Report and Recommendations of the Marlborough Salmon Farm Relocation Advisory Panel

Prepared for the Minister for Primary Industries July 2017

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Executive Summary

The Minister for Primary Industries has exercised his powers pursuant to sections 360A-C of the Resource Management Act 1991 (RMA) to propose a change to the Marlborough Sounds Resource Management Plan (the Plan) to specifically zone six alternative locations in the coastal marine area of the Marlborough Sounds to enable relocation of some existing salmon farms as a restricted discretionary activity ("The Proposal").

Currently, there are twelve consented sites for finfish farming in the Marlborough Sounds. The six proposed new sites are to be in substitution for six of the existing consented sites which are currently in locations which give rise to significant suboptimal environmental outcomes.

The Panel's role was to review the expert research reports, analyse the technical information, consider the comments received in writing and orally at public hearings and then, to advise the Minister as to our views on the proposal with any recommendations for change that the Panel considers should be made.

The Panel has recommended that the Proposal proceed in respect of three of the six sites, namely Tio Point, Horseshoe Bay and Richmond Bay South. If only three new farms are to proceed as part of the Proposal, then it is appropriate that consents for three currently operational farms be surrendered, namely Waihinau, Otanerau and Ruakaka Bay. The grounds for recommending the Blowhole Point¹ and Waitata Mid-Channel sites not proceed are site specific, with there being no single disqualifying feature at Waitata Mid-Channel. Rather the Panel's conclusion on that site was a combination of navigation, cultural, natural character and landscape effects.

Legal Considerations

Many of those who commented on the Proposal expressed their opposition to the Minister's use of his section 360A-C powers.

To the extent that jurisdictional issues were raised, the Panel has concluded that the Minister has not exceeded his jurisdiction.

To the extent that the Minister has a discretion, the Panel considers it is for the Minister to decide what procedure to adopt. Parliament has conferred these powers upon the Minister and it is for the Minister to determine whether to exercise them in any given circumstance.

Many submitted in their written comments that the Minister was obliged to undertake a s.32 RMA evaluation before calling for comments. This would have given those wishing to comment on the Proposal a chance to review for themselves the s.32 evaluation and comment upon its adequacy or otherwise. The Panel has determined

¹ The spelling of Blowhole as one word is the style used in the Proposal and in this report. We note, however, that the New Zealand Topographic map series uses the spelling of Blow Hole as two separate words.

that the Minister is not obliged to undertake a s.32 assessment before notifying the Proposal for public comment.

Many people opposed the Proposal on the ground that NZ King Salmon Limited (NZKS), the company most likely to benefit from it, is largely owned by overseas interests. The Panel considers the law on this point is clear. For RMA purposes questions of overseas ownership are irrelevant. It is the activities and their effects which are to be assessed.

It was also said by a number of those making comments that the environmental record of NZKS is far from exemplary, and that accordingly the Proposal should not proceed. The Panel considers this suggestion has no foundation in law. This is a proposal to change a zoning and not the consideration of an application for resource consents consequent on the Plan Change.

The Panel considered that the request by Marlborough District Council to merge the proposed CMZ4 zone with the existing CMZ3 zone was not feasible as the two zones serve different purposes. The CMZ 4 zone is solely designed to enable relocation of some existing poorly performing salmon farms which are having a detrimental effect on the environment. To achieve that purpose that zone requires the imposition of specific rules relating to the approval of consents for the relocation sites, which contemporaneously require surrender of existing consents as a precondition to the exercise of the new consent.

Substantive Issues

1. Benthic

We are satisfied on the expert evidence that salmon farming can be conducted at the proposed new high-flow sites in such a manner that the discharge to the immediate seabed will be below ES (Enrichment Scale) 5 as provided by the agreed Benthic Guidelines. Further we concluded that by the adoption of an adaptive management regime coupled with both close and far-field monitoring, the broader area of deposition should be able to be maintained at ES 3 or under; i.e. at a level that will not adversely affect the ability of the benthic ecosystem to function. This would have distinct environmental advantages so far as benthic heath is concerned as a result of relocation of the current operative salmon farm sites.

2. Water Quality

The adaptive management regime the Panel is recommending should be adopted utilises a precautionary approach, based on very conservative assumptions, to protect water column quality. That approach has been upheld by the Supreme Court in the SOS case², and given the advances in scientific knowledge and understanding over the intervening five years, the Panel is satisfied on the expert evidence that the proposed conditions would serve to more than adequately address this issue.

² Sustain Our Sounds Incorporated v. New Zealand King Salmon Company Limited [2014] NZSC 40

3. Landscapes and Natural Features

The Marlborough Sounds are justifiably regarded as having areas of outstanding natural features or landscapes, but that does not mean there are not within the Sounds, areas where salmon farms can be provided for without infringing the legal requirement of the NZ Coastal Policy Statement that adverse effects on outstanding landscapes and natural features are to be avoided.

The Panel concluded that the landscape and natural features adjacent to the proposed Blowhole Point South site were indeed "outstanding", and that the location of a salmon farm in the bay would have an adverse effect upon those landscape and natural features. Accordingly, in terms of the NZ Coastal Policy Statement, no farm should be permitted at Blowhole Point South.

The Panel has concluded that the three sites it has recommended raise no issues as regards outstanding natural features or landscapes.

4. Iwi Issues

A range of approaches was taken by various iwi interests in respect of differing aspects of the Proposal.

Te Ātiawa in Tōtaranui (Queen Charlotte Sound) requested that for cultural reasons the Otanerau site be prioritised for removal, that for social reasons of employment of some of their people that the Ruakaka site be retained, and that for development reasons in their own rohe they have the opportunity through the Proposal to develop salmon farming on the Tio Point site. The conclusions reached by the Panel, for a range of cultural and other environmental reasons, mean that their requests can be met by the recommendation to relocate the Otanerau site, and allow the change of zoning at Tio Point.

Other iwi such as Ngāti Kuia, Ngāti Koata, Ngāti Toa, and Ngāti Apa opposed the proposal. The grounds for opposition by all of those opposing iwi and Te Ohu Kaimoana (TOKM) focussed on the recent aquaculture settlement process which had concluded in 2015. During the settlement negotiations Te Ohu Kaimoana and various iwi representatives raised with the Crown the possibility of the Minister using sections 360A-C of the RMA to enable water space for aquaculture to be made available for iwi as part of the settlement. That request was declined. The Crown did not indicate any willingness to use that process until after preliminary settlement terms had been reached on a monetary settlement, and mandate obtained over a lengthy period from all Te Tau Ihu iwi. However, at the same time as that settlement was being finalised MPI embarked upon the preliminary stages of using the sections 360A-C process for this Proposal.

The Panel was concerned by the MPI response that Part 2 considerations may not have been properly taken into account in dealing with iwi, but concluded that refusal to recommend this Proposal would not assist iwi in relation to what was really an arguable Treaty grievance as to Crown conduct in respect of the aquaculture settlement process. That possible grievance the Panel considered was distinct from this Proposal.

Site specific cultural concerns were expressed by Ngāti Kuia and Ngāti Koata about the potential sites in Te Hoiere (Pelorus Sound), and near its entrance. In respect of the Blowhole Point North site in particular, but also the Blowhole Point South and Waitata Mid-Channel sites those concerns had some bearing on our conclusions to recommend those sites not proceed. The detail of those considerations is contained in Chapter 5.

5. King Shag

The King Shag is a threatened species, unique to the Marlborough Sounds. A very reliable census undertaken in 2015 revealed that the total population was 839 birds. There are currently three roosting areas; a major colony at Duffer's Reef off Forsyth Island, and less populated colonies at Trio Islands and White Rocks. Five of the six sites in the Proposal are within the foraging range of the birds.

Of the three sites which the Panel has recommended proceed; the one at Tio Point is not within a recognised foraging area for the birds and would therefore have no impact upon them. The other two, Horseshoe Bay and Richmond Bay South, are near the limit of the birds' foraging range and the development of farms at these locations is expected to have little if any impact.

6. Fish Health

Internationally experienced scientists Dr. C J Johnston and Dr. B Diggles concluded that the relocation of farms from low-flow to high-flow sites would be beneficial in terms of fish health. The Panel has accepted this advice.

7. Marine Mammals and Pelagic Fish

The Panel received expert advice as to the likely effect of implementing the Proposal upon the whales, dolphins and seals which inhabit or frequent the Sounds. The proposed relocation of the farms was not seen as having any likely adverse effects on those species, or on pelagic fish.

8. Economic Issues

The Proposal was accompanied by an economic analysis prepared by PricewaterhouseCoopers, which was in turn favourably peer reviewed by Ernst & Young. This analysis satisfied the Panel that there will be positive economic impacts from the Proposal for both Marlborough and Nelson both as regards employment and in revenue terms.

9. Navigation

The sites which raised most concern as to navigation issues were those at Tio Point, Waitata Mid-Channel and Blowhole Point North. The other sites at Blowhole Point South, Richmond Bay South and Horseshoe Bay did not raise realistic navigation issues, as those three sites lay inshore of the adjacent point to point line which dictates lines of travel within the Sounds complex. For the reasons set out in detail in Chapter 6 of this report the Panel has concluded that navigation issues at Tio Point were not sufficient to recommend that this part of the Proposal should not proceed. However, navigation issues at Waitata Mid-Channel and Blowhole Point North were amongst the reasons for the Panel recommending that these two sites not proceed.

10. Community Impacts

The Panel has concluded that the proposed relocation of some salmon farms would benefit Sounds residents in that fewer of them would be in close proximity to a salmon farm, so that any adverse impacts would be reduced in both intensity and the number of people affected. The removal of the Otanerau, Ruakaka and Waihinau existing farms would be of particular benefit to both nearby residents and to those visiting sites in the main Queen Charlotte Sound such as Cook's Cove. The relocation sites proposed for those two latter salmon farms are at Richmond Bay South and Horseshoe Bay, an area which is distant from residences, far less visited and already subject to existing marine farm development.

The proposed Tio Point site may generate limited adverse visual effects, but no dwelling would be less than 1 kilometre from the farm. Furthermore, the Otanerau farm, which is proposed to be relocated to Tio Point, generates considerably more adverse effects for a larger number of people with nearby residences than would be affected by the proposed location.

Chapter 1. Introduction

1.1 Proposed plan change

The Ministry for Primary Industries (MPI) has prepared a proposed plan change to provide for the relocation of six existing salmon farms in the Marlborough Sounds from lower flow sites to higher flow sites. MPI propose to amend the Marlborough Sounds Resource Management Plan (MSRMP) using the regulation-making powers in ss360A-C of the Resource Management Act 1991. From now on in this report this is referred to as the Proposal.

1.2 Reasons for relocating

The reasons for relocating sites as provided by MPI in Discussion Paper 2017/04³ are as follows:

• It would ensure the environmental outcomes from salmon farming are improved through the implementation of the Best Management Practice Guidelines for salmon farms in the Marlborough Sounds: Benthic environmental quality standards and monitoring protocol, November 2014.

• It may maintain or improve the social and cultural outcomes from salmon farming by creating jobs and moving salmon farming away from areas of high competing use.

• It would maintain or increase the economic benefits of salmon farming.

• This Proposal provides for industry growth through more efficient use of marine farming space, rather than from creating additional new space.

The Panel has also identified enhanced water quality effects as a potential reason for relocating.

We will be examining these reasons in greater detail later in this report.

1.3 Background to the Proposal

There are 12 consented fin-fish farming sites in the Marlborough Sounds and, with one exception, these are all salmon farms operated by NZKS. Six of the existing salmon farm sites are said to be unsustainable environmentally. The sites proposed to be relocated are in shallow bays with low flows. Some are located near populated areas.

The sites are in Ruakaka Bay and Otanerau Bay in Tōtaranui/Queen Charlotte Sound, and Forsyth Bay, Waihinau Bay, and Crail Bay (two sites) in Te Hoiere/Pelorus Sound. The Crail Bay sites have not been stocked since 2011.

MPI proposes that these six existing salmon farm sites should be decommissioned and that six new sites for salmon farming should be developed, in a staged process.

The proposed relocation sites are;

³ Potential relocation of salmon farms in the Marlborough Sounds, MPI Discussion Paper 2017/04

Te Hoiere/Pelorus Sound:

- Blowhole Point North
- Blowhole Point South
- Waitata Mid-Channel
- Horseshoe Bay
- Richmond Bay South

Kura Te Au/Tory Channel:

• Tio Point

MPI proposes that the order of consent surrenders should be as follows; Ruakaka, Otanerau, Waihinau Bay, Forsyth Bay and Crail Bay (Marine Farm Licence 48 and 32).⁴

1.4 Benthic Guidelines are central to Proposal

The Best Management Practice Guidelines for salmon farming in the Marlborough Sounds: Benthic environmental quality standards and monitoring protocols (known as the Benthic Guidelines) were developed in 2014 as a collaborative process between local and central government, industry, scientists and the local community.

The key element of the Benthic Guidelines is the use of Environmental Standards. ES 5 in the zone of maximum effect, and ES 3 in the outer limit of effects, to set a maximum permitted level of enrichment ('bottom lines') for a salmon farm.

At ES 5, species diversity has declined and abundance of seabed life such as worms and nematodes is at its maximum. Exceeding ES 5 means the seabed receives too much organic matter, and this may reduce the availability of oxygen in the seabed sediments. The decline in oxygen and rise in sulphides can lead to an anoxic environment, which can result in a hostile environment for marine invertebrates.⁵

Meeting these Benthic Guidelines for seabed health has been made a requirement as part of granting new resource consents for existing farms issued in 2015 at Clay Point and Te Pangu. NZKS has undertaken to voluntarily adopt the Benthic Guidelines across all farms prior to possible re-consenting from 2021 (1 site, Ruakaka) to 2024 (5 sites).

The effect of the Benthic Guidelines on feed level inputs to the water column at the existing sites is shown in Table A below:

⁴ MWH Stantec, Relocation of existing lower flow salmon farms sites, January 2017, pg145

⁵ Marlborough Salmon Working Group Advice to the Minister of Aquaculture, 23 November 2016, pg12

Table A: Compliance with the Benthic Guidelines, recent feed levels and predictedfeed levels of existing lower-flow sites. 6

Site name	Current consented feed level (tonnes)	Average historic feed level (tonnes) per year (range 2005-2015)	Number of years ES5 exceeded in last four years	Predicted feed level per year to comply with ES5 (tonnes)
Ruakaka Bay	4000	1700	three	600-1500
Otanerau	4000	1700	four	500-1500
Forsyth Bay	4000	2500 (600- 3800)	three	1000-2000
Waihinau Bay	3000	1800 (0- 3300)	two	1000-2000
Crail Bay MFL48	960	20	NA	500-1000
Crail Bay MFL32	1180	1300 (1000- 1600)	NA	500-1000
TOTAL	17140	9020 (6820- 12120)		4100-9000

In an economic impact assessment in 2016, PricewaterhouseCoopers (PwC) estimated meeting the Benthic Guidelines to reduce environmental effects at the existing sites would significantly impact the ongoing commercial viability of farms at the existing sites and the numbers of people employed.⁷

⁶ Potential relocation of salmon farms in the Marlborough Sounds, MPI Discussion Paper 2017/04, pg33

⁷ PricewaterhouseCoopers – Marlborough Salmon Relocation – Economic Impact Assessment, November 2016.

1.5 Potential for further aquaculture

We were advised that in 2012, MPI began a process to identify potential aquaculture space (finfish, mussels and oysters) in the Marlborough Sounds to deliver the Crown's Treaty aquaculture obligations to iwi. An initial list of over 100 sites was identified, and this was subsequently refined down to a very small number of potential sites following constraint analysis using environmental, biophysical, hydrological, fisheries and RMA constraints. This process demonstrated that suitable new space in Marlborough to grow salmon was extremely limited. We return later in this report to address iwi concerns about this process.

In 2015, MPI began work with the Department of Conservation (DOC) to explore options to enable existing Marlborough salmon farms to comply with the Benthic Guidelines. Nine potential high-flow sites (four in Tory Channel and five in Waitata Reach) were eventually identified for detailed investigations on their suitability to grow salmon as part of an Assessment of Environmental Effects (AEE) process.

1.6 The Marlborough Salmon Working Group

In mid-2016, MPI, supported by the Marlborough District Council (MDC), convened the Marlborough Salmon Working Group (the Working Group). The Working Group's purpose was to consider options to implement the Benthic Guidelines and to ensure the enduring sustainability of salmon farming in Marlborough, including environmental outcomes and landscape, amenity, social and cultural values. While non-binding, the recommendations would inform the future planning work on salmon farming in Marlborough.⁸

The group comprised nominated individuals from MPI, DOC, MDC, Te Tau Ihu⁹ Iwi Forum, NZKS, Aquaculture New Zealand, and local community interest groups.

This group had seven meetings and considered a range of options, including reducing stocking levels (and associated feed levels) at existing lower-flow farms, waste capture, seabed remediation, improving feed efficiency, land-based aquaculture, offshore farming, and relocation. The Working Group produced a public report.

The Group concluded the only viable short-term options at this time with current technology were either reducing stocking density at the existing farms or relocating the farms to higher flow sites. In its advice it recorded the following:

Members generally agree that shifting existing farms to high-flow sites may enable NZKS to comply with the Benthic Guidelines within an acceptable timeframe, while remaining operationally and commercially viable. Members agree that relocation must not lead to an increase in total surface structure area, and must lead to a gain in environmental outcomes (ecological, social, cultural and economic). Some SWG members do not agree that relocation should allow increased production over current levels. Some members do not

⁸ Marlborough Salmon Working Group Advice to the Minister of Aquaculture, 23 November 2016

⁹ Te Tau Ihu o te Waka a Maui is the generic Māori name for the Top of the South Island

agree that relocating farms would result in better environmental outcomes. Potential benefits of site relocation need to be carefully assessed.¹⁰

In respect to the nine potential relocation sites, the Working Group identified:

a. Three sites to proceed to public consultation: Richmond Bay South, Horseshoe Bay, and Tio Point.

b. Three sites where members had divergent views on whether the sites are appropriate to proceed to consultation; Blowhole Point North, Blowhole Point South, and the Waitata Mid-Channel.

c. There were three sites recommended to be eliminated from the process; Tipi Bay, Te Weka Bay, and Motukina.

MPI has promoted the first six sites for public consultation.

The Marlborough Salmon Working Group also recommended:

- That all relocated farms adopt an adaptive management approach involving staged development and environmental monitoring. And, that in addition to the existing Benthic Guidelines, Best Management Practice-Water Quality Guidelines need to be developed.
- If existing salmon farms are relocated then the coastal space previously occupied by the farms should not be made available for future aquaculture.
- Research to facilitate seabed remediation where farms have been vacated.
- The Marlborough salmon farming industry is encouraged to continue research into waste capture, improved feed efficiency, land-based aquaculture and offshore farming to ensure ongoing environmental and social improvements.
- Research initiatives on endangered King Shag and improved state of the environment monitoring.
- The Government explores options to close the enclosed Marlborough Sounds to any further new salmon farming space. Options would need to consider iwi settlement obligations and growth aspirations.
- The Government and MDC develop more coordinated and strategic crosssector approaches to the environmental management of the Marlborough Sounds. This includes improving State of the Environment Monitoring to better measure and manage the cumulative effects of aquaculture and other activities.
- The Working Group provide additional advice to the Minister following the public consultation process.¹¹

¹⁰ Marlborough Salmon Working Group Advice to the Minister of Aquaculture, 23 November 2016, pg15
¹¹ Ibid, pg6

Chapter 2. Panel appointment

The Marlborough Salmon Farm Relocation Advisory Panel (the Panel) was established as part of the Minister's process to give the public and iwi authorities the opportunity to comment on the proposed plan change. The Panel has been charged with testing the case for relocation and to make recommendations to the Minister.

The Terms of Reference dated 21 February 2017 are set out in Appendix 1 to this report.

The Panel was required to report on the written and oral comments submitted as part of the consultation process, and to consider the technical, legal, ecological, economic, social and cultural aspects of the Proposal.

The Panel members appointed were Professor Peter Skelton (Chair), Ron Crosby and Alan Dormer.

This report provides input to the Minister's decision as to whether to recommend that the Proposal proceeds by way of regulations made under sections 360A-C of the RMA. Following consideration by the Minister the report will be publicly notified.

During the course of the hearings there was one assertion of possible predetermination by a panel member. Mrs. Judy Hellstrom, a member of the Marlborough Salmon Working Group, made a written comment, reiterated at the hearing, that she had concerns about a possible predetermination by Mr. Crosby in respect of the decision of the Board of Inquiry in its report in 2012. Some people were asserting that the BOI had determined that a threshold for salmon farming had been reached in the Waitata Reach in Pelorus Sound.

Mr. Crosby who was at that time the independent facilitator for the Working Group process had quickly read parts of the Board of Inquiry report and could not find reference to a threshold. At our hearing Mr. Crosby responded to Mrs. Hellstroms's challenge by saying that a member of the Working Group had asserted that there was a threshold which meant that no further consideration could be given to salmon farms in the outer Waitata Reach area. He continued by saying:

I thought the Salmon Working Group could continue because it did not appear to me either on the Board of Inquiry decision or the Supreme Court's decision that there was a reference to a threshold, but I did draw attention to the fact that the Environment Court did have a reference in one other unrelated case at Port Ligar to a threshold.¹²

MSWG had then resolved that legal opinions be sought on the issue of whether or not there was such a threshold. We should also record here that shortly after Mr. Crosby tendered this advice to the MSWG he relinquished his position as facilitator of that

¹² Hearing Transcript 1 May, 2017 p36

process because he was going overseas and he took no further part in the MSWG process.

Mr. Crosby also stated that he had not formed a fixed view on the issue which required him and the other Panel members to consider in detail the decisions involved, and the varying legal opinions received, which was a process the Panel had yet to undertake.

Professor Skelton, Panel Chairman, then asked Mrs. Hellstrom whether her concerns had been addressed and she replied she was "*much happier*".¹³

In the light of Mr. Crosby's explanation, Mrs. Hellstrom's acknowledgment of that and the fact that Mr. Crosby ceased to be involved in the process shortly after the issue arose, the Panel decided to continue its hearings as originally constituted.

¹³ Hearing Transcript 1 May 2017, pg38, Line 30

Chapter 3. The Hearing Process

3.1 Information provided to submitters

On 26 January 2017 MPI publicly notified the Discussion Paper No: 2017/04 Potential Relocation of Salmon Farms in the Marlborough Sounds by way of consultation. People wishing to comment were asked to respond by 27 March 2017. The consultation documents included the Discussion Paper and summary, a report on the potential amendments to the MDC planning maps, an assessment of environmental effects with a summary of that and two Errata (amendments). Those various documents referred to a long list of technical reports on potential effects. Also available were related documents including photo simulations of what the proposed farms might look like and the Marlborough Salmon Working Group's advice report. A link to these is in Appendix 2 which is a full list of the consultation documents.

MPI identified three potential outcomes from the Proposal.

- a) Outcome One: Make regulations under sections 360A-C of the RMA to change the Marlborough Sounds Resource Management Plan to enable relocation of all six existing lower-flow farms to the potential higher-flow relocation sites.
- b) Outcome Two: Make regulations under sections 360A-C to change the Marlborough Sounds Resource Management Plan to enable relocation of some lower-flow farms to potential higher-flow sites, while others remain in their present location.
- c) Outcome Three: Not make regulations under sections 360A-C and all existing lower-flow farms remain at their present locations.

MPI sought feedback on a number of issues and provided a response form.

3.2 Site visit

The Panel viewed the existing sites and the proposed sites from a helicopter on 9th April 2017. See Appendix 3 for the itinerary.

3.3 Hearing dates

Comments were heard at the Marlborough Convention Centre, Blenheim and at Te Hora marae at Canvastown. There were 12 days made available for these presentations between 10 April and 17 May 2017 with New Zealand King Salmon (NZKS), Marlborough District Council (MDC) and MPI presenting responses to matters raised during the preceding hearings on 22 May 2017.

Of the 588 written comments received, the largest proportion were from Blenheim and Picton, with most being from individuals (84.5%). We do need to record, though, that many of the supporting comments were from NZKS employees or other people with contractual links with NZKS. Summaries of the written comments and transcripts of oral submissions are available on-line and the links are listed on Appendix 4 to this report.

We add here that to keep this report within manageable proportions it has not been possible for us to refer to each comment or the presentations of all those who engaged in the process or appeared at our hearings. We have necessarily limited the report to addressing the relevant issues which we have identified from all the information provided to us, including the comments and presentations.

Four Procedural Minutes were issued by the Panel - see Appendix 5.

Meetings with three groups of expert witnesses were also held in public at the Blenheim Convention Centre in relation to the issues relevant to King Shags, landscape values and economic assessments - see Appendix 6.

Two maps of the existing and proposed sites, over-laid with the Areas of Outstanding Landscape Value designation from the operative Marlborough Sounds Resource Management Plan, are attached in Appendix 7. These maps were made up after the hearings and will be referred to again in the landscape discussion in Chapter 6.

3.4 Statement of position

MPI stated that the relocation of the farms to higher-flow sites would have the following beneficial effects:

- The improved ability of the six salmon farms to operate in a way that meets the Benthic Guidelines for sea bed sustainability resulting in reduced negative effects on the sea floor
- Better managed water quality
- Improved fish health
- Increased economic returns and socio-economic benefits
- Improved visual effects
- Salmon farms moved further away from Queen Charlotte residents/users

The counterview expressed in the written comments and by people appearing at the hearings was that the relocation of the farms would have the following negative effects:

- Impact on the benthic areas under the farms to a greater extent
- Reduced water quality
- Reduced ecological health
- Impact on Outstanding Natural Character
- Impact on Outstanding Landscape Values
- Increased negative effects on the Sounds community
- Increased risk to navigation, in particular in Tory Channel and Waitata Mid-Channel
- Impact in and near Te Hoiere (Pelorus Sound) on issues of significance to Māori
- Impact on the integrity of Coastal Plan formation processes

3.5 The mood of the hearings

The hearings were scheduled in an order that had those supporting the Proposal or, if not supporting it, at least neutral or concerned about only some parts of it going first, followed by those who were opposed. The Panel also held a one-day hui on the Te Hora Marae at Canvastown on 17 May 2017 when we heard from Ngāti Kuia, Ngāti Koata and the Te Ohu Kaimoana Trust.

In the early part of the hearings there was little tension apparent amongst those attending. MPI provided a largely factual summary of the Proposal in a comprehensive presentation by Mr. Dan Lees supported by Ms. Frances Lojkine as to planning matters. We also heard from the Mayor of Marlborough Mr. John Leggett, Mr. Pere Hawes a planner for the MDC, Port Marlborough and the Marlborough Harbour Master on various matters to do with navigation issues.

We heard, too, from many of the staff of or contractors with NZKS who emphasised the economic and social benefits the salmon farm industry provided in both Nelson and Marlborough.

After that we had a day or so with people or groups who had some concerns about different aspects of the Proposal that might affect them. We also heard at that stage from Kiwi Rail, the operators of the Inter-Islander Ferry Service, and Te Ātiawa, one of the eight Iwi in the Nelson/ Marlborough Area which conditionally supported the Proposal at Tio Point.

We then had a comprehensive presentation from NZKS which at times we thought amounted to overkill, especially in relation to the merits of the company as a corporate citizen and the international reputation of its product, neither of which are of particular relevance to the matters we have to assess under the RMA.

We soon came to understand, however, why NZKS had gone to the lengths just described as we began hearing from those who were opposed to the Proposal.

From our reading of the written comments we had already gained an understanding of the depth of anti-Proposal feeling, but those written comments were not enough to

describe the very strong anger and frustration of many of those who came to speak to their written comments.

The mood of the hearings changed, as in many cases presenter after presenter expressed their anger at the Minister's use of sections 360A-C of the RMA; at the perceived "corrupt" (their word) association between the government and NZKS, and the overriding of the Marlborough District Council's planning functions.

Some of this anger and frustration was probably associated with the fact that salmon farming in the Marlborough Sounds has had a long and litigious history. Nevertheless, the members of this Panel have collectively a long history of hearing environmental cases and we are agreed that none of us has ever experienced the level of vitriol that was palpable in the hearing room as these presentations continued.

Submissions were commonly made using intemperate language or ascribing unprofessional or unethical motivations against all and sundry involved in the Proposal.

In a more measured and restrained way a similar degree of anger and frustration was evident at our hui on the Te Hora Marae, with those feelings being triggered by expressions of feelings of lack of respect for iwi values, and concerns as to breach of entitlements to be fairly dealt with as Treaty partners. We explore those matters in more detail later in this report.

We have made a point of reporting on these matters to the Minister not because they have materially influenced the conclusions we have reached. We are, of course, very cognisant of the fact that ill-founded assertions and intemperate language need to be put to one side in the decision-making process.

Even when that was done, however, the force of the opposition was sufficient for us to judge that the Minister, and the Government of which he is a part, should know that despite public surveys that tend to show otherwise, there is a substantial body of deep-seated resentment in the public arena against the Proposal. Given the depth of that feeling, we felt it was important for the Minister to appreciate that the salmon farming industry is almost certainly going to find its pathway into the future frustrated by continued deeply felt opposition through the RMA plan and consenting processes.

