha)	Area \geq ES 3 (ha)
Kaitira	761	0–2	23
Richmond	247	1–2	12
Tapipi	524	0–2	21
White Horse Rock	302	0–2	32
Waitata	589		
Ngamahau	268	0–2	14.6
Ruaomoko	879	1–4	43
Kaitapeha	414		
Papatua	48	5–10	38
TOTAL		7–24	\approx 196

[312] The maximum distance is measured from the cage boundary to the end of the area affected to $ES \geq 3$ along the line of the predominant current. The areas for White Horse Rock and Waitata, and for Ruaomoko and Kaitapeha are combined as the footprints overlap.

[313] Mr Keeley considered the total affected area to be small in a regional context and the effects to be reversible. He concluded that “the overall effects are not expected to result in an ecologically significant change to the overall Marlborough Sounds environment”.²²⁰

[314] Dr Hartstein used a different model to predict the depositional footprint, with the same feed inputs and feed conversion ratios. A comparison of the results showed some differences – principally a southerly drift at the Tapipi and Richmond sites. In terms of the overall area of impacts the modelled outcomes were very similar.²²¹

[315] Dr Mead considered enrichment to ES 5 and the resulting environmental impact to be too high, as the benthic biodiversity is greatly reduced and there would be little or no energy transfer between trophic levels.²²² In addition he was concerned at the level of uncertainty in the predictions from the DEPOMOD

²¹⁹ Drawn from Keeley EiC Tables 7, 9 and 10

²²⁰ Keeley EiC at [88]

²²¹ Hartstein EiC at [50] – [52] and Figures 23 – 27

²²² Mead EiC at [33] – [38]

depositional modelling.²²³ Mr Keeley agreed that ES 5-7 conditions would preclude utilisation by higher trophic level organisms at the low flow sites. However, he considered that the ES 4-5 conditions, likely to be encountered at high flow sites, would enable fish and other organisms to feed on the dense aggregations of worms.²²⁴

[316] In response to questions from the Board Dr Mead said that there should be a much lower level of change amounting to just one or two levels of enrichment. From an ecological perspective he would prefer to see a lower level of enrichment over a larger area of the seabed compared to smaller areas of very high impact.²²⁵

[317] Monitoring of the seabed beneath retired salmon farms has demonstrated that the enrichment effects are reversible with most biological indicators returning to background conditions in about five years, with full recovery after about ten years. Mr Keeley considered that moderate to high flow sites would recover more quickly. Increases or decreases of salmon feed, in the order of 20% – 30%, are usually measurable in terms of the impacts on the seabed in the following year's monitoring results.²²⁶ He noted that avoiding conditions greater than ES 5 should avoid prolonged recovery periods on the cessation of farming.²²⁷ In response to questions from the Board about the fallowing proposed at Papatua he explained that the majority of the recovery observed at the, comparable, Forsyth site occurred in the first three to four years. A three year break is proposed for Papatua and Mr Keeley considered that the success of the approach would only be able to be assessed after the second occupation of each location.²²⁸

[318] Dr Mead agreed that the environment would recover but was concerned that recovery would take longer at high flow sites and may never reach pre-farming conditions.²²⁹ Mr Keeley acknowledged that there were very few studies that described recovery to background conditions. However, he explained that functional recovery (species with similar functional roles to reference sites) would be rapid and equilibrium recovery (full recovery to an equilibrium community) would follow. He agreed that a site may not revert to exactly the pre-farm

²²³ Mead EiC at [51] – [53]

²²⁴ Keeley Rebuttal at [12.1]

²²⁵ Transcript at 711 and 714 – 715

²²⁶ Keeley EiC at [107] – [110]

²²⁷ Keeley rebuttal at [10.2]

²²⁸ Transcript at 510

²²⁹ Mead EiC at [45]

condition.²³⁰ During cross-examination Mr Keeley agreed that the Forsyth Bay farm site had only achieved functional recovery following eight years of fallowing and quickly reverted to an impacted state, ES 6, after the farm had returned. During re-examination he re-iterated that the high flow sites, with a lower maximum ES and stronger hydrodynamic environment with good oxygenation of the sediments, would recover more quickly.²³¹

Discussion and Finding

[319] There is no doubt that the area beneath the proposed salmon farms would be highly impacted, with much reduced biodiversity and significant changes in sediment chemistry. We acknowledge that conditions beneath the farms do respond and improve rapidly (within months) if the feed levels are substantially reduced. If farming ceases the effects are largely reversible. However, the experience at Forsyth Bay indicates that excessive enrichment ($ES \geq 6$) at low flow sites is difficult to come back from even over a period of some years.

[320] We acknowledge that there are uncertainties in the modelling of the effects on the seabed particularly with respect to the exact size and shape of the depositional footprints. However, these effects would be controlled by the conditions of consent and the proposed conditions are not dependent upon the outputs of the model. If the effects have been underestimated then King Salmon would be required to reduce the level of effect to that authorised by the conditions.

[321] The total area impacted is large but we note that only 7ha to 24ha would be highly impacted. The remaining areas would still be functioning well in an ecological sense although there would be noticeable differences in appearance and community structure.

[322] We find that the impacts on the seabed beneath the farms are adverse and likely to persist for some years following the cessation of farming. However, in the wider context of the Sounds we agree with Mr Keeley's conclusion that, given appropriate consent conditions, these effects would not amount to a significant adverse effect on the benthos. We address the issue of appropriate consent conditions, particularly for the low flow site at Papatua, later in this decision.

²³⁰ Keeley Rebuttal at [14.1] – [14.3]

²³¹ Transcript at 459 – 460 and 497

Far Field Effects

[323] Mr Keeley outlined the potential for low level cumulative enrichment through resuspension, horizontal transport and subsequent sedimentation. He considered most sites to be in close proximity to Cook Strait where dilution and wide dispersion of organic particulates would occur. However, some entrained particles may enter the inner Sounds and/or embayments where they would increase natural sedimentation processes. Mr Keeley constructed a simple model, assuming an even distribution of deposition, and compared this with the natural depositional flux within the Sounds. If all unassimilated waste was spread across the whole area the flux would be $0.005 \text{ kg/m}^2/\text{yr}$ compared to the natural flux of 1.8 to $12 \text{ kg/m}^2/\text{yr}$. The predicted flux within the primary depositional footprint, where benthic effects may be measurable, is $0.5 \text{ kg/m}^2/\text{yr}$. Mr Keeley concluded that, beyond the primary footprint of the farms, the flux would be sufficiently small and diffuse that it would be assimilated without any obvious ecological effects.²³²

[324] In response to questions from the Board Mr Keeley clarified his use of “natural” depositional flux as meaning the existing baseline situation with respect to both marine and terrestrial derived sediment, including the contribution from agriculture and logging operations within the catchments, rather than a pristine environment.²³³

[325] Dr Mead was particularly concerned with the particulate dispersion beyond the immediate vicinity of the farms and the lack of wider modelling of where such particles would accumulate and to what densities.²³⁴ He considered the smaller size fraction of waste material would be taken far from the farm site in the high flow areas and could affect ecologically significant and sensitive areas not targeted in the design of the monitoring sites. Dr Mead opined that particulate dispersion modelling should have been done to determine both spatial and temporal effects and their likelihood of occurrence.²³⁵

[326] In his rebuttal Mr Keeley acknowledged that some areas would be more naturally disposed to deposition than others and argued that such areas would also be “inherently predisposed to dealing with enrichment and sedimentation”. He noted that the far-field monitoring sites would be established after modelling to

²³² Keeley EiC [103] – [106]

²³³ Transcript at 503

²³⁴ Transcript at 690

²³⁵ Mead EiC at [47] – [49]

determine likely settlement areas as well as any notable ecological areas. The concerns of stakeholders would also be taken into account and Deep Bay, in relation to the proposed Ngamahau farm, would be a likely candidate for such monitoring.²³⁶

[327] Dr Taylor considered that any of the habitats beyond the primary depositional footprint would be receiving very low levels of deposition ($<0.5\text{kg/m}^2/\text{yr}$ or $<1.3\text{g/m}^2/\text{day}$) which would not be likely to have any adverse effects. Based on this modelling and the annual reef monitoring at existing salmon farms he concluded that ecologically important habitats beyond the primary depositional footprints were not likely to be negatively affected.²³⁷

[328] Dr Hartstein was concerned that the depositional modelling results had not been used to examine the impact of nutrient interactions, that is, the mineralisation of nutrients from the sediments into the water column.²³⁸

Discussion and Finding

[329] Beyond the primary depositional footprint the predicted additional flux is small in relation to the existing background flux. Accordingly, we accept that any significant or even observable ecological effect from far field deposition is unlikely. The results of long term monitoring of biological features in the proximity of existing salmon farms provides considerable comfort on this point. The proposed conditions require monitoring of such potential effects. We address the issue of nutrients in the water column and nutrients cycling from the sediments in the section dealing with water quality.

Proposed Conditions

[330] The conditions relating to benthic effects are formulated as “trigger and response” conditions with the details of the monitoring and adaptive management responses set out in Marine Environmental Monitoring and Adaptive Management Plan (MEM-AMP).²³⁹ Concerns have been raised about the trigger levels and the appropriate management responses as well as the ability of the Council to take timely enforcement action.

²³⁶ Keeley Rebuttal at [15.1]

²³⁷ Taylor Rebuttal at [35] – [36]

²³⁸ Hartstein EiC at [52]

²³⁹ Condition 70 sets out the purposes of the MEM-AMP

The Trigger Conditions

[331] The conditions of consent²⁴⁰ specify “zones” and “environmental quality standards” to be achieved at the zone boundaries beneath the farms. The four zones are described by Mr Keeley:²⁴¹

- Zone 1 – small area of most pronounced effects usually directly beneath the cages
- Zone 2 – area near the cages where effects can be highly impacted but dramatically improving with distance (out to 50–200m)
- Zone 3 – moderately enriched area extending 150–800m from the cages
- Zone 4 – beyond the primary footprint and comparable to natural background conditions

[332] The footprint dimensions for each farm have been incorporated into the conditions of consent based on the PSFL rather than the MCFL. These areas are slightly smaller, combining to a total of 140ha (excluding Papatua) that would be permitted to be impacted above ES 3.0. The total area at Papatua would be 35ha, under the proposed fallowing strategy, with different parts of the site at varying stages of recovery.²⁴² The dimensions are constrained by Condition 47²⁴³ setting out the maximum distances from the net pen to the Zone 2/3 and the Zone 3/4 boundaries as well as the maximum area of zones 1, 2 and 3 combined. These dimensions may be reviewed but may not be increased by more than 10%.

[333] Condition 47²⁴⁴ as proposed by King Salmon is (in summary):

Farm	Distance to 2/3 (m)	Distance to 3/4 (m)	Area Zone 1+2+3 (ha)
Waitata	150	600	24
Kaitira	200	800	20
Tapipi	137	550	20

²⁴⁰ Our Appendix 4

²⁴¹ Keeley EiC at [118] – [119]

²⁴² Keeley EiC at [82] – [86] and Condition 47

²⁴³ Now Papatua Final Condition 35, Waitata/Richmond/Ngamahau Final Condition 39

²⁴⁴ Now Papatua Final Condition 35, Waitata/Richmond/Ngamahau Final Condition 39

Richmond	60	250	10
Papatua	50	100	35
Kaitapeha	112	450	15.7
Ruaomoko	225	900	30
Ngamahau	75	300	12
White Horse Rock	60	300	7.5

[334] Condition 48 sets out the Environmental Quality Standards (**EQS**) at the edge of the net pens, the Zone 2/3 boundary, and the Zone 3/4 boundary. Mr Baxter supported the approach of setting EQS at the zone boundaries and made some suggested improvements to the conditions that have been accepted by King Salmon.²⁴⁵ The EQS for seabed deposition as proposed by King Salmon are (in summary):²⁴⁶

Zone	Monitoring location	EQS
1 and 2	Edge of net pens	ES≤5.0 (except Papatua); ES<6.0 (Papatua) No more than one replicate core with no taxa (azoic) No obvious outgassing Bacteria mat coverage no more than patchy
3	Zone 2/3 boundary	ES≤4.0 Infauna abundance not higher than at net pens Number of taxa >75% reference site
4	Zone 3/4 boundary	ES<3.0 Conditions statistically comparable with reference site

[335] Monitoring is conducted along two transects radiating away from the cages, one in the direction of the predominant current and the other perpendicular (or cross current) to the first. Three monitoring stations are placed on each transect – at the edge of the net pens, at the zone 2/3 boundary and at the zone 3/4 boundary.²⁴⁷ The MEM-AMP sets out the level of sampling and range of environmental variables to be measured annually at each of these benthic monitoring stations.²⁴⁸

[336] In closing submissions Sustain our Sounds argued for an EQS of ES≤3.5 and Kenepuru and Sounds Central Residents Association sought ES≤3–4 with an absolute maximum of 5. As already discussed Dr Mead considered ES 5 to be

²⁴⁵ Baxter EiC at [188] – [191]

²⁴⁶ Condition 48

²⁴⁷ Keeley EiC at [120]

²⁴⁸ Conditions 79 and 80 set out the contents of the MEM - AMP

unacceptable and would prefer to see only one or two points above the existing ES score.

[337] During cross-examination Mr Keeley was asked about conditions in Tasmania, at 35m from the salmon farm. He replied that he thought those would be equivalent to the zone 2/3 (ES 4.0) boundary but he could not be certain.²⁴⁹ Mr Keeley followed up on these questions in a letter²⁵⁰ and set out the “management control” at 35m from the boundary of the marine farming lease area in Tasmania. In short there must be no unacceptable environmental impact and “unacceptable benthic” impacts are defined as the presence of feed pellets, *Beggiatoa* mats, 3x increase in organic carbon content and redox levels 150mV less than the control site. During cross-examination Mr Keeley confirmed that the Tasmanian example would be a moderate to low flow site and the closest approximation in this proposal would be the Papatua farm.²⁵¹ In response to questions from the Board Mr Keeley characterised the parameters defined as “unacceptable” in the Tasmanian example as ranging between ES 4 and 6.²⁵²

[338] When asked about ES 5 being very close to ES 6, Mr Keeley explained that an ES level of no greater than ES 5.0 is an important distinction when considering non-compliance. He agreed that the consent conditions should specify ES 5.0 rather than simply ES 5.²⁵³

[339] Mr Keeley’s evidence was that ES 5.0 was associated with a depositional flux of 10–12 kg/m²/yr while ES 4.0 was predicted at 4–5 kg/m²/yr. That is, a decrease from ES 5.0 to ES 4.0 would require a 40-50% reduction in production. At ES 3.0 the depositional flux is 0.5 kg/m²/yr.²⁵⁴ While Mr Keeley had not done the calculations for ES 3.0 he confirmed that would be a substantial reduction again and a very low level of production.²⁵⁵ He suspected that it would not be viable for a salmon farm.²⁵⁶ In closing submissions King Salmon confirmed that operating the salmon farms at ES 3 would not be economically viable.²⁵⁷

²⁴⁹ Transcript at 486 – 488

²⁵⁰ Exhibit Dawson 4 letter from Mr Keeley dated 10 September 2012

²⁵¹ Transcript at 3550 and 3557

²⁵² Transcript at 3569

²⁵³ Transcript at 467 and 506

²⁵⁴ Keeley EiC at [54.3] and [55.2]

²⁵⁵ Transcript at 496

²⁵⁶ Transcript at 512

²⁵⁷ Nolan and Gardner-Hopkins closing submissions at [9.19]

The Response Conditions

[340] The original conditions proposed that any non-compliance with the EQS should be rectified within 24 months. No specific management action was required and nor was there any sanction, within the conditions, for repeated non-compliance.

[341] In response to concerns expressed by submitters King Salmon now propose a tiered response to non-compliance with the EQS. Where the non-compliance is less than 0.5 above the specified ES, a substantive improvement is required within 12 months and full compliance is required within 24 months. Where the non-compliance is more than 0.5 above the specified ES, stock must be removed within four months and the site fallowed until compliance is achieved. Following re-stocking the specified ES levels must be met in the following year.

[342] The Minister of Conservation agreed with the tiered approach although suggested that additional monitoring should be required (at 4 and 8 months) following an identified non-compliance and a tolerance of only 0.3 above the specified ES level be allowed before removing stock and fallowing the site.

Discussion and Finding

[343] We are satisfied that the approach of predicting the depositional footprint, defining the zones of impact, and setting limits in terms of the enrichment stage at the zone boundaries is an appropriate method to control the adverse effects on the benthos. The dimensions of the zones define the maximum physical extent of the effects and the EQS, alongside the narrative criteria, control the level or intensity of impact. The proposed monitoring would identify and quantify the effects.

[344] However, we are concerned that the proposed conditions allow for ES levels up to 6.5 at Papatua and 5.5 at all other sites before any specific remedial action has to be taken. Taking note of Mr Keeley's distinction between ES 5 and ES 5.0 and considering both the extent and the intensity of the impact on the benthos we do not consider this to be appropriate.

[345] $ES < 6.0$ is proposed as the EQS for Zones 1 and 2 for the Papatua farm. At ES 6.0, a level described as excessive enrichment and in transition to an azoic state, the impact on the seabed is indeed severe. In addition the evidence shows that recovery of such severely impacted sites is slow. Given that compliance is

measured at the edge of the net pens it is possible that the impacts are even greater closer to the centre of the net pens. As such we consider that $ES < 6.0$ is too high to ensure that the effects on the seabed are adequately managed and readily reversed by taking management action, such as reducing feed levels or fallowing the site. We consider that the EQS for Zones 1 & 2 for Papatua should be $ES \leq 5.0$. Given the rotation and fallowing approach proposed for the Papatua farm this would essentially allow the ES level to be increased up to 5.5 in the final year before the net pens are moved to a new location within the zone.

[346] $ES \leq 5.0$ is proposed as the EQS for Zones 1 and 2 for all other farms. For the very high flow sites, such as Waitata, Kaitira and Ruaomoko, this would allow a highly impacted zone to extend 150m to 200m from the edge of the net pens. Only when the ES level goes above 5.5 is any specific action required to be taken under the proposed conditions. We are acutely aware that any reduction in the numerical EQS at the net pens has significant consequences for the productivity of the salmon farms and all of the modelling has been undertaken using an EQS of 5.0. We agree with the submission of the Minister of Conservation that a tolerance of +0.5 is too great before action is taken to reduce the impact.

[347] While we do not recommend any reduction in the numerical EQS for the high flow sites we do consider that the ES level should not go beyond ES 5.0 without an immediate management response. However, de-stocking and fallowing of the farm would be an over-reaction and we recommend that where the monitoring indicates a result within +0.3 of the specified ES level then a 20% reduction in feed level is required in the following year. An ES score of +0.3–0.6 is to trigger a 40% reduction in feed levels. An ES score of greater than +0.6 would result in destocking and fallowing as presently proposed. We are satisfied that such an approach would be more effective in managing the impacts on the seabed within acceptable levels.

Copper and Zinc

[348] A number of submitters raised general concerns about copper and zinc.²⁵⁸

[349] Mr Ross Sneddon, an environmental scientist with expertise on the fate and effects of contaminants in the environment, gave evidence on the potential

²⁵⁸ East Bay Conservation Society 1036, Te Runanga o Ngati Kuia 0455 and Sustain our Sounds 0061

accumulation of copper and zinc from the farms. The principal sources of copper and zinc are antifouling coatings and salmon feed additives respectively. The issue of accumulation under finfish farms is recognised and the sediment record under existing King Salmon farms has been used to predict effects at the new sites. Elevated levels have been observed at 10m to 150m from the net pens consistent with the expected depositional patterns beneath the farms.²⁵⁹

[350] King Salmon began using feed with organic zinc (replacing inorganic zinc sulphate) in 2011 and estimates this will reduce zinc in sediments by 50%.²⁶⁰ Trials are also underway using in-water net cleaners for the predator nets rather than copper antifouling.²⁶¹ Mr Preece was not able to give an assurance that copper antifouling would not be used until the trials have been completed.²⁶²

[351] Even with copper antifouling being used, Mr Sneddon concluded that levels of copper and zinc were unlikely to reach levels of concern except at Papatua. Any detectable bioaccumulation of copper and zinc in marine biota would be limited to organisms within the depositional footprint of the farms. Any long term ecological effects on benthic communities would be minor given the proposed conditions of consent – using the trigger levels in the ANZECC²⁶³ guidelines – and a timely response to reduce inputs of metals.²⁶⁴

Discussion and Finding

[352] The accumulation of copper and zinc under finfish farms is well documented both overseas and in New Zealand. We accept the evidence of Mr Sneddon that such accumulation under the proposed farms would be highly localised and unlikely to cause any significant ecological effects. The monitoring conditions are sufficient to ensure that any effects will be managed within appropriate limits.

Water Quality

[353] The feed given to the salmon introduces a new nutrient source to the water, mostly through the production of fish waste. The concentration of nutrients is

²⁵⁹ Sneddon EiC at [21] – [28], [32] and [38]

²⁶⁰ Sneddon Rebuttal at [12] and Preece Rebuttal at [7.2]

²⁶¹ Preece Rebuttal at [7.9]

²⁶² Transcript at 894

²⁶³ Australian and New Zealand Guidelines for Fresh and Marine Water Quality 2000 Volume 1

²⁶⁴ Sneddon EiC at [80] – [84] and Figure 2 Decision Tree for Sediment Metals

higher in close proximity to the farms however the cumulative effect of all farms, in the wider context of the Sounds, must also be considered. Increased nutrient concentration can lead to enhanced growth of phytoplankton and, potentially, an increase in algal blooms.

The Position of the Parties

[354] Overall King Salmon submitted that a precautionary approach had been taken to the issues with respect to water quality. They considered the proposed conditions to clearly identify the water quality outcomes to be achieved and the adaptive management measures proposed in response to any threshold being exceeded to be adequate. They emphasised that the modelling had been conservative and overestimated the likely enrichment by nutrients. King Salmon submitted that there was sufficient background information, when supplemented by the additional one year of monitoring required by the proposed conditions, to adequately characterise the receiving environment.²⁶⁵

[355] The submitters have challenged the modelling and expressed concern at the cumulative impact of the nutrient additions to the Marlborough Sounds. They question the adequacy of the information on the natural variation in water quality within the Sounds. The ability of the spatial modelling to accurately predict effects, particularly in sheltered bays, has been challenged and concerns raised about the potential for an increase in harmful algal blooms.

[356] The Marlborough District Council submitted that there is a lack of baseline information and noted that they have a monitoring programme underway for Pelorus and Queen Charlotte Sounds. They consider that the site by site approach to effects, taken by King Salmon, does not assist in understanding the overall sustainability of aquaculture in the wider Marlborough Sounds.²⁶⁶

[357] The Minister of Conservation submitted that the baseline information, including a single year of monitoring required by the proposed conditions, was insufficient and the degree to which the additional Council information might assist was not clear.²⁶⁷ The Minister expressed concern about the unreliability of and inaccuracies in some of the modelling, and the decision to model initial rather than

²⁶⁵ Nolan and Gardner-Hopkins closing submissions at [10.1] – [10.34]

²⁶⁶ Quinn opening submissions at [77] – [78]

²⁶⁷ Bradley and Jamieson opening submissions at [94] – [98]

maximum feed levels (as sought in the consents). The Minister submitted that a more sophisticated “food web” model would provide a better management tool than the modelling indicated in the proposed conditions of consent.²⁶⁸ In conclusion the Minister submitted that “a precautionary approach is especially warranted” with respect to the wider water column effects.²⁶⁹

[358] Sustain our Sounds, the Friends of Nelson Haven, and the Nelson Underwater Club submitted that the proposal had the capacity to damage the “delicate balance of the benthic and water quality environments” with particular reference to the potential for harmful algal blooms which could damage or destroy the mussel industry.²⁷⁰ They submitted that there was no definitive evidence on the impacts on the water column and the associated limits of acceptable change, while acknowledging the complexity and difficulty therein.²⁷¹ They shared the concerns of the Minister about the absence of baseline information to gauge thresholds and reiterated the need for a precautionary approach.²⁷²

[359] Many other submitters made reference to the issue of further nutrient additions to the Sounds. Ms Barbara Jurgensen articulated many of these concerns saying:²⁷³

Over the years, the Sounds have been subjected to run-off from farming and forestry. Now when new rules protect our streams and rivers from dairy run-off it is incomprehensible that an extension of marine farming, where nutrients flow directly into the enclosed waters of the Sounds should even be considered.

[360] We read and heard evidence from a number of experts with respect to impacts on water quality. Mr Ben Knight, a modelling expert, had developed an overall mass balance model and a flushed model for nutrient impacts on the Sounds as a whole. In addition Mr Knight undertook spatially explicit modelling for Port Gore, Pelorus Sound and Queen Charlotte Sound. Dr Paul Gillespie, an ecologist, considered the implications for water quality and subsequent ecosystem changes. Mr Lincoln MacKenzie, an ecologist, assessed the potential for harmful algal blooms in the Marlborough Sounds. Dr Niall Broekhuizen, an ecological modeller, and Dr Mark Hadfield, a scientist with expertise in marine physical processes and

²⁶⁸ Bradley and Jamieson opening submissions at [88] and [104] – [110]

²⁶⁹ Bradley and Jamieson opening submissions at [128]

²⁷⁰ Heal opening submissions at [8.11] – [8.14]

²⁷¹ Heal opening submissions at [14.18]

²⁷² Heal opening submissions at [10.12]

²⁷³ Jurgensen submission 0559 and transcript at 2484 – 2485

hydrodynamic modelling, carried out a peer review²⁷⁴ of the applicant's modelling and assessment of nutrient loadings. Dr Peter Longdill, an expert in coastal processes and modelling, considered the appropriateness of the modelling approach, the uncertainties involved and the proposed conditions of consent. Dr Neil Hartstein, a physical oceanographer, reviewed the hydrodynamic modelling and presented the results of his own modelling work. Dr Ian Henderson examined a report on the biochemistry of the water column before and after the intensification of salmon farming in the Sounds and looked at the potential for salmon farming to create local "dead zones". The experts had caucused and produced a joint statement dated 27 August 2012.

The Existing Environment

[361] Dr Gillespie observed that the physical, chemical and biological characteristics of the Sounds exhibit a high degree of variability over both time and space (with seasonal and inter-annual cycles and inner to outer Sound gradients). He assessed the trophic condition, or productivity, of Pelorus Sound to be low to moderate and that of Queen Charlotte Sound to be moderate. The Sounds as a whole can be described as mesotrophic or a moderately productive environment.²⁷⁵ Typical water column characteristics for the different trophic states – in terms of total nitrogen (TN), total phosphorus (TP), algal biomass as indicated by chlorophyll-*a* (Chl-*a*), and water clarity as indicated Secchi disc depth (SD) – were presented by My Keeley:²⁷⁶

Trophic State	TN (mg/m³)	TP (mg/m³)	Chl-<i>a</i> (mg/m³)	SD (m)
Oligotrophic	<260	<10	<1	>6
Mesotrophic	260–350	10–30	1–3	3–6
Eutrophic	350–400	30–40	3–5	1.5–3
Hypertrophic	>400	>40	>5	<1.5

[362] Mr Knight observed that oligotrophic through to eutrophic conditions may exist in the Sounds periodically due to natural fluctuations in nutrient inputs and flushing. He described the temporal variability in nutrient concentrations and primary productivity with the season (low nitrogen in the summer compared to

²⁷⁴ Broekhuizen N & Hadfield M, 2012, Review of evidence submitted by Mr Ben Knight on behalf of NZ King Salmon, prepared for the EPA, NIWA report HAM2012-110

²⁷⁵ Gillespie EiC at [24]

²⁷⁶ Keeley EiC Table 6

winter) and also between years in response to climate cycles (such as El Nino and La Nina).²⁷⁷

[363] Mr Knight described each of the three regions where farms are proposed. He noted the relatively high influence of freshwater inputs to Pelorus Sound. The Pelorus River dominates the temperature, salinity, nutrient and turbidity of inner Pelorus and Kenepuru Sounds and during high flow periods the river's influence can extend through the whole Sound. This freshwater input creates an estuarine circulation pattern. The freshwater inputs to outer Pelorus are small relative to the large volume of water exchanged with Cook Strait. Nitrogen is considered to be the primary limiting nutrient for phytoplankton production in Pelorus Sound and hence the addition of nitrogen from the proposed farms is the major focus of the assessment of effects on the water column. A dominant feature in Queen Charlotte is the strong currents that flow through Tory Channel. Estuarine circulation is also possible in Queen Charlotte after periods of heavy rain. There is clear evidence of nitrogen limitation in Queen Charlotte Sound but that might not be so in Tory Channel. Tory Channel is well mixed and rich in nitrogen and phosphorus, even in the summer. Port Gore is largely removed from the influence of major rivers and is more exposed to water exchange with Cook Strait. Nitrate nitrogen concentrations are generally higher in Cook Strait, than within Pelorus, but show the same seasonal pattern of lower concentrations in summer. Chlorophyll-*a* was measured in the range 0.5-1.5mg/m³ (1984–85 data). From this Mr Knight considered it reasonable to assume that Cook Strait and Port Gore are mesotrophic.²⁷⁸

[364] We reproduce a portion of the water quality information showing the mean (minimum and maximum) concentrations, presented by Mr Knight, for Pelorus Sound (1984-1985 data), Queen Charlotte Sound (2011–2012 data) and Tory Channel (1997–1999 data):²⁷⁹

Location	TN (mg/m ³)	TP (mg/m ³)	Chl- <i>a</i> (mg/m ³)
Inner Pelorus ²⁸⁰	167 (118–238)	19 (5.9–42)	2.0 (0.6–3.9)
Outer Pelorus ²⁸¹	136 (90–197)	14 (7.1–27)	1.1 (0.1–2.8)
Tory Channel	175 (136–227)	21 (13–39)	1.4 (0.1–4.3)
Inner Queen Charlotte ²⁸²	155 (84–248)	22 (10–43)	2.0 (0.8–5.7)

²⁷⁷ Knight EiC at [44] – [47]

²⁷⁸ Knight EiC at [22] – [38] and [52] – [54]

²⁷⁹ Knight EiC Table 7 (locations as corrected by rebuttal evidence)

²⁸⁰ Mills Bay

²⁸¹ Richmond Bay

[365] Dr Longdill was critical of the heavy reliance placed on existing data, some of which is rather old, and collected at locations which are not ideal in aiding the understanding of the potential effects of the present proposal. He expressed surprise that more comprehensive background water quality monitoring had not been carried out. Given the inadequacies in the existing data and the absence of water quality data for Port Gore he contended there were particular difficulties in placing the modelling results into the context of the existing environment.²⁸³

[366] In response to questions from the Board on the temporal variations and trends in riverine inputs Dr Gillespie said that he expected nutrient and sediment inputs from catchments to be increasing and even to override the influence of the salmon farms. With reference to dairying inputs from the Rai catchment (discharging into Pelorus) he considered the situation could be “quite alarming” particularly for the inner Sounds, the effect being diluted as one moves out.²⁸⁴

[367] Mr Knight had carried out a statistical analysis²⁸⁵ of datasets collected at two sites within Pelorus Sound and one within Queen Charlotte, before and after salmon farming. He found significant differences in dissolved inorganic nitrogen (DIN), generally lower after farming, and dissolved reactive phosphorus (DRP), being generally higher. There was no consistent pattern in chlorophyll-*a* concentrations. Noting that the differences were small Mr Knight considered the results to highlight the difficulty in differentiating salmon farm effects from natural variation.²⁸⁶

[368] Dr Ian Henderson had undertaken a thorough review of the historical data and trends for Wedge Point in inner Queen Charlotte Sound, as presented in Mr Knight’s report. He identified a number of errors and inconsistencies in the analysis and reanalysed the data. He concluded that the historical intensification of aquaculture is associated with a 60% increase in phytoplankton chlorophyll-*a* in Queen Charlotte Sound, “a clear indication that eutrophication has already started”. No such trends were observed for DIN and DRP. Dr Henderson noted that the data came from studies not designed specifically to test for the impact of salmon farms and the Wedge Point sampling point was over 12km from the nearest farm.²⁸⁷

²⁸² Wedge Point

²⁸³ Longdill EiC at [18] – [20]

²⁸⁴ Transcript at 298

²⁸⁵ Knight B and Jiang W 2012, Bio-chemical water column properties before and after intensification of salmon farming in the Marlborough Sounds, Cawthron Report 2184

²⁸⁶ Knight EiC at [126] – [128]

²⁸⁷ Henderson EiC at [A] – [D] and [9.1] – [9.2]

[369] In his rebuttal evidence Mr Knight accepted that alternative methods of analysing the data could be more sensitive with respect to detecting effects. However he maintained that the data were insufficient to differentiate the effects of salmon farming from natural processes and variability. He agreed that the analysis of existing effects, using real system data, was important and larger datasets would assist.²⁸⁸ Dr Broekhuizen generally agreed with Mr Knight that the data points were few and the study was not designed to detect such effects.²⁸⁹ We concur.

[370] Following caucusing the experts were agreed that the unavailability of background data has introduced uncertainty to the interpretation of modelling results and baselines surveys would need to begin as soon as practicable after the issuing of any consents.²⁹⁰

[371] Dr Gillespie was confident that this lack of data could be made up for through a combination baseline monitoring prior to production from the proposed fish farms (a bare minimum of one year) and the gathering of historical information (including the MSQP,²⁹¹ NIWA²⁹² datasets and the ongoing Marlborough District Council water quality surveys). He lamented the lack of government funding for the development of long term databases on the state of the environment, particularly in areas where the expansion of aquaculture is being promoted.²⁹³ Similarly Mr Knight envisaged a combination of baseline monitoring supplemented by “other multi-seasonal and multi-annual data.” He thought one year of monitoring would be long enough depending on the availability of this other data.²⁹⁴

[372] Dr Broekhuizen was aware of the MSQP and NIWA data, saying he had seen a “very little bit of it”, and believed it would be adequate to determine the baseline conditions. In an ideal world he would like to see 10 to 20 years of monitoring information but practically speaking two years would be acceptable and one year the “absolute bare minimum.”²⁹⁵ Dr Longdill did not wish to commit to a particular period of baseline monitoring as it would depend on the adequacy of the information available from the other datasets.²⁹⁶ He accepted that the peer review

²⁸⁸ Knight rebuttal at [11.1] – [11.3]

²⁸⁹ Broekhuizen & Hadfield review at 50

²⁹⁰ Joint statement water column experts at 1

²⁹¹ Marlborough Shellfish Quality Programme

²⁹² National Institute of Water and Atmospheric Research

²⁹³ Transcript at 236 – 239 and 282 – 285

²⁹⁴ Transcript at 181 – 182

²⁹⁵ Transcript at 362 – 363

²⁹⁶ Transcript at 379

panel could assess the adequacy of the data for Pelorus and Queen Charlotte Sounds although remained concerned about Port Gore.²⁹⁷

Discussion and Finding

[373] We concur with the experts that there was a paucity of data presented to us on the existing water quality of the Marlborough Sounds, particularly given the temporal and spatial variations in nutrient concentrations and phytoplankton. It was somewhat frustrating to hear that additional data and information did exist but was not available to, and had not been properly considered by, the various experts for this hearing. In the absence of such consideration we are unable to comment on the adequacy of this information.

[374] The trend of increasing nutrient additions from the land and the absence of any robust research into the impact of the existing farms adds to our concerns about the characterisation of the existing environment. We go on to consider the implications of this lack of information and the uncertainties about the state of the existing environment in the context of the modelling and predictions of the environmental impact of nutrient additions from the proposed farms.

The Nutrient Additions and the Overall Budget

[375] Dr Gillespie described the nutrient cycling in the marine environment of the Sounds. He considered nitrogen to be the limiting nutrient for phytoplankton production. Approximately 78% of the nitrogen fed to the salmon is estimated to end up in solid or dissolved forms of nitrogen waste, mostly (about 80%) as dissolved ammonium (NH_4^+). This dissolved nitrogen would quickly be taken up by phytoplankton which may in turn be grazed by other organisms. Dissolved ammonium may also be converted to nitrate (NO_3) which may be consumed by plants, or converted to nitrogen gas (N_2) and lost (denitrification). The remaining 20% of waste nitrogen would be deposited on the seabed. This particulate nitrogen (PN) may be recycled or buried in the sediments.²⁹⁸

[376] Dissolved oxygen depletion is a result of the respiration of a concentration of farmed fish and the microbial degradation of wastes. As adequate dissolved oxygen is critical to fish health King Salmon monitor the concentrations daily. We

²⁹⁷ Transcript at 396

²⁹⁸ Gillespie EiC at [25] – [29]

accept the largely unchallenged evidence of Dr Gillespie that there would be only minor and localised effects on dissolved oxygen levels in the water column in the immediate vicinity of the farms. Similarly we accept that the build-up of toxic levels of ammonia (the unionised form of ammonium) is extremely unlikely.²⁹⁹

[377] The estimated sources and sinks of nitrogen, expressed in tonnes of nitrogen per year, for each the three regions are reproduced below.³⁰⁰

	Pelorus	Queen Charlotte	Port Gore
Ocean exchange	1050–2100	412–825	
River input	580	16.6	
Picton wastewater	-	9	-
Existing salmon ³⁰¹	504	812	0
<i>Proposed salmon (initial)</i>	<i>644</i>	<i>336</i>	<i>168</i>
<i>Proposed salmon (max)</i>	<i>952</i>	<i>672</i>	<i>280</i>
Mussel farms	-266	-11.8	
Denitrification	-465	-367	

[378] The input of nitrogen from ocean exchange is presented as a range due to the very high seasonal and inter-annual variability. Mr Knight regarded ocean inputs as the most significant natural source of nitrogen albeit of highly variable quantity. He accepted that the Sounds ecosystem has evolved on the basis of this erratic scenario and the persistent and significant inputs from the salmon farms would be imposed on top of this variability.³⁰² While Mr Knight could not say what proportion of the river inputs could be ascribed to farming and forestry (over and above the natural background) he estimated that the mussel farm removals would cancel them out.³⁰³

[379] A number of submitters had compared the proposed salmon farms to inputs of human sewage.³⁰⁴ Dr Schuckard calculated that the nitrogen input from the maximum feed discharge was equivalent to what is produced by 420,000 people.³⁰⁵

²⁹⁹ Gillespie EiC at [35] – [47] and [48] – [50]

³⁰⁰ Knight EiC Tables 3, 4, 8 and 9 (as updated by rebuttal); maximum proposed salmon nitrogen calculated from maximum feed discharge in proposed conditions of consent

³⁰¹ Based on consented feed discharge

³⁰² Transcript at 201

³⁰³ Transcript at 222

³⁰⁴ Soderburg submission 0314 compares Clay Point salmon farm to Christchurch City; Marshall submission 1072 present salmon farms equivalent to sewage from 250,000 people and increase equivalent to 270,000 to 600,000; TasFish submission 1074 increase in production is equivalent of sewage from 500,000 people

³⁰⁵ Schuckard EiC at [7.10]

Mr Knight noted that the pathogens present and chemical composition of human sewage is quite different to the fish farm waste. However he also calculated the equivalent population inputs of nitrogen: 35,370 people for Port Gore, 70,740 people for Queen Charlotte and 135,585 people for Pelorus Sound. While saying these inputs “appear large” he considered them to be small in comparison to the existing levels of nitrogen in the water column.³⁰⁶ Mr Knight’s calculations are based on the initial rather than maximum feed levels. Using his assumptions we calculate the population equivalents for the maximum feed levels in the three regions would be 58,950, 141,470 and 200,420 respectively or a total of 400,480 people. This figure is very close to Dr Schuckard’s estimate and usefully illustrates the scale of the proposal.

[380] Mr Knight presented three models: a mass balance model, a flushed aspatial model and a spatially explicit model. Following peer review, initiated by the Board, some changes and improvements were made to the inputs and modelling assumptions. It is the revised modelling that we consider here and we express our gratitude to the water column experts involved for their prompt and cooperative approach to their task. We note Mr Knight’s description of models as “mathematical representations of complex systems and (they) can never perfectly simulate what effects will transpire under real world conditions”.³⁰⁷ Dr Hadfield put it more colloquially quoting the phrase “all models are wrong, but some models are useful”.³⁰⁸

[381] Before considering the models themselves we address the issue of the nutrient budget and the fish farm inputs. Dr Broekhuizen noted the almost all of Mr Knight’s modelling was based on the proposed initial feed levels and therefore his inferences apply only to the possible outcomes for the early stage of the farms operations.³⁰⁹ Similarly Dr Longdill was concerned that the effects of the fully operational farms had not been modelled or assessed. Nor had inputs from existing and pending finfish farms been considered. Dr Longdill observed that at times of low oceanic input, fish farm based nutrients would be the dominant source of “new” nitrogen into the Sounds.³¹⁰ Mr Knight disagreed that the fish farms nutrients would be dominant.³¹¹

³⁰⁶ Knight rebuttal at [156]

³⁰⁷ Knight rebuttal at [B]

³⁰⁸ Broekhuizen & Hadfield review at 23

³⁰⁹ Broekhuizen & Hadfield review at 35

³¹⁰ Longdill EiC at [F] & [I]

³¹¹ Transcript at 201

[382] During cross-examination Mr Knight confirmed that he had only modelled the initial feed discharge levels which are about half what King Salmon is seeking by way of the maximum feed discharge in the proposed conditions of consent. He maintained that this was a thorough assessment of the effects on the water column as the maximum levels may never actually be reached. Later he added the proviso that satisfactory consent conditions would need to be in place for the water column.³¹²

[383] Dr Gillespie similarly accepted that the modelling had been of the initial feed levels and he agreed that effects of the maximum discharge sought had not been thoroughly assessed. However, Dr Gillespie thought that the benthic effects would become limiting before the water column effects.³¹³ In response to questions from the Board on this point Mr Keeley considered that the seabed effects would only be limiting at the low flow sites, but at the “really dispersive” sites “you would certainly want to have the water column thresholds established” before farming commenced.³¹⁴

Discussion and Findings

[384] We consider the implications of modelling the initial, rather than the predicted sustainable or maximum feed levels sought after we have looked at each of the models. Looking at the estimated sources of nitrogen we concur with Dr Longdill that the fish farms could very well become the dominant source of “new” nitrogen into the Sounds. The oceanic exchange of nitrogen can be regarded as part of the natural background. The inputs from rivers, particularly into Pelorus, are almost certainly significantly elevated due to farming and forestry operations within the catchments. These inputs (thought to be increasing) are mitigated to a large extent by the mussel farms which remove nutrients. The existing and proposed finfish farms are a major new source of nitrogen in this context.

Mass Balance Modelling

[385] The overall impact of the nutrient additions of the proposed salmon farms was compared to a critical nutrient loading rate (CNLR) derived for euphotic (well-lit) surface waters. The CNLR is the nutrient loading rate which cannot be

³¹² Transcript at 177 – 178 and 194

³¹³ Transcript at 320

³¹⁴ Transcript at 502 – 503

exceeded without loss of ecosystem integrity. Assuming nitrogen to be limiting phytoplankton growth Mr Knight estimated a conservative CNLR for the Sounds at 6 mg/m³/day. This CNLR is based on experimental work in European coastal waters.³¹⁵ During cross-examination Mr Knight described the CNLR as the critical point where the water column is unable to respond linearly to an increase in nutrient loading. He agreed that it could be used as a trigger but it was not straightforward to determine the appropriate numerical limit for the Sounds.³¹⁶

[386] Mr Knight calculated the nitrogen additions from the existing and proposed farms, the natural inputs from the ocean and rivers, and removal of nitrogen through mussel farming and denitrification and estimated the euphotic volume – his “simple box model.” He concluded that the total nutrient loading rate would be well within the estimated CNLR at a Sounds wide scale.³¹⁷ Despite some reservations Mr Knight considered the box model to be a useful tool and the CNLR to be conservative, but not to be “heavily relied upon”.³¹⁸

[387] Dr Longdill had calculated the inputs from the farms using the maximum feed discharge (adjusted for the highest seasonal loading) alongside the pending (in Melville Cove, Beatrix Bay and Port Ligar) and consented finfish farms. He estimated the total inputs of nitrogen at 49%, 30% and 35% of the CNLR (set at 6 mg/m³/day) for Pelorus, Queen Charlotte and Port Gore respectively.³¹⁹ Mr Knight noted that these calculations also showed that the loading rates would also fall below a more conservative CNLR for nitrogen of 4 mg/m³/day.³²⁰

[388] Drs Broekhuizen and Longdill described the designation of a CNLR and the comparison of nutrient loadings with it as a “back of an envelope” or preliminary calculation. Dr Broekhuizen was confident that Mr Knight’s calculations of nutrient loadings were reasonable but much less confident of the proposed CNLR.³²¹ Dr Longdill said the CNLR should not be relied on to designate a safe threshold of nutrient loading as significant changes could occur even if a CNLR of 6 was complied with.³²² Mr Knight agreed.³²³

³¹⁵ Knight EiC at [62] – [68]

³¹⁶ Transcript at 195 – 197

³¹⁷ Knight rebuttal at [8.4]

³¹⁸ Knight rebuttal at [8.15]

³¹⁹ Longdill EiC Table 2

³²⁰ Knight rebuttal at [8.8] – [8.9]

³²¹ Broekhuizen & Hadfield review at 35–39 and Broekhuizen EiC Executive Summary at [14] – [20]

³²² Longdill at [32] – [33]

³²³ Transcript at 187

Flushed Aspatial Modelling

[389] The flushed aspatial model incorporates the effects of oceanic exchange which reduces the build-up of the introduced nitrogen in the environment. This provides an estimate of the average long term increase in steady state nitrogen concentrations (ignoring the changes in feed discharge with the season).³²⁴ The model suggests that long term system wide increases in TN would be small (plus 9.9 mg/m³ in Pelorus, 4.9 mg/m³ in Queen Charlotte and 7.95 mg/m³ in Port Gore) but a measurable change in chlorophyll-*a* is possible – potentially increasing by 1.13 mg/m³ in Pelorus, 0.56 mg/m³ in Queen Charlotte and 0.90 mg/m³ in Port Gore.³²⁵

[390] Mr Knight's calculations are for the initial feed discharge and are in isolation from the existing environment – that is, the model estimates the marginal change as a result of the proposed salmon farms.³²⁶

[391] Dr Broekhuizen considered the box model and flushed aspatial model to be of limited management value because the farms are point sources and transport is not sufficiently rapid to ensure that the nutrients become “well-mixed” as assumed in the models.³²⁷

[392] The experts were agreed that the spatial model produced more realistic and relevant results in a physical sense than a simple box model.³²⁸

Spatially Explicit Modelling

[393] The spatially explicit model used by Mr Knight (SELFIE) simulated the temporal and spatial patterns of the increase in nutrient concentrations around the proposed farms. The model used was entirely physical and did not take into account losses through settling of particulates, assimilation by flora and fauna, denitrification and burial in the sediments. Hence Mr Knight considered the results to be conservative, forecasting the maximum nutrient concentrations in the water column. He noted that the ecological importance of the increased nutrients and the extent of assimilation into the food web would depend on the time of year, the

³²⁴ Knight EiC at [69] – [72]

³²⁵ Knight EiC at [99] as updated by rebuttal Table 2

³²⁶ Knight Rebuttal at [8.17]

³²⁷ Broekhuizen & Hadfield Review at 40

³²⁸ Joint statement water column experts at 4

location within the Sounds and the wider oceanic conditions that fluctuate over longer time scales (years).³²⁹

[394] Using 90 day simulations and initial feed levels (averaged over time) Mr Knight predicted the mean increase in TN in the Pelorus and Queen Charlotte Sounds would range up to 10 mg/m³ and for Port Gore up to 30 mg/m³ (based on hydrodynamic modelling for the winter period). These mean increases do not reflect the temporal and spatial variability that would occur. Mr Knight compared the increases in TN to the average background concentrations in Pelorus and Queen Charlotte Sounds (132 and 150 mg/m³ respectively) and observed that the increases are estimated to be less than 10%. He concluded that the proposal may lead to small increases in the time spent in a higher trophic state but the average trophic state is unlikely to change. At the oligotrophic end of the scale (TN has been observed at 84 mg/m³) the modelled increases are more significant, approximately 20%, which he regarded as having a “stabilising effect” reducing the time the system spent in an oligotrophic state. For Port Gore the estimated increases are about 33% of the assumed background concentrations and the effects on the water column may be greater.³³⁰

[395] Dr Broekhuizen challenged Mr Knight’s terminology with respect to the modelled increases in TN having a “stabilising effect” with respect to the trophic state. He considered system stability to refer to the amplitude and regularity of cycles of plankton population abundance.³³¹ We understand and agree with the distinction being made by Dr Broekhuizen.

[396] Mr Knight noted that the predicted increases in concentration, across a large area of outer Pelorus and in the vicinity of Kaitapeha in Queen Charlotte, could be up to 50% greater during the spring-summer (November to January) period when feed loads are increased. At Port Gore the combination of low currents and summertime feeding rates leads to a predicted increase in TN of 50 mg/m³ within 500m of the farm. Measurable increases in bloom concentrations, additional chlorophyll-*a* up to 1.5 mg/m³ (a 25% increase), could result.³³²

[397] In his rebuttal Mr Knight modelled the summer scenario, with its different hydrodynamic regime, particularly in Pelorus Sound. The increment in TN was

³²⁹ Knight EiC at [101] – [105]

³³⁰ Knight EiC at [106] – [110]

³³¹ Broekhuizen & Hadfield Review at 46 – 47

³³² Knight EiC at [113] – [116]

increased by 20% to 30% within one or two kilometres of the proposed farms in Pelorus. The concentrations and extent of increased TN were similarly higher for Port Gore. These results did not cause Mr Knight to alter his conclusions that the likely effects on the water column would be small, with an increase of about 10% above average background TN concentrations possible in Pelorus Sound.³³³

[398] During cross-examination Mr Knight acknowledged that the modelling may have underestimated the concentrations in Port Gore. However he did not accept that there is a large degree of uncertainty regarding the potential impacts as there are real world examples for comparison. Monitoring of the effects at Crail Bay and Otanerau, low flow sites with similar characteristics, showed that the results from modelling were “very” overestimated. He did accept that isn’t to say changes to the trophic state may not occur at a smaller scale.³³⁴ Dr Longdill was unconvinced by this comparison of the proposed Papatua farm with existing farm sites as he considered the monitoring data to be insufficient and there was no data on existing water quality at Port Gore.³³⁵

[399] Dr Broekhuizen accepted the comparison of TN increments with the annual average concentrations although noted that these are a “chronic increase” over a variable background and that the greatest increment would be in summer. He agreed that the 10% increase in TN was small in relation to the average and in the context of the wide natural variability in background concentrations.³³⁶ However Dr Broekhuizen was less happy with the increment in chlorophyll concentrations being expressed as a percentage of winter bloom concentrations of 6 mg/m³. He argued this may underestimate the farm induced change which he estimated could be up to 40–55% above average levels during the winter and up to 100% above average levels during the summer.³³⁷ Dr Broekhuizen did accept that Mr Knight’s modelling assumption that all farm derived TN would be converted to algal biomass was a “worst case” and his conversion factor (TN to chlorophyll-*a*) was appropriate.³³⁸

[400] The expert caucus addressed the issues of accuracy and precision in the modelling. With the exception of Port Gore, most agreed that the hydrodynamic modelling was likely to be adequate with respect to the time-averaged, large spatial

³³³ Knight rebuttal at [8.39] – [8.42] and Figure 1

³³⁴ Transcript at 183 – 186

³³⁵ Transcript 382–383 and 392

³³⁶ Broekhuizen EiC at [22]

³³⁷ Broekhuizen & Hadfield review at 47 – 48

³³⁸ Broekhuizen EiC at [24]

scale footprints of the TN increment – that is over two to four weeks or more and for the large bay scale. They accepted that a possible error in the concentration of TN up to a factor of two was acceptable. They considered the quality of the hydrodynamic modelling in the short term (over days) or at small spatial scales to be inadequate. Drs Longdill and Hartstein remained concerned about the calibration of the model and vertical mixing characteristics.³³⁹

[401] With respect to the concentrations of TN in the scenarios modelled the experts agreed (with the exception of Dr Broekhuizen) that the TN increments would be overestimated in the far-field. Dr Broekhuizen agreed with the overestimation for the mid-field but remained concerned about uncertainties in the model with respect to the far field. They agreed that chlorophyll-*a* increments would be overestimated in both the near and far fields and the model says nothing about community structure.³⁴⁰ We note here that the “overestimates” are for the scenarios modelled, that is, for the initial feed levels in the proposed conditions of consent.

[402] During cross-examination Mr Broekhuizen explained his reservations about the model predictions in the far field. He accepted that the model ignored denitrification, which would remove nitrogen from the water column, however he was concerned that the model had not been run for long enough to adequately represent the penetration of nutrient deep into the Sounds. He was unsure as to which of these two factors would be the most important – denitrification leading to an overestimate or the model run time leading to an underestimate.³⁴¹

[403] Mr Knight acknowledged various sources of error and uncertainty in his rebuttal – limited current meter data, vertical mixing, variability in residual currents, not reaching equilibrium – and accepted that modelling was an iterative process where improvements could be continually made to improve precision and accuracy. He maintained that the concerns raised did not markedly change the outcomes in terms of the predicted effects. Noting that his models were purely physical and that biogeochemical processes would reduce the area of effect he reiterated his conclusion that changes in water column nutrient concentrations would be small at the regional scale and over the long term, in comparison to the range of concentrations observed in the existing environment.³⁴²

³³⁹ Joint Statement water column experts at 4 and Broekhuizen EiC at [32]

³⁴⁰ Joint Statement water column experts at 5

³⁴¹ Transcript at 356

³⁴² Knight rebuttal at [C] and [8.51]

Discussion and Findings

[404] The simple box model and flushed aspatial model are a useful first check on the impact of the proposed salmon farms on the Sounds as a whole. They provide an overview of the various sources and sinks of nitrogen and put the input from the farms into the context of the natural background variability, the nitrogen inputs from the land and the removal of nitrogen by mussel farming. These models demonstrate that the introduced nitrogen is a significant addition to the Sounds ecosystem but unlikely to cause a major shift or perturbation in the functioning of the ecosystem as a whole. The extensive mussel farming in Pelorus Sound acts as a buffer to further nutrient additions.

[405] While there has been much discussion of the errors and inaccuracies in the hydrodynamic modelling ongoing improvements have led the experts to agree that the results are satisfactory except in the very short term (less than two to four weeks) and at a detailed scale of impact (minor embayments). They are further agreed that the TN increments will be conservative (that is overestimated) for the scenarios modelled as the removal of nitrogen by biological and physical processes is ignored in the model.

[406] The scenarios modelled are for the “maximum initial feed discharge” in the proposed conditions of consent. While these levels are increased by 50% to demonstrate the impact of summer loadings Mr Knight has not modelled the “maximum feed discharge” also set out in the proposed conditions. He explained that these levels may never be reached and the intention was to take an adaptive management approach. We are somewhat astounded and cannot understand why these maximum discharges were not modelled to give the truly worst case scenario for nutrient additions and the potential effects at both local and Sounds wide scale. Such modelling would not have precluded an adaptive management approach.

[407] The lack of spatial modelling of the maximum feed discharges makes it extremely difficult to come to a finding on the nature or magnitude of the effects of this discharge. Obviously a doubling of the feed inputs is a considerable increase in the nutrient load, particularly over the summer period when the feed discharge is higher than the average for the year. We return to the issue of the effects of the maximum feed discharge after considering the proposed conditions of consent and the detail of the adaptive management approach.

Food Web-Models

[408] Dr Broekhuizen was surprised that a conservative tracer model had been presented rather than a full food web model. His own research work, incorporating a complex food web model, indicated the majority of farm derived dissolved nitrogen would be consumed by phytoplankton within 1 to 2 km of the source. Accordingly he considered the total nitrogen simulations to be increasingly biased with distance from the farm. He contended that a food web model would be particularly useful when it came to interpreting the proposed monitoring data.³⁴³

[409] Similarly Drs Longdill and Hartstein were concerned that subsequent biogeochemical transformations had not been modelled citing the potential for nutrient transformations (such as ammonium to nitrate), changes in phytoplankton abundance and community structure (opportunistic species, diatom and dinoflagellates), varying responses in terms of increased zooplankton (grazers) and seasonal influences.³⁴⁴ Dr Hartstein opined that the use of food web or biogeochemical models is international best practice for finfish farms.³⁴⁵

[410] Mr Knight agreed that his model had not provided information on subsequent transformation or uptake of the nutrients, assimilation by organisms such as phytoplankton, or changes to plankton community structure – all potential impacts. However he regarded his modelling approach as conservative and more easily interpreted compared with modelling “not very well understood biological processes” in the Sounds.³⁴⁶ Similarly Dr Gillespie was sceptical of the ability of very complex biogeochemical models to provide any more useful and sufficiently validated information. He did suggest that such a model would be useful with respect to management of the multiple sources of nutrients to the Sounds and could be achieved through multi-stakeholder research.³⁴⁷

Discussion and Findings

[411] We agree that a more sophisticated biogeochemical model would assist with the prediction of effects, particularly with respect to the nature and extent of potential biological changes. However, as pointed out by Dr Gillespie and Mr

³⁴³ Broekhuizen & Hadfield review at 41 – 43 and 49

³⁴⁴ Longdill EiC at [46] – [55] and Hartstein EiC at [22] – [23]

³⁴⁵ Transcript at 400 – 401

³⁴⁶ Transcript at 200 and 210

³⁴⁷ Gillespie EiC at [31] and transcript at 281

Knight, that modelling would not necessarily provide any more certainty when attempting to quantify those effects. Such a model would be a major research project and would be of considerable assistance in the overall understanding and management of the Marlborough Sounds marine environment and the multiple sources of and sinks for nutrients. We do not consider this to be the sole responsibility of King Salmon or any other individual stakeholder.

[412] We are satisfied that the SELFE model, as employed by Mr Knight, is an adequate tool to determine the potential impacts of the salmon farms on water quality. We address the related question of appropriate and necessary modelling in the context of ongoing monitoring when we consider the proposed conditions of consent.

Phytoplankton and the Potential for Harmful Algal Blooms

[413] Dr MacKenzie explained that frequent blooms (a high biomass) of plankton in coastal waters are a natural and essential ecosystem process. Some algal species can cause mass mortalities of marine flora and fauna, contaminate shellfish and kill fish in sea cages. Such harmful algal blooms (HAB) are usually natural events although degraded coastal water quality can promote the development and persistence of blooms. Dr MacKenzie did not consider eutrophication of coastal waters to be an important factor in the incidence of blooms in New Zealand except in some small coastal impoundments.³⁴⁸

[414] Most HAB species are flagellates with whip-like flagella enabling them to move rapidly in response to light, nutrients, temperature and/or salinity gradients. In contrast non-motile diatoms dominate the highest phytoplankton biomass blooms in the Sounds, usually in the late winter-spring and autumn. Flagellate dominated phytoplankton is favoured where the water column becomes strongly stratified in the summer, in sheltered embayments with weak currents and long water residence times. Dr MacKenzie noted that long term change in nitrogen/phosphorus/silicon ratios have been shown to correlate with changes in the ratio of abundance of diatoms to flagellates in systems similar to the Sounds.³⁴⁹

[415] Giving an overview of historical HAB events Dr MacKenzie described “relatively minor” blooms of a toxic dinoflagellate in 1993 – 1994 in outer Pelorus

³⁴⁸ MacKenzie EiC at [C], [15]

³⁴⁹ MacKenzie EiC at [16] – [18]

Sound that resulted in extensive and prolonged closure of mussel harvesting. In June 2010 a bloom originating in the Grove Arm of Queen Charlotte Sound caused substantial mortalities at the Ruakaka salmon farm. During February to April 2011 a bloom in Tory Channel spread to other areas of Queen Charlotte and prevented shellfish harvests. Another toxic dinoflagellate blooms every year in Port Underwood, usually in spring or late summer, only sometimes closing down shellfish harvests. Dr MacKenzie summarised these observations saying HABs were relatively common in Queen Charlotte Sound but less so in Pelorus with sheltered inlets being prime habitats for the establishment of flagellate dominated communities.³⁵⁰

[416] Dr Rob Schuckard, a biologist and ornithologist, was particularly concerned about the potential for eutrophication of the Sounds, changes in nutrient ratios and the related risk of HABs during the summer months. Climate warming was also cited as a possible driver of changes in phytoplankton species composition and spatial distribution with far reaching consequences for ecosystem function.³⁵¹ Similarly Mr Janssen, an environmental scientist, considered the release of nitrogen from the proposed farms would skew nutrient ratios and result in a non-linear ecosystem response in the form of harmful algal blooms.³⁵²

[417] Dr MacKenzie considered the proposed farm sites (with the exception of Papatua) to be in deep, well mixed and high current locations that would be unlikely to experience the stable water column conditions conducive to algal blooms. Further he did not expect the increase in nitrogen load, into naturally nutrient rich environments, would lead to any detectable changes in inorganic nutrient ratios, the structure of the phytoplankton community or an increase in HABs. His review of the international literature did not reveal a strong relationship between fish farms and HABs except in confined, poorly flushed and grossly polluted situations. In addition the MSQP data on phytoplankton and biotoxins has given no indication of any unusual HAB activity associated with the existing salmon farms in the Sounds.³⁵³

[418] Dr MacKenzie acknowledged that climate change and increasing sea temperatures could have an effect on the phytoplankton ecology of the Sounds but these would be unpredictable and any projections would be simply speculation.

³⁵⁰ MacKenzie EiC at [19.5], [19.12], [19.13] and [73]

³⁵¹ Schuckard EiC at [5.1] – [5.19]

³⁵² Janssen EiC at 7–8

³⁵³ MacKenzie EiC at [K], [L], [21], [50] and [61] – [66]

While warming may provide conditions more conducive to HABs it could also result in a reduction in oceanic inputs of nutrient making the Sounds less productive.³⁵⁴

[419] The water column experts were agreed that the greatest potential for adverse effects such as harmful algal blooms exists in side embayments close to the farms, off the main channels.³⁵⁵ During cross-examination Dr MacKenzie accepted there was a potential risk of HABs in some embayments and while he considered this risk to be relatively low he recommended targeted monitoring.³⁵⁶

[420] In response to questions from the Board about the proposed conditions of consent Dr MacKenzie did not think it was possible to set simple quantitative thresholds such as chlorophyll concentration or frequency of blooms. He thought it better to stay with the narrative criterion and examine both the statistical information on frequency and detailed biological data as to the nature of any bloom events.³⁵⁷

Discussion and Findings

[421] While the development of harmful algal blooms is not easily predictable we accept the evidence of Dr MacKenzie that the salmon farms are unlikely to materially affect the frequency, duration or extent of such blooms. His review of the information from the MSQP data with respect to the impact of the existing salmon farms provides considerable comfort on this issue. While there is the potential for localised changes in some embayments there are multiple drivers of phytoplankton blooms and the availability of additional nutrients from the farms is but one. We agree that ongoing monitoring, including potentially affected embayments is necessary and it would be highly desirable for this to be linked to the MSQP.

The Cumulative Impact and Potential for Eutrophication

[422] In his further rebuttal evidence Mr Knight presented a summary of the results for the modelled cumulative effects of the existing (consented feed discharge), proposed (initial consented feed discharge) and potential farms (Port

³⁵⁴ MacKenzie rebuttal at [E]

³⁵⁵ Joint statement water column experts at 2

³⁵⁶ Transcript at 305

³⁵⁷ Transcript at 345 – 346

Ligar and Melville Cove at initial consented feed discharge). In short there is the potential for cumulative effects on the water column between the existing and proposed farm operations. Taking into account these modelled cumulative results Mr Knight concluded the changes to water column nutrient concentrations to be small at the Sounds wide scale.³⁵⁸ During cross-examination he agreed that was not his conclusion at the embayment scale.³⁵⁹

[423] Mr Knight accepted that erratic oceanic inputs, from Cook Strait, were the most significant natural feature with respect to nitrogen inputs to the Sounds leading to cycles of low and high levels of nitrogen. Mr Heal put it to Mr Knight that the salmon farms were imposing a consistently higher level of nitrogen on a system adapted to these cycles. In response Mr Knight agreed that was possible but would not be any different to a high or average nutrient level occurring naturally. He noted that the context of the Sounds environment had already changed with mussel farming reducing nutrients to low levels, particularly in Pelorus Sound. He estimated that the salmon farms would contribute on average about 10% of the background load depending on the time of year. He agreed that it was possible for the high summer loadings of feed to coincide with an influx of nutrient rich water from Cook Strait.³⁶⁰

[424] In response to questions from the Board about nutrient inputs from the land, compared to nutrient removal by mussel farms, Mr Knight estimated that the river inputs were greater. He did not know how today's levels, including farming and forestry inputs, would compare with background levels from bush catchments.³⁶¹

[425] Looking at the nutrient loadings and potential for increased phytoplankton, which would in turn stimulate zooplankton and suspension feeding animals (such as scallops and mussels) Dr Gillespie thought there would be "no adverse food web perturbations." He regarded the high biomass of farmed mussels in Pelorus as likely to have a dampening effect on phytoplankton enhancement. He acknowledged that such food web effects were difficult to predict and emphasised the importance of staged development and monitoring as part of an adaptive management approach.³⁶²

³⁵⁸ Knight further rebuttal at [4] – [14]

³⁵⁹ Transcript at 185

³⁶⁰ Transcript at 201 – 203

³⁶¹ Transcript at 222 – 223

³⁶² Gillespie EiC at [51] – [57]

[426] Dr Gillespie recommended developing an “enrichment index” as a means of assessing the trophic condition of the Sounds over time. Such an index would be calculated from combined nutrient, chlorophyll-*a* and dissolved oxygen measurements, reducing the variability associated with the individual parameters and providing a more robust indicator of the water column ecosystem. While he had insufficient background information to set standards using such an index Dr Gillespie thought it would a good measure of both spatial and temporal changes in enrichment status. He thought performance indicators or standards may be able to be developed within about three years. He noted that standards may have to be fine tuned every five years or so in the context of long term natural variation.³⁶³ Dr Longdill agreed that a trophic index would be useful as one of a number of proxies or thresholds in the monitoring approach.³⁶⁴

[427] The experts were agreed (with the exception Dr Henderson) that, at a Sounds wide scale, there is unlikely to be a change in the water column from mesotrophic/oligotrophic to eutrophic from the establishment of the salmon farms. Dr Henderson remained concerned that non-linear responses may occur at the Sounds wide scale. The experts were also agreed that changes may occur at a smaller scale and the greatest potential for adverse effects, such as harmful algal blooms, exists in side embayments close to the farms, off the main channels.³⁶⁵ Dr MacKenzie explained that the classifications of trophic level were broad and there had been some discussions amongst the experts as to whether or not the Sounds should be classified as oligotrophic (based on the total nitrogen) or mesotrophic (based on the chlorophyll).³⁶⁶

[428] Dr Henderson pointed out that ecological systems often do not respond in a simple way exhibiting threshold responses, alternative stable states and hysteresis. He considered the intense production systems of the proposed salmon farms would lead to further eutrophication of the Sounds that might be difficult to reverse.³⁶⁷

[429] Dr Gillespie expected the rapidly flushed environment of the Sounds to ensure easy reversibility and a rapid return to the trophic condition pre-development following the closure of the salmon farms. He did not expect the nutrient loads to trigger any regime shift. He expected any change in plankton community structure

³⁶³ Gillespie EiC at [74] – [78] and Transcript at 297

³⁶⁴ Transcript at 396

³⁶⁵ Joint statement of water column experts at 1 – 2

³⁶⁶ Transcript at 335

³⁶⁷ Henderson EiC at [11.1] – [11.5] and [12.5]

would be flushed and re-seeded from Cook Strait to quickly re-establish the pre-existing community following remedial action. Dr Gillespie concluded that any time lag or hysteresis would be short-lived following the removal of the nutrient source.³⁶⁸

Discussion and Findings

[430] Mr Knight has quite correctly modelled the cumulative effects of the existing farms, this proposal and other consented salmon farms. However we note that little information has been presented on the inputs, and more importantly, the trends in nitrogen from the land. We must also keep in mind the possibility of more subtle and long term effects due to climate change. We agree with Dr MacKenzie that we do not have enough information to predict whether this would be positive or negative with respect to nutrient inputs.

[431] We accept the majority opinion of the experts that a major shift in the trophic state of the Marlborough Sounds as a whole is unlikely following the establishment of the salmon farms. This does not rule out the possibility of shifts in the trophic state in affected embayments at different times of the year or in some years. Nor does it deny the possibility of more subtle ecosystem changes in response to the increased nutrients from the farms. The implications of increased phytoplankton and consequential reduction in water clarity are potentially significant in the feeding habitat of King Shag. We return to this issue later. The complexity of the ecosystem response at different temporal and spatial scales is obviously impossible to fully describe or predict and the absence of a food web model for the Sounds does not assist.

[432] We consider the development of an integrated “enrichment index” such as that described by Dr Gillespie to be a useful indicator for monitoring changes and potentially providing a trigger (or performance standard) for an adaptive management response. We note Dr MacKenzie’s comments about the trophic level of the Sounds not being as clear cut as some witnesses have implied. The concentrations of total nitrogen are at the oligotrophic end of the spectrum while chlorophyll-*a* is typical of the slightly more enriched mesotrophic state. As such a shift in trophic state, from oligotrophic/mesotrophic to eutrophic could represent a massive change in the nutrient status and related ecosystem of the Sounds. We return to this issue when considering the proposed conditions of consent.

³⁶⁸ Gillespie rebuttal at [24.1] – [24.9]

[433] The conclusions of the experts are based on the present day conditions of the Sounds. Increases in riverine inputs and/or conversions of shellfish to finfish farms would further add to the nitrogen load and have to be factored into the consideration of cumulative effects. That is the baseline is shifting and there is an important question around the assimilative capacity of the Sounds as a whole given the likely trend of increasing nutrient loads from both land and sea based activities.

Mitigation

[434] Mr Knight pointed to possible improvements in feed, farm management and fish breeding to reduce the nitrogen emission rates. He presented calculations for low protein feed and improved feed conversion rates that could reduce the nitrogen emission per tonne of fish produced by up to 47%.³⁶⁹ Dr Broekhuizen agreed that such improvements were plausible following investment in nutrition, husbandry, feed management and breeding.³⁷⁰

[435] Mr Knight and Dr Broekhuizen both dismissed co-culture with shellfish as not feasible although Mr Knight noted the combined effect of the extensive shellfish industry already existing in Pelorus Sound.³⁷¹ We have already discussed this combined effect, removing nitrogen from the water column, in the context of the overall nutrient mass balance for the Sounds. This is indeed one aspect of the existing environment that must be taken into account when evaluating the environmental impact of the proposed salmon farms.

[436] Mr Knight described the location of the farms in high flushing environments as a form of “natural mitigation”.³⁷² This was challenged by a number of witnesses³⁷³ and we agree that this is not “mitigation” in the strict sense of the RMA. The careful site selection is more correctly characterised as choosing a receiving environment where rapid mixing and dilution limit the intensity of the immediate effects on the water column and on the benthos.

³⁶⁹ Knight EiC at [154] and Table 5

³⁷⁰ Broekhuizen & Hadfield review at 53 – 54

³⁷¹ Knight EiC at [152] and Broekhuizen & Hadfield review at 53

³⁷² Knight EiC at [154] and Table 5

³⁷³ Mead EiC at [43]; Broekhuizen & Hadfield review at 53

Overall Summary and Findings on Effects on the Water Column

[437] We agree with the experts that the background data and information on water quality, as presented to the Board, is not an adequate description of the existing environment given the scale of the proposed increase in finfish farming and consequential release of nutrients into the marine environment. Some of this deficiency in information can be remedied through the conditions of consent requiring baseline monitoring. Some is expected to be filled by the monitoring currently underway for the Council. However there remains considerable uncertainty as to the nature of the receiving environment, including the trends in other nutrient sources, and consequently the ability of the Sounds to adequately assimilate a significant increase in nutrients.

[438] We accept that the modelling of the nutrients introduced to the water column is conservative for the scenarios presented to us. However those scenarios were generally for the initial feed rates for each farm and, for some of the modelling, the (higher) summer loadings. The applications for each salmon farm seek almost double this feed level – the maximum conceivable feed levels as listed in the proposed conditions of consent. The approach taken was in marked contrast to the modelling of effects on the benthos which used these maximum feed levels. This astonishing gap in the prediction of effects on the environment cannot be explained away by emphasising that the modelling is conservative and nor can it simply be filled by invoking adaptive management. It is a fundamental failing in the assessment of effects on the environment that we would not expect to see in a project of this magnitude and importance.

[439] Accordingly we can only consider granting consent for these graduated increases in feed discharge levels with any increases based on a more robust monitoring and adaptive management regime than that presented in the proposed conditions.

The Proposed Conditions of Consent

[440] Initially the conditions of consent set out baseline and ongoing monitoring requirements for water quality close to the farms, locations with the potential for nutrient accumulation and control or reference sites. Every three years the results of the wider water quality and ecosystem monitoring were to be reviewed to assess trends and implications for the ecosystem, including any potential for a shift in

trophic status, and to make recommendations as to management actions and/or suitable indicators for assessing the water column ecosystem. Ms Dawson had considered these conditions and the associated monitoring and management plans to provide “a sufficiently structured, but flexible, adaptive management approach”.³⁷⁴

[441] The Minister of Conservation submitted that the further amendments to the proposed conditions were required to ensure that the adaptive management regime for water quality would be sufficiently robust. The Minister was particularly concerned about baseline information, controlling the nutrient release (submitting that controlling the feed alone was not sufficient), an independent peer review panel, use of a food web model, setting appropriate thresholds for water quality, the management response to any breach of thresholds and enforceability.³⁷⁵ In closing the Minister focussed on the location of the monitoring sites and the associated modelling, the setting of thresholds and associated responses, and the roles of the peer review panel and the Council in reviewing and certifying the various management plans and thresholds. Further detailed suggestions were made with respect to controlling nitrogen inputs.³⁷⁶

[442] Similarly Sustain our Sounds submitted that the peer review panel should be more independent, essential baseline information was missing, and the thresholds or limits of acceptable change should be set by the Board. They were troubled by the cause and effect requirements in the conditions in the event that a particular salmon farm may not “cause” an observed effect but may “enhance or multiply”.³⁷⁷

[443] The Council submitted that the proposed conditions were overly detailed and complicated and could be simplified.³⁷⁸ They wished to see changes to the role of the peer review panel and clear standards, set out in the conditions, to be met by the management plan.³⁷⁹

The Water Quality Objectives, Thresholds and Standards

[444] In response to the concerns expressed by submitters subsequent iterations of the conditions introduced a series of objectives, expressed in narrative form, to

³⁷⁴ Dawson EiC at [9.89] – [9.96]

³⁷⁵ Bradley and Jamieson opening submissions at [92] – [129]

³⁷⁶ Janieson and Bradley closing submissions at [6] – [23]

³⁷⁷ Heal opening submissions at [19.06] – [19.20]

³⁷⁸ Quinn opening submissions at [126] – [127]

³⁷⁹ Quinn closing submissions at [27] – [39]

maintain the environmental quality of the Sounds. Dr Gillespie explained that specific quantitative thresholds or management triggers were not recommended “at this stage” because of the wide natural variability in nutrient levels. He preferred a “more holistic approach” based on monitoring a suite of enrichment indicators at selected sites to detect spatial gradients. Monitoring could include side embayments and sites of particular social or ecological concern. After three years of monitoring to evaluate the natural (seasonal and inter-annual) variation initial thresholds would be defined for specific indicators or an integrated trophic index. Any monitoring results exceeding the thresholds would trigger a more intensive investigation to establish a cause and effect relationship and to inform of the need for an appropriate mitigation response.³⁸⁰

[445] This approach was considered during caucusing and the experts were agreed that the condition specifying the water quality objectives should be amended to read as follows:³⁸¹

From the time this consent is exercised, the farm shall be operated in such a way as to achieve the objectives of minimal farm related impact upon:

- Phytoplankton biomass and species composition (including the frequency and duration of harmful algal blooms)
- Dissolved oxygen concentrations
- Macroalgal biomass
- Water column nutrient concentrations
- Water clarity
- Persistent increases in the trophic state of the water column

The specific level of acceptable change as a result of the farms to aid in defining the term ‘minimal’ in the above is not appropriate to be defined by this group of experts alone.

[446] The experts also agreed:³⁸²

Specific EQS measures are capable of being developed in the manner provided for in condition 50 through collaboration between relevant parties, and should be confirmed prior to fish being stocked in any of the farms.

[447] Drs Hartstein and Longdill added that trigger values should be supplied pre-approval.³⁸³ During cross-examination Mr Knight also agreed that it would be ideal for the quantitative standards to be set prior to the fish going into the water.³⁸⁴

³⁸⁰ Gillespie Rebuttal at [14] – [23]

³⁸¹ Joint Statement water column experts at 2

³⁸² Joint Statement water column experts at 3

[448] At the close of the hearing King Salmon proposed the following two conditions recasting the objectives as “qualitative water quality standards” and outlining the process for developing the quantitative standards and responses:

The farm shall be operated at all times in such a way as to achieve the following qualitative Water Quality Standards in the water column:

- a) To not cause an increase in the frequency or duration of phytoplankton blooms (i.e. chlorophyll-a concentrations $\geq 5 \text{ mg/m}^3$) [Note: water clarity as affected by chlorophyll-a concentrations is addressed by this objective];
- b) To not cause a change in the typical seasonal patterns of phytoplankton community structure (i.e. diatoms vs. dinoflagellates), and with no increased frequency of harmful algal blooms (HAB's) (i.e. exceeding toxicity thresholds for HAB species);
- c) To not cause reduction in dissolved oxygen concentrations to levels that are potentially harmful to marine biota [Note: Near bottom dissolved oxygen under the net pens is addressed separately through the EQS – Seabed Deposition];
- d) To not cause elevation of nutrient concentrations outside the confines of established natural variation for the location and time of year, beyond 250m from the edge of the net pens;
- e) To not cause a persistent shift from a mesotrophic to a eutrophic state;
- f) To not cause an obvious or noxious build-up of macroalgal (eg sea lettuce) biomass [Note to be monitored in accordance with Condition 65h].

The farm shall be operated at all times in such a way as to comply with Water Quality Standards (WQS), and associated responses, for the near-farm and wider-scale water column environment of Pelorus Sound. The WQS and responses shall be established as follows:

- a) For the first three years of farm operation, initial WQS for chlorophyll a (chl a), dissolved oxygen (DO) and Total Nitrogen (TN) concentrations to achieve the qualitative Water Quality Standards a, c and d of Condition 42 shall be specified in the Baseline Report (Condition 63) and may be reviewed in the Annual Report at the end of the first and second years of farm operation (Condition 66).
- b) The initial WQS shall be reviewed in the Annual Report at the end of the third year of farm operation (Condition 66) and WQS specified to achieve the qualitative Water Quality Standards a - e of Condition 42.

³⁸³ Joint Statement water column experts at 4

³⁸⁴ Transcript at 179

These WQS shall be reviewed through the Annual Report every three years thereafter unless any other Annual Report (Condition 66) necessitates earlier review.

- c) WQS shall be specified at the locations specified in Condition 62c.
- d) In the Baseline Report and each Annual Report, a hierarchy of responses to potential breaches of the WQS shall be specified, including:
 - i. A first level response requiring further monitoring and/or analysis to determine whether the operation of the farm is causing the relevant WQS not to be achieved; and
 - ii. If the operation of the farm is determined to be causing the relevant WQS to not be achieved; a second level response requiring a plan of action as soon as practicable, with clear timeframes to reduce effects on the water column and achieve full compliance with the WQS, through reduced stocking on the farm following the next harvest of salmon on the farm.

[449] King Salmon submitted that the condition defining the qualitative standards clearly identifies the outcomes to be achieved and the precise means of achieving them (through adopting numerical thresholds or quantitative water quality standards) could appropriately be left to a management plan and carried out subsequently.³⁸⁵ Further conditions require the Baseline Report and the Annual Report to be provided to the Peer Review Panel for its review, assessment and recommendations. The consent holder is to have “particular regard” to any recommendations and must give reasons if any have not been adopted. Finally the Baseline Report and the Annual Report (with respect to any recommendations for changes to the WQS, adjustment to the EQS (for the seabed) compliance zone dimensions, and increase in feed discharge) must be approved by the Council.

[450] During cross-examination on the water quality standards Dr Gillespie explained that the narrative objectives were designed as a “safeguard” as the specific quantitative standards could “miss” the effects. He emphasised the need for a holistic approach and was reluctant to rely solely on the quantitative standards or thresholds. Any breach of a threshold would trigger more intensive monitoring, probably over a period of months, to establish cause and effect. That information would need to go to the peer review panel with recommendations as to whether or not to cut back on production. With respect to the narrative objectives Dr Gillespie

³⁸⁵ Nolan and Gardner-Hopkins closing submissions at [10.24]

would add “intensity” to the frequency and duration of algal blooms and noted that there should be “no obvious shift towards a eutrophic state.”³⁸⁶

[451] The Minister of Conservation submitted that the condition relating to the trophic state should take into account both temporal aspects and the magnitude of change, suggesting the words “no statistically significant shift” to replace “no persistent shift”. The Minister proposed that the conditions setting the quantitative water quality standards should specify both “target” and “intervention” standards where any breach triggers further monitoring and reduced stocking respectively.³⁸⁷

[452] Dr Broekhuizen believed that thresholds of acceptable change should be “promptly negotiated” and, if exceeded, the conditions should require prompt destocking of the farm.³⁸⁸ Dr Longdill agreed and described “target (or acceptable change) thresholds” above which a management response is required as well as maximal thresholds above which immediate action is required. The thresholds should be agreed on by the stakeholders including the consent holder and the Council with the support of the peer review panel.³⁸⁹ Dr Gillespie also addressed the issue of a two tiered response to the water quality thresholds when answering questions from the Board. He accepted that there should be additional detailed monitoring in the first instance and that a major breach, directly linked to the farm, should prompt a “short cut” to a response.³⁹⁰

[453] During cross-examination Dr Broekhuizen commented further on the proposed conditions of consent (26 August 2012 version). He believed the conditions needed to clearly set out the process for developing the thresholds, the levels of acceptable change and the associated responses.³⁹¹

Discussion and Findings

[454] Dr Gillespie was careful to ensure that appropriate ecological safeguards were in place through the conditions of consent. He warned against relying on a single set of standards or thresholds even when adequate information became available to set such standards. We agree. While simplification to a series of

³⁸⁶ Transcript at 244 – 249

³⁸⁷ Jamieson and Bradley Closing Submissions at 12 – 14

³⁸⁸ Broekhuizen EiC executive summary at [11]

³⁸⁹ Longdill EiC at [67] – [68]

³⁹⁰ Transcript at 301 – 302

³⁹¹ Transcript at 360 – 361

thresholds or standards is tempting, and much easier to monitor and enforce through conditions, such an approach ignores the complexity of the ecological processes taking place within the Marlborough Sounds. While thresholds or standards will become important triggers in the future they are unlikely to be sufficient on their own. We find that setting objectives for water quality and the consequential ecosystem response is necessary to manage the potential adverse effects of the nutrient additions. Our task is to ensure that these objectives, as part of the conditions of consent, are reasonably certain and enforceable.

[455] Comparing the “qualitative water quality standards” in the proposed conditions to the suggestions for objectives in the agreed statement of the experts we make the following observations. First, these qualitative standards are not standards as that term is usually used in resource management practice – they are indeed objectives for an adaptive management approach to water quality (and the wider ecosystem) and it does no harm to use the more correct term. Some of these objectives are able to be stated reasonably precisely however others are broad and involve a measure of professional judgement. In this context we find the conditions requiring a Peer Review Panel to be both necessary and appropriate.

[456] Second, the issue of any shift in trophic state needs to be expressed in terms of an “increase” or “shift towards” rather than a full scale change in state. A change from today’s oligotrophic/mesotrophic conditions to a eutrophic state would represent an ecological disaster with significant implications for recreation and tourism, natural character, cultural values and other primary production operators within the Sounds. Preventing such an extreme scenario is hardly an appropriate safeguard, something less must trigger action. What represents a material or significant shift (with respect to magnitude, temporal and spatial extent) must be left to the judgement of the Peer Review Panel in the light of all of the information from the monitoring programme. Being able to demonstrate statistical significance may well require additional monitoring. We agree with the change proposed by the Minister of Conservation to this objective. Further, as discussed earlier in this decision, we think the present state should be described as oligotrophic/mesotrophic and the word “towards” should be used rather than “to” – thus conveying the message that avoiding a significant movement along the scale is the objective.

[457] We also favour adding an integrated trophic index to the list of quantitative water quality standards. While it may be sometime before such an index can be reliably “calibrated” for the Sounds, or possibly for different regions within the

Sounds, we accept the evidence of Dr Gillespie that it may become a valuable indicator in the future.

[458] Increases in phytoplankton and consequential reductions in water clarity, and the potential impact on King Shag, also need to be captured at a level somewhat less than bloom conditions. We do think that water clarity should be measured, however we are reluctant to set a water clarity standard. The relationship between water clarity and diving depth and any potential impact on King Shag foraging is uncertain as discussed further later in this decision. We consider it to be more appropriate to have an additional objective relating to King Shag and require monitoring of the population, in particular the colony at Duffers Reef. We find that the objective seeking no increase in blooms should remain although we add the word “intensity” as recommended by Dr Gillespie.

[459] Any breach of the benthic standards requires a decrease in feed levels or the fallowing of the farm. The hierarchy of responses with respect to any breach of the water quality standards is to first require more information and if that information indicates a problem caused by the farm then an “action plan” must be formed. We do not entirely disagree with this approach but do think that large exceedences of the standards should result in more immediate action – that is a two tier approach. Our recommendations for changes are shown in the attached conditions of consent.

[460] Finally we note the experts’ agreement on involving “other parties” in setting the water quality standards. This recognises the reality that setting standards is a values based decision and science can only take us so far. In this instance the Board must make the decision, based on the evidence presented, as to the levels of acceptable change. We have already discussed what is acceptable in terms of the benthic standards. While we are not able to make a decision as to the appropriate water quality standards the thresholds must relate to the agreed objectives as modified by this decision. And the conditions must clearly set out the process and timelines for setting these standards. We are satisfied that the proposed conditions provided by King Salmon in closing are adequate in this regard. The Peer Review Panel is tasked with reviewing the baseline information, the quantitative water quality standards, the management responses and the supporting monitoring programme.

Baseline Monitoring

[461] We have found that the baseline information is insufficient. The proposed conditions of consent require a review of existing water quality information and further water column monitoring prior to fish being stocked on the farms. That part of the baseline condition relating to water quality is as follows:³⁹²

The Baseline Plan shall include, but not be limited to, the following:

...

A synthesis and review of all available existing water quality data relevant to the enrichment status of Pelorus Sound, in order to provide a historical baseline of water quality conditions;

Water column monitoring for nutrient (NH₄-N, NO₃-N, NO₂-N, DRP, Si, TN and TP) and chlorophyll a concentrations, phytoplankton composition and biomass, salinity, temperature, turbidity and dissolved oxygen (DO) at the following locations in Pelorus Sound:

- i. Near-farm locations within 1km from the net pens;
- ii. Locations within regions that are expected to have the greatest potential for farm-related cumulative enrichment effects (particularly where farms are located in proximity to one another and/or as indicated by spatially explicit nutrient modelling or other modelling considered necessary by the Peer Review Panel in accordance with Condition 69a);
- iii. Locations further away from farms or groups of farms in regions that are expected to have progressively lesser farm-related cumulative enrichment effects (as indicated by spatially explicit nutrient modelling or other modelling considered necessary by the Peer Review Panel in accordance with Condition 69a);
- iv. Locations that are identified as being of high ecological value
- v. Within the inner Sounds; and
- vi. Near the entrances to Cook Strait.

The above water column data shall be collected at least monthly at these locations over one year prior to fish being stocked on the farm, provided that this frequency could be reduced in whole or in part, depending on the availability of existing water column data (which can suitably substitute). The appropriateness of any reduction is to be specifically considered by the Peer Review Panel (as part of its review of the **Baseline Plan** under Condition 69).

The monitoring stations for this water column monitoring shall be established as long-term monitoring stations for the purposes of

³⁹² Proposed Condition 77

undertaking the long-term water column monitoring specified in Condition 65c. The precise location of the long-term monitoring stations and the range of specific nutrient parameters monitored may, however, be adjusted over time in response to monitoring results (in accordance with Condition 65c) and/or in response to modelling considered necessary by the Peer Review Panel in accordance with Condition 69a ...

[462] Further conditions specify that the Baseline Plan and Report must be prepared by an independent person and then provided, in draft form, to the Peer Review Panel (not less than three persons including at least two scientists). The Peer Review Panel is to assess the adequacy of the monitoring proposed in the Baseline Plan and may make recommendations regarding any changes or further modelling requirements.

[463] As we have already discussed, Dr Gillespie, Dr Broekhuizen and Mr Knight believed that one year of monitoring (as a minimum) and the gathering of historical information would be sufficient to establish the baseline. Dr Longdill did not wish to commit to any set period although accepted that the peer review panel could assess the adequacy of the baseline data.

[464] Mr Knight explained that it would be extremely difficult to find control sites as his modelling showed that the effects can be quite widespread. While effects would be able to be measured locally the effects at a Sounds wide scale would have to be assessed by looking at the deviation from the baseline.³⁹³

Discussion and Findings

[465] Given the likely lack of suitable control sites establishing the baseline is particularly important. King Salmon have already proposed that the baseline monitoring for the Papatua farm in Port Gore should be for two years. While we accept one year of monitoring as a bare minimum may be adequate for Queen Charlotte Sound, depending on the adequacy of existing data, we consider the Peer Review Panel should have the discretion to recommend an extension, up to a total of two years, for farms in Pelorus Sound. It is within Pelorus Sound that the potential for cumulative effects is of the greatest concern – given the number of proposed farms, the trends in riverine inputs and the King Shag colony at Duffers Reef. We recommend amended conditions for the Pelorus farms.

³⁹³ Transcript at 186 – 188

Ongoing Water Quality Monitoring

[466] Dr Gillespie outlined the proposed approach to monitoring water quality based on the detection of “spatial gradients” for a suite of parameters at selected sites. He noted sites to be specifically targeted including side embayments, which may have a higher natural propensity for algal blooms, and sites of particular ecological or social concern.³⁹⁴ During cross-examination he confirmed that looking at gradients moving away from the farm was straightforward and would give a good indication of near farm effects.³⁹⁵ Where proposed farms are in close proximity to one another Dr Gillespie recommended “staggered” development in conjunction with monitoring to identify any stepwise cumulative responses.³⁹⁶

[467] Dr Longdill agreed there should be a mix of near farm and far field sites for water quality monitoring.³⁹⁷ He accepted that gradients, from close to the farm and moving away, could be used although evaluation would still require adequate baseline information.³⁹⁸

[468] During cross-examination on the use of model outputs to guide site selection Dr Broekhuizen recommended the SELFIE model be abandoned and another type of model used. He considered the SELFIE model to give the “worst conceivable outcome” in terms of TN but that was so unlikely as to be almost implausible. Hence a food web or biogeochemical model would be more useful.³⁹⁹ Similarly Dr Longdill thought a food web model would be useful in the adaptive management of these farms.⁴⁰⁰

[469] Dr Broekhuizen told us the impacts of the salmon farms in the far field would be so small that monitoring would probably not pick it up at all. He regarded the far field monitoring as reassurance that the modelling predictions were correct. If the intention of the monitoring programme is to pick up the effects then the monitoring would need to be done closer to the farm.⁴⁰¹

³⁹⁴ Gillespie Rebuttal at [13] – [14]

³⁹⁵ Transcript at 235

³⁹⁶ Gillespie Rebuttal at [19]

³⁹⁷ Transcript at 379

³⁹⁸ Transcript at 379 – 380

³⁹⁹ Transcript at 358 – 359

⁴⁰⁰ Transcript at 383

⁴⁰¹ Transcript at 364

[470] Dr Broekhuizen was happy with the proposed list of water quality parameters although would add DO close to the farms in the upper water column and near the seabed. He also recommended monitoring sedimentation rates in the near and far field as an early indicator of possible water column eutrophication.

[471] Dr Broekhuizen and Dr Henderson have both expressed concern about the “statistical power” of the monitoring, that is, whether or not the monitoring programme is robust enough to detect the changes it is intended to assess.

Discussion and Findings

[472] The purpose of the monitoring is to ensure that the environmental quality standards for both the seabed and the water column are met. As for the Baseline Plan the proposed conditions specify that the ongoing monitoring plan – Marine Environmental Monitoring and Adaptive Management Plan or MEM-AMP – must be prepared by an independent person and is subject to peer review. The Peer Review Panel is to assess the adequacy of the MEM-AMP and make recommendations regarding any changes, including any requirement for further modelling.

[473] While we share the concerns of Dr Broekhuizen and Dr Longdill regarding the adequacy of the proposed monitoring, including the modelling for the purposes of identifying the sampling locations, we consider the conditions proposed by King Salmon in closing to have addressed these issues. Given the robust peer review process incorporated into the conditions of consent we are satisfied that the monitoring conditions are adequate.

Controlling the Nitrogen Input

[474] The Minister of Conservation submitted that the conditions controlling the discharge of feed combined with an additional condition restricting the nitrogen content of the feed to less than 7% by dry weight were not sufficient to control the discharge of nitrogen. As discussed earlier in this decision the actual release of nitrogen from the farms depends on both the amount of feed and the feed conversion ratio. The Minister suggests an amendment to the conditions to require the feed conversion ratio to be less than 2.0.⁴⁰²

⁴⁰² Jamieson and Bradley closing submissions at 11

[475] While we understand the concern being expressed we do not consider it necessary to also impose a condition on the feed conversion ratio. The primary safeguard is the restriction to the total discharge of feed. King Salmon have volunteered the additional restriction on the nitrogen content of the feed. A further requirement to monitor and report on the feed conversion ratio would be onerous for very little additional benefit.

Biosecurity and Disease

[476] Concerns about biosecurity and disease have been raised given the disease problems encountered at overseas salmon farms and the mortality events at the existing Waihinu farm. A number of submitters were concerned that the increase in salmon farming would increase the risk and prevalence of disease spreading to wild stocks of fish.⁴⁰³

[477] While a large number of submitters made representations and gave lay evidence as to their observations and fears with respect to disease and the impact on wild fish, the scientific evidence was fairly consistent and much more positive. We heard evidence from three experts: Dr Ben Diggles, a scientist specialising in parasitology of fish, Dr Barrie Forrest, a marine ecologist specialising in biosecurity, and Dr Krkosek, a marine ecologist with expertise in population dynamics and epidemiology. In addition Mr Alistair Brown, an aquatic veterinarian, addressed the issue of salmon health.

[478] While the future is uncertain the experts were agreed that today New Zealand is in an enviable position in that most of the pathogens known to cause problems for salmon farms overseas are not known to occur here. Very few infectious diseases have caused production losses and active surveillance has been undertaken for decades. Accordingly, there is currently minimal risk of antibiotic resistance due to low usage (no usage since 2000) and this situation is unlikely to change. Vaccination is recommended if bacterial disease becomes a problem in the future.⁴⁰⁴

[479] Mr Diggles explained that fish welfare issues occur at stocking densities above 25kg/m³ and King Salmon operate their farms at or below that mark

⁴⁰³ For example Sustain our Sounds Submission 0061 and 0771, Global Alliance against Industrial Aquaculture Submission 1092, Danny Boulton Submission 0702, Crum Submission 0125, Lomas submission 0424, Alison Parr Submission 0282, Boyce 0454

⁴⁰⁴ Joint Statement Disease Risk and Biosecurity

throughout the entire life cycle.⁴⁰⁵ The experts were agreed that existing disease agents were unlikely to become a problem, at an individual farm level, given the current stocking densities. While the farms within each management area are likely to be connected, at a whole of Sounds scale the three farm management areas would have a low epidemiological connection given the large buffer zones between them.⁴⁰⁶

[480] Overall, Dr Krkosek considered the proposed salmon farms would result in an incremental increase in the risks already present in the Sounds due to the presence of aquaculture.⁴⁰⁷ Dr Diggles agreed.⁴⁰⁸

[481] Addressing the mortality spike at the Waihinu farm in March 2012 Mr Brown estimated the loss at about 25%. The fish exhibited skin lesions, lethargy and loss of appetite. Laboratory analysis found no evidence of a bacterial or viral agent and Mr Brown concluded the most likely cause was a water-borne irritant such as algae passing through the farm on the tide.⁴⁰⁹ During cross-examination he explained that the transient nature of algal blooms made it difficult to precisely identify the cause.⁴¹⁰

Discussion and Findings

[482] King Salmon have been operating salmon farms in the Sounds for many years with no known disease outbreaks. Antibiotics are not routinely used and are not proposed as part of this application. While the proposed farms increase the level of risk in terms of disease and biosecurity simply because of the increased density of salmon at a regional scale there are no “new” disease risks.

[483] The use of three separate management areas and the ability to switch to a biosecure mode is good practice. We note that this approach would only be successful as long as other operators do not establish finfish farms, with the potential to introduce or transmit diseases, in the “buffer” zones between the three management areas. Ms Dawson agreed that this was a potential reverse sensitivity effect.⁴¹¹

⁴⁰⁵ Transcript at 1035

⁴⁰⁶ Joint Statement Disease Risk and Biosecurity

⁴⁰⁷ Krkosek EiC at [D]

⁴⁰⁸ Transcript at 1043

⁴⁰⁹ Brown Rebuttal at [5.1] – [5.5]

⁴¹⁰ Transcript at 434

⁴¹¹ Transcript at 3797

[484] We note that the proposed conditions of consent prohibit the importation of roe and imported feed is controlled by Import Health Standards. We find that the proposed salmon farms pose little increased risk with respect to disease or biosecurity in the Marlborough Sounds.

Pelagic Fish, Mammals and Seabirds

Wild Fish Populations

[485] King Salmon submitted that any effects on wild fish would be negligible as the site selection has avoided any sensitive habitat and food wastage, that could attract wild fish, has been minimised.

[486] A number of submitters were concerned about the impacts on wild fish particularly blue cod. The Boating Clubs⁴¹² submitted that the proposed Waitata farms are scattered through highly valued blue cod habitat. Mr Boulton was similarly concerned about the impact on cod in the Waitata Reach.⁴¹³ Kenepuru Residents' Association was concerned about the potential for predatory species to assemble at the farms and form a "predator trap" for wild fish passing through the Waitata Reach.⁴¹⁴

[487] Mr Martyn Barlow, President of TASFISH⁴¹⁵ was concerned that blue cod abundance and productivity would be affected through degradation of habitat, poisoning, and predation of juveniles.⁴¹⁶ He had caught blue cod at a number of the proposed farms sites, particularly Kaitira, Tapipi and Richmond.⁴¹⁷ Mr Barlow expressed some disquiet about the potential for recreational fishers to take fish with elevated levels of mercury in the proximity of the salmon farms.⁴¹⁸

[488] Similarly Mr Boulton was concerned about the health of the wild fishery and the potential for increased parasite levels as well as contaminants such as heavy metals and the effects of a changed diet from consumption of fish feed.⁴¹⁹

⁴¹² Pelorus Boating Club, Mana Cruising Club and the Royal Portage Bay Boating Club

⁴¹³ Boulton EiC at [58]

⁴¹⁴ Kenepuru Residents Association submission 0222 Pat Williams at [31]

⁴¹⁵ Submission 1074

⁴¹⁶ Barlow EiC at [12] – [13] and [48]

⁴¹⁷ Transcript at 2514

⁴¹⁸ Transcript at 2514 and Barlow EiC at [38] – [40]

⁴¹⁹ Boulton EiC at [137]

[489] Mr Paul Taylor, a fisheries biologist, had characterised the pelagic habitat of the Sounds as highly productive and supporting a wide range of marine organisms. He noted that important fisheries within the Quota Management Area encompassing the Sounds included barracouta, blue moki, flat fish, jack mackerel, leather jacket, and warehou. Recreational fishing targeted blue cod more than any other species. Observations at existing farms indicate the yellow-eyed mullet were the predominant species followed by pilchard, anchovy and jack mackerel – largely juveniles because they can swim through the mesh and into the cages. Snapper, tarakihi, yellow-tail kingfish, blue cod and several shark species have also been seen.⁴²⁰

[490] Mr Taylor explained that the proportion of blue cod habitat in the Sounds is low as most of the benthic habitat is flat soft sediment. Blue cod favour a heterogenous substrate (jagged bedrock/sand/shell hash and biogenic colonies of tube worms and sponges) generally found in a narrow shallow band around the coast. Mr Taylor considered the proposed farm sites in Queen Charlotte Sound and Tory Channel to exhibit elements of blue cod habitat and there would be some loss of this habitat at Ngamahau.⁴²¹ He accepted the evidence of Donald Jamison that the area near Kaitapeha and Ruaomoko was a good and popular blue cod fishing spot.⁴²² Mr Taylor also accepted there is blue cod habitat in Waitata Reach associated with the areas of shell hash between the proposed farm sites and the shore as pointed out by Mr Connolly.⁴²³ He concluded there may be some indirect effects on these areas in the Waitata Reach although there was no current evidence to suggest this.⁴²⁴ We note that the depositional footprint of the proposed White Horse Rock farm⁴²⁵ is much closer to the shoreline and would impact on this habitat.

[491] Mr Taylor acknowledged the possibility that large predatory species could be attracted to the farms and prey on migratory fish moving through the Waitata Reach. However such a mechanism relied on “some density of predators being present at the time of the migrations.” Mr Taylor considered there to be little or no quantitative information on this.⁴²⁶ Dr Tim Dempster, a zoologist, stated that there was no evidence in the international literature of salmon farms acting as a

⁴²⁰ Taylor EiC at [18] – [29]

⁴²¹ Taylor EiC at [107] – [109]

⁴²² Taylor rebuttal at [3.10]

⁴²³ Connolly EiC at [84]

⁴²⁴ Taylor rebuttal at [3.11] – [3.12]

⁴²⁵ David Taylor EiC Figure 5

⁴²⁶ Taylor Rebuttal at [3.4]

“predatory trap” for wild fish.⁴²⁷ Mr Taylor also acknowledged the possibility that juvenile blue cod would be predated by salmon. However, there is no evidence that blue cod enter the cages to become vulnerable to such predation.⁴²⁸

[492] Acknowledging the aggregation of wild fish around fish farms Dr Dempster recommended “spatial protection from fishing” to prevent the potential depletion of local fish stocks. He noted the advantage, in terms of “ecosystem services,” to the salmon farm of wild fish consuming waste feed and reducing benthic impacts.⁴²⁹ Mr Taylor agreed with this recommendation.⁴³⁰ However, Mr Gillard did not consider this to be an issue. He had observed that the farms only attract sightseers and are not sought out as good fishing spots. His field staff reported that most who try fishing near the farms are soon disappointed and move on. He confirmed that King Salmon do not seek to exclude boats or fishing from the areas around the farms.⁴³¹

[493] Dr Dempster acknowledged that contaminant levels (organohalogen compounds and heavy metals) in wild fish that interact with fish farms may be different (some higher and some lower) than those found in wild fish that do not. However, levels have not been found (from international research) above public health standards so he did not regard this as “poisoning.”⁴³² Similarly while elevated levels of mercury have been detected in long lived fish beneath salmon farms in Norway these were below public health limits set for human consumption.⁴³³ Dr Dempster had considered the evidence from overseas literature on parasite loads and disease and concluded that wild fish living in the vicinity of salmon farms would not be greatly affected.⁴³⁴

Discussion and Findings

[494] We accept that most of the blue cod habitat lies close to the shore and along reef structures. The site selection process has largely avoided important blue cod habitat with the exception of Ngamahau, White Horse Rock and, to a lesser extent, Kaitapeha and Ruaomoko. However, the depositional footprints of the farms are small in relation to the availability of such habitat. While some fish would be

⁴²⁷ Dempster Rebuttal at [3.2] – [3.3]

⁴²⁸ Taylor rebuttal at [3.5]

⁴²⁹ Dempster EiC at [69] – [70]

⁴³⁰ Taylor Rebuttal at [F]

⁴³¹ Gillards Rebuttal at [14.3] – [14.5]

⁴³² Dempster Rebuttal at [3.4]

⁴³³ Dempster EiC at [45]

⁴³⁴ Dempster EiC at [47]

displaced from the area immediately beneath the farm, this would be a very localized effect and minor in terms of the fish population of the Sounds. We address effects on recreational and customary fishing grounds later in this decision.

[495] Effects on the fish populations themselves are possible in terms of a changed diet for fish attracted to the farms. However, given the very small proportion of feed wastage these are extremely unlikely to result in any detectable change in contaminants in the fish flesh. There is no evidence of a likely increase in parasites or disease transmission. Similarly predation by salmon themselves or by predators attracted to the farms is unlikely to have a significant impact.

[496] We find that the impact on wild fish, including blue cod, would be minor or minimal.

Sharks

[497] A number of submitters expressed concern about the attraction of sharks to the salmon farms. Mr Tony Black,⁴³⁵ resident in Wellington with a bach about 300m from the Waihinu Bay farm, has observed the attraction of seals and sharks to the farm. He had seen sharks going on for 2m long, probably bronze whalers.⁴³⁶ Mr Danny Boulton, a tourism operator, also considered sharks attracted to the Waihinu Bay farm to have been a problem for an expanding tourism industry. Bronze whalers would chase swimmers and divers, and sharks had been reported attacking a kayak.⁴³⁷

[498] Mr Taylor told us that the most common cause of shark interactions with fish farms was the presence of dead fish. This could be fixed by good husbandry and the use of predator exclusion nets. The conditions proposed impose both of these requirements.⁴³⁸ Mr Preece accepted that in the past King Salmon employees had fed sharks which had attracted them to the farms. In response to complaints from neighbours and health and safety concerns King Salmon put a stop to this practice in 2008. Shark sightings have fallen considerably since.⁴³⁹

⁴³⁵ Submitter 0161

⁴³⁶ Black EiC at [12]

⁴³⁷ Boulton EiC at [80]

⁴³⁸ Taylor EiC at [31] – [33]

⁴³⁹ Preece EiC at [78] – [79] and Appendix A

[499] Mr Clinton Duffy, a marine biologist with a research focus on sharks, agreed with the evidence of Mr Paul Taylor with respect to sharks.⁴⁴⁰ While there are some 14 species of sharks found naturally with the Sounds and they may be attracted to fish farms he considered the risk of shark attack around the farms to be no greater than elsewhere in the marine environment.⁴⁴¹ In response to questions from the Board he explained that he expected sharks would aggregate around proposed farms in the Waitata Reach but that would not result in a greater number of sharks in Pelrous Sound overall.⁴⁴²

Discussion and Findings

[500] While temporary aggregations of sharks in the vicinity of fish farms may be alarming we find that there is no increased risk to users of the Sounds, including swimmers and divers. Indeed we think it is unlikely that people would be in the water close to the salmon farms choosing to swim elsewhere for obvious reasons. Given the proposed conditions of consent with respect to prompt removal and disposal of dead fish and the ban on feeding sharks from the salmon farms we find that there would be no adverse effects with respect to sharks.

Marine Mammals

[501] A number of submitters were concerned about the impact of the proposed salmon farms on marine mammals. Mr Raymond Smith,⁴⁴³ for Te Runanga o Ngati Kuia Trust, and Mr Boulton⁴⁴⁴ were concerned about dolphins. Mr Plaisier⁴⁴⁵ and Mr Janssen⁴⁴⁶ were particularly worried about the impact on Hector's dolphin population from fragmentation of habitat. Ms Marcia Rowe⁴⁴⁷ opposed the removal and relocation of seals and Ms Karen Marchant⁴⁴⁸ was concerned that seals and sharks could be attracted to the proposed Port Gore farm.

[502] Mr Cawthorn, a marine biologist specialising in marine mammal research, reported that marine mammals are common throughout the Sounds including

⁴⁴⁰ Duffy EiC at [7]

⁴⁴¹ Duffy Attachment 1 at [2.2] and [3.1] – [3.2]

⁴⁴² Transcript at 1012

⁴⁴³ Smith EiC at 24

⁴⁴⁴ Boulton EiC at [2] and [27]

⁴⁴⁵ Plaisier EiC at 14

⁴⁴⁶ Janssen EiC at [IV.9]

⁴⁴⁷ Rowe submission 0813

⁴⁴⁸ Marchant submission 0752 and Marchant EiC at [42]

orca/killer whales, Hector's, Dusky, bottlenose and common dolphins. Sperm whales and beaked whales are often observed foraging along the steep margins of Cook Strait. Humpback and right whales migrate through Cook Strait and occasionally come into the Sounds. Fur seals are seen in Queen Charlotte, Kenepuru and Pelorus Sounds and along the Cook Strait coast.⁴⁴⁹ Mr Cawthorn had no concerns about displacement of marine species as the area taken up by the salmon farms would be very small in the context of the Sounds as a whole.⁴⁵⁰

[503] Orca is listed as nationally critical with bottlenose dolphin, Hector's dolphin and the southern right whale are listed as nationally endangered species. Mr Baxter considered any human induced mortality of these species would be of great concern.⁴⁵¹

[504] Mr Cawthorn and Mr Baxter were agreed that dolphins and seals were the most likely marine mammal species to interact with the farms. Entanglement and entrapment of dolphins and seals is to be minimised by excluding these species using predator nets. Mr Baxter suggested, and King Salmon have agreed, detailed conditions requiring a marine management plan and reporting of any marine mammal entrapment, injury or death.⁴⁵² While these conditions require measures to minimise interactions between the salmon farms and marine mammals Mr Baxter did not believe it possible to completely eliminate deaths.⁴⁵³ Mr Cawthorn did not consider there would be any impact on the fur seal population and adverse effects on dolphins were unlikely. He acknowledged there would be "incidents" of dolphin entanglement but these would "be few and far between." Constant vigilance on the part of farm workers is required.⁴⁵⁴

[505] Mr Preece explained that, very recently, juvenile seals had been found in greater numbers around the farms. Five had become trapped in the predator nets and died. In response King Salmon is going to reduce the mesh size of these nets.⁴⁵⁵

[506] Mr Baxter agreed with Mr Cawthorn that the salmon farms would be unlikely to adversely affect fur seal or dusky dolphin populations. Neither are threatened and fur seals are abundant and expanding their geographic range.

⁴⁴⁹ Cawthorn EiC at [18]

⁴⁵⁰ Cawthorn EiC at [33]

⁴⁵¹ Baxter EiC Executive Summary at [3]

⁴⁵² Cawthorn EiC at [2] – [3], Baxter EiC at [84] and transcript at 420

⁴⁵³ Baxter EiC executive summary at [6]

⁴⁵⁴ Cawthorn EiC at [3] – [4] and [42]

⁴⁵⁵ Preece rebuttal at [11.4] – [11.5]

However he was more concerned about orca/killer whales, Hector's dolphin and bottlenose dolphin.⁴⁵⁶

Discussion and Findings

[507] The salmon farms occupy a very small footprint in the context of the Marlborough Sounds and we find there would be no adverse effects with respect to displacement of marine mammals and loss of habitat. Given the comprehensive conditions of consent we are satisfied that any adverse effects due to entanglement would be minimised. We agree with Mr Baxter that the potential for entanglement and death of marine mammals, including threatened species cannot be completely eliminated. However, we find that the conditions and proposed measures for predator exclusion, monitoring and reporting are sufficient to make the potential effects minimal.

Impacts on Seabirds particularly King Shag

[508] The Marlborough Sounds support a diverse and abundant seabird community, of which three species are considered to be Nationally Endangered – New Zealand King Shag (Te Kawau-a-Toru), Black-billed Gull and Black-fronted Tern. The King Shag is estimated to number 650 individuals and is restricted to the Marlborough Sounds. The Black-billed Gulls and Black-fronted Terns occur in the Sounds, in small numbers relative to their population numbers, during late summer to winter after they have bred on braided rivers. All other seabirds reported from the Sounds are both more abundant and widely distributed.⁴⁵⁷

[509] A number of submitters were concerned about the potential impact of the salmon farms on the King Shag through changing prey abundance, pollution of feeding grounds and disturbance of breeding, roosting and feeding activities.⁴⁵⁸ Many concerns were encapsulated by the words of Ms Leona Plaisier,⁴⁵⁹ a 17 year old from the Tui Nature Reserve on the Waitata Reach, who said:⁴⁶⁰

⁴⁵⁶ Baxter EiC at [50] – [55]

⁴⁵⁷ Sagar EiC at [B]

⁴⁵⁸ For example submissions from Royal Portage Bay Boating Club 0764, Nikki Elliot 0225, Barry Schmidt 0323, Eric Wood 0503, Martin Pinder 0645, Tui Nature Reserve Wildlife Trust 0160, Danny Boulton and family 0702

⁴⁵⁹ Submission 0134 and for Wildlife Protection Services submission 0133

⁴⁶⁰ Transcript at 2588

Having been involved in King Shag research in one of the most important feeding grounds, the Waitata Reach, I am appalled to see the lack of regard to these species survival. Although I am by no means an expert in this field it is obvious, even to me, that there is a huge lack of knowledge regarding the life cycle and habits of this rare, endangered and endemic bird.