That could mean that new development in the Marlborough Sounds will be hotly contested, and re-consenting of existing development will face expensive and time-consuming opposition. For example, it is almost certain that the new coastal plan provisions in the Marlborough Environment Plan (MEP) will be the next battle ground, involving much expense and bitter litigation, with renewal of consents for any salmon farms being the sequel as they come up for consideration.

That outcome cannot be good for the community as a whole, if other alternatives might exist whereby this industry can continue and potentially expand in a sustainable way at locations where such division in the community can be avoided.

These are very significant motivating factors behind our conclusions addressed later in this report, that the Minister should send a message to the industry that it needs to continue to be pro-active in exploring alternatives, whether land-based or open-seabased, which will enable not only maintenance of operations, but potential development of them.

As we explain later in this report, we have concluded that the only real management mechanism open to the Minister to send that message, is to provide in the policies that any resource consents granted should have a limited term.

This should ensure that the industry continues to genuinely explore and assess the viability of such alternative locations or methods. If this does not occur then the industry will be locked into a resource management regime where it will continue to face expensive, time-consuming opposition and uncertain outcomes from litigation at every stage in the plan formulation and consenting processes. That will be so even to maintain its present levels of endeavour in the Sounds complex. The prospects of further development in that complex would appear to be even smaller.

3.6 Flawed assertions

Many comments opposing the Proposal contained a repetitive theme which was based on the fact that the Board of Inquiry (BOI) report in 2013 is less than four years old. It was also stressed that the BOI allowed only two new salmon farms in Pelorus Sound and one in Tory Channel.

The questions then posed repetitively were in essence:

- What had changed to warrant consideration of further farms?
- Why was the Proposal being made when no monitoring results had been received as to the performance of those new BOI farms?

The assertion made in all such comments was that nothing relevant had changed at all in the last four years.

Further, it was said that as no monitoring results had been received in respect of the operation of the new farms established under the BOI Plan changes, it was completely inappropriate to consider adding new farms when the outcome from the BOI farms remained unknown.

We have considered those assertions very carefully as they appeared at first sight to carry some weight.

3.6.1 Changes since Board of Inquiry report

However, we have been driven by the evidence to the conclusion that those assertions ignore some very relevant hard and undeniable facts, the detail of which we discuss later in this report. In summary, these hard facts include:

- The Benthic Guidelines were developed only <u>after</u> the BOI Report and they identify objectively, in a measurable scientific manner, the benthic effects in a way which was not possible before the BOI.
- The application of the Benthic Guidelines in this Proposal carried with it significant limitations on the feed input levels, which are known by the experts to be necessary to abide by if effects on the benthos are to be maintained within the ES 5 level.
- In two places in its report the BOI said it was 'astounded' and that it was 'astonishing'¹⁴ that no worst-case water quality effects scenario was modelled for it, so it had to reach its conclusions without the benefit of any such worst-case scenario being modelled. Notwithstanding that problem, and its application of the precautionary principle, the BOI still approved some of the new farms on the basis of a carefully constructed set of adaptive management monitoring conditions.
- By contrast MPI in this Proposal has ensured that not only a worst-case scenario, but a wide range of other scenarios, have been modelled. Moreover, to be even more conservative, the worst-case scenario was modelled at feed input levels which significantly exceeded those which could in fact be used to ensure the ES 5 standard was not exceeded in terms of effects on the benthos.
- Notwithstanding that conservative approach, the water quality computer modelling on this Proposal has shown a plausible outcome with less than 3% modelled adverse effects for the worst-case scenario by comparison with a baseline scenario. Those effects were described by the water quality experts as being minor or less than minor on the water column.
- Even more importantly, during the course of the hearings monitoring results from the first three BOI approved farms, Waitata, Kopaua and Ngamahau, have all shown that there can be a level of confidence in the computer modelled results as the actual measured effects in the first year of operation validated the model outcomes for the relevant period.
- At the time of the BOI hearings and Report the only methods of monitoring proposed were by physical sampling and assessment carried out laboriously, usually in daylight conditions and with extended intervals between samples.
- By contrast this Proposal advances conditions requiring the use of real-time monitoring buoys which provide a digital record of real-time sea conditions. Real time monitoring produces a multi-layered, continuous record of water column quality.
- There is now a more robust baseline figure for the King Shag population than existed before the BOI.

¹⁴ Board of Inquiry, *New Zealand King Salmon Requests for Plan Changes and Applications for Resource Consents,* 22 February 2013, paragraph 406 and 438

All of these are indisputable factual differences between the situation facing the BOI and the factual situation before us.

3.6.2 Adaptive management regime and monitoring differences

A further feature common to almost all of the comments raising concerns about water quality effects, were assertions based on maximum input feed levels only utilised as theoretical inputs for the worst-case scenario. Those comments variously expressed the feed inputs as being either four or five times the rate of feed input in comparison to existing farm feed input levels; that that level of input equated to the waste stream from a city of 300,000-400,000 people; or that the maximum level of feed input was to be 30,000-33,000 tonnes. These concerns were particularly focussed on water quality effects in Pelorus Sound.

Most making those types of assertions made either no reference at all to the limitations imposed by the adaptive management and related monitoring proposals, or if they did refer to them, did so only by a passing acknowledgment that an adaptive monitoring regime was proposed. It was almost invariable that such comments did not address the details as to the very significant limitations the proposed adaptive management regime will impose on feed input levels.

When we compared those assertions based on technical maximum feed levels with the reality of the adaptive management regime and monitoring proposed, we found the following:

- The limit on feed input initially for the five relocation farms proposed in the Waitata Reach was 6,000 tonnes, i.e. one fifth of the amount repeatedly referred to by commenters who referred either to the 30,000 tonne plus figure, or at the very least to an asserted addition of 17,000 tonnes.
- Moreover, the adaptive management regime conditions meant that any increase in feed input level could only take place after three years of actual monitored results showed less than minor impacts on water quality, and the increases are even then in significantly limited steps – each of which could only occur if no statistically significant adverse effects were shown by actual real-time monitoring.
- As we have observed above those actual measurements of effects on water quality were to occur through a system of real-time measuring buoys capable of producing digitally downloaded results, which was a vast improvement on past manual methods of sampling.
- The ES 5 benthic standard also continuously provided further safeguards against adverse effects by actual objectively quantifiable measurements of effects on the benthos.
- These monitoring methods as we have said were not available to the BOI, but the BOI recommended a similar strict adaptive management and monitoring regime, and the monitoring results from the first three BOI approved farms, Waitata,

Kopaua and Ngamahau have not disclosed any significant adverse effects on water quality. At this stage they have validated the modelled impacts on water quality, despite repeated assertions that water quality effects would be seriously adverse.

3.6.3 Supreme Court decisions

Finally on this issue of flawed concepts, many of the comments and presentations at the hearings, to quote one commonly used comment format, asserted that the Supreme Court made a number of very important findings and that "this Proposal is attempting to ride rough shod over it".

As discussed in detail later, the Supreme Court actually issued two decisions in relation to the BOI report. One known as the NZKS decision¹⁵ held the BOI had made an error of law in not refusing consent to a salmon farm at Papatua in Port Gore which would have adverse effects on an outstanding landscape contrary to the NZCPS. However, the other decision upheld the precautionary approach the BOI adopted in approving an adaptive management regime – which is the approach this Proposal also uses.

In short, the Proposal **accords** with the approach approved by the Supreme Court in that decision, rather than *"attempting to ride rough shod over it"*.

3.7 Offshore salmon farming

There are three methods of salmon farming (inshore, offshore and land-based). NZKS states that commercial offshore farming will occur sometime in the future, perhaps up to ten years away.

There are currently no commercial farms worldwide that are located in true offshore conditions (rated for waves up to 12m), the technology is developing but at this time the risks are too high and the technology expensive.¹⁶

Mr. Lees, from MPI, commented that offshore aquaculture is not the panacea.

It doesn't remove farms from the Sounds necessarily. You still need farms in the inshore as well as the offshore. They operate in tandem. When you put fish into the water they would have to go into inshore farms just because of the climate nature. You could then farm them in offshore farms but you would need to bring them back in for harvest as well into the inshore areas.¹⁷

The problem is that New Zealand is located in the roaring 40s and we do have waves that are very, very large. In the time we've been doing this work in the last couple of years, in Pegasus Bay off Christchurch there's an offshore farm and

¹⁵ Environmental Defence Society v. New Zealand King Salmon Company Limited [2014] NZSC 38

¹⁶ New Zealand King Salmon – Company Submission, Written Comment 0482, March 2017, pg46

¹⁷ Hearings Transcript, April 10, pg12

we've had two 11-metre waves across the site. So you have to have very, very good engineering to hold them into these types of seas. There's also potential implications for the health of the fish in such high seas.¹⁸

The Panel considers that the time frame to develop commercial offshore farms is medium to long term and that inshore farm consents should be limited to medium term.

Land based salmon farms were cited by some making comment as a more favourable option than inshore farms. Land based farms are more expensive, with energy costs make then commercially unviable using current technology.¹⁹

¹⁸ Hearings Transcript, April 10, pg9

¹⁹ New Zealand King Salmon – Company Submission, Written Comment 0482, March 2017, pg46

Chapter 4. Legal considerations

During the hearings, several of the issues raised were either specifically legal issues or included legal questions as part of them. We will now address these and in formulating our advice to the Minister we will apply the conclusions reached.

Before we do that, however, we should say something about this Panel's role in relation to the Proposal which may assist readers of this report to understand why we are addressing these legal issues at all. In doing so we will draw on the helpful advice we have received from Mr. Richard Fowler Q.C. who attended the last day of our public hearings at Blenheim to assist us with jurisdictional questions that had been raised in the comments on the Proposal lodged before the hearings, and at the hearings themselves.

Mr. Fowler had been engaged at our request by MPI to provide us with legal advice independent of the Ministry. His advice to us was not part of the Ministry's case before us.²⁰

Mr. Fowler referred to the relevant provisions of sections 360 A-C of the RMA for the purpose, amongst others, of placing this Panel and its public hearings process in context. He pointed out that nowhere in the statutory framework is there any mention of the establishment of an advisory panel. In this case however the establishment of such a panel with its terms of reference including its procedures was obviously intended to be part of the process by which the Minister could be satisfied that adequate public consultation with the public and with iwi had been undertaken –see s.360B(2) and (3).

Because neither those provisions in the Act, nor the establishment of the Panel gives it a decision-making role in relation to the Proposal, we asked Mr. Fowler to advise how we might best fulfil the role provided by our terms of reference to report to and advise the Minister. That issue arose out of the fact that all the members of the Panel have been appointed expressly for their expertise in resource management law, and given also that each of them has extensive experience in the more common decision-making processes under the RMA.

Mr. Fowler's advice was that we should first accept that the process of which we are a part is a special and abbreviated one in RMA terms. He suggested that our part in it can be seen as a kind of hybrid between decision-making in the sense of forming conclusions about issues, and the formulation of advice for the actual decision-maker, namely the Minister.

When we asked Mr. Fowler if we should ourselves endeavour to form a view about legal issues since we were not decision-makers, his firm advice was that we should do that for the purpose of properly advising the Minister on such issues. We now turn to those issues.

²⁰ Independent Legal Advice, Richard Fowler QC, 18 May 2017 and Further Advice, Richard Fowler QC, 2 and 29 June 2017. Located in Hearings Documents, MPI salmon relocation website.

4.1 The relationship between the Proposal and the proposed Marlborough Environment Plan

The Proposal is to change the operative Marlborough Sounds Resource Management Plan (MSRMP) in various ways to provide for up to six new sites where salmon farming will be a restricted discretionary activity. At present, some of the sites are zoned CMZ1 in the operative plan where aquaculture, including salmon farming, is a prohibited activity. They include the Waitata Mid-Channel site, and the Richmond Bay South site.

The others appear to be either wholly or partly within the CMZ2 zone, where aquaculture is a discretionary activity. If they are only partly within a CMZ2 zone, then the balance part will be within the CMZ1 zone. Two of the sites in that category appear to be the two sites at Blowhole Point North and South.

The final two sites at Horseshoe Bay and Tio Point appear to be within the CMZ2 zone, either entirely, or all but entirely.

The MSRMP became operative for all relevant purposes in 2003.²¹ In June 2016, the Council publicly notified a review in the form of new plan called the proposed Marlborough Environment Plan (MEP). This plan comprises a review of the Marlborough Regional Policy Statement (RPS) and the Marlborough Sounds Resource Management Plan, and the Wairau/Awatere Resource Management Plan to provide the single proposed MEP. Importantly, for present purposes the MEP does not contain any provisions for aquaculture. These are still currently being developed with the community.

S.360A only authorises changes to an operative regional coastal plan and therefore the proposed MEP cannot be amended under this process. Submissions have closed on the MEP and the further submission process is now underway.

We were advised by Mr. Pere Hawes, the Marlborough District Council officer charged with the proposed Plan formulation process, that the aquaculture section process will be introduced into the Proposed Plan by way of a variation, and thereafter will follow the RMA Schedule 1 process.

In formulating our advice to the Minister we are required to consider the relevant provisions of the RMA. In the present context this means, amongst other things, that we are to ensure that the proposed plan change gives effect to superior planning instruments including any national policy statement, the New Zealand Coastal Policy statement and the regional policy statement; takes into account any relevant Iwi management plans, and is not inconsistent with any other regional plans.

We are also required to have regard to any proposed regional policy statement but not any proposed regional plan; see s.66 and s.67 of the RMA.

²¹ The Plan was made operative in parts on 28 February 2003 and on 28 March 2003. The Regional Coastal, Regional and District Plan (in the form of the Marlborough Sounds Resource Management Plan) became operative in full on 25 August 2011 when one last appeal was resolved as to coastal charge issues.

4.2 The Minister's use of sections 360A-C

Under this heading several questions arise. These have been formulated based on the written comments of The Environmental Defence Society; The Royal Forest and Bird Protection Society; The Friends of Nelson Haven and Tasman Bay and Mr. Tony Black. The same matters were also covered in the presentations by the same commenters at the public hearings and in the iwi presentations at the hui on Te Hora Marae.

As we have said earlier in this report many other people also challenged the Minister's use of the sections 360A-C for a variety of non-legal reasons.

We should make it clear here that it is only jurisdictional or purported jurisdictional issues that we are now considering.

Whether as a matter of policy the Minister should use sections 360A-C is for the Minister.

In this regard we need do no more than advise the Minister of the deep concern and disquiet generally about this Proposal. This we have already done in Chapter 3 of this report.

The questions and our consideration of them now follow.

Is the proposed use of sections 360A and 360B to relocate salmon farms in the Marlborough Sounds an improper or unlawful use of s.360A because:

It is a concurrent plan/coastal permit application dressed up as a plan-making exercise?

It is not appropriate for the Ministry for Primary Industries to undertake the role and cost of a public process?

It is inefficient for the Ministry for Primary Industries to amend a plan mid–review as it undermines a strategic and integrated approach to aquaculture management

On this group of questions Mr. Fowler's response was threefold.

First, he advised that while in an extreme case a court might set aside a regulation promulgated for an improper purpose that situation does not arise here. S.68(5) of the RMA provides that rules in a plan can be either general or specific in their application across a planning area. Mr. Fowler said the EDS submission had asserted that a planning instrument can never be site specific and that this Proposal is really a consenting exercise. By letter dated 20 June 2017 Counsel for EDS Mr. R B Enright submitted that EDS had not contended that the provisions of a planning instrument cannot be site specific. He went on to submit that in this case the Ministry's site specific approach was ad hoc and inconsistent with sustainable management and that s.360A does not contemplate allocation to an individual.

We accept that Mr. Fowler may have expressed the EDS contention too strongly, but nevertheless EDS came close to saying that in its written comment when it said:

Removal of prohibited status and coastal marine area zoning in an ad hoc fashion to enable specific sites for a nominated entity is the antithesis of strategic planning.²²

Both Counsel are in agreement with the proposition that the RMA enables site specific zoning in appropriate situations and we, too, agree with that view. That being statutorily provided for, we cannot see how that can be legally impermissible. It may be undesirable but whether that is so or not is not a jurisdictional issue.

Secondly, Mr. Fowler said he was having difficulty understanding why the Ministry was the subject of such criticism. There is nothing in the statutory provisions that would prohibit the Ministry from overseeing or administering the current process which patently is not a private plan change application

On the third point, Mr. Fowler thought there just might be more substance in this point but in the end it goes nowhere because plainly the purpose of the regulation is to "*override*" the relevant parts of the operative plan. However, once that has been done there is nothing to prevent the Council from carrying out a review under s.79 of the RMA – see s. 360A(2)(c). In any event matters of appropriateness or efficiency are merit issues and not legal issues.

On this suite of questions we accept Mr. Fowler's advice. We have italicised the word "override" because although that might appear to be the effect of the Minister using the regulation-making powers the sections themselves do not use that word. In our view those sections should simply be seen as providing another plan-making process for a specific activity, namely aquaculture in the CMA. Nonetheless, Mr. Fowler's use of that word does not detract from the force of his conclusions.

The second question considered by Mr. Fowler was:

Is the non-provision of a s.32 report at this stage of the process unlawful?

S.32 (5)(a) of the RMA provides that a report under that section must be given particular regard and be publicly notified *"as soon as practicable after the proposal has been made"* in the case of a regulation. This contrasts with a plan or plan change proposal using the Schedule 1 process in the RMA where the timing is different –see s.32(5)(b) and Clause 5 of Schedule 1 which together make it clear that the relevant date is before public notification. The difference is reinforced by s. 360B (2)(d) which requires the Minister to have particular regard to the s.32 report when deciding whether to recommend the making of the regulations.

For these reasons Mr. Fowler advised that the fact that the s.32 report has not yet been made available does not render the process to date unlawful.

At the hearing we questioned Mr. Fowler further about this because we had a submission from Mr. Enright for EDS that, in this case, there was a failure to provide the s.32 report before now which amounted to a breach of natural justice. He

²² EDS Submission, Written Comment 592, 27 March 2017, paragraph 17, pg11

submitted that the statutory intent was that those wishing to make comments on the Proposal might be able to comment on the s.32 report before the Minister made a decision to proceed with the regulation.

Mr. Fowler's response was to remind us of his earlier submission that this whole regulatory process should be viewed as a special and abbreviated process to be contrasted with the usual, more participatory Schedule 1 process.

We accept Mr. Fowler's advice on this matter. In addition, it accords with the provision of two different timing sequences in s.32 (5) (a) and (b), with the former applying to plan change by regulation as in this Proposal. We conclude that the fact that a s.32 report has not yet been made and provided publicly does not render the process to date unlawful.

In his advice to us on this matter on 18 May, 2017 Mr. Fowler said he understood that EDS had focussed solely on s.32 (5)(b) of the RMA. In the letter of 20 June 2017 already referred to, Mr. Enright submitted that EDS had not focussed solely on that subsection. We accept that EDS did not solely focus on s.32 (5)(b), but for the reasons already stated above our conclusion on this matter remains the same.

The third question considered by Mr. Fowler was:

Is the use of s.360A to provide for salmon farms in currently prohibited locations beyond the power of the provision?

Mr. Fowler's advice was that he could see nothing in s.360A that restricts the ambit of the regulation making power, provided that the requirements of s.360B are met. There is certainly nothing in s.360A that states any special restriction or limitation regarding locations where aquaculture, (or any other use), is currently prohibited. In closing on this question Mr. Fowler drew attention to the last part of The Royal Forest and Bird Protection Society's submission on this point where reference is made to the inappropriateness of using the regulating making power, but as he went on to say that matter had already been dealt with earlier, in answer to the first suite of questions.

We accept Mr. Fowler's advice on this question and conclude that making provision by way of plan change, using the regulation-making powers, for salmon farms in areas where they are currently prohibited is not beyond the power conferred by Parliament.

The fourth question considered by Mr. Fowler was;

Section 360A (1) allows regulations to be made amending provisions in regional coastal plans that relate to the management of aquaculture activities in the coastal marine area. Does this mean that this power cannot be used to provide for occupation of the coastal marine area?

The argument here appears to be that the regulation—making function only provides for making plan provisions that 'manage' aquaculture activities in the CMA and 'management' does not include allocation of space for these activities in the CMA. Mr. Fowler's response to this submission was to point to s.12 of the RMA which provides for various methods of control of specified activities in the CMA including by plan rules. Importantly too, s.12 (2) provides for the control of the activity of occupying space in the CMA by plan rules. This also falls within the definition of aquaculture activities in the RMA in s.2 which "...*involves the occupation of a coastal marine area*".

Mr. Fowler also referred to an ancillary point made by Mr. Tony Black on this issue to the effect that a power to regulate does not usually permit the prohibition of the very activity that is to be regulated. This was in the context of that part of the Proposal that will prohibit activities on sites where the current permits have been surrendered.

Mr. Fowler's response was that prohibiting activities must surely relate to their management.

We accept Mr. Fowler's advice on this question. We conclude that s.360A does allow for regulations that provide for occupation of space in the CMA.

The fifth question considered by Mr. Fowler was:

s.360B(2)(c) sets out various requirements that the Minister must be satisfied of before he/she recommends to the Governor General the making of regulations. Is the fact that he has not yet done so wrong in law?

Mr. Fowler's response makes the point that once again this question raises the matter of sequencing. He then repeats his earlier advice that there is nothing in s.360B that requires the Minister to be satisfied at this point in the process, which is still the consultation phase.

We accept Mr. Fowler's advice on this question and have nothing further to add.

The sixth question considered by Mr. Fowler was:

Is the regulation making power in s.360A narrowed or circumscribed by reason of the fact that the values likely to be affected are predominately those within the shared responsibility of the council and the Minister of Conservation, or by reason of the requirement to continue to give effect to the NZCPS and in particular policy 8?

Mr. Fowler advised that s.360A (1) is permissive and the only restraining filter is that any regulations must "...*relate to the management of aquaculture activities in the coastal marine area*".²³ The fact that particular values that might be likely to be affected could be said to be otherwise of greater interest to either the Minister of Conservation or the Council is irrelevant.

When considering this advice from Mr. Fowler we noted however that in s.360B the Minister is required to consult with both the Minister of Conservation and the Council amongst others. Having noted this, we sought further advice from Mr. Fowler as to whether he might want to revise his advice on this point in the light of the provisions in s.360B. On 2 June 2017 Mr. Fowler responded in writing and this response together with his advice on two additional questions we had posed for him, arising out of our deliberations, has been posted on the MPI website.

²³ Richard Fowler, Queen's Counsel, Letter to Panel 18 May, 2017, paragraph 38

Mr. Fowler's response to our question set out above was to the effect that in the light of s.360B his original advice about s.360A may have been expressed too broadly. Consequently, he revised that advice in this way:

Whilst I would answer this question by concluding that the regulation making power is not narrowed or circumscribed by the fact the values likely to be affected are within the shared responsibility of those other parties, I would acknowledge that s.360B (2)(b) contains a requirement of mandatory consultation with those parties and for that reason any views they may have that are relevant to the proposed regulations will need to be ascertained and taken into account. However that requirement does not itself narrow the regulation–making power.

We accept Mr. Fowler's revised advice on this question and conclude that the regulation-making power itself is not circumscribed by reason of the matters set out in the original question.

4.3 The Implications of the Board of Inquiry and the Environment Court findings in the NZ King Salmon and the KPF Investments cases

This issue arises because the Board of Inquiry in the NZKS case in 2013 and the Environment Court subsequently in the KPF Investments case,²⁴ are said by some people making comments on the Proposal, to have established a limit or threshold for the establishment of new salmon farms in the area of Pelorus Sound known as the Waitata Reach.

This matter arose first when the Salmon Relocation Working Group was examining the nine potential sites for relocation, five of which were in the Pelorus Sound. The group sought advice on the matter and this was provided by an MPI solicitor. We adverted to this when discussing a claim by Mrs. Hellstrom that one of our number Ron Crosby had a conflict of interest.

The MPI solicitor advised that in her opinion the BOI did not establish a threshold when finding that only two of the then proposed new salmon farms should be provided for and consented. The original number had been five.

The background to this question arises in this way. In 2013 the BOI authorised two new salmon farms at Kopaua and Waitata in the Pelorus Sound area. At that time there were already two consents for salmon farms in that area, an operational one at Waihinau Bay and one at Danger Point in Port Ligar, which was subject to an appeal, and an operational farm at Forsyth Bay. It is said that when the BOI authorised the two new farms it did so on the basis that this was the maximum number that could be accommodated in Waitata Reach area. There is nothing in the BOI decision that actually says that the Waitata Reach had then reached a maximum number. In addition to the two new farms in the Waitata Reach authorised by the BOI, the Waihinau Bay farm was in operation and the MDC had also authorised a new farm at Danger Point in

²⁴ NZKPF Investments Limited v. Marlborough District Council [2014] NZ Env C 152

Port Ligar. This authorisation was cancelled by the Environment Court in the KPF Investments decision, after the BOI decision, and the Court did say in that decision that it thought a threshold had been reached. Looking at the situation today, however, that is not necessarily correct. Currently there are the two farms at Waihinau Bay and Forsyth Bay and the two farms authorised by the BOI at Kopaua and Waitata which makes a total of 4 salmon farm consents, although Forsyth Bay is no longer operational.

Consequently, the situation is different from when the BOI made its decisions and, as we said earlier, it did not make a finding about a threshold.

But even if it had done so we do not think either such a finding or the Environment Court's finding about a threshold precludes us from considering as a matter of law, the actual position as it is today, and as it may become if this Proposal or any part of it proceeds.

This is because, as Mr. Davies counsel for NZKS submitted, the issues are not necessarily the same now as they were at the time of either the BOI decision or the Environment Court decision and the circumstances have changed. For example, the Benthic Guidelines are now in place and, as a result, it is part of the present Proposal that the farms at Waihinau Bay and Forsyth Bay are to be closed and the consents for salmon farming at those sites surrendered.

On this issue Mr. Davies also referred to the House of Lords judgment in *Thrasyvoulou* [1990]²⁵ where Lord Bridge held that withholding planning permission did not involve any issue of legal rights and does not give rise to an estoppel. We understand this to also be the law in NZ and that even in respect of Environment Court decisions no issues of res judicata can arise.

Finally, we comment that on the facts as they will emerge from this report there will be no increase in the number of farms in the Waitata Reach general locality if our recommendations are accepted. The two new farms at Richmond Bay South and Horseshoe Bay will replace the existing farm at Waihinau and the Forsyth Bay farm is highly unlikely to ever become operational again.

4.4 The Implications of the Supreme Court Decision in the NZ King Salmon case with regard to alternative sites

In the context of this Proposal the decision of the Supreme Court has two implications for us. The first relates to the ruling by the Court that adverse effects on outstanding natural character and landscapes are to be avoided pursuant to Policies 13 and 15 of the NZCPS. We take this to mean that, if we find as a fact that establishing a salmon farm at any of the proposed six sites will have an adverse effect on an outstanding landscape, the Proposal should not proceed at that site. We note the Court's reference

²⁵ House of Lords judgment. *Thrasyvoulou* [1990] 2 A.C 271 paragraph 290

to minor or transitory effects and that it did not see such effects as falling within the prohibition.²⁶

Secondly, the Court also ruled that when considering making provision for activities in the public domain (i.e. the CMA in that case) as distinct from making provision for activities on private property, decision-makers should consider alternatives to the Proposal being advanced.

In this case, as discussions elsewhere in the report will show, a substantial amount of work has been done prior to notifying the present Proposal for public consultation on looking at alternative sites for salmon farming in the Marlborough Sounds.

Then as the evidence of NZKS and others at our hearings showed, alternative methods of salmon farming either in the open sea or on land have also been considered in some depth. On these methods the conclusion has been reached that the technology is developing but more work needs to done. This, of course, is one of the reasons behind our recommendations for shorter term consents - see our summary at the conclusion of this report. In that way we have certainly taken into account the potential for alternative methods and sites.

4.5 Effects on commercial and recreational fishing

The reason for dealing with this matter here is because these effects were raised by some people making comments. As a matter of law the relevant provisions of the Fisheries Act provide the processes for dealing with potential conflicts between commercial and recreational fishing and marine farming and that Act as we understand it is a code on such fishing issues, subject to the refined approach described since our hearings by the High Court.²⁷ Section 30(2) of the RMA makes that clear in providing that a regional council must not perform its functions, i.e. through its plan processes, 'to control the taking, allocation or enhancement of fisheries resources for the purpose of managing fishing or fisheries resources controlled under the Fisheries Act 1996'.

Consequently, it is not a matter for us to advise the Minister on, other than by way of drawing attention to the fact that the statutory code exists to resolve these issues should the need arise.

4.6 The Ownership of New Zealand King Salmon

In many of the written comments on the Proposal, and also at our hearings, a considerable number of those making comments expressed strong opposition to the fact that this Proposal involved a New Zealand (NZ) company with an approximately 50% foreign shareholding. We mention this matter under this heading simply to

²⁶ Environmental Defence Society Inc v New Zealand King Salmon Co Ltd [2014] NZSC 38

²⁷ Attorney-General v. The Trustees of the Motiti Rohe Moana Trust [2017] NZHC 1429

dispose of it. The law is quite clear.²⁸ For resource management purposes, the fact that a person carrying on an activity anywhere in NZ is not a NZ national or includes a foreign investor is irrelevant. There is nothing in the Resource Management Act that would make such a circumstance relevant and we know of no case where a contrary view has been expressed. There are of course rules around foreign investment in NZ for other purposes but again, they are not relevant for the present purpose.