[510] Tangata whenua value the King Shag as a taonga, Ngati Kuia included in their evidence the tradition associated with Te Kawau-a-Toro:⁴⁶¹

Our tipuna Kupe explored this area with the use of guardians. One of these was a King Shag called Te Kawau-a-Toro. His role was to test the currents of the sea to ensure it was safe to travel through. When Kupe arrived at the entrance to the Pelorus Sound he asked Te Kawau-a-Toro to test the currents, this he did. But when he asked him to test the currents at French Pass he broke his wing and drowned. Kupe named this place Te Aumiti a Te Kawau-a-Toru. The descendants of Te Kawau-a-Toro remained as kaitiaki, guardians. They have two Pa Kawau (refuge) areas, one at Te Aumiti a Te Kawau-a-Toro, the other at Moturaka (The Entangling Islet) now known as Duffers Reef.

[511] We address the potential effects of the proposal on tangata whenua values in the cultural section of this decision.

[512] Mr Pat Williams, for Kenepuru & Central Sounds Residents Association, outlined the following concerns – the potential effect of the nets in Waitata Reach on Australasian Gannets, the effectiveness of siting farms at greater than 100 m from King Shag roosting sites and the shooting of indigenous Black-billed Gulls (sic)⁴⁶² by King Salmon.⁴⁶³

[513] Sustain our Sounds raised three specific concerns with respect to impacts on King Shag – the farm structures interfering with feeding habits, the impacts of sedimentation on the habitat of prey, and the increased nutrients leading to increased phytoplankton and reduced water clarity which would make hunting difficult.⁴⁶⁴

[514] King Salmon submitted there would be no discernible impact on the King Shag population given the distance of the proposed farms from any breeding locations and the very small footprint of the farms in the context of the Sounds as a whole.⁴⁶⁵

⁴⁶¹ Smith (Ngati Kuia) EiC at 18

⁴⁶² We presume this was Black-backed Gulls

⁴⁶³ Williams additional evidence at [33] – [35]

⁴⁶⁴ Heal opening submissions at [15.08]

⁴⁶⁵ Nolan and Gardner-Hopkins closing submissions at [15.1] – [15.14]

[515] Mr Sagar, an ecologist, told us that King Shag nest at nine breeding colonies in the outer Sounds, usually in the period March to December. They remain in the Sounds area throughout their lives and feed on bottom-dwelling fish which they obtain from 20 m to 40 m depth.⁴⁶⁶ He acknowledged that there were significant gaps in the knowledge of the biology of the species with a lack of information on basic population parameters such as breeding success, breeding frequency and adult mortality. Little is known about whether foraging areas or diet change from year to year. Nor is there experimental data to determine how King Shag respond to human disturbance. Despite such gaps in knowledge Mr Sagar was confident about predicting the impacts of the King Salmon proposal.⁴⁶⁷

[516] Mr Sagar identified the potential effects on seabirds and evaluated the likely significance from experience with the existing salmon farms. Mr Preece outlined the key measures taken to deter seabirds including covering all pens with netting, placing secure lids on feed bins, sweeping up all spilt feed pellets and covering the mortality bins. Since 2010 King Salmon has not allowed the shooting of seabirds at its farms and this would only be contemplated under extreme circumstances.⁴⁶⁸

[517] Mr Sagar said there have been few reports of entanglement of birds and current practices minimise the risk. Any effects due to exclusion and smothering of the benthos directly beneath the cages were considered to be insignificant given the very large foraging range available to the birds. Aggregations of fish attracted to the farms in conjunction with on-site roosting could be a benefit for shags, penguins, gulls and terns. Ingestion of rubbish is minimised by good house-keeping. Attraction to lights and the potential for collisions is minimised by using downward pointing lights. In Mr Sagar's opinion the only significant potential adverse effect was disturbance due to the proximity of farms and boat traffic in the vicinity of feeding and/or breeding sites.⁴⁶⁹

[518] During cross-examination Mr Preece conceded that birds could become entangled in the netting if the aperture of the mesh is not correct and they did "catch the odd one". King Salmon had been trialling smaller gauge and different coloured nets.⁴⁷⁰

⁴⁶⁶ Sagar EiC at [C]

⁴⁶⁷ Sagar EiC at [4.4]

⁴⁶⁸ Preece EiC operations at [81] – [83]

⁴⁶⁹ Sagar EiC at [5.3] – [5.11], [7.3] and Table 1

⁴⁷⁰ Transcript at 884 – 885 and Sagar EiC at [5.5]

[519] King Shag are sensitive to disturbance when breeding, roosting and feeding. Most of the population breed at just five sites – Duffers Reef, North Trio Island, White Rocks, Sentinel and Rahuinui Island – with smaller colonies at Squadron Rocks, The Twins and Taratara (breeding was only observed at The Twins and Taratara in 2006). King Shag roost in the vicinity of Waitata and Papatua.⁴⁷¹

[520] Given the potential effects of disturbance the proposed conditions of consent prevent boat traffic from approaching within 100m of known King Shag roosting sites at Boat Rock Point and Taratara. The farms at White Horse Rock, Waitata and Papatua are no closer than 600m to the nearest King Shag roosts and no farms are within 1,000m of current breeding sites. Given this condition and the placement of the farms Mr Sagar concluded that adverse effects from boat traffic would be negligible. He also concluded the farms were sufficiently distance from breeding colonies to have no discernible adverse effect.⁴⁷²

[521] Mr Sagar compared the foraging area of the King Shag to the benthic footprint of the proposed farms. Mr Keeley had calculated the footprint to be 175ha.⁴⁷³ King Shag forage mainly in the outer half of the Sounds, an area of around 750km.² Thus, the footprint of the proposed farms would be about 0.2%, in his view an insignificant proportion of estimated foraging habitat.⁴⁷⁴

[522] Mr Schuckard, an ornithologist with considerable experience studying the King Shag, was particularly concerned about the placement of farms with respect to the feeding habitat of King Shag in the Waitata Reach and in Queen Charlotte Sound. Duffers Reef, one of the biggest colonies would be the most affected as birds generally feed close to the colony (most within 6km - 8km) and, as poor flyers, require wind assistance on the return trip particularly when feeding chicks. Mr Schuckard considered King Shag to be dependent on deep benthic prey (particularly witch flounder), in clear water and in close proximity to breeding sites.⁴⁷⁵ Mr Sagar agreed that the Waitata Reach was an important feeding ground for King Shag.⁴⁷⁶

⁴⁷¹ Sagar EiC at [F] and [G]

⁴⁷² Sagar EiC at [5.10] – [5.13]

⁴⁷³ Keeley EiC at [86]

⁴⁷⁴ Sagar rebuttal at [3.12]

⁴⁷⁵ Schuckard EiC at [1.13] – [1.16]

⁴⁷⁶ Transcript at 1132

[523] While Messrs Sagar and Schuckard were agreed on the present day taxonomic status, population size, limited distribution, and conservation status of King Shag, Mr Sagar considered it to have had a greater range historically. Evidence from midden deposits indicated that it had been more widespread in the northern South Island. In addition fossil records attributed to the species occur from Northland to the Wairarapa. Given the wider historical range Dr Sagar concluded the King Shag did not have the limited adaptability assumed by Mr Schuckard.⁴⁷⁷ Mr Schuckard firmly disagreed with that assessment saying that the relationship between the King Shag and other blue eyed shags had only recently been established. He pointed out that, in contrast to previous scientific thinking, the King Shag is not closely related to the Stewart Island Shag and its closest living relative is the Bounty Island Shag. Accordingly Mr Schuckard thought it possible for the bones to be King Shag, Stewart Island Shag or even those of a species no longer in existence. In that context he considered the use of bone distribution as a proxy for the range and adaptability of the species to be “not correct.”⁴⁷⁸ During cross-examination Mr Sagar conceded that he was not certain the bones were King Shag although he still considered them to be a reliable indicator of a wider distribution and adaptability.⁴⁷⁹

[524] The core of Mr Schuckard’s concern was the potential for increased nutrients to lead to increased phytoplankton which, in turn, would reduce water clarity, particularly in the Waitata Reach. He cited research⁴⁸⁰ into the impact of phytoplankton on water clarity in the Southern Ocean and the consequences for diving depth for a blue-eyed shag. He contended that small increases in phytoplankton could greatly compress the diving range for blue-eyed shags. In the Sounds, if the average chlorophyll-*a* increased from 1 mg/m³ to 2 mg/m³, he estimated that the available depth range for King Shag could shrink from 52m - 37m. Mr Schuckard considered the proposed addition of nitrogen to the Waitata Reach, close to the Duffers Reef colony, to threaten the survival of a significant proportion of the King Shag population.⁴⁸¹

[525] During cross-examination Mr Schuckard referred to Mr Broekhuizen’s evidence on the range of summertime chlorophyll-*a* concentrations in the Sounds,

⁴⁷⁷ Sagar rebuttal at [3.7]

⁴⁷⁸ Transcript at 637

⁴⁷⁹ Transcript at 1145 – 1146

⁴⁸⁰ *The impact of phytoplankton on the spectral water transparency in the Southern Ocean; implications for primary productivity*. Polar Biology Vol 14 p 127 – 136 (1994)

⁴⁸¹ Schuckard EiC at [10.20] – [10.22] and transcript at 632 and 641

being 0.5 mg/m³ to 2.5 mg/m³, and Mr Knight's estimated increase of 0.5 mg/m³ to 1.7 mg/m³ (with an uncertainty of a factor of 2). He considered such a change to be very significant for the feeding habitat of King Shag.⁴⁸²

[526] In response to questions from the Board on the proposed conditions of consent with respect to water quality Mr Schuckard was unable to say whether or not setting thresholds for chlorophyll and water clarity would address his concerns. The difficulty being a lack of a clear understanding of the present state of the environment, or baseline, and the assimilative capacity for additional nutrients. Mr Schuckard saw the King Shag as "more or less like the famous canary".⁴⁸³

[527] Mr Sagar stated he was not aware of any study that has recorded King Shag foraging depths in relation to chlorophyll-*a* measurements under specified light conditions. From his reading of the evidence of Dr David Taylor, Mr Keeley and Dr Gillespie he considered any such effects would be negligible.⁴⁸⁴ During cross-examination he explained that, in his understanding of Mr Knight's modelling, any increased phytoplankton production in response to nutrient inputs would be just a localised effect and not impact in the far-field.⁴⁸⁵

[528] Mr Sagar commented that Mr Schuckard's estimates were based on scientific data collected in the Weddell Sea, in the South Atlantic Ocean, an area below 60 degrees south, with water temperatures of zero to one degrees centigrade. It is in the open ocean, influenced by pack ice and with no fresh water influence. Mr Sagar considered this is to be in contrast to the Sounds embayments with intrusions of fresh water and detritus from the land, rainfall, and with water temperatures above 10 degrees centigrade. In his view these are two entirely different ecosystems and it was inappropriate to transpose Weddell Sea data into the Marlborough Sounds situation and say this is how King Shag hunting depth would change with increases in chlorophyll-*a* concentration.⁴⁸⁶

[529] In response to questions from the Board Mr Sagar accepted that water clarity may be an important factor for King Shag with respect to finding prey. And he considered that a link between water clarity and the available depth for King Shag to dive to be "possible, but no more than possible". The Board referred Mr Sagar to

⁴⁸² Transcript at 641

⁴⁸³ Transcript at 645 – 646

⁴⁸⁴ Sagar rebuttal at [3.9] – [3.10]

⁴⁸⁵ Transcript at 1136

⁴⁸⁶ Transcript at 1148

Mr Knight's water column evidence⁴⁸⁷ where he pointed out that dissolved nutrients may lead to phytoplankton increases which may affect water colour and clarity. Mr Knight discussed the fact that the water clarity changes, with the maximum enhancement of phytoplankton, could be measurable. Mr Knight's Figures 8 to 10 in the appendices illustrate the extent of the potential changes in chlorophyll-*a* and Mr Sagar agreed that these extended much further than the impact on the benthos. While Mr Sagar agreed that a greater area of King Shag feeding habitat was potentially affected he said there was "no evidence that it would actually affect the hunting ability of the King Shag itself". However, like Mr Schuckard, he did regard the King Shag as "the canary" and potentially more sensitive to changes in the Sounds than other species.⁴⁸⁸

Discussion and Findings

[530] We agree with Mr Sagar that the proposed salmon farms occupy a very small proportion of the water space in the Sounds and the displacement of seabirds, due to their physical presence and impact on the benthos, is not a significant issue. Similarly we are satisfied that the proposed conditions of consent adequately address the potential adverse effects in relation to entanglement, ingestion of rubbish and collisions due to the attraction to lights. We note that birds would roost on the farms (as is easily observed by any visitor to the Sounds) and may well feed on the local aggregations of fish attracted to the farms. This may be a benefit to the local seabird population.

[531] Of all seabirds in the Sounds the King Shag was the principal focus of attention for both the applicant and submitters. The experts agreed there remain many information gaps about its biology and basic life history. The King Shag is endemic to the Sound's, located on very few breeding sites and in a relatively small but static population, with an unknown ability to adapt to changes in its feeding habitat.

[532] Mr Schuckard has demonstrated the potential for adverse impacts on the feeding habitat and foraging activity of King Shag. While some of his scientific observations and conclusions draw on research into other shag species we are satisfied that he has identified a potential impact on the King Shag and in particular to the colony at Duffers Reef. It is difficult to quantify the overall risk to the

⁴⁸⁷ Knight EiC at [148] – [149]

⁴⁸⁸ Transcript at 1151 – 1154

population of King Shag in the Sounds and we accept that it may be low. However, the consequences of any adverse impact on such a small population could be serious and the experts agree that King Shag may well be particularly sensitive to any habitat changes.

[533] We find there is an adverse effect on King Shag particularly from those farms proposed for the Waitata Reach. We recommend a King Shag Management Plan as part of the conditions of consent for any farms within Pelorus Sound. The objective of this plan is to ensure that there is no significant decrease in the overall population and the colony at Duffers Reef.

NATURAL CHARACTER, NATURAL FEATURES AND LANDSCAPES

Introduction

[534] Natural character and landscape issues tend to be considered together and both are very nearly always addressed by the landscape witnesses. While there is often an overlap between the evaluations of natural character and landscape, they are different. This is reflected in the New Zealand Coastal Policy Statement (**Coastal Policy Statement**) which recognises that “natural character” is not the same as “natural features and landscape”.⁴⁸⁹

[535] We thus assess natural character effects as a distinct sub-topic, but together with landscape for each locality.

The Statutory Context

[536] There are a number of provisions contained in the RMA and in the statutory instruments that provide guidance and direction on natural character and landscape issues in achieving the single purpose of the RMA as defined in Section 5. It is within this framework that we must assess the effects on natural character, natural features and landscapes.

[537] We set out the most relevant of the provisions, considering in cascading order the statutory instruments, first in relation to natural character; second to natural features and landscapes; and third, to visual amenity.

Natural Character

1. Part II of the RMA

[538] We note the following relevant provisions of Part II of the RMA:

- [a] *Section 6* – matters of national importance that must be recognised and provided for:

⁴⁸⁹ Policy 13(2)

- [i] the preservation of the natural character of the coastal environment and the protection of them from inappropriate subdivision, use, and development (a).

[b] *Section 7* – other matters that must be had particular regard to:

- [i] intrinsic values of ecosystems (d).

2. New Zealand Coastal Policy Statement

[539] Objective 2 of the New Zealand Coastal Policy Statement seeks to preserve the natural character of the coastal environment. There are three specific directions:

- [a] To recognise the characteristics and qualities that contribute to natural character and of their location and distribution;
- [b] To identify those areas where various forms of subdivision, use, and development would be inappropriate; and
- [c] To encourage restoration.

[540] Two policies support Objective 2:

- [a] Policy 13 which seeks to preserve the natural character of the coastal environment and to protect it from inappropriate use and development. It is an important provision with respect to natural character, and we set out the first part of Policy 13 in full:

Policy 13 Preservation of Natural Character

1. To preserve the natural character of the coastal environment and to protect it from inappropriate subdivision, use, and development:
 - a. avoid adverse effects of activities on natural character in areas of the coastal environment with outstanding natural character; and
 - b. avoid significant adverse effects and avoid, remedy or mitigate other adverse effects of activities on natural character in all other areas of the coastal environment; including by:
 - c. assessing the natural character of the coastal environment of the region or district, by mapping or

otherwise identifying at least areas of high natural character; and

- d. ensuring that regional policy statements, and plans, identify areas where preserving natural character requires objectives, policies and rules, and include those provisions.

...

- [b] Policy 14 which promotes the restoration of natural character of the coastal environment and lists the criteria for how this is to be achieved.

3. The Marlborough Regional Policy Statement

[541] The Regional Policy Statement has only one Policy which addresses natural character. This is Policy 8.1.6 which repeats the wording of Section 6(a) of the RMA.

4. The Marlborough Sounds Regional Management Plan

[542] Chapter 2 of the Sounds Plan is headed “Natural Character.” This chapter includes the direction contained in Section 6(a) of the RMA requiring “the preservation of the natural character of the coastal environment ... from inappropriate subdivision, use and development.”

[543] There is one objective – Objective 2.2.1 which restates in almost identical terms the wording of Section 6(a) of the RMA.

[544] There are eight policies which detail how Objective 2.2.1 is to be achieved. Of particular relevance are:

- | | |
|------------|--|
| Policy 1.1 | Avoid the adverse effects of subdivision, use or development within those areas of the coastal environment and freshwater bodies which are predominantly in their natural state and have natural character which has not been compromised. |
| Policy 1.2 | Appropriate use and development will be encouraged in areas where the natural character of the coastal environment has already been compromised, and where the adverse effects of such activities can be avoided, remedied or mitigated. |
| Policy 1.3 | To consider the effects on those qualities, elements and features which contribute to natural character ... |

...

Policy 1.5 Promote an integrated approach to the preservation of the natural character of the coastal and freshwater environments of the Marlborough Sounds.

...

Policy 1.7 To adopt a precautionary approach in making decisions where the effects on the natural character of the coastal environment ... are unknown.

[545] The Marlborough Sounds has been classified and mapped into natural character areas. Plan changes and resource consent applications are to be assessed with regard to the natural character of the Sounds as a whole, as well as each natural character area, or areas, where appropriate.⁴⁹⁰

5. Draft Natural Character Assessment of the Coast September 2011

[546] This document, although not a statutory instrument, was referred to by all of the expert witnesses who gave evidence on natural character. It is a recent assessment of the natural character of the Sounds carried out by Boffa Miskell on instructions from the Council, and has regard to the Coastal Policy Statement.

[547] The Draft Assessment covers the following matters:

- [a] The definition of “natural character”;
- [b] The delineation of Marlborough’s coastal environment;
- [c] Natural character values of the coastal environment; and
- [d] The degree of natural character of Marlborough’s coastline. Natural character is assessed from very low to very high. Outstanding natural character is described and areas of Marlborough that display such character are listed. It contains a map of the Sounds delineating the areas of outstanding, very high, and high natural character.⁴⁹¹

Natural Features and Landscapes

1. Part II of the RMA

⁴⁹⁰ The Sounds Plan at 2-3

⁴⁹¹ This map was attached as Figure 2 to the EiC of Mr Boffa

[548] We note the following relevant provisions of Part II of the RMA:

- [a] *Section 6* – matters of national importance that must be recognised and provided for:
 - [i] the protection of outstanding natural features and landscapes from inappropriate subdivision, use and development (b).
- [b] *Section 7* – other matters that must be had particular regard to:
 - [i] the maintenance and enhancement of amenity values (c);
 - [ii] the maintenance and enhancement of the quality of the environment (f);
 - [iii] any finite characteristics of natural and physical resources (g).

2. New Zealand Coastal Policy Statement

[549] Policy 15 of the Coastal Policy Statement provides strong direction regarding natural features and natural landscapes. Because of its importance we set it out in full:

Policy 15 Natural features and natural landscapes

To protect the natural features and natural landscapes (including seascapes) of the coastal environment from inappropriate subdivision, use, and development:

- (a) avoid adverse effects of activities on outstanding natural features and outstanding natural landscapes in the coastal environment; and
- (b) avoid significant adverse effects and avoid, remedy, or mitigate other adverse effects of activities on other natural features and natural landscapes in the coastal environment;

including by:

- (c) identifying and assessing the natural features and natural landscapes of the coastal environment of the region or district, at minimum by land typing, soil characterisation and landscape characterisation and having regard to:
 - (i) natural science factors, including geological, topographical, ecological and dynamic components;

- (ii) the presence of water including in seas, lakes, rivers and streams;
 - (iii) legibility or expressiveness – how obviously the feature or landscape demonstrates its formative processes;
 - (iv) aesthetic values including memorability and naturalness;
 - (v) vegetation (native and exotic);
 - (vi) transient values, including presence of wildlife or other values at certain times of the day or year;
 - (vii) whether the values are shared and recognised;
 - (viii) cultural and spiritual values for tangata whenua, identified by working, as far as practicable, in accordance with tikanga Maori; including their expression as cultural landscapes and features;
 - (ix) historical and heritage associations; and
 - (x) wild or scenic values;
- (d) ensuring that regional policy statements, and plans, map or otherwise identify areas where the protection of natural features and natural landscapes requires objectives, policies and rules; and
- (e) including the objectives, policies and rules required by (d) in plans.

[550] We take particular note of the direction to “avoid adverse effects” on outstanding natural features and landscapes in (a) in contrast to the direction in (b) to “avoid significant effects” on other natural features and landscapes.

3. The Marlborough Regional Policy Statement

[551] The Regional Policy Statement gives little clear direction to decision-makers on landscape matters, which perhaps reflects the age of the document. It has one objective on visual character⁴⁹² which simply provides for the “maintenance or enhancement” of the visual character of indigenous, working and built landscapes. It contains two policies. One policy⁴⁹³ for outstanding landscapes which has been overtaken by the Coastal Policy Statement, and one policy⁴⁹⁴ of marginal relevance

⁴⁹² Objective 8.1.2

⁴⁹³ Policy 8.1.3

⁴⁹⁴ Policy 8.1.5

promoting the enhancement of the natural character of landscapes by all activities which use land and water.

4. The Marlborough Sounds Resource Management Plan

[552] Chapter 5 of Volume 1 of the Sounds Plan “establishes objectives, policies and methods to achieve the protection” of landscapes from inappropriate development. The issue is identified as:⁴⁹⁵

The adverse effects of inappropriate subdivision, use or development, on outstanding natural features and landscapes.

[553] The Plan has one relevant objective:

Objective 1 Management of the visual quality of the Sounds and protection of outstanding natural features and landscapes from inappropriate subdivision, use and development.

and one relevant policy:

Policy 1.1 Avoid, remedy and mitigate adverse effects of subdivisions, use and development, including activities and structures, on the visual quality of outstanding natural features and landscapes, identified according to criteria in Appendix One.

[554] Areas of outstanding landscape value have been identified in accordance with specific criteria in Appendix 1 to Volume 1. These are indicated on the Planning Maps in Volume 3. Of significance to this matter is the identification of the Kaitira Peninsula and parts of Port Gore as areas of outstanding natural landscape.

5. Landscape and Natural Character Review 2009

[555] Despite not being a statutory instrument, all of the landscape architects agreed that this document is of some relevance. An extensive reassessment of Marlborough’s landscapes was undertaken for the Council in 2009.⁴⁹⁶ Important landscapes were identified through this reassessment and the report resulted. The report is currently the subject of consultation with private landowners whose land

⁴⁹⁵ Sounds Plan at 5.2

⁴⁹⁶ *Key Issues Report* at 67

has been so identified. When consultation is complete, the report will be made publicly available as part of the review process for the Sounds Plan.

[556] We note the Review has identified the whole of the Marlborough Sounds as either an Outstanding Natural Landscape or a Visual Amenity Landscape. Of relevance, it identifies parts of Port Gore in the southern side of the Kaitapeha Peninsula as an Outstanding Natural Landscape.

Project Description for Assessment of Natural Character and Landscape Effects

[557] As we have said, King Salmon proposes to establish and operate nine salmon farms in the Marlborough Sounds in locations as shown in Appendix 1.

[558] With the exception of the Papatua and Ruaomoko sites, each of the proposed sites covers some 16.5ha, being approximately 600m x 275m in size. Within the centre of each site footprint, an area of approximately 3.5ha (100m x 350m) will be identified as the location for the salmon farm cages. The resource consent applications propose that these be occupied by up to eight 40m x 40m net pens.

[559] The White Horse Rock site, which is proposed on the landward side of the Waitata site, will be smaller and will have a consent footprint of approximately 2.2ha within which there will be four 30m x 30m cages.

[560] The proposed Ruaomoko site will also be smaller (600m x 235m), with an area of 2.2ha. This is proposed to accommodate four 40m x 40m cages within an area of 0.50ha.

[561] The Papatua site will cover an area of 91ha divided into four rectangular blocks, each of which will have an area for salmon farm cages of 6.7ha. The resource consent application for Papatua proposes the potential to accommodate five circular plastic net pens, 40m in diameter (in each of the blocks). However, only two of the four blocks will be used at any one time and the net pens will be rotated between the blocks.

[562] The maximum total surface area of cage structures in use at any one time is:

Ngamahau	1.5ha
Kaitapeha	1.5ha
Ruaomoko	0.75ha
Papatua	1.6ha
Richmond	1.5ha
Tapipi	1.5ha
Kaitira	1.5ha
Waitata	1.5ha
TOTAL	11.01ha

[563] The visible salmon farm surface structures that will be apparent include the following:

- [a] Steel or plastic flotation structures – these form the salmon farm cages to support the suspended grower nets with walkways, around, and sometimes over, the cages;
- [b] Netting – these include the grower nets, bird netting over the top of the cages, and predator exclusion nets (beneath, around the perimeter and extending up to 2 m above the water);
- [c] Barges – no greater than 7.5m in height above water level and with a footprint no greater than 280m². Connected to the flotation structures and net pens by a steel walkway. It is proposed that Ruaomoko will share a barge with Kaitapeha, Tapipi will share a barge with Richmond, White Horse Rock will share a barge with Waitata, and there will be no barge at Papatua.

[564] For the purposes of the landscape assessment, we note the following:

- [a] the barges are to be sited adjacent to the cages;
- [b] the barges are to be designed with a nautical theme;
- [c] the colour measures proposed;
- [d] a small, transportable and sealed mortalities container located on a small floating platform attached to each farm; and

[e] boats and service barges would visit from time to time, including a harvest barge.

[565] We acknowledge on the evidence that salmon farms, although utilizing the natural marine environment, are, with their built structures, an abrupt incursion in to the natural seascape. Such an incursion needs to be considered, at least in part, in the context of scale and cannot be absorbed by the seascape itself. An absorption can only occur when views are experienced whereby the proposed farms are nestled against a terrestrial backdrop.

The Evidence

[566] All five of the landscape witnesses agreed that the Marlborough Sounds is an “iconic” landscape. This reflects the Sounds Plan which says:⁴⁹⁷

In its entirety, the landscape of the Marlborough Sounds Plan area has outstanding visual values. It displays a broad range of types of visual landscapes and features which are often of greater value for their collective contribution than for their individual value.

[567] It is not surprising, therefore, that we received a considerable quantity of evidence and that there was extensive cross-examination of the landscape witnesses. The landscape evidence included a large number of maps, photographs and photo simulations. Our three extensive site visits have greatly assisted us in understanding and evaluating the landscape evidence.

[568] The landscape architects who gave evidence were:

- Mr Frank Boffa for King Salmon
- Mr Peter Rough for the Council
- Mr Stephen Brown for EDS
- Dr Mike Steven for Pelorus Wildlife Sanctuary Limited and others
- Mr Andrew Baxter for the Minister of Conservation

⁴⁹⁷ At 5.1.1

[569] In addition to the landscape architects who gave evidence, we also heard evidence and representations from a number of submitters, such as:

- Ms Karen Marchant and her father, Mr Clifford Marchant, who gave quite extensive evidence and representations illustrated with photographs. Their evidence concerned mainly the natural features and amenity effects relating to Port Gore.
- Mr Brian Plaisier and his daughter, Ms Leona Plaisier, who addressed the effects on the landscape character of the Waitata Reach.
- Mr Martin and Ms Clair Pinder who made representations relating to the visual effects of the proposed Ngamahau Farm in Tory Channel.
- Mr Peter and Ms Kathryn Halstead who each explained to us the effect on their property on Arapaoa Island adjacent to the proposed Kaitapeha site.

[570] Many others, too numerous to mention, also expressed concern about the effects of the proposed farm, either individually or collectively, on the character, landscape and natural features of the Sounds. Visual amenity, being in part subjective, is one of the those areas where the distinction between expert and non-expert becomes less important in some respects. In forming our evaluation, we have regard to all of the evidence and representations made in respect of landscape, natural character and amenity.

The Landscape Context of the Marlborough Sounds

[571] Many of the people who appeared before us spoke of the landscape qualities of the Sounds. Their views were encapsulated in these words by a 16 year-old witness, Mr Patrick Gerard:⁴⁹⁸

After spending time in a city, I have learnt to appreciate the Sounds more than I would have otherwise. I know that when my friends and family come to stay in the Sounds, they are always amazed at the natural beauty of the surroundings we take for granted.

⁴⁹⁸ Gerard, EiC at [2] – [4]

[572] This “natural beauty” was a constant thread through much of the evidence. Not surprisingly, there was little disagreement as to the broad overview of the landscape characteristics of Marlborough Sounds. As for the overall context, we found the description by Mr Brown to be the more representative. It reflected what we saw on our site visits. Accordingly, we largely adopt his description.⁴⁹⁹

[573] The Marlborough Sounds remain one of this country’s iconic landscapes. Its coastline and waterways are endlessly varied and comprise a complex matrix of islands and finally wrought headlands that gradually dip towards Cook Strait. The margins of the “Outer Sounds” and Cook Strait consistently display a more rugged, wild and remote character than the more “inshore” reaches closer to Picton and Havelock. Thus, some of the grandeur and elemental nature of the interaction between land and sea also dissipates as one moves into the calmer, more enclosed, waters of inner Pelorus Sound, Queen Charlotte Sound and Tory Channel.

[574] Few parts of the Marlborough Sounds are wholly natural. Mussel farming, in particular, lines the margins of many inlets and bays – from Croiselles Harbour to East Bay, and parts of Tory Channel. Throughout most of the Sounds, areas of open pasture, pockets of residential settlement and – perhaps most obvious of all – production forestry, leave their mark on the local landscape, disturbing its natural gradients and patterns. Tory Channel and the upper reaches of Pelorus Sound go well beyond this, as both appear seriously degraded from a landscape and natural character standpoint, despite being key gateways to the Sounds as a whole.

[575] Hardly surprising therefore, that some of the least modified parts of the Sounds – such as Port Gore, the Waitata Reach, and Queen Charlotte Sound approaching Picton from Cook Strait – remain in a fine state of balance. The question is – to what extent these landscapes are able to withstand change and development, and at what scale?

[576] Most of the inlets and bays either side of Pelorus Sound, as well as in the vicinity of Port Gore, are already lined by a significant proportion of the 575 consented marine farms scattered throughout the Marlborough Sounds. Fortunately, few of these current operations extend beyond their more sheltered bay margins out into the Sounds’ main channels.

⁴⁹⁹ Brown EiC at [1] – [8]

[577] Within Queen Charlotte Sound, there are relatively few marine farms at present, with the majority of those effectively isolated within East Bay, at the remote northern end of Arapaoa Island. The Ruakaka Bay salmon farm is already reasonably prominent near the centre of the Sound, and within Tory Channel there is a more obvious proliferation of both salmon and mussel farms. Although Tory Channel is already appreciably compromised from a landscape/natural character standpoint under the combined weight of forestry, farming, residential development and marine farming, the same cannot be said of most of Queen Charlotte Sound. Indeed it appears that the wider Sound is benefitting quite appreciably, from past retirement of farmland and gradual restoration of large swathes of coastal forest canopy.

[578] Mr Rough explained to us the overall pattern of development in a succinct way.⁵⁰⁰ We accordingly adopt what he had to say.

[579] The landscape of the Sounds has been subject to 150 years of farming, feral browsing, fire, forestry, fishing and coastal settlement, and as a result a complex pattern of land use and land cover has evolved.

[580] It was his observation, that while there are some areas within the Sounds where pastoral farming is obviously the principle land use – for example, in Port Ligar, and on slopes above Okukuri Bay inside the Cook Strait entrance to Tory Channel – what was once a widespread activity throughout much of the Sounds has ceased in many areas. Pasture grasses are no longer evident and the land cover exhibits various states of regeneration towards a cover of indigenous forest. Many areas once cleared for farming, have been established in plantation forest.

[581] Settlement is scattered throughout the Sounds with obvious concentrations in Havelock, Picton and Waikawa Bay. While there are holiday dwellings throughout the Sounds, the highest concentrations occur in bays on the northern side of inner Queen Charlotte Sound and generally in close proximity to Picton. Where road access is non-existent or difficult, and jetties and wharves are a prevalent feature associated with areas of settlement.

[582] Dwellings, whether on their own or in clusters, tend to be located in close proximity to water and, along with jetties, are invariably well within the enclosure afforded by headlands and defined coves and bays.

⁵⁰⁰ Rough EiC at [15] – [19]

[583] Marine farming, especially of mussels, is a well-established activity in the labyrinth of waterways that are collectively known as Pelorus Sound, and also in some outer Sounds bays such as Admiralty Bay and parts of Port Gore. While mussel farms have been established along the southern side of Tawhitinui and open reaches within Kenepuru Sound, mostly they have been established within Pelorus Sound and Outer Sounds areas in the more sheltered and visually less obtrusive confines of bays.

[584] Compared to Pelorus Sound, marine farming in Queen Charlotte Sound is a minor activity. It is confined to a single line of buoys in Shakespeare Bay near Picton, a salmon farm in Ruakaka Bay in Inner Queen Charlotte Sound, and some mussel farms and another salmon farm on East Bay of Arapaoa Island in Outer Queen Charlotte Sound. In Tory Channel there are some mussel farms within the confines of a few bays and two salmon farms in two bays of relatively shallow indentation that are visually well exposed to the main waters of Tory Channel.

[585] It was Mr Rough's observation that, overall, Pelorus Sound and Tory Channel have a distinctive working landscape character given by some pastoral farming, extensive areas of plantation forestry and the obvious presence of marine farms. While Queen Charlotte Sound had a limited number of these land and water uses, it has more of a sense of being a landscape for recreation with its higher density of holiday dwellings, a well-known public walkway (Queen Charlotte Track) and generally higher overall natural character.

[586] It is against this background that we need to assess the effects of the Plan Change and resource consent applications. We assess each of the landscape settings for the proposed farms.

Natural Character Attributes

[587] Relative to s 6(a) of the RMA, it is necessary for us to determine the necessary attributes that go to make up natural character, and the extent of those attributes. "Natural character" is not defined in the RMA. Nor is it defined in the relevant statutory instruments. The landscape architects in their Joint Statement dated 17 August 2012 had this to say:

Agreed – The concept of "Natural Character", as used in the NZCPS (2010), includes dimensions and values not addressed in the evidence of the landscape architects. These mainly relate to the sub-surface marine

components of the coastal environment. Landscape architects usually address the surface of the water and the terrestrial landscape. The evidence of other experts is also relevant to the natural character of the coastal environment. By way of example marine wildlife distribution and behaviour patterns are a relevant component of natural character.

[588] Chapter 2 of the Sounds Plan describes the key elements of natural character which include:⁵⁰¹

The natural character of the coastal environment and freshwater bodies is comprised of a number of key elements which include:

- Coastal or freshwater landforms;
- Indigenous flora and fauna, and their habitats;
- Water and water quality, including marine and freshwater ecosystems;
- Scenic or landscape values;
- Cultural heritage values; and
- Habitat of trout.

[589] We also note that the Draft Natural Character Assessment of the Coast 2011 uses a definition of natural character developed for the Ministry for the Environment. Mr Boffa⁵⁰² indicated that he was responsible for the definition:

The degree or level of natural character within an area depends on:

1. The extent to which natural elements, patterns and processes occur;
2. The nature and extent of modifications to the ecosystems and landscape/seascape.

The highest degree natural character (greatest naturalness) occurs where there is least modification. The effect of different types of modification upon the natural character of an area varies with the context, and may be perceived differently by different parts of the community.

[590] We are conscious that the visual component is just one aspect of natural character. As Mr Baxter pointed out⁵⁰³ a consideration of natural character of the coastal environment needs to be overarching and include the different marine elements that contribute to an area's natural character. Thus its preservation includes protecting the broad scale biotic patterns that occur. Such preservation needs to be considered in the context of the range of human activities in the Sounds

⁵⁰¹ *The Sounds Plan* at 2-1

⁵⁰² Boffa EiC at [13]

⁵⁰³ Baxter EiC at [64] – [67]

that have resulted in a decline in biological attributes, such as sedimentation from terrestrial land use (particularly deforestation) and dredging.

[591] We accept that impacts on natural character other than the obvious visual effects would occur. These include effects on water quality, marine ecosystems, indigenous flora and fauna, and cultural heritage values. We take these into account having regard to our findings on those matters in other parts of this decision. In this section of the decision we concentrate on the physical and visual impacts. Where necessary, we will refer to our findings on other matters.

Outstanding Natural Landscape Assessment

[592] As we have said, Section 6(b) of the RMA requires that provision be made for the protection of outstanding natural features and landscapes. As the Sounds Plan points out⁵⁰⁴ the Sounds has landscapes which are unique in New Zealand and are valued for their semi-wilderness aspects, scenic beauty, recreational capability and their social, economic and cultural utility.

[593] Landscapes are identified on the planning maps in the Sound Plan – Volume 3 “Areas of Outstanding Landscape Value”. This work has been updated by the “Landscape and Natural Character Review 2009”. The expert landscape witnesses offered various opinions on those documents and came to their own, sometimes, disparate conclusions. Mr Marchant and Ms Marchant also expressed their views on the Council documents. Mr Marchant considered there to be a measure of inconsistency in the classifications.⁵⁰⁵

[594] It is well settled that landscape includes both the physical and the aesthetic or perceptual qualities. To fall within s 6(b) of the RMA, a landscape must be both outstanding and natural⁵⁰⁶ – hence the interrelationship with natural character.

[595] A recent decision of the Environment Court⁵⁰⁷ noted that in respect of s 6(b), before what is appropriate can be assessed, a qualifying landscape has to be described in terms of:

⁵⁰⁴ Volume 1 at 5.1

⁵⁰⁵ Marchant Representation at [30]

⁵⁰⁶ *Wakatipu Environmental Society Incorporated v Queenstown Lake District Council* [2000] NZRMA59 (EnvC)

⁵⁰⁷ *Port Gore Marine Farms & Ors v Marlborough District Council* [2012] NZEnvC72 at [78]

- [a] the landscape in which a proposal is set;
- [b] a determination of whether the landscape is natural, and if so, how natural; and
- [c] an assessment as to whether that landscape is outstanding.

[596] An outstanding natural landscape is usually so obvious in general terms that there is no need for expert analysis. Landscape does not require precise definition. It is an aspect of the environment and includes natural and physical features and social and cultural attributes.

[597] In a series of decisions of the Environment Court, criteria for the assessment of “landscape” have been set. They include, but are not limited to:

- [a] The natural science factors – geological, topographical, ecological, and dynamic components of the landscape;
- [b] Its aesthetic values, including memorability and a naturalness;
- [c] Its expressiveness – (legibility) – how obviously the landscape demonstrates the formative process leading to it;
- [d] Transient values – occasional presence of wildlife or its values at certain times of the day or year;
- [e] Whether the values are shared and recognised;
- [f] Its value to tangata whenua; and
- [g] Its historical associations.

Landscape Assessment

[598] Relative to Section 6(b) of the RMA, it is necessary to determine the existing attributes and extent of outstanding natural features and landscapes in order to assess how they will be affected by a specific proposal. This is also required

under the Coastal Policy Statement for those natural features and landscapes that are within the coastal environment.

[599] Policy 15 of the Coastal Policy Statement also requires that an evaluation be made as to whether the natural features and landscapes/seascapes in the existing coastal environment are outstanding or not in order to determine whether Policies 15(a) or 15(b) should be triggered.

[600] All of the landscape architects acknowledged that landscape assessments undertaken for the purposes of determining the effects of a project must be premised upon a defined landscape. All acknowledge that as a general principle, the appropriate scale of reference will be at the lowest level that provides sufficient explanation of a situation.

[601] Unfortunately the landscape classification has been undertaken at a variety of levels by each of the landscape experts. This reflects the complexity of the Sounds which were described by Dr Steven as:⁵⁰⁸

... A complex of nestled landscapes, within which certain features are identified by reason of their differentiation from the ambient landscapes that surround them.

[602] Later in his evidence, Dr Steven had this to say:⁵⁰⁹

... There is no correct analysis of landscape character areas in my opinion, as the Sounds overall are open to a multitude of different interpretations, according to the scale of analysis chosen. Some areas define themselves more readily than others, at least in topographical terms.

[603] A variety of Outstanding Natural Landscapes and Visual Amenity Landscapes have been identified from the Site Area Scale to the Sounds as a whole. The scales and levels of assessment, combined with prescriptive terminology used, make it difficult for us to easily compare the assessments.

[604] As for scale, it ranged from more discrete areas of characterisation to much broader areas. We are mindful of what Mr Brown said:⁵¹⁰

⁵⁰⁸ Steven EiC at [35]

⁵⁰⁹ Steven EiC at [39]

⁵¹⁰ Brown EiC at [73]

In looking at landscape and natural character values in the context of the King salmon applications, I can see little point in dissecting the landscapes of Port Gore, Pelorus Sound, Queen Charlotte Sound and Tory Channel up to the point where appreciation of the landscapes – as whole – is lost. In order to fully understand the values that might be affected by the proposals, one must first appreciate that the Sounds are rarely viewed in a static fashion from fixed points. Although this would be the case in relation to views from some of the dwellings exposed to, for example, the Ngamahau, Kaitapeha and Papatua sites – which lie closer to residential properties – I have not had the opportunity to visit such vantage points.

[605] We agree with Mr Brown when he said that it is important to address the landscapes within which the proposed salmon farms would sit as a whole rather than dissecting them to a point where it becomes difficult to see “the wood for the trees.” As such, we address the landscape settings and their related values as follows:

[a] Port Gore – Pig Bay for Papatua

[b] Pelorus Sound – the Waitata Reach for:

- White Horse Rock
- Waitata
- Kaitira
- Tapipi
- Richmond

[c] Queen Charlotte Sound – Dieffenbach Point and the intersecting channels for Kaitapeha and Ruaomoko

[d] Tory Channel – for Ngamahau

[606] We also consider that it is important in the Sounds setting to consider, as Dr Steven emphasised,⁵¹¹ the role of the sea, or at least the surface of the marine environment. It is unambiguously an integral part of all Marlborough Sounds landscapes at any scale of analysis.

[607] Finally, when considering the proposed farms in this setting, we agree with Mr Boffa,⁵¹² that the visual component is an important factor when considering the

⁵¹¹ Steven EiC at [40]

⁵¹² Boffa Rebuttal at [7.25]

overall landscape effects, given that the salmon farms have no direct terrestrial effects. From a landscape perspective, visibility and visual effects are a key consideration.

Port Gore

[608] Pig Bay, within Port Gore, is the site of the proposed Papatua salmon farm. As we have said, the farm will consist at any one time of two rows of five circular cages of 40m in diameter. The area able to be taken up with structures at any one time is 1.26ha. It is not proposed to have a permanently moored barge alongside the farm. Rather, it would be serviced by a vessel of up to 400 gross tonnes. Such a vessel could be at the site for up to 14 hours a day in summer and eight hours a day in winter.⁵¹³

Landscape Context

[609] The landscape context was succinctly put by Mr Rough⁵¹⁴. His description accurately reflected what we observed on our site visits. We thus adopt his description.

[610] Port Gore is an almost rectangular bay in the Outer Sounds. It is approximately 9km deep and 4.6km wide with a northeast/southwest orientation. It opens directly to Cook Strait and its outer part is defined by the narrow and steep sided Capes Jackson and Lambert. Steep hillsides enclose the inner part of Port Gore and these culminate in a ridge and three named peaks (Puzzle Peak, Mounts Ferneaux and Otewhanga) which have elevations of 735, 823, and 688 masl respectively.

[611] Headlands that jut into Port Gore form subsidiary bays within the broad bay that Port Gore is. The most well defined bay is Melville Cove in the western corner of Port Gore. Pig Bay is a reasonably well defined indentation on the northwestern side of Port Gore, backed by the southwestern end of the isthmus of land leading out to Cape Lambert.

[612] In the overall context of the Sounds, Port Gore is a relatively remote bay. Access by sea around Capes Jackson or Lambert is subject to the vagaries of the

⁵¹³ Preece EiC at [121]

⁵¹⁴ Rough EiC at [87] – [94]

often extreme weather and sea conditions experienced in Cook Strait. There are no jetties or wharves in Port Gore.

[613] Road access is afforded on Kenepuru Road, from Linkwater on Queen Charlotte Drive, along the southeastern side of Mahau and Kenepuru Sounds to the head of the latter, then on Titirangi Road via a ridge line high above Endeavour Inlet and the western side of Port Gore. A private access road cuts down from Titirangi Road to near sea level on the southwestern shore of inner Port Gore and terminates in Cockle Bay in the southeastern corner of Port Gore. A farm road continues to near Black Head and on the eastern side of Port Gore there are farm roads that traverse hillsides as far north as Pig Bay.

[614] In essence, because of its location in the Outer Sounds, its often difficult access from the sea and its somewhat difficult road access, Port Gore has a sense of isolation and remoteness.

[615] Pastoral farming continues on the peninsula that terminates at Hunia and on the lower slopes around Melville Cove. Previously farmland, the lower slopes of inner Port Gore and the Port Gore side of the Cape Jackson isthmus are now covered in manuka and/or kanuka with broadleaved indigenous hardwood species in the gullies. There are areas of broadleaved species on the slopes of the Cape Lambert isthmus, Melville Cove and Black Head. The highest slopes of inner Port Gore have a cover of indigenous forest much of which is with Department of Conservation administered reserves.

[616] The previously mentioned roads afford access to several dwellings and farm buildings in the inner Port Gore area and in outer Port Gore. As well as the roads and a few buildings, constructed features include power lines, two airstrips in Cockle Bay, and farm fences.

[617] Within Port Gore there are several marine farms, the main concentration being tucked around the coastline of Melville Cove. There are three marine farms in Pig Bay – two licenses expire in 2014 and one expires in early 2019. The marine farms near Gannet Point and Pool Head in the southeastern corner of Port Gore have recently had their applications to re-consent declined.

Natural Character Attributes

[618] After visiting Port Gore (twice by boat and a helicopter overview) we agree that Mr Brown's description captures the essence of what Port Gore is:⁵¹⁵

Dramatically contained by a series of peaks, ridges, headlands and bluffs that, both physically and visually subdivide into an outer bay, inner bay and Melville Cove.

[619] As for Pig Bay, Mr Brown said:⁵¹⁶

Overall, therefore, Pig Bay has the appearance – to anyone entering Port Gore – of being part of a wider landscape continuum that is remote, natural (in a relative sense) and strongly imbued with a very New Zealand identity courtesy of its distinctive landforms, vegetation cover and seascape. It is also part of the more expansive, Port Gore landscape that is frequently raw, highly dynamic and dramatic, but which is also relatively cohesive and unified. This includes the coastline sequence from Hunia Peak to the tip of Cape Lambert that displays very significant continuity of character and identity.

[620] Our site visits confirmed the impressive underpinning geomorphology. It also confirmed the mosaic of land cover consisting of a mix of forestry, extensive pastoral farming and farmland in various stages of regeneration and indigenous forest cover. The mosaic pattern of land cover is evident of the photographs in King Salmon's *Natural Character, Landscape and Visual Amenity* graphic supplement dated November 2011.

[621] Mr Hooson provided us with a description of the ecology of the land adjoining the proposed salmon farm site at Papatua, noting that there are three very distinct areas:

- [a] Managed pastoral land;
- [b] Coastal scrub and forest on private land; and
- [c] Coastal scrub and forest within the Cape Lambert Scenic Reserve which is administered by the Department of Conservation.

⁵¹⁵ Brown EiC at [76]

⁵¹⁶ Ibid at [81]

[622] The three areas have distinctively different ecological naturalness with the naturalness of the managed pastoral land adjoining the site being ranked as low-medium; the coastal scrub and forest on the private land as medium-high; and the coastal scrub and forest within the Cape Lambert Scenic Reserve as high.⁵¹⁷

[623] Mr Marchant was enthusiastic about the natural character of Port Gore, telling us of the sheer physical beauty of the mountains and coastline, and the distinguishing features, which collectively give Port Gore a natural character. He considered that the area was unique in comparison to any other place in the Marlborough Sounds. Mr Marchant questioned how natural character was assessed in the Port Gore area, highlighting his concerns about unclassified areas, using a series of oblique aerial photographs he had taken from his plane.⁵¹⁸

[624] Mr Marchant was referring to the Marlborough District Council's draft Natural Character Plan which identifies the northern part of Pig Bay, incorporating the Cape Lambert Scenic Reserve, as being an area of outstanding character.⁵¹⁹ All of the landscape experts rated the Cape Lambert Scenic Reserve locality in Pig Bay as outstanding. All rated Port Gore as high in natural character.

Landscapes

[625] The landform defining Pig Bay is part of an extensive area that encompasses the Cape Lambert isthmus and the peninsula that separates Guards and Waitui Bays. Pig Bay is classified as an area of Outstanding Landscape Value in the Sounds Plan. Other such areas in Port Gore are on the eastern side, including an area encompassing (and east of) Black Head and the Cape Jackson isthmus northeast of Paterea.

[626] According to the Section 149G(3) report, the updated review does not change the classifications of Pig Bay and the associated Cape Lambert and Port Gore from being "outstanding" as shown in the current Sounds Plan.

[627] All the landscape experts identified that Port Gore includes areas of Outstanding Natural Landscape, including part of Pig Bay adjoining the proposed Papatua salmon farm.

⁵¹⁷ Hooson EiC at [612] – [618]

⁵¹⁸ Transcript at 2863 - 2867

⁵¹⁹ Boffa EiC at [652] and Figure 2

[628] Mr Boffa, Mr Rough and Mr Brown were generally in agreement. However, Mr Steven considered the whole of Port Gore to be an Outstanding Natural Landscape.⁵²⁰ It would appear that the main basis for his recognition of the Sounds and each of his defined landscape character areas is aesthetic value and aesthetic appreciation. That is of course only one of the now well settled, but by no means only, assessment criteria. We prefer the classification of the other landscape witnesses which reflects the Sounds Plan and the 2009 landscape study.

Effects on Natural Character

[629] We have found in the seabed discussions elsewhere in this decision, that the fine mud and silt sediments that make up the seabed beneath the site support communities generally considered representative of many other areas within the Sounds. The four rectangular areas making up the proposed Papatua farm, each of 6.7ha, would mean that a total benthic footprint of at least 26.8ha is likely to be affected by significant deposition. While such an effect on a Port Gore wide level would be low, at a local level it would be moderate.

[630] Mr Baxter was concerned about the effect of the farm on the seafloor biotic patterns, considering the offshore mud habitat to be a distinguishing feature of the natural character of Pig Bay. He suggested that a large buffer between the proposed salmon farm site and the scenic reserve would result in more of the offshore mud zone remaining unaffected. He also suggested that the inner line of cages, if removed, would mitigate the effects of the salmon farm on the marine ecological components of natural character within Pig Bay.⁵²¹

[631] No marine areas of ecological significance identified in the vicinity of the proposed farm are likely to be adversely affected. The effects of additional nutrients in the water column and associated phytoplankton growth would be marked only in the immediate vicinity of the farm. While the water quality would likely be compromised, customary fishing grounds are unlikely to be adversely effected.

[632] At the site area level there is no disagreement that the proposed farms would have high unavoidable adverse effects on the outstanding natural character of the

⁵²⁰ Steven EiC at [46]

⁵²¹ Baxter EiC at [650]

Cape Lambert Scenic Reserve. Our site visits clearly confirmed that the proposal would place an obvious man-made structure in an area free of such structures.

[633] On a Port Gore wide basis we need to look at the cumulative effects of the salmon farm in conjunction with the present farms. There was a general consensus between the landscape architects that the overall effect on Port Gore would be low,⁵²² save for Mr Brown who considered it to be very high.⁵²³ In our view the evidence of Mr Rough and Mr Boffa reflected what we saw on our site visit. We also take into account the more extensive area of this farm with respect to the benthic effects.

Finding

[634] We find that the effects on natural character at the site level would be high. This would include the effect on the seabed and on the Cape Lambert Reserve, which is recognised as an area of outstanding natural character. This would be inconsistent with Policy 13 of the Coastal Policy Statement. Overall the effects on Port Gore as a whole, in our view, would be low to moderate.

Effects on Landscapes

[635] The expert landscape witnesses rank the effects on the Outstanding Natural Landscape areas in Pig Bay as variably high,⁵²⁴ substantial,⁵²⁵ and very high.⁵²⁶ Unquestionably, there will be high to very high adverse visual effects on an Outstanding Natural Landscape. Thus the proposal will fail to give effect to Policy 15(a) of the Coastal Policy Statement which prescribes avoidance of adverse effects on Outstanding Natural Landscapes.

Effects on Visual Amenity

[636] We agree with Mr Boffa⁵²⁷ that in the context of the Papatua site, while the proposal is set within the wider Port Gore landscape setting, its landscape context in terms of potential effects is within the outer Port Gore area and more particularly to

⁵²² For example, see Rough EiC at [99]

⁵²³ Brown EiC at [181]

⁵²⁴ Boffa EiC at [10.5]

⁵²⁵ Rough EiC at [103]

⁵²⁶ Brown EiC at [151]

⁵²⁷ Boffa EiC at [7.19]

the west of Pig Bay. In the context of the Port Gore landscape overall, we consider the proposed Papatua development will be perceived as a relatively small development in quite a large landscape.

[637] We are conscious of the concerns of Mr Marchant and his daughter Ms Marchant as to views from the eastern side, particularly from the ridgeline. However, such views will be from in excess of 4km. King Salmon's proposal not to use underwater lighting at Papatua will substantially reduce any such effects at night.

[638] In the context of the more visually confined Pig Bay context, the proposal will be moderate to large, depending from where it is viewed in a relatively small landscape. The effects would potentially be high depending on the location of the viewer.

[639] We agree with Mr Rough,⁵²⁸ that in a visual amenity sense, even though the existing marine farms are close to the coastline and are not particularly visually obtrusive from out of Port Gore, the existing marine farms in Pig Bay detract somewhat from the wilderness-like quality that can be experienced in Port Gore. The proposed Papatua farm will be an additional and more obtrusive anomaly in terms of its physical presence. It will exacerbate the detraction from the visual amenity value and wilderness-like quality of the bay, and to a lesser extent, Port Gore in general.

[640] We find the proposed farm will, in its own right and cumulatively, generate adverse visual effects in Pig Bay that would be high, and in Port Gore as a whole low to moderate.

Waitata Reach

[641] The Waitata Reach is the location of five proposed salmon farms:

[a] Waitata on the northwestern side;

[b] Kaitira, Tapihi and Richmond on the southwestern side; and

⁵²⁸ Rough EiC at [107]

[c] White Horse Rock, to be located on the western side of Waitata between the headland and the proposed Waitata farm.

[642] Four of the proposed concurrent farms would be of the same size with eight square cages (40m x 40m) contained within an area of 3.5ha. The area of structures to be taken up at any one time would be 1.5ha for each farm. The proposed salmon farm at the White Horse Rock site, within the existing CMZ2, is somewhat smaller, with a maximum cage area of 0.50ha within a consent area of 2.2ha.

[643] It is proposed that Waitata and White Horse Rock would share a barge and Tapiipi would share a barge with Richmond.