4.7 Compliance record of NZKS as consent holders

There were several comments made during the hearing that farm relocation should not be allowed until NZKS shows it can adequately meet conditions of current resource consents at the new high-flow sites.²⁹

During the latter stages of the hearing, the 2016-17 Annual Monitoring Reports by Cawthron on the most recently consented NZKS farms (Waitata Reach, Ngamahau Bay, Kopaua) were released to the Panel on 11 May 2017.³⁰

The results showed consent conditions were being met in regards to water quality, nitrogen inputs and Benthic Guidelines.

It is not appropriate to consider a compliance record when addressing a plan change which, as we have already said earlier in this section, is not specifically for any particular operator. To the extent that this may be relevant at all, this issue may fall for consideration as part of a resource consenting process.

4.8 Over-lap or potential effects on relocation sites with adjacent existing farms and of surrender of sites

A number of comments raised issues about the exact boundary locations of proposed relocation sites impacting directly or indirectly on:

- other marine farms
- other consents
- other consent applications

We will address each of these in turn.

However, we commence by separately describing the differing types of concerns raised in the comments in respect of what might be collectively summarised as 'overlap' issues with other marine farms, or potential adverse renewal effects on farms nearby.

²⁸ Maclaurin v Hexton Holdings Ltd [2008], NZCPR 1, p47

 $^{^{\}rm 29}$ E.g. Guardians of the Sounds Inc, Written Comment 0465

 $^{^{\}rm 30}$ Cawthron Report number 2999, 3000 and 3001, 9 May 2017.

The first of these types of concern is that in respect of both the Tio Point site, and the Horseshoe Bay site, conflict issues were raised as direct effects on sites that had been, or were currently being, occupied as mussel farms. The proposed relocation salmon farm sites in each of those cases related to space occupied at present, or in the recent past, for mussel farming pursuant to current coastal permits. Issues were also raised in relation to these sites by a nearby consent holder Sanford Limited.

The second type of concern related to the Blowhole Point South site. The comments made in respect of that site related to a potential conflict with an application by Marlborough Aquaculture Limited for a new resource consent for a major expansion to its existing adjacent mussel farm. For reasons canvassed later in this report we will be recommending to the Minister that this proposed relocation site not proceed as part of the Proposal, so the potential overlap issues in respect of that site do not require any further consideration.

The third type of concern was quite different. It related not to a proposed relocation site, but rather to existing sites at Crail Bay. This concern was raised by the Clarke family.³¹ Their comments challenged the effects of the CMZ 4 zoning, and its related compulsory consequence of a potential surrender of the salmon farm consent. The comments particularly related to the Crail Bay north site involving MFL 48.

Again for other reasons set out later in this report we will be recommending that the two Crail Bay existing consents not be considered to be a part of the Proposal. The concerns affecting those existing sites raised in the Clarke family comments therefore become otiose and do not need detailed consideration.

Effects on other marine farms at Tio Point and Horseshoe Bay

As there were direct effects raised in respect of the proposed Tio Point and Horseshoe Bay relocation sites, we deal with those first.

The issues raised at Tio Point arise because of consents already in existence at that site held by the Te Ātiawa Trust. Those complex issues are fully addressed in Chapter Five and we need not repeat them here. We simply record that the concerns raised by Te Ātiawa in respect of Tio Point bore many similarities to the issues raised in respect of the proposed Horseshoe Bay relocation site. As we deal with those matters in detail below in relation to the Horseshoe Bay site, the outcome will be similar for the Tio Point site.

The issues at Horseshoe Bay were raised by the Goulding Family Trust.³² Mr. Jim Goulding provided us with a strong statement of opposition to the Proposal but only in relation to this site. He outlined his family's long and successful involvement in the

³¹ Graeme Clarke, Liz Clarke, Crail Bay Trust and Crail Bay Aquaculture Limited, Presentations, Week 1.

³² Mr Jim Goulding, Hearings Transcript 9 May, 2017

mussel farming industry and he expressed general support for the principle behind the Proposal of relocating salmon farms for environmental reasons.

However, he made it very clear to us that the proposed site boundaries for the CMZ4 zone at Horseshoe Bay impacted upon his family trust's coastal permit for marine farm number 8207 in a major way. He stated the trust had no interest in negotiating a commercial joint venture with NZKS.

While there had been some discussions with some NZKS personnel, he had not pursued those discussions any further, and neither NZKS nor MPI had sought to conclude any commercial arrangements with him. One of the options he had raised in those discussions was whether alternative, similarly highly productive water space could be located for him in exchange for his vacating the proposed Horseshoe Bay site.

At first glance it seems a rather surprising situation to have a Plan Change proposed, the boundaries of which impact on Mr. Goulding's Trust's own coastal permit boundaries, but without any commercial resolution being achieved with him.

However, once an appreciation is gained of the practical outcome of the 'first-in, first served' principle on any moves to provide extra water space for aquaculture, whether as new space or as relocation space, then the unfortunate consequence of a lack of conclusion of arrangements with other potential applicants for the same space becomes more understandable.

A classic example of that outcome has occurred in relation to this Proposal at Blowhole Point South where benthic scientific information had been gathered by MPI to support this Proposal, doubtless at considerable expense to it, and in turn to NZKS.

However, MPI and NZKS were to find that that detailed benthic analysis was utilised by Marlborough Aquaculture Limited to support a mussel farm application by it for a coastal permit covering the same area, (and even more extensive areas surrounding the proposed relocation site), as it was adjacent to their mussel farm.

Such a resource consent application was able to be made because the proposed relocation site was in a CMZ 2 zone. That action we were informed has resulted in High Court litigation which is yet to be resolved.

Consequently, we comment no further upon it, other than to observe that the use of the benthic information in that way is a classic illustration of how far parties are prepared to go in gaining a 'first in time' position of occupation.

As the Horseshoe Bay site is also in a CMZ 2 zone we surmise it is possible that there may have been similar concerns for MPI and NZKS at that site, if they engaged too much in detailed consultation before the Proposal was resolved one way or the other.

Nonetheless, whether or not that was the reason for the lack of any commercial arrangements, that lack of continued consultation has understandably created a major concern and suspicion for Mr. Goulding as to the final outcome for his Trust.

He expressed that concern in these words:
...I am deeply concerned that King Salmon found it appropriate to even apply over the top of my existing and valid RMA consent. I'm not aware of this happening before in the Sounds. This indicates to me that King Salmon have some sort of expectation the ministerial intervention will somehow override my rights or at least put me under pressure to vacate the site. I see no other reason why they would make the application unless they thought their application would be successful.³³

Our problem is to stand back from that situation, which has understandable arguments both ways, and to pose the question as to what is the practical RMA consequence of what is proposed at this site – consultation issues aside.

On the one hand, we have evidence that has satisfied us that in environmental terms this site can be recommended to the Minister as one which should continue to be a part of the Proposal.

Mr. Goulding did not challenge its suitability as a site for salmon farming, other than in terms of its conflict with his mussel farming activity. In fact he emphasised that the very reason why it was a highly productive site for growing mussels with its high currents was the very reason why it would be suitable for salmon farming.

An understanding of the nature of the overlap is required to properly assess the RMA impacts of the Proposal.

Figure 1 of the engineering assessment conducted by OCEL Consultants Limited³⁴ shows the extent of the overlap in detail and this is re-produced below:

³³ Hearings Transcript 9 May, 2017 p3

³⁴ OCEL – Engineering feasibility of the proposed salmon farm at Horseshoe Bay (site 124) Waitata Reach, p10



Figure 1: Potential Marine Farm Sites, Horseshoe Bay, OCEL – Engineering Feasibility, September 2016

The Goulding Trust mussel farm comprises a base coastal permit of 3 ha, and an extensive extension to 4.8 ha granted in 2001 to the north-west and to the south-west. The boundaries of the proposed relocation site extend across both of those coastal permit areas. To provide for the anchoring system for the proposed salmon farm

structure, which can be seen in Figure 1 above, the boundaries of the proposed CMZ 4 zone extend at the north-east corner of the boundary of the proposed relocation site, right to the boundary of the original mussel farm permit area closest to the shore. The north-eastern corner of the salmon farm structure proposed would be right on the edge of the outer boundary of the south-western extension of the mussel farm.

In short, it is obvious that the mussel farm could not continue at anywhere near its current area and productivity if the salmon farm was to proceed. Hence Mr. Goulding's anxieties.

However, on the other hand, as a matter of law the Goulding Trust holds the 'first in time' occupation rights for marine farming and cannot be dispossessed of those rights for the duration of its coastal permits, which are until 2021 for the extension area, and 2030 for the original farm area.

Moreover, the CMZ4 zoning does not shut the door on the Goulding Trust for any future renewal application it might make. Ss.124A and 124B of the RMA provide a significant measure of protection for existing permit holders at renewal time by way of priority. That section was introduced into the RMA to overcome the risk of 'queue jumping' by opportunist applicants seeking to take advantage of the 'first in time' approach at renewal stage. Relevantly, s.124B provides:

124B Applications by existing holders of resource consents

(1) This section applies when —

(a) a person holds an existing resource consent to undertake an activity under any of sections 12, 13, 14, and 15 using a natural resource; and

(b) the person makes an application affected by section 124; and

(c) the consent authority receives 1 or more other applications for a resource consent that—

(i) are to undertake an activity using some or all of the natural resource to which the existing consent relates; and

(ii) could not be fully exercised until the expiry of the existing consent.

(2) The application described in subsection (1)(b) is entitled to priority over every application described in subsection (1)(c).

(3) The consent authority must determine the application described in subsection (1)(b) before it determines any application described in subsection (1)(c).

(4)

A further factor we take into account is that the CMZ4 zone Proposal does have provision for new consents for farming of species other than salmon as a discretionary activity. That is found in proposed Rule 35.4.2.10 A which states that a discretionary activity consent can be sought for: Marine farms for the farming of species other than salmon where the marine farm is authorised by a current Coastal Permit as at 16 January, 2017, provided the activity conforms to the following standards.

We fully appreciate the prejudicial effect, however, on the Goulding Trust of there being a change from what it argues is a controlled activity consent status to a discretionary activity consent status at renewal stage. ³⁵

The difference in status is important. The controlled activity status means a consent for a renewal cannot be refused. A discretionary activity consent, though, can be refused. As the Goulding Trust is successfully farming mussels at this location currently it is in a different situation from Te Ātiawa at Tio Point where mussel farming is not currently in operation for a range of practical farming reasons.

That outcome of a serious change in status of the existing activity at this site has caused us some concern in considering what is the appropriate sustainable outcome in RMA terms at this site. For reasons we describe later in this report, there is a range of broader environmental benefits for the wider environment of the Marlborough Sounds, and for affected communities, which would flow from a salmon farm being relocated to this site. Those broader benefits can only be enabled at present and in the short term if the CMZ4 zoning proposed in this Proposal is recommended for this site.

However, for that to occur now, not only must a rezoning to CMZ4 take place, but a commercial conclusion satisfactory to the Goulding Trust enabling a change in occupation must be reached with NZKS. If that is achieved, and the current salmon farming activity at the Ruakaka site is able to be effectively relocated to this site, we have concluded there are many broader environmental benefits arising from the surrender of the Ruakaka site. Moreover, there are also some direct practical benefits for the Goulding Trust which could flow from the Proposal. There is a significant potential economic benefit for the Goulding Trust because NZKS would have to reach a realistic commercial outcome with the Trust by which it was satisfied that it was not disadvantaged. By comparison with Te Ātiawa at Tio Point, the Goulding Trust would hold stronger negotiating cards, as it does not want or need to farm salmon at the site. It would have to be persuaded commercially to enable that to occur.

To that extent, therefore, recommending that the Proposal proceed at this location provides the Goulding Trust with the prospect of a significant commercial advantage of a different nature which it would not have without the Proposal. However, at the same time the Proposal may have a prejudicial effect because of the CMZ4 zoning in terms of status at renewal which the Trust would not have suffered without the Proposal. If the Trust did not reach or wish to reach a commercial resolution with NZKS on the

³⁵ Rule 35.2.5.1 (b) of the Operative Sounds Plan provides for controlled activity status only for the area, purpose and species authorised prior to 1 August, 1996. There is an as yet unresolved issue about whether the controlled activity status is lost in terms of this rule if an extension to a marine farm is granted after 1996. The resolution of that issue is beyond the scope of our functions.

salmon farm proceeding, then its renewal status may be changed against its wishes and to its detriment.

There is one practical RMA related method which we favour of reducing this concern. That requires the insertion in the policies of this Proposal of an amended statement of principle which supports the granting of renewal of coastal permits for existing activities at the Horseshoe Bay and Tio Point sites, in the event they are not developed as salmon farms by the time of renewal of the existing consents.

We consider this approach leaves open the flexibility for the Goulding family to reach a commercial solution with NZKS if it wishes to, thus enabling a broader environmental benefit. If such a commercial outcome is not reached by the time of renewal of the Trust consents, then it can still have the confidence of seeking a discretionary activity consent renewal on the basis it knows the policies of the Plan support such a renewal. Such a response would also provide in part a response to the Te Ātiawa concerns as we address in more detail in Chapter 5 of this report.

Mr. Goulding also raised a concern that if the rezoning occurred it may impact on the ability of his Trust's mussel farm to be moved 100 metres seawards which he described as being under consideration. We do not regard that potential development as being properly within our purview on the statutory instruments as they stand at the present time, and certainly it is not possible for it to be considered as a potential prejudice in the same manner as the change of status would be for the Goulding Trust.

Sanford issues at Horseshoe Bay

An issue was also raised by Sanford Limited for which Mr. Edward (Ted) Culley, its General Manager for processing at Havelock, gave evidence. Sanford farms mussels extensively in the Marlborough Sounds and salmon in Stewart Island.

Mr. Culley said:

Sanford holds marine farming licences on sites immediately adjacent to three of the proposed new NZKS farms. As such we are a near neighbour with the potential to have our own farming entitlements adversely affected by any relocating decision....

As several of the NZ King (Salmon) proposed relocation sites are adjacent to existing Sanford marine farming licences, the unintended consequence of 'double parking' means that the relocation Proposal is likely to have a more than minor effect on our legally existing rights.³⁶

Mr. Culley's concern related to Sanford's mussel farming operations near site 4 Richmond Bay South, and the Blowhole Point North and South sites. In particular, he feared that these Sanford marine farms may not be renewed (two expire in 2019). As we said earlier in this section for other reasons discussed later in this report we have recommended that the Blowhole Point North and South sites not be proceeded with in

³⁶ Potential Relocation of Salmon Farms In The Marlborough Sounds: A Proposal To Amend The Marlborough Sounds Resource Management Plan, 18 April 2017, Oral Submission Sanford Limited

this Proposal, so the Sanford issues in relation to those sites need no further consideration. As far as Sanford's Richmond Bay farm 8206 is concerned, it lies in the CMZ 1 zone currently and is not directly affected by the Richmond Bay South proposed relocation site. There are at least 160 metres between the boundaries of the respective sites. We do not consider the proposed relocation site's location will have any adverse effects on any new application by way of renewal which Sanford Limited may make at expiry of that consent (which does not expire until 2030 according to the MDC website records). No specific adverse effect was able to be described to us.

Sanford Limited also raised concerns about possible effects on the renewal of two other farms at Horseshoe Bay in which it either had share farm arrangements (8209) or which it owned (8212). They are respectively 300 metres and 1200 metres from the proposed Horseshoe Bay relocation site and once again we do not accept that their prospects of renewal are affected at all by the proposed new zoning.

4.9 Additional advice sought after the hearings had closed

We mentioned earlier in this section, that during our deliberations, two additional questions arose upon which we sought advice from Mr. Fowler. The first of these was expressed in this way:

Whether the s.360A proposed intervention by the Minister does not accord with the Government's strategy for aquaculture and is therefore ultra vires by reason of s.360B(2)(c)(i) of the RMA

This question arose out of consideration of the written comment by the Royal Forest and Bird Protection Society and was repeated by Ms. Gepp, counsel for the Society in her submissions at our hearings.³⁷

Mr. Fowler prefaced his advice on this issue by drawing attention to the relevant wording in s.360B that describes the threshold for Ministerial satisfaction. He submitted that this is expressed in a relatively broad-brush way. That is to say the Minister needs to be satisfied before recommending the making of regulations that they are "necessary or desirable" for managing aquaculture activities "in accordance with" the Government policy for aquaculture in the CMA.

He then referred to the two policy matters identified in the submission by RF&B. These were as follows:

Government should only intervene where we add value and where industry and others cannot act alone

and

Government should work with regional councils to ensure planning to identify opportunities for aquaculture growth including through identifying new growing areas in appropriate places and provisions to enable better use of existing space.

³⁷ Royal Forest and Bird Protection Society, Written Comment 587, paragraph 9-12

We note here that the two matters just referred to are to be found amongst a number of other matters referred to in the "*Governments Aquaculture Strategy and Five-year Action Plan to support Aquaculture 2012*" that was referred to by Ms. Gepp in her written submissions presented at the hearings. They are, therefore, but part of a more detailed policy instrument including a plan of action.

During the course of our deliberations on this question it was not clear to us that Mr. Fowler had fully addressed the matters raised by it and we therefore sought further advice from him on 22 June 2017 to which he responded in writing on 29 June 2017. This exchange of correspondence is on the MPI website.

Having considered this matter in the light of this advice we have concluded that no jurisdictional issue arises. We have taken it from Ms. Gepp's reference to Government intervention in the first quote above from the 2012 Strategy that she is submitting on behalf of RF&B that because a plan change under the RMA can be achieved by means other than the use of the Section 360A-C regulation-making power then in using that power in this case the Minister is in breach of that part of the Strategy.

The submission takes an unnecessarily narrow view of the Strategy document which as Mr. Fowler points out has, as its fundamental objective, achieving growth in the aquaculture industry, and then proceeds to set out an agenda for giving effect to that, one part of which involves planning and regulating (see the box headed Government's Role). A logical conclusion to draw from Ms. Gepp's submission is that the Minister could never use the section 360A-C powers because there are always other means by which plan changes can be made under the RMA. The words in the Strategy must be given a purposive interpretation bearing in mind also the words 'necessary or desirable' in s.360B.

In this case in fact Government intervention through the use of the regulation making power will add value by providing for a relatively rapid plan change to correct significant environmental issues of benthic degradation, fish health concerns and potential water quality impacts by comparison with the more common processes. It is also a process that only the Government can use.

Finally it is plain from the evidence we heard that the Government is working with the MDC in pursuing this Strategy, as for example in the establishment of the Salmon Working Group, and utilising the regulation-making power. Whether as a matter of merit it should be doing these things is of course quite another question that is addressed at length and in detail in the ensuing Chapters of this report.

The second additional question was expressed in this way:

Whether the proposed regulations are inconsistent with the RMA Part 7A which does not allow for an allocation method that is specific to one operator and therefore the proposed regulations are ultra vires The legal consequences of s.360A (2)(b) and subpart 1 of Part 7A were raised by the Environmental Defence Society in its legal submissions which challenged the lack of specific reference in the legal submissions by MPI and NZKS to those provisions.

S.360A(2) provides that an amendment to a regional coastal plan made by a regulation under that section must not be inconsistent with and is subject to the other provisions of the RMA "...for example sub part 1 of Part 7A". Quite how a regulation is expected to be "not inconsistent with" AND "subject to" the other provisions of the RMA is not immediately clear to us but that is not the point raised by EDS.

Its submission is that Part 7A which deals with occupation of the common marine and coastal area does not make provision for an allocation of space in that area to one specific occupier or operator. EDS emphasised that the specific method provided in Part 7 of the RMA is by public tender which it asserted connoted an intent for the allocation of water space to be generic.

Mr. Fowler in his advice of 2nd June referred to the provisions for public tender but also emphasised the phrase "*any other method*" for authorising allocations provided by s.165G of the Act. While he also agreed that Part 7A plainly contemplates the use of a non-exclusive allocation method such as by public tender, Mr. Fowler stopped short of concluding that a regulation that by reason of its specificity to say a particular site and therefore effectively associated with a particular occupier or operator is necessarily inconsistent with Part 7A of the Act. In neither Part 7 nor Part 7A does the RMA provide that public tender is the only method of allocation.

In fact s.165G of the RMA makes that clear:

165G Plan may specify allocation methods

A regional coastal plan or proposed regional coastal plan may provide for a rule in relation to a method of allocating space in the common marine and coastal area for the purposes of an activity, including a rule in relation to the public tender of authorisations or any other method of allocating authorisations.

Mr. Fowler also drew attention to the fact that the proposed regulations themselves do not refer to a specific occupier or operator and he referred back to his earlier advice about the validity of providing for specific sites as distinct from specific occupiers or operators. He concluded that there are no ultra vires issues in terms of this question. We accept Mr Fowler's advice and his conclusion.

In the letter of 20 June 2017 Mr. Enright submitted that EDS had not contended that tender is the only appropriate allocation method which he said was implied in the advice given to us by Mr. Fowler. However, in our view Mr. Fowler in his advice to us did not imply this was EDS's position, rather he was responding to a question we had posed for his consideration. In any event it will be apparent from our consideration of this matter above that such an implication if there were one has not affected the conclusion we have reached.

Chapter 5. Māori and Treaty of Waitangi/ Te Tiriti o Waitangi and Iwi considerations

5.1 RMA Provisions

The RMA has three specific provisions in Part 2 addressing issues of significance to Māori. Part 2 of course contains the purpose and principles of the Act. Those provisions are now well known but bear repeating.

The first is contained in s.6 (e) of the RMA. It is important to stress that it identifies matters of national importance and its relevant provisions state:

6 Matters of national importance

In achieving the purpose of this Act, all persons exercising functions and powers under it, in relation to managing the use, development, and protection of natural and physical resources, **shall** recognise and provide for the following matters of national importance:

...(e) the relationship of Maori and their culture and traditions with their ancestral lands, water, sites, waahi tapu, and other taonga:

We have emphasised the word 'shall' because, subject to achieving the purpose set out in s.5, the statutory obligation is a strong direction to recognise and provide for the relationship of Māori and their traditions with their ancestral water.

In addition, s.7 relevantly provides:

7 Other matters

In achieving the purpose of this Act, all persons exercising functions and powers under it, in relation to managing the use, development, and protection of natural and physical resources, shall have particular regard to—

- (a) kaitiakitanga:
- (b)

Once more the statutory language is a strong direction that particular regard must be had to the concept of kaitiakitanga which is defined in s.2 of the Act 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 final provision in Part 2 of relevance is s.8 which provides:

8 Treaty of Waitangi

In achieving the purpose of this Act, all persons exercising functions and powers under it, in relation to managing the use, development, and protection of natural and physical resources, shall take into account the principles of the Treaty of Waitangi (Te Tiriti o Waitangi).

All of those provisions were relied upon to a greater or lesser extent in the comments and presentations we received from iwi.

The Marlborough Regional Policy Statement (MRPS), operative on 28 August, 1995, and the MSRMP apply those statutory provisions by making specific acknowledgment of the strong customary relationship of various iwi within the Marlborough Sounds. The MRPS specifically acknowledges at paragraph 3.2 the eight Te Tau Ihu iwi as having tangata whenua status and the need for Council "*…to recognise tino rangatiratanga and power-sharing.*" At paragraph 3.2.1 a series of principles are set out which relevantly for this Proposal include:

(a) recognise the concept of kaitiakitanga and the Treaty of Waitangi

(b) incorporate where appropriate, the aspirations, heritage and values of the iwi of Marlborough into resource management decision-making

(c)

...

(d) Establish systems so that consultation with iwi occurs on resource consent applications, plan and policy preparation and changes

(e)

(f) The Council will recognise the tangata whenua as having the role of kaitiakitanga of Marlborough's coastal environment.

Now while many of those provisions may be said to appear to technically relate more to Council-controlled Plan Changes, and not to changes under sections 360A-C of the RMA, s.360B (2)(c)(iii)(C) requires the Minister to be satisfied that the Plan as changed will continue to give effect to "(C) any regional policy statement". We view those statements as illustrative of the underlying principles in the MRPS which lie behind the operative Plan being changed by this Proposal.

The operative MSRMP at Volume One in its Objectives and Policies particularly at Chapter 6.1 adopts a similar approach, but adds in the concept of protecting 'mauri' – which is a particular expression of Maori cultural association with te taiao (the environment). That is expressed in the Plan relevantly as to water quality issues as follows:

....It is possible to damage resources (e.g; through pollution or despoliation) to the extent that they can lose their mauri entirely. Protecting the mauri ensures the maintenance of its integrity and protection of supply for future generations. The concept of mauri therefore imposes a discipline on tangata whenua as kaitiaki, and because of their spiritual, social and economic connection to the resource, it is kaitiaki who have the responsibility for ensuring that the mauri of the resource is protected. In this sense, the Marlborough Sounds Resource Management Plan must recognise the role of tangata whenua as kaitiaki for the coastal environment. To this end the Plan endeavours to facilitate that role through a policy of consultation...

Accordingly, when issues addressed in this report touch on kaitiaki responsibilities, these types of statutory and plan provisions carry considerable weight.

Ngāti Koata had also drawn attention to their Iwi Management Plan through the Cultural Impact Assessment report carried out by Maximise Consultancy Limited for all Te Tau Ihu iwi. The Ngāti Koata nō Rangitoto ki te Tonga Trust Iwi Management Plan is dated 2002. In common with the statutory instruments, and the MRPS and MSRMP provisions, it has a significant emphasis on the kaitiaki responsibilities for Ngāti Koata as to the quality of the waters in Te Hoiere, (particularly as to water quality issues at paragraphs 8.14 and following). As we traverse in more detail below Te Ātiawa o te Waka a Maui Trust also have an Iwi Management Plan which similarly stresses its kaitiaki responsibilities in Tōtaranui (Queen Charlotte Sound) and Kura Te Au (Tory Channel).

The provisions to that effect in those Iwi Management Plans are yet a further factor reflecting the need to ensure that real regard is had to the exercise of kaitiaki functions of tangata whenua. That is particularly so in respect of any uncertainties arising from the Proposal. Finally, in respect of the significance of the statutory provisions affecting Māori in Part 2 of the RMA we draw attention to the observations of Lord Cooke of Thorndon in the Privy Council case of *McGuire v. Hastings District Council*³⁸ where those provisions were described in the following manner:

...These are strong directions, to be borne in mind at every stage of the planning process.

5.2 Nature of Written Comments and Presentations

There were a number of written comments filed by, or on behalf of, ngā iwi o Te Tau Ihu o te Waka a Maui.

Te Ātiawa through its trust Te Ātiawa o Te Waka a Maui Trust (Te Ātiawa) lodged a written comment in support of the Proposal as it affected the proposed Tio Point site in Te Kura te Au (Tory Channel), although it had reservations as to some aspects of the detail of the zoning proposed, and its effects. Those details and the reasons for its support for the Proposal were presented by Te Ātiawa at our hearing in Blenheim on 12 April, 2017.

³⁸ McGuire v. Hastings District Council [2002], 2 NZLR 577

Those iwi who filed comments in opposition were Ngāti Apa ki te Rā Tō, Ngāti Kuia, and Ngāti Toa. In addition, a joint comment was lodged by Te Ohu Kaimoana on behalf of those three iwi, and other te Tau Ihu iwi including Rangitāne, Ngāti Rārua, Ngāti Koata and Ngāti Tama.

Ngāti Kuia, Ngāti Koata and Te Ohu Kaimoana made more detailed presentations at a hui hosted by Ngāti Kuia in their wharenui Te Rupe o Ruapaka at Te Hora marae, Canvastown (Wakamarina) on Wednesday 17 May, 2017. The oral presentations made at the hui were directed at opposition to those parts of the Proposal affecting Te Hoiere (Pelorus Sound) and not at Kura te Au. Other principal aspects of those presenting at the hui addressed Treaty related concerns.

As there was a far more limited input to the relocation process from iwi in respect of the Tio Point site we will deal first with iwi issues relating to it. We will then turn to a consideration of the broader Treaty-related concerns particularly advanced by Ngāti Koata and Te Ohu Kaimoana and in the Ngāti Apa written comment, before concluding with a consideration of the more site-specific iwi opposition to the Te Hoiere relocation proposals.

Tio Point

In customary terms Te Ātiawa's position was that Kura te Au fell within its rohe, and that fact was reflected in the statutory acknowledgments in that area, which now apply as a result of the settlement of its historic Treaty grievances with the Crown.

In terms of RMA issues Te Ātiawa raised a number of matters, some in support of the proposal, some neutral to its detailed proposals, and some contrary to a limited extent. They included:

• That through the iwi Trust two coastal permits were held by Te Ātiawa, one of those comprising 3.5 ha being marine farm no. 8409 affected by the proposed relocation site,³⁹ and it wished to be able to pursue salmon farming, either on its own, or possibly by way of joint venture with NZKS at this site

• Te Ātiawa also wished to retain the flexibility for marine farming of a range of species that the current CMZ 2 zoning provided for at the site to enable it to pursue mussel farming or aquaculture of other species as an alternative to salmon farming, or in addition to that activity

- Te Ātiawa had in place an Iwi Management Plan which it felt had not been given sufficient weight in the proposal
- Part 2 of the RMA required that its particular interest in the locality, and in particular in salmon farming at that site be given considerable weight
- A serious concern that Te Ātiawa together with other iwi had been unfairly treated by comparison with a commercial entity in the manner in which the Crown has decided to use the ss.360A-C process.