Landscape Context

[644] There was general consensus between the landscape architects that the location and general character of the Reach needs to be appreciated in the context of the overall labyrinth of waterways known as Pelorus Sound. There was little or no disagreement as to its setting. The Waitata Reach incorporates the body of water that connects Tawhitinui Reach at Maud Island to the south, to the open waters of Cook Strait to the north. The Reach is approximately 12km long and the width of the passage typically varies between 2km and 4km.

[645] Stretching south from Te Akaroa, affording a backdrop to both the Outer Sound and out of sight Port Ligar, is a broad sequence of forest/scrub covered ridges and hills that run from Turner Peak to Cone Peak, then towards a more remote Mt Shewell.

[646] Mr Brown accurately describes the entry from Cook Strait into Pelorus Sounds as being defined by two key features: the twin promontories of Te Akaroa (West Entry Point) to the right and Kaitira (East Entry Point) almost straight ahead. As one gets closer to the Sounds “gateway” between both points, the landscape is almost entirely dominated by the angled profile of Kaitira. As for Kaitira, Mr Brown had this to say:⁵²⁹

Despite the almost depauperate state of the pasture across Kaitira, there is little sense of human incursion or modification within this landscape, and the manner in which its water areas flow around and between the projecting

⁵²⁹ Brown EiC at [87]

headlands - peninsulas at the mouth of Pelorus Sound adds another, more dynamic dimension to this highly appealing landscape.

[647] Travelling in the opposite direction, the western side of the Reach beyond Maud Island comprises three expansive embayments which are the focus of the cultural patterns present in this landscape in terms of scattered dwellings, jetties and marine farms.⁵³⁰ These activities are particularly focused on the lower slopes and in the waters of these bays. There are visible networks of tracks across the slopes, however, with the exception of Port Ligar which has retained large areas of pastoral activity. The upper slopes of Waitata and Waihinu Bays are largely characterised by the regeneration of native bush and scrublands with the outer headlands displaying less development and more advance regeneration processes.

[648] Tui Nature Reserve (a QEII covenant) is located on the eastern face of the southern headland that defines Waitata Bay. Further to the south of Tui Nature Reserve is Deep Bay Scenic Reserve administered by the Department of Conservation.

[649] Within the three embayments located on the eastern side of the Reach, existing marine farms tend to be focused to the south of Horseshoe Bay, leaving Richmond and Ketu Bays largely free of marine farm development. While there are few dwellings and limited tracking in these bays, there is an obvious and localized productive character to the head of Richmond Bay. The headlands and Ketu Bay are less modified and predominantly covered in regenerating indigenous vegetation.

[650] Mussels farms are tucked into the recesses of Port Ligar, Waihinu Bay, Waitata Bay, Horseshoe Bay, and part of Richmond Bay. Apart from Horseshoe Bay, they are sufficiently removed from Pelorus Sound's main channel that they have little real impact on perceptions of the coastal environment and landscape in general. This is not the case elsewhere and so that nearby Forsyth Bay has from a proliferation of mussel farms down its coastal margins.

[651] The mouth of the Tawhitiui Reach and transition into the Inner Sounds area south of that Reach, is also marked by an increasing preponderance of open pasture, large-scale forestry blocks and areas of recent or current pine harvesting. Mussel farms also line the series of bays on both sides of Pelorus Sound, encroaching ever

⁵³⁰ Boffa EiC at [6.13]

closer to its main channel, while housing also begins to regularly dot both the coastline and its hinterland south of North West Bay.

Natural Character Attributes

[652] The draft Natural Character Assessment 2011 rates the overall natural character value of the Waitata Reach as high. The landscape architects generally agreed, although Mr Brown rated the western side of the Reach as outstanding to high.⁵³¹ The outstanding areas would, he said, include all three headlands down the Waitata Reach's western shoreline.

[653] Mr Rough rated the whole of the Waitata Reach as high to outstanding. He said:⁵³²

In essence, the Waitata Reach is high to outstanding in respect of its natural character, and it has the potential to become an area of the Sounds with natural character that is higher than it is at present if regeneration of terrestrial vegetation is allowed to continue.

[654] We note that Mr Hooson commented, that for every proposed Waitata Reach salmon farm site, if current management continued, the vegetation would continue to regenerate and the naturalness of the terrestrial environment is expected to improve.

[655] We find that the Reach as a whole has high natural character value which extends close to outstanding in some places, particularly on the western headlands identified by Mr Brown.

[656] As for the site area values, there was little disagreement. The ratings were as follows:

- [a] Waitata/White Horse Rock – medium to high. Dr Steven rated the marine natural character as very high;
- [b] Kaitira/Tapipi – high to very high. Mr Rough identified these two sites as the most sensitive in the Reach; and

⁵³¹ Brown EiC at [94]

⁵³² Rough EiC at [60]

[c] Richmond – high. Again, Dr Steven rated marine natural character as very high.

Landscape Classification Values

[657] According to the classifications of the Sounds Plan, most of the prominent Kaitira Peninsula and Post Office Point is identified as being an Area of Outstanding Landscape, as are the Chetwode Islands and Forsyth Island, beyond the Cook Strait entrance. At the southern end Maud Island is so identified.

[658] A steep sided peninsula that separates Port Ligar and Waihinu Bay on the northeastern side of the Reach is also identified as outstanding, as is the area encompassing Tui Nature Reserve and Deep Bay Scenic Reserve extending south from Waitata Bay's southern headland. The balance of the Reach is classified as a Visual Amenity Landscape.

[659] The 2009 Marlborough Landscape Study confirms the classification in the Sounds Plan, save for the Kaitira headland. It removes the Outstanding classification and reclassifies it as a Visual Amenity Landscape. The landscape architects could not agree on this: Mr Boffa⁵³³ confirmed the reclassification as a Visual Amenity Landscape; Mr Brown⁵³⁴ ranks it as very high; both Mr Rough⁵³⁵ and Dr Steven⁵³⁶ assessed it as an Outstanding Natural Landscape.

[660] Although we have previously found that the Kaitira Peninsula does not qualify for the classification of an Area of Outstanding Natural Character, we nevertheless consider the landscape qualities to be of considerable value. We agree with Mr Brown when he says:⁵³⁷

It has a clear and legible structure, a strong sense of being remote, even wild and elemental (not uncommon on the edge of Cook Strait), and is conspicuously natural. It is also a distinctly New Zealand landscape, shaped by the amalgam of sharply etched terrain, clear blue seas and green/khaki bush.

⁵³³ Boffa EiC at [7.9]

⁵³⁴ Brown EiC at [94]

⁵³⁵ Rough EiC at [68]

⁵³⁶ Steven EiC at [43.2]

⁵³⁷ Brown EiC at [88]

[661] It is sufficiently natural, that in combination with its visual qualities we conclude that it meets the criteria for outstanding. We agree with Mr Rough when he said:⁵³⁸

... it is my opinion that the headland, because of the high aesthetic value of its landform and its strategic visual prominence, is a candidate for retaining its AOLV status or being classified as an ONFL.

[662] Noting the gun emplacement at Post Office Point to the west of the site,⁵³⁹ the waka route through the Waitata Reach (as discussed later in this decision), the high natural character, the prominent and legible nature of the landform, and the landscape architects' views of its aesthetic qualities we find the Kaitira Peninsula to be an Outstanding Natural Landscape.

[663] Dr Steven considered the whole Reach to be an Outstanding Natural Landscape,⁵⁴⁰ and thus the effects on that landscape would be significantly adverse.⁵⁴¹ We do not accept that view. We considered that Dr Steven was too "broad brush" in his approach to determining areas of Outstanding Natural Landscape. Furthermore, he had not carried out a detailed comparable assessment of the Sounds landscapes. Thus there is no robust comparable foundation upon which his findings could be assessed.

[664] The other landscape witnesses were of the opinion that the Waitata Reach as a whole was a landscape of high visual amenity value. The high visual amenity is contributed to by many factors including:

- [a] The visually interesting bush covered forms of the Chetwode Islands which are the focus of attention in vistas out of the Reach;
- [b] The visually appealing and bush covered Maud Island that marks the southern end;
- [c] The interesting landforms associated with Forsyth Island;

⁵³⁸ Rough EiC at [68]

⁵³⁹ Boffa EiC at [6.25]

⁵⁴⁰ Steven EiC at [43.2]

⁵⁴¹ Ibid at [189]

[d] The high legible peninsula that defines the eastern side of Port Ligar and the headland that separates the three main bays on the northwestern side of the Waitata Reach; and

[e] The indigenous forest or regenerating bush, especially that encompassed in Department of Conservation administered reserves and the Tui Nature Reserve.

[665] We find the Waitata Reach as a whole to be a landscape of high to very high visual amenity.

Effects on Natural Character

[666] We deal first with the local effects on natural character. Mr Boffa was of the opinion, that the effects of the proposed Waitata and White Horse Rock proposals would be moderate. He emphasised that there would be no physical effects on the terrestrial landscape, however, the proposed salmon farms would introduce new structures into an area that is free of obvious modifications. He suggested that further mitigation could be achieved if the barge facility at this location were designed as a single storey structure and sited on the landward side of the site.⁵⁴² Mr Rough agreed that there would be benefits in respect of visibility in locating the barge on the landward side of the proposed salmon farms site.⁵⁴³

[667] Mr Rough opined that the proposed salmon farms would have a high, rather than moderate effect on natural character due to the prominent location of the site.⁵⁴⁴ Mr Brown also considered that the effects of the proposed farms were high, and he made the same observations as Mr Rough, suggesting that it was as a result of the greater visual presence of a salmon farm, rather than a consented mussel farm.⁵⁴⁵

[668] Dr Steven was of the opinion that the proposal to locate salmon farms off a prominent headland, displaying such high natural character within the marine environment and terrestrial environment, would result in significant adverse effects at the site scale.

⁵⁴² Boffa EiC at [622] – [624]

⁵⁴³ Rough EiC at [55]

⁵⁴⁴ Ibid at [56]

⁵⁴⁵ Brown EiC at [159]

[669] In coming to our conclusion, we are aware of the natural character effects on the seabed, the water column, and ecological features. The White Horse Rock farm, being located closer to the shore, impacts on coarser sand and shell hash areas which may provide blue cod habitat.

Findings on Waitata and White Horse Rock

[670] Our site visit confirmed the proposed farms would be located off a prominent headland. We accept the opinion of both Mr Boffa and Mr Rough, that the level of natural character at the Waitata site would be medium to high overall, and that overall the combined effect of double parking the proposed farms would have a high adverse effect on the natural character of the locality. It would introduce new built structures into a prominent location that is free of man-made structures. The mitigation measures proposed by Mr Boffa would be beneficial, but the effects on natural character would still be high. Reducing the number of farms to one would alleviate the effects to some degree.

Kaitira

[671] In assessing the visual effects on the proposed Kaitira farm, Mr Boffa provided us with examples of the potential visual effects through a series of visual simulations. He pointed out that viewing location and distance has a significant effect on the visibility of the proposed salmon farm in this particular landscape/seascape setting.⁵⁴⁶

[672] Mr Boffa initially considered that the redesign of the barge building as a single storey structure would also assist in reducing visual effects. However, as a result of the visual simulations, he was of the opinion that the deletion of the barge from this site would be a more appropriate and effective means of mitigation.⁵⁴⁷ It was his opinion that the proposal would warrant a moderate effect rating due to the influence of the modified background landscape.⁵⁴⁸

[673] Mr Rough had a counter view. He stated that the proposed salmon farm at Kaitira, due to its location in one of the most sensitive sites in the Waitata Reach would have a more serious effect on natural character. Even with no barge at the

⁵⁴⁶ *New Zealand King Salmon Proposed Salmon Farms Visual Simulations* September 2012

⁵⁴⁷ Boffa EiC at [6.29]

⁵⁴⁸ Ibid at [6.29]

site he considered the proposed salmon farm at Kaitira would have a high effect on natural character.⁵⁴⁹

[674] Mr Brown provided us with an analysis of how the Kaitira proposal would clearly diminish the natural character values: it would sit in the seascape imposing its industrial/residential profile directly in front of a major landmark at the mouth of Pelorus Sound. In his view the impact would be of a very high order.⁵⁵⁰

Finding at Kaitira

[675] Again, we premise our remarks by saying we have considered our findings on aspects other than the visual effects on natural character which we have already discussed, and which unless we say otherwise, are generic to all of the proposed farms.

[676] Our site visit confirmed that the Kaitira site is in a particularly sensitive part of the Waitata Reach – the gateway to Pelorus Sound. It sits on an important navigation route (a matter we will consider later in this decision). The site area has high natural character, and we agree with Mr Rough's assessment that the proposed farm will have a high impact on natural character. We do not accept Mr Boffa's contention that the deletion of the barge is an effective means of mitigation. We accept that it is the simple presence of the farm at this location that is the principal effect on natural character. The proposal would result in a built form in a key prominent location at the entrance to Pelorus Sound.

Tapipi

[677] Mr Boffa describes the Tapipi site as being back-dropped against the headland that separates Ketu Bay and Richmond Bay, containing a relatively uniform background cover of kanuka with a scattering of wilding pines. There are no discernible man-made modifications or intrusions to the landforms or coastal edge.⁵⁵¹ Mr Hooson assessed the naturalness of the land adjoining the Tapipi site as medium.⁵⁵²

⁵⁴⁹ Rough EiC at [54] – [55]

⁵⁵⁰ Brown EiC at [153] – [154]

⁵⁵¹ Boffa EiC at [630]

⁵⁵² Hooson EiC at [6.8]

[678] The seabed beneath the site is composed of mud and shoal with few surface dwelling species. To avoid benthic depositions on the reef habitat at the tip of the headland, the Tapipi site has been located some 330m offshore. The effects on natural character have been assessed as being high, due primarily to the site's location at the tip of the Tapipi headland and its visible intrusion into the open waters of the Waitata Reach.

[679] Mr Boffa contended that the visual natural character effects could be reduced to moderate if the site were able to be relocated closer to the shore and further to the south and/or the barge was redesigned or deleted from this site.⁵⁵³ He provided a series of visual simulations to illustrate the potential of visual effects of the farms. Questioned on the simulations, Mr Boffa had to agree that the farm would be "visually prominent".⁵⁵⁴

[680] Mr Rough was of the opinion that the Tapipi site was in the most sensitive location in the Waitata Reach in terms of the proposed farm having an effect on natural character.⁵⁵⁵

[681] Mr Brown tendered the view that the natural character values of the location would be high given its central location and its setting adjacent to a bush-covered headland that displays high natural character values, which is both expressive and scenically appealing and contrasts markedly with a developed Richmond Bay.⁵⁵⁶

[682] Dr Steven was of the opinion that the proposal to locate salmon farms off prominent headlands displaying very high natural character in the marine component of the coastal environment would result in significant adverse effects at the site scale.⁵⁵⁷

Finding on Tapipi

[683] We find that the effects of the proposed farm on natural character would be high. We do not accept that the mitigation proposed by Mr Boffa would be sufficient to markedly reduce the visual impact of the farm.

⁵⁵³ Boffa EiC at [630] – [632]

⁵⁵⁴ Transcript at 1731

⁵⁵⁵ Rough EiC at [54]

⁵⁵⁶ Brown EiC at Table 5.1

⁵⁵⁷ Steven EiC at [141]

Richmond

[684] Mr Hooson in his assessment of ecological naturalness (indigenous naturalness) of the terrestrial environment adjacent to the site, ranked it as medium.⁵⁵⁸ The seabed beneath the Richmond site is dominated by soft sediments with seabed communities being representative of current swept locations in the central and outer Pelorus Sounds area. Scallops are present.⁵⁵⁹

[685] Mr Boffa provided a brief natural character description of this site, pointing out that it is to the south of the Tapipi site, located at the entrance to Richmond Bay and is not generally as visually prominent as the adjacent Tapipi site when viewed from the sea. There are no apparent man-made disturbances or built structures within the immediate area of the site. Mr Boffa concluded that the natural character effects of the proposed Richmond salmon farm would be moderate.⁵⁶⁰

[686] Mr Brown was of the opinion that the Richmond proposal would contribute to both physical and visual redefinition of the main channel margins through the Waitata Reach. The naturalness and unity of character associated with the Tapipi headland would be eroded. The effects generated by this proposal would therefore be high in relation to natural character values.⁵⁶¹

[687] Dr Steven provided the opinion that to locate a salmon farm off such a prominent headland would result in significant adverse effects at the site scale.

Finding on Richmond

[688] In terms of natural character effects, we are faced with the different positions of Mr Boffa and Mr Brown. Our site visit confirmed that the site is not as visually prominent as the adjacent Tapipi site. The visit also confirmed the obvious patterns of development in Richmond Bay. We find that the effects on natural character would be moderate.

⁵⁵⁸ Hooson EiC at [610]

⁵⁵⁹ Ibid at [663] – [664]

⁵⁶⁰ Boffa EiC at [635] – [636]

⁵⁶¹ Brown EiC at [166]

The Effects on the Waitata Reach Overall

[689] Mr Baxter provided us with the opinion that the three eastern sites pose concerns for the preservation of natural character due to their location within an area of Pelorus Sound which remains largely free of marine farming development.⁵⁶² His justification for preservation was that the stretch of coast was one of only four examples in the mid-outer Pelorus, where marine shore biotic patterns remain largely intact over tens of kilometres.⁵⁶³ He also noted that:⁵⁶⁴

I am less concerned about the proposed Waitata and White Horse Rock sites in regard to the marine ecological components of natural character as a mussel farm has already been approved for the inner White Horse Rock site and marine farming is a reasonably common activity on the western side of the Waitata Reach.

[690] Mr Boffa came to the conclusion that given the openness of the Waitata Reach and the locations of the five proposed salmon farms within the Reach, that there would be little or no significant adverse effects in terms of direct physical or ecological effects on the Waitata Reach as a whole.⁵⁶⁵ He referred to the recent Marlborough District Council's draft Assessment of Natural Character, noting that there are no areas of outstanding natural character identified on the draft Plan within the Waitata Reach, other than the coastline of Maud Island. All five sites are, however, adjacent to areas identified as having high levels of natural character. He agreed with the Council's draft classification.⁵⁶⁶

[691] A number of the submitters also addressed natural character effects. Mr Martin Shand for the Pelorus Wildlife Sanctuaries Limited & Ors, said:⁵⁶⁷

I question whether it is really appropriate development for this area as it will impact on the natural character of the channel between Maud Island and the Chetwode Islands in a very conspicuous manner.

[692] Mr Plaisier provided us with a number of images to demonstrate the potential impact that the proposed farms would have on the natural beauty of the Waitata Reach. Mr Laurence Etheridge⁵⁶⁸ offered the perspective that visually the

⁵⁶² Baxter EiC at [162]

⁵⁶³ Ibid at [167]

⁵⁶⁴ Ibid at [173]

⁵⁶⁵ Boffa EiC at [6.18]

⁵⁶⁶ Ibid at [173]

⁵⁶⁷ Transcript at 2900

⁵⁶⁸ Etheredge submission 0969

proposed farms are in complete contrast with the surrounding landscape, and the prospect of there being an ongoing 24/7 smelly, noisy industrial activity in his front yard was unthinkable. It would also seriously compromise the quality of the visitor experience he offered his clients in his sailing charters in the Sounds.⁵⁶⁹

[693] It was Mr Rough's opinion that the development of all or any of the proposed salmon farms in the Waitata Reach would be a retrograde step. It would introduce a highly visible form of marine farming into the coastal environment of a significant part of Pelorus Sound where presently there is virtually no marine farming or other forms of built development.⁵⁷⁰

[694] In terms of cumulative effects (the five proposed farms in addition to the existing one), Mr Boffa considered the effects on natural character in the Waitata Reach to be high. Mr Boffa was of the opinion that the effects could be mitigated in part in the Waitata Reach by the deletion of the barge from the Kaitira and the Tapiipi sites, and the redesign of the barge.⁵⁷¹

[695] Dr Steven considered that Mr Boffa's statement that the proposed sites are largely located away from areas identified as having the highest or greatest levels of natural character, could not be justified in relation to the Waitata Reach.⁵⁷²

[696] Mr Brown said that the combination of five new salmon farms, located off a series of headlands that define Pelorus Sound's main channel, would have a "decisive effect." The proposed salmon farms would fundamentally change the interplay and balance of "developed" versus "natural" areas, and in so doing, it would transform the character of the Waitata Reach.⁵⁷³

Finding on Waitata Overall

[697] Our site visits confirmed Mr Rough's opinion to us that in comparison to mussel farms, salmon farms are a highly visible form of marine farm. As a consequence, the mere presence of salmon farms in the Waitata Reach, and their cumulative effects constitutes a substantive issue in respect of the effects of the proposal on the natural character of that Reach.

⁵⁶⁹ Transcript at 2499

⁵⁷⁰ Rough EiC at [57] & [60] – [61]

⁵⁷¹ Boffa EiC at [10.3]

⁵⁷² Steven EiC at [98]

⁵⁷³ Brown EiC at [183] – [184]

[698] The cumulative effect of the five proposed farms, in conjunction with the other consented salmon farms (Port Ligar and Waihinu Bay) would, in our view, have a high impact on the natural character of this Reach of Pelorus Sound. We find that, individually, each new farm would have an effect on natural character. Given the prominent locations of the White Horse Rock/Waitata site, Kaitira and Tapihi, even if only one or two of these farms were consented, the effect on natural character would be high.

[699] We find that the proposed farms at prominent, highly visible locations of the Kaitira and Tapihi sites would impact on the intactness of the natural character of this side of the Reach. They would have a very high impact.

[700] Again, we acknowledge that the benthic and water column communities that contribute to subsurface natural character would be physically impacted, with the greatest impact in the immediate environs of the farms.

Effect on Landscape

[701] Because of our finding on the quality of the Kaitira Headland and its classification as an Outstanding Natural Landscape, we find this to be a particularly sensitive location and we unambiguously conclude that the proposed Kaitira farm will have a high adverse effect on that headland. Thus the prescription contained in Policy 15(a) of the Coastal Policy Statement would not be given effect to.

[702] Apart from the effects on the Kaitira Headland, the other areas classified as “outstanding” by the updated Marlborough District Council classification would not be adversely effected. They are sufficiently remote from the proposed sites to ensure adverse effects do not occur.

[703] The effects on the Waitata Reach as a whole were variously assessed as moderate to very high with the proposed farms at Kaitira and Tapihi having effects at the more serious end of the scale.⁵⁷⁴ We agree.

Effects on Visual Amenity

[704] The landscape architects ranked the local effects on visual amenity as follows:

⁵⁷⁴ Boffa rebuttal attachment – landscape effects summary table

[a] Mr Boffa:

- Waitata/White Horse Rock – moderate⁵⁷⁵
- Kaitira – high⁵⁷⁶
- Tapipi – high⁵⁷⁷
- Richmond – moderate⁵⁷⁸

[b] Mr Rough:

- Waitata/White Horse Rock – diminished⁵⁷⁹
- Kaitira – very high⁵⁸⁰
- Tapipi - diminished⁵⁸¹
- Richmond – diminished⁵⁸²

[c] Mr Brown:

- Waitata/White Horse Rock – high⁵⁸³
- Kaitira – very high⁵⁸⁴
- Tapipi – high to very high⁵⁸⁵
- Richmond – high to high/moderate⁵⁸⁶

[d] Dr Steven:

- All – very high/severe⁵⁸⁷

[705] From a synthesis of the landscape architects’ analysis, we conclude that generally the most vulnerable of the proposed sites are Kaitira and Tapipi. Both would be prominently situated in the “gateway” between Pelorus Sound and Cook Strait. A “gateway” that has memorable views as one enters the Sounds from Cook

⁵⁷⁵ Boffa EiC at [7.12]

⁵⁷⁶ Ibid at [7.12]

⁵⁷⁷ Ibid at [7.12]

⁵⁷⁸ Ibid at [7.12]

⁵⁷⁹ Rough EiC at [70]

⁵⁸⁰ Ibid at [69]

⁵⁸¹ Ibid at [70]

⁵⁸² Ibid at [70]

⁵⁸³ Brown EiC at [160]

⁵⁸⁴ Ibid at [154]

⁵⁸⁵ Ibid at [163]

⁵⁸⁶ Ibid at [160]

⁵⁸⁷ Steven EiC at [180]

Strait, and equally as memorable as one leaves the Sounds. Those views would be badly impacted by the two proposed farms. Furthermore, Kaitira is adjacent to the prominent headland that defines the eastern end of the “gateway”.

[706] The remaining farms would not have the same impact. They are not so far out into the main Reach. They are nestled more closely into the landform. They would have some specific effects from some close water views and from some land-based views. Both Mr Boffa⁵⁸⁸ and Mr Rough⁵⁸⁹ comment on visual amenity effects on Tui Lodge, Tui Nature Reserve, and on Pelorus Wildlife Sancturaries Limited.

[707] Tui Nature Reserve shares the 160ha Otohuta Peninsula in the Outer Pelorus Sounds with Pelorus Wildlife Sancturaries Limited and the Sealife Trust. The submitters were concerned about the adverse visual effects of the proposal. Pelorus Wildlife, in the general sense, and Tui Nature in both a general sense and specifically for the effect on their views from its property. The Tui Nature Reserve Trust was established by Mr Brian Plaisier and his family. The Tui Nature Reserve has been transformed from what Mr Plaisier called a “devastated forest by introduced predators”,⁵⁹⁰ into a biodiversity project that won the 2009 Marlborough Awards Habitat Enhancement and Supreme Awards. Mr Plaisier and his family, have over the years, transformed the peninsula which has been classified by the Council as an Area of Outstanding Natural Landscape.

[708] With good reason, he expressed his concern about the visual impacts. All five proposed salmon farms could be seen from different locations on his property. The views to the west would encompass the proposed Tapipi and Richmond farms. To the north, the Waitata/White Horse Rock and Kaitira sites would be seen. The closest farm would be Waitata/White Horse Rock farms at approximately 3km. Tapipi and Richmond would be in excess of 3km, and Kaitira in excess of 6km.

[709] Mr Boffa presented viewing distance thresholds of the farms from land-based viewpoints.⁵⁹¹

⁵⁸⁸ Boffa EiC at [8.14] – [8.17]

⁵⁸⁹ Rough EiC at [70] – [74]

⁵⁹⁰ Plaisier EiC at [601]

⁵⁹¹ Boffa EiC at Table 6B

Viewing Distance Thresholds				
Distance	0 – 1km	1km – 2.5km	2.5km – 5km	5km and beyond
Visibility	Dominant	Prominent	Visible	Partially visible or minor part of view

[710] Based on that table, the visual effects from Mr Plaisier’s property would be assessed as moderate. We understand that he does not concur with this assessment. Similar views from dwellings in Waihinu Bay would also be assessed moderate. This accords with the views of Mr Boffa⁵⁹² and Mr Rough.⁵⁹³

[711] While we disagree with Dr Steven classification of the whole of the Waitata Reach as an Outstanding Natural Landscape, we agree with him when he says:⁵⁹⁴

Much of the amenity appreciation of the Waitata Reach derives from expansive and at time extensive views and vistas that are obtainable from the waters of the Reach, but also from land based settlements around the periphery, from public and private reserves and conservation land and public roads ...

The adverse effects on aesthetic quality will derive from the four farms considered individually and collectively, but will be compounded as cumulative adverse effects when considered together with:

- (1) the existing Waihinu Bay farms,
- (2) existing mussel farms within Waitata Reach and adjacent bays.

[712] We agree with Mr Brown⁵⁹⁵ that the combination of five new farms located off a series of headlands that define Pelorus Sound’s main channel would be a “decisive” cumulative effect. The four headlands in question are all prominent landmarks, or “way points” that help to define the entry to Pelorus Sound and passage through Waitata Reach. From a visual and aesthetic point of view, the two more prominent farms off Kaitira and Tapipi are the defining element of the decisive cumulative effect.

Findings for Waitata Reach

[713] We accordingly find that:

⁵⁹² Boffa EiC at [8.14] – [8.17]

⁵⁹³ Rough EiC at [73]

⁵⁹⁴ Steven EiC at [234] and [231]

⁵⁹⁵ Brown EiC at [183]

- [a] Five farms would have a *decisive* cumulative effect and from a visual and aesthetic point of view the two most prominent farms of Kaitira and Tapipi are the defining element of the *decisive* cumulative effect; and
- [b] At a more local level, the five proposed farms would have adverse visual effects. The most severe effects would be created by Kaitira and Richmond.

Queen Charlotte Sound

[714] Queen Charlotte Sound is the location of the two proposed farms, Kaitapeha and Ruaomoko. They are situated close to the southwestern end of Arapaoa Island in the vicinity of the entrance to Tory Channel. The farms would be approximately 2.7km southeast of an existing King Salmon farm in Ruakaka Bay on the northwestern side of Queen Charlotte Sound. Kaitapeha is the largest of the two farms with a cage area of 1.5ha. The Ruaomoko farm would have a cage area of 0.75ha. A single barge is proposed to be shared between the two sites and would be located at the Ruaomoko farm.

[715] For Kaitapeha, it is accepted that there would be visual amenity effects for the Halstead house and jetty. King Salmon have amended the plan change and consent conditions to ensure the farm structures and farm vessels (other than being used in relation to the anchors) cannot be seen from either the house, beach or jetty.

Landscape Context

[716] The landscape context was again succinctly put by Mr Rough.⁵⁹⁶ We thus adopt his description.

[717] Queen Charlotte Sound is the eastern-most of the main Sounds of the Marlborough Sounds. It is generally orientated northeast/southwest from Capes Jackson and Koamaru (open to Cook Strait) to its most inland reach in Grove Arm. It is approximately 45km long and meanders between steep sided hills of a system of drowned river valleys.

⁵⁹⁶ Rough EiC at [119] – [124]

[718] The inner part of Queen Charlotte Sound, which is the setting of the two proposed farms, is defined on its northwestern side by a steep sided narrow landform that separates the Sound from Kenepuru Sound. Numerous bays with sub-bays, many of which are well developed with jetties and residential settlement, indent the coastline. At the end of the southeastern side of Queen Charlotte Sound lies the port of Picton, which is the departure and arrival point for interisland ferry travelers. Waikawa Bay, with dwellings and a marina, is close by.

[719] The steep sided peninsula-like, southern half of Arapaoa Island bounds the outer southeastern side of inner Queen Charlotte Sound. Between the southern tip of the island and the mainland is the western entrance to Tory Channel, which is an important waterway within the Sounds through which interisland ferries pass.

[720] Apart from a single line of buoys, adjacent to the west coast of Shakespeare Bay, which is used intermittently by Queen Charlotte College, there is only one marine farm in the inner Queen Charlotte Sound. It is a King Salmon farm on the northern side of Ruakaka Bay opposite the entrance to Tory Channel.

[721] We agree with Mr Rough,⁵⁹⁷ that in comparison to Pelorus Sound, the use of land in Queen Charlotte Sound for farming and plantation forestry is much less evident. This, coupled with the fact that marine farming in Queen Charlotte Sound is extremely limited, results in the Sound not having the overall commercial working landscape character that is prevalent through much of Pelorus.

[722] Inner Queen Charlotte Sound is the most commonly visited part of the Sound. Despite this Sound containing the greatest level of built development, primarily residential, beyond Picton the slopes are largely clothed in native bush and regenerating scrub, providing an attractive setting.

[723] The landscape features of the Sound were summed up by Mr Brown when he said:⁵⁹⁸

... whether approaching the junction of Queen Charlotte Sound and Tory Channel from the direction of Picton or Cook Strait, the landscape down the northern side of Queen Charlotte Sound is largely dominated by a sequence of natural, bush-clad, headlands. Unfortunately, this is not the situation down the length of most of Arapawa Island. As a result, when entering Queen Charlotte sound from Cook Strait, the collage of natural

⁵⁹⁷ Rough EiC at [124]

⁵⁹⁸ Brown EiC at [104]

landforms and vegetation cover presented by Long and Blumine Islands gives way to large blocks of pine forest, then a rather haphazard mix of scrub and pines, near the western end of Arapawa Island. At the mouth of Tory Channel this 'modification' is exacerbated by a swathe of harvested slopes, stands of eucalyptus and housing around Maraetai and Hitaua Bays.

[724] We agree with Mr Brown⁵⁹⁹ that most of the landscape experience within the Sound when approaching Tory Channel from Picton has considerable appeal. Factors which contribute to this appeal include:

- [a] The confined nature of its main channel;
- [b] The manner in which landforms are intertwined with the main body of water and its side reaches;
- [c] The continuity of bush cover – from headlands to high peaks – even if those peaks (Mt McMahon, Mt Stokes and Mt Kiwi) remain quite remote; and
- [d] The sense of containment and relatively tranquil (even placid) nature when compared with the much more open waters outside Long Island.

Natural Character Attributes

[725] The landform backdrop to both the Kaitapeha and the Ruaomoko sites consists of a mixture of regenerating coastal forest and scrub, with extensive areas of wilding pine and woody weed species. In general the vegetation cover and landscape character cover of the Ruaomoko Point Scenic Reserve and the Kaitapeha Bay area appear to be complementary.

[726] On the headland to the west of Ruaomoko Scenic Reserve is the Dieffenbach Point Scenic Reserve. The Kaitapeha salmon farm site is generally backdropped by private land, whereas the Ruaomoko site is seen in the context of the Ruaomoko Point Scenic Reserve.⁶⁰⁰

⁵⁹⁹ Ibid at [100]

⁶⁰⁰ Boffa EiC at [660]

[727] The Draft Coastal Assessment 2011 maps the whole of the Kaitapeha Peninsula adjacent to where the two proposed farms would be located, as having high natural character.⁶⁰¹ The land to the southwest of Tory Channel, between Dieffenbach Point and Whatamango Bay is also mapped high. On the northern side of Inner Queen Charlotte Sound, high coastal natural character is mapped from Double Cove to opposite Blumine Island.

[728] All of the landscape architects agreed with the classification in the draft Coastal Assessment, save for Dr Steven who considered that the terrestrial natural character attributes of the Inner Sounds to be moderate to high.⁶⁰²

[729] We are satisfied that the natural character of the Inner Queen Charlotte Sound is high. This reflects the classification as determined by the Draft Assessment and the landscape architects. The site area values were also generally in agreement with the landscape architects assessing it as medium to high (Mr Boffa and Dr Steven) and high (Mr Rough and Mr Brown).⁶⁰³

Landscape Classification Values

[730] Figure D2 in the King Salmon graphic supplement delineate the Areas of Outstanding Landscape Values in the current Sounds Plan that are within the vicinity of the proposed Kaitapeha and Ruaomoko salmon farm sites. The closest in Queen Charlotte Sound is Blumine Island, approximately 6km away, followed by Allports Island at 8.5km. Both areas are too far away to be affected by the proposed salmon farms.

[731] The 2009 Landscape Study identifies the two above mentioned islands as Outstanding Natural Features/Landscapes, and also identifies an extensive area on the northern side which generally coincides with the Department of Conservation administered reserve, as Outstanding Natural Landscape. The closest such area to the proposed salmon farm sites is most of the peninsula that separates Bay of Many Coves and Ruakaka Bay. Bull Head on this peninsula is approximately 1.67km away from the Kaitapeha site.

⁶⁰¹ Ibid at Figure 2

⁶⁰² Steven at Table 4

⁶⁰³ Boffa rebuttal attachment – natural character summary table

[732] As Figure D2 of the graphic supplement shows, land on the Queen Charlotte Sound side of the Kaitapeha Peninsula is not classified as an AOLV in the Sounds Plan, but the Tory Channel side of the peninsula is. There is disagreement between the landscape architects as to the status of the Queen Charlotte Sound side of that peninsula.

[733] Dr Steven considered the peninsula a part of a wider area of Outstanding Natural Landscape, which he described as the “Inner Sounds” character area.⁶⁰⁴ We have already said that Dr Steven’s broad brush approach has not withstood the rigours of a Sounds wide detailed assessment and analysis as occurred in the 2009 Landscape Study.

[734] Mr Rough was of the opinion that the whole Kaitapeha Peninsula is a natural feature of some significance within both the Queen Charlotte Sound and Tory Channel. He described it as a sizable and very distinctive landform in a prominent location, with regenerating indigenous vegetation.⁶⁰⁵ Furthermore, from the first draft the coastal assessment mapped the whole peninsula as having outstanding status.

[735] Both Mr Boffa and Mr Brown are of the view that the northern slopes of the peninsula adjacent to the proposed Kaitapeha salmon farm cannot warrant “outstanding” status. This is because the character and condition of the north facing landform.⁶⁰⁶

[736] Mr Brown, after describing the factors or values that contribute to Queen Charlotte Sound’s considerable appeal, had this to say:⁶⁰⁷

The forestry, scrub and pines of Arapawa Island contradict some of these values and diminish them by association. It is also conceivable that in the near future this will change as the wilding pines around Kaitapeha gradually surrender to a more coherent mix of native shrubland and re-emerging forest. However, such change has yet to come to pass. For that reason, I agree with Dr Boffa that Arapawa Island – in the vicinity of Kaitapeha – is not an ONL; it should, in my assessment, be a Visual Amenity Landscape, both within Queen Charlotte sound and at the western end of Tory Channel.

⁶⁰⁴ Steven EiC at [43.4]

⁶⁰⁵ Rough EiC at [142] – [143]

⁶⁰⁶ Boffa EiC at [7.24]

⁶⁰⁷ Brown EiC at [106]

[737] We agree with Mr Brown and Mr Boffa. We observed on our site visit the forestry, scrub and wilding pines which clearly diminish the character of the northern side of the peninsula by comparison with the more coherent mix of native shrubland on the southern side.

[738] We agree with Mr Brown and Mr Boffa, that it should be assessed as a visual amenity landscape. The surrounding parts of Queen Charlotte Sound have highly important landscape values, particularly in the vicinity of the various headlands. Headlands that, notwithstanding the areas of residential development, forestry and farming; exercise considerable influence over the aesthetic perceptions of the Sounds main channel. This is particularly so in the prominent entrance to Tory Channel.

Effects on Natural Character

[739] While there was general agreement among the landscape architects as to the attributes of natural character, this was not the case with their assessment of effects. On a Reach wide scale, the assessment ranged from low by Mr Boffa,⁶⁰⁸ to significant by Mr Rough.⁶⁰⁹

[740] At the site area scale their assessment ranged from moderate by Mr Boffa,⁶¹⁰ to significant by Mr Rough⁶¹¹ and Dr Steven.⁶¹²

[741] Mr Boffa stated:⁶¹³

Given the context of the two proposed salmon farms in the central section of the Queen Charlotte Sound, I consider there will be little or no adverse effects on the wider perception of natural character of this area of the Sound.

[742] Mr Rough responded:⁶¹⁴

I disagree with Mr Boffa's assessment. As I have outlined in paragraphs above, northeast of Double Cove, Queen Charlotte Sound is consistently high in natural character and in my opinion the introduction of two salmon

⁶⁰⁸ Boffa EiC at [6.61]

⁶⁰⁹ Rough EiC at [132]

⁶¹⁰ Boffa EiC at [6.66] & [6.85]

⁶¹¹ Rough EiC at [132]

⁶¹² Steven EiC at [141]

⁶¹³ Boffa EiC at [6.61]

⁶¹⁴ Rough EiC at [132]

farms into coastal waters in the approximate middle of the high natural character area of Inner Queen Charlotte Sound will significantly affect the area continuing to be high in natural character.

[743] We agree with Mr Rough. The two proposed farms, being on one side of Queen Charlotte Sound's principal waterway, will be readily visible and impose on the high natural character area with its backdrop of native bush. This would be contrary to the general pattern of development within the Sound whereby jetties, wharves and dwellings are located within bays and coves that form indentations to the coastline. The existing salmon farm in Ruakaka Bay and mussel farms in East Bay are no exception to this.

[744] Furthermore, as Mr Rough pointed out, the zone of theoretical visibility maps in Figure D3 of King Salmon's Graphic Supplement, indicates the likely visibility of the two proposed marine farms. This would equate to the extent the supplement maps high natural character within Queen Charlotte Sound. This high natural character would be adversely affected.

Effects on Landscape

[745] Having found that the northern side of the Kaitapeha Peninsula does not warrant "outstanding" status, there would be no adverse effect on any identified Outstanding Natural Landscape. Those that are identified are too distant from the proposed farms for there to be any appreciative visual effect.

[746] Mr Boffa observed that the southern headland of Arapaoa Island together with Dieffenbach Point forms a "gateway" between Queen Charlotte Sound and Tory Channel. He considered the effects on this landscape to be moderate.⁶¹⁵ The other landscapes architects assessed the effects as high with Mr Rough noting that the farms would detract from the integrity of the Kaitapeha peninsula.⁶¹⁶

[747] The "gateway" at the entrance to Tory Channel has moderate to high landscape values and is a prominent location with respect to tourism and recreation as well as local traffic. As such it is somewhat more sensitive and we find the effects on the landscape to be high.

⁶¹⁵ Boffa EiC at [7.27]

⁶¹⁶ Boffa Rebuttal – landscape summary table

Effects on Visual Amenity

[748] There was general agreement that most of the Queen Charlotte Sound landscape is of high visual amenity value. But there was some disagreement as to the effects of the two salmon farms on visual amenity.

[749] Mr Boffa⁶¹⁷ considered that the addition of two salmon farms in the general location of the entrance to Tory Channel would have a moderate effect overall. He discussed in some detail the likely visual amenity effects from some dwellings in the general vicinity of the proposed farms. He discussed the concern of Mr & Mrs Halstead which has been met in part by the condition of consent. He considered that the views from the dwellings located in the south on the outer headlands of Maraetai Bay, would have clear views of the farms,⁶¹⁸ but that with only one barge between them he assessed their effects as moderate. All other dwellings he assessed as being low to moderately affected because of their distance from the proposed farms.

[750] Mr Boffa assessed the effects from the Queen Charlotte Track⁶¹⁹ as low due to the distance. He acknowledged there would be many boat users in the vicinity including the ferries. He accepted that the views would vary according to location, but overall assessed the sea view effects to be moderate.

[751] Mr Rough opined⁶²⁰ that the proposed farms would, in their own right and cumulatively, detract from the general pleasantness and high visual amenity values of the Inner Sound. He said:⁶²¹

... in their being located just north of Ruaomoko Point, the proposed salmon farm will be in a very prominent location and have an unavoidable presence for people on craft making a passage with Queen Charlotte sound towards the outer area of the Sound or, as will be the case for interisland ferry passengers, when entering Tory Channel. In my opinion the proposed salmon farms will detract from the high visual amenity of this strategically prominent location and its general surrounding area ...

⁶¹⁷ Boffa EiC at [7.27]

⁶¹⁸ Ibid at [8.29]

⁶¹⁹ Ibid at [8.31]

⁶²⁰ Rough EiC at [150]

⁶²¹ Ibid at [151]

[752] Mr Rough does accept that the views from dwellings in the vicinity would be mitigated by the redesign of the single barge.⁶²² He found the overall conclusion of Mr Boffa that seaview effects would be moderate to be “somewhat problematic”⁶²³ as numerous vessels would pass reasonably close to the farms. He considered that for many vessels the proposed farms would appear prominent.

[753] Mr Brown assessed the two farms as generating high adverse visual effects.⁶²⁴ He had this to say:⁶²⁵

... the increased physical footprint of both farms, their enhanced visual presence, their proximity to Tory Channel, and their combined exposure to the inter-island ferry routes would have a profound impact on perception of both the more immediate, and wider, sounds environment.

[754] Dr Steven discussed a range of amenity effects associated with the two farms⁶²⁶ and considered that they would “significantly diminish the amenities currently associated with the Halstead properties and environs.”

[755] Overall, we find on the evidence that the proposed Kaitapeha and Ruaomoko farms in their own right and cumulatively would have high adverse landscape and visual effects on the Inner Queen Charlotte Sound. We say this for a number of reasons, including:

- [a] The high visual amenity value of the Inner Queen Charlotte Sound; and
- [b] The Kaitapeha Peninsula’s strategically important location and high visibility (being in a high use recreation area and adjacent to the Interislander Ferry route).

Tory Channel – Ngamahau

[756] Tory Channel is the site of the proposed Ngamahau salmon farm. The proposed site covers 16.5ha and would accommodate eight square cages that would occupy a maximum of 1.5ha. The site is adjacent to Ngamahau Bay on the southern

⁶²² Ibid at [152]

⁶²³ Ibid at [154]

⁶²⁴ Brown EiC at [166] – [170]

⁶²⁵ Ibid at [188]

⁶²⁶ Steven EiC at [216] – [218]

coast of Arapaoa Island in the outer section of Tory Channel. The cages would be towards the bay's southwestern headland, rather than along the bay's central foreshore, in an area of Tory Channel that is approximately 1.3km wide. There would be a permanently moored barge.

Landscape Context

[757] Tory Channel is a 21km long and approximately 1.5km wide channel between Arapaoa Island and the mainland. The channel provides the principal entrance to Cook Strait for ferries between Picton and Wellington. The entrance, between east and west heads is narrow and dramatic, and experiences tidal streams of great turbulence. In the overall context of the Sounds, Tory Channel is considered, like Port Gore, to be part of the Outer Sounds.⁶²⁷

[758] The coastline exposed to Cook Strait with its steep cliffs, rocky reefs, boulder beds and bays, is considered to be nationally significant.⁶²⁸ Although the entry into the Tory Channel from Cook Strait is dramatic, the landscape revealed inside Tory Channel is by contrast, much more utilitarian and unexceptional.⁶²⁹ As Mr Brown says, it is something of a let-down after the drama of the narrow entry point and the rugged straits landscape revealed on the outside of Arapaoa Island and West Head.

[759] The slopes between Te Awaiti Bay and Ngamahau are not as obviously dominated by forest as those of Deep Bay, but areas of harvesting further up the channel, combined with open pasture, areas of low scrub, and wilding pines, substantially reduce Tory Channel's appeal once inside its heads. A scattering of dwellings around Thoms Bay at the base of Arapaoa Island, flanked by bare pasture and the geometric rows of semi-mature forestry near Deep Bay – as well as behind Te Rua and Oyster Bays opposite – simply exacerbates such impressions.⁶³⁰

[760] Similarly, as Mr Brown pointed out, when travelling from the direction of Queen Charlotte Sound, the scars of forestry operations around Hitaua and Onapua Bays, power cables across the channel (together with coloured warning posts and stanchions), and marine farms from Te Pangu Bay to Hitaua Bay, combine with

⁶²⁷ 2009 *Landscape Review* at [72]

⁶²⁸ Ibid at [72]

⁶²⁹ Brown EiC at [108]

⁶³⁰ Ibid at [109]

pockets of residential development to confirm impressions of a working landscape.
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Natural Character Attributes

[761] The Natural Character Assessment 2011 contained no rateable value in the vicinity of the Ngamahau site. The adjacent landform rises relatively steeply to Wairere Peak at 435m and is covered in a mosaic of native vegetation, gorse and scattered pines. Mr Hooson assessed the naturalness of the land adjoining the Ngamahau site as medium. The vegetation cover is largely indigenous comprising of a mosaic of native and introduced vegetation of varying successional stages. The existing vegetation patterns reflect past human disturbance and other factors, such as aspect, shading, soil moisture and substrate.⁶³²

[762] Mr Brown was of the opinion that Tory Channel does not exhibit the same unified character and appeal as other Sounds landscapes. He considered that it lacked the fundamental cohesion of elements, sense of structure and order, and aesthetic appeal of the other Sounds.⁶³³ He noted:⁶³⁴

Despite being perhaps the single most important gateway to the Marlborough Sounds, Tory Channel's landscape is highly modified: a discordant mix of uses and structures that impair both its appeal and a naturalness/natural character value, having a ranking of moderate – low.

[763] The landscape architects were in agreement and considered Tory Channel to have a low to moderate/medium level of natural character.

[764] When considering the natural character of the Ngamahau area we are mindful of Mr Davidson's evidence. He told us that the Ngamahau site is close to sites of significant ecological value. These are to the east and west of the proposed site and contain dense hydroid dominated communities.⁶³⁵ Within the application area, there are significant areas of biogenic clumps comprising bryozoans, sponges and hydroids. The biogenic clumps within the cage area, while not considered significant, were of biological value.⁶³⁶

⁶³¹ Ibid at [110]

⁶³² Hooson EiC at [625] – [626]

⁶³³ Brown EiC at [123] – [125]

⁶³⁴ Brown EiC at [301]

⁶³⁵ Davidson EiC at [76]

⁶³⁶ Ibid at [91] – [94]

Landscape Classifications

[765] Apart from Dr Steven, none of the landscape architects rated Tory Channel in the vicinity of Ngamahau as containing any outstanding natural feature that could be affected by the proposed farm. The 2009 Landscape Review identified an area on the mainland across the channel.

[766] While acknowledging that the area affected by the farm is a Visual Amenity Landscape, its values were considered by the landscape architects to be more utilitarian by contrast with the rest of the Sounds. Mr Brown had this to say:⁶³⁷

... Although its water area and some pockets of bush – even the pasture and forestry that I have largely derided – will have at least a degree of appeal for some, it is clear that Tory Channel does not exhibit the same unified character and appeal as other Sounds landscapes. It lacks the fundamental cohesion of elements, sense of structure and order, and aesthetic appeal that the likes of Pelorus Sound and most of Queen Charlotte Sound so clearly evoke ...

... once inside the channel proper, there is little that is particularly natural or bucolic about the collage of images presented to tourists and others journeying up the channel. There is, in fact a very marked disparity between the sort of expectation created by Tory Channel's role as one of the most important tourist/traveller gateways/conduits in the country and the reality of its productive, but also fundamentally utilitarian landscape. It sets a much lower amenity benchmark than is found at Port Gore, within the Waitata Reach or in neighbouring Queen Charlotte Sound.

Effects on Natural Character

[767] The landscape witnesses, apart from Dr Steven, all considered the effects of the proposed farm at Ngamahau, both from a Sounds perspective and a site area perspective would be low, moderate, or low to moderate.⁶³⁸ Mr Brown was representative of their pragmatic views. He doubted the Ngamahau farm would significantly change the character and values of Tory Channel, concluding that cumulative effects on natural character would be relatively low.⁶³⁹

[768] We are conscious of the fact that the biogenic clumps within the cage area comprising bryozoans, sponges and hydroids, will be highly impacted. As their value was not considered significant by Mr Davidson, we are of the view that

⁶³⁷ Brown at [123]–[124]

⁶³⁸ Boffa rebuttal attachment – natural character table

⁶³⁹ Brown EiC at [192] & [194]

overall the effect on marine natural character arising from the proposed farm would be at worst, moderate.

[769] We find that the effects on natural character overall would be low.

Effects on Landscapes

[770] All of the expert witnesses, apart from Dr Steven, were of the opinion that the outstanding natural landscape identified across the channel would not be adversely affected.

[771] Similarly they were agreed that the landscape effects at the site would be low.⁶⁴⁰ We concur.

Effects on Visual Amenity

[772] Again, all of the landscape architects, apart from Dr Steven, were of the view that overall the affect on visual amenity would be low.⁶⁴¹ Most of the views would be from the sea. The main boating activities are the Cook Strait Ferries, fishing and recreational boating. At some locations, particularly in close proximity to the site, the adverse visual effects would be high.⁶⁴²

[773] Mr Rough considered that because of its location out to approximately 300m into Tory Channel, the proposed farm would have a pervasive visual amenity effect in the Outer Channel.⁶⁴³ While he considered the combined and successive types of cumulative effects would be low, there would be sequential cumulative effects from vessels that ply the waters of the Channel. But he did not give a value to the latter.

[774] Clearly the views from a number of dwellings would be adversely affected, particularly the dwelling owned by the Gledhill family in Ngamahau Bay. But after reaching agreement with King Salmon they withdrew their submission. So the effects on that dwelling are no longer an issue.

[775] Mr Martin & Mrs Clare Pinder own a dwelling on the southern headland to Deep Bay. They appeared before us on 24 September 2012. Mrs Pinder told us that

⁶⁴⁰ Boffa rebuttal attachment – landscape summary table

⁶⁴¹ See Spreadsheet attached to Boffa Rebuttal

⁶⁴² Boffa EiC at [8.40]

⁶⁴³ Rough EiC at [196]

relying on the zoning of the Sounds Plan, they built their house on the southern headland to Deep Bay. She produced photographs showing the expansive views from their elevated property northeastwards up Tory Channel. The proposed salmon farm, approximately 1.2km to the northeast, would be prominent.

[776] We acknowledge that the proposed farm would have high adverse visual effects on the view from the Pinder household. However, we find that overall the adverse effects on visual amenity would be low.

Summary of Findings on Natural Character and Landscape Effects

Summary of Findings on Natural Character

[777] Port Gore – Papatua

- At a site level within Pig Bay the proposed Papatua farm will have a high effect on an area of outstanding natural character, not giving effect to Policy 13 of the Coastal Policy Statement.
- At a Port Gore-wide level, the overall effect will generally be low to moderate.

[778] Waitata Reach – Waitata and White Horse Rock

- The combined effect of the proposed Waitata and White Horse Rock farms on natural character will be high. In our view the effect would be mitigated by reducing the number of farms to one.

[779] Kaitira

- The proposed farm would have a high impact on natural character as the sites are on a particularly sensitive part of the Waitata Reach – the gateway to Pelorus Sound.

[780] Tapipi

- The effects on natural character would be high.

[781] Richmond

- The effects on natural character would be moderate.

[782] Cumulative Effects

- The cumulative effects of all five farms would have a high impact on the natural character of the Waitata Reach and the proposed Kaitira and Tapipi sites a very high impact on the eastern side of the Reach.

[783] Queen Charlotte Sound – Kaitapeha and Ruaomoko

- The two proposed farms would have a high adverse effect on the natural character of the Reach within which they are set.

[784] Tory Channel – Ngamahau

- We find that there would be no adverse effects on natural character.

Effects on Landscape

[785] Port Gore – Papatua

- The proposed farm would have a high/very high adverse effect on an outstanding natural landscape. Thus the proposal would fail to give effect to Policy 15(a) of the Coastal Policy Statement.

[786] Waitata Reach – Kaitira

- The proposed Kaitira farm would have a high adverse effect on the outstanding natural landscape of Kaitira headland, thus not giving effect to Policy 15(a) of the Coastal Policy Statement.

[787] Queen Charlotte Sound – Kaitapeha and Ruaomoko

- We find the landscape effects to be high although there would be no adverse effects on any areas of outstanding natural landscapes.

[788] Tory Channel – Ngamahau

- We find the landscape effects to be low and there would be no adverse effect on any areas of outstanding natural landscape.

Effect on Visual Amenity

[789] Port Gore – Papatua

- The proposed farm will, in its own right and cumulatively, generate adverse visual effects in Pig Bay that would be high, and in Port Gore as a whole, the effects would be low to moderate.

[790] Waitata – all five farms

- We find there would be high impact on the visually appealing entrance to the Sounds from Cook Strait, particularly on the northeastern side of the Reach where the Kaitira and Tapipi farms are proposed.

[791] Queen Charlotte Sound – Kaitapeha and Ruaomoko

- We find that the adverse landscape and visual effects would be high on the Inner Queen Charlotte Sound.

[792] Tory Channel – Ngamahau

- We find that overall the effects on visual amenity would be low.

MAORI CULTURAL ISSUES

Statutory Provisions of the RMA

[793] Section 6 of the RMA identifies those matters that decision makers shall recognise and provide for as a matter of national importance, in relation to Maori:

- [a] The relationship of Maori and their culture and traditions with their ancestral lands, water, sites, waahi tapu and other taonga, outlined as a matter of national importance under Section 6(e); and
- [b] Section 6(f), the protection of historic heritage from inappropriate subdivision, use and development; and
- [c] Section 6(g), the protection of protected customary rights.

[794] We received a considerable amount of evidence from iwi, hapu and whanau during the course of the hearing that demonstrated a rich, well documented history and ongoing cultural association of the tangata whenua with the Marlborough Sounds.

[795] Under Section 7(a) of the RMA we are required to have particular regard to kaitiakitanga. Kaitiakitanga is defined in the RMA as “the exercise of guardianship by the tangata whenua of an area in accordance with tikanga Maori in relation to natural and physical resources; and includes the ethic of stewardship.” The evidence we received from tangata whenua on their customary rights was fulsome and clear on the respective kaitiakitanga interests of the resident iwi. We discuss these matters more fully further on in this section of the decision.

[796] Section 8 of the RMA refers to the principles of the Treaty of Waitangi. Discussion of those principles is of course found in the well known judgement of *New Zealand Maori Council v Attorney General*.⁶⁴⁴ The decision emphasises two core principles “partnership” and “active protection”. Subsequent judgements have elaborated on the core principles and what they entail and these principles include:

- [a] Duty to act in good faith;

⁶⁴⁴ [1987] 1 NZLR 641 (CA)

- [b] Duty to make informed decisions through consultation;
- [c] Principles of redress and in a duty not to create grievances;
- [d] Principle of reciprocity;
- [e] Principle of mutual benefit.