³⁹ The extent of the overlap is limited in that there is a common boundary between the Te Ātiawa site and the proposed relocation site.

We address each of these issues in turn with the first two being addressed together.

5.3 Aquaculture flexibility

The evidence from Te Ātiawa witnesses was that the coastal permit it held had been used for mussel farming in the past, but with what we took to be mixed results because of a mix of poor growth and the difficulty of holding the mussel lines in an area of very high current flows – the latter being one of the very reasons the site is advanced as being suitable for salmon farming.

Te Ātiawa made the obvious point that in addition to the significance of their customary associations with the site, in actual physical occupation terms the existence of the Trust's coastal permits meant it had to be involved in any salmon farming activity on that site. Counsel for NZKS did not challenge that proposition.

Te Ātiawa witnesses confirmed that they did not presently have the technical knowledge required to conduct salmon farming on the site, and it seemed implicit from that evidence that if they have not already done so, if the Proposal proceeds, they will be advancing discussions with NZKS as to some form of joint venture or other commercial arrangement in a satisfactory manner for Te Ātiawa.

Mr Ruru's evidence was:

Whilst we are open to a relationship with New Zealand King Salmon, if this is not possible then Te \bar{A} tiawa would like to have the opportunity to pursue its own fin fish activity at the Tio Point site.⁴⁰

However, if the Proposal were to proceed on this site, (and we address that later in dealing with the site-specific considerations for each site), there will clearly be a need for NZKS and Te Ātiawa to combine in some respect for salmon farming to actually occur on this site. Two matters have to be brought together in terms of the Proposal for any new high flow site to be used for salmon farming. One is the obtaining of a coastal permit to allow that activity, but the second is a directly related corollary of the application for such a consent. The proposed plan change rules will require that an applicant for consent to use a new high flow site must surrender a low flow site consent for salmon farming.

In reality then, CMZ4 zoning at this site will mean that for the Te Ātiawa Trust to farm salmon at this site it will need to have in place a commercial arrangement with NZKS of some nature whereby NZKS agrees to surrender presumably its existing consent at Otanerau Bay which was the site Te Ātiawa sought to have relocated as a first option. The detailed nature of these commercial arrangements are not an issue of RMA significance that either we, or the Minister, would normally need to address.

However, because of the combination required by the proposed rules for the CMZ4, what transpires for consideration by us, and in due course by the Minister, is the

⁴⁰ Hearings Transcript 12 April 2017, p61

rather knotty problem that CMZ4 zoning at this location in its present form will effectively remove the ability for Te Ātiawa to use the site for salmon farming on its own and possibly limit its use for other aquaculture purposes. That outcome would clearly be a major detriment to Te Ātiawa in that without that flexibility which the present CMZ2 zoning provides, the bargaining power they may have had with NZKS is markedly reduced. We do also take into account, however, that Te Ātiawa would still have the opportunity to carry out any aquaculture activities authorised by the Trust's existing coastal permit.

Nonetheless, a more serious legal consequence is that the removal of those existing CMZ 2 rights by regulation in the face of direct opposition by Te Ātiawa to that course immediately raises the s.8 RMA obligation that decision makers "shall take into account the principles of the Treaty of Waitangi (Te Tiriti o Waitangi)".

It is fundamental to the implementation of the Treaty that fresh breaches should be avoided. An important base guarantee in the Treaty is contained in Article 2 whereby the Crown guaranteed to all Maori 'te tino rangatiratanga o o ratou wenua o ratou kainga me o ratou taonga katoa'. In English the phrase involves a guarantee over all the valued resources of Māori with te tino rangatiratanga able to be translated as the utmost authority. We recognise that the Article 2 guarantee often gives rise to finely balanced considerations of where the boundaries lie between actively protecting that guarantee of tino rangatiratanga to Maori over their valued resources, and the Crown's obligations in term of its own sovereignty to wisely govern and manage environmental resources.

In our view in this case, however, these concerns are met in part by virtue of the fact that the Proposal enables as, a discretionary activity, the farming of marine species other than salmon.⁴¹ In addition, as we have discussed in section 4.8 above in relation to the legal issues as to overlap in relation to Horseshoe Bay, the renewal of consent can be assisted significantly by an amended policy in the Proposal. Such an amended policy, which we recommend, would support the granting of renewal of coastal permits for existing activities at the Horseshoe Bay and Tio Point sites, in the event they are not developed as salmon farms by the time of renewal of the existing consents. That would enable Te Ātiawa to retain their rangatiratanga over a body of water in their control by way of a coastal permit, and in respect of which they also have customary associations and kaitiakitanga responsibilities.

The rezoning would enable the Otanerau Bay site to be relocated, which was the site identified by Te Ātiawa as their first preference for relocation. The policy recognition we recommend is also a solution which would not seriously undermine the iwi's bargaining position with NZKS, which is inherently a very strong position because it holds the first in time resource consents for the Tio Point relocation site which gives them the right to occupy that part of the coastal marine area. NZKS will have to reach

⁴¹ Potential Relocation of Salmon Farms in the Marlborough Sounds, MPI Discussion Paper 2017/4, Rule 35.4.2.10 A, pg74

some form of joint venture agreement with Te Atiawa to be able to effectively utilise this site as a replacement location for which it can surrender its Otanerau consent.

Furthermore, in practical terms, if the Te Ātiawa Trust was not satisfied with its commercial relationship with NZKS and hence could not proceed with an application in terms of the CMZ4 zoning in the operative Plan then it would still have the right to seek a different zoning to enable salmon farming in the proposed new Marlborough Environment Plan process. That could be sought by way of either the Schedule 1 consultation path, or by way of submission when the aquaculture section of that Plan is finally proposed.

For completion one final important point needs to be made. This is that the Te Ātiawa Trust sought in its written comment, and in its presentation, to advance the argument that it wished to have the right on its own to seek consents to farm salmon at this location, i.e. without being bound to have a co-related relocation of an existing lowflow site involving the surrender of such a low-flow site salmon farm consent. However, that would require either a resource consent application by Te Ātiawa which has not been made, or a Plan Change request by Te Ātiawa which again has not been made.

In summary, what the current CMZ4 zoning proposal allows for is an immediate outcome of an iwi being able to pursue an activity of salmon farming in conjunction with an experienced operator. Te Ātiawa's evidence to us was that they did not have the expertise or experience to undertake the task themselves. This zoning enables a joint approach in the short term if that is their wish. If they do not wish to pursue that avenue further, or are unable to reach agreement with NZKS for such a joint approach on terms satisfactory to themselves, they will still have the opportunity through the new MEP plan consultation or submission process to seek another different outcome enabling them to utilise the space on their own.

Te Ātiawa in common with other iwi also complained about the failure of the Crown in the Treaty Aquaculture Settlement process to ensure iwi had provision made through this regulation making power for their own sites. Mr. Ruru expressed those strongly held views in this way:

This inequality between the investigation provided by a Crown agency to an overseas company as opposed to the indigenous people of Aotearoa and particularly the people of the Sounds, cannot be ignored and must be addressed by the Crown in this process. In addition, this in-equality risk(s) (sic) a long established Te Ātiawa aquaculture site to be overtaken by a Te Tau Ihu treaty grievance process, hence it is critical that the Advisory Board recognise that the Tio Point site is separate and distinct from the New Zealand King Salmon relocation process.⁴²

The problem the Minister faces, however, is that he is dealing solely with a Proposal to amend the Plan in a specific manner and for a specific purpose, i.e. by identifying and

⁴² Hearings Transcript 12 April, 2017 p.63

rezoning high flow sites for salmon farming as a non-notified restricted (limited) discretionary activity, but only to enable relocation of existing low flow sites. We later express a firm view in the conclusion to this report that the Proposal is a genuine relocation proposal.

If Te Ātiawa wish to have the advantage this Proposal offers of salmon farming on the basis of such a status in the operative Plan, as they strongly indicated they do, then we consider the only avenue by which this particular Proposal can enable that outcome is by applying the methods contained in the Proposal. The Minister does not have the flexibility in our view to amend what is a relocation Proposal to allow for salmon farming in the Plan Change unless another low-flow site is surrendered as part of the process.

If we were to recommend that the Minister should decide not to proceed with the Proposal because of its limiting effects on one aspect of the Te Ātiawa Trust's aspirations for its coastal permit sites, i.e. a level of flexibility it enjoys in its coastal permits for various aquaculture endeavours or a zoning enabling applications for other consents, then the other aspiration it expressed to us of a possible commercial relationship for salmon farming now with NZKS would be lost.

Provided the environmental site-specific factors enable us to recommend the Proposal proceed at Tio Point, then we have formed the view that our recommendation above provides a practical solution that the Te Ātiawa Trust has the opportunity to avail itself of, without shutting all the doors on its desire for future flexibility.

5.4 Te Ātiawa o Te Waka a Maui Iwi Environmental Management Plan

Te Ātiawa pointed to the requirement in s. 66(2A) (a) of the RMA that when changing a regional plan (which in the Marlborough Sounds includes a coastal plan) a council must take into account '*any relevant planning document recognised by an iwi authority*.' Te Ātiawa asserts the Proposal fails to give effect to some of the provisions of their own Environmental Management Plan.

What Te Ātiawa seek by emphasising the provisions of their Environmental Management Plan is that the Plan "supports the use, development and protection of all resources within the area" to quote Mr. Ruru. He and other Te Ātiawa presenters were critical of the fact that the MWH report on which the Proposal was modelled, and the Proposal itself, do not make reference to those considerations in the Iwi Environmental Management Plan.

That is a valid observation but can be corrected by such a reference being made in the policies of the proposed Change including references to the Te Ātiawa Environmental Management Plan supporting the inclusion of a replacement location at Tio Point to meet Te Ātiawa's legitimate aspirations to conduct flexible aquaculture activities in their rohe.

Broader Treaty considerations

The discussion about Tio Point above will make it plain that in reaching the conclusions we have expressed, we have sought to give practical effect to s.6 (e) and s.7 (a) RMA considerations and to some extent also s.8 considerations as to rangatiratanga.

As to the Te Ātiawa complaints in respect of the s.8 Aquaculture Treaty Settlement issues, they echo those made by other iwi which we propose to address when considering the Te Hora presentations. Te Ātiawa are in a different position from the other iwi in that one site under their control at least has become part of a sections 360A-C process, albeit one saddled in terms of this Proposal with the need for its use for salmon farming being coupled with a required relocation of an existing farm.

5.5 Aquaculture Settlement Issues

The presentations made on this issue on 12 April, 2017 by Te Ātiawa were expressed by Mr. Ruru as quoted above, and reiterated by Mr. Prosch. Those expressions of concern were even more strongly advanced at Te Hora Marae on 17 May, 2017 by Mr. Hippolite for Ngāti Koata, by various speakers for Ngāti Kuia, and particularly by Mr. Lawson from Te Ohu Kaimoana on behalf of all Te Tau Ihu iwi.

The thrust of the complaint arose from the settlement mechanisms provided by the Maori Commercial Aquaculture Settlements Claims Act 2004. That Act provided for a settlement process whereby iwi in Te Tau Ihu, and elsewhere, were to be offered the equivalent of 20% of any water space utilised for aquaculture in their areas of customary entitlement. A settlement in monetary terms was reached under that Act for all 'pre-settlement' aquaculture space occupied by others.

The circumstances we describe below are based on the narrative we received from Te Ohu Kaimoana as, except for one important issue, MPI did not take the opportunity in its reply to challenge this narrative.

The settlement provisions involved Māori and the Crown reaching agreement on regional aquaculture settlement agreements to provide Māori with water space or financial equivalent again at 20% of water space occupied as an Aquaculture Management Area (AMA) under the AMA regime for aquaculture after the 1st of January, 2005 down to 11 September 2011. If the Crown could not provide acceptable water space to iwi a financial settlement process was provided for. There were no new AMAs created in the Marlborough area in that period so that process did not give rise to any issue in Te Tau Ihu.

For the period after 2011 Mr. Craig (Laws) Lawson for Te Ohu Kaimoana described the rather complex situation in the following way:

For the period between 2011 and 2035, the Ministry worked with experts and iwi to forecast the national growth in demand for salmon, green lipped mussels and Pacific Oysters. That demand was then translated into the amount of space in the appropriate regions, taking into account a large number of factors including what the plans were, what development, what infrastructure, what was the likelihood of waters, what was the productivity of waters etc.

Once that was defined, (an) evaluation model was built for each species by consultants working jointly for the Crown and Te Ohu Kaimoana on behalf of all iwi. That model took into account, amongst other things, the expected timings of development and the variations in regional costs for each of the species. The model was refined and agreed between the Crown and iwi and was used to determine the overall financial equivalent that iwi would receive in 2015 for the various regional settlements if cash was taken as the option. ⁴³

Mr. Lawson continued to explain that under the new statutory aquaculture space provisions passed in 2011 some aquaculture space areas (ASAs) were gazetted in each region and each iwi had a choice as to how to take the settlement – either in water space or in cash. It seems to be undisputed that at the time this was done no detailed environmental assessments of those gazetted areas occurred to establish whether they were appropriate. The 2011 Amendment Act provided that the Crown had a period of two years to meet its settlement obligations by 1 October 2013. Extensions had to be made to that date and a series of negotiations between the Crown and iwi followed from August 2014 into 2015.

As an aside we record that meanwhile Parliament had also passed a Fisheries Amendment Act in 2011 including the amendments to the RMA providing for ss.360A-C which gave the Minister of Aquaculture the power of recommending regulations to effect a plan change to operative coastal plans. This means that when these 2014-2015 negotiations commenced, both the Crown and iwi were aware of the existence of those powers as Mr. Lawson expressly stated before us. ⁴⁴

Mr. Lawson then described the steps taken in the course of those negotiations as set out below. We record that his account coincided with the recollections of Mr. Hippolite and Mr. Ruru as to the trips on the water where many sites were looked at, most of which were in the CMZ 1 zone where aquaculture was a prohibited activity. One of the sites, however, was almost exactly the same as the present Richmond Bay South site contained in this Proposal.

Mr. Lawson described the iwi view of what then occurred:

The iwi in Marlborough were looking for active involvement in aquaculture and requested MPI to undertake investigations of sites for potential use of settlement assets. Initially, these were in areas where consents for aquaculture could be granted with conditions. However, these investigations showed no suitable sites and the Crown subsequently investigated sites in prohibited zones for Marlborough iwi in the Marlborough Sounds.⁴⁵

⁴³ Hearings Transcript 17 May 2017, Laws Lawson, p72

⁴⁴ Hearings Transcript 17 May 2017 p.73 paragraph 1

⁴⁵ Hearings Transcript 17 May 2017 p.74

... early in 2015 Marlborough (iwi) collectively decided it would be better for them to take cash, even though some iwi still preferred space. Iwi asked about the ability of the Minister to use his powers under 360A - C but were told by officials that as the power had never been used before, they did not consider the Minister would use these powers at that point to alter a regional coastal plan to assist iwi to cost effectively gain resource consent for sites.

The subject was discussed a number of times by officials and iwi representatives.

Mr. Lawson then said that in the Marlborough New Space Regional Agreement negotiated it was recorded by an inserted cl. 3.8 that if the Minister of Aquaculture later contemplated using ss. 360A-C the Crown would ensure that the Minister:

...is made aware of the need to take into account the Crown's obligations under section 9 of the Settlement Act to provide iwi with settlement assets that are representative of 20 per cent of new space.

Mr. Lawson then described a lengthy process for each of the nine Te Tau Ihu iwi, (which also included Ngai Tahu), briefing their own Boards, and gaining their approval by late April 2015 to the regional cash settlement proposal. The pressure was on to enable agreement to be furthered on many details with the Minister at a major meeting held at the end of April, 2015. That agreement then needed to be ratified by all nine iwi boards, a process that took most of May and June 2015.

Mr. Lawson then provided the following description of events:

Subsequent to all nine iwi gaining approvals that their leader could sign the regional agreement with the Minister and two days before the signing on 23 July, 2015 the Crown sent a letter to the trustee(s) in all Marlborough iwi, signalling that it was going to investigate the use of sections 360A - C in Marlborough.

Mr. Lawson continued that by that stage iwi considered they had no option but to proceed with the cash settlement for which they had authority to sign after much extended effort from each of their iwi memberships. However, the legacy of bitterness over the late advice of an intent by the Minister to use the ss.360 A-C powers for a commercial entity, when their use had so recently not been offered to iwi, was canvassed repeatedly before us.

Three factors were said to exacerbate the situation. The first was an assertion that the Treaty duty of good faith engagement with Treaty partners was breached. The second was the denial of reasonable opportunity in early 2015 to iwi of use of the regulation making power, whilst the same power was about to be used from some indeterminate date in 2015-2016 for a commercial entity. The third was the fact that in at least one

...

case, the present Richmond Bay South site, the regulation making power was used for this proposal, but not to assist iwi.

On 22 May, 2017, during MPI's reply session at our public hearings, MPI through Mr. Lees was asked for a response on the issue of this late notice to iwi of an intent to use the regulation making power.

He responded that the Crown was in essence faced with the problem of trying to sort out settlement issues with iwi involving complex forecasting concepts and lack of space over an extended period at much the same time as the Benthic Guidelines were being negotiated and settled. It was after those Benthic Guidelines were finally settled and adopted that NZKS made it plain to the Crown it could not meet the new guidelines on the low-flow sites at re-consenting time.

Mr. Lees' summary of the position was as follows:

Even today, that was always our goal that if we can provide iwi space that is the Crown's preference. It probably wasn't perfect because of the way things evolved over time, but iwi were aware of section 360 and have been asking questions of Ministers around those matters. This is generally in a national context. And the Minister said at that time that obviously there's a lot of things you have to consider in making a call to progress use of the section 360 regulations and it would all depend on the case ahead of us. And at that time, obviously, we were looking for King Salmon at the same sort of time. But iwi came to us in about May, 2015 – don't quote that date, sorry, I'm just running this off my head – and at that point it was more that they were looking for a cash settlement so we continued. And the thing for us is we were actually still hunting for sites and some of the sites that came up in this process were actually identified post that point of them saying that they would like a cash settlement. I guess we've always wanted to find iwi sites if we could at all but, at the end of the day, I think the way the process worked out iwi were very close to having to go through their process of governance to get the decision that they wanted and they made a call to go for cash based on what they knew at that time.

We did make sure that we wrote to iwi to let them know that relocation was being considered for New Zealand King Salmon, that we were considering it in very early stages, and it was a couple of days before they signed the agreement and by that time their views is that it was too late for them to change their minds.⁴⁶

We have set all this out at some length because initially we had some concerns about the perception of the use of a Crown power for a commercial entity, when it was not used for iwi settlement purposes immediately beforehand. Mr. Lees explained how the two separate processes developed and then coalesced in time.

⁴⁶ Hearings Transcript 22 May, 2017, p.93

However, after further consideration we have reached the view that it is beyond our function to attempt to reach definitive conclusions on these issues. To reach definitive conclusions would require a full opportunity for detailed Crown and iwi responses to be tested. That is not part of our function. These are in essence assertions of Treaty breaches which cannot have a useful outcome in the context of the restricted RMA focus of this Proposal. That is best illustrated by contemplating whether there is any useful RMA purpose served for the iwi Treaty based settlement aspirations as a result of our recommending that the Proposal be rejected or not.

On the one hand it might be said recommending rejection of the Proposal could open the door to the Crown offering possible use of the Richmond Bay South site to iwi. However, the two iwi with the strongest customary relationship with that area of Te Hoiere are Ngāti Kuia and Ngāti Koata. Both of those iwi have made strong presentations that site should not be used for salmon farming. So no purpose is served of advantage to iwi from that possible course.

On the other hand, as discussed above, if we recommend that the Minister rejects the Proposal at Tio Point, then Te Ātiawa are shut out from a possible use of the regulations now, which in part may provide them with an avenue to engage in salmon farming through a commercial relationship with NZKS.

Moreover, as Mr. Lees stated the iwi 'entitlement' in percentage terms is probably at most one site, so recommending refusal of the Proposal is unlikely to provide any quick solution as to how any particular site is agreed upon between the nine iwi amongst themselves and with the Crown, both in terms of location and occupation.

We have concluded that in RMA terms we cannot reasonably refuse to recommend a Proposal which is based on a relocation concept as an environmental improvement, because the Crown may arguably have breached some aspects of its Treaty duties as to how it engages with iwi in settlement negotiations.

The two issues are not the same. If the affected iwi wish to pursue the issue further with the Crown they must do so by negotiation, or by other Treaty claim processes. Refusal of this Proposal will not assuage their grievances, or advance their position in terms of their asserted settlement entitlements. And most significantly it will not assist the process of environmental improvement that underpins this Proposal.

5.6 Te Hoiere Concerns

Where iwi relationships with the environment have more traction is in relation to the Proposal's impacts on the iwi cultural and traditional associations with Te Hoiere and nearby locations.

Setting the scene for those associations requires that we describe the oral accounts and whakapapa linkages that we received from Ngāti Kuia presenters such as Dr. Peter Meihana and Mr. Raymond Smith, supported by Mr. Frank Hippolite and Mr. George Elkington for Ngāti Koata. Ngāti Kuia presenters were concerned that these traditional oral accounts were all too often discounted by literal European approaches to the recording of history. They stressed that these oral histories and whakapapa were every bit as important and dear to Māori, as were historical recorded written accounts of tales of European exploration of New Zealand.

The reasons for those admonitions were that these accounts are among some of the oldest oral traditions held by Māori, which is unsurprising given the very long association Ngāti Kuia have had for many, many centuries with Te Tau Ihu. Their concern was that all too often such oral traditions are dismissed as myths, or as asserted recent convenient constructs. In respect of that latter point it was of some interest that Dr Meihana was able to physically demonstrate just how Ngāti Kuia oral traditions have remained constant, by producing to us a map drawn by the well-known historical author James Cowan in 1907 in his book '*Pelorus Jack*' based on Cowan's discussions with Ngāti Kuia kaumātua over a century ago.

Dr. Meihana was at pains to explain that while critical European thinking may regard some Māori oral traditions as mingling time and myth, from the Māori point of view they are oral accounts on which the whole Māori system of iwi or hapū customary entitlements, responsibilities and obligations are frequently based.

The mix of traditional account and whakapapa support that was presented by Ngāti Kuia was that when Kupe visited the Te Hoiere/Outer Sounds area centuries ago he was accompanied by Te Kawau a Toru –the King Shag which is unique to the Marlborough Sounds. The role of the King Shag Te Kawau a Toru was to test the currents for Kupe and it died at Te Aumiti or French Pass.

The whakapapa linkages recorded by Ngāti Kuia kaumātua such as Meihana Kereopa and Hemi Whiro, to name but two, towards the end of the nineteenth century then link back from their times to Matua Hautere who is linked by traditional account to Kupe. Matua Hautere was the rangatira who followed in Kupe's footsteps in command of the waka Te Hoiere, from which is derived the name of the river and Sound, each of which is now commonly called by the English name the Pelorus. Whakapapa descent lines direct from Matua Hautere can link to the present day.

The traditional account of Kupe is briefly that he pursued and killed the giant octopus Te Wheke o Muturangi at Kura te Au (Tory Channel) after Muturangi had dug out the Sounds complex with his huge tentacles in his struggles to escape from Kupe. The name of Kupe or his actions adorn many of the place names in the Sounds complex, as does the name of his kaitiaki Kaikaiawaro who was left according to tradition at Kaimahi rock or island, (now called Te Oke rock on modern maps), to guide in those who followed from Hawaiki once Kupe had returned there.

Kaikaiawaro is variously said to take the form of dolphins or aihe, or even a taniwha, and the traditional account has it that one of her ana or caves is located at or by Blowhole Point. Similarly, other names can be tied into traditional oral tales about the endeavours of Matua Hautere who followed Kupe to Kaimahi. The significance of these accounts is not, as the hyper-critical European mind demands, whether they are factually precise or scientifically provable as realities or details. Their significance lies in their interrelationship with whakapapa and customary entitlements as demonstrated by longstanding traditional place names, and their ongoing importance in te ao Māori (the Māori world) and the wairua enjoyed and felt by Ngāti Kuia and other iwi such as Ngāti Koata for the area within their rohe. Dr Meihana expressed the oral traditions as setting the responsibilities and obligations for hapū.

By way of further example of those types of associations Dr. Meihana illustrated that in addition to the Kawau a Toru and Kaikaiawaro Kupe is said to have brought a Rupe, or two headed kereru, which took up residence at Ruapaka between Te Hora and Havelock or Paneuku. The wharenui in which our hui was held is called Te Rupe o Ruapaka – and so the associational traditional naming continues on.

Raymond Smith detailed to us the manner in which in recent times Ngāti Kuia have developed extended wānanga in the Outer Sounds and Te Hoiere areas to re-acquaint iwi members with these traditions. We consider that these traditional associations at Te Hoiere and near Kaimahi and Te Ana a Kaikaiawaro at Blowhole North, are not at all dissimilar to the type of school trips and other tourist trips that Mr Peter Beech described to us that he and his whanau take out to areas such as Ships Cove where Captain Cook stayed on his various visits to the Sounds.

Blowhole Point North

It is very unlikely that suggesting a salmon farm be located in or near Ships Cove would meet with any enthusiasm from pākehā New Zealanders with any sense of history because of its potential adverse impact on the historic values Europeans associate with that locality. In our view the Kaimahi area is deserving of the same respect in the Māori culture.

We consider the Minister would not be giving the Kaimahi area the deep traditional associational significance it requires in terms of s. 6(e) and s.7(a) of the RMA if the Proposal at Blowhole Point North was to proceed. Similarly, we consider that giving effect to the s.8 principles of consulting properly with Ngāti Kuia and Ngāti Koata requires listening to their genuinely held views about the significance of that locality, and the potential adverse effects upon that cultural significance of establishing a salmon farm there, out from the embayment in a very prominent position.

For this reason, and a navigational issue we address later, we do not recommend that the Proposal proceeds at Blowhole Point North.

Blowhole Point South

This locality is some distance from Kaimahi rock and cut off from it by a protruding headland. In our view the potential cultural impact is not as severe, although we

recognise iwi cultural values still need to be considered as being adversely affected to some degree by a development there at the entry location to Te Hoiere.

If that were the only issue, though, we would not recommend that the Proposal should fail at that site solely for cultural reasons, because the salmon farm's structures could be located within the embayment and it is some distance away from Kaimahi.

Waitata Mid-Channel

Mr. Raymond Smith stressed to us, as did others, the significance of Te Hoiere in traditional terms. He particularly emphasised what an adverse effect there would be on that traditional and cultural importance of Te Hoiere to have a salmon farm placed directly in what he described as the waharoa or gateway of the Sound.

He expressed that effect in these terms:

In the next couple of years, 2019, 29 November to 3 December, we plan to have not only the Endeavour replica from Australia over here but eight or nine waka hourua that will be navigating around the Marlborough Sounds. I'd hate to think that coming into the entrance there'll be a big blockage right in the middle of that. These are sailboats and these will be maintained under traditional understandings of tide and wind and not big obstacles in the middle of entrances. This is the re-navigational pathways of Kupe, of Matua Hautere. When Cook turned up in 1770 it was our iwi that were here, Ngāti Kuia, Rangitane, Ngāti Apa along with our close relations of Tumatakokiri. So a long history of association here.

Te Waharoa (o) Te Hoiere is an extremely beautiful and important place. It would be a pity and would be more than a pity for us if something was placed right in the middle.

He continued that it would be a "...Blight on our rohe."47

Again we accept that this impact requires to be taken into account as an adverse cultural effect. It may not on its own be sufficient to warrant recommending this Proposal not proceed, but it does need to be taken into account along with other potential adverse effects.

⁴⁷ Hearings Transcript 17 May, 2017 p28

Chapter 6 Issues

6.1 Introduction

We now address environmental issues of benthic standards, water quality, marine ecosystem (including King Shag) and fish health. We also discuss issues of landscape values, effects on navigation, and social and economic impacts on affected communities. Comments regarding proposed new technologies/designs to improve waste capture, sediment removal and farm aesthetics are noted. However, the Panel has made recommendations based on what technologies are currently available in a commercial setting.

6.2 Panel conclusions as to comments on each issue

6.2.1 Benthic (seabed/reef)

During the course of the hearings there was widespread acceptance of the Benthic Guidelines (developed 2014, see Section 1.4 of this report) and their ability to limit negative environmental impacts from salmon farming on the sea bed. An enrichment scale maximum of ES 5 directly beneath the farm and a maximum of ES 3 in the Outer Limit of Effect, in combination with monitoring in far field locations and adaptive management, were not challenged as an appropriate management approach. Of note NZKS suggested that Proposed Condition 38 in the plan change was inconsistent with the Benthic Guidelines as it requires the average of the scores to be beneath a certain threshold.⁴⁸ The threshold is the level of enrichment found on the sea bed.

While more lenient, NZKS stated it will implement the Benthic Guidelines where all monitoring stations are below the relevant ES scores and the Panel supports this amendment to Condition 38.