[797] The range of evidence and submissions received from tangata whenua were consistent in their adherence to the principles of the Treaty. A number of times a generic point was made in the formal submissions that the application was in contravention of the principles of the Treaty, but no evidence was provided.

New Zealand Coastal Policy Statement 2010

[798] The relevant provisions for tangata whenua matters are:

Objective 3

To take account of the principles of the Treaty of Waitangi, recognise the role of tangata whenua as kaitiaki and provide for tangata whenua involvement in management of the coastal environment by:

- recognising the ongoing and enduring relationship of tangata whenua over theirlands, rohe and resources;
- promoting meaningful relationships and interactions between tangata whenua and persons exercising functions and powers under the Act;
- incorporating mātauranga Māori into sustainable management practices; and
- recognising and protecting characteristics of the coastal environment that are of special value to tangata whenua.

[799] The Objective gives clear direction to decision makers about recognising the rights and interests of tangata whenua in the coastal marine area, a point we address later in this decision.

Objective 6

To enable people and communities to provide for their social, economic and cultural wellbeing and their health and safety, through subdivision, use and development.

[800] This Objective addresses the enabling aspect of the RMA through the use of resources, albeit in a sustainable way.

Policy 2: The Treaty of Waitangi, tangata whenua and Maori

In taking account of the principles of the Treaty of Waitangi (Te Tiriti o Waitangi), and kaitiakitanga, in relation to the coastal environment:

- a. recognise that tangata whenua have traditional and continuing cultural relationships with areas of the coastal environment, including places where they have lived and fished for generations;
- b. involve iwi authorities or hapū on behalf of tangata whenua in the preparation of regional policy statements, and plans, by undertaking effective consultation with tangata whenua; with such consultation to be early, meaningful, and as far as practicable in accordance with tikanga Māori;
- c. with the consent of tangata whenua and as far as practicable in accordance with tikanga Māori, incorporate mātauranga Māori, in regional policy statements, in plans, and in the consideration of applications for resource consents, notices of requirement for designation and private plan changes;
- d. provide opportunities in appropriate circumstances for Māori involvement in decision making, for example when a consent application or notice of requirement is dealing with cultural localities or issues of cultural significance, and Māori experts, including pūkenga, may have knowledge not otherwise available;
- e. take into account any relevant iwi resource management plan and any other relevant planning document recognised by the appropriate iwi authority or hapū and lodged with the council, to the extent that its content has a bearing on resource management issues in the region or district; and ...

[801] This policy gives significant weight to the need to recognise and provide for the range of customary interests held by iwi and kin groups in the coastal marine area of the Marlborough Sounds affected by the King Salmon application. Tangata whenua were consistent in their emphasis on the importance of continued access, use and protection of their customary resources to their culture and values of manaakitanga. The historical losses and impacts on customary resources through land and developments in estuarine areas and wash effect of fast ferries underpinned the concern of some of the iwi submitters. Consultation with iwi was the subject of criticism and this matter is addressed elsewhere in this decision.

Policy 8: Aquaculture

Recognise the significant existing and potential contribution of aquaculture to the social, economic and cultural well-being of people and communities by ...

[802] This policy gives effect to Objective 6 and the requirement to recognise the positive benefits from aquacultural development. Te Atiawa Trust and a number of

other tangata whenua submitters recognised the jobs and economic benefits from marine farm developments but tempered that with the need to avoid adverse effects.

Policy 21: Enhancement of water quality

...

- e. engaging with tangata whenua to identify areas of coastal waters where they have particular interest, for example in cultural sites, wahi tapu, other taonga, and values such as mauri, and remedying or, where remediation is not practicable, mitigating adverse effects on those areas and values.

[803] A policy which requires little in the way of explanation as to its intent, and which includes a direction to identify values such as mauri, which many tangata whenua and other submitters cite.

Marlborough Regional Policy Statement (RPS)

7.2.10 POLICIES – ALLOCATION OF COASTAL SPACE

...

- (b) Access to or along the coastal marine area will only be restricted for reasons of public safety, defence purposes, security, or matters of national importance including the protection of natural values and Maori cultural values

...

7.3.2 OBJECTIVE - CULTURAL AND HERITAGE VALUES

Buildings, sites, trees and locations identified as having significant cultural or heritage value are retained for the continued benefit of the community.

...

7.3.3 POLICY - CULTURAL AND HERITAGE FEATURES

Protect identified significant cultural and heritage features;

...

7.3.5 OBJECTIVE - CULTURAL VALUES

Recognise and accommodate the diversity of cultural values that exist within the community.

[804] Because the Regional Policy Statement is a ‘first generation’ RMA policy document its provisions as set commonly repeat the phrasing of the RMA.

Marlborough Sounds Resource Management Plan

[805] The Sounds Plan in Volume 1 contains robust provisions recognising the specific interests of tangata whenua. Section 6 identifies as significant the following issues:

- Recognition of the Maori holistic systems of values within resource management decision making. These values being:
 - Te Taha o Te Ao (environment);
 - Te Taha Hinengaro (way of life);
 - Te Taha Wairua (spiritual and customary values); and
 - Te Taha Tinana (healthy body).
- Exclusion from the use, development and protection of traditional resources;

...

[806] The objectives and policies of Chapter 6 include:

- | | |
|-------------|---|
| Objective 1 | Recognition and provision for the relationship of Marlboroughs Maori to their culture and traditions with their ancestral lands, waters, sites, waahi tapu and other taonga. |
| Policy 1.1 | Recognise and protect sites of significance to tangata whenua, including waahi tapu, taiapure, tauranga waka and areas of taonga raranga. |
| Policy 1.2 | Recognise values important to tangata whenua, including the concepts of mauri, effects on the mana of iwi or hapu, and the ability of tangata whenua to provide manaakitanga. |
| Policy 1.3 | Recognise the role of tangata whenua as kaitiaki in the coastal marine area. |
| Policy 1.4 | Recognise and provide for continued tangata whenua access to, and use, of traditional coastal resources such as mataitai, taiapure and taonga raranga. |

[807] Methods of Implementation at 6.1.3, states that the prohibited activity in addition to other reasons (refer Section 9.2.1, Policy 1.1) “will facilitate tangata whenua access to traditional coastal resources”. A particular concern for tangata whenua was the effect that the proposal would have on their customary resources and taonga. The policy requires the applicant to consult tangata whenua to determine what if any adverse effect a proposal will have on sites and resources of significance to tangata whenua and to avoid remedy or mitigate effects.

[808] Objective 6.2.2 requires:

6.2.2 Objectives and Policies

- Objective 1 The preservation of the Plan area heritage resources including, historical buildings, places and sites, waahi tapu, archaeological sites and areas, and heritage trees.

The associated policies and methods address research, incentives and allocation of resources to achieve heritage preservation including consultation with iwi.

[809] Coastal Marine Section 9.2.1 and 9.4.1 each have a Policy which seeks to avoid, remedy and mitigate the adverse effects on cultural and iwi values through the use, development of resources and or activities that disturb or alter the foreshore and/or seabed.

[810] The provisions in the Sounds Plan require effective engagement with tangata whenua to ensure that identification of the cultural values, sites and resources including kaitiakitanga functions are understood and appropriately addressed. This point was the subject of many of the iwi submissions, while the information in the application on the specific cultural values of tangata whenua was limited.

Ngati Koata Management Plan

[811] Section 74(2A) of the RMA states that:

A territorial authority, when preparing or changing a district plan, must take into account any relevant planning document recognised by an iwi authority and lodged with the territorial authority, to the extent that its content has a bearing on the resource management issues of the district.

[812] The Ngati Koata Management Plan incorporates a broad range of objectives and policies that identify and address heritage and coastal management issues of importance to Ngati Koata, those of relevance to this case include;

- Policy 7.15 and provisions from 1 to 7, provide guidance in the recognition of iwi heritage and planning processes, consultation and involvement in decision making affecting Ngati Koata heritage values;
- Topic 8, Coastal Water, Objective 8.32:

8.32 Objectives

1. Maintenance or enhancement of water quality in the coastal marine area at a level that enables the gathering or cultivating of shellfish for human consumption (Class SG).
2. Protection of the coastal environment by avoiding, remedying or mitigating any significant adverse effects of activities that alter or modify the foreshore or seabed.

- Topic 8, Coastal Water, Policies 8.33:

8.33 Policies

1. Ngati Koata involvement in the management and planning of coastal water quality;
2. Avoid, remedy or mitigate the adverse effects of use and development of resources in the coastal area on cultural and iwi values;
3. Avoid, remedy or mitigate and adverse effects resulting from the occupation of structures and activities in the coastal marine area;
4. Avoid foreshore structures in areas of cultural use where there is potential adverse effect on cultural values;
5. Avoid the discharge of contaminants into the coastal marine area where it will adversely effect;
 - a) areas identified by Ngati Koata as being of special spiritual, cultural or historical significance; or
 - b) areas identified by Ngati Koata as outstanding landscape.
6. Recognise and provide for the need to (including the following):

...

 - d) Protect sites of spiritual, historical or cultural significance to Maori in accordance with Tikanga Maori, including waahi tapu, tauranga waka, maataitai and taonga raranga; and
 - e) Avoid, remedy or mitigate adverse effects on ecological systems including natural movement and productivity of biota, natural biodiversity and adverse effects on:
 - Shellfish areas;
 - Fish spawning and nursery areas;
 - Bird breeding and nursery areas;
 - Fish and bird migration;
 - Feeding patterns flora and fauna;

...
11. Avoid, remedy or mitigate any significant adverse effects to the foreshore and seabed arising from any activity in the coastal marine area, including any lawfully established or otherwise permitted activity.

[813] The Ngati Koata Management Plan states that its primary purpose is to provide a means by which Ngati Koata are properly and fully considered in decision-making affecting their interests and to identify how to consult with Ngati Koata. In essence the iwi plan is a useful guide to applicants and decision makers about the nature and extent of Ngati Koata interests and how best to achieve effective consultation with the iwi.

Cultural Values

[814] For Pelorus Sound the position of Ngati Koata Trust Board and Te Runanga o Ngati Kuia Charitable Trust Board was one of opposition based on the potential effect on taonga, mauri and environmental values. Issues over mana recognition and consultation also had an impact on the attitude of Ngati Koata Trust Board to the proposals.

[815] For the Port Gore, Queen Charlotte Sound and Tory Channel proposals we heard from members of Te Atiawa iwi in opposition while the Te Atiawa Trust reversed its original opposition to one of support based on an agreed set of mitigation measures. Members of Ngati Apa also gave evidence on the Port Gore proposal.

[816] The protection of taonga, mauri, customary practices and the exercise of kaitiakitanga were key issues for tangata whenua.

King Salmon Assessment of Cultural Matters

[817] The King Salmon application for a Plan Change and concurrent resource consents was lodged and notified with limited information on the cultural values of the tangata whenua of Te Tau Ihu. Ms Dawson listed the submissions and information that had assisted her assessment⁶⁴⁵ in her evaluation of the relevant objectives and policies of the Coastal Policy Statement, the Regional Policy Statement, Sounds Plan and relevant sections of the RMA. She was unable to comment on the implications for specific iwi sites or values.

⁶⁴⁵ The Ngati Koata Iwi Management Plan; Cultural Impact Assessment prepared by Te Runanga o Ngati Kuia; submissions from tangata whenua, including; Te Atiawa Manawhenua o Te Tau Ihu Trust; Waikawa Marae; Ngati Koata Trust Board; Mitchell of Ngati Toa descent; Tahuaroa Watson Whanau; Dawson EiC, Attachment A, [1.18]

[818] Ms Dawson advised us she was able to consider concerns identified by iwi that were similar to effects addressed through other objectives and policies, particularly those relating to water quality, ecological values, significant flora and fauna, fish, the seabed, open space, landscape and navigation.

[819] In her rebuttal Ms Dawson said she was able to review in the limited time available the extensive and helpful evidence provided to the hearing from those tangata whenua with particular knowledge of iwi values that may be adversely affected by the Proposal. Ms Dawson acknowledged that much of this evidence was critical of King Salmon's approach to iwi values, and submitted that if King Salmon had had the benefit of that information earlier then it could have taken a more comprehensive approach to considering the issues.

[820] She observed that, while these matters addressed by the scientists and other witnesses have not been put into their cultural context, there is little raised that has not been considered from a scientific, navigation or landscape effects perspective. In summary, Ms Dawson's understanding was that the proposal was unlikely to compromise the quality of the water across the Sounds as a whole, or result in major ecosystem shifts. It was also her understanding that the health of the seabed and foreshore will be maintained and any effects would be reversible after farms are removed.

[821] She stated that from the scientific evidence, the waters would continue to be highly productive food baskets, supporting cultural practices and the mana of the respective iwi.⁶⁴⁶

[822] Ms Dawson explained that assessment of the reefs and valued fishing locations in the vicinity of the Ngamahau, Ruaomoko and White Horse Rock sites indicate that any adverse effects are expected to be small and localised and able to be managed through the proposed adaptive management approach. Similar conclusions are reached in relation to foreshore and significant seabed localities in Port Gore. However, she acknowledged that fishing, diving and gathering kaimoana at these locations would be undertaken in the vicinity of a salmon farm, which would change the amenity of that experience.

[823] Ms Dawson advised that Mr Keeley for King Salmon had addressed potential effects on the valued scallop fishery in Waitata Reach and adjoining bays

⁶⁴⁶ Dawson rebuttal at [10.10] – [10.11]

and concludes that scallops are expected to be displaced within the immediate vicinity of the net pen. Beyond that point it was considered scallops are likely to be largely unaffected, with the overall biomass of scallops in the area remaining largely unaltered.⁶⁴⁷

[824] Ms Dawson referred to the evidence of Mr Sagar in regard the taonga species of importance to iwi. Mr Sagar had, in taking into account the distance of the proposed farms from breeding colonies and roosting sites of the King Shag, the limited extent of the proposed farms in relation to the overall extent of foraging habitat available in the Sounds considered that there was unlikely to be discernible effects on King Shag, or for other seabirds such as Tīti.

[825] In relation to the taonga species of dolphins in the Sounds, Mr Cawthorn considered that there will be no discernible impact on the populations of dolphins and continuation of current practices will minimise the potential for dolphin entanglement at the farms.⁶⁴⁸

[826] Ms Dawson considered that she had addressed Section 6(e) of the RMA to the extent that she was able to in her evidence-in-chief, particularly in relation to the objectives and policies of the Sounds Plan which mirror Section 6(e). In her opinion, as a result of the additional evidence, and the evidence received from other iwi/tangata whenua, King Salmon is now in a better position to be able to recognise and have particular regard to the relationship of Te Tau Ihu iwi and their culture and traditions with waterbodies of the Sounds.⁶⁴⁹

Tangata Whenua Witnesses on the Topic of Cultural Values

[827] We read and heard evidence and representations from a number of witnesses and submitters on cultural matters in the rohe moana of the different whanau and hapu across the Sounds.

⁶⁴⁷ Dawson rebuttal at [10.13]

⁶⁴⁸ Dawson rebuttal at [10.14]

⁶⁴⁹ Dawson rebuttal at [10.15] – [10.20]

Customary Interests of Iwi

[828] Given the multiple tribal interests and instances where manawhenua status is shared by one or more iwi we were grateful for the significant amount of evidence we received that gave us guidance on those customary interests.

[829] The report *Cultural Impacts of the King Salmon Ltd Proposals* prepared by Mitchell Research in support of the Tahuaroa-Watson Whanau evidence was such an example. A report based on more than 30 historical reports the Mitchells had prepared for the Waitangi Tribunal WAI-785 hearings held between 2000 and 2004.

[830] The Mitchell Report traverses the history of Te Atiawa land alienation, extinctions and resource destruction that have been experienced over the last 170 years, and elaborated on the context of iwi settlement and rohe across the Marlborough Sounds.⁶⁵⁰

[831] Ms Kathy Ertel, Counsel for the Te Atiawa Trust, appended to her legal submissions the Waitangi Tribunal Report Wai 785.⁶⁵¹ Given iwi status was an issue particularly, for the applicant in regard Ngati Koata, we include an extract that describes customary interests of iwi and hapu of the Marlborough Sounds:⁶⁵²

The tangata whenua call the northern South Island by the name of Te Tau Ihu o Te Waka a Maui. This name refers to the prow (te tau ihu) of Maui (a Maui) and commemorates the fishing up of the North Island by Maui from his canoe (the South Island – Te Waka a Maui).

The Maori iwi and hapu of Te Tau Ihu have described their identity in the following terms:

- Rangitane, Ngati Apa, and Ngati Kuia are descendants of the captain and crew of the Kurahaupo waka. They were the tangata whenua of Te Tau Ihu in the 1820's and 1830's when the Kawhia – Taranaki tribes migrated to the district.
- Ngati Toa Rangatira, Ngati Rarua, Ngati Koata, Ngati Tama, and Te Atiawa migrated to Re Tau Ihu in the 1820's and 1830's. Their original rohe are located in the Kawhia and Taranaki districts. Some affiliations to the Tainui waka, others to the Tokomaru waka. Ngati Koata settled as a result of a tuku (customary gift) from Tutepourangi, an ariki of the Kurahaupo tribes. The other northern

⁶⁵⁰ Mitchell Research EiC at [5.6.1]

⁶⁵¹ Waitangi Tribunal Report, “Te Tau Ihu o Te Waka: Preliminary Report on Customary Rights in the Northern South Island” 2007 Wai 785.

⁶⁵² Ertel, opening submissions at [9] Page 1, (1.1)

iwi migrated after a series of battles and victories, and settled alongside Ngati Koata and the defeated Kurahaupo peoples.

There has been intermarriage between all eight iwi, and they are bound together by whakapapa, co-residence, and overlapping customary rights.”⁶⁵³

[832] Ngati Koata in their evidence illustrated that the “tuku” referred to above holds reciprocal duties for Ngati Koata to protect the interests of their kin Ngati Kuia and that this tuku extends to Te Hoiere (Pelorus Sound). Mr Roma Hippolite, for Ngati Koata, provided relevant text from the Waitangi Tribunal “*Wai 785*” Report, where it is stated:⁶⁵⁴

... the rights of Ngati Koata predated the conquest and were based on a tuku of ancestral land by the leading Kurahaupo rangatira of his day, Tutepourangi. This tuku initiated a reciprocal relationship, reinforced by intermarriage and co-residence, in which Ngati Koata had to protect and look after Tutepourangi’s people in return for the right to settle, use resources, and exercise authority throughout their tribal lands. Both parties had rights and exercised tino rangatiratanga, although the balance of authority over people clearly lay with the protecting tribe. Ngati Koata and the Kurahaupo peoples (more particularly Ngati Kuia, but Ngati Apa and Rangitane also) have consistently confirmed, relied on, and lived out this tuku ever since. We accept their evidence that it is the basis of their reciprocal rights and duties in parts of Te Tau Ihu, and that its effect remains ...

[833] This evidence demonstrates that the waterways of the Marlborough Sounds are subject to customary rights, predicated on the traditional accounts of how those interests were established. It is also clear that the tribal boundaries are not necessarily defined by lines on a map but by reference to whakapapa, tuku and the associated customary rights which include overlapping interests.

[834] Ms Ertel, Counsel for the Te Atiawa Trust, drew our attention to the key findings of the Waitangi Tribunal in respect of the Marlborough Sounds:⁶⁵⁵

- Rangitane communities existed at Wairau, Kaituna and Pelorus Sound.⁶⁵⁶
- Ngati Koata were at Croiselles Harbour and French Pass and reached as far as Pelorus Sound Ngati Kuia were in this area also.⁶⁵⁷
- A Ngati Apa community existed in Gore Harbour.⁶⁵⁸

⁶⁵³ Page 2, The Claims, 1.1.1

⁶⁵⁴ Hippolite EiC at [18]

⁶⁵⁵ Ertel opening submissions at [8]

⁶⁵⁶ *Maori Customary Occupation in Te Tau Ihu 2007* (Waitangi Tribunal) at 57

⁶⁵⁷ Ibid at 63

- Te Atiawa were at Arapaoa, Queen Charlotte Sound and Tory Channel, as spoils of the taua of 1832. These areas they at first shared with Ngati Toa, but by 1840 Ngati Toa had essentially gone from this area.⁶⁵⁹

[835] In the following assessment of cultural values and effects we find the practical way to progress through this discussion is by grouping the tangata whenua witnesses by geographic order of (a) Pelorus Sound, (b) Port Gore, (c) Queen Charlotte Sound and Tory Channel.

Pelorus Sound (Te Hoiere)

[836] For the Pelorus Sound (Te Hoiere) we heard from Ngati Koata Trust and Te Runanga o Ngati Kuia in opposition to the proposals.

[837] Pelorus Sound (Te Hoiere) is of importance to both Ngati Kuia and Ngati Koata. Waitata Reach was identified as the gateway to Te Hoiere and the cumulative effect of several farms in the vicinity of Waitata Reach include:

- [a] Adverse effect on the mauri of this waterway and the identity and mana of these iwi;
- [b] The presence of feeding, roosting and breeding areas for the special taonga, King Shags, particularly for the Kaitira and White Horse Rock/Waitata sites;
- [c] The presence of dolphins, which are considered taonga species and taniwha by Ngati Kuia;
- [d] Traditional waka routes for Ngati Koata along the eastern side of Waitata Reach, coinciding with the Tapipi and Richmond sites;
- [e] Customary scallop fisheries in Waitata Reach, Ketu and Richmond Bays;
- [f] The reef in the immediate vicinity of the White Horse Rock / Waitata sites being a well used fishing spot, particularly for blue cod;

⁶⁵⁸ Ibid at 63

⁶⁵⁹ Ibid at 78

[g] The presence of recorded sites of significance is referred to by H Elkington in the vicinity of the Kaitira, Tapipi and Richmond sites, although the specific nature or location is unknown.

[838] Mr Roma Hippolite stated that Ngati Koata must object to all of the proposed farms due to all of the adverse effects on the taonga within the environment especially the mauri of the moana.⁶⁶⁰

[839] Mr Hori Turi Elkington presented tangata whenua evidence for Ngati Koata Trust Board and also for the Pelorus Wildlife Sanctuary. He states that the lore of Tangaroa is the safest and surest way to protect the values of the Pelorus, treating the environment respectfully, and to avoid effects on taonga and important fishery resources.⁶⁶¹

[840] Mr Elkington noted that in 1991 work to record coastal (terrestrial) sites of significance to iwi in the Pelorus was undertaken, information from that survey helped inform the reasons for opposing each of the Waitata Reach sites.⁶⁶² In response to a question from the Board regarding the specificity of the survey information Mr Elkington stated that “we are a little bit reluctant to share that knowledge because it may be misused unfortunately” and that “... much of it is available in the Council with a key on it”.⁶⁶³

[841] Mr Elkington stated that Ngati Koata are opposed to the establishment of such a large number of salmon farms due to the cumulative effect they will have on the moana, mauri of the moana and all the other taonga. His view was that as kaitiaki, taonga was inclusive of the whanau and hapu as well as of all of the ika and manu in the rohe.

[842] He was also concerned that the proposed farms at Tapipi and Richmond would interfere with the traditional waka routes and as a result impinge on the mana, kaitiakitanga and rangatiratanga of Ngati Koata, attached to his evidence for Ngati Koata was a chart with traditional waka routes.⁶⁶⁴

⁶⁶⁰ Hippolite EiC at [44]

⁶⁶¹ Elkington EiC (Pelorus Wildlife) at [21] – [24]

⁶⁶² Ibid at [27]

⁶⁶³ Transcript at 2908

⁶⁶⁴ Elkington EiC (Ngati Koata) at [27] – [29]

[843] He elaborated in his evidence for Pelorus Wildlife on concerns at the potential impacts on cultural and spiritual values, the scallop fishery, and the cumulative effects in association with other farms (KPF Investments salmon farm at Danger Point) including smell, noise, sharks, disease, damage to the environment.

[844] In respect of the, Kaitira, Tapipi, Richmond and White Horse Rock/Waitata Mr Elkington stated there are various sites of significance and includes the feeding grounds of Te Kawau a Toru (The King Shag). The King Shag is an important taonga to Ngati Koata as it was the bird in tradition sent by Kupe to test the waters of Te Aumiti (French Pass).⁶⁶⁵

[845] In response to a question of whether Ngati Koata had a strong sense of the potential effects from the salmon farms Mr Elkington stated “...We are not opposed to sustainable salmon farming, but we are opposed to anything that contravenes the sustainable environment and its natural way of providing enjoyment and beauty and kai for our people”.⁶⁶⁶

Te Runanga o Ngati Kuia Charitable Trust Board

[846] We also heard from Mr Raymond Smith, Ngati Kuia Community Development Manager, Te Runanga o Ngati Kuia Charitable Trust Board. Ngati Kuia oppose the Waitata, Kaitira, Tapipi and Richmond proposals, in summary form due to the impact on Ngati Kuia mauri, taonga and taiao (environment).⁶⁶⁷

[847] Mr Smith was contracted by King Salmon to provide a Cultural Impact Assessment on behalf of Ngati Kuia, the recommendations in the Cultural Impact Assessment were:

- [a] That King Salmon move out onto offshore areas for their industry, where dilution of enrichment will be effective;
- [b] The King Salmon actively look for areas and technology that will assist them achieve expansion in deeper water; and

⁶⁶⁵ Elkington EiC (Pelorus Wildlife Sanctuaries) at [28]

⁶⁶⁶ Transcript at 2909

⁶⁶⁷ R Smith (Ngati Kuia) EiC at 4

[c] That King Salmon purchase any mussel farms in CMZ2 and apply for a species change.

[848] Mr Smith lodged additional evidence at Waikawa marae representing:

[a] Smith whanau interests in Anamahanga (Port Gore);

[b] Tui Nature Reserve Wildlife Trust; and

[c] Presented evidence on behalf of Ms Sharyn Smith (Trustee of Te Runanga o Ngati Kuia Charitable Trust and director for the Ngati Kuia Holding Company Ltd).

[849] Ms Sharyn Smith indicated her whanau have Maori land at Okoha at the head of Anakoha Bay (between Port Gore and Pelorus Sound). Their tipuna “Matuahautere” was an early descendant of Kupe, who was guided by “Kaikaiwaro” (dolphin) a taniwha, in his waka “Te Hoiere”.

[850] Ms Smith stated that Ngati Kuia fishing assets are important for their economic survival as an iwi, a resource that has sustained their ‘Trust’ and provides employment to their people.

[851] Ms Smith listed among her concerns the loss of access to water space if the applicant is successful it would impact on the value of the Ngati Kuia Fisheries Settlement Asset.⁶⁶⁸

[852] Ms Smith repeated the Ngati Kuia opposition to all of the King Salmon applications in Te Hoiere, but stated that Ngati Kuia are neutral in part with environment and association concerns for the Papatua, Kaitapeha, Ruaomoko and Ngamahau sites.

[853] The Ngati Kuia evidence included the tradition associated with the King Shag “Te Kawau-a-Toro”:⁶⁶⁹

Our tipuna Kupe explored this area with the use of guardians. One of these was a King Shag called Te Kawau-a-Toro. His role was to test the currents of the sea to ensure it was safe to travel through. When Kupe

⁶⁶⁸Smith EiC [1] – [6]

⁶⁶⁹Smith (Ngati Kuia) EiC at 18

arrived at the entrance to the Pelorus Sound he asked Te Kawau-a-Toro to test the currents, this he did. But when he asked him to test the currents at French Pass he broke his wing and drowned. Kupe named this place “Te Aumiti a Te Kawau-a-Toru”. The descendants of Te Kawau-a-Toro remained as kaitiaki, guardians. They have two Pa Kawau (refuge) areas, one at Te Aumiti a Te Kawau-a-Toro, the other at Moturaka (‘The Entangling Islet’) now known as Duffers Reef.

[854] For Queen Charlotte Sound (Totaranui) and Tory Channel (Te Kura Te Au) we heard evidence from Te Atiawa whanau, hapu and the iwi authority Te Atiawa Manawhenua o Te Tau Ihu Trust. While for Port Gore we heard from Te Atiawa and Ngati Apa whanau.

Te Atiawa Manawhenua o Te Tau Ihu Trust – “Te Atiawa Trust”

[855] In their original submission Te Atiawa Manawhenua o Te Tau Ihu Trust opposed the King Salmon applications.⁶⁷⁰

[856] Ms Ertel, advised us that the Objects of the Te Atiawa Trust include the promotion of Te Atiawa interests, the protection or conservation of taonga and to promote the economic development of the Te Atiawa Manawhenua o Te Tau Ihu.⁶⁷¹

[857] Ms Glenice Paine is the Chairperson for the Te Atiawa Trust, the mandated iwi organisation and representative body of Te Atiawa in the top of the South Island with 3,000 members.⁶⁷²

[858] Ms Paine reiterated the broad functions that the Trust exercises including a kaitiaki function over traditional and customary resources whilst having a duty to receive Treaty Settlement assets and develop the economic interests of their iwi. Te Atiawa Trust have marine farming interests in the Marlborough Sounds and all of their income is derived from either marine farming or fishing assets. Te Atiawa and King Salmon hold half shares in a marine farming licence for a salmon farm at Clay Point, Tory Channel.⁶⁷³

[859] Ms Paine advised that the concerns Te Atiawa Trust held with the King Salmon proposals in Tory Channel, Queen Charlotte Sound and Port Gore were evaluated in a Cultural Impact Assessment, a copy of which was attached to her

⁶⁷⁰ Submission 0511

⁶⁷¹ Ertel closing submissions at [2]

⁶⁷² Paine EiC at [3]

⁶⁷³ Ibid at [4]

evidence-in-chief. The Cultural Impact Assessment uses ‘Te Atiawa’ collectively to mean Te Atiawa Trust the iwi/tribe, and/or descendants and members of Te Atiawa as the context requires. Then acknowledges that all three groups will have different roles in upholding, defending, and/or progressing these perspectives, vision, and values.⁶⁷⁴ Ms Paine advised that “Te Atiawa Trust” had reached agreement with King Salmon on acceptable mitigation measures on the resource consent (for the Papatua, Kaitapeha, Ruaomoko and Ngamahau farms).⁶⁷⁵

[860] Ms Ertel submitted that the effect of the King Salmon proposals will be minimal and will not alter Te Atiawa cultural behaviour.⁶⁷⁶

[861] Port Gore and the Papatua site were referred to in the evidence of the Tahuaroa-Watson Whanau/Hapu and on behalf of Ngati Kuia. This bay holds important Kaimoana values, while fishing and diving are identified in and around the Papatua site. The presence of the taonga species of King Shag (Te Kawau a Toru) and Titi bird is referred to, and the significant cultural sites associated with Kupe at Cape Jackson

Waikawa Marae

[862] The hearing sat at Waikawa Marae in the meeting house Arapaoa on 3 - 5 October. We heard many times the whakatauki or proverb of the marae which is ‘mou, moku, mo nga iwi katoa’ ‘for you, for me, for all people’, a forum for all discussions underpinned by the concept of manaakitanga or hospitality. More than once we heard the saying ‘when the tide is out, the table is set’, which speaks of the kaimoana riches the Sounds provide to the people, an integral element of manaakitanga.

[863] Ms Rita Powick is the Chairperson of the Marae. Her evidence was presented by Waikawa Marae Management Komiti members Ms Tina Looms and Ms Bev Maata-Hart. This evidence emphasised the cultural function of the marae as being the heartbeat of things Maori, a link to the natural world and that the marae is much more than a mere physical fixture. Ms Powick’s evidence stated “with the ancestral connection, spiritual association, social association and cultural affinity

⁶⁷⁴ Cultural Impact Assessment at [5]

⁶⁷⁵ Paine EiC at [9]

⁶⁷⁶ Transcript at 2987

that exists between us people and the surrounding land and sea, we are a vital part in the very fabric of the landscape of this rohe”.⁶⁷⁷

[864] Ms Powick’s evidence referred to the carvings, woven patterns and painted rafters that adorn the wharenui Arapaoa. They represent traditions and environment norms that have existed for generations, it was her desire that future developments do not result in change to the extent that they “become stories to tell not live”.⁶⁷⁸

[865] Ms Powick’s evidence told us that manaakitanga is a two way relationship, the host expends all to make the host welcome, but there is a reciprocal duty to respect such hospitality. In her view King Salmon breached this principle by not consulting the Waikawa Marae about its plans, a failure to recognise kaitiakitanga and the cultural relationship to the natural resources.

[866] Ms Tina Looms told us “It is the relationships we foster and the interdependence that we share within this domain, it is the expression of our mana whenua and mana moana and its inherent right that we hereby call upon you to protect”.

[867] Ms Maata-Hart said it was her view that the responsibility of kaitiakitanga is a very serious obligation which faced her and members of the Waikawa Marae, she strongly opposed more salmon farms in the Sounds.

[868] Mr Alan Riwaka spoke about the importance of Kura Te Au (Tory Channel) to Te Atiawa and the traditions that gave rise to the placenames Kura Te Au, Te Wheke, Te Uira-karapa (lightning flash of Kupe’s axe), Te Kakau-o-te-toki-a-Kupe (axe handle of kupe), and Arapaoa (downward blow that killed Te Wheke). Placenames arising from Kupe and his chase of the giant octopus Te Wheke across the ocean, eventually dispatching the octopus at the place now known as Te Wheke, while Te Kura Au takes its name from the blood that flowed from Te Wheke.

[869] Mr Riwaka spoke of the prodigious fishery found in Kura Te Au (Tory Channel), and the rich sites within proximity to the proposed Ngamahau site including the largest cockles found in the Sounds at Deep Bay.

⁶⁷⁷ Powick EiC at [8]

⁶⁷⁸ Ibid at [22]

[870] Mr Harry Love, who was born at Aotea, at Te Aroha Bay located in East Bay, Arapaoa Island, spoke about the 200 year history of his whanau living and fishing in the Sounds. While he was not opposed to salmon farming he is fearful of the floodgates being opened if the application succeeds. That to lose what has been an important part of their heritage for over 200 years will render their mana null and void. That an iwi without mana is no longer an iwi, but a ghost no one will remember.⁶⁷⁹

[871] Mr Bentham Ohia summed up the Te Atiawa concern in upholding their strong tradition of manaaki manuhiri (act hospitable to visitors) and the whakatauki of their people:⁶⁸⁰

Ko too Te Ati Awa ko Tahuaroa

Te Ati Awa are bountiful hosts and rich in food sources. This abundance of food is presented to acknowledge visitors.

[872] It was evident that the Sounds represents more than an amenity, a visual beauty or a place to live and play. It is a living force that is treasured and deeply revered for its many qualities both spiritual and physical, a place rich in marine life and kaimoana. Many submitters referred to the importance of kaimoana for tangi, hui and social gatherings.

Tahuaroa-Watson Whanau

[873] Counsel for the Tahuaroa-Watson Whanau, Mr Tom Bennion, stated that the whanau was a significant and longstanding whanau in Te Atiawa. He said that there were several hundred members, who oppose all of the plan change and associated resource consents, in particular the Papatua, Kaitapeha, Ruaomoko and Ngamahau proposals.

[874] Mr Bennion referred to an application for a “protected customary rights” order⁶⁸¹ for the Totaranui (Queen Charlotte Sound) by the Tahuaroa-Watson Whanau and weighting of that in this case.⁶⁸² The application remains to be determined and so no “order” exists at this point and therefore we do not consider that matter any further. However the evidence provided to this hearing reflects the

⁶⁷⁹ Love EiC at 2

⁶⁸⁰ Ohia at 1

⁶⁸¹ Section 9(1) Takutai Moana Act 2011

⁶⁸² Tahuaroa-Watson MCMAA Application, Appendix 8, Gillard EiR, Tab 2

reason for that Protected Customary Rights application and therefore is considered in that context.⁶⁸³

[875] We heard from Mr Trevor Tahuaroa-Watson, senior descendant of Te Wawai and Rihari Watene Tahuaroa of the Puketapu hapu of Te Atiawa, Tōtaranui. Mr Tahuaroa-Watson told us that his whanau had held continuous and contiguous ahi ka roa on Arapaoa since the 1820's, exercising mana over their rohe moana. He told us that in that time his people had suffered successive alienation of their domain in the waterways of Port Gore, Queen Charlotte Sound and Tory Channel.⁶⁸⁴

[876] Mr Tahuaroa-Watson was concerned that the King Salmon proposed plan change would further alienate his whanau from their kaitiaki function over moana resources adjacent to Arapaoa Island. Traditional management practices such as the application of rahui and tapu under tikanga Māori would be compromised. He referred to his whanau having traditional access to fisheries included pipi, ika, tuatua, moki, scallop, koura, kina, paua, oyster, butterfish, kutai and tuna and these would suffer.⁶⁸⁵

[877] He stated that the King Salmon application fails to address what effect the Private Plan Change will have on cultural, customary practices and tikanga.⁶⁸⁶

[878] For the Tahuaroa-Watson Whanau we also heard from Mr Stephan 'Bosun' Huntley, of Te Atiawa and other iwi, his grandfather farmed in Te Iro Bay, mid-section of Tory Channel (Kura Te Au) on Arapaoa Island. He is an experienced paua diver and fisher who considers that Kura Te Au if properly managed could recover to be a veritable market garden, despite abuse by over fishing, diving, dredging and the most unbelievable damage from fast ferries.⁶⁸⁷

[879] Mr Huntley explained the meaning of Tōtaranui (Queen Charlotte Sound), that it is not a tree but is in reference to the Sounds being our "Mother", she feeds us, shelters us and protects us and Kura Te Au (Tory Channel) is our mothers womb. Mr "Bosun" Huntley told us Tory Channel is a food basket, the engine room

⁶⁸³ Transcript at 3017–3018

⁶⁸⁴ Tahuaroa-Watson closing statement at 2

⁶⁸⁵ Ibid at 2–11

⁶⁸⁶ Tahuaroa Watson EiC at [12] – [16]

⁶⁸⁷ Huntley EiC at [27]

for the whole Totaranui, that the ebb tide carries the great spat from kina and paua out through the entrance and seeds the outer coastline.⁶⁸⁸

[880] He also said that he was concerned that nitrogen released from the proposed Ngamahau salmon farm in Tory Channel would have a detrimental effect on the cockles in Deep Bay, which are the biggest cockles that he knows of in New Zealand.⁶⁸⁹

[881] Mr Huntley expressed his concern at the effect on the kina beds in Ngaruru to the south of Clay Point, which have a slime over them which was never there before, he was concerned at possible links of salmon farms to toxic algae blooms and the potential effect on their kaimoana. Like many witnesses on the marae Mr Huntley was concerned at past piecemeal development in the Sounds and the resultant depletion or loss of ecologically important resources.

[882] Appended to the Mitchell Report were maps from the David Alexander: *Reserves of Te Tau Ihu* Vol 1, which identify the location of Maori reserve lands in the Queen Charlotte Sound and Tory Channel areas. These reserve lands are located in Queen Charlotte Sound and Tory Channel, notably the following are within 3km or less of the Ngamahau site:

- [a] Wékenui on Arapaoa Island in Tory Channel; and
- [b] Arapawa SD, on the mainland side of Tory Channel; and
- [c] Te Rua District, on the mainland side of Tory Channel.

We heard no evidence that these lands were adversely affected.

Anamahanga (Port Gore)

[883] For Port Gore we heard from Mr Arthur Huntley, Te Atiawa, Ngati Kuia, Rangitane and Ngati Apa, whose whanau have a whare in Anamahanga. He said he will not eat kaimoana from Te Pangu because of the salmon farm there and instead now goes to Anamahanga to get his kaimoana.⁶⁹⁰

⁶⁸⁸ Ibid at [34]

⁶⁸⁹ Transcript at [3055]

⁶⁹⁰ Arthur Huntley EiC at [12]

[884] Mr “Bosun” Huntley, who also has Ngati Apa whakapapa and connection to Port Gore, spoke of Te Ope o Kupe (the company of Kupe), it is a flat rock flanked by two small islands (named Ihara and Mata after his daughters). Behind one of the islands is a wonderful little sheltered boat harbour, with a steep cliff covered in lichen, with a fresh water spring running down the cliff, the face of the bench is covered in kelp, paua, kina and crayfish. On the flat part of the bench directly under some huge karaka trees are the footprints of Kupe, not just his own but woman sized also, children and even dog prints in granite rock.⁶⁹¹

[885] “Bosun” Huntley stated that just inside Cape Jackson, on the northern side is Te Taonui o Kupe (Kupe’s spear), where Kupe was reputed to have thrown a spear from to try and join Te Ika a Maui to Te Waipounamu. There are huge fractured quartz rock faces in this area that look like a fisherman’s net, he said they call them Te Kupenga a Kupe (where Kupe hung his fishing nets to dry).

[886] Mr Huntley told us that from Cape Lambert along that coast into Papatua Bay was a very special paua habitat that is different to any other site he has seen, Papatua itself is renowned for having the biggest scallops in the Sounds.⁶⁹² He was also concerned about the welfare of the King Shag and the impact on their young who receive regurgitated feed, whose feed may be affected by the nutrients from the King Salmon farms.⁶⁹³

[887] Mr Huntley, like other tangata whenua witnesses, was uncomfortable with revealing their special fishing sites and kaimoana gathering areas into a public domain, such information is generally a taonga to each whanau.

Mr Buddy Mikaere

[888] Mr Buddy Mikaere appeared as an expert on cultural matters for Pelorus Wildlife Sanctuaries Ltd, J & R Buchanan and H K Elkington in respect of the Pelorus Sound proposals.

[889] He told us that the issue of “mauri is a generic issue that impacts on all of Te Tau Ihu regardless of who might assert mana moana” and concluded the applicant either did not understand the mauri issue or chose to do nothing about it.⁶⁹⁴

⁶⁹¹ Bosun Huntley EiC at [91]

⁶⁹² Ibid at [95]

⁶⁹³ Ibid at [98]

⁶⁹⁴ Mikaere EiC at [49] – [53]

[890] Mr Mikaere's view was that any discharge that is not the same as, or better quality, than the receiving water body diminishes the mauri of that water body and therefore should not occur.⁶⁹⁵

[891] Tangata whenua made it clear that they considered mauri was an important cultural value in the waterways of the Sounds and the iwi provided a definition of the concept and its spiritual/metaphysical elements in their respective iwi plans and cultural impact assessments.

[892] During cross-examination Mr Mikaere accepted that Te Atiawa, Ngati Apa and Ngai Tahu were pursuing finfish farming.⁶⁹⁶

[893] While the comparison was not tested it indicated that there were variances to the view that finfish farming was not suitable for the Sounds environment. However there was strong correlation in the whanau, hapu and iwi descriptions of their taonga, kaimoana and customary practices in the bountiful waterways of the Sounds.

[894] Mr Bennion, Counsel for Tahuaroa Watson Whanau, submitted that on the evidence for most of the sites there is an effect that is more than negligible, and that would support the concern about the effect on spiritual values, such as mauri. He contended that there would be immediate visual, benthic and water column effects, with models predicting how far afield that will occur and at what concentrations.⁶⁹⁷

[895] Tangata whenua expressed the view that the mauri or life force of their taonga, the waters of their rohe moana were already subject to depletion, it was their concern to retain what they have in its present or better condition for future generations. Which Mr Bennion submitted means the effects are quite clearly present, the physical link from which the effect on mauri builds.

[896] Mr Gardner-Hopkins, counsel for King Salmon, submitted that they have addressed the issue of mauri and believe that based on expert evidence in relation to water column, benthic environment and aquatic life that the mauri of the moana will not be undermined by the proposal.⁶⁹⁸

⁶⁹⁵ Transcript at 2948

⁶⁹⁶ Ibid at 2945

⁶⁹⁷ Ibid at 3016

⁶⁹⁸ Nolan and Gardner-Hopkins closing submissions at [25.22]

[897] We take the point that the proposed additional salmon farms would have an immediate impact on the physical characteristics in the locations of those farms. It is also conceivable then that the mauri will be affected. There are existing marine and land based activities impacting on the health of ecosystems in the Sounds and hence the mauri would be compromised to some extent already.

[898] The RMA is not a no-effects statute and has an enabling focus. Our task is to determine on the facts before us whether additional salmon farms achieve the purpose of the RMA. Mr Mikaere told us that a discharge from an activity should be of the same or better quality than the receiving water if the mauri was to be unharmed.

[899] It was clear to us that tangata whenua have a spiritual connection to their rohe moana based on many layers of connection and interaction with their resources and the history and traditions that go with it. It was clear also that as a way to express this spiritual connection that mauri is an important element. The natural quality of the waters and kaimoana are tangible evidence of the life supporting capacity of the Sounds and an indicator to kaitiaki.

[900] We received little evidence on how to manage the mauri in relation to resource use and development or the protocols that might be employed by tangata whenua to make an activity noa or permitted and on what basis.

Our Assessment

[901] We agree with King Salmon that there was a large amount of information on cultural values provided through the evidence of tangata whenua. Our task in the assessment of cultural impacts is to focus on:

- [a] The breadth of meaning of kaitiakitanga as tangata whenua understand it to be in respect of the areas affected by the proposal; and
- [b] The breadth of relationship of tangata whenua to the particular resources and how that relationship may be affected.

[902] Much of the cultural information had been through the Waitangi Tribunal hearings and validation process over a significant period of time, which drew on

whanau manuscripts, Maori Land Court minutes and official government agency records and archives. In addition we heard from tangata whenua how the Sounds and its environs is a rich source of food, provides shelter and protection to the iwi, and its waters hold special significance to the tangata whenua.

[903] It was evident that the practical expression of kaitiakitanga occurs at the whanau and hapu level, drawing on familial knowledge of their rohe, natural resources and traditions and continuation of customary practices.

[904] The mandated iwi authorities have statutory roles and functions to undertake on behalf of their members, which also include responsibilities to uphold the kaitiaki interests of their people, in some cases overlapping interests prevail.

[905] We are required to have particular regard to the view of the Sounds tangata whenua about the appropriate manner in which the natural and physical resources in their respective areas should be husbanded.

[906] We are required also to make findings based on the evidence as to the nature of the tangata whenua relationship and the effects on that relationship (Section 6(e)). The tangata whenua witnesses highlighted the prodigious qualities of the Sounds and its marine resources, which from their perspective has been subject to detrimental effects from development over time. Their concern was that the proposal would further diminish that relationship both spiritually and physically.

[907] We are not persuaded by the King Salmon case that there would in all cases be minor impacts on the relationship of tangata whenua with their rohe moana or the discharge of their duty as kaitiaki. There would undoubtedly be impacts on Maori cultural values to various extents which need to be weighed. We will address such impacts where necessary, when dealing with our assessment of the proposed farm sites later in this decision.

[908] The spiritual relationship that tangata whenua hold with their rohe moana, which includes the mauri of its waterways, is less easily assessed, and subject to varying interpretations. Where there is uncertainty about the environmental effects of the proposal, the spiritual and cultural welfare of the whanau, hapu and iwi is also at risk.

AMENITY EFFECTS (NOISE, AIR QUALITY AND ODOUR)

Noise

[909] The Sounds Plan standards set the noise limits for permitted activities in the Coastal Marine Zones of 55/45 dBA L₁₀ (Day/Night) with 2200 hours to 0700 hours being the night-time period.⁶⁹⁹ The second part of this rule specifically excludes the noise generated by marine farm servicing and harvesting ships. While the rule does not apply to marine farm activities, it does give an indication of what is regarded as a reasonable level of noise for activities in the Marlborough Sounds. It has thus been used as a guide, along with existing ambient noise levels, to determine what is a reasonable level of noise.

[910] A number of submitters have commented on the potential noise likely to be generated by the proposed new farms.

[911] Mr Phillip Black was concerned about the operation of the existing salmon farm in Waihinu Bay.⁷⁰⁰ He mentioned that generator and compressor noise had been a concern for them over the years. He did acknowledge that progress had been made by King Salmon with reduction of this noise to what he describes as “low level but insistent 24 hours a day”. Mr and Mrs Black’s bach is some 300m from the Waihinu Bay farm.

[912] Mr Cliff Marchant resides in southern Port Gore approximately 5.5km away from the proposed farm at Pig Bay. He expressed concern as to the effects of noise if the farm were to be established. The ambient background levels in Port Gore, he believed, were low because of the remote nature of the bay. Those activities that currently contribute to noise levels in the bay included mussel farm activity, recreational boat traffic, light planes and boats associated with diving trips. He said:⁷⁰¹

Most people associate absolute silence with night time only, when most human activity has ceased. Because there is so little human activity anywhere in Port Gore it really is incredibly devoid of man-made sound by day.

I have not heard the noises made by a salmon farm, but given the absolute quiet we are accustomed to on still days, any noise would soon be a source of annoyance.

⁶⁹⁹ Rule 35.1.4.2

⁷⁰⁰ Black EiC at [10] – [11]

⁷⁰¹ Marchant EiC at 18

[913] Mrs Kristen Gerard who appeared on behalf of The Kenepuru and Central Sounds Residents Association, as well as her own family, lives in Hopai Bay and owns land with a holiday bach in Port Gore. She described her experience of an existing salmon farm, some 2kms from her home in Hopai Bay. This farm was previously owned by a company called Pacifica Ltd and subsequently purchased by King Salmon:⁷⁰²

While the Crail Bay Pacifica farm was active we also had to live with severe noise from the feeders (which were audible inside our home over 2kms away), and from the workboat/barge movements. Although King Salmon intend to use a quieter form of feeder, there would still be noise issues from its various workboats coming and going, and (on some of the farms) the 24/7 presence of a barge. Night-time work-boat noise and lighting is particularly annoying, and would especially impact on those outer Sounds areas where there are presently no other similar full-time commercial activities.

[914] Mrs Gerard went on to say:⁷⁰³

We are also aware that there will be work boats coming and going all day and every day to service and maintain the site and that they cannot afford to leave the site unmanned for security reasons. Therefore there will be a lot more boat movements in the bay than we are currently used to.

[915] The above evidence encapsulates the general thrust of a number of submissions.

[916] The underwater noise levels were suggested to be less than that of other vessels operating in the sounds. The issue of underwater noise and its affect on marine life was a matter raised by Mr Andrew Baxter for the Minister of Conservation. He concluded:⁷⁰⁴

The cumulative effect of noise from multiple sources is an issue for cetaceans and NZ King Salmon's proposed new activities (vessels and farm operations) will result in additional noise entering the Marlborough Sounds' marine environment. I am unable to quantify the relative contributions from NZ King Salmon's proposed new activities and those from other sound sources (notably existing and future vessel traffic through the Sounds). I am not aware of any studies which have quantified the underwater noise climate of the Marlborough Sounds. Nevertheless, based on my assessments above, I believe the additional noise resulting from NZ King Salmon's proposed new salmon farms is likely to have no more than a minor additional effect on marine mammals relative to other existing noise sources in the Marlborough Sounds.

⁷⁰² Gerard at Additional Evidence KCSRA Appendix A4 at 29

⁷⁰³ Transcript at 3262

⁷⁰⁴ Baxter EiC at [79]

[917] We have no reason to doubt the conclusion of this witness as no competing evidence was put before us.

[918] Mr Miklin Halstead carried out a study into the noise effects of the nine proposed salmon farms. He pointed out that marine farm activities have the potential to produce noise, resulting from diesel generators, feed dispensers, water blasters, net lifters, harvesting, and service vessels. He determined the noise effects at locations near to the new farms, and recommended noise rules to control effects to a reasonable level. His noise assessment pays particular attention to critical receiver locations adjacent to the proposed farm sites, including houses and shorelines in close proximity to the farms.

[919] At seven of the nine farms, he told us, the closest houses to the proposed farms were over 2km to 3km away from the salmon farms and would receive very little noise. At Kaitapeha and Ngamahau farms, the nearest houses would receive some degree of noise during daytime operation. At night, however, the noise emission is limited to a controlled generator that produces very little noise. When he compared the noise character of the salmon farm with other activities in the Sounds, he concluded that the noise effects from parts of the daytime operation of the salmon farm were more industrial in nature than noises emitted by other uses of the region including marine traffic, which were brief and transitory in nature.

[920] He therefore considered it appropriate to provide a slightly greater degree of protection at the notional boundary (within 20m from any side of a dwelling), of 50dBA L_{10} during daytime and 40dBA L_{10} night-time/Sunday. This limit was consistent with the more stringent end of the range of limits normally applied in the rural area. He felt it was also useful to impose a noise control at a fixed distance of 250m from the salmon farm of 55dBA L_{10} daytime and 45dBA L_{10} night-time/Sunday in order to protect recreational users.

[921] Mr Halstead was of the view that the proposed farms would be able to comply with the limits he had recommended at the closest dwelling situated adjacent to the Ngamahau farm, and to comply with these limits by a large margin at all other locations.

[922] In concluding Mr Halstead said:⁷⁰⁵

⁷⁰⁵ Halstead EiC at 4

At the shoreline, where this land is accessible, this level of noise from the farm would be clearly audible to anybody standing on the land immediately adjacent to the salmon farm. People are likely to find the noise annoying, but the level is similar to what would be regulated in a rural environment. This level is considered reasonable for the salmon farms taking into account the unlikely nature of human occupation and the small area that is affected.

At seven of the properties nearest to farms, the predicted daytime noise levels are less than 25 dB L_{A10} and the farms would be insignificant amongst the background noise under most environmental conditions. I consider that the effects of noise at these properties is less than minor.

At the two closest dwellings to Ngamahau and the closest dwelling to Kaitapeha the noise from the salmon farm may be audible outside these dwellings at times, but the noise level is sufficiently low to avoid sleep disturbance indoors and will not result in adverse amenity effects. I thus conclude that noise effects are no more than minor. I conclude similarly for the alternative location for the Ngamahau farm.

Finding

[923] Mr Halstead was not cross examined and we received little evidence to contradict him. We agree with his conclusions that the effect of noise levels from the proposed farms will be no more than minor in the vicinity of any nearby residences, of which there are few. We also agree that compliance with the new noise standards and mitigation measures as set out in the conditions of consent ensure that noise emitted from the farms would not be unreasonable.

Air Quality

[924] A range of activities occur on a regular basis on salmon farms which give rise to odours, some more offensive than others. Mr Andrew Curtis, an air quality expert and experienced odour assessor, told us that these odours are generally marine like in character and some could be considered unpleasant if experienced at close range.⁷⁰⁶ Mr Curtis outlined the nature of combustion related emissions from service vessels, and those from on site generators and ancillary engines.

[925] It was his view that these emissions would have “negligible potential” to impact on the air quality within the Sounds and because of the separation distances of the proposed farms, any odours would be unlikely to give rise to a nuisance. Mr Curtis was not cross-examined.

⁷⁰⁶ Curtis Rebuttal at [1.4] – [1.5]

[926] A number of submitters expressed concerns, relating to odour from existing salmon farms and their experiences of past management practices.

[927] Members of the East Bay Conservation Society described their experiences relating to odour from the Otanerau Farm.⁷⁰⁷ They told us that, over the years, they had been affected by odour that amounted to what they called “a nuisance”. They did say however that since taking over the farm, King Salmon had endeavoured to reduce the effects.

[928] The submission supported proposed conditions designed to reduce the effects of odour from the farms and said “smell and mechanical are noise unavoidable necessities for the operation of this activity.” In finishing, they told us, there would still be effects that diminish the enjoyment of being at their properties.

[929] Smell was an issue for Mr Peter Halstead who believed he and his family would be affected by the proposed farm some 730m from their house at Kaitapeha. They had detected a “fishy” smell they believed to permeate from the Ruakaka farm across Queen Charlotte Sound.

[930] Mr Simon Novak and Dr Sally Smith own a property near Dieffenbach Point, at East Bay, Queen Charlotte Sound. They told us that there were regular strong fishy smells coming from the Ruakaka farm on the other side of Queen Charlotte.⁷⁰⁸

[931] These comments are representative of concerns about odour.

[932] The Council has not set any specific regional air quality standards in the Sounds Plan. In Volume 1, Objective 1, of Section 7.2.1 of that Plan they have adopted a set of *Provisional Indicator Standards for ambient air quality*. These values, Mr Curtis said, were essentially the Ministry of Environment 2002 revision of the Ambient Air Quality Guidelines. His air quality analysis therefore was based on these standards. Mr Curtis confirmed the general perception that air quality in the Sounds is relatively good.⁷⁰⁹ There were relatively few sources of air pollution, apart from the ferries and other powered craft.