A major underlying driver for the whole Proposal has been that the consent requirements for the six existing NZKS sites proposed for relocation do not include a requirement to comply with the Benthic Guidelines because the consents predated the Benthic Guidelines. Four farms would not comply at this time under existing feed levels. NZKS has between three and seven years to run with its existing consents. NZKS stated it does not seek to abuse that and s.17 of the RMA controlling adverse effects generally can be used to ensure that is so. ⁴⁹

However NZKS did state that it intends that farming of smolt will recommence at Crail Bay if the Proposal does not proceed.⁵⁰ Some of the written comments and those presenting asserted that the poor benthic state under some farms chosen for relocation show that NZKS has either mismanaged some farms or deliberately put

⁴⁸ Submissions of behalf of NZKS, Quentin Davies, 11 April 2017, Pg31

⁴⁹ Quentin Davies, Solicitor, Transcript, speaking to Submissions on behalf of New Zealand King Salmon Co Ltd, 11 April, 2017.

⁵⁰ Grant Lovell, NZKS Supplementary Evidence, 22 May 2017.

economics ahead of environmental concerns.⁵¹ We accept that relocation from problematic low-flow sites and new consents in high- flow sites will be an effective means to remove this ongoing seabed degradation risk in the short term.

Some commenters suggested the best result for the Marlborough Sounds benthos was not to relocate any farms, in the hope that salmon farms would either reduce their feed inputs or cease altogether as consents expired and were not able to be renewed at economic feeding levels.

We consider that the risks from that 'do-nothing' option to the benthos, and the regional economy and employment in the Nelson and Marlborough regions, is the antithesis of sound sustainable management of resources. That option will not assist in reducing risk to the benthos one iota. The relocation option to high-flow sites is the only realistic way of protecting the benthos from ongoing risk exposure against a known background of difficulty in meeting the Benthic Guidelines, while at the same time avoiding loss of employment and significant reduction of regional GDP.

After dismissing the non-relocation option as unsustainable, we have then considered the potential impact on the benthos of relocating operating farms to the six proposed sites.

Two reports were used as the basis for our assessment of the impacts. In 2016 NIWA was commissioned by MPI to characterise and report on the ecological state of the benthic areas under eight proposed salmon farm sites (Report Part 1). NIWA then modelled potential deposition footprints for each farm site based on likely feed input scenarios and field measurements of currents. NIWA forecast the intensity and extent of the deposition from the proposed farming activity (Report Part 2).⁵² Both reports were peer reviewed by Associate Professor Catriona MacLeod and described as comprehensive base-line assessments.⁵³ Ben Knight, of the Cawthron Institute, also reviewed the Biophysical Model Predictions.

The predicted impact on the benthos from relocation is described by NIWA;

At all eight of the sites, communities of infauna living within the sediments beneath the cages and within the zone of maximum effects will be affected by the deposition. Enrichment-tolerant species (e.g. Capitellid polychaetes and nematodes) will become highly abundant, infaunal diversity will decrease significantly, and there is potential for the formation of bacterial mat (Beggiatoa sp.) and for some outgassing of H₂S gas from the sediment. Some of those effects may extend some way beyond the zone of maximum effects into the wider footprint. Infaunal assemblages at the sites mainly comprised taxa that are widespread and common in soft sediment habitats within the Marlborough

⁵¹ N.McLennan, Written Submission 0181.

⁵² NIWA Benthic Ecological Assessments for Proposed Salmon Farm Sites – Part 1: Benthic Ecological Characterisations and Part2: Assessment of Potential Effects, December 2016

⁵³ Peer review of NIWA assessments of benthic effects of relocation of salmon farms in the Marlborough Sounds, Catriona Macleod, 2016

Sounds so the effects on those infaunal communities are not considered to be ecologically significant in the context of the Marlborough Sounds geographic region.⁵⁴

Site discussion Tio Point

The predicted deposition from a farm with annual production of 2000 t will alter existing benthic habitats, but is highly unlikely to cause anoxic conditions, even directly beneath the pens, according to the expert report. Wave action, in combination with tidal currents, would very likely re-suspend material that may be carried on to the Oyster Bay reefs, particularly close to the headland of the bay.⁵⁵

Richmond Bay South

There were no particularly notable or rare communities or taxa recorded on the muddy seabed in the immediate vicinity of the Richmond Bay South (106) site, but scallops were relatively abundant. Two large reefs were both more than 500 m away from the proposed farm boundaries, and were considered to be outside the influence of significant depositional effects from the proposed farm activity.⁵⁶ This farm site supported the lowest mean abundance of infauna compared with the other proposed farms and low numbers of infaunal species. We have concluded there are unlikely to be any significant adverse effects on the benthic environment at this site.

Horseshoe Bay

North of the site (not within the proposed farm boundaries) is a distinct zone of biogenic habitat and the associated invertebrate community is considered to be an unusual ecological feature in the context of the Marlborough Sounds region.⁵⁷ We note that the adaptive management regime with associated close monitoring will be important at this site as 0.5ha could be close to >ES 5 at 2500t feed/year.⁵⁸

Blowhole Point North

Scallops, brachiopods and other epifaunal taxa considered sensitive to depositional effects would be displaced/excluded beneath the cage area.⁵⁹ Suffice it to say that while limited potential impacts on the benthos were identified, in our view they were not significantly adverse to an extent that would have warranted recommending the Proposal did not proceed at this site solely for that reason.

⁵⁴ NIWA – Benthic Ecological Assessments for Proposed Salmon Farm Sites – Part 2: Assessment of Potential Effects, 2016, pg6

⁵⁵ NIWA – Site assessment for potential finfish site – Oyster Bay, pg20

⁵⁶ NIWA – Benthic Ecological Assessments for Proposed Salmon Farm Sites – Part 2: Assessment of Potential Effects, pg 52 and 109

⁵⁷ Ibid pg70

⁵⁸ Ibid pg60

⁵⁹ Ibid pg6

Blowhole Point South

The primary footprint extends to the northeast over portions of the extensive reef at Blowhole Point. The benthic report concludes that there is potential for some effects on diverse communities on that reef from low to moderate levels of deposition and elevated nutrient levels.⁶⁰

This site is not being recommended for a range of other reasons. We do not need, therefore, to dwell on the detail of those effects but should record that had it been necessary we may well have recommended a lower initial baseline for feed inputs to ensure adaptive management control was tighter to avoid the potential benthic effects identified. Also, had both Blowhole Point sites proceeded, the cumulative effects on the benthos could have been higher than modelled and would have needed to be monitored.⁶¹ However, as we have recommended they not proceed this issue drops away.

Waitata Mid-Channel

There were no ecological features of special significance identified beneath the cage area nor in the vicinity of the overall site boundary.⁶² This is a particularly deep site and one with high current flows. We are satisfied that effects on the benthos under the adaptive management regime would not be significant.

Adaptive management

The overall finding was that the potential footprint of deposition from the farms at high-flow sites is highly dependent on feed inputs. For this reason, we consider the adaptive management regime proposed in the MPI Proposal with limits on feed level increments which have to be closely monitored before increases, is a sound strategy. The application of the precautionary principle in the NZPS requires that feed levels must be set conservatively initially, and only increased when adaptive management monitoring shows that the benthic levels do not exceed ES 5 and ES 3 in the inner and outer areas.

Hot-spots

Professor MacLeod noted in her peer review that because of the sizable currents at many of the sites studied, many in excess of 30cm/s, that they would be highly dispersive. She suggested that system-wide monitoring over a broader area, should be considered as a means to identify any hot spots.⁶³ Hot spots are areas where fish faeces may drop to the benthos when the current speed drops. This concern about hot

⁶⁰ NIWA – Benthic Ecological Assessments for Proposed Salmon Farm Sites – Part 2: Assessment of Potential Effects, pg7

⁶¹ IBID pg57

⁶² NIWA – Benthic Ecological Assessments for Proposed Salmon Farm Sites – Part 1: Benthic Ecological Characterisations

⁶³ Peer review of NIWA assessments of benthic effects of relocation of salmon farms in the Marlborough Sounds, Catriona Macleod, 2016, p7

spots was also noted by several people making comments but there was no direct evidence from the benthic experts of this occurring.

We are aware of the MDC broader state of the environment monitoring but also recommend that appropriate broader benthos monitoring in the wider Pelorus Sound and Tory Chanel should be part of any resource consent conditions, especially in the initial stages. We understand the far-field monitoring regime of water column quality contained in condition 43c) of the Proposal does address this issue in part, in that water column effects would detect any potential increase in sediment loads.

The Marlborough Research Centre suggested NZKS lodge a \$2 million bond with the MDC, with \$200,000 payable if benthic conditions were not met under any of the relocated farms.⁶⁴ The latter aspect of this request is in the form of a penalty, which is not the purpose of bonds (see Section 108A of the RMA). We have confidence that the adaptive management regime contained in the Proposal will ensure that the problem is avoided, effectively being the fence at the top of the cliff. That is a far better solution than this type of bond approach of an ambulance at the bottom of the cliff.

Towards the close of the hearing, this conclusion was confirmed for us when the firstyear monitoring reports by the Cawthron Institute on the state of the benthos and water column at the most recently consented NZKS farms (Waitata Reach, Ngamahau Bay, Kopaua) were released publicly.⁶⁵

The results show that these farms comply with the Benthic Guidelines at the initial feed input levels designed to achieve that outcome. Many opposing comments expressed concern that the relocation would proceed without evidence the NZKS can comply at its new farms. The evidence from very detailed monitoring of initial performance at the new BOI sites does not support this concern.

Benthic recovery at existing farms

Several people making comment said that NZKS should be required to speed up the recovery of the benthos under the existing farms as the new farms would open before the old sites fully recover. That the benthos could be anoxic for up to ten years was not regarded as acceptable by some commenters.⁶⁶

NZKS states that the sea bed under the existing farms will take up to ten years to recover to a similar level to a pre-farm state following immediate fallowing. Dr. David Taylor of the Cawthron Institute, who has personally carried out close monitoring of the benthos beside many operating salmon farms on many occasions, made it plain during the expert meeting on King Shags, that recovery to varying levels of functioning benthic fauna and flora was much more rapid than that. He stated that within six months infauna recovery commences and progressively improves species diversity over time. He said that within a few years it would be very difficult for the average observer to notice any difference from the adjacent seabed, and that while it might

⁶⁴ Marlborough Environment Centre Written Submission, 0588, pg10

⁶⁵ Cawthron Report number 2999, 3000 and 3001, 9 May 2017

⁶⁶ John Leader, Des Boyce, Written Submission 0400

take up to 10 years for full natural recovery of benthic diversity of species, a healthy environment with more limited species diversity occurs naturally relatively quickly.

There is a considerable degree of uncertainty as to whether interventions such as vacuum sediment removal and harrowing of the sea bed will hinder or hamper the recovery process. NZKS has contracted the Cawthron Institute to carry out further trials on removing the organic layer at a semi-commercial scale. It is NZKS's opinion that it will be better to allow for self-remediation until such time as it is clearly demonstrated there is a risk free alternative strategy. ⁶⁷ For all these reasons, we do not recommend a specific remediation strategy.

In conclusion, the strategy of tying the relocation of the Otanerau farm to Tio Point, the Waihinau Bay farm to South Richmond, and the Ruakaka farm to Horseshoe Bay, is confidently expected to enable salmon farming at the new high-flow sites in a manner whereby the direct benthos under all operating salmon farms can be maintained below ES 5. This contrasts with the current situation where the benthos is above that level unless feed inputs are markedly reduced. This must be a much more sustainable outcome.

While deposition will be more widely dispersed around the farms, by using adaptive management coupled with close monitoring, that level of broader deposition should be able to be maintained under ES3 which is a level that will not adversely impact on the ability of the benthic ecosystem to function.

Although the Benthic Guidelines are not specified as a condition on the Crail Bay and Forsyth Bay consents, it is common ground amongst the experts that exceedance of that level will result in anoxic (nil-oxygen) conditions. If that were to occur then the provisions of s.17 of the RMA could enable the Council to require cessation of the aspect of the activity giving rise to the adverse effect on the environment.

Compliance with the ES 5 level has proven to be very problematic at Forsyth Bay in the past, and the ability to remain under it is unknown at Crail Bay. The sites at Crail Bay and Forsyth Bay would possibly be available for short-term use for smolt holding. NZKS has canvassed this possibility but that may not prove necessary once more high flow sites can be utilised.

Given the current degraded state of the benthic environment already at Forsyth Bay, that may not be feasible at all before the consent expires there.

6.2.2 Water Column Quality Issues

The consequence of salmon farming in coastal waters protected by the natural landform as in the Marlborough Sounds is a potential adverse effect on both the benthos beneath or in close proximity to the pens in which the salmon are fed, and on

⁶⁷ NZKS Written Comment 0482, pg62

the water column affected by any discharges. The potential effects arise from two sources – the input feed and the faeces produced by the salmon.

The consequent potential adverse effects on the quality of the water column include:

- elevated nitrogen & chlorophyll-a levels in turn potentially feeding phytoplankton which if uncontrolled can result in algal blooms and other general degradation of water quality for other flora and fauna
- potential for Harmful Algal Blooms (HABs)
- general potential for degradation effects on water quality affecting other species
- potential detrimental effects on threatened species such as King Shag reliant on reasonably clear light conditions for foraging of prey species

Direct linkages between salmon farming and the last three potential risks listed are not clearly established but nonetheless remain real concerns. The first bullet point effects, however, are demonstrably provable at near site locations, and potentially may be at far-site locations.

The information before us is that far-field linkages will be much harder to understand and monitor. The Marlborough District Council, through Dr. Steve Urlich their coastal scientist, described the state of the environment programme of regular sampling and monitoring that has commenced since the BOI decision. One of the practical problems with that regime is that the Sounds complex is very large with approximately 1500 kilometres of coastline. The distances on the water needing to be covered on sampling runs are so long that sampling can only realistically be taken on a spot basis of the various layers of the water column at a number of locations throughout the Sounds. That is done at regular intervals, but those intervals are necessarily separated by days of natural events and influences which the sampling regime simply cannot record.

Included among those influences are major rainstorm events and consequent floodflow contributions to the Sounds waters, and massive impacts from upwelling inflows and outflows from and to Cook Strait. In addition, wind effects, temperature, sunlight, currents, sediment loads, storms and water pressure variances can also play a major part in the make-up of the water quality at any time.

Real time monitoring buoys, as are proposed in standard 32 of the Proposal, are seen by the water quality experts as providing a much needed more accurate record on a minute by minute basis of water quality conditions. ⁶⁸ It is proposed that even after their installation, at least for the foreseeable future until the buoys have demonstrated their reliability, the MDC state of the environment physical sampling and monitoring programme will continue so that the buoy system complements rather than replaces it.

⁶⁸ Potential Relocation of salmon farms in the Marlborough Sounds, MPI Discussion Paper 2017/04, Appendix D4

In essence, this Proposal approaches the water column quality issue with a similar approach to that of the benthic effects issue. Namely, that the higher flow, deeper water sites enable rapid mixing of discharges in high flows. This allows a broader dispersal effect and the consequent dilution achieved is intended to limit the intensity of the immediate effects on both the water column and the benthos. We do not need to repeat the analysis of trophic effects and their risks that the BOI made. No party challenged the detail of that general analysis, which is essentially replicated in the background descriptions contained in the expert reports in support of this Proposal.

The practical method of ensuring the conservative modelled outcomes are not exceeded was advanced, both before the BOI and before us, on a regime of close monitoring of water column quality effects coupled with an adaptive management regime.

However, there are significant differences between the factual material before the BOI and the factual material available to this Panel.

The BOI found itself in the position where a major Proposal for nine new salmon farms was advanced to it, but against a background where no worst-case scenario water column quality modelling had been done. Instead the modelling had been done at the level of the initial proposed feed input levels, checked only against a scenario of a 50% increase of those levels to demonstrate summer loadings. The BOI report observed as follows in its report:

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.⁶⁹

And at paragraph 438 of the report the approach to water column modelling was contrasted to that taken with benthic effects modelling:

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 in 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.

It is plain that MPI heeded that concern in preparing this Proposal. Table 1-1 of the report by NIWA entitled '*Modelled water column effects on potential salmon farm* relocation sites in Pelorus Sound - HAM Report 12'⁷⁰ provided a range of 12 computer

⁶⁹ Board of Inquiry, New Zealand King Salmon Requests for Plan Changes and Applications for Resource Consents, 22 February 2013, paragraph 406

⁷⁰ Modelled water column effects on potential salmon farm relocation sites in Pelorus Sound - HAM Report 12, NIWA, Broekhuizen & Hadfield, 18 October 2016

modelled scenarios to demonstrate differences to a baseline scenario. The worst-case scenario 13 in that report was run at input feed levels of 38,165 tonnes per year which massively exceeded the initial discharge levels of 6,000 tonnes in the Proposal for Pelorus Sound by a factor of over six.

Interestingly, the computer models in the BOI were carried out by Mr. Ben Knight of the Cawthron Institute and peer-reviewed by Dr. Broekhuizen of NIWA. In the present Proposal those roles were reversed – in its own way adding something to the robustness of the process.

Even with the conservative modelling approach just described, the outcome of the modelling was that the near field outcomes would only result in a percentage increase of nitrogen of less than 3%. That was an outcome all experts were comfortable with. The peer reviewer Mr. Knight of the Cawthron Institute described the results of the modelling as being plausible and of less than minor effect, even if he felt the modelling was "*stretched*" in some degree.⁷¹

When balanced against a real restriction in the Proposal of 6,000 tonnes maximum feed input for the first three years, as monitoring occurs to substantiate the computer modelled results, the level of confidence now provided by the worst-case and other computer modelling is significantly improved and more comprehensive than that faced by the BOI.

Yet, notwithstanding the expressions by the BOI of its bewilderment at the lack of worst case scenario modelling before it, the BOI was still sufficiently confident with the modelled outputs it did receive to grant consent to two further farms in Pelorus Sound in Waitata Reach. And that was in addition to the discharges from the existing Waihinau farm and the potential then-consented Danger Point farm in Wahinau Bay. In doing so the BOI imposed and relied upon a range of adaptive management controls on discharges dependent on monitoring of effects on both the benthos and water column quality.

As a consequence of actions taken since the BOI report, we now have the advantage of not only extremely conservative worst-case modelled scenarios, but also initial monitoring reports in respect of the first year's operation of the two new BOI approved farms at Kopaua and Waitata in Waitata Reach. Both of those monitoring reports demonstrate there can be a level of confidence in the modelled predictions in the Pelorus Sound, and the same can be said for the first year monitored results for the new BOI approved Ngamahau farm in Tory Channel.

In addition to those matters, very significantly there are now Benthic Guidelines which definitively and accurately control effects of the discharges on the benthos, in a manner that Dr. David Taylor very clearly illustrated to us. He and benthic scientists can now accurately measure depositional effects against those Guidelines, and very importantly feed discharge levels as a matter of practice can now be estimated with

 ⁷¹ Report No. 2923 Peer Review Of The Marlborough Sounds Biophysical Model Predictions, Cawthron Institute,
B. Knight, pg22

some confidence so as not to exceed the ES 5 level. Those methods were not available to the BOI.

Moreover, we also have a Proposal which in the Pelorus Sound relocates the Waihinau farm to a deeper higher flow site, (albeit at levels of discharge which will in the end be at higher levels of feed input), but which does not now face the potential existence of a salmon farm at Danger Point as the BOI faced. That consent was refused on appeal by the Environment Court after the BOI report was delivered. The inputs for Waihinau on the modelled baseline scenario were included at 3,983 tonnes over an 18-month period.

It is of significance to note that despite the extremely close scrutiny applied by many commenters to these modelled outcomes, the only challenges of significance as to figures utilised were based on challenges as to the baseline feed input scenarios for some farms such as Crail Bay. It was asserted that no provision should be made at all for a baseline that included the Crail Bay farms because of the fact that no salmon farming had occurred there for over five years.

In its reply NZKS, through its counsel Mr. Davies, submitted that the legal test for the 'existing environment' included realistic potential effects arising from existing consents which could be utilised. He then called evidence from Mr. Grant Lovell who said that if the Proposal did not proceed, NZKS would have to consider using the sites at Crail Bay in stages to hold smolt for short periods. Hence he had included limited feed input allowances at levels of 822.8 tonnes for each of those two sites for the baseline scenario.

Regardless of whether as matter of fact or law that was the correct approach, we are satisfied that because of the relatively small amounts involved the effect on the modelled results is insignificant as to the worst-case scenario of an input of 38,000 tonnes.

However, we do observe that while the inclusion of the Crail Bay inputs was insignificant in the final outcome, providing those figures for Crail Bay to the computer modellers did serve to confuse and possibly confound many of those seeking to understand the Proposal. The figures were not significant enough to make any difference to the outcome of the model, but their inclusion added to an already heated reaction from many of those considering the modelled results in the AEE, because all knew such feed inputs had not occurred at Crail Bay for over five years.

In a large number of other comments criticisms about water quality effects were made based almost always on assertions as to the effects of the maximum potential feed input levels. As we have observed earlier in discussing a series of flawed assumptions we found these comments unrealistic and unhelpful, as they made no acknowledgment of the reality that the maxima were only ever able to approached against a background of very carefully worded limitations as compared to the baseline to be established. It was against that baseline that the increase of feed inputs could be measured as part of the proposed adaptive management regime. The precautionary steps which had to be met which are relevant to water column quality in the adaptive management regime are:

> a very conservative baseline is required to be set over a period of at least one year, or two if required by the Peer Review Panel, before the first feed discharge takes place (standard 43)

the Baseline Plan also has to quantitatively and qualitatively map the soft-sediment habitats for the Zone of Maximum Effect (ZME) and Outer Limit of Effect (OLE) for each site (standard 43 (a))

➤ as part of the baseline water column monitoring to establish a baseline for nutrient (NH4 –N, NO3-N, NO2-N, DRP, Si, TN and TP) as well as Chorophylla concentrations, phytoplankton composition and bio mass, salinity, clarity, temperature, turbidity and dissolved oxygen (DO) monitoring is required over that one or two year period at near-farm locations within 1 km of the proposed net pens, at other far-field locations both at sites with influence from marine farms and others more distant from marine farm effects and at areas of high ecological value.

Limits are then set in the standards both as to individual farm locations, and collectively in the Pelorus Sound at initially 6,000 tonnes/year (standard 20) as being the maximum level of initial feed discharges based on what is predicted to be the amount of feed discharges that can occur while maintaining a depositional footprint which doesn't exceed Enrichment Stage 5

Monitoring is required annually with a very comprehensive report required to be lodged with Council each year on benthic and water column quality impacts (addressing matters which cover two full pages of detailed matters requiring assessment in terms of the Environmental Quality Standards (EQS) in conditions 36, 38 & 40 (standard 45-47)

Only if the discharge has been within 85-100% of the Environmental Quality Standards in conditions 36, 38 & 40 over a period of three consecutive years can the feed discharge level at any one farm be increased (standard 23 for Pelorus Sound & 30 for Tory Channel)

There are then further conservative steps for each level of increase at each individual farm (standards 22 for Pelorus Sound & 29 for Tory Channel)
In addition, there are maxima for increases in Pelorus Sound for discharges of 1800 tonnes per year (standard 26)

The total eventual maxima for all five potential sites in Pelorus Sound, including the two Blowhole sites is 23,000 tonnes per year – which is far below the maxima in excess of 30,000 tonnes that was repeatedly put to us. (Standard 28). The totals for Richmond Bay South and Horseshoe Bay in this standard are 5,000 tonnes and 1,500 tonnes respectively, 7,000 tonnes for Waitata Mid-Channel, and 4,500 tonnes and 5,000 tonnes respectively for the Blowhole North and South sites.

The EQS set in standards 36, 38 & 40 have follow-up steps standards as laid down in standards 37 & 39 including if required destocking within set timeframes to reduce effects,

➢ In water quality terms standards include concentrations of chlorophylla in the receiving waters not exceeding 3.5 mg m⁻³, concentrations of Total Nitrogen in the receiving water not exceeding 300 mg m⁻³, and concentrations of dissolved oxygen above an average saturation of 70% within 250 metres of the pens or an average of 90% saturation beyond 250 metres.

That is only a condensed summary of what is a very comprehensive monitoring and adaptive management regime. In our view it is an appropriately precautionary approach in line with the precautionary approach the NZCPS requires in Policy 3.

We were continually surprised that many of those who most vociferously criticised the effects of the Proposal had either not read these standards, or were dismissive of them in a generalised manner, but without engaging with their detail.

We find it difficult to understand how excessive claims of disastrous effects from this Proposal can be made by those criticising it, when they either have not read, or do not give any weight at all to the water column quality standards imposed by the proposed plan change, and how conservatively framed they are. When the comprehensive conservative approach of the adaptive management regime is appreciated and understood, then these excessive assertions based on the maximum feed discharge levels in the worst-case scenario cease to have any real significance.

To take just one example of what was a recurrent theme in many comments, the Kenepuru and Central Sounds Resident's Association and Pelorus Boating Club stated:

At the existing farms the level of feed discharges is a little less than 6000 tonnes. At the new proposed sites MPI is arguing that the permitted feed discharges be set at around 25,000 tonnes. Since when was an increase by four or five times 'like for like'?⁷²

That assertion entirely ignores the adaptive management regime in the Proposal which fixes a total initial feed discharge limit of 6,000 tonnes which can only be increased if three years of monitoring shows no adverse effects. The staged increases above that are incremental only, and because of the three-year successful monitoring required can take in excess of twelve years to achieve full potential.

However, that approach still occurred, even at one of the expert meetings, with other experts in vain drawing the attention of one expert to the reality that no proper account was being taken by him as to the limiting impacts of the conservative adaptive management controls contained within the Proposal.

The comments also often drew our attention to the precautionary principle, and emphasised the importance it was given in the NZCPS, the BOI report and in the Supreme Court decision. However, these issues were definitively addressed in the

⁷² Kenepuru & Central Sounds Resident's Association and Pelorus Boating Club, Written Comment 0485,pg27-28
Supreme Court⁷³ in favour of the BOI's findings in respect of the NZKS proposed farms at Waitata, Kopaua and Ngamahau. It is instructive to compare this Proposal as to water column issues with the approach the Supreme Court approved in that case. The Court identified at paragraph 6 that there were three issues raised:

- (a) Whether the adaptive management approach that the Board took was available
- (b) Whether the Board's decision on the plan changes was wrongly predicated on the consent conditions
- (c) If an adaptive management approach was available, whether that should have been contained in the plan as against the consents

In respect of the third issue the Plan Change approved by the Board had included adaptive management limits on the levels of increase of feed discharges from initial levels with assessment criteria being set.

We make the general observation that unsurprisingly the present Proposal before the Minister endeavours to follow basically the same format as was used by the BOI for the adaptive management regime and approved by the Supreme Court. One significant change, which we observe is for the betterment of the environment, has been a reduction in the EQS for chlorophyll-a from 5.0 to 3.5 mg m⁻³.

On the first issue, the Supreme Court held that before an adaptive management regime can be considered:

...there must be an adequate evidential foundation to have reasonable assurance that the adaptive management approach will achieve its goals of sufficiently reducing uncertainty and adequately managing any risk.⁷⁴

We are satisfied for all the above reasons that in respect of water quality issues there is in this Proposal sufficient evidence that the adaptive management approach will meet the goals of maintaining water quality. The Supreme Court placed considerable emphasis on the staged and monitored approach to increases in feed discharges as we have done. It is the failure of the comments opposed to the Proposal to do that which undermines their overall criticism of water column quality effects. In discussing those staged approaches the Court stated:

... Under the consent conditions, they will only be reached if water quality (and the seabed) will be protected.⁷⁵

We are satisfied that the same views apply to this Proposal.

On the second issue the Supreme Court accepted that the factors identified by the BOI were appropriate. These were:

(a) There will be good baseline information about the receiving environment (this is met in our view in this Proposal and no comments suggested otherwise)

 $^{^{\}rm 73}$ Sustain our Sounds Inc v. New Zealand King Salmon Co Ltd [2014] NZSC 40

⁷⁴ Sustain our Sounds Inc v. New Zealand King Salmon Co Ltd [2014] NZSC 40, paragraph 125

⁷⁵ Ibid, paragraph 126

- (b) The conditions provide for effective monitoring of adverse effects using appropriate indicators (again in our view this is met in this Proposal and no contrary views were expressed in comments as to the indicators to be measured.)
- (c) Thresholds are set to trigger remedial action before the effects become overly damaging (once again this is met in our view on this Proposal)
- (d) Effects that might arise can be remedied before they become irreversible (once again in our view the expert evidence was strong that this aim could be met.)

The Court held that fixing the baseline before structures were inserted was an appropriate method. That is adopted in this Proposal.

The Court also upheld the Board's approach to fixing the environmental quality standards. As the current Proposal follows the same methodology, save for the tighter EQS for chlorophyll-a, there is no reason to question that any further and nor did any of the commenters do so in any detail.

The reliance on remedial measures used by the BOI and again in this Proposal involving reduction of feed or reduction of stock was not held to give rise to any error of law.

The Supreme Court held it was implicit in the BOI's report that effects could be remedied under the regime proposed before they became irreversible. We share that view on the very similar approach taken in the detailed adaptive management approach proposed in the current Proposal.

Finally, the Supreme Court held:

In this case, given the uncertainty will largely be eliminated and the risk managed to the Board's satisfaction by the conditions imposed, it was open to the Board to consider that the adaptive management regime it had approved, in the plan and the consent conditions, was consistent with a proper precautionary approach.⁷⁶

Given the consistency with which those making comments ignored the adaptive management regime in the Proposal, we observe that we really do wonder if the Supreme Court's approval of the BOI adaptive management regime approach was properly understood or appreciated by those making comments based on maxima tonnages which may never be approached given the limitations in the Proposal.

The other water quality concerns raised, though, were not so directly related to the modelling. They were:

• potential far-field effects, particularly on the possibility of HABs in lower flow locations such as Onapua Bay off Tory Channel where such blooms have occurred in the past, and at the head of Queen Charlotte Sound, and in areas like Mahakipawa Arm, Mahau Sound and Kenepuru Sound in particular in Pelorus Sound

⁷⁶ Sustain our Sounds Inc v. New Zealand King Salmon Co Ltd [2014] NZSC 40, paragraph 140

- Potential effects on water quality for other species of pelagic fish or other species or fauna
- an asserted significant adverse effect on the foraging conditions for King Shag as a result of limitations on light penetration to depths in its feeding range

While we deal with each of those in turn, we make the primary observation that as with near-field effects it can generally be said that the monitoring involved in the adaptive management regime is aimed at avoiding these asserted adverse effects, as well as the near-field effects.

As to potential effects on HABs or algal bloom incidences generally, and impacts on pelagic fish the MDC state of the environment monitoring is continuing to build a baseline against which such effects can be better monitored and understood. The requirement in this Proposal for real-time monitoring buoys will add significantly to the detail, frequency and reliability of that monitoring.

Conclusion on water quality issues

In summary, the adaptive management regime advanced in this Proposal accords with the approach taken in the BOI, and the aim of that is to utilise a precautionary approach to protect water column quality. That approach was approved by the Supreme Court.

In this case, too, the Minister now has far more information than was available to the BOI. We consider the Proposal adopts an appropriate precautionary approach to water quality issues.

6.2.3 Marine mammals

The Minister must consider Policy 11 of the NZCPS which requires;

(a) avoiding adverse effects of activities on:

i. indigenous taxa that are listed as threatened or at risk in the New Zealand Threat Classification System lists, and

ii. taxa that are listed by the International Union for Conservation of Nature and Natural Resources as threatened.

Marine mammals with a threatened or at-risk status in the Marlborough Sounds are Hector dolphins and Bottlenose dolphins, with killer whales classed as Nationally Critical and Humpback whales Endangered on the International Union listing.

In assessing the risks to these mammals and non-threatened mammals, the Panel drew on evaluations by expert M.W. Cawthorn in his report, and general comments on that report by Andrew Baxter of DOC. Written and oral comments during the hearings were also considered.

The Panel has recommended that Blowhole North and South, and Waitata Mid-Channel not proceed as relocation sites, because of various landscape, navigation and cultural issues. However, this section will also address possible effects on marine mammals which may be relevant at any of the six proposed sites.

The Panel agrees with Mr. Cawthorn that, in general:

While there can never be zero risk to marine mammals from the large floating structures which make up salmon farms, in my opinion, the risks are low.⁷⁷

Humpback Whales

Mr. Cawthorn said the highest risk of whales interacting with farms on the relocation sites would be at Tio Point (Tory Channel) because of the narrow, occasionally restricted waterway.

Moving farms into this area will increase the potential risk of some interaction with large whales, however, given the low number of right and humpback whales seen in the channel the risk of a whale blundering into a large floating structure remains very low.⁷⁸

Some Humpback Whales use Tory Channel during their northward migration. Mr. Cawthorn concludes that little or no feeding occurs during the northward migration, however, so the likelihood of humpbacks targeting salmon farm sites as feeding areas while on migration is so low as to be insignificant.⁷⁹

We note that there have been no whale vs farm encounters to date even with the Southern right whales who have a habit of rubbing their skin against anchor warps. We consider that underwater night lights, correct net tension and anchor cable tension are important mitigation factors that should be part of resource consent conditions at all sites.

Mr. Cawthorn did not see any issues with the deep Waitata Mid-Channel site for whales, as he considered there would be more than adequate space around any such structure for them to navigate.⁸⁰

Dolphins

Hector's dolphins are regularly sighted in the Marlborough region and they are Nationally Endangered. Between 15 January 2009 and 16 May 2011, 24 observations of 142 Hector's dolphins, in groups ranging from 1-50 individuals were recorded in the DOC Sounds Area Database, suggesting Hector's dolphins are most frequently seen in the middle reaches of Queen Charlotte Sound and are concentrated in the area around Blumine Island.⁸¹

⁷⁷ Cawthorn and Associates - Marine Mammals Report, pg20

⁷⁸ Ibid, pg20

⁷⁹ Ibid pg31

⁸⁰ Ibid, pg19

⁸¹ Ibid, pg13

The closest salmon farm to Blumine Island is Otanerau and the Panel proposes it be relocated to Tio Point, which is in Tory Channel a significant distance away from Blumine Island.

Bottlenose dolphins are Nationally Endangered. The Cook Strait/Marlborough Sounds population extends south to Westport, is considered semi-resident, with high migration rates and an unknown number of transient animals. Mr. Cawthorn suggests that dolphins will move to farms if the farms relocate.

Dolphins will rapidly locate any farms moved and resume feeding in the vicinity on schoolfish attracted to the structures if they choose to.

The effects of moving farms on marine mammals associated with them should be no more than a temporary inconvenience to already established behaviour. ⁸²

We note that the number and type of reported dolphin deaths associated with salmon farms in the Cawthorn Report was queried in the review by DOC. DOC listed five deaths going back to 1999 but also referred to the fact that it appeared tensioning of nets and moorings had reduced the risk factor in recent years.

Since dolphins move to the farms, we suggest that mitigation is more important than location of farms. It is essential that improvements in farm structure design continues to mitigate mammal deaths. In particular, correct tensioning of nets and use of full enclosure predator nets. Lighting of structures underwater will also provide visual reference for any animal nearby.

Mr. Cawthorn reports that Killer whales/Orca (which are a Nationally Critical species) are highly manoeuvrable and have never been recorded in any salmon farm incident reports.⁸³

Comments made during the hearing emphasised the importance of protecting dolphins (including Orca) in the Pelorus Sound as they enhanced the experience of people visiting the area and they were amazing to watch.⁸⁴ Of concern was whether there would be space for young Orca and dolphin to be taught to hunt in the sheltered bays.

Seals (not threatened)

There were four seal deaths associated with salmon farming reported from 2014-16. Given the high interest in salmon farms from seals, and the population increase of seals, the mitigation programme utilised by NZKS meets the situation.

We see no greater or lesser effects on seals from relocating farms and accept Mr. Cawthorn's report that seals are unlikely to be affected:⁸⁵ In conclusion, we accept the opinion expressed by Mr Cawthorn that:

⁸² Cawthorn and Associates - Marine Mammals Report, pg20

⁸³ Ibid pg23

⁸⁴ Peter Martin and Nikki Elliot, Hearing Presentation, 2 May 2017.

⁸⁵ Cawthorn and Associates - Marine Mammals Report, pg20

Relocation of salmon farms in the Marlborough Sounds is likely to have an insignificant effect on marine mammals in the area.⁸⁶

However, a condition on consents for any relocation should be that NZKS's Marine Mammals and Protected Shark Management Plan and a Wildlife Nuisance Plan should be extended across any new sites. Accurate recording of incidents with marine mammals must be kept (see condition 54 (q)) so as to ensure management responses and regulatory supervision can be made to avoid recurrences.

6.2.4 Pelagic fish

The pelagic zone of the Marlborough Sounds has at least 49 different species of fish and sharks.⁸⁷ The NZ Coastal Policy Statement requires attention to threatened or atrisk fish, fish at the limit of their natural range, nationally significant fish communities, habitats important to vulnerable life stages and migratory fish corridors.

In respect to this issue we have considered advice from Paul Taylor and Tim Dempster in their September 2016 report 'Effects of salmon farming on the pelagic habitat and fish fauna of the Marlborough Sounds and management options for avoiding, remedying and mitigating adverse effects'.

This report concludes that the impact of this Proposal is likely to be low as there are no pelagic species at the limit of their sustainability in the Marlborough Sounds.

We note however that nationally significant fish communities in the Marlborough Sounds are not fully understood or identified.⁸⁸

There is one pelagic species (pilchard) that is known to utilise a corridor provided by a current system but it is unlikely that the nett effect of farms at the relocation sites will impact on the movement corridors.⁸⁹

The noted potential risks to indigenous species are;

- disease spread from farmed salmon
- change in reproductive success from consuming left-over salmon food
- having their breeding, spawning or feeding areas affected by deposits to the benthic areas directly under the farms
- being an easy-catch due to their attraction to salmon farm pens
- underwater lights affecting their behaviour

⁸⁶ Ibid, pg23

⁸⁷ MPI Discussion Paper 2017/04, pg53

⁸⁸ Effects of salmon farming on the pelagic habitat and fish fauna of the Marlborough Sounds and management options for avoiding, remedying, and mitigating adverse effects, Paul Taylor & Tim Dempster, September 2016, pg38

⁸⁹ Ibid, pg41

The extra flow-on risk from fish eating salmon food is an increase in their organohalogenated containments and heavy metal loadings.

The issue of diseases moving across species or affecting wild fish in other ways is addressed in the Fish Health section below.

The Taylor Dempster report notes that wild fish can have their body weight altered by consuming uneaten feed falling through the salmon pens, which may affect reproductive performance. The pelagic report states that feed waste levels at NZKS sites are estimated to be less than 0.1% but, as this is not independent data, there is a need for independent and accurate measurement of feed fallout. We agree that knowing the tonnes of feed potentially going to wild fish would help build a picture of the tonnes fed to wild fish/per year and at key times during the year. This is especially important as feeding rates may increase over time, provided they meet adaptive management requirements.

In addition we support the recommendation to monitor the long-lived bentho-pelagic fish that traditionally reside near the salmon farms for evidence of any heavy metal accumulation, at various sites. These recommendations are included in the proposed Marine Environmental Monitoring, Adaptive Management Plan (MEM-AMP).⁹⁰

In regard to assessing the effects of benthic deposits from salmon farms on fish breeding grounds and habitat, it is expected there will be effects. Not much is known of the various fish behaviours in the Marlborough Sounds, in regard to particular areas. However, the discussion on the benthic issues in 6.2.1 show there are no significant reefs directly under the proposed farms and that the South Richmond Bay reef is considered far enough away not to be affected by deposits. We note the size of the benthic areas under salmon farms in the Proposal are similar but that the effect on the benthos itself will be less.

We agree with Chris Cornelisen, Coastal and Freshwater Group Manager, Cawthron Institute, that underwater lighting is very localised and will have no significant effect on pelagic fish.⁹¹

In overall terms, we are satisfied that this Proposal will not lead to adverse effects on pelagic fish in the Marlborough Sounds.

6.2.5 Landscape and Natural Features identifications

The Marlborough Sounds are undoubtedly a place of great scenic beauty. The major factor contributing towards this quality is the magnificence and natural character of the landscapes. It is therefore no surprise that many of those who made comment on the Proposal opposed the establishment of new salmon farms which they saw as a detraction from the natural beauty of the environment.

⁹⁰ Potential relocation of salmon farms in the Marlborough Sounds, MPI Discussion Paper 2017/04, Marine Environmental Monitoring, Adaptive Management Plan (MEM-AMP), condition 45 (h), pg91

⁹¹ C. Cornelisen, Letter to MPI, 16 November 2016, AEE Documents provided to submitters.

Of course, the environment of the Sounds is far from entirely natural at present. There is a significant degree of human habitation, some of which is a distinct detraction from the elements which render the Sounds so remarkable, including extensive linear residential developments along the coastline, and a number of settlements ranging from towns such as Picton and Havelock, to smaller dense settlements such as Elaine Bay. In addition, there are around 568 operating marine farms that currently occupy 2,800ha of the Sounds' 150,000ha of water space.⁹² There is a major port, a number of lesser ports and stands of commercial forestry.

The operative Marlborough Sounds Resource Management Plan identifies Areas of Outstanding Landscape Value (AOLV), which are not to be confused with Outstanding Natural Landscapes (ONL).

The Proposed Marlborough Environment Plan, which has been notified but in relation to which no hearings have been held, does refer to ONLs, but as that Plan is in the very early stages of consideration and subject to opposing submissions in respect of landscape issues, we have given little weight to its provisions.

The relevant maps from the operative plan are annexed, and the location of the existing and proposed salmon farms marked thereon. See Appendix 7.

Policy 13 of the NZ Coastal Policy Statement which sets out to "preserve the natural character of the coastal environment and to protect it from inappropriate subdivision, use and development" requires policy makers to

(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....

Policy 15 of the NZ Coastal Policy Statement, which sets out to "protect the natural features and natural landscapes (including seascapes) of the coastal environment from inappropriate subdivision, use, and development" requires policy makers to

(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.

However, whether any particular area is one possessing ONF or ONL attributes/qualities is not to be determined solely by reference to whether it is so described in a Plan or Proposed Plan.⁹³

⁹² Stephen Brown, Environmental Defence Society, Written Comment, 27 March statement, paragraph 13

⁹³ Unison Networks Ltd v Hasting District Council [2011] NZRMA 394.

In those locations where a salmon farm would adversely affect an ONL or ONF, the establishment of such a facility is to be avoided. ⁹⁴ Indeed, this was accepted to be the case by counsel for NZKS in his reply on the last day of the hearing. In locations which do not qualify as an ONL or ONF, significant adverse effects are to be avoided and other adverse effects on "other natural features and natural landscapes in the coastal environment" are still to be avoided, remedied or mitigated. ⁹⁵

We accept the advice from a number of landscape experts who gave evidence before us and attended the expert witness meeting that, in the Marlborough Sounds, the sea is an important component of the landscape. Dr. Steven, for example, described the sea space as "the glue" which binds together the various elements of the landscape and expressed the view that "in the Sounds, seascapes are an integral part of landscapes".⁹⁶

Of the six proposed new locations for salmon farms, five are in or near the Waitata Reach, and one in the Tory Channel. The Waitata Reach stretches for something over 12 kilometres in length, and is already host to three salmon farms, including two approved by the BOI.

Dr. Steven was of the view that the Waitata Reach should be considered as a "natural landscape/seascape within which valued characteristics and qualities are evident at the level of outstanding".⁹⁷

Mr Brown, by contrast, did not regard the proposed Richmond Bay South and Horseshoe Bay sites as being within an ONL or ONF; although he joined with Dr Steven in the view that "*it is relevant to consider cumulative effects that pertain to the reach scale*".⁹⁸

Our preference is to acknowledge that the Reach does contain Outstanding Natural Features and Landscapes, but not to attribute those qualities to the Reach as a whole. In our view it is clear that a collection of farm buildings, tracks scarring the hillside, a mix of baches and homestay lodges such as those in Waitata Bay, Waihinau Bay and Port Ligar, are sufficiently intrusive to serve to render those areas inaptly categorised as either ONL or ONL. Further, the extensive areas of coastal waters devoted to mussel farming, and the existing salmon farms serve to reinforce the view that whilst the Reach does contain outstanding natural landscapes and natural features; that description cannot apply to every stretch of water within the Reach.

We will the examine each proposed individual site in terms of the character of the immediate landscape and natural features and then consider, as a related but separate question, the issue of cumulative effects.

⁹⁴ Environmental Defence Society v The New Zealand King Salmon Company Ltd [2014] NZRMA 195

⁹⁵ Mr Davis, Hearing Transcript, 22 May 2017

⁹⁶ Dr Michael Steven, Written Evidence before witness meeting, 1 May 2017, paragraph 62

⁹⁷ Ibid, paragraph 67

⁹⁸ Mr Brown, Pre-caucusing statement, 5 May 2017, paragraph 7

Salmon farms have the potential to constitute an adverse effect upon the qualities of landscapes. Given the Supreme Court's decision in NZ King Salmon whereby adverse effects on outstanding landscapes and outstanding natural features are to be <u>avoided</u> rather than merely mitigated or remedied, the greatest of caution is required to be exercised in cases where a salmon farm is proposed to be located in the vicinity of such a landscape or feature.

If the immediate landscape is already compromised to such an extent that it cannot be described as Outstanding, the proposed farm may still not qualify for approval if its adverse effects cannot be remedied or mitigated, or its contribution by way of cumulative effects is such as to contribute towards an adverse effect upon a Natural Landscape, Natural Feature or the Natural Character of the environment.

As will be seen from our conclusions set out in Chapter 7, we recommend that only two of the Waitata Reach sites proceed as part of the Proposal.

Much was made by supporters of the Proposal of the suggestion that taking into account the proposed surrender of six consents, the cumulative effects of the Proposal would be, to paraphrase, modest to benign. For ourselves we do not wish to make too much of this point. Whilst it is true to say that six consents are to be surrendered, only three are currently being exercised: Forsyth Bay is fallowed for the long term, and the two Crail Bay sites have not been occupied for five years. Furthermore, the consent for Ruakaka is to expire in 2021, with the others expiring over the next seven years.

Nevertheless, particularly as we are recommending that only three sites proceed, we do accept that the surrender of the Ruakaka, Waihinau and Otanerau consents would have positive benefits for the occupiers of nearby houses. In addition, Ruakaka is a beautiful spot frequently passed by tourists and recreational boats.

We have therefore given some recognition to the 'relocation' aspect of the Proposal; but in terms of outstanding landscapes and natural features, it has not been a decisive factor in reaching our conclusions.

Furthermore, particularly in terms of the Waitata Reach, only the Waihinau Bay site could be considered as being within the Reach.

Cumulative effects may still be relevant in the case of the proposed site at Tio Point; but we leave that question to be discussed when we come to consider that site.

We turn now to consider each of the six proposed new locations.

Blowhole Point North and Blowhole Point South

Two new farms are proposed on either side of Blowhole Point, which sits north of Te Akaroa, the West Entry Point to Pelorus Sound. The sites are described in the Proposal as Blowhole Point North and Blowhole Point South. Te Akaroa might be seen as the portal to a gateway to the Sounds.

Blowhole Point and its adjacent lands are included in an area noted in the Proposed Plan as an ONL, but were accorded no such recognition in the Operative Plan. However, as set out above, we place little weight on the provisions of the Proposed Plan.

The landscape immediately adjacent to the proposed Blowhole North site is dominated visually by a mix of vegetation, including a large exotic pine forest, and extensive pastures. There are also a number of mussel farms in the bay. We agree with Mr Hudson, a landscape architect retained by MPI, that "this particular bay and its adjacent hill-slopes, when assessed at the site scale ... do not meet the threshold for ONF."⁹⁹

Mr Hudson reached a similar conclusion in relation to the proposed Blow Hole South site; although for our part we are less confident as regards this site.

We regarded the landscape immediately adjacent to the proposed southern site as meeting that threshold. Whilst it too has significant areas of exotic planting, the long spit on the southern side of the bay (to Te Akaroa) does in our view, serve to raise the landscape qualities and natural character of the bay to a level which may properly be described as 'outstanding'.

In accordance with the Supreme Court's ruling in the NZKS decision, having concluded that the southern site is adjacent to an ONL, and it being clear that the establishment of a salmon farm there would adversely affect the qualities which render it 'outstanding', it follows that no salmon farm can be approved for the southern site.

A related issue is whether it is appropriate to assess the southern site separately at a "site scale" as suggested by Mr Hudson.

Given the proximity of the two proposed northern and southern sites, it could also be argued that they should be assessed together as a single landscape unit.

Mr Brown, a landscape architect who gave evidence for the Environmental Defence Society did so. It was his view that;

... while I would rate the site specific effects associated with both Blowhole sites only slightly more highly than John Hudson and Drakeford Williams, it is my opinion that the real value of the northern Waitata Reach lies in its dramatic connection with Cook Strait and that many of the Reach's key values – its relative naturalness and lack of development, it dynamism and its sheer rawness – would be appreciably eroded by the introduction of either or both of the proposed Blowhole sites.¹⁰⁰

In landscape terms we do see a difference between the two sites. The southern site is marked by a rocky spit which forms the definitive entry to Pelorus Sound. That feature is absent from the northern site.

For predominately cultural reasons and some navigation concerns, however we are going to recommend that no farm proceed at the northern location.

⁹⁹ Review of Proposed Marine Farm Sites, Hudson Associates Landscape Architects, 2016

¹⁰⁰ Dr Brown, Environmental Defence Society, Written Comment 0592, March 2017, paragraph 72

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Accordingly, as we are recommending that no farm proceed at either of the Blowhole Point proposed sites we shall take no further the question as to whether they should be regarded as part of the same unit for assessment purposes, or as two sites each warranting individual site assessment.

Waitata Mid-Channel

The largest of the new farms is proposed to be situated mid-channel towards the northern end of Waitata Reach. The proposed site is south-east of Waihinau Bay, about four kilometres from the gateway to Pelorus Sound. The Reach is about two kilometres in width at this point. The location is not recognised in either the Operative or Proposed Plan as a site of outstanding landscape qualities or natural character.

Nevertheless, we agree with Mr Hudson that "there is a high perceived naturalness at the site, due to the lack of structures on the water, and a general lack of structures on the surrounding landform, with those structures present being distant from the site. Views of the site and its expansive seascape context, whether from a position on land or sea, add to visual amenity, and to the feeling of being in a highly natural setting."¹⁰¹

Mr Hudson acknowledged that there would be adverse effects on seascape character resulting from the proposal, mainly in terms of a reduction of perceived naturalness. Mr Brown's view was that the proposed farm would "significantly erode the naturalness of the Reach".¹⁰²

While it was Mr Hudson's view that with the mitigation measures proposed, the adverse effects would be at an acceptable level, we are ourselves doubtful on this score.

We did give consideration to the issue of cumulative effects were the Mid-Channel site to be approved, although of course, if the Blowhole Point sites were not to proceed, the issue would have less force. On balance we did not consider them to be significant, especially given the proposed surrender of the consent for the existing Waihinau Bay farm.

Overall, landscape and natural character issues cause us significant reservations as to whether the Minister should approve the Mid-Channel site.

Richmond Bay South and Horseshoe Bay

Travelling further south into Pelorus Sound, the next proposed site is Richmond Bay South. The proposed site is situated at the edge of the channel, and to the north of a small headland separating Richmond and Horseshoe Bays. A further salmon farm is proposed for Horseshoe Bay; and we shall consider them jointly.

Neither site can be characterised as having outstanding landscape or natural character values, and nor is either recognised as such in the Operative or Proposed Plans.

 ¹⁰¹ Review of Proposed Marine Farm Sites, Hudson Associates Landscape Architects, 2016, pg32
¹⁰² Stephen Kenneth Brown For Environmental Defence Society Inc In Respect Of Submission On Ministry for Primary Industries, Potential Relocation Of King Salmon Ltd Salmon Farms In The Marlborough Sounds, March 2017, paragraph 79

Mr Brown's evidence is that these farms would have an *"appreciable impact on the ONL and ONC values of Maud Island"*.¹⁰³

Maud Island is a Department of Conservation Restricted Access Reserve, for scientific and species protection purposes. The only inhabitants are the Ranger and his family, although there are a number of school party visits each year. It is widely recognised as having outstanding qualities, and indeed it is recognised in the Operative Plan as an "Area of Outstanding Value". The proposed sites are also opposite a proposed ONF covering Tapapa Point.¹⁰⁴

Nevertheless the two relocation sites are something over two kilometres from Maud Island, on the other side of the channel, and set reasonably close to the eastern shores of the Reach. We agree with the conclusion expressed in the Taylor Baines' report, that at such a distance "a salmon farm is no longer an intrusive visual element".¹⁰⁵

In terms of views and visual detraction from the Island therefore, there would not appear to be any issue of significance: and in terms of views of the island, the proposed sites' location on the far side of channel renders them of little account.

Accordingly, from a landscape and natural character perspective, we recommend that these two sites be approved.

Tio Point

The last of the proposed six sites is located at Tio Point, on the south side of Tory Channel, between Oyster Bay and Te Pangu Bay. It is approximately opposite the Clay Point salmon farm on the northern side of the Channel.

The site is accorded no recognition for any outstanding landscape or natural character values in either the Operative or Proposed Plan.

Tory Channel is the main route through the Sounds, and is described by Mr Brown as *"the most compromised and 'industrialised' of the main passages"*.¹⁰⁶ He continued to express the view that;

Contrasting with its spectacular entrance from Cook Strait, the main body of Tory Channel remains a manifestly, utilitarian landscape that various forms of production, together with pockets of marine farming and even isolated infrastructure elements, have turned into a tourism gateway that is substantially devoid of cohesion and significant aesthetic appeal.

Whilst acknowledging that the Channel's landscape and natural character values would be "*further eroded*", he described them as "*already at a rather low ebb*".

 ¹⁰³ Stephen Kenneth Brown for Environmental Defence Society Inc In Respect Of Submission On Ministry Of Primary Industries, Potential Relocation Of King Salmon Ltd Salmon Farms In The Marlborough Sounds, March 2017, pg 370
¹⁰⁴ Ibid, pg35

¹⁰⁵ Taylor Baines and Associates, Potential salmon farm relocation in Marlborough – Social Impact Assessment, Dec 2016

¹⁰⁶ Mr Brown, Written Comment, 27 March 2017, paragraph 66

We accept those descriptions of the site and conclude that the Proposal would not have adverse effects upon areas of outstanding qualities.

The issue of cumulative effects arises at this location as there are already three other salmon farms in the Tory Channel, namely Clay Point and Ngamahau on the western shore and Te Pangu on the eastern shore. However, given the extent of the presently existing detractions from the natural character of the environment, we are satisfied that it would be appropriate for the Minister to proceed with the proposed rezoning.

There will however be localised visual effects, particularly for residents of Oyster Bay. However, given the distances from which they will view any salmon farm, we are confident that the imposition of appropriate conditions on any consent would alleviate adverse effects to a satisfactory level.

Accordingly, from a landscape and natural character perspective, we recommend that this site be approved.

6.2.6 Fish health and disease risk

A number of those who commented on the Proposal raised concerns as regards fish health. Principally their concern was that the farmed salmon have suffered a number of poor health outcomes¹⁰⁷ and that the risk exists that the diseases experienced by those fish could be transmitted to wild stock of both fish and shellfish and to the important mussel industry.

Our consideration of this issue was greatly assisted by evidence from two highly qualified and internationally experienced scientists; Dr. Johnston and Dr. Diggles. We set out below extracts from their reports.

Dr. Diggles, as regards to the risk to other fauna said that

...the proposal to move several salmon farms...would improve the environmental conditions to which cultured salmon are exposed. This would reduce both the risk of outbreaks of non-infectious diseases, and mitigate significant risk factors for emergence of infectious diseases like the NZ-RLO at suboptimal sites.

...especially if these efforts are made in conjunction with implementation of effective biosecurity arrangements.¹⁰⁸

Dr. Johnston was of the view that:

It is entirely appropriate to consider that any risk represented specifically by the presence of NZ-RLO is very low, and may be addressed by improving the

¹⁰⁷ Gillard, Hearings Transcript, DATE confirmed by the Intelligence Report, NZRLO & T. *maritimum*, MPI Technical Paper, Jeannine Fischer and John Appleby, May 2017, stating there have been significant fish fatalities at some of the NZKS sites, notably Waihinau, where in 2015 the death rate reached up to 70%. Pgs 8 and 9. Paragraph 5.2 ¹⁰⁸ Dr Ben Diggles, Updated Disease Risk Assessment Report. Letter to the Panel, 19 May 2017

environmental conditions. This is in complete agreement with the conclusions of Dr Diggles.

I reach the same conclusion as Dr Diggles, namely that in comparison to lowflow sites, a move to high-flow sites would result in improved fish health and biosecurity outcomes.¹⁰⁹

Dr. Johnston also found there to be "no justification…for linking the presence of the NZ-RLO in salmon farms to the occurrence of a rickettsia in scallops in the Marlborough Sounds".¹¹⁰

He concluded:

In summary, if a desired outcome is the reduction of disease risk to both farmed and wild populations, and better health outcomes for the farms and the ecosystem, and if the choice is between farms remaining on low-flow sites or moving to high-flow sites, the answer is clear and unequivocal: We can expect better all-round outcomes at the high-flow sites.¹¹¹

After our hearing had finished, and whilst we were deliberating, we received a report from MPI on the 2015 salmon deaths and NZKS's response.¹¹² The authors of this report cited from an expert Technical Advisory Group Report which was critical of NZKS's record and amongst its conclusions were that "*the NZKS Biosecurity Management Plan is inadequate*", the requirements of that plan were "*inconsistently applied*" by the company, and that its "*production cycle is not consistent with international best practice for the prevention of disease*".¹¹³

MPI is in the course of addressing these issues, as evidenced by the issue of Notices of Direction under Section 122 of the Biosecurity Act 1993 directing NZKS to comply with its own Biosecurity Management Plan, the appointment of the TAG which found that plan to be inadequate, and the commissioning of the Intelligence Report, which MPI has just received.