⁷⁰⁷ EiC at [72]

⁷⁰⁸ Novak Submission No 0002

⁷⁰⁹ Curtis EiC at [5.1] – [5.2]

[933] The Sounds Plan's only relevant reference to air quality appears in Volume 1 Section 7.3 under Policy 1.1. This policy states that:

Ensure that all persons discharging contaminants into air, avoid, remedy or mitigate any adverse effect arising from that discharge. This includes all effects likely to be noxious, dangerous, offensive, or objectionable to such an extent that there is an adverse effect on the environment.

[934] There are a number of activities that could, if not controlled, contribute to odour emissions from salmon farms. They include feeding, mort bins (where dead fish are stored and transported from the farm), the net pens prior to cleaning, and to some degree wildlife.

[935] The conditions of consent for each farm contain a condition on "Odour Management"⁷¹⁰ which is designed to mitigate any potential odour effect.

Finding

[936] Having considered all the evidence relating to the issue of air quality and the various standards and conditions that apply, we consider the effect on air quality will be negligible.

Lighting

[937] Four matters pertaining to the issue of lighting, on the proposed farms, were presented to the Board by way of evidence and submission, during the course of the hearing. These are set out below:

- [a] Navigational Lighting, required for the safe passage of commercial and recreational vessels;
- [b] Lighting associated with the operation of the farms, and accommodation;
- [c] Underwater Lighting, for the control of maturation in King Salmon; and
- [d] The effect of the above sources of light on visual amenity.

⁷¹⁰ Papatua Final Condition 44, Waitata/Richmond/Ngamahau Final Condition 48

[938] Navigational lighting came in for a great deal of comment by various parties, with suggestions on how best to light the proposed farms in order to ensure the safe navigation of passing of boat traffic.

[939] While we found these comments helpful, the fact remains that the Navigational Lighting and Marking required, once approval is given for one or more salmon farms, falls within the jurisdiction of the Regional Councils' Harbourmaster. This is pursuant to a Maritime Delegation from the Director of Maritime Safety pursuant to Sections 200, 444(2) and 444(4) of the Maritime Transport Act 1994.

[940] Mr Boffa explained the effects of the lighting required for safety, navigational, those associated with the barge/building facility and underwater lighting:⁷¹¹

- [a] Firstly, with regard to navigational lighting, Mr Boffa's view was that the effects on visual amenity would be "relatively confined and low", especially when the farm was adjacent to other marine farms. He considered these lights to be only intermittently visible; and
- [b] Secondly, he recommended the removal of some barges, from a number of the farms, which he believed would assist mitigate any adverse visual affects both day and night.

[941] Mr Boffa explained that light emitted from the barge was the most obvious of the various types of lighting on the farms. This effect was shown to us by way of a photo supplement, entitled "Nightlighting Photographs of Clay Point Salmon Farm".⁷¹² This consequence, he believed, could be reduced or largely eliminated if curtains or shutters were used at night. With these changes, and a reduction of the barge to a single storey, Mr Boffa was of the view that the effects of lighting from the farms would be minor.

[942] Mr Preece described the lighting on the barges at the proposed farms.⁷¹³ They would contain standard internal lights, similar to a dwelling. The entrance to the barges (from the farm side) would have floodlights fitted that are switched on when staff enter the pen area at night – usually about once a night.

⁷¹¹ Boffa EiC at [8.8]

⁷¹² Boffa EiC at Nightlighting Photographs 16 March 2012

⁷¹³ Preece EiC at [41]

[943] A number of submitters expressed their concerns regarding lighting and its effect on visual amenity. The examples we quote here echo the general thrust of the submitters concerns.

[944] Mr Plaisier situated adjacent to the Waitata Reach, was concerned that the farms would be an intrusion into an area of the Sounds that currently has few other light sources.⁷¹⁴ He told us that four of the proposed farms would be visible from his tourist accommodation, and therefore the navigational and subsurface lighting would change the experience of remoteness for his visitors.

[945] An increase in the number of lights visible in Port Gore was a concern also for Mr Marchant.⁷¹⁵ He described Port Gore as having a lack of man-made lighting, and believed there would be major change to the present situation.

[946] The Papatua site, we were told, would not have a permanent service barge associated with it and therefore would not have any underwater lighting. Mr Marchant pointed out however that it would still require a service vessel “somewhere” in Port Gore.

[947] The lighting positioned on a permanent basis at the Pig Bay farm, would be that required by the Harbourmaster for navigational safety. These lights would be required to be visible for up to 2 nautical miles. The effect on the residences on the eastern side of Port Gore, would be therefore minimal.

[948] Mr Colin Roper expressed a view relating to navigational lighting in the Waitata Reach.⁷¹⁶ He was concerned at the prospect of a proliferation of lights within the Reach.

[949] There would be, he submitted, a multitude of lights within a 6.5 nautical mile stretch of the Reach, leading to confusion amongst transiting skippers. These lights would be supplemented by existing mussel farm lights albeit those lights are of a lesser brightness.

⁷¹⁴ Plaisier EiC at 15.01

⁷¹⁵ Marchant EiC at [78] & [79]

⁷¹⁶ Roper EiC at Kerepuru & Central Sounds Appendix 3 at 26

Finding

[950] As stated earlier, navigational lighting is an issue the Harbourmaster is required to deliberate on, taking into account other lighting within a particular area.

Subsurface Artificial Lighting

[951] Submerged artificial lighting for slowing maturation in salmon has been used on salmon farms overseas for some time. King Salmon have introduced it on their Clay Point farm in Tory Channel and recently obtained consent to increase the number of fish pens with artificial lighting from two to four.

[952] Dr Christopher Cornelisen described the process as it would relate to the Marlborough Sounds.⁷¹⁷ He told us that artificial lighting slowed the rate of maturation in Atlantic salmon that arises as a function of seasonal changes in the day/night cycle. Research has shown that the Chinook salmon had shown similar benefits with increased growth rates and inhibited maturation. It also has the benefit of evenly distributing the fish in the salmon pens thus reducing fish densities near the surface.

[953] Dr Cornelisen described the design and installation of lights necessary to achieve the desired affect.⁷¹⁸ Within a 30m x 30m fish pen a ring of nine lights would be positioned with three and six bulbs situated at 5m and 10m beneath the surface respectively. The bulbs would be some 5m to 10m from the wall of the pen. The bulbs used generate 1000 watts of “clear daylight” within visible range. It appears blue-green under the surface. Some have described this effect as being akin to lights in a “swimming pool” on the surface. The area impacted by the lights may extend beyond the pen structures to small degree.

[954] Mr Preece referred to the timing of use of underwater lighting, in his evidence.⁷¹⁹ The lights were switched on in December and off in October. They ran for 14 hours per day over darkness. Trials he told us were underway to reduce the period lights are running for. It was more likely that in the future the lights

⁷¹⁷ Cornelisen EiC at [17] – [20]

⁷¹⁸ Cornelisen EiC at [25]

⁷¹⁹ Preece EiC at [42] – [43]

would run from May to October. The visual effect of the lighting was, in his view, to provide a soft green hue in the area of the pens.

[955] Mr Steffan Browning cross-examined Dr Cornelisen on the matter of the effect of artificial subsurface lighting on species other than salmon.⁷²⁰ There was some uncertainty as to the effect on other species, some of which were attracted to the lights. It was a matter of fact that physiologically salmon are affected by things like the phases of the sun, and the length of the day that triggers spawning, however Mr Cornelisen was unsure if this applied to bait fish.

[956] It was Mr Cornelisen's view that while baitfish may also enter the fish pens even during daylight hours without lights, some may remain there, after growing too large to escape from the pen nets because of the particular mesh size.

[957] It was revealed that while salmon do predate the baitfish, the quantity remains to be identified. The salmon are fed an artificial diet and so their supplementary requirement would be small. This was borne out by the fact that after three days of non-feeding prior to harvesting, little or no baitfish were found in the stomachs of the salmon. This observation came from King Salmon staff, rather than close scientific scrutiny. Mr Browning questioned the reliability of this observation.

[958] Finally Mr Cornelisen stated that the effect on natural fish stocks in the Sound would be small, especially when a comparison is made of the amount of baitfish attracted to the pens, either by the feed or the lights, and the total amount of biomass contained within the Marlborough Sounds.

Finding

[959] Having considered all the evidence concerning the various types of lighting employed in the activity of salmon farming, and there effects on the surrounding locality, along the recommended matters of mitigation and conditions. We consider these effects to be of a very minor nature. They would generally be in keeping with the character of similar activities, and not something that would dramatically change the ambience, of these specific areas of the Sounds.

⁷²⁰ Browning Transcript at 1244 - 1257

SOCIAL EFFECTS

[960] We heard from two experts during the hearing who addressed the social impacts of the proposed Plan Change and associated consents; Mr James Baines for King Salmon and Dr Peter Phillips for Marlborough District Council.

[961] Through caucusing the two experts reached agreement on the following points:

- [a] That there is no mandated standard conceptual framework used for preparing Social Impact Assessments in New Zealand;
- [b] That each expert has used a different framework, Mr Baines used a framework based on OECD work,⁷²¹ and Dr Phillips used a United Nations Environment Programme framework⁷²² which is almost identical to a framework developed by IAIA;⁷²³
- [c] That beyond the differences in the conceptual framework utilised by each expert they agreed that that they have both used a multi-method approach to information gathering for their assessments;
- [d] That the difference in coverage of classes of affected parties is in part explained by the difference in briefs that each of the experts were contracted to;
- [e] That Dr Phillips definition of affected parties set out in his evidence-in-chief is appropriate as a generic classification; and
- [f] That positive impacts will arise from an increase in the number of jobs and the flow on effects of the associated income from those additional jobs.

⁷²¹ Appendix 2 of Social Impact Assessment, “such a conceptual framework, which has been adopted by other SIA’s and social research contexts in NZ in recent years comes from social work indicators work in OECD and closely parallels the framework adopted by the MSD”

⁷²² UNEP, covers five types of effects, lifestyle, cultural, community and amenity or quality of life

⁷²³ International Association for Impact Assessment

[962] Mr Baines and Dr Phillips used different frameworks in assessing the potential social impacts of the King Salmon proposals, and they reached very different conclusions.

[963] Dr Phillips concluded that the adverse social effects of the King Salmon proposals would be cumulatively more than minor. Mr Baines concluded that other than for the Ngamahau site the overall social impacts would be positive or acceptable.

Finding

[964] In our view the divergent evidence of the experts simply reflected their respective briefs, and we did not get an objective overview of the potential social effects. Our decision on these applications is informed by the large amount of evidence we received from the other experts, residents and users of the Sounds. In this regard we heard extensive evidence on important physical effects and consequences for ecosystem function, navigational safety, tourism and recreational amenity issues (amongst others) which all make a contribution to social wellbeing. Our findings on the economic benefits are also relevant as a contribution to social wellbeing.

[965] In the end the social effect issues identified and assessed by the experts were consistent with the many contrasting views of many of the submitters we heard and received evidence from.

[966] We are satisfied that the management plans as required in Condition 90⁷²⁴ will cumulatively contribute to positive social outcomes. However we are not convinced of the need for the specific Social Impact Management Plan as proposed in condition 89. In our view that condition prescribes a plan that will be somewhat token in its intent and effect.

⁷²⁴ Now Papatua Final Condition 69, Waitata/Richmond Final Condition 75, Ngamahau Final Condition 74

TOURISM & RECREATION

Introduction

[967] All parties to the King Salmon applications agreed that the Marlborough Sounds are a nationally significant area for tourism and recreation. We were told that tourism is an important industry within the Marlborough region. International and domestic visitors spent \$208 million in Marlborough during 2009.⁷²⁵

[968] The Queen Charlotte Track, Ship Cove Historic Reserve, and the Mikhail Lermontov shipwreck are all listed as sites of national recreational importance,⁷²⁶ and the importance of the Sounds for activities such as cruising, fishing, sailing, swimming, waterskiing, walking, tramping, biking and wildlife viewing (to name but a few), were never in dispute.

[969] Not surprisingly then, there were many views expressed to us by submitters regarding recreation and tourism in the Sounds. Most conveyed a concern that the presence of salmon farms would diminish recreation opportunities within the Sounds as a whole.

[970] The views of many submitters were encapsulated in the submission from the Marlborough Girls College Environment Council. Ms Ruby McIntosh, their spokesperson, said:⁷²⁷

The proposed installation of eight new salmon farms into the prohibited zone will diminish the areas of the Sounds open to recreational activities. Simply salmon farms are not beautifully crafted structures, they will not enhance the beauty of their surroundings, they are an ugly 1.25 hectares of industrial structure.

Is this what we want our visitors to see when they come to the Sounds for their untouched beauty. The proposed salmon farms will defeat the purpose for many of visiting the Sounds. Many want to get away from the industrialisation and head to somewhere with minimal human interference to be at one with the environment.

[971] Mr Dave Bamford, who has an extensive background in tourism and recreational matters, summed up the potential effects of marine farms on

⁷²⁵ Tourism and Recreation Assessment 25 July 2011 at [4.24]

⁷²⁶ Bamford EiC at [37]

⁷²⁷ McIntosh Transcript at 2442

recreational and tourism activities: physically limiting or blocking access to say a fishing spot or kayaking route; affecting the amenity value of the recreation and tourism experience; imposing on “remote” settings; cumulative effects on natural character and the amenity values of users.⁷²⁸

[972] There were a number of studies and surveys commented on by the experts during the course of the hearing.⁷²⁹ All of these studies to some degree or other showed the level and vibrancy of the recreational and tourism industry in the Marlborough Sounds. We were acutely aware of this fact during our deliberations on the applications.

[973] The very diverse nature of recreational activities makes assessing the effect of possible new farm sites a complex matter. It is our view that the effects on recreational or tourism activities are very location dependent. We address the recreation and tourism effects accordingly.

Statutory Assessment

[974] Those parts of the Act’s definition of sustainable management that refer to enabling people and communities to provide for their well-being are particularly relevant. There are no relevant Section 6 matters. Under Section 7 we must have particular regard to (c) the maintenance and enhancement of amenity values – given the inclusion of recreational attributes in the RMA’s definition thereof, and (f) the maintenance and enhancement of the quality of the environment.

[975] The Coastal Policy Statement contains a number of provisions relevant to tourism and recreation issues, and we list those as follows:

Objective 4

To maintain and enhance the public open space qualities and recreation opportunities of the coastal environment by:

- recognising that the coastal marine area is an extensive area of public space for the public to use and enjoy;

⁷²⁸ Bamford EiC at [57]

⁷²⁹ These included the Recreational Opportunity Spectrum (ROS), the Corydon surveys commissioned by the Marlborough District Council entitled ‘*Perceptions of the Marlborough Sounds and the Impacts of Marine Farms*’ 2001, and ‘*Perceptions of the Marlborough Sounds*’ 2012, The Conservation Management Strategy(CMS) Nelson/Marlborough Conservancy 1996-2006, and *The Tourism and Recreation Assessment 25 July 2011*, presented in evidence by Mr Bamford and commissioned as an assessment of the potential recreational and tourism effects of NZ King Salmon’s proposals

- maintaining and enhancing public walking access to and along the coastal marine area without charge, and where there are exceptional reasons that mean this is not practicable providing alternative linking access close to the coastal marine area; and
- recognising the potential for coastal processes, including those likely to be affected by climate change, to restrict access to the coastal environment and the need to ensure that public access is maintained even when the coastal marine area advances inland.

...

Objective 6

To enable people and communities to provide for their social, economic, and cultural wellbeing and their health and safety, through subdivision, use, and development, recognising that:

- the protection of the values of the coastal environment does not preclude use and development in appropriate places and forms, and within appropriate limits;
- some uses and developments which depend upon the use of natural and physical resources in the coastal environment are important to the social, economic and cultural wellbeing of people and communities;
- functionally some uses and developments can only be located on the coast or in the coastal marine area

...

Policy 3: Precautionary approach

1. Adopt a precautionary approach towards proposed activities whose effects on the coastal environment are uncertain, unknown, or little understood, but potentially significantly adverse.
2. In particular, adopt a precautionary approach to use and management of coastal resources potentially vulnerable to effects from climate change, so that:
 - a. avoidable social and economic loss and harm to communities does not occur;
 - b. natural adjustments for coastal processes, natural defences, ecosystems, habitat and species are allowed to occur; and
 - c. the natural character, public access, amenity and other values of the coastal environment meet the needs of future generations.

...

Policy 5: Land or waters managed or held under other Acts

1. Consider effects on land or waters in the coastal environment held or managed under:
 - a. the Conservation Act 1987 and any Act listed in the 1st Schedule to that Act; or
 - b. other Acts for conservation or protection purposes; and, having regard to the purposes for which the land or waters are held or managed:

- c. avoid adverse effects of activities that are significant in relation to those purposes; and
 - d. otherwise avoid, remedy or mitigate adverse effects of activities in relation to those purposes.
2. Have regard to publicly notified proposals for statutory protection of land or waters in the coastal environment and the adverse effects of activities on the purposes of that proposed statutory protection.

...

Policy 6: Activities in the Coastal Environment

...

2. Additionally, in relation to the coastal marine area:

...

- b. recognise the need to maintain and enhance the public open space and recreation qualities and values of the coastal marine area

[976] Recreational interests are addressed in a general way by Policy 7.1.9 of the Marlborough Regional Policy Statement that seeks to “enable present and future generations to provide for their wellbeing by allowing use, development and protection of resources provided any adverse effects of activities are avoided, remedied or mitigated”.

[977] The Method to implement the above policy can be found at 7.2.11(c) of the Regional Policy Statement which provides an instruction to:

- (c) incorporate within resource management plans objectives, policies and controls that:
 - ensure proponents of all developments in the coastal marine area consider public access and recreational use

[978] Chapter 9.2 of the Sounds Plan deals with the issue of restriction of public access to the coastal marine area due to the private occupation of coastal space. Policy 1.1 in that chapter seeks to avoid, remedy or mitigate the adverse effects of use and development of resources in the coastal marine area on recreation values (amongst a range of other matters). Policy 1.6 (which received some attention during the hearing) is to ensure that recreational interests retain a dominant status over commercial activities that require occupation of coastal space and which preclude recreational use in Queen Charlotte Sound. Policy 1.12 is to enable a range of activities in appropriate places in the water of the Sounds including marine farming, tourism and recreation.

[979] Chapter 9.4 of the Sounds Plan deals with alteration to the foreshore and seabed. Objective 1 in that chapter seeks to protect the coastal environment by avoiding, remedying or mitigating any adverse effects of activities that alter the foreshore or seabed – in this case the salmon farm anchoring systems will represent an alteration to the seabed. Policy 1.1 in chapter 9.4 seeks to avoid, remedy or mitigate the adverse effects of activities that disturb or alter the foreshore on recreation values (amongst a range of other matters).

The Potential for “Industrial Tourism”

[980] The potential for the proposed new salmon farms to provide an attraction of interest to tourists and thus contribute to an increase in “industrial tourism” in the Sounds was traversed at the hearing. We heard a range of views on the matter.

[981] King Salmon suggested that the new farms could be used to promote both their activities as salmon farmers, and salmon as a product. Mr Bamford explained there were tourism products that focused on cuisine, general sightseeing, and ecotourism (wildlife viewing) that were utilising mussel farms in the Pelorus Sound and the salmon farm in Ruakaka Bay as ‘key components’ of their tours and there is further potential to develop this sector.⁷³⁰

[982] Mr Chris Godsiff, who is the Managing Director of Marlborough Travel Ltd,⁷³¹ told us his company currently runs cruises in Kenepuru, show-casing the mussel industry.⁷³² In like manner to Mr Bamford, Mr Godsiff believed that tourism associated with the salmon industry is a growth market with some potential. His company was currently speaking with King Salmon in regard to setting up ventures, in conjunction with the proposed farms.

[983] Mr Robert Greenaway, an expert in the field of tourism and recreation, held a different view, believing there was ample ability to visit marine farms now and additional marine farms presented no new tourism opportunities.⁷³³

[984] Destination Marlborough is a tourism promotional organisation made up of some 1500 tourism operators around Marlborough. They took a neutral stance on the application, however they support activities that could lead to an increase in

⁷³⁰ Bamford EiC at [50]

⁷³¹ A South Island tourism business having in the order of \$4 million in plant and employing 15 staff.

⁷³² Bamford EiC at [50]

⁷³³ Greenaway EiC at [113]

visitor numbers coming to the province. It was suggested by Mr Bamford under cross-examination⁷³⁴ that a representative from King Salmon be made available to liaise with Destination Marlborough and the industry on matters relating to its salmon farming operations.⁷³⁵

Finding

[985] On this specific matter we prefer Mr Godsiff's evidence, as someone closely involved with the tourism industry in Marlborough, and his belief that there is potential for growth in the industrial tourism sector, with patience and good promotion. We find that the proposal does provide the potential for the development of industrial tourism ventures.

Waitata Reach

[986] Some submitters were concerned that the presence of salmon farms would adversely affect the viability of existing eco-tourism enterprises. This issue was particularly relevant for the submitters from Waitata Reach.

[987] We visited the Plaisier property, the Tui Nature Reserve, during our 30th September 2012 site visit and were impressed by the Plaisier family's achievements and their enthusiasm. Their visitors, we were told, were attracted to their environmental ethos and the clean green image. With this aspect we agree.

[988] Mr Plaisier described his visitors' experience when coming to the Tui Nature Reserve:⁷³⁶

Currently our visitors have uninterrupted views from their accommodation. There are no salmon farms, no lights, no industrial noises, no industrial odours. We rely on the surrounding waters to remain pristine because the sea and land eco-systems are interconnected. We bring our guests in by boat and as we get closer to our bay the view across the Waitata Reach is one of remoteness and natural beauty.

[989] The question we must answer is whether the presence of salmon farms in this instance, and other sites like it, would materially affect the viability of these environmental projects. While we agree the cumulative effect of five new farms in

⁷³⁴ Transcript at 1361

⁷³⁵ Conditions at 90A

⁷³⁶ Plaisier EiC at [8.06.1]

the vicinity of Waitata Reach would adversely affect the views from the Tui Nature Reserve, a lesser number of farms may well be able to be accommodated, without significantly detracting from the character of the area.

[990] During cross-examination Mr Bamford⁷³⁷ said he did not believe there would be a 'noticeable drop off' in patronage to their businesses (ecotourism operators), due to the farms, and he based that on his involvement with similar projects throughout New Zealand. He used the example of the Makara wind farm in Wellington, where now it is up and running there is no evidence that this has had an adverse effect on tourism in the Wellington region.

[991] Mr Bamford went on to say that the Ruakaka farm in Queen Charlotte Sound for example had had little effect on the tourist operators in the likes of the Bay of Many Coves. He was more concerned with the impacts of the foreign exchange rate on tourism and the decline of the Australian market.⁷³⁸

[992] Mr Bamford commented in answer to a question regarding the effect of salmon farms on ecotourism:⁷³⁹

Well, my understanding of the ecotourism in the Queen Charlotte Sounds out to Blumine Island and towards Ship Cove, that those visitors are leaving Picton, they are going past forested areas, they are going past mussel farms, they are going past holiday homes, they are getting out to Ship Cove, and it is not making a negative impact on the business.

So I feel quite strongly that it is completely okay to have a range of activities and settings, where you go on an ecotourism tour, and I'll refer back to Kapiti Island where we go kiwi watching at night and five or six kilometers away is the village of Paraparaumu with its lights and its industry and its infrastructure and visitors don't get upset about that when we are watching kiwis.

[993] The impact of salmon farming in the Waitata Reach is a matter of scale. Five farms in the Reach would have an adverse effect on visual amenity and would have a bearing on how visitors perceived the Reach. Whether this would deter visitors from visiting the Tui Nature Reserve, is hard to determine, however we agree it would detract from the ambience of what is being achieved by the Plaisiers.

⁷³⁷ Transcript at 1304

⁷³⁸ Ibid at 1305

⁷³⁹ Ibid at 1343

[994] On the other hand a lesser number of farms may well be able to be assimilated into the Reach without significantly affecting other commercial enterprises within the area. As has been mentioned earlier some regard the salmon farms as an eyesore while others perceive them as an opportunity.

[995] In describing the Pelorus Sound as compared with Queen Charlotte Sound, Mr Bamford told us:⁷⁴⁰

... the Pelorus Sound does not have the same popularity and high use for recreation and tourism as does Queen Charlotte Sound.

[996] With this fact we concur.

[997] There is however recreational use and it is a popular destination for fishing. The Waitata Reach has long been an important part of the customary fishery for kaimoana, of both the Ngati Kuia⁷⁴¹ and Ngati Koata iwi.⁷⁴²

[998] Mr Greenaway's evidence indicated that the Kaitira site was popular for groper, snapper and cod fishing and the White Horse Rock site for snapper, blue cod and kahawai.⁷⁴³ He had during the course of the preparation of his evidence interviewed a number of local fishermen and referred to published fishing guides which indicated that the Reach contained good fishing sites, "with Post Office Point and the area off White Horse Rock providing particularly productive locations".⁷⁴⁴

[999] The fish species commonly caught at Kaitira are important species to recreational fishers and the environment in which they fish adds to the experience. The benthic conditions differ slightly from the Tapipi site in as much there is mixed mud/shell identified closer to the cages.⁷⁴⁵ We accept Mr Greenaway's evidence therefore as it relates to recreation fishing at this site and, along with the fact that it lies on a traditional navigational route, we find that the adverse effects on recreational use and public access at the proposed Kaitira farm will be significant.

⁷⁴⁰ Bamford EiC at [102]

⁷⁴¹ Smith EiC at 6

⁷⁴² Elkington EiC at [28] – [34]

⁷⁴³ Greenaway EiC at 69

⁷⁴⁴ Ibid at [88]

⁷⁴⁵ Taylor at Figure 4

[1000] The proposed White Horse Rock site has a relatively complex benthic environment inshore of it, and the cages would be situated just 100 m from the shoreline.⁷⁴⁶

[1001] This area was identified as a popular recreational fishing spot by a number of submitters, along with its importance to iwi as a traditional fishing ground. Mr Greenaway has also indicated the importance of this site as a recreational fishery with snapper, blue cod and kaihawai recorded as common catches.

[1002] Mr Tony Black from Waihinu Bay described his impressions of the Kaitira and White Horse Rock areas:⁷⁴⁷

These two sites are very important to me. Each year we have a number of friends staying with us including, in most years, some from overseas for whom, they tell us, the Sounds is the highlight of their trip. It is my practice to take them on a little eco-tour. First we head for the stretch of coast by White Horse Rock. As said in my initial submission, the proposed location is the last remaining area reasonably accessible from Waihinu Bay by relatively inexperienced people in small boats (dinghy/kayak) where they can enjoy natural surroundings out of sight of man-made structures. This, of itself, gives the area a particular importance. And for this tour we will first have a look to see if there is any sign of black backed gulls nesting on White Horse Rock and then move on to see if anything is happening at a spotted shag nesting spot just north of Boat Rock.

[1003] Although not directly related to fishing this is an example of the site also having value as a sightseeing and recreational destination.

[1004] We find therefore that the proposed farm at White Horse Rock site would have adverse effects on amenity for fishing and sightseeing and would impede safe navigation along this section of coastline.

[1005] The proposed Waitata farm site on the other hand, which is adjacent to the White Horse Rock site, sits further off shore,⁷⁴⁸ and has different benthic conditions, which are described as largely mud under the cages.⁷⁴⁹ This site being further offshore makes it less attractive as a recreational fishing ground. While the presence of a farm on this site would affect the amenity of fishing along the adjacent shore it does not preclude such an activity. There would also remain plenty of sea room for passing yacht traffic to navigate through the Reach comfortably.

⁷⁴⁶ Taylor at Figure 5

⁷⁴⁷ Black EiC at [14]

⁷⁴⁸ Walker Navigation Report at Appendix 1

⁷⁴⁹ Taylor at Figure 5

[1006] The same applies with the Tapipi farm site with its distance from shore⁷⁵⁰ of approximately 350m, from cages to the foreshore. The benthic conditions are described as mud in evidence of Dr David Taylor, which here again makes it less attractive from a recreational fishing point of view.⁷⁵¹

[1007] Some comment was made however that some reasonable fishing could be found inshore of the proposed farm. Tapipi does lie however on the main navigational route, from the inner Pelorus to the Outer Sound and near to the entrance to the recreational scallop dredging ground in Ketu Bay. This fact alone causes some difficulty and adverse effects on recreational users of the area.

[1008] The proposed Richmond farm is located in similar conditions in terms of benthos, to that of the Tapipi farm. The same would apply as regard to its popularity as a recreational fishing ground. It is described as being made up of largely mud under the cages, in Dr Taylor's evidence.⁷⁵² Being some 236m from the cage boundary to the foreshore gives adequate room to navigate or fish on the inside of the proposed farm. As mentioned earlier some catches have been recorded on the inside of the proposed site.

[1009] Access to recreational scallop dredging in Richmond Bay would be unaffected by the presence of the farm. The same applies to the boating club mooring, advised as being further to the southwest, along on the eastern side of the bay.

[1010] We find then that the Richmond farm would create only minor inconvenience in navigation in and out of the Richmond Bay. Likewise recreational fishing would be largely unaffected and able to be substituted within the near vicinity.

Queen Charlotte Sound/Tory Channel

[1011] We were told by various submitters that the proposed Kaitapeha and Ruaomoko sites are in an area in which fishing, scallop dredging, kayaking, yachting, recreational navigation and Outward Bound boat trips, amongst others, all take place.

⁷⁵⁰ Walker Navigational Report at Appendix 1

⁷⁵¹ Taylor at Figure 3

⁷⁵² Ibid

[1012] This part of the Queen Charlotte Sounds is undoubtedly a popular and well utilized area, with recreationalists and tourists alike. The fact that the Cook Strait ferries pass close to the proposed position of these farms, also means many domestic and international travellers get to view this area even if only for a brief time.

[1013] Queen Charlotte Walkway is located on the other side of the Sound to the west of these farms and the presence of the farms would albeit in a small way, detract from the visual experience of those on the walkway. It was pointed out to us however, that the Queen Charlotte Sound, although generally dominated by recreational activities, does contain numerous structures of one kind or another, such as baches, holiday homes, wharfs, and commercial lodges.

[1014] We find that the adverse effects of these two farms on visual amenity and recreational activity are significantly adverse, particularly in the light of the Sounds Plan provisions that recreational activities should dominate over those of a commercial nature.⁷⁵³ In other words we preferred the evidence of numerous local submitters to that of Mr Bamford in this instance.⁷⁵⁴

[1015] The proposed site at Ngamahau while lying adjacent to the Cook Strait ferry route does tend to be more isolated from the main recreational activities of Queen Charlotte Sound. It is subject to navigation traffic coming and going to the Cook Strait area, as well as locals travelling from their homes and fishermen and sightseers just out for a day in Tory Channel.

[1016] Totaranui (Queen Charlotte Sound) and Kura Te Au (Tory Channel) are both, important customary fisheries for the Te Atiawa iwi.

[1017] Mr Bosun Huntley told us about fishing at Ngamahau:⁷⁵⁵

This takes me back to Ngamahau, when it comes to fishing and diving this site is hard to beat, Mahau means shelter, the points on either side are great fishing spots, and when you dive it's not hard to see why the habitat here is special, that's because the reefs have stopped the dredges from smashing it all up.

⁷⁵³ Sounds Plan Volume 2 at Policy 9.2.1.1.6

⁷⁵⁴ D Bamford EiC at [80] – [84]

⁷⁵⁵ S Huntley EiC at [79] – [80]

Along here we catch butterfish, moki, taraikihi, trevally and blue cod on the line. And is ideal habitat for crayfish paua and kina. When it's too rough at the entrance, we gather our kina and paua here.

[1018] Mr Greenaway pointed out in his evidence that Ngamahau had not been identified as a specified fishing or anchoring site, but that reference had been made to Tory Channel as having fishing opportunities.⁷⁵⁶

[1019] Within Tory Channel at Clay Point and Te Pangu Bay there are currently two existing salmon farms. The proposed farm at Ngamahau is situated to the north east of the current farms, approximately 5 km from the entrance to Tory Channel. While we have found that there is sufficient room for boat traffic to pass safely through this portion of the Channel, we accept that recreational craft will still wish to fish the reef structures to the northeast and southwest of the farm and inshore of the site, as Mr Huntley pointed out above.

[1020] This distance between the shore and the cages would be just over 200m at its nearest point.⁷⁵⁷ We accept then that this traditional fishing site could continue to be so, apart from the area occupied by the cages.

[1021] The fact that King Salmon have come to an arrangement with some of the owners of land adjacent to the Ngamahau farm has simplified the situation from a recreational point of view. In the normal course of events this farm would have been a dominating factor for these adjacent land owners.

[1022] The existing two salmon farms in Tory Channel are a point of interest for many travellers on the Cook Strait ferries and the addition of a third will only add to that experience.

[1023] We find then that the establishment of the Ngamahau farm would have minor adverse effects on recreation and tourism opportunities.

Papatua/Port Gore

[1024] The Papatua farm lies in Pig Bay, Port Gore. Both Mr Bamford and Mr Greenaway agreed it was a 'remote' recreational setting, with little boat traffic when compared to Queen Charlotte Sound.

⁷⁵⁶ Greenaway EiC at [93]

⁷⁵⁷ Walker Navigation Report at Appendix 6

[1025] Mr Bamford described the bay this way:⁷⁵⁸

The Papatua site and the area surrounding it is classified under the ROS system as “remote waters” for recreation. This implies a higher degree of natural landscape values and lower levels of use because of difficulty of access. The amenity values for Port Gore include “wild” and “scenic” qualities that are an integral part of the recreation and tourism experience in this location.

In my opinion the effect on existing recreation and tourism activities in Port Gore from the proposed new Papatua site would have minor impacts for most recreationalists and tourists.

[1026] We are in general agreement with this summation.

[1027] Diving in Port Gore is centered on the wreck of the Mikhail Lermontov, a nationally significant site, which lies approximately 3km from the site of the proposed farm. Accommodation for divers visiting the wreck is located in Melville Cove.⁷⁵⁹ The farm would not be visible from the accommodation because of a headland between the two.

[1028] We do not believe the presence of the Papatua farm would in any way impact on the numbers of divers visiting the wreck.

[1029] The salmon farm would be visible from a walking track, on the southeast side of the bay, because of the elevation of the track. This track leads from Ships Cove to the Queen Charlotte Wilderness Park at Cape Jackson. The distance between the track and the farm would be some 5km. At this distance the visual effect would be no more than minor.

[1030] Given the form of the proposed Papatua farm (a large area within which cages will be rotated) we are of the view that any recreational boating traffic, including kayakers would have ample room to navigate around Pig Bay as desired. The circular pens to be used at Papatua would also have a lower profile when compared to the other sites applied for in this application, and therefore would be less visually obtrusive at sea level than other salmon farms.

[1031] The Papatua site is not a recommended anchoring site according to the Cruising Guide.⁷⁶⁰ While fish may well be caught in this area, from time to time,

⁷⁵⁸ Bamford EiC at [13-14]

⁷⁵⁹ Greenaway EiC at [74]

⁷⁶⁰ Walker EiC at [57]

we did not hear that the site constituted a reliable or popular fishing ground. For that reason we find the proposed site would not have more than minor effect on recreational fishing.

[1032] The Cape Lambert Scenic Reserve is situated to the north of the proposed farm. Access to the farm by land or sea would be unimpeded by its presence. We were told that it was seldom visited by recreationalist and those that did visit were predominately land based divers.⁷⁶¹ We accept this evidence but have confidence that tourists on passing boat traffic would acknowledge its remote natural character.

[1033] We find therefore that the presence of the salmon farm in Pig Bay would have only a minor adverse effect on tourist and recreational activities in Port Gore.

⁷⁶¹ Bamford EiC at [91]

NAVIGATION

Introduction

[1034] The waters of the Marlborough Sounds have been used in many ways by people, since they arrived by waka so many years ago. They have been a source of survival, transportation, enjoyment, recreation, protection, industry and livelihood.

[1035] The proposed marine farms would be sited in a variety of situations from a navigational point of view – ranging from positions within embayments to sitting off headlands. Marine farms can be a hazard to navigation in coastal waters for commercial and recreational vessels. The location of the proposed salmon farm sites relative to shipping lanes, popular recreational areas and routes regularly used by recreational and commercial boats is therefore of importance to public safety. Boating traffic would have to navigate around all of the proposed farms.

[1036] We heard evidence from a number of navigation experts as well as residents and recreational users of the Sounds. Expert conferencing took place on the 05 September 2012, involving Messes Bermingham, Tear, Teear, van Wijngaarden, Connelly, Ballet and Vause.

Statutory Provisions

[1037] The purpose of the RMA as set out in Section 5 is of obvious importance to consideration of navigation issues. Those parts of the RMA's definition of sustainable management that refer to enabling people and communities to provide for their health and safety are particularly relevant.

[1038] We must also recognise and provide for the Section 6 matters of national importance that are relevant to navigation. This is limited to (d) the maintenance and enhancement of public access to and along the coastal marine area, lakes and rivers. Under Section 7 we must have particular regard to (c) the maintenance and enhancement of amenity values – given the inclusion of recreational attributes in the RMA's definition thereof, and (f) the maintenance and enhancement of the quality of the environment.

[1039] The Coastal Policy Statement contains the following provisions relevant to navigation issues:

Objective 6

To enable people and communities to provide for their social, economic, and cultural wellbeing and *their health and safety*, through subdivision, use, and development, recognising that:

- the protection of the values of the coastal environment does not preclude use and development in appropriate places and forms, and within appropriate limits;
- some uses and developments which depend upon the use of natural and physical resources in the coastal environment are important to the social, economic and cultural wellbeing of people and communities;
- functionally some uses and developments can only be located on the coast or in the coastal marine area

...

[our emphasis]

Policy 6: Activities in the Coastal Environment

...

2. Additionally, in relation to the coastal marine area:

...

- e. promote the efficient use of occupied space, including by:
 - i. requiring structures be made available for public or multiple use wherever reasonable and practical;
 - ii. requiring the removal of any abandoned or redundant structure that has no heritage, amenity or re-use value; and
 - iii. considering whether consent conditions should be applied to ensure that space occupied for an activity is used for that purpose effectively and without delay

Policy 9: Ports

Recognise that a sustainable national transport system requires an efficient national network of safe ports, servicing national and international shipping, with efficient connections with other transport modes, including by:

- a. ensuring that development in the coastal environment does not adversely affect the efficient and safe operation of these ports, or their connections with other transport modes; and
- b. considering where, how and when to provide in regional policy statements and in plans for the efficient and safe operation of these ports, the development of their capacity for shipping, and their connections with other transport modes.

[1040] The Sounds Plan defines a National Transportation Route to recognise the route of Cook Strait ferry services and also to regulate the speed of these large vessels while in the enclosed waters of the Sounds. We discuss the relationship of

the proposed Ngamahau, Kaitapeha and Ruaomoko farms to the National Transportation Route later in this section.

[1041] Navigational matters in terms of safety and efficiency and limitation on public access are woven through policy provisions in both the Marlborough Regional Policy Statement and the Sounds Plan. Policy 7.1.19 of the Regional Policy Statement seeks to:

7.1.19 POLICY – WATER TRANSPORT

Enable the safe and efficient operation of water transport systems within Marlborough consistent with the duty to avoid, remedy or mitigate adverse environmental effects.

[1042] Policy 7.2.10(a) states:

- (a) Public access and recreational use will be considered when assessing all proposals for development of the coastal marine area ...

While Policy 7.2.10(d) is that:

- (d) Allocation of space for aquaculture in the coastal marine area will be based on marine habitat sustainability, habitat protection, landscape protection, navigation and safety, and compatibility with other adjoining activities.

[1043] Within the Explanation to this Policy the Regional Policy Statement states that:

There are some areas of the Sounds where aquaculture could create a hazard to the safe navigation of vessels.

[1044] The Method to implement the above policies can be found at 7.2.11(c) of the Regional Policy Statement which provides an instruction to incorporate within resource management plans objectives, policies and controls that:

- ensure proponents of all developments in the coastal marine area consider public access and recreational use;
- consider the degree to which such developments provide for public use/benefit; and
- restrict aquaculture from Queen Charlotte Sound, significant habitat areas, and important navigational routes

[1045] Chapter 8 of the Sounds Plan addresses public access. Objective 1 of that chapter largely repeats the RMA by requiring that public access to and along the coastal marine area, lakes and rivers be maintained and enhanced. Policy 1.2 seeks that adverse effects on public access caused by the erection of structures, marine farms, works or activities in or along the coastal marine area should as far as practicable be avoided. Where complete avoidance is not practicable, the adverse effects should be mitigated and provision made for remedying those effects, to the extent practicable. Policy 1.3 seeks to prevent the erection of structures and marine farms that restrict public access in the coastal marine area where it is subjected to high public usage.

[1046] Chapter 9.2 of the Sounds Plan deals with the issue of restriction of public access to the coastal marine area due to the private occupation of coastal space. Policy 1.1 in that chapter seeks to avoid, remedy or mitigate the adverse effects of use and development of resources in the coastal marine area on navigational safety (amongst a range of other matters). Chapter 9.4 of the Sounds Plan deals with alteration to the foreshore and seabed. Objective 1 in that chapter seeks to protect the coastal environment by avoiding, remedying or mitigating any adverse effects of activities that alter the foreshore or seabed – in this case the salmon farm anchoring systems will represent an alteration to the seabed. Policy 1.1 in chapter 9.4 seeks to avoid, remedy or mitigate the adverse effects of activities that disturb or alter the foreshore on navigational safety (amongst a range of other matters).

Navigational Guidelines

[1047] The issue of navigational guidelines came in for much attention during the course of the hearing. The document referred to was the *Aquaculture Management Area & Marine Farm Guidelines* (2005). Capt Alex van Wijngaarden, the Harbourmaster, discussed these Guidelines in his evidence. He holds the NZ Foreign Going Certificate of Competency and prior to his appointment as Harbourmaster, held the position of a Deck Officer on the NZ Rail Interlander Cook Strait ferry.⁷⁶²

[1048] In caucusing the navigational experts came to a number of joint conclusions regarding these Guidelines, as follows:⁷⁶³

⁷⁶² van Wijngaarden EiC [27] – [37]

⁷⁶³ Joint Statement Navigation Experts at 1 & 2

- [a] The Guidelines are not maritime rules in terms of the Maritime Transport Act 1994;
- [b] They were amended in 2005 to include all forms of marine farming, however Mr Geraint Bermingham believed that the amendment process did not seem to capture the implications of the differences between mussel farms and salmon farms; and
- [c] The Guidelines are relevant to salmon farms.

[1049] At first there was a difference of opinion amongst the experts as to whether the farms were “offshore” (more than 200m from the shore in “coastal waters”) or “inshore” in terms of the Guidelines. If a farm is “offshore” then the guidelines set a 1000m separation distance between the structure and a recognised navigational route. If they are “inshore” a 500m separation distance applies. Following the submissions from Yachting New Zealand it became quite clear that the proposed farms would be “inshore” as these locations within the Sounds are defined to be “enclosed waters” and not “coastal waters”.⁷⁶⁴ The evidence of Mr Geraint Bermingham would seem to concur with this view.⁷⁶⁵

Ngamahau

[1050] The Ngamahau farm is located in Tory Channel, adjacent to a section of coast between Deep Bay and Ngamahau Bay. Tory Channel is approximately 1,250m wide at this point, a reasonable distance through which both powered and sailing vessels can navigate with a level of comfort. However, this changes somewhat if larger vessels are navigating the Entrance at the same time. Tory Channel lies on the route taken by the Wellington to Picton ferries and a number of other larger vessels on the way to unload in Picton.

[1051] The proposed salmon cages would be positioned some 209m from the shore, with the outer edge of the farm being approximately 330m from the inbound ferry route.⁷⁶⁶ The Ngamahau farm is sited within the national transportation route as designated in the Sounds Plan. On this route the ferries may travel at a speed greater than 15 knots, up to 20 knots, within the enclosed waters of the Sounds.

⁷⁶⁴ Transcript at 2357–2360

⁷⁶⁵ Bermingham Rebuttal at [3.14][a] & [b]

⁷⁶⁶ Walker Navigation Report at [197]

[1052] Mr David Walker gave evidence on behalf of King Salmon. He is a Master on the Interislander ferry, amongst other vessels. Relying on his experience with the existing salmon farm at Clay Point, at some 315m from the inward track of the ferries⁷⁶⁷ he considered the proposed farm at Ngamahau “to be acceptable from a navigational point of view”.⁷⁶⁸

[1053] Mr Walker explained that in order for a large ship to become dangerously close to the proposed Ngamahau farm it would have to be initially north of the inward track. If an accident did happen to take place at the point of collision with the proposed Ngamahau farm, the vessel would be approximately one minute from running aground.⁷⁶⁹

[1054] The greatest risk in the channel would be the possibility of the Ngamahau farm breaking away and floating toward the Entrance. Mr Walker advised us that “close to an absolute assurance” would need to be given that this would not happen, as a breakaway farm meeting an inbound ferry at the entrance would be a serious situation.⁷⁷⁰

[1055] Mr Walker advised us to be cautious not to overstate the risks of the farm breaking away. His reasons included the position of the farm compared to the other salmon farms in the channel; the time it would take the farm to drift to the Entrance on an outgoing tide (approximately 60 minutes); the fact that the farm would be constantly manned; and diversion of vessels to the Northern Entrance of Queen Charlotte Sound occurs when Tory Channel is closed, amongst others.⁷⁷¹

[1056] Mr Walker stated⁷⁷²:

In order for this sort of circumstance to develop into a serious incident, a number of failures will need to occur. The starting point must be good engineering. However, in the event of a mooring failure, even at worst case scenario, there is significant time before significant risks arise.

[1057] It was Mr Walker’s view that there was sufficient sea room for small vessels to navigate between the shore, the farm and the ferry track.⁷⁷³ It was also his

⁷⁶⁷ Ibid at Appendix 6

⁷⁶⁸ Ibid at [199]

⁷⁶⁹ Ibid at [200]

⁷⁷⁰ Ibid at [202]

⁷⁷¹ Ibid at [203]

⁷⁷² Ibid at [204]

⁷⁷³ Walker EiC at [1][d]

recommendation that salmon farms in Tory Channel should have installed Class B AIS Transponders.⁷⁷⁴ He also recommended emergency procedures, particularly for the Ngamahau farm.⁷⁷⁵

[1058] Capt van Wijngaarden concentrated on the issue of separation distances between recognized navigational routes and marine farms in general. Other issues of concern included the danger posed by floating ropes, the nautical misadventures of some King Salmon staff, and the issue of farm break-away which we deal with in the engineering section of this decision.

[1059] In the case of the proposed Ngamahau farm we are of the opinion that the farm is positioned in an enclosed waterway, and as such a 500m separation distance would apply in terms of the Guidelines.

[1060] Mr Bermingham, who is a risk management consultant and chartered professional engineer, agreed that the three farms (Ngamahau, Ruaomoko and Kaitapeha) were “unquestionably” near to the recognized navigation route. He pointed out however that within Tory Channel the rocky shoreline poses a greater threat than the salmon farm structures. We agree.

[1061] He further stated:⁷⁷⁶

If a case is to be made that large vessels should reduce speed when passing the farm locations, then a stronger case can be made for the same speed restriction to be applied through the whole of Tory Channel. This is not the case and therefore must assume that the council and Maritime New Zealand continue to deem the current speed restrictions to be ‘safe’.

[1062] The same point was echoed, by Mr Walker who also attached a Map⁷⁷⁷ that diagrammatically indicated how many of the headlands contained within Tory Channel lay inside the 500m separation distance line proposed by the navigational Guidelines.⁷⁷⁸ He said the strict application of a 500m requirement was unnecessarily arbitrary.⁷⁷⁹

⁷⁷⁴ Ibid at [104-105]

⁷⁷⁵ Ibid at [110]

⁷⁷⁶ Bermingham EiC at [3.14]

⁷⁷⁷ Walker Rebuttal at Attachment A

⁷⁷⁸ Ibid at [3.8]

⁷⁷⁹ Ibid at [3.4]

KiwiRail

[1063] The matter of a potential reduction in speed of the Cook Strait ferries, when passing salmon farms, was of concern for the Interislander (KiwiRail) Limited.⁷⁸⁰

[1064] The submission from the Interislander was generally neutral. They were satisfied that King Salmon had satisfactorily addressed all relevant navigational safety issues save for their concern at the prospect of speed restrictions being imposed and the effect that would have on their timetables. This concern was prompted by a comment to that effect by Capt van Wijngaarden. KiwiRail's was also concerned about the effect of ferry wash on the proposed farms and the reaction to that, if any. This is a matter of reverse sensitivity.

[1065] The issue of smaller vessels passing through Tory Channel, while one or more of the ferries are navigating those waters, was raised by Mr Clive Ballet for Yachting New Zealand and the Waikawa Boating Club. He stated:⁷⁸¹

In my view passaging along Tory Channel is already tight when 2 ferries are passing and recreational boats are forced to the sides. That is particularly so if the boat concerned is a sailing vessel which is being forced as a result of the wind direction to tack up wind. The position of the proposed Ngamahau Bay site in the Tory Channel will further reduce the available channel thereby increasing the risk of accidents and/or close calls in the busy shipping channel. I note that sailing vessels when proceeding under sail have to some extent their course dictated to them by the wind direction. In addition whether they are proceeding under sail or by motor, sailing vessels are unlikely to have the speed to outrun the ferries. Accordingly sailing vessels, whether under sail or under power, need the ability to move to the sides of the channel to avoid ferry traffic.

[1066] Mr Walker countered this, when he commented on the evidence of Mr Peter Vause and stated:⁷⁸²

The area in the vicinity of the Ngamahau farm is one of the easiest places to navigate in Tory Channel. I do not anticipate the presence of the Ngamahau farm will change this.

In relation to the ferry tracks, these are laid down in our manuals and we follow them when possible. However there are many reasons why deviation is necessary, including the presence of small boats. I have considered the need for deviation in the context of the Ngamahau farm. I am confident no significant navigational issues will arise if the proposed farm goes ahead.

⁷⁸⁰ Davis EiC at [31]

⁷⁸¹ Ballet EiC at [22]

⁷⁸² Walker Rebuttal at [3.60]

Whilst I am not a yachtsman, I have good experience of navigating amongst yachts and navigating visiting yachts that tend to run up the centre of Tory Channel. I have observed the action of yachts in the vicinity of the proposed farms (particularly at Ruaomoko and Kaitapeha) and conclude they are no concern to the ferries.

[1067] Mr Donald Jamison a one-time ferry master plying Tory Channel, and a retired Harbourmaster, told us during cross-examination that as a “private individual running my own launch, I would have no problem with any of the proposed marine farms from a navigational point of view”.⁷⁸³

[1068] Mr Clive Ballett, for Yachting NZ showed there were no boating club moorings within close proximity to the proposed Ngamahau farm, there only being one shown in Ngaruru Bay toward the western end of Tory Channel.⁷⁸⁴

[1069] Two risk assessment reports were commissioned to look at any potential risk posed by the establishment of the proposed nine salmon farms in the Marlborough Sounds. One for King Salmon authored by Sandy Pont, a director of Enhanced Operating Systems Limited, and the other by R M Robinson a Director and Chairman of R2A Due Diligence Engineers (Australia) on behalf the Marlborough District Council. Perhaps unsurprisingly the two reports came to conflicting conclusions.

[1070] Ms Pont’s conclusion was that possible risks associated with these King Salmon applications were at a low or reasonable level. Mr Robinson seemed to question why the farms needed to be in the Sounds at all. We did not find either report helpful in assessing the magnitude of risk.

Finding

[1071] We found the evidence of Mr Walker to be the most objective and helpful. We are conscious that the proposed farm is within the separation distance prescribed in the guidelines. However these guidelines are not rules and professional judgment must be exercised in determining whether a greater or lesser separation distance should apply in a particular situation. We rely on the extensive evidence and cross-examination that we heard. We conclude that the proposed salmon farm at Ngamahau would have little or no adverse effect on navigation.

⁷⁸³ Transcript at 2463

⁷⁸⁴ Ballett EiC at Attachment CB1

Ruaomoko/Kaitapeha

[1072] The Ruaomoko and Kaitapeha farms are located at the convergence of Queen Charlotte Sound and Tory Channel in the Marlborough Sounds. The Kaitapeha farm is proposed to be sited immediately adjacent to Kaitapeha Point. The cages will be approximately 171 m north of the shoreline at the headland. The Ruaomoko farm is to be situated close by, with some 300 m between the cage structures of the two farms.

[1073] There would be approximately 170m of clear sea room, between the shoreline and the cages of both farms, to allow for the navigation of recreational boats steering due north or south.

[1074] Mr Walker states in his report attached to the application:⁷⁸⁵

From a navigational point of view the proposed Ruaomoko and Kaitapeha farms are in a complex area. This area includes:

- Inward and outward bound Cook Strait ferry traffic rounding Dieffenbach Point;
- Other major shipping movements by log ships and cruise ships transiting to or from Shakespeare Bay/Picton Harbour to the Northern Entrance;
- Recreational vessels travelling to and from the outer Queen Charlotte Sound and Tory Channel;
- Recreational Vessels fishing off Dieffenbach Point;
- Vessels scalloping north west of Dieffenbach Point.
- This is also a common meeting point for inward and outward ferries, particularly when Aratere, Kaitaki and Santa Regina are all on schedule on their current timetables.

From a ferry perspective outward vessels entering Tory Channel from Queen Charlotte Sound and then transiting Tory Channel must, in order to follow the track as laid down in the passage plan, execute the turn with some precision, as Dieffenbach Reef is avoided to starboard, whilst ensuring that the rate of turn is adequate to avoid excessive cross track error, across to the east and towards the path of the inward vessel steering 355 degrees.

In the context of the rules, small vessels less than 500 gross tonnage are required to keep out of the ferry's way. However often, recreational craft will fish in the vicinity of Dieffenbach Reef where they occasionally prevent the ferries from starting their turn to starboard in a timely fashion. (The boats fishing normally move away in good time.)

⁷⁸⁵ Walker Report at [213] – [217]

Although I have never seen it happen with an inward vessel in the vicinity, it is common enough to complete the outward Dieffenbach Point turn with about 80m of cross track error, as for whatever reason the vessel would require excessive helm, and consequent passenger discomfort, to be 'on the track' at the completion of the turn.

[1075] It was Mr Walker's view that there was sufficient sea room for small vessels to navigate between the shore, the farms and the ferry track.⁷⁸⁶ He recommended that farms at Ruaomoko and Kaitapeha should also install Class B AIS Transponders.⁷⁸⁷ This suggestion was made to assist in the event of anchor failure and breakaway in the vicinity of this busy maritime intersection.

[1076] We were told, by Mr Peter Beech, that an outward bound ferry was involved in an incident that involved a loss of steerage, resulting in the vessel running aground in close proximity to the site of the proposed Ruaomoko farm.⁷⁸⁸ While this incident did not result in any loss of life, we accept it was still a serious matter and an indication of the vulnerable nature of this section of water on the route from Queen Charlotte Sound into Tory Channel.

[1077] The proposed Ruaomoko and Kaitapeha farms are sited within the National Transportation Route as set out in the Sounds Plan. It would appear from the map in Volume 3 that the Kaitapeha farm would be dissected by the boundary of this designated route. Accordingly, Policy 9 of the Coastal Policy Statement is particularly relevant to consideration of the proposed Ruaomoko and Kaitapeha farms.

[1078] Also of relevance in the Coastal Policy Statement Policy 6(2)(b) due to the use of this area by recreational boats:

- b. Recognise the need to maintain and enhance the open public space and recreation qualities and values of the coastal marine area.

[1079] Ruaomoko would lie within the 500m guideline separation distance, if taken from an alternative ferry track described by Mr Walker.⁷⁸⁹ He referred to the fact that the farm is sufficiently distant from the ferry track so as to enable a deviation from the inward track to safely take place and to provide for safe passage for small

⁷⁸⁶ Walker EiC at [1][d]

⁷⁸⁷ Ibid at [104] – [105]

⁷⁸⁸ Transcript at 3147

⁷⁸⁹ Walker EiC at [1c] & Appendix 8

vessels between the ferry track, the farm and the shore. This would allow for a deviation angle of some five degrees.

[1080] With regard to recreational and small vessels a number of submitters expressed concern about crossing Tory Channel in heavy southerly weather. There appeared to be a genuine concern amongst these submitters, most of whom use the route on a relatively regular basis. This manoeuvre we were told, involved hugging the western side of Arapaoa Island, heading southwest, to the vicinity of just south of the proposed Ruaomoko Farm, and then turning into the wind to have the waves on the bow while crossing the channel to Dieffenbach Point. We refer here to three submitters, although here were a number of others who echoed the sentiment.