The Proposal specifically requires a Biosecurity Management Plan to be established (see Condition 56). That plan, under Condition 57, is to be reviewed to ensure best practice by persons appropriately qualified in marine biosecurity and aquatic animal diseases prior to the initial placement of a structure at a marine farm. Rule 35.3.3.1 (b) requires the consent holder to comply with the standards in Appendix D4 of the Plan.

Whether the holder of existing consents has conducted itself in exemplary fashion or otherwise is not a question which touches at all upon the suitability of proposed new

¹⁰⁹ Dr Johnston, Hearings Transcript, 22 May 2017, pg45-46

¹¹⁰ Dr Johnston, Statement of Evidence, 22 May 2017, paragraph 20

¹¹¹ Dr Johnston, Statement of Evidence, 22 May 2017, pg44

¹¹² Intelligence Report, NZRLO & T. *maritimum*, MPI Technical Paper, Jeannine Fischer and John Appleby, May 2017

¹¹³ Intelligence Report, NZRLO & T. *maritimum*, MPI Technical Paper, Jeannine Fischer and John Appleby, May 2017, pg27, 28

sites for the same activity. Rather it is a matter for the consent holder itself, and perhaps more importantly, the regulators to focus upon.

We are therefore confident that the Proposal has distinct benefits as regards the issue of fish health, the high priority of which has been highlighted by these recent events.

Moving the low-flow sites to high-flow locations presents significant positive benefits. In terms of fish health we would commend the Proposal to the Minister.

6.2.7 Effects on Community

This section deals with effects on residents and recreational users living in or visiting the areas with the existing and proposed salmon farms. The effects considered concern aesthetics, noise, odour and potential nuisance animals.

The conclusion is that relocation would benefit Marlborough Sounds' residents in terms of fewer residents being close to a salmon farm so aesthetics, noise and odour affects would be reduced. We have drawn on the social impact assessment by James Taylor of Taylor Baines and Associates, 2016, which had a positive review from Quigley and Watts Ltd.¹¹⁴

Taylor Baines' methodology was to assess effects primarily by regarding potential effects on residential visual amenity. It defined effects in this way; that at 1.5 to 2 km a salmon farm is no longer an intrusive visual element and at 3km it is barely noticeable. These conclusions were derived from neighbour interviews conducted in 2011 and 2012, and then 2016. ¹¹⁵

We consider the report methodology has merit.

Taylor Baines analysed the cumulative effects in the Waitata Reach (the full 12km) and then in Tory Channel, as two separate locations. The report quantified the negative community effects if all proposed farms were relocated within or into Waitata Reach, and within Queen Charlotte. They also evaluated individual sites, notably from the point of view of affected residents in the line of sight to the farm. It should be noted

¹¹⁴ Taylor Baines and Associates, Potential salmon farm relocation in Marlborough – Social Impact Assessment, Dec 2016, and Quigley and Watts Ltd - Peer review – Social impact assessment on the potential salmon farm relocation in Marlborough, August 2016. During the hearing, Judy Hellstrom, a member of the Marlborough Salmon Working Group and Endeavour Inlet resident, queried the independence of James Taylor, one of the authors of this report. The reason given was that the peer reviewer of Taylor's work, Rob Quigley, was already "...collaborating <with Taylor> on a publication that had been commissioned by MPI". This does not affect the weight we give the work.

¹¹⁵ Taylor Baines and Associates, Potential salmon farm relocation in Marlborough – Social Impact Assessment, Dec 2016, pg47. The above conclusions were derived originally from neighbour interviews conducted in 2011 and 2012. The subsequent series of neighbour interviews (January 2016 and July 2016) have confirmed the validity of these conclusions.

that in this report more potential farm relocation sites were evaluated than are included in the MPI Proposal.

Aesthetics

Condition 15 of Appendix D4: Standards under Rule 35.3.3.1 (b) provides conditions to mitigate aesthetic effects including visual, odour and lighting. As to visual effects the Proposal requires:

Nets pens and exterior above water metal structures (other than surface walkways) shall be painted or finished in dark recessive colours.¹¹⁶

Predator nets, grower nets and bird netting are to be in black or dark colours (Condition 16) and submerged lighting should not comprise more than nine 1000 watt halide underwater lights (Condition 17 of Appendix D4).

The sites in Pelorus Sound would have largely minimal effects on residential amenity, except for the potential Waitata Mid-Channel site where thirteen residential properties would have a long-distance view. The Tui Nature Reserve property would look onto Waitata Mid-Channel, Horseshoe Bay and Richmond Bay potential sites. The above conditions would help mitigate these effects.

Noise

Taylor Baines considers a salmon farm is no longer an intrusive element in the residential noise environment for houses beyond 700-1,000m in direct line of sight.

The Marshall Day noise expert report predicted that all of the proposed sites can comply with the noise limits previously accepted in the BOI report by a comfortable margin. There was no major noise benefit or negative effect from relocation, the report concluded. ¹¹⁷

Tio Point daytime noise from salmon farm activities was estimated to be 24 - 29 dBA at the nearest dwelling and below the 55 dBA limit at the shoreline for salmon farm activities, as described in Plan Change 24.¹¹⁸

We consider that the noise standards in Condition 5 of the standards in the Proposal provide a reasonable degree of protection from adverse noise.¹¹⁹ We note, however, that an amendment should be made to condition 5 of The Proposal. Ms Gina Fergusson, MDC, drew attention to the fact that the Proposal contains references to L10 standards which have been superseded:

¹¹⁶ Potential relocation of salmon farms in the Marlborough Sounds, MPI Discussion Paper 201704, pg82

¹¹⁷ Marshall Day, Salmon Farm Relocation Noise Effects Assessment, 2016.

¹¹⁸ Ibid, pg15

¹¹⁹ Potential relocation of salmon farms in the Marlborough Sounds, MPI Discussion Paper 201704, pg82

The use of the noise descriptor L10 is inconsistent with the use of the noise standard referred to in condition 6, which is the 2008 standard and should instead be a noise descriptor of an LAeq.¹²⁰

The Panel recommends this be done.

Relocation of the farm from Waihinau would be an advantage in terms of noise for residents nearby.

Odour

In regards to unpleasant odour, Taylor Baines considered that beyond 700 m, off-site odour from a salmon farm is unlikely to be an intrusive element in the residential odour environment. ¹²¹ The three sites we recommend as relocation sites are all beyond 700 m from any residence.

Conditions add further assurance of meeting best practice odour management. Condition 35 of Appendix D4 states that, as far as practicable, only one grower net is lifted and cleaned at one time, to minimise the potential odours from this activity.¹²²

Mammal and shark issues

Nuisance animals (notably seals who are associated with negative odours, and sharks who had potential to interfere with swimmers) were of concern to some of those making comment. To this end, salmon farm operators must ensure dead fish are removed promptly from the fish pens (Condition 54 (I)). Relocating from low-flow sites could help in this regard, as the level of fish mortalities should be reduced. This, together with the use of predator exclusion nets, are the most important parts of the Marine Mammal and Shark Management Plan, required in Condition 54.

Condition 58 requires that before the placement of any structures at the marine farm site, the Council be provided with a Residential Amenity Management Plan, Wildlife Nuisance Management Plan and a Solid Waste Management Plan.¹²³

Site specific consideration

Waihinau Bay

We agree with Taylor Baines who stated that the existing adverse Waihinau Bay farm effects are substantially greater than at any other site, due to the number of dwellings at relatively close quarters. Moreover, its report recorded that it is associated with

¹²⁰ Gina Ferguson, Hearing Transcript, 22 May 2017, page 17

¹²¹ Taylor Baines and Associates, Potential salmon farm relocation in Marlborough – Social Impact Assessment, Dec 2016, pg47

 ¹²² Potential relocation of salmon farms in the Marlborough Sounds, MPI Discussion Paper 201704, pg86
¹²³ Ibid, pg98

relatively close-range odour, noise and visual effects combined.¹²⁴ Some houses are only 300 m from the farm.

We consider that the community benefit in terms of aesthetics is a strong reason for relocating the farm away from Waihinau Bay.

Ruakaka Bay

The existing Ruakaka salmon farm is located near a popular tourist and fishing waterway in Queen Charlotte, with more recreational traffic than would pass near Horseshoe Bay and Richmond Bay South in the Pelorus Sound.

Taylor Baines notes the existing Ruakaka salmon farm has the greatest overall adverse effect (namely odour) on nearby residential amenity of the existing farms in Queen Charlotte Sound because of the relatively high number of dwellings less than 1km away from the farm.

Most of the amenity reduction is attributable to the risk of adverse odours at relatively close proximity, even though most dwellings do not have direct line of sight.¹²⁵

We consider that relocating an extra farm from Queen Charlotte Sound to Pelorus Sound while directly adding its effects to Pelorus is still a relocation having benefits for the whole Sounds complex. However, we stress this asserted benefit has not been given much weight by us as the Proposal, even in the reduced amended form we have recommended, does place more adverse effects in the Pelorus Sound but one which is remote from residences.

Otanerau Bay

Many comments, particularly from Te Ātiawa, stressed the adverse effects of the location of this farm both culturally in an area of significance to Te Ātiawa but also because of the number of residences nearby. The proposed relocation out of Otanerau Bay would plainly have a significant beneficial effect.

Crail Bay and Forsyth Bay

Due to landscape, navigation and iwi issues at the Blowhole Point sites, the Panel consider these sites as unsuitable relocation sites. Similarly, we have not recommended that Waitata Mid–Channel proceeds for a combination of cultural, natural character, navigation and seascape effects.

¹²⁴ Taylor Baines and Associates, Potential salmon farm relocation in Marlborough – Social Impact Assessment, Dec 2016, pg26

¹²⁵ Taylor Baines and Associates, Potential salmon farm relocation in Marlborough – Social Impact Assessment, Dec 2016, pg37

Without potential relocation sites being available to enable relocation of the Forsyth and Crail Bay sites, this means no purpose is served by us assessing in detail community or other effects of surrender of these sites. We note though, that the Forsyth Bay farm is remote and has low effects on community aesthetics, while the Crail Bay sites have moderate negative aesthetic effects according to Taylor Baines. However, we again make the point made elsewhere, that the Crail Bay sites have not been used for salmon farming for over five years and the Forsyth Bay site has been fallowed because its benthos is so degraded.

6.2.8 Economic Issues

Some of the comments received challenged the economic analysis that accompanied the Proposal which was entitled 'PricewaterhouseCoopers - Marlborough Salmon Relocation – Economic Impact Assessment' (known as the PwC report).

MPI had also commissioned a peer review of this report by Ernst & Young (EY) which essentially found its methodology to be an appropriate methodology which considered correctly "the key economic drivers likely to be affected by changes to salmon production in Marlborough. We therefore consider that this analysis provides an acceptable basis for decision-making."¹²⁶

As the conclusions in both the PwC report and the EY peer review were challenged both as to the appropriateness of the methodology used, and the outcomes, we will describe in this section in summary form what was undertaken by the PwC report and what conclusions it reached.

PwC report methodology

A number of economic experts took issue with the nature of the PwC report because it was not a true Cost/Benefit Analysis (CBA).

However, that criticism can be dealt with very shortly because it was common ground amongst all of the experts at the experts' meeting on economic issues that it was never intended to be a CBA. It was instead as described by PwC an Input-Output analysis which was intended to gauge regional economic impacts from the Proposal on the economies of Marlborough and Nelson by assessing the annual impacts from productive operations, and the one-off impacts from pen construction and installation. From these considerations, the value-add or Gross Domestic Product (GDP) impacts were assessed, along with full-time equivalent positions (FTEs) created or lost, as well as various aspects of support for the Proposal in terms of both value-add and employment.

¹²⁶ Ernst and Young, Marlborough Salmon Relocation Economic Impact Assessment, November 2016.

The report acknowledged specifically that at some stage a CBA would be carried out and that the PwC report would support its preparation.

Our view on the appropriateness of the methodology is that it comes down to a question of whether a s.32 evaluation addressing all costs and benefits is required at this consultation stage or not. That has been addressed in the legal issues section of the report, with our conclusion being that a s.32 evaluation will follow this consultation process, and did not need to be part of it.

What was required for this consultation phase was that the Minister and the public should have an understanding of the economic drivers behind the Proposal, and why it could be said to have regional significance in terms of economic impacts, so as to address some of the legal criteria for the Proposal to proceed.

Analysis of GDP and FTE impacts

The PwC report essentially analysed five different scenarios:

- Production from the existing low-flow farms without giving effect to the Benthic Guidelines¹²⁷ which means at feed levels not restricted by the application of the Guidelines.
- Limitations on levels of production under the application of the Benthic Guidelines.
- Limitations under the Benthic Guidelines, but with commercial viability and operational considerations factored in.
- Limitations added by fallowing if the Benthic Guidelines were at maximum feed levels, rather than minimum feed levels prescribed to meet the Guidelines.
- Production from nine potential new sites also applying the Benthic Guidelines.

Some brief introductory explanation is required as to why those scenarios were chosen and their practical reality, or lack of reality.

The first scenario of operation without giving effect to the Benthic Guidelines is technically possible legally because the consents for the existing low-flow sites do not contain conditions requiring compliance with the Guidelines. However, for reasons we addressed in the benthic and water quality sections of this report, we do not think this is realistic. If adverse effects of a scale amounting to a breach of the duty imposed by s.17 of the Act occurred, sanctions would surely follow.

The second scenario attempted to capture what the production situation would be if the Benthic Guidelines were applied but without taking into account operational

¹²⁷ Referred to in PwC Report as Best Management Practice Guidelines.

constraints or commercial viability. Once more, for reasons we discussed in the benthic and water quality sections of this report, we also consider this scenario unrealistic.

The third scenario factors those operational constraints and commercial viability into the equation – a far more realistic scenario.

Similarly, the need for fallowing under maximum feed input levels under the Benthic Guidelines adds further reality.

The final scenario was for nine farms at new relocation sites under the Benthic Guidelines. The figure of nine sites was used because at the stage the PwC report was being prepared three other potential farm sites at Weka Point, Motukina and Tipi Bays in Tory Channel were still under consideration. Those did not proceed past the Salmon Working Group process. However, as we discuss below in respect of the six sites in the Proposal this scenario suffered from utilising maximum production levels which may never be achieved.

First scenario – production without BMP Guidelines

As shown graphically in Table 16 of the Report the two Crail Bay sites were not treated as being productive even under this scenario. Waihinau and Forsyth were shown as productive on this scenario, but on the evidence we have received each of those sites has major current problems. Waihinau has for some time now suffered from excessive levels of mortality, and Forsyth has been fallowed because the benthic degradation at that site is so serious. These problems are at such a level that we discount any realistic contribution from them. Even Table 16 showed them having a very reduced production potential under this scenario. The value add shown on Table 16, excluding Waihinau and Forsyth, would be \$6.6m and FTEs 69.

Second scenario – Benthic Guidelines but without considering commercial viability or operational constraints

The PwC report was somewhat equivocal in its approach in respect of this second scenario. On the one hand it purported to demonstrate a reduced production at Table 24, but in the text observed that NZKS acknowledged operational difficulties and viability issues which made this scenario unlikely. Table 24 showed a value-add and FTEs both at maximum levels of potential feed input and at minimum levels under the Benthic Guidelines.

However, once again we are satisfied on the benthic and water quality evidence we heard that only minimum levels could be seriously contemplated, and even then, not at all sites. As the PwC report records the reality is that only Otanerau would actually be productive and viable under this scenario, and then only at maximum feed levels. Table 24 showed Value-add of only \$8.2 m and 85 FTE's at the minimum levels – but that included figures for the two Crail Bay farms, and Forsyth, which on the evidence before us was unrealistic.

Moreover, because of continued elevated fish mortality levels Waihinau must also be subject to considerable question marks at present, even at the minimum levels under the BMP Guidelines.

Third scenario – Benthic Guidelines with viability and operational constraints included

Our view is that in terms of the existing farm scenarios the only one even approaching sustainable reality is scenario three. The result of this scenario was set out in Table 25 and showed Otanerau at maximum levels having a value add of \$3.0m and FTEs of 31. This Table still showed Waihinau and Forsyth as contributing, but for the reasons already discussed we discount the reality of that occurring on any sustainable basis. However, even with those figures included the maximum Value add is only \$6.4 m and FTEs 67.

Fallowing impacts

The PwC report then showed in Table 28 the impact of fallowing that would be needed at these low flow sites if maximum feed levels under the Benthic Guidelines were utilised requiring fallowing. That requirement exacerbates the operational limitations of these low flow sites and degrades their commercial viability even further. Table 29 showed the reductions caused by operating at minimum feed input levels under Benthic Guidelines. The respective maximum/minimum levels for reductions of Valueadd and FTEs over two years were \$36m/\$16.4 m and FTEs per year 188 and 85.

Table 29 then summarised the outcome for production following maximum Benthic Guidelines utilisation but taking into account commercial considerations and showed a value-add loss of \$12.8m over two years, and FTE loss of 67.

New site production potential

The three sites at Weka Point, Motukina and Tipi Bays in Tory Channel obviously need to be placed to one side in considering the outcome of this scenario.

In assessing the reality of these figures another factor we have taken into account is that the production impacts were assessed on the basis of full potential feed levels. However, as we have pointed out in a number of other sections of this report that may never come to pass. The feed levels enabling those maximum levels of production will only occur if close monitoring over three years at each stage shows the adaptive management regime can sustainably allow stepped increases.

These two factors mean that Table 40 showing a Value add total of \$56.8 m and 592 FTEs for nine relocation farms must be discounted very heavily in weighing up the GDP and employment benefits.

Because of these discounting factors we place greater weight on the findings in the report that every 100 tonnes of annual salmon production adds \$0.45m in GDP to the

combined Nelson and Marlborough regional economies, and supports approximately 4.7FTEs. With maximum annual production tonnages of 660, 2,200 and 704 tonnes (being 44% of feed input levels of 1,500, 5,000, & 1,600 tonnes respectively i.e. a total of 8,100 tonnes) for the three farms we have recommended at Horseshoe Bay, Richmond Bay south and Tio Point, the total salmon production would be 3564 tonnes.

That has to be discounted to the realistic initial feed levels stipulated in standard 19 of the Proposal to levels of 1,000, 2,500, and 1,000 tonnes respectively at those three sites –a total of 4,500 tonnes feed input. Applying the 44% production return, the total salmon production at those three sites would be 1,980 tonnes initially. At \$0.45m per 100 tonnes the production value-add on initial feed levels would be \$8.91m and FTEs 93. That has the potential to rise, if monitoring allows, according to Table 40 to the following respective figures for those three new sites of \$3.0m, \$10.0m, and \$3.2m – a total of \$16.2m annual value-add, and 168 FTEs.

That can be contrasted favourably against the highly likely value-add and employment losses described above if the low flow sites attempted to operate under the BMP Guidelines.

Criticisms by economic experts

Mr. Kevin Counsell, the economist called by EDS, was concerned that MPI appeared to have misinterpreted the PwC report as demonstrating economic benefits which he asserted required a cost benefit analysis rather than an economic impact assessment. He said that the danger of relying on this type of report is that it does not take into account the costs side of the economic equation. He did acknowledge in his evidence, however, that it was reasonable to expect that the relocation would be profitable for NZKS and that an increase in producer surplus could be considered a benefit. His concern remained however, that the costs in producing that benefit had not yet been assessed.¹²⁸

Mr. Trevor Offen, called by the Kenepuru and Central Sounds Residents Association and the Pelorus Boating Club, similarly acknowledged that the six relocations sites would have a positive economic benefit or impact. (The use of the term 'benefit' was actually criticised by Mr. Counsell who preferred the term 'impact'). However, he disagreed that it was valid to refer to employment FTEs as a discrete economic benefit. Again, he shared the view of Mr. Counsell about the lack of assessment in the PwC report of the 'costs' of the Proposal. He discounted the economic benefits very significantly by calculating his view of those costs.

¹²⁸ Statement Of Evidence By Kevin Counsell For Environmental Defence Society Incorporated In Respect Of Submission On Ministry for Primary Industries Potential Relocation Of King Salmon Ltd Salmon Farms In The Marlborough Sounds, 2 May 2017, Paragraph 51

In essence, the difference became clear at the experts' meeting that Mr. Offen calculated costs on a national basis whereas the PwC report focussed on regional economic impacts of a positive nature only. The difference in position was \$36 million (PwC) versus \$4 million (Mr. Offen).

Mr. Offen stressed, though, that his approach was not a full CBA. Rather he made it plain that all his report did was assess the net economic benefit which could be utilised in a broader cost benefit analysis against other benefits or costs of an environmental or amenity nature. In short, we understood his approach also acknowledged that a full s.32 evaluation on a broader basis was still required.

Mrs. Wendy McGuinness of the McGuiness Institute echoed the concerns about to the lack of a CBA. She also pointed to a number of detailed aspects of the figures NZKS and PwC had used and then went so far as to assert the PwC report should be *"ignored"*.

Suffice it to say that nothing put before us by Mrs. McGuinness satisfied us that there were inaccuracies that warranted a carefully prepared economic analysis being totally 'ignored', particularly when the peer review approved the methodology utilised for an economic impact report. We feel bound to observe too that Mrs. McGuiness did herself little favour by appearing to unnecessarily personalise her criticisms. Initially at least, she appeared to attack the personal professionalism and independence of the report writers, although at the experts' meeting she clarified that what she had intended to convey was only that certain levels of disclosure should have been used.

Conclusion

We are satisfied on the basis of the information provided in the PwC report that either at initial levels, or at potential levels, the economic impacts of the Proposal are indeed significant for both Marlborough and Nelson in terms of the improved production that can be achieved from relocation of farms to high flow sites, and support FTEs.

To the extent that Mr Offen disagrees with the PwC report, we prefer the latter.

It will be the full s.32 evaluation that will inform the Minister about the net economic benefits or costs, and other broader benefits and costs that might flow from the Proposal.

A further point of importance stressed at the conclusion of the detailed analyses in the PwC report is that, as Tory Channel waters are colder, they have the ability to carry smolt throughout the year, assisting in avoiding a four to six-month lack of availability of harvest sized fish. As a consequence, the report states:

...while Tio Point is a small site in terms of 'value' it has the ability to play an important role within the overall production strategy of NZKS due to its location in

the cooler waters of the Tory Channel allowing pre-summer smolt to be transferred to this site if desired.¹²⁹

It is plain from the evidence we heard as to the unsatisfactory alternative of attempting to use Crail Bay sites or even Forsyth Bay for those purposes, that these observations as to the comparative value of the Tio Point site carry weight.

We do not place great weight on the one-off economic impact of the construction and installation of the pens.

6.2.9 Navigation

As salmon farms are already located on various sites in the Queen Charlotte and Pelorus Sounds, the navigation issues triggered by potential relocation of some of these farms are largely site specific.

In terms of general treatment of navigation issues the operative MSRMP does have some relevant provisions. The Plan states in Chapter 19.2:

Water transportation needs to be provided for in a way which is compatible with other activities which take place in the coastal marine environment. This will involve the prioritising of some forms of water transportation in some areas of the Sounds and thus limiting them from other areas.

That statement is followed by:

Policy 1.1 Avoid, remedy or mitigate the adverse effects of activities and structures on navigation and safety, within the coastal marine area.

And Policy 1.5

Identify and enable the use of water transport corridors which form a significant part of the transport network.

Chapter 19 on Water Transport issues lays the basis for some detailed treatment of how marine farms were to be provided for in Chapter 9. In the discussion at Chapter 9.1 the following statement is made:

The Marlborough Regional Policy Statement (Policies 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 matters of prime

¹²⁹ PricewaterhouseCoopers - Marlborough Salmon Relocation – Economic Impact Assessment, November 2016, pg47

importance for Marlborough. Any allocation for private benefit must not compromise these important values.

At paragraph 9.2.2 the following appears:

Within Coastal Marine Zone 2 out to 50 meters from mean low water mark, and beyond 200 meters from mean low water mark, marine farms are non-complying 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.

To that extent, therefore, there is some recognition in the Plan as it stands that finfish farming may need to be located in different locations than the standard inshore locations identified in the Plan for mussel farms in the CMZ 2 zone. It must follow as a matter of logic that the Plan anticipates that there will be some differing navigation outcomes from such farms, if a non-complying consent can be obtained.

By way of general comment, all NZKS high-flow farms monitor the mooring loads through attaching real-time load cells to the lines and use screw anchors to moor the farm to the sea bed. These improvements occurred after a farm breakaway in Te Pangu Bay in 2006 under a different mooring system.¹³⁰

Mr. Paul Dickinson of Navigatus Consulting Limited, retained by MPI to give expert advice on navigation issues, assessed the impact of relocating farms to nine new sites including the three in Tory Channel which did not proceed past the Salmon Working Group process. He looked at four main scenarios that could represent navigational risk. These are:

- The causes and effects of a large vessel passing close by or impacting a salmon farm
- The risk associated with that potential to influence the actions of a master or skipper
- The interactions between a small vessel and a salmon farm
- The causes and effects of a farm breaking free and creating a hazard to other vessels and water users

He concluded that;

Whilst the farms would increase marine traffic, especially when constructing or relocating the farms, the effect can be considered minimal. There is a conceivable possibility of a farm breaking free and thus creating a navigational hazard. However, experience has shown that this hazard can be adequately mitigated by good engineering design and other practical controls. The addition of a position monitoring system would reduce the risk to minimal by

¹³⁰ NZKS Written Comments 0482, March 2017, pg38

providing the farm crew good warning of undue movement of the farm. Overall it has been found that the proposed farms would not unduly impede navigation and would have a very limited negative impact on navigational safety.¹³¹

We consider that, of the four tabled risks above, the mooring security issues can be mitigated and large vessels have the benefits of AIS radio systems and radar to identify the location of farms. NZKS has installed AIS on all farms. However, the majority of smaller recreational boats do not have AIS so they must rely on lighting, knowledge and/or GPS to identify the position of farms in poor weather or at night.

We now look more closely at these issues for each specific site.

Tio Point navigation

The Tio Point proposed site is 285 m from the National Transportation Route recognised and provided for in the MSRMP. This is the route used several times each day by the ferries travelling between Picton and Wellington (8000 passings/year).¹³² Other salmon farms within 500m of this route include Clay Point (340 m) and Ngamahau (324 m) both of which are located on the northern side of Tory Channel adjacent to the incoming shipping route.

Kiwi Rail and the CEO of Port Marlborough Limited had concerns with the Tio Point site because of perceived added risks to navigation for the ferries, particularly on the outgoing route.¹³³ The Tio Point site is on the southern side of Tory Channel, which positions it closer to the outgoing shipping route. Outgoing vessels will be on the eastern or starboard side of Tory Channel when passing the site, with other inbound shipping approaching the other way.

The Navigatus report shows that the ferry traffic routes range from -90m to +110m of the programmed Transportation Route.¹³⁴

It is of interest that in the Navigatus report, the site which particularly concerned the ferry masters interviewed for that report was the Motukina Bay site to the east of Motukina Point. That was one of the sites which did not proceed past the Salmon Working Group. The Report analysed the effects on navigation of a salmon farm at that site in detail.

The reason for that is that, as was emphasised in the evidence before us by Kiwi Rail, outgoing ferries have to execute a port turn to round Te Uira Karapa Point which is a

¹³¹ Navigation Risk Assessment Marlborough Sounds Salmon Farms, Prepared for Ministry for Primary Industries, Navigatus Consulting, Rev 0.5 14 December 2016, Pg7

¹³² Ibid, Pg17

¹³³ Ian McNabb, CEO, Port Marlborough, Hearings Transcript 11 April, 2017

¹³⁴ Navigation Risk Assessment Marlborough Sounds Salmon Farms, Prepared for Ministry for Primary Industries, Navigatus Consulting, Rev 0.5 14 December 2016, Pg25

headland on the southern side of Arapawa Island. That turn is illustrated well on Figure 12 of the Navigatus report and it commences as the vessel approaches the tip of the western peninsula to the west of Motukina Bay.¹³⁵

The concern was that as that turn was executed Te Uira Karapa Point makes for a 'pinch point' in the Channel. That is exacerbated if another ferry or large vessel was incoming and rounding the point at the same time. In that case it was common for two factual events to occur, each of which requires close consideration.

The first is that, regardless of whether there is an approaching vessel or not, there is a tendency as the port turn occurs for the stern of the vessel to 'swing' out to starboard. The second is that in the face of an oncoming vessel it is common for some slight deviation to starboard before the turn commences. Each of those facts is real and merits close consideration as we have said.

However, a number of factors persuade us that while those concerns were potentially a very real problem for the then proposed Motukina Bay site, they are not a realistic concern for the Tio Point site. Doubtless that is why the ferry masters on interview for the Navigatus report were recorded as being concerned about the Motukina Bay site, but were not recorded as having those same concerns about the Tio Point site.

The first of the differentiating factors between the two sites is that as a ferry approaches the Tio Point site its safe navigation route requires that it avoid two fixed points of land – the first being the outer edge of Tio Point itself, and the second being Motukina Point. A transit line drawn between the two points is outside to the north of the surface structures for the salmon farm. Those two headlands are the points of crucial importance to navigation which must be avoided on the approach to the port turn around Te Uira Karapa point. If they are avoided, as they must be for safe passage, so too, necessarily is the location of the structures of the proposed salmon farm. A blunter way of expressing the matter would be to say that for an outgoing ferry to strike the site of the proposed salmon farm will mean it is definitely in far greater trouble by virtue of the fact that its course would mean it will be running almost immediately into Motukina Point.