[1081] Mr Roy Grose is the Sounds Area Manager for the Department of Conservation and travels through this area on a regular basis, as part of his job. During cross-examination he related how, in southerly conditions, they would hug the coastline on the northern side along Arapaoa Island. Travelling, usually some 100m to 200m from the coast, until they reached the area just south of the Ruaomoko farm and then in his words “whip across” to Dieffenbach Point to continue their journey along the northern coastline into Waikawa Bay.⁷⁹⁰

[1082] Mr Grose also described his observations of recreational boats in the area:⁷⁹¹

On Sunday 1st July 2012 at 3.30 pm I noted three recreational fishing boats, of various sizes and with various numbers of fishers trying their luck, directly in and around the proposed Ruaomoko salmon farm site. The wind was light and blowing in a southerly direction.

I am also aware, as I have done this myself, that in strong southerly and south- east wind conditions boaties hug the western edge of Arapawa Island and the Ruaomoko Point shoreline to shelter from the biting wind and rough sea conditions. Both the proposed Kaitepeha and Ruaomoko farms are directly in the path of this well used route which boaties take to get safely back to the marinas at Picton and Waikawa.

Both proposed farm sites are located in areas of relatively high recreational and commercial boating traffic particularly over the summer period. Sailing also occurs in this area but is less common, as are sea kayaking, diving and use by the Outward Bound students in sailing cutters.

[1083] Mr Peter Beech, who appeared on behalf of The Guardians of the Sounds, also referred to navigation in the southerly conditions that can invade this area. He illustrated to us, by way of the use of photographs, the fog banks that roll over the

⁷⁹⁰ Transcript at 1699

⁷⁹¹ Grose EiC at [65] – [67]

hills at Dieffenbach Point and envelope parts of Queen Charlotte Sound. The fog does from time to time, he explained, cover the sites of the Ruaomoko and Kaitapeha farms.

[1084] Mr Beech described his experiences navigating in the vicinity of the two proposed farms in heavy southerly weather. His description was comprehensive and detailed. For brevity we simply say he concluded that the Ruaomoko and Kaitapeha farms would be directly in the way of the safest route for crossing the Queen Charlotte Sound/Tory Channel junction in heavy southerly weather, a time of heightened maritime danger.⁷⁹²

[1085] Mr Beech also described the area (given its apparent propensity to attract fish) as the most popular recreational fishing site in Queen Charlotte Sound.

[1086] Mrs Jean Hadley, appearing on behalf of the East Bay Conservation Society, eloquently expressed the concerns of the Society in terms of the problems experienced while navigating past the entrance of Tory Channel in Queen Charlotte Sound.⁷⁹³ These concerns can be summarised as follows:

- [a] Several of the proposed salmon farms are directly on the navigation route of small craft taking advantage of the shelter of the coastline during severe weather;
- [b] “Bay hopping” is a navigational method commonly used by people in the Sounds during rough weather. This method involves cutting into the openings of individual bays and catching the tops of waves as the vessel is angled across to a point where it is safe to turn in the lee of the opposite hill to run out of the bay and round the next point with the waves;
- [c] The Ruaomoko and Kaitapeha farms are in the location commonly used for shelter by smaller vessels that are “bay hopping” in adverse southerly weather, before attempting to cross the open water between the headlands at the Queen Charlotte Sound entrance to Tory Channel. Travelling inshore of those farms in adverse weather is not a desirable alternative; and

⁷⁹² Transcript at 3135

⁷⁹³ East Bay Conservation Society EiC at [80] – [87]

[d] Given the circumstances of the people who live and recreate in the Sounds it is necessary for maritime travel to occur at times of adverse weather – delaying travel until the weather improves is sometimes not an option.

[1087] Capt van Wijngaarden, under cross-examination by Mrs Hadley, generally agreed with the scenario's outlined by these witnesses, and the action employed by them to navigate in these conditions.⁷⁹⁴

[1088] It was suggested by some witnesses that perhaps it would be unwise for residents and visitors to navigate these waters in such heavy weather. We agree good navigation practice dictates that caution is required in these circumstances, and that the principal of "discretion is the better part of valour" should apply. However, we also find and accept that sometimes circumstances do not allow such discretion to be practiced as set out by the witnesses.

[1089] We have considered all this evidence, including that of other witnesses, and conclude this is indeed a matter of critical importance in terms of safe navigation in this area of Queen Charlotte Sound.

[1090] The importance of the location was also addressed by many submissions relating to recreational fishing and diving. Much of that evidence was presented on the Waikawa Marae. One such submission was presented by Mr Stephan (Bosun) Huntley, who has a long history of customary and commercial fishing and diving for kaimoana in Tootaranui (Queen Charlotte Sound) and Kura Te Au (Tory Channel). He stated:⁷⁹⁵

I can't believe that King Salmon have the cheek to apply for these sites. Ruaomoko is the most popular customary and recreational fishing spot in Tootaranui. How well were the public consulted over this site, for not one but two farms side by side.

Finding

[1091] We conclude therefore, that although the farms would generally have little effect on the safe operation of larger commercial vessels, the weight of evidence regarding these sites is that the proposed farms would generate a significant adverse

⁷⁹⁴ Transcript at 2804

⁷⁹⁵ Ibid at 3054

effect on navigational safety for smaller vessels. This effect cannot be satisfactorily mitigated. Accordingly, the farms do not satisfy Policy 6(2)(b) of the Coastal Policy Statement; Policy 7.1.19 of the Regional Policy Statement; and Policy 1.2 of Volume 1 of the Sounds Plan.

Papatua

[1092] Port Gore is a large bay, at the northern tip of the Marlborough Sounds, between Cape Jackson and Cape Lambert and is approximately 2.5 nautical miles wide and 5.5 nautical miles to the head of the bay. The Papatua is proposed to be sited in an embayment called Pig Bay. It is described by Ms Sarah Dawson as "... a remote part of the Sound with little traffic".⁷⁹⁶

[1093] On the landward side of the proposed King Salmon farm, in Pig Bay, are three existing mussel farms that are listed in Appendix D2 of the Sounds Plan. The underlying zoning is CMZ1. To the north is the Cape Lambert Scenic Reserve administered by the Department of Conservation. In the middle of the bay lies the wreck of the Mikhail Lermontov, a Russian cruise liner that struck rocks at Cape Jackson and later sank in 1986. The wreck is a dive site of national interest and generates boat traffic to and from Picton. This traffic generally follows a course some way from the proposed site of the Papatua farm.

[1094] The area sought to be rezoned Coastal Marine Zone 3 at the Papatua site is some 91ha. The farm would consist of two rows of circular plastic fish pens, which would be rotated over the zoned area. The maximum area to be covered by the actual sea cages at any one time would be 1.26ha. The site would not have a permanently moored barge but would be serviced by boat as required.

[1095] The requirement for proper navigational lighting, as directed by the Harbourmaster, along with the low level of boating traffic in the area, will go a long way to mitigate the effect of the presence of a salmon farm at this site. We were told the bay is used from time to time, by larger vessels, for shelter from heavy weather in Cook Strait. The navigational lighting of the farm, and the size of Port Gore lead us to believe the effects on this practice will be minimal. The weather conditions in Port Gore are generally those that are experienced in Cook Strait itself. Mr Walker advised us that the site of the Papatua farm is not a recommended

⁷⁹⁶ Dawson EiC at 48

anchorage.⁷⁹⁷ The anchorage positions noted in the NZ Pilot are well clear of the proposed farm site.⁷⁹⁸

[1096] There were no contested issues with regards to the proposed Papatua site remaining after the expert conferencing.

Finding

[1097] Given the remote and isolated nature of Pig Bay, and the amount of room available within the bay, and low usage by recreational craft we believe very little impedance of watercraft will occur. We find the effect on navigational safety of the proposed Papatua farm would be minimal.

Waitata

[1098] The proposed Waitata salmon farm is positioned on the western side of the Waitata Reach in the Pelorus Sound. Mr David Walker said:⁷⁹⁹

Waitata Reach is a deep passage at the entrance of Pelorus Sound, influenced by the tide. It is located in the outer Pelorus Sound which receives relatively little boat traffic compared with other parts of the Sounds. Waitata Reach does lie on the navigation route between Havelock and Forsyth Bay in the Cook Strait. By the time a mariner is prepared to venture into those regions, they are likely to be reasonably skilled.

[1099] Mr Walker goes on to describe boating traffic within Pelorus Sound, in his evidence, where he states⁸⁰⁰:

The Pelorus Sound has more small commercial marine farming traffic than the Queen Charlotte. The Pelorus Sound is a much less popular area for sailing due to the gusty nature of the wind and the shallow upper reaches, and has generally much less recreational traffic than the Queen Charlotte.

[1100] The Waitata Reach is approximately 2.2kms wide where the proposed Waitata and Tapihi farms would be located. However, if both the Tapihi (on the eastern side of Waitata Reach) and Waitata site were to be developed this would be reduced to some 1.7kms. This is still a substantial distance to navigate both powered and sailing vessels through with comfort.

⁷⁹⁷ Walker EiC at [57]

⁷⁹⁸ Ibid at [59] and Appendix 5

⁷⁹⁹ Ibid at [43]

⁸⁰⁰ Walker Navigation Report at [102]

[1101] The zoned area of the farm would be 16.5ha, with the actual caged area some 1.5ha in size. A standoff distance of some 20m from the cage boundaries, recommended in expert caucusing, would further reduce the space to navigate between the shore and the farm to around 180m.

[1102] During the expert caucusing it was agreed, by the parties⁸⁰¹ that:

For the Waitata/White Horse Rock farm sites it would not be prudent to routinely navigate inshore of the farms.

[1103] This statement assumed that both the White Horse Rock and Waitata farms would be developed. If for example the White Horse Rock farm was not established, then there would be approximately 180m to navigate between the shore and the farm. According to the navigational experts, this would be sufficient for safe passage, at least for powered vessels, when compared to other proposed farms within Waitata Reach. This also compares favourably with mussel farms elsewhere in the Pelorus Sound.

[1104] There are no private or public moorings in the vicinity of the proposed farm. Mr Michael Connelly's map⁸⁰² showed a number of club moorings and navigational routes through the Waitata Reach. A route map produced by Capt van Wijngaarden⁸⁰³ confirmed those routes to be basically correct.

[1105] The marine traffic on the western side of the reach is shown to skim the seaward side of the Waitata farm. We agree it is unlikely that sailing vessels would wish to navigate between the shore and the farm,⁸⁰⁴ however there would be an abundance of sea room between the Waitata and Richmond farms. We also concur that most powered pleasure craft would have no difficulty navigating the waters between the farm and the shore.

[1106] Mr Walker described the potential weather conditions, in the Waitata Reach, and concluded that for sailing vessels in heavy weather sailors would prefer to remain in the middle of the channel, as winds become unpredictable close to shore.⁸⁰⁵

⁸⁰¹ Joint Statement Navigation Experts at 5

⁸⁰² Exhibit Connelly MCB

⁸⁰³ Exhibit van Wijngaarden 1

⁸⁰⁴ Joint Statement navigation at 6

⁸⁰⁵ Walker EiC at [48]

[1107] Mr Geraint Bermingham goes one step further when he suggested that a well-lit salmon farm could actually be an aid to navigation.⁸⁰⁶ This point was supported by Mr Brian Tear where he suggested a green starboard lateral light of up to two nautical mile range be fitted on the two seaward corners of the proposed Waitata farm to enhance navigation.⁸⁰⁷ He goes on to mention that “this is a opportunity to install pilotage lights where there are otherwise none.”⁸⁰⁸ This lighting issue is under the jurisdiction of the Harbourmaster.

[1108] The site visits we took to the area were helpful in giving us a perspective on the influence that appropriate siting of farms has on safe navigation. It helped us to better understand the views presented to us by way of evidence and submission.

Finding

[1109] We conclude that the proposed Waitata farm would have little or no effect on the ability of recreational and commercial vessels to navigate safely and without undue inconvenience, both north and south, through Waitata Reach. The Waitata farm is proposed to be located immediately adjacent to the White Horse Rock farm, and we now address the navigational effects of the White Horse Rock farm.

White Horse Rock

[1110] The proposed White Horse Rock farm lies in the CMZ2 in Waitata Reach, between Boat Rock Point and Burnt Point. The proposed fish cages are to lie between 99m and 115m from the shoreline.⁸⁰⁹ A standoff distance of some 20m from the cage boundaries, recommended by expert caucusing, would further reduce the space to navigate between the shore and the farm to around 90m. We have referred earlier to the views of the experts on the prudence of navigating inshore of the White Horse Rock and Waitata farms. We have also noted the substantial navigation distance available in the Waitata Reach on the seaward side of the White Horse Rock and Waitata farms.

[1111] The Waitata farm would be on the seaward side of the White Horse Rock farm. If both farms were to be developed there would be a block of fish cages some 200m wide, with a 77m gap between the two sets of cages after allowing for a 20m

⁸⁰⁶ Bermingham EiC at [57]

⁸⁰⁷ Tear EiC at [158]

⁸⁰⁸ Ibid at [141]

⁸⁰⁹ Walker EiC at Appendix A Map 1

standoff distance on both sides. We acknowledge that navigational matters and recreational use are particularly relevant at this site. Mr Connolly's map⁸¹⁰ as referenced earlier showed there are no club moorings in close proximity to the White Horse Rock site. Mr Connolly informed us that the White Horse Rock and Waitata farm locations are popular for recreational fishing and on a well used navigational route.⁸¹¹

[1112] This point was also highlighted by Mr Pat Williams, for the Kenepuru and Central Sounds Residents Association. He expressed their concern that the proposed siting of the farms, would not allow clear passage from point to point. At the same time, Mr Williams told us of his concern regarding a multitude of navigation lights visible to mariners in the reasonably narrow reach.⁸¹²

[1113] Mr Walker saw the farm as an object that would need to be navigated around and, other than that, would pose no issue.⁸¹³

[1114] We prefer, in this instance, to rely on the evidence of experienced local mariners. It is our view, therefore that the adverse effect on sea room/navigation safety and marine recreational activities in this coastal area would be more than minor should the White Horse Rock farm be established inshore from the Waitata farm.

Richmond

[1115] The proposed Richmond salmon farm is positioned on the eastern side of Waitata Reach, at the mouth of Richmond Bay, in the Pelorus Sound. The Waitata Reach is approximately 3.5kms wide when measured across to Reef Point. This is a substantial distance within which to navigate both powered and sailing vessels with comfort.

[1116] The zoned area of CMZ3 water space would be 16.5ha, with the actual caged area 1.5ha in size. The boundary of the cages would stand some 200 m to 230 m offshore. The standoff distance would reduce the space to navigate to between 180m to 210m.

⁸¹⁰ Connolly EiC at Exhibit MCB

⁸¹¹ Ibid

⁸¹² Williams EiC at [58]

⁸¹³ Walker EiC at [1a]

[1117] The farm sits inside the navigational route described by Mr Michael Connelly⁸¹⁴ and verified by Mr Alex Van Wijngaarden,⁸¹⁵ in a small embayment on the western side of the Tapipi headland. The cages of the farm would sit approximately 750 m from those of the proposed Tapipi farm.

[1118] Richmond Bay has a boating club mooring on the northern side of the bay. The route to this mooring would pass adjacent to the proposed farm, if approaching from the north. Other than that the farm would have only minimal effect on navigation into the bay.

[1119] In expert caucusing it was agreed that the clearance between the shore and the sites are adequate.⁸¹⁶ We agree with the experts that it is unlikely that sailing vessels would wish to navigate between the shore and the farm,⁸¹⁷ however there would be an abundance of sea room on the outside of the Richmond farm. We also concur that most powered pleasure craft would have no difficulty navigating the waters between the farm and the shore.

[1120] Mr Pat Williams mentioned that scalloping occurs in Richmond Bay.⁸¹⁸ Given the proposed location well to one side in the mouth the bay, we believe it would be most unlikely to impact significantly on any dredging.

[1121] Although the navigation routes described by Mr Connelly⁸¹⁹ are indicative only, when the cage boundaries are taken into consideration, the traffic would pass on the outside of the farm. This would apply only to vessels entering the bay from the north.

[1122] The site visits we undertook were helpful in understanding the influence of the siting of farms on safe navigation and the views presented to us by way of evidence and submission.

⁸¹⁴ Connelly Exhibit MCB

⁸¹⁵ van Wijngaarden

⁸¹⁶ Joint Statement Navigation at 6

⁸¹⁷ Ibid

⁸¹⁸ Williams EiC at 19

⁸¹⁹ Connelly Exhibit MCB

Finding

[1123] We conclude that the proposed Richmond farm would have little effect on the ability of recreational and commercial vessels to navigate safely and without undue inconvenience in and out of Richmond Bay. We believe also the vessels navigating north or south through Waitata Reach would be generally unaffected by the presence of the farm.

Tapipi

[1124] The proposed Tapipi salmon farm is positioned on the eastern side of Waitata Reach. The Waitata Reach is approximately 2.2kms wide at this point. However if both the Tapipi (on the eastern side of Waitata Reach) and Waitata site were to be developed this would be reduced to some 1.7kms. This is still a substantial distance to navigate both powered and sailing vessels through with comfort. The proposed farm is the same size as that at Waitata and the space to navigate between the shore and the farm would be between 300 m and 350 m.

[1125] During the hearing Mr Hori Turi Elkington of Ngati Koata, tabled a chart⁸²⁰ showing the traditional waka routes navigated by his (and likely other) iwi, over the years in the Marlborough Sounds and Tasman Bay. Ngati Koata whose rohe moana includes the waters of the Waitata Reach consider these waka routes as taonga. The chart was produced on a relatively small scale, however it does show the route down the Reach, passing through the proposed site of the Tapipi farm and relatively close to the Richmond farm.

[1126] Ngati Koata's relationship with this stretch of water, was best described by Mr Elkington:⁸²¹

Ngati Koata are a seagoing iwi. My family have been associated with navigation for generations. It is of utmost importance to be able to navigate the sea. In our ancestors days we would travel extensively and frequently by waka. Attached to my evidence and marked "1" is a chart of our waka routes. The proposed farms at Taupipi and Richmond will interfere with the waka routes and by so doing would impinge on our mana, our kaitiakitanga and out rangatiratanga.

⁸²⁰ Elkington EiC at Attachment1

⁸²¹ Ibid at [29]

[1127] The proposed salmon farm would lie approximately 350m off the prominent headland known as Tapipi. This farm, it was submitted, would be in the direct path of boating traffic travelling from Havelock to the outer Sounds and Cook Strait. This was a point confirmed by Mr Connelly.⁸²²

[1128] To the north of the proposed Tapipi site is Ketu Bay with a number of boating club moorings. Ketu is also a very popular site for recreational scallop dredging. Mr Connelly stated:⁸²³

For many years Ketu Bay in the Outer Pelorus has been the most heavily used bay in the Marlborough Sounds for recreational scallop fishing. On any weekend during the season and particularly over the December/January period there can be up to 35 boats engaged in scalloping in the bay at one time.

[1129] This fact, along with the use of Ketu Bay for mooring recreational boats, indicates the importance of this bay to recreational amenity value and the need to maintain safe navigable waters in the area.

[1130] In expert caucusing⁸²⁴ it was agreed that apart from the Waitata/White Horse Rock farms, the clearance distances between the shore and the farm sites, are adequate for recreational craft navigation in Waitata Reach, including the Tapipi farm.

[1131] We agree it is unlikely that sailing vessels would wish to navigate between the shore and the farm, and there would be an abundance of sea room on the outside of the Tapipi farm between that and the Waitata site on the other side of the Reach. We also concur that most powered pleasure craft would have no difficulty navigating the waters between the farm and the shore if they so wished.

[1132] The issue here is however, that this is a popular and well used navigational route, for a good percentage of the traffic plying the waters of Pelorus Sound, in both directions. While it is entirely feasible for traffic to navigate around the farm, it would be an interruption that amounts to something more than an inconvenience, as suggested by Mr Walker.⁸²⁵

⁸²² Connelly EiC at Exhibit MCB

⁸²³ Ibid at [73]

⁸²⁴ Joint Statement Navigation at 5

⁸²⁵ Walker EiC at [1(a)]

Finding

[1133] We conclude that boating traffic, on this popular navigation route, would be significantly adversely affected by the siting of the proposed Tapiipi farm. This effect would apply to the passage of vessels entering and exiting Ketu Bay, as well as through traffic travelling north or south in the Reach itself.

Kaitira

[1134] The proposed Kaitira salmon farm is positioned on the eastern side of Waitata Reach to the north of the prominent headland referred to as Post Office Point. The Waitata Reach is approximately 2.35kms wide at this point. If the farm were to be established, this distance would be reduced to 2.03kms from the outer boundary of the cages to West Entry Point on the northern side of Waitata Reach. This is still a substantial distance to navigate both powered and sailing vessels through with comfort. The space to navigate between the shore and the farm would be approximately 255m.

[1135] We agree it is unlikely that sailing vessels would wish to navigate between the shore and the farm,⁸²⁶ however there would be an abundance of sea room on the outside of the Kaitira farm. We also concur that most powered pleasure craft would have no difficulty navigating the waters between the farm and the shore.

[1136] This proposed farm would be in the direct path of boating traffic travelling from the inner Sounds, in the south, to Forsyth Bay and Allen Strait. Mr Connelly's map confirmed this which showed a navigational route passing around Post Office Point to enter Forsyth Bay.⁸²⁷

[1137] While Mr Bermingham suggested that a well-lit salmon farm could actually be an aid to navigation,⁸²⁸ and Mr Tear⁸²⁹ mentioned that "this is a opportunity to install pilotage lights where there are otherwise none", there appears to us no doubt that the proposed Kaitira farm would lie on a popular and well used navigational route, for a good percentage of the traffic, plying the waters of the outer Pelorus Sound. While we believe it is entirely feasible for traffic to navigate around the

⁸²⁶ Joint Statement Navigation at 6

⁸²⁷ Connelly EiC Exhibit MCB

⁸²⁸ Bermingham EiC at [57]

⁸²⁹ Tear EiC at [141]

farm, we are of the view it would be an interruption that amounts to something more than just an inconvenience, as suggested by Mr Walker.⁸³⁰

Finding

[1138] We conclude that an obstruction of this nature, on this popular navigation route, would generate a substantial level of annoyance to boating traffic. Notwithstanding this, as there is sufficient room to navigate around the proposed farm we do not consider this inconvenience to amount to a major adverse effect.

⁸³⁰ Walker EiC at [1(a)]

ENGINEERING

[1139] An Engineering Feasibility Study⁸³¹ was commissioned by King Salmon, from OCEL Consultants NZ Ltd, and presented to the Board. This study covered the structural design of each individual farm including the location, farm development, environmental conditions, including wave dynamics, marine farm structures and layout with mooring design. The study demonstrated, from a structural engineering point of view, the feasibility of each farm.

[1140] The greatest concern for submitters from an engineering standpoint was the prospect of a farm coming free from its moorings, drifting into a navigational channel and becoming a danger to shipping.

[1141] Mr Richard Robinson told us that this occurred with the current Te Pangu Farm in 2006. It broke free from its moorings and swung round into Tory Channel. This event required the channel to be closed for a period of time, and evidently required four tugs to bring the farm under control⁸³²

[1142] The structural design of the proposed farms was not subject to any compelling criticism during the hearing. Mr Peter Beech, for the Guardians of the Sounds, did make the comment that he would not want to swing his boat on a screw anchor because in his view they are prone to failure and described the same event outlined by Mr Robinson:⁸³³

I remember that on three occasions Te Pangu farm has cut loose and, yes, they now have a mooring system using screw anchors. For a long time they were reluctant to use screw anchors and that is because we all know they have a higher failure rate than mooring blocks. The steel eyes work hard and with time they just break off. There is no way I would swing my launch off a screw anchor, I don't trust them.

[1143] Mr Gary Tear, a qualified engineer, also referred to the breakaway event at Te Pangu:⁸³⁴

With regard to the failure of the Te Pangu farm moorings in 2006 that incident was fully investigated and mooring design and procedure changed as a result. That event marked the start of OCEL's engagement. The

⁸³¹ AEE Folder 3 at Appendix 20

⁸³² Robinson EiC at [16]

⁸³³ Transcript at 3148 – 3149

⁸³⁴ Tear EiC at [10.3]

present applications are based on modern designs and not arrangements used six years ago.

[1144] Mr Teear also elaborated on the issue of screw anchors:⁸³⁵

Screw anchors will be used to moor the farm structures and a level of redundancy provided. Test pullout loading of a representative anchor will be carried out to confirm the anchor pullout capacity at each location. Quality control will be applied by monitoring the installation torque for each anchor and comparing that to the torque required to install the test anchor.

[1145] The Dowson Family expressed concerns relating to the issue of navigational safety in Tory Channel. They covered the 'break free' event at Te Pangu as well as other issues regarding safety matters in the channel.⁸³⁶

[1146] In his closing submission Mr Nolan⁸³⁷ referred to Mr Teear's evidence and the fact that was very little credible challenge to it. He said:

The chief concern from an engineering point of view is the risk that a salmon farm could theoretically break free from its moorings. Mr Teear, an engineer with over 40 years' experience in marine civil engineering concludes that the proposed salmon farms at the new sites are "fully feasible from a mooring and structural safety standpoint".⁸³⁸

[1147] Importantly Mr Teear concluded that:⁸³⁹

I confirm that, in my view, any concerns which arise out of engineering aspects can be dealt with by way of conditions. I confirm my view that I can foresee no circumstances that these farms would need to be refused on engineering grounds.

[1148] Mr Teear was not cross-examined on this matter. Nor was his evidence meaningfully challenged through competing evidence. To the contrary, during questioning by the Board, Mr Lamplough, an architect, voiced his opinion that:⁸⁴⁰

... I would say that having read the evidence of Mr Teear, I am not disputing the merits or the engineering performance of these farms, I'm sure from an engineering point of view they are stable and put together in a sensible structural fashion.

⁸³⁵ Ibid at [11.3]

⁸³⁶ Dawson submission 0968

⁸³⁷ Nolan Closing Submissions at 120

⁸³⁸ Teear EiC at [11.1]

⁸³⁹ Ibid at [11.5]

⁸⁴⁰ Transcript at 2019

Finding

[1149] While we recognise the local residents' knowledge of the local area and weather conditions, we prefer the evidence of the expert engineering witnesses, dealing with structural safety of the farms, and navigation of large vessels within Tory Channel. We find that there is no basis for refusing any of the farms on engineering grounds. The evidence satisfies us that it is most unlikely that a farm would break free from its moorings.

Effects on Salmon Farm Structural Integrity from Large Vessel Passage

[1150] Captain Alex van Wijngaarden expressed concern about the interaction between passing vessels, such as the Cook Strait ferries, and the farms. This was due to the suction effect that a moving vessel creates around itself as it moves through the water. We were told that this phenomenon was similar to that of a venturi, where an increase in water velocity flow through the venturi, causes a drop in local pressure, thus creating a significant underwater flow towards the moving vessel. This causes considerable forces to be exerted on a marine farm, depending on depth, bottom topography, speed, vessel hull and propulsion design.⁸⁴¹

[1151] Captain Van Wijngaarden believed this had not been addressed in the evidence of King Salmon and was a particularly relevant issue in Tory Channel, as there had been complaints about damage to marine farms structures from ferry wash.⁸⁴²

[1152] Mr Gary Teear was of the view that the distance between the passing objects was critical to the magnitude of the effect. He explained that there are three key dimensionless parameters that characterise the strength of the interaction: draft to depth ratio, separation ratio, and displacement ratio.⁸⁴³ Mr Teear came to the conclusion that such effects would not be of any significance.⁸⁴⁴

[1153] Having considered all the evidence on this matter, we prefer that of Mr Teear. While we understand Captain van Wijngaarden's concerns, as he freely admitted, the engineering aspects of this topic generally fall outside the area of his expertise.

⁸⁴¹ van Wijngaarden EiC at [47]–[53]

⁸⁴² Ibid at [51]

⁸⁴³ Teear Rebuttal at [3.2]

⁸⁴⁴ Ibid at [3.8]

[1154] Agreement amongst navigation and engineering experts was also reached regarding a safe approach distance for recreational vessels in the vicinity of salmon farms. The agreed distance was 20m as, at this distance, the mooring lines would be some 4m below the surface.

Finding

[1155] We thus find that any adverse effects on farm structural integrity from large vessel passage will be effectively mitigated through the form and engineering design of the farms themselves, and the separation distances from the farms to the large vessel tracks.

THE PLAN CHANGE

Statutory Basis of Decision

[1156] As we have said, Part II is the framework against which we must exercise our decision-making.

[1157] The legal submissions and planning evidence analysed the merits of the Proposed Plan Change in terms of, what is now often referred to as the *Long Bay* tests⁸⁴⁵, and also as these are set out by the Environment Court in *Clevedon Cares*⁸⁴⁶ for the post-2005 amendment to the RMA. These cases related to District Plan Changes, but all agreed there should not be any reason to depart from the approaches adopted, save as necessary to reflect the specific provisions relating to Regional Plans rather than District Plans.

[1158] The *Long Bay* tests set out fully the now well settled framework which includes Sections 72 – 76 and incorporates, by reference, Sections 31 & 32 of the RMA. Counsel modified the tests to reflect the fact that these proceedings concern a private Plan Change to a Regional Plan, and referring to the Board. We set out counsels' summary with the tests that are particularly relevant to this proposal highlighted:

A. General Requirements

1. *A regional plan change should be designed to accord with and assist the regional council to carry out its functions so as to achieve, the purpose of the Act.*
2. *When considering a regional plan change the Board must give effect to any national policy statement or New Zealand Coastal Policy Statement.*
3. *When considering a regional plan (change) the Board:*
 - a. *shall have regard to any proposed regional policy statement;*
 - b. *must give effect to any operative regional policy statement.*
4. A regional plan change must not be inconsistent with any other regional plan for the region (or a water conservation order).
5. *When considering a regional plan change the Board must also:*

⁸⁴⁵ *Long Bay – Okura Great Parks Society Incorporated v North Shore City Council*, A078/2008

⁸⁴⁶ *Clevedon Cares Incorporated & Ors v Manukau City Council*, [2010] NZEnvC211

- a. *have regard to the Crown's interest in the coastal marine area, and any relevant management plans and strategies under other Acts, and to any relevant entry in the Historic Places Register and to various fisheries regulations; and to consistency with regional policy statements and plans and proposed regional policy statements and proposed plans of adjacent regional councils;*
- b. *take into account any relevant planning document recognised by an iwi authority;*
- c. recognise and provide for, or take into account matters in a planning document prepared by a customary marine title group;
- d. not have regard to trade competition or the effects of trade competition.

6. The regional plan change must be adopted in accordance with any regulation.

7. The formal requirement that a regional plan change must also state its objectives, policies and the rules (if any) and may state other matters.

B. Objectives (the Section 32 test for Objectives)

8. Each proposed objective in a regional plan change is to be evaluated by the extent to which it is the most appropriate way to achieve the purpose of the Act.

C. Policies and Methods (including Rules) (the Section 32 test for Policies and Rules)

9. *The policies are to implement the Objectives and the Rules (if any) are to implement the Policies.*

10. *Each proposed Policy or Method (including each Rule) is to be examined having regard to its efficiency and effectiveness, as to whether it is the most appropriate method for achieving the Objectives of the Regional Plan taking into account:*

- a. *the benefits and costs of the proposed Policies and Methods (including Rules); and*
- b. *the risk of acting or not acting if there is uncertain or insufficient information about the subject matter of the Policies, Rules, or other Methods.*

D. Rules

11. *In making a Rule the Regional Council must have regard to the actual or potential effect of activities on the environment.*

E. Other Statutes

12. Finally, Regional Councils may be required to comply with other statutes.

[1159] Reference was made in counsels' submissions to the relevant *Long Bay* tests and the relevant provisions of the statutory instruments which have been earlier identified in this decision. The planning witnesses addressed the assessment of the Plan Change against the adopted *Long Bay* criteria. We do not intend to discuss in detail the large volume of evidence or the lengthy submissions that contained those assessments. Rather we propose to address as succinctly as we can the specific issues that arose under the *Long Bay* tests. They are:

- [a] Precedent;
- [b] Spot Zoning;
- [c] Compliance with statutory directions relating to planning instruments; and
- [d] The most appropriate test.

We deal with each of these in turn.

Precedent

[1160] Mr Quinn, counsel for the Council, in his opening submission, submitted the following:⁸⁴⁷

The council's submission has raised particular concerns regarding:

...

NZKS's assessment of the potential impacts of the proposed activities on landscape values and competing uses and the potential precedent effect of this application.

[1161] Later in his submission, Mr Quinn submitted:⁸⁴⁸

⁸⁴⁷ Quinn, Opening Submissions at [29]

⁸⁴⁸ Ibid at [69]

The council is concerned that NZKS's proposal will set a precedent for other similar private plan change applications. Other applicants could seek to further compromise the prohibited activity status encompassed in CMZ1 by ad hoc plan changes that are designed solely for the benefit of particular applicants.

[1162] Again, a little later in his submission, he had this to say:⁸⁴⁹

... As evidence of the practical precedent created by the NZKS application, council officers have received at least two enquiries about marine farming in CMZ1 since this hearing commenced.

[1163] Ms Tree, for the Environmental Defence Society, submitted that we should consider the “potential effects” of applications for private plan changes (and consents) that might be made at some point in the future.⁸⁵⁰ For this she relied on the High Court decision of *Kennedy’s Bush Developments Limited v Christchurch City Council*.⁸⁵¹ In that case, which related to rezoning, Chisholm J used the term “domino effects” rather than “precedent effects”.

[1164] The submissions of Mr Quinn and Ms Tree reflected issues raised by other parties and submitters throughout the course of the hearing. At the heart of their concerns, is a fear that other marine farmers, if King Salmon is successful, will seek plan changes (and concurrent resource consents) to enable aquaculture (not necessarily salmon farming) in the CMZ1 Zone.

[1165] Similar concerns as to precedent in a plan change context were raised in *Canterbury Fields*.⁸⁵² There the Environment Court was clear that the issue of precedent simply cannot arise on a Plan Change Request.⁸⁵³

The issue of precedent and cumulative effects was raised by the planning witnesses and by counsel for the Regional and District Council. These concerns are:

- a. that granting the plan change request would create a precedent; and

⁸⁴⁹ Quinn Opening submissions at [73]

⁸⁵⁰ Tree, Opening submissions at [36]

⁸⁵¹ CIV-2004-485-1189 2 September 2004 (HC)

⁸⁵² *Canterbury Fields Management Limited v Waimakiriri District Council*, [2011] NZEnvC199

⁸⁵³ Ibid at [93] – [94]

- b. make it more likely than not that neighbouring land would also be rezoned or consented for rural residential development (if requested), giving rise to adverse cumulative effects.

The first issue was framed in the language of resource consent applications; at its heart was the Councils' concern that the proposed plan change was inconsistent with the plan's objectives and policies. As the proposed rules and methods must implement the policies and in turn objectives of the District Plan and must also give effect to the operative regional policy statement, we do not see how this issue can arise on a plan change request (unless the territorial authority or the court on appeal did not observe those requirements of the Act). The comments of the Environment Court (Judge Whiting presiding) in *Bell Farms Limited and Another v Auckland City Council*, where it was argued that to allow the appeal would create a precedent effect and encourage other landowners to seek rezoning of their land, are apposite:

Precedent is thus linked to the integrity of the Plan as it would apply to a resource consent application. This being a Proposed Plan Change, the integrity of the planning instruments are addressed by the statutory provisions and the need to be consistent with the plan's objectives and policies.⁸⁵⁴

[1166] The Environment Court in *Canterbury Fields* concluded that both concerns expressed in the quote above were addressed by the statutory requirements of Sections 32, 74 and 75.⁸⁵⁵

[1167] In our view, Ms Tree's reliance on *Kennedy's Bush* is misplaced. The Court of Appeal has since confirmed that the cumulative effects of a particular application are effects which arise from that application (and not others)⁸⁵⁶ and that precedent and integrity are not "environmental effects" as such and are better dealt with under Section 104(1)(c) of the RMA. Further, *Kennedy's Bush* was a decision given on the facts of that particular case.

⁸⁵⁴ [2011] NZEnvC37 at [107]

⁸⁵⁵ At [94] & [96]

⁸⁵⁶ *Queenstown Lakes District Council v Hawthorn Estate Limited* [2006] NZRMA 424 (CA) at [83]

[1168] If a Plan Change request is made in the future for further CMZ3 sites, or some other zone for species other than salmon, then the decision-maker at the time will be required to consider the “actual and potential effects”, and any “cumulative effects”.

[1169] We agree that the law is as set out in *Canterbury Fields*. Precedent and plan integrity can be adequately catered for by applying the relevant statutory directions contained in the RMA, particularly the requirements of Sections 32, 74 and 75. We agree with Mr Nolan that this is supported at the substantive level by the following three matters:

- [a] Parliament has elected to allow any member of the public, at any time, to make an application for a private plan change (apart from limited exceptions). The private plan change process is a fundamental and important right for members of the public to be able to exercise, as without it, they are left to the mercy of a council which may have no political will to amend its Plan, or is in a state of inertia;
- [b] Parliament has specifically turned its mind to this issue again in 2011. As part of its deliberate intention to “kick-start” aquaculture, Parliament addressed the problem marine farmers were having to establish new farms in the large areas which councils had ruled out by making them prohibited activities. Section 165ZN of the RMA, inserted by the 2011 aquaculture reforms, enables an applicant to apply concurrently for a private plan change and associated resource consents; and
- [c] Parliament has turned its mind to addressing exactly how to deal with any concerns that there might be over too many applications for plan changes and resource consents occurring in practice being made. The aquaculture legislation provides the following specific powers:
 - [i] To approve the use of an allocation method by a regional council;⁸⁵⁷

⁸⁵⁷ Section 165N of the RMA

- [ii] To suspend applications to occupy the common marine and coastal area for the purposes of aquaculture activities upon receipt of a request from a regional council for such a suspension;⁸⁵⁸ and
- [iii] To direct that applications for the occupation of space for aquaculture activities be processed and heard together by councils.⁸⁵⁹

[1170] Even if we are wrong, we do not consider the concerns of the parties to be real. There is no real evidence that multiple applications will be lodged. We say so for the following reasons:

- [a] Insofar as marine farm activities are concerned, the proposed CMZ3 is specific to salmon farming so there would not be a risk of mussel farming (or other forms of aquaculture) seeking to use the zone;
- [b] While there has been some interest in marine farming in the Sounds (including salmon), there is no evidence that this will lead to multiple applications being lodged. While giving evidence, Mr Hawes indicated that he had received two enquiries regarding aquaculture in the Sounds. Of those, one was only a general enquiry and the second was in relation to Port Gore, but he did not disclose the type of aquaculture. We do not consider that either enquiry represents any probative evidence of a “goldrush”;
- [c] Iwi have also emphasised a wish to be involved in aquaculture in the Sounds. While the recent gazetted areas provide some assistance to iwi, a Plan Change is still required, and there is no evidence of any concrete proposition. Mr Hippolite, while cross-examining Ms Dawson, referred to the expense involved with the necessary Plan Change process and suggested that it was beyond iwi;⁸⁶⁰ and
- [d] Even if there were additional concurrent applications in the future, as discussed earlier:

⁸⁵⁸ Section 165ZE of the RMA

⁸⁵⁹ Section 165ZFA of the RMA

⁸⁶⁰ Transcript at 3731

- [i] Each application would need to be and should be entitled to be, assessed on its merits, including consideration of cumulative effects; and
- [ii] The Council has the ability to request the Minister of Aquaculture to suspend the receipt of applications for coastal permits for aquaculture activities if a genuine issue ever arose over multiple applications.⁸⁶¹

Spot Zoning

[1171] A number of submitters expressed concern about the Plan Change as effectively being a “spot zoning” exercise. Ms Dawson was cross-examined on the topic by Mr Quinn.⁸⁶² Mr Heal had this to say in his closing submission:⁸⁶³

I always understood when I was learning planning law, that spot single activity zones constituted very bad planning. Where they do happen, it is to accommodate an established activity that has established a true niche that can continue without impacting adjoining and other activities.

[1172] The RMA does not employ the term “spot zoning”, or anything similar. The terminology had currency in decisions made under the former Town and Country Planning Act, but has little relevance under the Resource Management Act. Criticism of scheduling for activities conducted on specific sites as “spot zoning” is thus not warranted.

[1173] While zoning at such a “micro” level, is probably not to be generally encouraged (because of the complexity of considering a multiplicity of interacting effects), site specific zoning is occasionally acceptable.⁸⁶⁴

[1174] The Environment Court said in *Mullen v Auckland City Council*:⁸⁶⁵

The Court has no difficulty with spot zoning in appropriate places: *Horrocks v Auckland City Council* and *Kamo Veterinary Holdings Limited & Northland Shelf Company No. 9 v Whangarei District Council*. There are

⁸⁶¹ Section 165ZB of the RMA

⁸⁶² Transcript at 3438 - 3440

⁸⁶³ Heal Closing Submission at [804]

⁸⁶⁴ See *Kamo Veterinary Holdings Limited v Whangarei District Council* EnvC A161/03 and *Daylight v Auckland City Council* A032/96

⁸⁶⁵ EnvC A129/2004 at [19]

occasions when integrated management requires a spot zoning because of a site's unique characteristics.

[1175] It is not uncommon for site-specific zoning to be implemented for the purposes of providing for those activities that have a functional need to be located in a particular area. Examples of such activities are ports, marinas, quarries and limeworks. Aquaculture is also such an activity as is recognised by Policy 6(2)(c) of the Coastal Policy Statement.

[1176] Underlying the issue is integrated management. Section 63 of the RMA states that the purpose of the preparation of a Regional Plan is “to assist a regional council to carry out any of its functions in order to achieve the purpose of this Act”. Section 30(1)(a) of the RMA makes it clear that one of the basic functions of a regional council is to establish and implement objectives, policies and methods “to achieve integrated management of the natural and physical resources of the region”. Those statutory directions have been carried on through to the Marlborough Regional Policy Statement⁸⁶⁶ and then to the Sounds Plan.

[1177] As we have said, aquaculture has a functional need to be situated in the coastal marine area. We have already discussed in some detail the evidence adduced by King Salmon on the specific requirements for its product in terms of water temperature, water flows, water depth, and relatively low exposure to the open ocean. We must also consider the implications of each of the proposed CMZ3 sites in the context of the surrounding CMZ1, the reserve status of the adjacent land and the relevant objectives of the Sounds Plan and the Regional Policy Statement. These are matters that need to be considered, together with the other matters discussed, when exercising our judgment as to whether or not this proposal complies with the statutory direction to provide for the integrated management of natural and physical resources.

Compliance with Statutory Directions Relating to Planning Instruments

[1178] A number of issues arose as to whether the proposal complied with the statutory directions contained in the relevant planning instruments. We address those issues now.

⁸⁶⁶ See for example Chapter 2.3 *Integrated Management of Resources*

[1179] Section 67(3)(b) and (c) of the RMA requires us to “give effect to” the Coastal Policy Statement and the Regional Policy Statement. The requirement to “give effect to” is a higher threshold than to “not be contrary to”; “not be inconsistent with”; or to “have particular regard (to)”. It is more aligned to the wording of Section 6 of the RMA which prescribes decision-makers to “recognise and provide for” matters of national importance.

[1180] It is a strong direction and requires positive implementation of the instrument.⁸⁶⁷ However, both the instruments contain higher order overarching objectives and policies, that create tension between them or, as Ms Dawson says, “pull in different directions”,⁸⁶⁸ and thus a judgment has to be made as to whether the instrument as a whole is generally given effect to.⁸⁶⁹

[1181] Planning instruments, particularly of a higher order, nearly always contain a wide range of provisions. Provisions which are sometimes in conflict. The direction “to give effect to” does not enjoin that every policy be met. It is not a simple check-box exercise. Requiring that every single policy must be given full effect to would otherwise set an impossibly high threshold for any type of activity to occur within the coastal marine area.

[1182] Moreover, there is no “hierarchy” or ranking of provisions in the Coastal Policy Statement. The objective seeking ecological integrity has the same standing as that enabling subdivision, use and development within the coastal environment. Where there are competing values in a proposal, one does not automatically prevail over the other. It is a matter of judgement on the facts of a particular proposal and no one factor is afforded the right to veto all other considerations. It comes down to a matter of weight in the particular circumstances.

[1183] In any case, the directions in both policy statements are subservient to the Section 5 purpose of sustainable management, as Section 66 of the RMA requires a council to change its plan in accordance, among other things, the provisions of Part II. Section 68(1) of the RMA requires that rules in a regional plan may be included for the purpose of carrying out the functions of the regional council and achieving the objectives and policies of the Plan.

⁸⁶⁷ *Clevedon Cares Incorporated v Manukau City Council* EnvC A011 at [50] & [51]

⁸⁶⁸ Dawson EIC at [8.22]

⁸⁶⁹ See *Whistler v Rodney District Council* EnvC A228/02; and *Tait v Hurunui District Council* EnvC C106/2008

[1184] Thus, we are required “give effect to” the provisions of the Coastal Policy Statement and the Regional Policy Statement having regard to the provisions of those documents as a whole. We are also required to ensure that the rules assist the Regional Council in carrying out its functions under the RMA and achieve the objectives and policies of the Regional Plan.

[1185] All three instruments contain objectives and policies that are effects-based. They address effects that are the subject of the contested issues - issues we have discussed in that part of this decision under the sub-heading “Contested Effects”. Our findings on each of those “Contested Issues” have been set out previously and we do not propose to repeat them here. Suffice it to say that we apply those findings as part of our evaluation and overall judgment.

[1186] In addition to the effects-based provisions there are overarching strategic policy provisions. Policy 8 of the Coastal Policy Statement is particularly relevant. That policy highlights the importance of aquaculture and its contribution to social, economic and cultural well-being of people and communities in appropriate locations. Policy 8(a) specifically identifies two matters relevant to an assessment of appropriateness – good water quality and access to land-based processing facilities. However, a wider assessment is required, including a functional need to locate in the coastal marine area; and a consideration of the effects-based provisions such as ecosystem function, natural character, landscape, amenity and cultural matters which we have already discussed.

[1187] The planners generally agreed that in many respects, the Regional Policy Statement gives little policy direction above that already contained in the RMA. For example, Objective 7.2.7 which is headed *Subject – Subdivision Use and Development of the Coastal Environment*, merely says:⁸⁷⁰

The subdivision use and development of the coastal environment, in a sustainable way.

From this, as noted by Ms Dawson,⁸⁷¹ the specific policy relating to the allocation of space to aquaculture is Policy 7.2.10(d). It states:

Allocation of space for aquaculture in the coastal marine area will be based on marine habitat sustainability, habitat protection, landscape protection, navigation and safety, and compatibility with other adjoining activities.

⁸⁷⁰ Chapter 7 – Community Well-Being

⁸⁷¹ Dawson EiC at [5.5]

[1188] We agree with Ms Jamieson⁸⁷² that the “give effect to” imperative does not only apply to the Policy Statement Objectives and Policies, the whole document needs to be considered including Methods. The Policy Statement Methods listed for Objective 7.2.7 and Policy 7.2.10 give specific direction in relation to Queen Charlotte Sound. Method 7.2.11(c) in particular states:

- (c) Incorporate within resource management plans objectives, policies and controls that:
- Ensure proponents of all developments in the coastal marine areas consider public access and recreational use;
 - Consider the degree to which such developments provide for public use/benefit; and
 - *Restrict aquaculture from Queen Charlotte Sound, significant habitat areas, and important navigational routes.*

[our emphasis]

[1189] The Sounds Plan reflects the strong direction contained in the last bullet point, in relation to Queen Charlotte Sound. As Ms Dawson notes, Objective 9.2.1 of the Sounds statement (in Chapter 9 Coastal Marine) is particularly relevant.⁸⁷³ It states:

The accommodation of appropriate activities in the coastal marine area whilst avoiding, remedying or mitigating the adverse effects of those activities.

[1190] Policy 9.2.1.6 of the Sounds Plan goes on to say:

Policy 1.6 Ensure recreational interests retain a *dominant* status over commercial activities that require occupation of coastal space and which preclude recreational use in Queen Charlotte Sound, including Tory Channel, but excluding Port and Marina Zones.

[our emphasis]

[1191] The use of the word “dominant” does not suggest complete exclusion. As Mr Nolan pointed out,⁸⁷⁴ while these two provisions do not actively encourage aquaculture to locate in Queen Charlotte Sound neither is unconditional. “Dominant” is very different from “sole” and “restrict” is very different from “prohibit”. But Policy 1.6 needs to be considered in the context of the rules which prohibit aquaculture in Queen Charlotte Sound by including it in CMZ1. Ms

⁸⁷² Jamieson Opening Submission at [67]

⁸⁷³ Dawson EiC at [116] Appendix E

⁸⁷⁴ Nolan Closing Submission at [28.23]

Cameron's evidence was that the Regional Policy Statement and the Sounds Plan give clear direction as to the location of activities in Queen Charlotte Sound.⁸⁷⁵ Ms Dawson's evidence-in-reply (relying on Mr Bamford and the King Salmon navigation experts) was that tourism and recreational interests will continue to be dominant over marine farming in Queen Charlotte Sound if the Ruaomoko and Kaitapeha sites are approved.⁸⁷⁶

[1192] Focusing on the area of the proposed farms, Mr Bamford's evidence was that substitutes for the recreation experience provided at the sites were available elsewhere in Queen Charlotte Sound. His evidence was that the adverse effect on recreation would be less than minor. However, Mr Bamford agreed in cross-examination that the recreation experience was influenced by the context in which the activity took place. He also agreed that the "public land" in Queen Charlotte Sound was an important part of that context.⁸⁷⁷

[1193] To suggest, as Ms Dawson did that the proposed CMZ3 in Queen Charlotte Sound would give effect to the specific Regional Policy Statement direction in relation to the Sound is questionable, in our view. We have already discussed in some detail the adverse effects likely to arise from the two proposed farms at Ruaomoko and Kaitapeha and have found that they will have a significant effect on a large number of people's appreciation of the Ruaomoko Point Scenic Reserve and the wider Queen Charlotte Sound.

[1194] The directions contained in the two planning instruments, while not absolute, are nevertheless strong directions which we need to consider when assessing the proposed farms at Kaitapeha, Ruaomoko and Ngamahau.

[1195] The prohibited activity status in the CMZ1 reflects the strong policy direction in respect of that zone. However it would be wrong of us to adopt what has been suggested, namely that we should not allow "a change to the Plan" because it was adopted through a "thorough" community process and represents what the community decided.

[1196] Parliament enacted at the outset of the RMA, that any citizen can apply to change any regional or district plan. There is no legal bar preventing anyone from

⁸⁷⁵ Cameron EiC at [122]

⁸⁷⁶ Dawson EiC at [4.38]

⁸⁷⁷ Transcript at 1723

seeking to change a plan at any time, except in certain cases that do not apply here. We are required to evaluate the Plan Change on its merits. Relevant to that evaluation is:

- [a] The age of the Plan. The applicable parts of the Plan were settled some 13 years ago. The Council has not notified any review of those provisions since that time;
- [b] The Plan was settled through a consent order process rather than by having its provisions robustly tested before the Environment Court;
- [c] Planning is a dynamic process.⁸⁷⁸ As such Plans must change over time to reflect changing circumstances.⁸⁷⁹ Planning needs to adapt to such matters as growth in population, increase in scientific knowledge, growth in industry and new community objectives. Planning is looking forward. It is not static, sitting on the status quo and looking backwards;
- [d] The Plan itself directly contemplates future changes to cater for ongoing development in the area of aquaculture. The Plan acknowledges the possibility of future plan changes to address the aquaculture provisions. It says:⁸⁸⁰

In addition, ongoing research is constantly occurring as to other means of aquaculture production involving species other than the present predominant species of mussels, and it is possible that some species may involve lesser effects on the environment through having less visible surface structures. The current Plan provisions are based on the predominant bi-valve marine farm structures. It may become necessary for those provisions to be readdressed by plan change.

The King Salmon Plan Change proposes to add to the above paragraph to recognise that a plan change has addressed this matter in relation to the expansion of salmon farming;

⁸⁷⁸ *Ports of Auckland Limited v America's Cup Planning Authority* PT Decision A100/1991 at [24]

⁸⁷⁹ *Coromandel Watchdog of Hauraki Incorporated v Chief Executive of the Ministry of Economic Development* 1 NZLR [2008] 1 NZLR 562 (CA)

⁸⁸⁰ Sounds Plan at [9-4]

- [e] The New Zealand Coastal Policy Statement now requires regional coastal plans to recognise the benefits of aquaculture in contributing to community well-being by providing for it in regional coastal plans (and having regard to the need for high water quality for aquaculture activities)⁸⁸¹; and
- [f] The recent 2011 aquaculture reforms enacted by Parliament.

Definition of “Most Appropriate”

[1197] A consideration of what is “most appropriate” lies at the heart of the statutory tests in Section 32 of the RMA. This is the threshold which we as a Board are to consider with regard to the Plan Change. An understanding of what “most appropriate” means is therefore critical.

[1198] Section 32 of the RMA was amended in 2003 to soften the rigours of the assessment by moving from the test of “necessary” to “most appropriate”. The High Court has recently held that the “most appropriate” method does not need to be the superior method.⁸⁸² The Court went on to state that:

Section 32 requires a value judgment as to what on balance, is the most appropriate, when measured against the relevant objectives. “Appropriate” means suitable, and there is no need to place any gloss upon that word by incorporating that it be superior.

Accordingly, we apply that meaning in this decision.

[1199] We also note that the Environment Court has recently held that:⁸⁸³

... the Court does not start with any particular presumption as to the appropriate zone, rule, policy or objective, which means that there is no presumption that the Council’s proposed rule is necessarily appropriate or correct. The law is well-settled that the proceedings in relation to plan change appeals are more in the nature of an inquiry into the merits in accordance with the statutory objectives and existing provisions of the policy statement and plans. The Court is seeking to obtain the optimum planning solution within the scope of the appeal it has before it, based upon an evaluation of the totality of the evidence given in the hearing, without imposing a burden of proof on any party.

⁸⁸¹ Coastal Policy Statement Policy 8

⁸⁸² *Rational Transport Society Incorporated v New Zealand Transport Agency* [2012] NZRMA 298 (HC) at [45]

⁸⁸³ *Federated Farmers of New Zealand Incorporated v Auckland Council* [2012] NZEnvC174 at [17]

We adopt that for the purposes of this decision.

SECTION 32 ANALYSIS

[1200] The relevant parts of Section 32 stipulate:

- (3) An evaluation must examine—
 - (a) the extent to which each objective is the most appropriate way to achieve the purpose of this Act; and
 - (b) whether, having regard to their efficiency and effectiveness, the policies, rules, or other methods are the most appropriate for achieving the objectives.
- ...
- (4) For the purposes of this examination ... an evaluation must take into account—
 - (a) the benefits and costs of policies, rules, or other methods; and
 - (b) the risk of acting or not acting if there is uncertain or insufficient information about the subject matter of the policies, rules, or other methods.

[1201] We note that King Salmon do not propose to add any new objectives to the Sounds Plan. Thus, we are not required to determine the matters set out in Section 32(3)(a).

[1202] Ms Dawson, on behalf of King Salmon, carried out an extensive Section 32 analysis. She set out what she considered to be the respective costs and benefits in an analysis that applied the evidence of fact as adduced by King Salmon to the relevant statutory provisions. Mr Hawes, on behalf of the Council, also carried out a brief Section 32 analysis. We have regard to their respective analyses subject to the extent that their factual basis has been modified by our findings.

[1203] There are two Section 32 related matters that were raised during the hearing that we feel a need to address. The first is that opponents to the Plan Change considered that Ms Dawson's analysis was erroneously based. Mr Hawes was of the view that Ms Dawson's Section 32(3)(b) evaluation had started with a predetermination that salmon farming was appropriate and as a result introduced a bias to the evaluation.

[1204] We heard extensive evidence on the development of salmon farming in the Sounds and the specific physical environments required for salmon. The Sounds

Plan in its current form (including its zoning), does not adequately provide for those requirements. We thus agree with Ms Dawson that the need to provide for salmon farming in the Sounds is a resource management issue which needs to be addressed in the Plan. However, our findings of fact on several of the proposed zoning sites are not in accordance with Ms Dawson's factual base.

[1205] The second matter is that those opposed to the Plan Change effectively sought retention of the status quo in terms of the CMZ1 on the basis that such a zoning reflected the objectives and policies of the Plan. We do not consider that retaining the status quo is the most appropriate way of achieving the objectives and policies of the Plan.

[1206] We have addressed extensively the effects based objectives and policies of the Plan and have found that in some instances the zoned sites sought would overall be acceptable. In other instances, they would not. These findings need to be balanced against the overarching policy direction of the Sounds Plan that recreational interests should retain a dominant status in the Queen Charlotte Sound.

[1207] The Plan Change as notified had marine farming of species other than salmon as a non-complying activity in CMZ3. However in closing King Salmon have proposed that this be changed to a prohibited activity. The change was made in response to concerns raised by the Halstead's and the potential for other forms of marine farming to impact on views from their house and jetty. The example given was of mussel farm floats extending across the zone. Mr Nolan submitted that King Salmon was "prepared to accept that status".⁸⁸⁴

[1208] Limiting the discretionary activity status to the species King salmon is the most appropriate approach given that we have only heard evidence on the benefits and adverse effects of salmon farming. However we do not think that should preclude any other species at the site except by way of a further plan change process – that would not be efficient or effective. It would better meet the settled objectives of the Plan to provide for other forms of aquaculture as a non-complying activity to allow a full assessment of effects.

[1209] Our analysis of findings on the many contested issues is effectively an evaluation of the various costs and benefits. The conclusion we have come to with

⁸⁸⁴ Nolan and Gardner-Hopkins closing submissions at [27.7] – [27.8]

respect to the contested issues forms the basis for our evaluation. For convenience we now summarise these findings.

Economics

[1210] The farms both individually and cumulatively would be of economic benefit, thus contributing to the social and economic wellbeing of people and communities, particularly in the northern part of the South Island. This is a benefit that will be enabled by the Plan Change.

Seabed/Benthic

[1211] The costs in terms of effects on the benthos beneath the farms will, in a Sounds wide context and in light of the conditions of consent, not be significant. This is reinforced by our decision not to approve some of the zone sites in areas where the quality of the benthic environment is highest. We are satisfied that costs will not accrue to the far field benthic environment.

Water Column

[1212] In terms of Section 32(4)(a), in addressing the potential water column effects we have acknowledged the uncertainty that exists with regards to the ability of the Sounds marine ecosystem to assimilate the nutrient loadings that would eventuate should all the zone locations be approved, thus creating the ability for consents to be considered and granted. This is particularly critical in the Pelorus Sound. Our finding that only two of the zone locations sought in the Waitata Reach can be approved is partly underpinned by our recognition of the (unresolved) uncertainty and risk that exists with regards to the water column effects should all the zonings be approved and consents granted.

Biosecurity

[1213] Disease and biosecurity risks will be increased through the establishment of the salmon farms, because of the increased density of salmon at a regional scale. That is a cost of enabling salmon farming through the Sounds Plan. However we regard that cost as minimal given that no new risks will be generated and there have been no known disease outbreaks in any of the salmon farms in the Sounds to date. Balancing the minimal costs, we find that the use of three separate farm

management areas that will allow a biosecure approach to be adopted if necessary is a significant benefit that will be enabled by the plan change.

Wild fish/sharks and Marine Mammals

[1214] There will be a minimal cost associated with impacts on wild fish stocks and habitat. Blue cod habitat has largely been avoided through the site selection process with the exception of Ngamahau, White Horse Rock (to which the plan change does not apply) and to a lesser extent, Ruaomoko and Kaitapeha. These costs are minimised by our findings that the plan change should not be approved at the Ruaomoko and Kaitapeha sites. There will no appreciable costs nor benefits in terms of shark related issues as we have found that there will be no increased shark risks, other than temporary aggregations around the farms themselves where people are unlikely to be in the water. While costs in terms of loss of marine mammals through entanglement cannot be completely eliminated, we are of the view that they will be minimal.

Seabirds

[1215] We are of the view that there may well be a minor benefit to the seabirds of the Sounds (with the exception of the King Shag) through the establishment of the salmon farms, due to increased roosting opportunities and the potential to feed on local aggregations of fish attracted to the farms.

[1216] In terms of King Shag, we find it difficult to quantify the risk to the overall population and while it may be low, any adverse impact on this species would be serious. We are therefore of the view that the plan change will produce a minor cost (in Section 32 terms) through increased risk to the King Shag population. We address “information uncertainty risks” through the imposition of a King Shag Management Plan, which is discussed elsewhere in this report.

Natural Character

[1217] We have found that the costs in terms of natural character will be high for the Papatua farm (within Pig Bay itself- but not the wider Port Gore area where the costs in terms of effects on natural character will be low to moderate), Waitata/White Horse Rock (if both are approved), Kaitira, Tapipi, Kaitapeha and Ruaomoko. Richmond is moderate.

Landscape

[1218] The Papatua and Kaitira sites will have very high to high costs in terms of adverse effects on outstanding natural landscapes, while the Kaitapeha and Ruaomoko sites will have high costs in terms of their landscape effects. The costs of the other zone sites will be either low or moderate.

Visual Amenity

[1219] The costs in terms of visual amenity will be high for the Papatua site (within Pig Bay itself- but not the wider Port Gore area where the costs in terms of effects on visual amenity will be low to moderate), high for the Waitata group of farms (particularly the Kaitira and Tapihi sites), and the Kaitapeha and Ruaomoko sites. The costs in terms of visual amenity effects will be low for the Ngamahau site.

Cultural

[1220] In our view, significant cultural costs will accrue as a result of approval of the plan change for all of the sites sought. The cost would be mitigated by a smaller number of zone sites/farms being approved.

Noise/Air Quality/Lighting

[1221] There will be no discernible costs as a result of approval of the CMZ3 zone in terms of these effects.

Navigation

[1222] There will be little, if any, costs in terms of impeded navigation if the Ngamahau, Papatua, Waitata, Richmond and Kaitira zone sites are approved. Costs in terms of navigational safety will be high for the Kaitapeha, Ruaomoko and Tapihi sites.

Engineering

[1223] A potential cost would be generated should any of the the Queen Charlotte/Tory Channel sites result in reductions in ferry sailings due to adverse effects of ferry operations on the structural integrity of the farms. In this regard we

find that such costs are extremely unlikely accrue due to the form and engineering design of the farms themselves that would be enabled by the plan change.

Outcome

[1224] Overall we find the additional policies and associated rules, amended with respect to the activity status for species other than salmon, are efficient and effective in terms of the provision of space for salmon farming. They address this resource management issue and are most appropriate with respect to the settled objectives of the Sounds Plan.

EVALUATION OF PLAN CHANGE

Introduction

[1225] It is within the framework of the many statutory provisions, most of which we have mentioned in this decision, that we must apply our findings of fact to the balancing exercise we must now do. The Plan Change seeks eight sites for discrete areas or reaches throughout the Sounds.

[1226] The effects have been described and evaluated at a site, region (or reach) and whole of Sounds scale. Given the clustering of the proposed plan change sites within three distinct regions, for convenience, we discuss the Plan Change at the regional (or reach) scale. Before doing so, we set out some findings which are generally applicable to all farms. Where a general finding is likely to impact on a particular proposed farm or group of farms to a greater extent, we will discuss it in relation to that proposed farm or farms.

Matters and Finding of General Application

Part II Matters

[1227] We are to apply the relevant Part II matters when balancing the findings we have made on the many contested issues. Many of those findings relate to different and sometimes competing principles enunciated in Part II of the RMA. We are required to make an overall broad judgment as to whether the Plan Change would promote the single purpose of the RMA – the sustainable management of natural and physical resources. As we have said earlier, Part II is not just the starting point but also the finishing point to be considered in the overall exercise of our discretion.

Strategic Use of Resources

[1228] We are conscious of the need to ensure that the Council's function of achieving the integrated management of the natural and physical resources of the region are promoted by the Plan Change.

Functional Need

[1229] We recognise that there is a functional need for aquaculture activities, such as salmon farms, to be located in the coastal marine area in appropriate places. This would give effect to the statutory provisions recognising the need to provide for such activities.⁸⁸⁵ We note that salmon farming has particular physical requirements with respect to temperature, depth and current.

Economic Impact

[1230] We have found that each of the farms, both individually and collectively, would be of economic benefit, thus contributing to the social and economic well-being of people and communities, particularly in the northern part of the South Island. This would give effect to the statutory provisions that require use to recognise the potential contribution to such well-being from the use and development of the coastal marine area, particularly aquaculture.⁸⁸⁶

Maori Cultural Values

[1231] We are conscious of the need to take into account the strong directions relating to Maori values in the Act and in the relevant statutory documents. We have discussed in some detail those values and have determined that Maori values could be compromised to some extent including:

- [a] With respect to the water quality of the Sounds as a result of the nutrient inputs. Such an effect would be more pronounced close to the proposed farms;

⁸⁸⁵ See *New Zealand Coastal Policy Statement* Policy 6(2)(c)

⁸⁸⁶ *Ibid* at 6(2)(a) and Policy 8

- [b] By the likely effect on customary food gathering areas in some instances thus impacting on their cultural relationships including the custom of manaakitanga;
- [c] By the potential impact on their kaitiakitanga; and
- [d] By the potential diminishing of their relationship with their rohe moana.

Seabed Beneath the Farms

[1232] We have found that the impacts on seabed beneath the farms are adverse and likely to persist for some years following the cessation of farming. However, in the wider context of the Sounds, and given the proposed conditions of consent restricting both the area and the intensity of the impact, these effects would not amount to a significant adverse effect on the benthos.

Far field Seabed Effects

[1233] Beyond the primary positional footprint, the predicted additional flux is small in relation to the existing background flux. Accordingly, we accept that any significant or even observable ecological effect from far field deposition is unlikely. The results of long-term monitoring of ecological features in proximity to the proposed farms provide considerable comfort on this point.

Significant Ecological Sites

[1234] We are confident that no significant ecological sites are located beneath or very close to the farms. While there are small features of biological significance located within one kilometre of some of the farms, the risk of effects on these features is low and appropriate monitoring has been satisfactorily included in the proposed conditions of consent.

Port Gore

[1235] Port Gore, and in particular Pig Bay, is the site of the proposed Papatua farm. Port Gore, in the overall context of the Sounds, is a relatively remote bay. The land adjoining the proposed farm has three areas of different ecological

naturalness ranked low, medium and high, within the Cape Lambert Scenic Reserve. All the landscape experts identified part of Pig Bay adjoining the proposed farm as an area of Outstanding Natural Landscape.

[1236] We have found that the effects on natural character at a site level would be high, particularly on the Cape Lambert Reserve, which is recognised as an Area of Outstanding Natural Character. We have also found that there would be high to very high adverse visual effects on an Outstanding Natural Landscape. Thus the directions in Policy 13(1)(a) and Policy 15(1)(a) of the Coastal Policy Statement would not be given effect to.

[1237] We have found that the proposed farm will, in its own right and cumulatively, generate adverse visual effects in Pig Bay that would be high, and in Port Gore as a whole, low to moderate.

[1238] We have noted that the four rectangular areas making up the proposed farm would mean that a total benthic footprint of at least 26.8ha would be affected by significant deposition. The designated cage areas within the proposed zone is located over a mud substrate and avoids any significant ecological sites or notable biological features. At a local level, the impact would be high, but overall on a Port Gore-wide level, after considering both the area and the biological values, the effects on the benthos would be insignificant.

[1239] Following the establishment of farms within the zone there would be localised increases in total nitrogen and, consequently, phytoplankton growth within Port Gore. However the open nature of the site, adjacent to Cook Strait, reduces the potential for cumulative effects to arise over time. Similarly the potential for any changes in the frequency or duration of algal blooms is likely to be very low.

[1240] The placement of any salmon farm into this dramatic landscape with its distinctive landforms, vegetation and seascape, would be an abrupt incursion. This together with the Policy directions of the Sounds Plan as indicated by its CMZ1 classification of Port Gore, weighs heavily against the Proposed Plan Change.

[1241] We have, also, to balance the adverse effects against the benefits for economic and social well-being, and, importantly, the integrated management of the region's natural and physical resources.

[1242] In this regard, we have already described the bio-secure approach, using three separate groupings. The Papatua site is particularly important, as King Salmon could operate a separate supply and processing chain from the North Island. Management of the biosecurity risks is critical to the success of aquaculture and the provision of three “biosecure” areas through the Plan Change is a significant benefit.

[1243] While the outstanding natural character and landscape values of outer Port Gore count against the granting of this site the advantages for risk management and the ability to isolate this area from the rest of the Sounds is a compelling factor. In this sense the appropriateness for aquaculture, specifically for salmon farming, weights heavily in favour. We find that the proposed Papatua Zone would be appropriate.

Waitata Reach

[1244] Four CMZ3 sites are proposed for the Waitata Reach. From our discussion on the issues arising from the “contested effects” part of the decision, we identify three areas of concern that apply specifically to the Waitata Reach:

- [a] Ecological integrity, particularly with respect to the habitat for the King Shag;
- [b] Cultural concerns arising out of the identified waka routes on the northeast part of the Reach; and
- [c] Natural character and landscape values.

Ecological Integrity

[1245] We have already noted that nitrogen is considered to be the primary limiting nutrient for phytoplankton production in the Pelorus Sounds. While the extensive mussel farming industry removes nutrients from the water the mass balance for nitrogen indicates that four new zones, providing for intensive salmon farming, would be a substantial net addition. In the absence of a sophisticated biogeochemical or “food web” model for Pelorus Sound it is difficult to be sure of the outcomes for the wider ecosystem. While some expansion of salmon farming

seems able to be accommodated (as indicated by the “critical nutrient loading rate”) the assimilative capacity for an expansion of this scale has not been demonstrated.

[1246] The cumulative additions of nitrogen, increases in phytoplankton and consequential reductions in water clarity would have a potential impact on King Shag foraging habitat. The Waitata Reach forms a part of that habitat and is likely to be particularly important for the breeding colony at Duffers Reef. A precautionary approach is warranted given the threatened status and limited geographic range of this species. The experts were agreed that the King Shag in the Marlborough Sounds may be the “canary in the coalmine”, that is, a species sensitive to ecosystem changes.

Cultural Concerns

[1247] We earlier referred to Ngati Koata’s relationship with this stretch of water, and of the chart produced by Mr Elkington, showing the traditional waka routes navigated by his iwi. The chart showed the routes down the northeastern part of the Reach, passing through the proposed Tapiipi farm and relatively close to the proposed Richmond farm.

[1248] Waitata Reach was identified as the gateway to Te Hoiere (Pelorus Sound) and the cumulative effects of the proposed farms in the Waitata Reach would include:

- [a] Adverse effects on the quality of this waterway and the identity and mana of the tangata whenua;
- [b] The potential effects on the King Shag, a special taonga;
- [c] The presence of dolphins which are considered taonga and taniwha by Ngati Kuia;
- [d] Traditional waka routes down the northeastern part of the Reach passing through the proposed Tapiipi farm and relatively close to the proposed Richmond farm;
- [e] Customary scallop fisheries in Waitata Reach, Ketu and Richmond Bays;

- [f] The reef in the immediate vicinity of the proposed White Horse Rock/Waitata farms being a well used fishing spot, particularly for blue cod; and
- [g] The presence of recorded sites of significance in the vicinity of Kaitira, Tapipi and Richmond, although the specific nature or location were not advised to us.

Natural Character and Landscape

[1249] The Waitata Reach has been described as the “gateway” to Pelorus Sound from Cook Strait, with the twin promontories of Te Akaroa and Kaitira being the two key features. We have found the Kaitira headland to be an Outstanding Natural Landscape. We have assessed that the proposed Kaitira and Tapipi farms would be prominently situated in the “gateway” which has memorable views whether entering or leaving the Sounds.

[1250] The effect on the Outstanding Natural Landscape of the Kaitira headland would be high, thus not giving effect to Policy 15(a) of the Coastal Policy Statement. We have found that the cumulative effect of the proposed farms would have a high impact on the natural character of the Reach, and a very high effect on the prominent, highly visible location of Kaitira and Tapipi sites.

[1251] We have found that the other two proposed farms would not have the same impact.

Assessment

[1252] After careful consideration of all the balancing factors, we conclude that the siting of four proposed farms in this Reach would not be appropriate. The assimilative capacity of the receiving waters and the potential cumulative effects on the foraging areas of the King Shag are uncertain. The cumulative effects of the Kaitira and Tapipi on the natural character, landscape and seascape qualities of the entrance to the Sounds would be high. Further, Tapipi lies in the path of a traditional waka route – a taonga to Ngati Koata. It would also be in the vicinity of recorded sites of significance to Maori.

[1253] To grant all of the zones would not give effect to the statutory provisions in respect of natural character, landscape, Maori, or ecological matters. The overall cumulative effects would be high.

[1254] We accordingly grant the request with respect to Waitata and Richmond, but decline the request with respect to Kaitira and Tapipi.

Queen Charlotte Sound

[1255] The two farms, Kaitapeha and Ruaomoko are proposed to be located in Queen Charlotte Sound. They are to be situated close to the southwestern end of Arapaoa Island in the vicinity of Tory Channel.

[1256] We have concerns about the siting of these two zones particularly in the light of the strong policy direction of the Regional Policy Statement and the Sounds Plan and the effects based provisions which include:

- [a] The effects on navigation;
- [b] The effects on recreational boating;
- [c] The adjacent scenic reserve;
- [d] The effects on natural character and landscape; and
- [e] The cultural traditions of Maori.

Policy Directions

[1257] We have discussed the provisions of the Regional Policy Statement and the Sounds Plan that indicate a strong direction to ensure that recreational interests dominate in Queen Charlotte Sound. The wording of the policy provisions in the Sounds Plan is not absolute but the associated CMZ1 zoning method prohibits any new aquaculture activities. If the two proposed zones were situated at the proposed sites, any salmon farm would tend to dominate the entrance to Tory Channel displacing and affecting recreational water uses.

Navigation

[1258] We have found that the proposed farms would generate significant adverse effects on navigational safety for small vessels. We discussed in some detail the submitters concerns about navigating across the entrance to Tory Channel in heavy southerly weather.

Recreational

[1259] We received many submissions emphasizing the importance of the area to recreational fishing and diving. While the recreation experience provided at the sites could be available elsewhere, nevertheless, recreational experience is influenced by context. The public land in Queen Charlotte Sounds is an important part of that context.

Scenic Reserve

[1260] The proposed two farms are in the vicinity of a scenic reserve administered by the Department of Conservation. The views of the scenic reserve (from the water and other vantage points) and people's appreciation of those reserve, are a relevant factor, and in this setting, an important one. The proposed farms would affect people's enjoyment of the reserve's scenic qualities – qualities that are being enhanced by native forest regeneration and control of wilding pines. The very purpose for which the land has been reserved.

Natural Character and Landscape

[1261] The two proposed farms, in close proximity and on one side of the Sound's principal waterway, would be readily visible and contrary to the general pattern of development. The likely visibility of the two proposed farms would equate to areas of high natural character within the Sounds. This high natural character would be adversely effected.

[1262] We have found that the proposed farms, in their own right and cumulatively, would have high adverse landscape and visual effects being located in such a prominent location. They would have an unavoidable presence for people on craft making passage or recreating.

Cultural Traditions

[1263] We heard of the importance of the associations tangata whenua have with Totaranui (Queen Charlotte Sound).

Assessment

[1264] On balance, we find that it would be inappropriate to locate the farms in the proposed locations. Accordingly, the Plan Change request with respect to Kaitapeha and Ruaomoko are denied.

Tory Channel – Ngamahau

[1265] Tory Channel is the site of the proposed Ngamahau salmon farm. The Channel provides the principle entrance to Cook Strait for ferries between Picton and Wellington. With the Channel being 1,250m wide at the proposed site, the effects on navigation were an issue. However, we have found little or no effects on navigation would be likely to occur.

[1266] In our discussion of “contested effects” we identified three matters of particular concern:

- [a] The effect on cultural values;
- [b] The effect on ecological features; and
- [c] The effect on local residents.

[1267] In other respects the effects were considered to be less than minor.

Effects on Cultural Values

[1268] At the Waikawa Marae we were told of the importance of Kura Te Au (Tory Channel) to Te Atiawa. We have discussed this matter at some length. Of importance to the iwi is the prodigious fishing found in the Channel, particularly sites within proximity of the proposed farm. These included:

- [a] Cockles in Deep Bay;

[b] Kina beds in Ngaruru to the south of Clay Point; and

[c] The reefs in the vicinity of the Ngamahau site which were identified as excellent fishing and diving locations and highly productive for kina.

[1269] It was emphasised to us that the protection of the fishing was important for upholding their customary practices including manaakitanga. Also of concern was the effects on the quality of the water, kaitiakitanga and the potential to diminish their spiritual relationship with their rohe moana. The evidence was not specific on these matters, so it was difficult for us to determine the magnitude of effects and what mitigation measures, if any, might be appropriate. However, we note that the footprint of the farm and direct impacts on the seabed are small in the context of Tory Channel.

[1270] Notwithstanding the alleged effects, the Te Atiawa Manawhenua o Te Tau Ihu Trust withdrew their opposition. Ms Ertel, counsel for the Trust, told us that the cultural practices of Te Atiawa would not be altered taking into account the mitigation measures agreed to with King Salmon. However, many hapu and whanau did not agree, and we have had to address the issues.

[1271] Some of the fishing and diving sites on the reef close to the farm are likely to be noticeably impacted, but not to the extent of an adverse ecological effect. The sites further afield, such as the cockle beds in Deep Bay are to be monitored by the conditions of consent to assess any potential effects.

[1272] In the overall context we have found that the effect on kaitiakitanga and customary practices would be less than minor. Hence the relationship with their rohe moana would not be very much diminished. Taking into account the small footprint of the farm in these very productive waters, any displacement would be relatively small.

The Effect of Ecological Features

[1273] We have found that the site is close to ecological sites of significant ecological value. These are to the east and west of the proposed site and contain dense hydroid dominated communities. They are to be monitored to assess any ecological effects. Within the application area, there are areas of biogenic clumps

that are not considered of significant biological value. These will be lost. However, their low value and the fact that the effects will be confined to the footprint under the cage, caused us to find the effects to be less than minor.

The Effect on Local Residents

[1274] We have found that there will be a significant adverse effect on the Pinder household, but overall the visual effects would be low.

Assessment

[1275] Balancing all of the matters that we have discussed, we find that it would be appropriate to approve the Plan Change request with respect to the Ngamahau site.

Part II Assessment

[1276] Looking at the Proposed Plan Change we think that we have struck the right balance by allowing constrained development in the Sounds. A balance between providing for the social and economic well-being of the community and achieving sustainable management of the natural and physical resources of the Sounds.

[1277] Sustainable management is measured against the guiding principles set out in Part II of the RMA. We have given effect to the principles by:

- [a] Providing for the communities' economic and social well-being – Section 5;
- [b] Ensuring that adverse effects on the environment are avoided, or at least mitigated – Section 5.

Where we have identified adverse effects on the environment for a particular site that on balance weigh against the proposed plan change, we have denied the requests. Where we have approved the request, we have done so aware of the conditions of consent that are designed to mitigate any adverse effects. These matters have been evaluated in that part of this decision under the heading “Contested Effects;

- [c] Being satisfied that the life supporting capacity of the water and its ecosystems are adequately safeguarded – Section 5(b);

We have discussed in some detail the effects on the water column, benthic and the pelagic fish and mammals that populate the Sounds, in that part of the decision under the heading “Contested Effects”;

- [d] Being satisfied, in appropriate cases, that the matters of national importance identified in Section 6 have been recognised and provided for;

This has been discussed in some considerable detail in that part of the decision under the heading “Contested Effects”, particularly matters relating to natural character, outstanding natural landscapes, and Maori values;

- [e] The need to have particular regard, where necessary, to the matters identified in Section 7.

Again, this has been discussed in some detail in that part of the decision under the heading “Contested Effects”, particularly having regard to landscape and amenity;

- [f] The requirement to have regard to matters relating to Maori.

[1278] We are satisfied, that for the reasons given throughout this decision, that the precepts enunciated in Part II of the RMA have been applied and balanced in the final analysis. We also consider we have appropriately applied the precautionary principle. In some instances we have been influenced by the degree of uncertainty, at least in part, to the extent that parts of the request have been denied, for example, the uncertainty regarding the King Shag in the Waitata Reach. In other instances we have been comforted on matters of uncertainty by the strong proposed adaptive management conditions of consent.

Decision on Plan Change Requests

[1279] We find that it would be appropriate to approve the Plan Change requests with respect to the Ngamahau, Papatua, Richmond and Waitata sites in accordance with Appendix 3, save for [16] on page 8 which is to be deleted.

THE RESOURCE CONSENT APPLICATIONS

Statutory Basis for Decision

[1280] Having approved the Plan Change in part and determined the status of the concurrent resource applications as discretionary, the concurrent applications are to be considered by us under Section 104 of the RMA. This provides relevantly:

104 Consideration of applications

- (1) When considering an application for a resource consent and any submissions received, the consent authority must, subject to Part 2, have regard to—
 - (a) any actual and potential effects on the environment of allowing the activity; and
 - (b) any relevant provisions of—
 - (i) a national environmental standard:
 - (ii) other regulations:
 - (iii) a national policy statement:
 - (iv) a New Zealand coastal policy statement:
 - (v) a regional policy statement or proposed regional policy statement:
 - (vi) a plan or proposed plan; and
 - (c) any other matter the consent authority considers relevant and reasonably necessary to determine the application.

[1281] In addition to the matters under Section 104 of the RMA, we are required to consider each application in terms of:

- [a] Section 105 of the RMA in relation to the discharge of salmon feed which is a part of the proposed salmon farming activities; and
- [b] Section 107 of the RMA which restricts a consent authority from granting a discharge permit if, after reasonable mixing, the discharge will have specified adverse effects.

[1282] The concurrent applications are to be determined under Section 104 of the RMA against the Plan as amended by our decision on the Plan Change. However, the White Horse Rock application is to be considered against the Rules of the Plan as it currently stands, because this site is located in the CMZ2 Zone. However, in determining the White Horse Rock application, the Plan Change can be taken into account, where relevant, in accordance with our determination on the Plan Change.

A Legal Issue – Unlawful Delegation of Power

[1283] Mr Heal, in his opening, made the following submission:⁸⁸⁷

I would also like to raise what I consider to be an important point in respect of proposed conditions 70 – 93. In my respectful submission these conditions purport to set up a decision-making process that is in effect a delegation of the statutory duties of this Board and the Marlborough District Council as the lawful issuer of the consent and consent authority.

[1284] He was of course referring to the adaptive management conditions proposed to manage the water column effects of the proposed farms. Mr Heal's concern was, that because of the unavailability of sufficient background data, quantitative standards cannot be set now to trigger appropriate adaptive management responses.

[1285] Mr Heal addressed this matter in much more detail in his closing. He referred to the well known Court of Appeal decision of *Turner v Allison*⁸⁸⁸ which determined that it is appropriate for a condition to allow a person to certify that a condition has been complied with, or to set a standard using his or her own skill and judgment; but not to exercise the powers of an arbitrator.

[1286] He then went on to refer to a decision of the High Court in *Director General of Conservation v Marlborough District Council*.⁸⁸⁹ That case involved the question of scientific uncertainty in respect of an application to set up a large off-shore marine farm at Clifford Bay. In some ways the case encountered a similar problem to that raised by Mr Heal in this case. It involved the potential adverse effects that could arise because of a lack of knowledge of a marine ecosystem, specifically on the Hector's Dolphin. McKenzie J said that he did not think that a

⁸⁸⁷ Heal Opening Submission at [19.05]

⁸⁸⁸ (1971) NZLR 833

⁸⁸⁹ [2004] 3 NZLR 127

consent that had conditions requiring the obtaining of more information was invalid. After referring to *Turner v Allison* he went on to say:⁸⁹⁰

Where the judicial function has been delegated in terms which require an adjudication to be made by the delegatee, then it will normally be readily apparent that it is a judicial function which has been delegated. But that is not necessarily the only basis upon which a judicial function may have been improperly delegated. It is of the essence of a judicial function that the adjudicator will be required to make findings of fact. If the function of making a finding on facts which is essential to the decision as delegated, then there is a delegation of the judicial function.

[1287] What is now proposed in the conditions of consent are the following:

- [a] A set of “objectives” for water quality and aspects for ecosystem function that have been determined to specify what outcomes are to be achieved;⁸⁹¹
- [b] Prior to development being undertaken a “baseline report”, which presents the results from monitoring and analysis undertaken in accordance with a “baseline plan”, is to be produced. It must also specify the initial Water Quality Standards. These standards set thresholds for compliance with the determined objectives. This report is to be prepared by an independent person(s);⁸⁹²
- [c] The Baseline Report is to be provided to a peer review panel for its review and assessment;⁸⁹³
- [d] The peer review panel is to be approved in writing by the Council;⁸⁹⁴ and
- [e] The peer review panel is to review the Baseline Report, including the recommended Water Quality Standards, and make recommendations to the Council for its approval.⁸⁹⁵

⁸⁹⁰ Ibid at [27]

⁸⁹¹ Condition 51(a) – (f)

⁸⁹² Condition 71(b)

⁸⁹³ Condition 73

⁸⁹⁴ Condition 84(a)

⁸⁹⁵ Condition 83(a)

[1288] Mr Heal is correct to the extent that we, at this time, are not able to make a decision on the quantitative water standards. However, the thresholds to be set via the standards are simply a mechanism to achieve the agreed objectives as modified earlier in this decision. The peer review panel is tasked with reviewing the baseline information and the quantitative water quality standards which in turn are to be approved by the Council.

[1289] It is clear that a body, such as this Board, entrusted with judicial duties, cannot delegate the performance of such duties to someone else. However, it is appropriate to delegate where a person or a body is required to set a standard using their skill and judgment, as opposed to exercising the powers of an arbitrator. This does not amount to an unlawful delegation of authority.⁸⁹⁶

[1290] While it would have been ideal to set the quantitative thresholds we are satisfied, that clear “objectives” have been set by Conditions 51(a) – (f)⁸⁹⁷ which will identify the outcomes to be achieved. In so recommending the associated quantitative standards, in the case of the peer review panel; and approving them, in the case of the Council; either body would be doing no more than exercising their skill and judgment.

[1291] Further, in our view, the clear “objectives” are robust and would ensure the quantitative water quality standards would be sufficiently constrained to be effective. The central and important matter is the setting of the objectives, and there was, in the end, little dispute as to them.

[1292] Mr Heal also submitted that the conditions lack finality and are accordingly invalid.⁸⁹⁸ He submitted that the proposed conditions are open-ended and uncertain, leaving decision-making to unknown persons without the ability of any person to have constructive input, particularly the public. We do not agree. The important matter is the determining of the objectives. All parties have had the option of input into their determination.

⁸⁹⁶ *Turner v Allison*, (1971) NZLR 833

⁸⁹⁷ Now Papatua Final Condition 39, Waitata/Richmond/Ngamahau Final Condition 43

⁸⁹⁸ He relied on *City of Unley v Claude Neon Limited* (1983) 49 LGRA 65

Relevant Resource Consent Tests

Environmental Effects

[1293] We are required under Section 104 of the RMA to have regard to the actual and potential effects on the environment of allowing the activity sought through the resource consents. These effects and our detailed discussions on them are set out in that part of this decision under the heading “Contested Effects”. We do not intend to repeat that discussion and analysis here.

Planning Framework

[1294] We are also required to have regard to the relevant planning instruments, including the Coastal Policy Statement. We have considered the effects-based provisions of these instruments during our discussions on “contested effects” in that part of this decision under the heading “Contested Effects”. We have discussed the overarching policy direction of the relevant statutory instruments as they apply to the proposal. We do not intend to repeat those discussions here.

[1295] We have also heard a considerable amount of evidence from the planning experts, many of whom were cross-examined at some length.

Section 105 of the RMA

[1296] Section 105 sets out additional matters relevant to applications for discharge permits or coastal permits to do something that would otherwise contravene Section 15 of the RMA. The Board must have regard to the matters set out, being:

- [a] The nature of the discharge and the sensitivity of the receiving environment to adverse effects;
- [b] King Salmon’s reasons for its proposed choice; and
- [c] Any possible alternative methods of discharge, including discharge into any other receiving environment.

[1297] We are satisfied on the evidence that the sensitivity of the receiving environment has been had regard to. The scientific witnesses have addressed the

issues of site selection in some detail. We have discussed and evaluated their evidence in other sections of this decision.

[1298] Potential alternatives and King Salmon’s reasons for the proposal have been canvassed at length in the evidence and the submissions. Again, we have evaluated that evidence elsewhere in this decision.

[1299] We are satisfied that the matters set out in Section 105 have been adequately covered in the evidence.

Section 107 of the RMA

[1300] In his opening submissions, Mr Ironside said:⁸⁹⁹

Depositions from salmon farms constitute suspended and re-suspended materials (waste). This will be a direct result of allowing an enrichment stage of 5 in the zone directly beneath the farms (zone 1). Zone 1 is not a “mixing zone” (as might be the case with an engineered dispersal pipe). It is a deposition zone. Consideration is therefore required of section 107 matters.

Section 107(2) provides that a consent authority may grant a discharge permit or a coastal permit to do something that would otherwise contravene section 15 (and that may allow any of the effects described in subsection (1)) if it is satisfied that exceptional circumstances justify the grant of the permit.

It is clear that the proposed adaptive management regime is not able to meet the requirements of Section 107 of the Act. The Plan Change is predicated on the basis that an enrichment stage of 5 is appropriate in zone 1 and 2. That constitutes partial formation of a bacterial mat, increasing organic content and sulphides and decreasing species richness, caused by the deposition of suspended materials. Section 107 is a hurdle that cannot be overcome. There are no exceptional circumstances.

[1301] Mr Heal in his opening submission referred to Section 107 as an “impossible hurdle”. He said :⁹⁰⁰

... Once it becomes apparent that suspended solids will be discharged from the proposed activity and that they will be discharged to areas beyond the “reasonable mixing” area the onus is placed squarely on the applicant to establish that such particulates do not offend Section 107, or that one of the exceptions in Section 107(2) apply.

⁸⁹⁹ Ironside Opening Submissions at [66] – [68]

⁹⁰⁰ Heal Opening Submissions at [18.09] & [18.10]

It has failed to address the issue, let alone deal with it. The applicant must not only prove that the activity will not produce such discharges (which it clearly cannot) it must also establish that such discharges are “unlikely”. There is no obligation for any submitter to prove that the effect of such discharges will be less than minor, because Section 107 provides a series of criteria that are not related to provable indirect or direct effects or impacts. The fact that such events occur is enough.

[1302] The issue was raised late in the hearing, long after the expert witnesses, who might have addressed it were cross-examined. They were not cross-examined on the issue. Nor was the issue raised as a contested issue as a result of a direction from the Board for counsel and the parties to confer and determine what the contested issues were.

[1303] In summary, Mr Nolan’s position was:⁹⁰¹

- [a] Section 107 applies only to the “receiving waters” which does not include the seabed. The alternative interpretation put forward by PWS and SOS is inconsistent with the scheme of the RMA and would result in perverse outcomes;
- [b] Within the “receiving waters” and after “reasonable mixing”, none of the Section 107 effects thresholds are met;
- [c] King Salmon called evidence on Section 107 issues from Mr Preece, Mr Barter, Dr Gillespie, Mr Sneddon, and Ms Dawson. None of those witnesses were cross-examined in respect of Section 107; and
- [d] Section 107 was not raised as one of the contested issues required to be identified by the inquiry procedures. He submitted that, notwithstanding the above, even if benthic effects are considered, the Section 107 thresholds are still not met. And accordingly, Section 107 does not prevent the grant of any of the resource consents.

[1304] Section 107 as relevant states:

107 Restriction on grant of certain discharge permits

⁹⁰¹ Nolan Opening Submissions at [33.3]

- (1) Except as provided in subsection (2), a consent authority shall not grant a discharge permit or a coastal permit to do something that would otherwise contravene section 15 ... allowing -
 - (a) The discharge of a contaminant ... into water;

...

If, after reasonable mixing, the contaminant ... discharged (either by itself or in combination with the same, similar, or other contaminants or water), is likely to give rise to all or any of the following effects in the receiving waters:
 - (c) The production of any conspicuous oil or grease films, scums or foams, or floatable or suspended materials:
 - (d) Any conspicuous change in the colour or visual clarity:
 - (e) Any emission of objectionable odour:

...

 - (g) Any significant adverse effects on aquatic life.
- (2) A consent authority may grant a discharge permit or a coastal permit to do something that would otherwise contravene section 15 that may allow any of the effects described in subsection (1) if it is satisfied –
 - (a) That exceptional circumstances justify the granting of the permit; or
 - (b) That the discharge is of a temporary nature; or

...

And that it is consistent with the purpose of this Act to do so.
- (3) In addition to any other conditions imposed under this Act, a discharge permit or coastal permit may include conditions requiring the holder of the permit to undertake such works in such stages throughout the term of the permit as will ensure that upon the expiry of the permit the holder can meet the requirements of subsection (1) and of any relevant regional rules.

[1305] As relevant Section 15 provides:

15 Discharge of contaminants into environment

- (1) No person may discharge any –
 - (a) Contaminant ... into water; or

...

unless the discharge is expressly allowed by a national environmental standard or other regulations, a rule in a regional plan as well as a rule in a proposed regional plan for the same region (if there is one), or a resource consent.

[1306] As Mr Nolan pointed out, Section 107 is not a replacement for Section 104 with respect to discharges to water. It is an additional gateway that must be considered, focusing on certain specified effects. The section is only triggered in limited circumstances:

- [a] It is only relevant where consent is required to authorize a person to discharge a contaminant into water;
- [b] It is limited to effects “in the receiving waters”;
- [c] The consideration of the level of effects is to occur “after reasonable mixing”;
- [d] The various effects expressed in Section 107 must reach a certain threshold for Section 107 to bite – depending on the effect that threshold is either “conspicuous”, “objectionable”, or “significant”; and
- [e] Section 107 thresholds can be met by conditions of consent.⁹⁰²

The Receiving Waters

[1307] Section 107 is focused on whether certain effects are exceeded in “the receiving waters”. While “water” is broadly defined in the RMA, “receiving waters” is not defined. The receiving waters are well understood to be the waters at the point of discharge. In the context of a salmon farm, that would logically be at the edge of a cage.

[1308] We note the effects threshold do not extend to include other aspects of the environment beyond the water itself. Mr Nolan submitted that this does not include the seabed and benthic environment.

[1309] The RMA distinguishes between the water and the seabed. This occurs both in relation to the separate definitions of “water” and “bed” as defined in the RMA; and in relation to the control of activities – Section 15 controls discharges to water, whereas the deposition of matter on the seabed is controlled by Section 12. Such a distinction in the RMA must, in our view, be relevant to the consideration of what constitutes “the receiving waters” in a Section 107 context. We thus find that it does not include the seabed and benthic environment.

⁹⁰² See *Renouf & Dodds v Hawkes Bay Regional Council & Central Hawkes Bay District Council* EnvC Wellington, W090/2006 at [17] – [18]

The Discharge

[1310] The discharge to water of principle concern is that of fish feed. The fish feed is an extruded pellet, that does not dissolve immediately on contact with water, but which retains its form until eaten by the salmon. Only 0.1% – 0.3%⁹⁰³ is actually lost to the environment. There was no suggestion that the uneaten fish feed would trigger any Section 107 issues.

[1311] What was of concern were the effects arising from the salmon processing the fish pellets and excreting ammonia/nitrogen and faeces into the receiving waters. The question therefore is whether any of the relevant effects set out in Section 107 arise in the receiving waters. It has not been suggested that the fish faeces give rise to any conspicuous oil or grease films, or scums or foams. Nor has it been suggested that the fish faeces give rise to any objectionable odour from the surface (if feed levels are managed to avoid significant out-gassing from the seabed).

[1312] It was suggested that the fish faeces may give rise to “conspicuous” suspended materials in the receiving waters, and the issue was raised of re-suspension of deposited sediments into the water column.⁹⁰⁴ There was no suggestion that the suspended or re-suspended materials would be seen from the surface of the water, although Mr Heal suggested that if any suspended sediments were “visible” to the naked eye by some observer on the seabed, then they would be conspicuous in the sense that term is used in Section 107 of the RMA.⁹⁰⁵

[1313] “Conspicuous” is defined in the dictionary as:

Clearly visible, striking to the eye; obvious, plainly evident, attracting notice, remarkable, noteworthy.⁹⁰⁶

[1314] Consistent with the dictionary definition, the Courts have interpreted “conspicuous”⁹⁰⁷ as “to draw special attention or attract special notice”.⁹⁰⁸

⁹⁰³ NIWA *Estimation of feed loss from two salmon cage sites in Queen Charlotte Sound* September 2011 at 18

⁹⁰⁴ Transcript at 2012

⁹⁰⁵ Transcript at 2711 - 2714

⁹⁰⁶ Shorter Oxford English Dictionary Volume 1 (5th Edition)

⁹⁰⁷ In the context of a “conspicuous statement”, rather than in the RMA context

⁹⁰⁸ *Clyde Engineering Limited v Russell Walker Limited* [1984] 2 NZLR 343 at [344], [346] & [351]

[1315] Mr Preece gave evidence that, with one exception, there would be no conspicuous change in colour or visual clarity as a result of the presence of the farms.⁹⁰⁹ He then stated:⁹¹⁰

The one exception to that is where water-blasting the grower nets is occurring in water. That process releases marine biofouling into the water column which is noticeable only for a matter of metres from the farms.

That evidence was not challenged.

[1316] Dr Gillespie stated:⁹¹¹

Section 107 of the RMA lists several standards with regard to the effects of a discharge on visual and aesthetic characteristics of the receiving water environment. To my knowledge there have been no instances reported where the production of conspicuous foams, films, floatables or objectionable odours, have occurred at existing salmon farms in the Marlborough Sounds.

I am also not aware of the occurrences of any visible changes in colour or clarity of surface waters around the farms. This is based on my own experience involving numerous visits to salmon farms in New Zealand. The only exception to this would be the temporary visible turbidity episodes associated with cleaning of biofouling from the salmon enclosure nets. I have not personally witnessed these however. Their frequency and scale are discussed in the evidence of Mr Mark Preece. I expect that these events are localised and short-term such that adverse impacts to the water column environment would not be significant after reasonable mixing.

[1317] Both Dr Gillespie and Mr Preece talked about discharges from the likes of water-blasting dissipating within metres of the farm. No one has suggested that this is other than reasonable mixing.

[1318] The term “reasonable mixing” is not defined in the RMA. The Plan does however provide some guidelines. Policy 1.3 provides:

No discharge, after reasonable mixing, (either by itself or in combination with other discharges) should limit the consumption of seafood from the coastal marine area.

The small distance mentioned in the evidence of Dr Gillespie and Mr Preece would not limit the consumption of seafood. And as we have said, they were not cross-examined on the issue.

⁹⁰⁹ Preece EiC at [158]

⁹¹⁰ Ibid at [160]

⁹¹¹ Gillespie EiC at [33] & [34]

Significant Effects on Aquatic Life

[1319] Mr Ironside in his opening submissions⁹¹² discussed the ecological effects and made reference to Subsection 107(1)(g) of the RMA and the requirement that the discharge of fish feed not give rise to or be likely to give rise to any significant effects on aquatic life in the receiving waters. His discussion on the issue centred around the benthic effects and whether ES3.0 would be a more appropriate standard than ES5.0. His concern was whether there might be significant effects on benthic aquatic life.

[1320] We have already discussed the differentiation between the water column (“in the receiving waters”) and the seabed. Given that differentiation, it is only effects on aquatic life within the receiving waters and not effects on the seabed that are relevant to Section 107. It follows that any effects on the benthic fauna and benthic in-fauna cannot be effects on aquatic life “in the receiving waters”. Mr Nolan discussed the meaning of the word “significant”. As he pointed out, “significant” is an evaluative judgment depending on the relevant circumstances. In the context of the RMA, a significant adverse effect has been confirmed as a “scientific significant adverse effect.”⁹¹³

[1321] In respect of aquatic life within the water column we heard evidence:

- [a] From Dr Gillespie, who in conjunction with the evidence of Mr Knight and Mr McKenzie, suggested a rationale for the development of the proposed farm sites that would result in minimum risk to the ecological integrity of the Marlborough Sounds water column environment. This in combination with monitoring would enable development and implementation of appropriate adaptive management measures to ensure protection of the environment;⁹¹⁴
- [b] From Dr Dempster who in his unchallenged evidence stated that the main impact of salmon farms on wild fish populations would likely stem from the waste salmon feed that falls from the farm system. As we have said, this is generally 0.1% - 0.3% of total feed used; and

⁹¹² Ironside Opening Submissions at 16 - 20

⁹¹³ *Biomarine Limited v Auckland Regional Council* EnvC A14/07 at [39] – [43] and [105]; *Meridian Energy Limited v Wellington City Council* [2012] NZEnvC27

⁹¹⁴ Gillespie EiC at [26] – [27]

- [c] There are no witnesses who suggested a significant effect on aquatic life in the receiving waters.

[1322] Even if Section 107 were interpreted so as to include consideration of benthic effects, the evidence of King Salmon is clear that there are no significant effects.

[1323] We have found in the seabed discussions, that the fine mud and silt sediments that make up the seabed beneath the selected sites support communities generally considered representative of many other areas within the Sounds. They also represent areas that have relatively insignificant ecological biota. Any effect on a Sounds-wide level would be insignificant.

Finding on Section 107 of the RMA

[1324] We accordingly find that Section 107 presents no impediment to the grant of any of the resource consents. We are also satisfied that the conditions of consent that require on-going monitoring are a safeguard to Section 107 not later being breached.

[1325] We are comforted in coming to our conclusion by the fact to hold otherwise would run the risk of prohibiting any finfish farming in coastal waters, given that most finfish farms would be likely to result in some adverse effect on the benthic environment as a result of deposition of waste matter. Parliament could not have intended this result when it enacted Section 107.

Conditions of Consent

[1326] We are enabled by Section 108 of the RMA to grant a resource consent subject to any condition that we consider appropriate. This section is a general provision and provides a wide discretion as to the content of conditions, so long as any condition is not implicitly forbidden as being contrary to the intent of the kind of condition contained in subsection 2.⁹¹⁵

[1327] The power to impose conditions is not unlimited. To be valid it must:

⁹¹⁵*Carter Holt Harvey Limited v Te Runanga o Tuwharetoa ki Kawerau Limited* [2003] 2 NZLR at 349

- [a] Be for a resource management purpose;
- [b] Fairly and reasonably relate to the development authorised by the consent; and
- [c] Not be unreasonable.

[1328] At the outset King Salmon provided to us and the parties a set of proposed draft conditions that it considered appropriate. Those draft conditions have gone through an iterative process that culminated in a set of conditions dated 18 October 2012 that reflected King Salmon's position at the close of the hearing. That set of conditions has been attached as **Appendix 4**.

[1329] A number of parties commented on the proposed conditions of consent during the hearing and sought changes in principle, and in some instances, to the wording of the Appendix 4 version. More often than not, the suggested changes in principle were not accompanied by proposed wording.

[1330] The number of conditions that were challenged prior to the close of the hearing amount to approximately 50. We have set out in a table the condition number and topic; the party contesting the condition; the reasons for contesting; the alterations sought; and our determination with succinct reasons. That table is attached and marked **Appendix 6**.

[1331] We have, during the course of our evaluation of the contested issues indicated amendments that are required. Those amendments are contained in **Appendix 7** with the changes shown in red track changes.

[1332] Since the issue of the Draft Decision we have received comments from a number of parties suggesting changes of a minor or technical nature pursuant to Sections 149Q(4) and (5). Changes that we have approved as being within scope and as being appropriate have been made. We have also divided the conditions into four separate sets of conditions – one for each farm approved – see **Appendices 8 – 11**.

Term of the Resource Consent

[1333] King Salmon have applied for 35-year terms for each of the concurrent resource consents required for their proposed farms. A number of submitters have questioned the length of the term. Some have advocated for term to be 20 years to reflect the CMZ2 provisions in the Sounds Plan.

[1334] Section 123A of the RMA states:

123A Duration of consent for aquaculture activities

- (1) ... must specify the period for which a consent is granted.
- (2) The period ... must not be less than 20 years from the date of commencement of the consent under section 116A unless-
 - (a) the applicant has requested a shorter period; or
 - (b) a shorter period is required to ensure that adverse effects on the environment are adequately managed.
- (3) The period ... must not be more than 35 years.

[1335] In setting the duration of consent the level of financial investment that the consent holder has made in achieving their resource consent is a matter to take into account. King Salmon have and will incur considerable costs. Mr Mark Hutton, a director of New Zealand King Salmon Investments Limited, gave evidence that the costs of the present applications will be in the region of \$8m and further development costs will be in the vicinity of \$34.8m.⁹¹⁶ He further told us that due to the significant level of capital required it would be necessary to obtain new sources of capital from both debt and equity.⁹¹⁷ A 35-year term would enable the minimum necessary return on investment threshold to be achieved. By contrast, a 20-year term would significantly reduce the return by a factor of 25%.⁹¹⁸ This evidence was unchallenged.

[1336] We have reduced the number of zones to four. This would reduce the investment costs, but equally, it would reduce the returns on the investment. Importantly, it would also reduce the potential for significant adverse effects on the function of the ecosystem of the Sounds which we now discuss.

⁹¹⁶ Hutton EiR at [3.6] & [4.2]

⁹¹⁷ Ibid at [4.5]

⁹¹⁸ Ibid at [F] and [4.1]

[1337] Our particular concern with a 35-year term relates to the potential effect on the water quality, scientific uncertainty as to the ecosystem response and customary values of the Sounds environment.

[1338] The adaptive management approach has been adopted and a robust set of conditions applied to the issued consents that gives certainty to the near field operation of the farms. However, the far field and Sounds wide effect of the farms in combination with yet to be fully understood natural variation and trends in sources of nutrients entering the Sounds from the ocean, land and other activities leave a higher degree of uncertainty beyond a 20 year period. This could be addressed, if necessary, by the Council through the review process.

[1339] The function of kaitiakitanga generally transfers on a generational basis, the term of 35 years would transcend at least one generation and breakdown the capacity to transfer matauranga and the kaitiaki duty to the next generation. We are conscious that a 35 year term would transcend at least one generation.

[1340] However, balancing the various factors we tend to the view that the overall cost of investment together with the reduction in the number of zones is such that a 35 year term is warranted.

Decision on Resource Consent Applications

[1341] We are satisfied that on balance the concurrent resource consent applications for Papatua, Waitata, Richmond and Ngamahau should be granted, subject to the Conditions of Consent as set out in **Appendix 8, Appendix 9, Appendix 10 and Appendix 11**, respectively. While some adverse effects will arise, particularly in respect to the water quality, the seabed, Maori values, natural character and landscape, and amenity values: these effects can be adequately managed through the proposed conditions of consent.

[1342] Any adverse effects need to be balanced with the need to provide for the economic and social well-being of the community. We reiterate, that providing for these four farms, this will strike the right balance.

THE WHITE HORSE ROCK APPLICATION

[1343] The proposed White Horse Rock farm would be situated within the CMZ2. Thus it is necessary for us to consider the proposal within the context of the relevant provisions of the Operative Sounds Plan.

Statutory Basis for Decision

[1344] We have earlier set out the statutory requirements of Sections 104, 105 and 107 of the RMA that are of particular relevance. We do not propose to repeat what is said.

The Relevant Statutory Instruments

[1345] We have also discussed throughout this decision the relevant provisions of the statutory instruments that form the framework for our consideration of the issues. Again, we do not reiterate what was said.

Adverse Effects on the Environment

[1346] In considering potential adverse effects that could arise, we are mindful, in addition to the statutory provisions that we have addressed in this decision, of the assessment criteria contained in Rule 35.4.1 of the Sounds Plan. As well, the Plan contains assessment matters for marine farms, structures, seabed disturbance, occupation of the coastal marine area and discharges to water in the coastal marine area. They are listed as assessment matters. So they are predominantly a list of matters that we are to consider rather than giving guidance to the level of effects expected.

[1347] Of particular relevance to the White Horse Rock proposal are those that address:

- [a] Effects on the water column and seabed;
- [b] Effects on Maori;
- [c] Effects on recreational fishing;

[d] Effects on landscape and natural character; and

[e] Effects on navigation.

[1348] All of these relevant matters reflect many of the relevant provisions in other parts of the Sounds Plan and in the other relevant statutory instruments. We have referred to those provisions in some detail when we have discussed the contested effects to which they relate.

Effects on the Water Column and Seabed

[1349] Effects on the water column and the seabed are not only important from the point of view of the physical and biological nature of the site, but also for the flow on effects to Maori customary practices and recreational users especially fishing and diving.

[1350] We have found that the proposed White Horse Rock site would be close to, and affect the reef structure close to the shore. We have accepted that the blue cod habitat lies close to the shore and along reef structures. We have found that the reef area adjacent to the proposed farm is frequently used as a recreational and customary fishing ground, particularly for the species blue cod.

[1351] We have found that the deposition from the farms would have an adverse effect on the blue cod habitat, particularly beneath the cages. However, the depositional footprint of the farm is small in relation to the availability of such habitat.

[1352] However, while the effects on fish population would likely be small, this would not be the same for recreational and customary fishing. The area was identified as a popular recreational fishing spot by a number of submitters. Mr Greenway also indicated the importance of this site as a recreational fishery with snapper, blue cod and kaihawai recorded as common catches. The area was also identified as important to iwi as a traditional fishing ground. We have found that the proposed farm would have adverse effects on amenity for recreational fishing. It would also have adverse effects on Maori customary fishing in the vicinity of the site.

Effects on Navigation

[1353] The Waitata farm would be on the seaward side of the proposed White Horse Rock Farm. If both farms were to be developed there would be a block of fish cages some 200m wide with a 77m gap between the two sets of cages after allowing for a 20m standoff distance on both sides. We have found that the adverse effect on sea room, navigation and safety in this coastal area would be more than minor should the White Horse Rock farm be established inshore of the Waitata farm.

Landscape and Natural Character

[1354] The proposed farm would be located off a prominent headland. The cumulative effects, together with the Waitata farm, on natural character and landscape values would be high. The combined effect of the built structures introduced to such a prominent location and close to the shore would, in our view, be imposing.

[1355] Looking at the Reach as a whole, we found that the introduction of five new farms would have a high impact on natural character and landscape values.

Assessment

[1356] We find that the adverse effects on recreational fishing, customary fishing, navigation, natural character and landscape, when considered cumulatively with the existing farms and the farms consented would be sufficiently high to tip the balance against granting the application.

[1357] Accordingly, the White Horse Rock application is denied.

DETERMINATION

A. The Plan Change

- 1. The Plan Change request is approved in part by allowing the Plan Change with respect to the proposed Papatua, Ngamahau, Waitata and Richmond Zones.**
- 2. The Plan Change request is rejected in part by declining the Plan Change with respect to the proposed Kaitapeha, Ruaomoko, Kaitira and Tapipi farms.**
- 3. The Plan Change is to be in accordance with Appendix 3 of this decision, but as amended by:**
 - (a) deleting all matters referring to the proposed Kaitapeha, Ruaomoko, Kaitira and Tapipi farms;**
 - (b) substituting the word [eight] with [four]; and**
 - (c) deleting the proposed Prohibited Activity Rule in Clause 16 and substituting it with the following as a new bullet point in Rule 35.5 Non-Complying Activities:**

“Marine farms within Coastal Marine Zone 3 other than marine farming provided for under Rule 35.4.2.10.1.”

B. The Concurrent Resource Consents

- 1. The resource consent application for Papatua is granted in terms of the Conditions of Consent as set out in Appendix 8.**
- 2. The resource consent application for Waitata is granted in terms of the Conditions of Consent as set out in Appendix 9.**

3. The resource consent application for Richmond is granted in terms of the Conditions of Consent as set out in Appendix 10.
4. The resource consent application for Ngamahau is granted in terms of the Conditions of Consent as set out in Appendix 11.
5. Because of the complexity of the Conditions of Consent and the number of iterative changes that have occurred since the commencement of the hearing, leave is given to the Marlborough District Council to apply within one week from receipt of this decision for amendments to correct any minor mistakes or defects.

C. The White Horse Rock Application

1. The resource consent application for White Horse Rock is declined.



Gordon Whiting
Retired
Environment
Judge/Chairman



Helen Beaumont
Member



Edward Ellison
Member



Mark Farnsworth
Member



Michael Briggs
Member