Moreover, for the same reasons the vessel could not turn to starboard to give extra sea room in a manner that places it at risk of hitting Motukina Point. Moreover, any port turn must commence in such a manner that 'swing' of the stern cannot place the vessel in danger from hitting Motukina Point.

Our view of the reality of the situation is that the proposed Tio Point farm is tucked back around the corner of Tio Point at a location well to the south-west of the areas where a starboard move to provide extra sea room might occur, where the port turn might occur, or where an anticipated stern 'swing' might occur. All of those events are controlled by the need to avoid Motukina Point, not by any need to avoid a salmon farm tucked in behind Tio Point. In that location it is outside to the south of the transit

¹³⁵ Navigation Risk Assessment Marlborough Sounds Salmon Farms, Prepared for Ministry for Primary Industries, Navigatus Consulting, Rev 0.5 14 December 2016, Pg27

line on a headland to headland basis between the two land forms that control safe navigation routes through this part of Tory Channel.

The Navigatus report summarised that situation:

...the farm is inside the headland-to-headland transit line and as any ferry masters' actions would be to avoid the greater hazard presented by the rock headlands, this largely mitigates this risk. The closer proximity of the farm to the ferry path does increase the risk of interaction between the ferry and work boats operating on the seaward side of the farm. It is noted that the work boat crews are used to operating in the vicinity of ferries and, given the lack of incidents, the existing procedures are robust. However, it would be prudent to explore strengthening procedures designed to ensure a suitable separation between work boats and ferries. Overall the Tio Point site could be considered to only very marginally increase any risk to ferries.¹³⁶

The Marlborough Harbour Master, Captain Grogan, was neutral in his stance on the Proposal but said the proposed Tio Point farm is likely to increase navigation risk in the Tory Channel. Vessel versus vessel was the highest risk. Captain Grogan said:

The presence of a marine farm in a particular location may create a perceived risk, and that presence of that farm and the perception of risk may alter the way in which a navigator chooses to direct their vessel when moving through that area.¹³⁷

Given the potential consequence of an event involving a collision between ships in Tory Channel, the navigation risk this Proposal generates must be properly evaluated. Thereafter, appropriate risk mitigation measures can be identified and the Navigatus Risk Report is not sufficient for this purpose.¹³⁸

The Marlborough Harbour Risk Assessment is currently undergoing a full review by Marico Marine and Risk Consultants Limited but was not complete or available for the Panel. However, we are satisfied that a close evaluation does drive one to the conclusion that serious increased risk to ferry traffic passing Tio Point is not real. We would have had a very different view of that risk had the proposal required consideration of a proposed farm at Motukina Bay.

Any other limited added risks can be mitigated by the use of AIS and radar for larger boats, and light signals for boats without AIS and, as suggested by Navigatus, a strengthening of procedures for salmon farm boat operators in Tory Channel. All of those are matters that will need to be considered at the resource consenting stage. Any relevant recommendations from the forthcoming Marlborough Harbour Risk Assessment could also be considered at the resource consent level.

¹³⁶ Navigatus, Pg 26

 $^{^{\}rm 137}$ Hearing Transcript, 2 April 2017, pg 33, line 20

¹³⁸ Hearings Transcript, 2 April 2017, pg3, line 20

Moving the Tio Point site any considerable distance further into Oyster Bay is not considered a good mitigation option as that is likely to have a higher negative effect on the benthos because flow rates rapidly become lower within the bay. However, if possible, any minor move of even 50 metres that can be made in that direction away from the ferry route may assist in further mitigating any perceived risk from working boats on the farm.

Operating Tory Channel as a one-way system was suggested as a possible option to mitigate risks. Kiwi Rail was against this option because of economic effects from timetabling changes to ferries.¹³⁹

For all the above reasons, we do not consider the development of a salmon farm at Tio Point warrants that consideration.

In respect of small boat traffic some limited concerns were raised, but we accept the views of experienced small boat operators such as Mr Webb, Commodore of the Waikawa Bay Yacht Club, who said recreational boaties are now quite used to having the farms in that area and "I don't see that as being so much of an issue, especially as they really are to one side of the channel".¹⁴⁰

Possibly the most experienced marine user of the area is Mr. Bruce Hearn, owner of oyster and mussel farms in Oyster Bay. His evidence was unequivocal that he did not perceive the presence of a salmon farm at this site as having any navigational concerns.¹⁴¹

Blowhole Point North navigation

The issue raised by many of the comments or in presentations to us was that the common sea route past this proposed site was inshore of Te Oke rock situated immediately to the north east of the proposed site, and between that rock and Mataka Point. An added problem was that a vessel maintaining a safe passage immediately east of a transit line between Mataka Point and Blowhole Point would also encounter the proposed surface structures for this farm.

The plots of AIS tracks shown in Appendix C to the Navigatus report make it plain that that assertion is real for cargo vessels travelling to and from Havelock and the port at Nelson. In addition, the AIS tracks for those recreational vessels with that device also show a preponderance for that route for vessels going to and from French Pass.

The Navigatus report dealt with the issue by saying:

In the case of Blowhole North skippers passaging to or from the North or West of the bay would need to give it a wider berth than is currently the case. It

¹³⁹ Rebecca Beale, RMA Team Leader, Hearings Transcript, 11 April 2017, pg10

¹⁴⁰ Hearings Transcript, 2 April 2017, pg 63, Line 30

¹⁴¹ Hearings Transcript, 12 April 2017, pg18

could therefore be argued that Blowhole North has an impact on routine vessel navigation and so presents some risk. ¹⁴²

The report also pointed out that there is space behind both Blowhole farms for small boats to moor and seek shelter in bad N to NW winds.¹⁴³

We are mindful that this area of the coast is far more exposed in rough weather, being outside the more protected waters of Pelorus Sound. We agree with the comments and the Navigatus report when it says this farm presents some extra risk. The risk is such that in adverse storm conditions with poor visibility for vessels without AIS devices, which will commonly include vessels under the control of inexperienced sailors, the presence of farm structures suddenly in the way of a vessel heading south that has passed west or inshore of Te Oke rock will raise navigation risk, which could be serious. For vessels travelling north the risk is almost certainly going to push them to head further offshore to round outside Te Oke rock potentially exposing the vessel to increased seas away from the lee of the land.

We do not wish to place the increased risk at too high a level as there is some force in the opposite observations we heard that to reach that location skippers would already have experienced other navigation risks and coped with them.

Our views about this site are predominantly guided by concerns about adverse cultural effects. However, this adverse navigational effect adds to our concerns about recommending this site.

Blowhole Point South navigation

The Blowhole South site does not face the same combination of navigational issues. Its proposed surface structures lie within the headland to headland transit line which is so crucial in assessing increased navigational risk.

Waitata Mid-Channel navigation

It was argued in many of the comments and by those presenting at the hearings that it would be a new concept for many boaties to have a salmon farm in the middle of a large channel in the Marlborough Sounds. Now while the reaction to that assertion may well be as the Navigatus report put it that, *"The mid channel site is also clear of the natural transit routes and, by its location, allows skippers plenty of room to safely pass the farm on either side",* the novelty of the issue does raise some concerns. ¹⁴⁴

The first of these lies in the current Operative Plan policies as to marine farm locations which have set the scene for the development of the marine farm industry in the Marlborough Sounds for over two decades. Its objectives and policies discussion bears repeating in this context as it states in Chapter 19.2:

¹⁴² Navigation Risk Assessment Marlborough Sounds Salmon Farms, Prepared for Ministry for Primary Industries, Navigatus Consulting, Rev 0.5 14 December 2016, Pg35

¹⁴³ Ibid pg36

¹⁴⁴ Ibid pg48

water transportation needs to be provided for in a way which is compatible with other activities which take place in the coastal marine environment. This will involve the prioritising of some forms of water transportation in some areas of the Sounds and thus limiting them from other areas.

That statement is followed by the relevant policies set out above.

There is, therefore, a Plan recognition that finfish farming may occur out from 200 meters by way of a non-complying resource consent application but only in the CMZ 2 zone and not in the CMZ 1 zone where this site lies. While there is no specific description in the Plan policies related to navigation issues being the guide as to the boundary between the two zones in this area, a general overview of the zoning maps for the Reach would suggest they have the appearance of providing a 'free-way' for navigation on the western side of the Reach.

We are also aware that the Environment Court has looked at this issue on a number of occasions on applications being made for mid-bay applications for mussel farm consents in the CMZ2 zoned areas. All of those applications were for far larger areas than would be occupied by this proposed salmon farm structure at 2.3 hectares. However, that is still a very significant area of water space being occupied and it is effectively right in the middle of a navigation route which currently has no obstructions. The Kuku Mara line of cases reached a similar conclusion.¹⁴⁵

Large cargo and cruise ships very occasionally enter Pelorus Sound but these ships must have a pilot aboard who is familiar with the local area, (unless they have an exemption), and they have AIS and radar. Accordingly, the Navigatus report did not envisage the structures would pose a significant risk for such vessels.¹⁴⁶

Navigation risk effects raised in written comments or by those presenting centred on small boats vs farm concerns, especially in poor visibility caused by bad weather or at night, or once again for inexperienced skippers. The Harbourmaster said navigation at night is the principal navigation issue here.

When you're navigating at night your reliance on navigation lights is far more critical. But it should also be noted that in cases of inclement weather navigation lights can serve a purpose as well.¹⁴⁷

Our view is that, given the width of the Reach, the increased risk is less than the increased risk posed at the Blowhole Point North site, but it must be acknowledged that at night or in very heavy storm conditions with low visibility it will add a level of navigational difficulty. However, it would not be a sufficient adverse effect for the Panel to recommend that navigation risks are enough of an adverse effect to warrant the site being excluded on these grounds alone.

¹⁴⁵ Kuku Mara Partnership (Beatrix Bay) v MDC EnvC, [2004] W39/2004.

¹⁴⁶ Navigation Risk Assessment Marlborough Sounds Salmon Farms, Prepared for Ministry for Primary Industries, Navigatus Consulting, Rev 0.5 14 December 2016, Pg24

¹⁴⁷ Hearings Transcript, 2 April 2017, pg 4, Line 20

Richmond Bay South and Horseshoe Bay navigation

The issues of navigation for these two sites can be dealt with together as the surface structures of each lie in approximately the same 'tucked-in' location north and south of Te Kaiangapipi Point. In using that phrase 'tucked-in' we are referring to the fact the structures are tucked inside the headland to headland transit lines utilised by vessels in the Sounds. For the Richmond Bay South site that line runs from Tapipi Point in the north at the northern entrance to Richmond Bay to Kaingapipi Point in the south. For the Horseshoe Bay site the transit line runs from Tapapa Point in the south to Te Kaiangapipi Point in the north, those two headlands encompassing Horseshoe Bay.

We have also taken into account the fact that neither Richmond Bay nor Horseshoe Bay have the same number of residences, wharves or jetties as are encountered on the other side of Waitata Reach. The evidence was clear that these two bays on this eastern side of Waitata Reach are most commonly utilised by marine farmers and no significant navigation concerns were raised by them about these particular sites.

We are satisfied that there are no adverse navigation effects which arise from the location of salmon farms at these two sites.

6.2.10 King Shag

A significant issue of concern raised in the comments on the Proposal related to the potential for adverse effects on King Shags and on their feeding habitats in particular. King Shags are a recognised threatened species. In addition to this special significance which requires consideration being given to the protection of King Shags, there is the legal requirement in policy 11 of the NZCPS that adverse effects on indigenous threatened taxa are to be avoided.

The Supreme Court's decision in the NZKS case, therefore, potentially applies with respect to the protection of this species if adverse effects to the species may occur which are more than minor or transitory. It is also an issue which has recently been considered in the High Court in *R.J. Davidson Family Trust v. Marlborough District Council* [2017]¹⁴⁸ where factual findings on this issue on the facts of that case were held to be open to the majority in the Environment Court below. We observe that this case was not dealing with a relocation proposal but a new proposed mussel farm site of 7.37 ha.

Even if we were to conclude that there were no specific adverse effects, or that those effects were minor or transitory, that is not the end of the matter. The provisions of policy 3 of the NZCPS may still have application. These require the application of a

¹⁴⁸ R.J. Davidson Family Trust v. Marlborough District Council [2017] NZHC 52

precautionary approach to effects which are "uncertain, unknown, or little understood, but potentially significantly adverse."

Finally, the Operative MSRM Plan has provisions and maps which identify feeding habitat of King Shags as Areas of Significant Ecological Value, although the evidence we received was that the whole Waitata area was within the foraging range of the King Shag. The significance of that is that the operative Plan provisions then trigger a discretionary status for activities in those areas. The Proposal, if accepted, would change that status to restricted discretionary.

Replacement Sites at issue

We have purposely left the consideration of this King Shag's issue until we had considered a range of other potentially significant factual issues affecting all or some of the proposed replacement sites, because it is essential to know which particular sites may still be under consideration when considering potential effects on the King Shag. As it turns out for a range of other unrelated reasons we have already concluded in earlier sections of this report that the following sites cannot be recommended by us to the Minister as potential relocation sites:

Blowhole Point North Blowhole Point South and Waitata Mid-Channel

All three of these sites were the closest sites to the King Shag's major colony location at Duffer's Reef off Forsyth Island, or at Trio Islands and each was well within the main foraging range of the King Shag colonies at those locations.

For completeness, in case any of those locations were to be further considered by the Minister notwithstanding our advice, we will return at the end of this section to consider potential impacts on the King Shag at those locations.

We now turn to address the remaining three proposed relocation sites and their potential impact on the King Shag.

Background factual matters

Before doing that, we need to outline some of the background facts and uncertainties on which the King Shag experts, in our view, seemed to agree. They included:

King Shags are unique to the Marlborough Sounds and are threatened taxa entitled to the protection provided by policies 3 and 11 of the NZCPS

- There are at present roosting colonies at Duffer's Reef and the Trio Islands which forage in the northern Pelorus Sound and Outer Sounds areas, and at White Rocks which forage in the Queen Charlotte Sound
- All six of the existing sites proposed for relocation are within the foraging range of King Shag roosting areas, either at Duffers Reef or Trio Islands (in respect of the Waihinau, Forsyth Bay and the two Crail Bay sites), or at White Rocks (in respect of the Ruakaka and Otanerau sites)
- Of the proposed new relocation sites Tio Point is not within the recognised foraging areas from White Rocks as flight distances to it are too long around Arapawa Island
- The new proposed relocation sites at Blowhole North, Blowhole South, and Waitata Reach Mid-Channel are definitely within the recognised foraging distances from Duffer's Reef and/or Trio Island colonies, however, given that most of the proposed nets at these sites would be in depths of greater than 50 m, while foraging is possible, it is less likely
- The Richmond Bay South and Horseshoe Bay sites are near the limit of the foraging range of the King Shags from the Duffer's Reef and Trio Island colonies
- Population stability and breeding success rates are both uncertain aspects of baseline information which are critical to assessing threat levels from particular activities
- The population census taken in 2015 showed a population of 839 King Shags comprising 187 breeding pairs with a high degree of certainty. This was because the census was achieved by aerial photography within a time frame of less than 30 minutes, compared with previous population counts in the 600's, which were based on counts from a distance from boats spread over much longer periods throughout a day
- While considered accurate by the experts, the 2015 population count was a snapshot of one time in one year and many more census counts would be needed to form reliable conclusions as to the stability of the population or otherwise
- The King Shag faces some inherent limitations in foraging range, and preferred foraging methods, arising from its own body weight, its consequent limited flying ability and range, and the duration of flights
- Most King Shag feed up to 12 kms from the colonies but can feed as far as 25 kms from colonies
- There are still considerable uncertainties as to the information available in respect of foraging range, depth of dives, duration of time spent on any dive in foraging, species foraged (although witch flounder are usually a major prey), and whether species are only taken on the seabed or at varying levels in the water column
- Their direction of travel, and preferred feeding areas have been observed and recorded only in general terms, with there being considerable uncertainties as to the details of those behavioural aspects
- King Shag are prone to disturbance from human activity, albeit the census survey from a relatively low-flying fixed wing aircraft in 2015 did not demonstrate any disturbance from its passage on photograph runs over the roosting sites
- No dive observations or films have been made of King Shag foraging so the detail of their actual foraging depths, foraging methods, and prey species are uncertain
- For decades now much of the available information related to the King Shag has come from distant observation to avoid disturbance, with only a very few landings for waste sample collection and analysis in attempts to analyse prey species preferences

Against that background we now turn to consider potential effects which may arise from the Proposal.

As the Proposal is for relocation of existing low-flow farms, it is logical first to address the asserted benefits that may flow from cessation of salmon farming at the three existing farm sites which have to be surrendered as part of a relocation to the only three 'live' relocation sites, before moving to address the potential effects at the relocation sites proposed.

Potential beneficial effects for the King Shag if the Proposal proceeds in part

We start by referring to the importance of establishing a reliable long-term population record of the King Shag. As a result of the BOI process, the new consents provided for a King Shag management plan which involved monitoring of the King Shag population every two years. That has proved to be beneficial because, for the first time, in 2015 an accurate count based on aerial over-flying in a short time frame, was achieved. This Proposal increases that beneficial effect by proposing annual monitoring of the

population as part of the King Shag Management Plan, to be established in accordance with the discretionary activity assessment criteria - see zone rule 35.3.3.2 (g). To ensure there is a written requirement of annual monitoring of King Shag population we have recommended an amendment to condition 58 to the Proposal.

We also repeat that the two sites at Crail Bay advanced in this Proposal for relocation do not currently have structures in operation for a salmon farm and the site at Forsyth Bay is fallowed on a long-term basis. The farm site at Forsyth Bay has been fallowed because the benthos there is in a severely degraded state. It seems likely it will take some time, possibly a year or even longer, before natural remediation enables any consideration at all by NZKS of some very reduced level of salmon farming in the future. Based on the evidence we heard about the problems of maintaining a less than ES 5 level on the benthos at these low flow sites we expect that salmon farming activity at the Forsyth Bay site would be likely to involve only lower intensity smolt holding of a transitory nature at most.

The two Crail Bay sites have not been farmed for salmon for over five years, and again the evidence was that if the Proposal did not proceed then smolt would have to be held there at one or both sites in future again, but on a transitory basis.

The practical outcome, therefore, of the problems faced by salmon farming at these low-flow sites is that only three of the existing low-flow farms proposed to be relocated in the Proposal are actually being currently farmed, or have recently been farmed - those being Ruakaka, Otanerau and Waihinau.

All six of these existing sites are in shallower waters of less than 50 metres depth, so we conclude on the expert evidence we heard, that each of them is in an area where, in the absence of existing farm structures, and as the benthos recovers, extra preferred foraging areas will be available to the King Shag.

It is logical, therefore, to conclude that removal of these farms must be a benefit in the longer term to the King Shag in that the preferred foraging range will be extended as natural remediation occurs. In respect of those three sites actively farmed at present, or with structures in place and the consequent presence of humans and related boat activity, the benefit will be even more marked than at the three other sites not utilised for salmon farming at present because those current disturbing influences for King Shag will be removed. The evidence was that the holding of smolt at those sites was being considered only if this Proposal did not proceed.

We turn now to address potential adverse effects at the only three relocation sites requiring consideration by the Panel, being those at Tio Point, Richmond Bay South and Horseshoe Bay.

Tio Point

We are satisfied on the evidence that there is no realistic adverse effect on foraging activities for King Salmon colonies or birds from the proposed relocation site being developed for salmon farming at Tio Point. It is beyond the natural flight and foraging range of the King Shag from any of their known colonies.

Mr. Schuckard did draw our attention to the fact that over the decades that he has been involved in close observation and recording of King Shag populations some small outlier colonies have developed or been abandoned throughout the Marlborough Sounds and Outer Sounds area. He advised us that it is not possible to rule out the possibility of that activity developing closer to Tio Point or other locations at the extreme range of existing colonies.

We acknowledge that fact but in evidential terms we have to reach conclusions on realities of what can currently be demonstrated, rather than surmising on what might happen. At the Plan Change stage, such surmise cannot defeat provision for activities which on the state of current facts cannot be demonstrated to have a particular adverse effect.

Richmond Bay South and Horseshoe Bay

As the King Shag flies, these sites are within a few hundreds of metres of each other, so they are able to be dealt with together in terms of assessing their potential effects on King Shag. In the MSRM Plan they lie within an Area of Significant Ecological Value with a map notation of 1/11. A number of matters need to be considered.

The first is that one or other of the sites in terms of surface structures will be an exchange with Waihinau Bay as it is relocated. Waihinau Bay is closely adjacent to a notation of 1/11 in the maps in the Operative Plan at present.

The second is that in terms of surface structures the addition of these two farms will have minimal if any effect, by way of comparison with the number of farms that were in operation that King Shag from the Trio Islands or Duffer's Reef have had to cope with within their foraging range, or potentially cope with.

We need to explain this conclusion in detail starting with the situation faced by the BOI at the time of its report. At that stage there were two operational salmon farms at Waihinau Bay and at Forsyth Bay, with another one granted consent by the Council at

Danger Point in Port Ligar. All of these were shallower low-flow sites in preferred King Shag foraging areas. The BOI itself then granted consent to two more farms one at Kopaua and one at Waitata, but in deeper water. The total, therefore, of consented farms within the foraging area of King Shags from Duffer's Reef or the Trio Islands at the time of release of the BOI report was five, with only four of those becoming operational because the consent for the Danger Point site was cancelled by the Environmental Court.¹⁴⁹

If Richmond Bay South and Horseshoe Bay were to proceed as an outcome of this relocation Proposal, there will still only be four operational salmon farms in Waitata Reach because the Waihinau consent will have been surrendered and Forsyth fallowed in the long term. All four new and relocation operational farms are within that same foraging area, but with all of them being in the less preferred deeper water. Moreover, two of the sites at Richmond Bay South and Horseshoe Bay are at the extreme of the current King Shag foraging range.

The effect then of the relocations proceeding at Richmond Bay South and Horseshoe Bay will not be any increase in surface structures within the foraging range of King Shag at the Duffer's Reef and Trio Islands colonies.

We acknowledge that will still mean there are three non-operational sites holding consents for salmon farms in the King Shag foraging area until 2024, (two at Crail Bay and one at Forsyth), but that is against a background where the evidence is quite strong that it is unlikely salmon farming could be sustainably carried on at those sites, other than possibly on a transitory basis for low intensity holding of smolt.

Water column quality concerns

Mr. Rob Schuckard, however, raised two concerns in respect of water column quality effects which he maintained would still place King Shag indirectly at serious risk of threat from the relocation Proposal in Waitata Reach.

The first of these was related to a specific perceived threat arising from increased levels of chorophyll-a. He asserted that an increase in chlorophyll-a would increase phytoplankton levels to such an extent as to inhibit the foraging of prey by the King Shag because of reduced lux levels at the seabed. Mr. Schuckard said that would occur because of the increased density of phytoplankton, inhibiting the light available at depth and hence the ability of King Shag to see their prey on the seabed.

The second issue was a more general one that any decrease in water quality would be likely to upset the fine ecological balance upon which all prey species of the King Shag

¹⁴⁹ KPF Investments Ltd vs. MDC [2014] NZEnvC 152

rely for their fecundity thus impacting the ready availability of food for a threatened species.

As to the latter issue we share the view of the BOI that such adverse effects on water quality can be avoided by the adaptive management regime. As we have emphasised earlier in this report, we have even greater reason for confidence in that regime than was available to the BOI, because even a rather extreme worst-case modelling has shown a plausible outcome of less than minor water column quality adverse effects.

Moreover, we now have the benefit of actual monitored results which at three faster flow sites have provided hard data supporting the modelled predictions as to minimal effects. Finally, we have the added significant factor that the Benthic Guidelines have now been adopted which require that feed levels are restricted to ensure ES 5 benthic effect levels are not exceeded.

Furthermore, if the Minister accepts our recommendation that the proposed relocations to Blowhole Point North, Blowhole Point South and Waitata Mid-Channel not proceed, then the amount of increased food discharge and fish faeces at Richmond Bay South and Horseshoe Bay will be well below the initial input of 6,000 tonnes in the original Proposal, which was itself a very conservative figure.

Even at the initial levels set for both sites combined (in standard 19 of Appendix D4 to the Proposal) those two sites respectively would only have an initial discharge rate of 2,500 tonnes and 1,000 tonnes. That is a total of 3,500 tonnes per annum. That amount is just over 20% of the figure of 23,000 tonnes or even 17,000 tonnes which Mr. Schuckard insisted on using before us repeatedly in his evidence, and at the expert meeting on the King Shags. It is less than 10% of the modelled worst-case scenario figure of 38,000 tonnes.

We must record here that we found it surprising that in Mr. Schuckard's written evidence there was no reference to the detail of the adaptive management regime, or to its initial limit of 6,000 tonnes of feed discharge which must be shown by three year's monitoring to be sustainable before any increase in feed level can occur.

We are satisfied on the evidence and reports we have considered, that water column quality effects on King Shag prey species will be less than minor at that level. Monitoring and the controls in the adaptive management regime requirements of three years of satisfactory operation before limited increases in further discharges will ensure that the precautionary approach in policy 3 of the NZCPS is met.

The Lux effect issue

This issue was addressed in the original water column quality reports but not in any great detail as the computer modelled increases in chlorophyll-a levels were so small.

However, it was emphasised by Mr. Schuckard in his main evidence to us and was explained again by him at the experts meeting on King Shag issues. He pointed out that chlorophyll-a levels were naturally in a range of 0.9-1.9 mg m⁻³ through the year, and stressed that the monitoring standard expressed in the Proposal allowed for an increase up to 3.5 mg m⁻³ (reduced from the 5 mg m⁻³ fixed by the BOI report.) Then both in written evidence, and more persuasively in a power point presentation, he calculated the lux reductions that such an increase over natural levels would have in phytoplankton generation and consequently on lux levels at depth.

The result he predicted in his written evidence might be a reduction from 52 to 37 metres in the visibility available to a King Shag for foraging. He demonstrated in his power point significant areas of preferred habitat that might be effectively lost or reduced in usable terms to the King Shag in such reduced lux conditions. His figures in the power point suggested loss of habitat could be as large as around 2,500 ha for each extra 1 mg m⁻³ of chlorophyll-a increase with a decrease of 3,500 ha if the 3.5 mg m⁻³ figure was attained.

The lux figure effects that he provided for foraging by the King Shag were between 100 lux, which he described as *"like a very dark overcast day"*, to 0.27-1.0 lux *"like a full moon on a clear night"*.¹⁵⁰

Despite the fact that Mr. Schuckard has no expertise as either a water column quality scientist or in lux levels, as the issue appeared of serious concern in the scenario he described, we invited NZKS to respond to those assertions. They were responded to on our last hearing day by Mr Ben Knight from the Cawthron Institute and Dr. Niall Broekhuizen from NIWA. While they, too, acknowledged they did not have particular expertise in light level effects, they do have expertise in the water quality issues impacting chlorophyll-a production and phytoplankton effects which underlay Mr. Schuckard's assertions.

Their separate responses essentially reached the same conclusions and provided the following information:

from a variety of sources they had found that light conditions under a summer overcast sky are around 1,000 lux and under a clear sky can exceed 30,000 lux. They agreed with Mr. Schuckard that 100 lux would be a very overcast day. As a consequence, they considered that unless the King Shag fed around dawn or

 $^{^{\}rm 150}$ Rob Schuckard evidence, Hearing power point presentation, pg30, Pt 2

dusk that figure seemed very low when a summer overcast day had levels of 1,000 lux

- Light attenuation would increase as chlorophyll-a concentrations increased but the relationship was only half of that assumed by Mr. Schuckard
- Moreover, the light attenuation component of other factors than chlorophyll-a induced attenuation was about 2.5 times larger than Mr. Schuckard assumed
- Chlorophyll is not the dominant driver of spatial and temporal variability of light attenuation with it being more likely suspended sediments particularly from the Pelorus river inputs
- The modelling showed that even the largest rise induced by the increase of feed discharges was less than 0.1 mg m⁻³
- That is very small when compared with the range of fluctuations measured in the MDC State of the Environment monitoring of 0.5 to 5 mg m⁻³ or the highest recorded at 25 mg m⁻³ in Kenepuru Sound
- Even if the baseline for modelling was to be lowered the change in chlorophylla level increase was still very small and such a change would have no significant effect on the outcome
- Finally the areas where the birds forage are not the areas where the biggest chlorophyll-a increases are observed in NIWA's biophysical modelling which are less than 0.1 mg m⁻³ anyway

The result is that it was their independent but shared view that Mr Schuckard had over-estimated the putative light limited foraging depths of King Shag when chlorophyll-a concentrations are low, and over-estimated the rate at which this foraging depth declines as chlorophyll-a concentrations rise. They each considered there was a very low risk of substantial change to the light environment, but emphasised the importance of the monitoring to validate the computer modelled results. We accept those shared views.

The conclusion we have reached is that once more the adaptive management regime and close monitoring will provide the precautionary safeguard that is required to protect the King Shag foraging habitat and prey species. Moreover, the location of these two sites is towards the extreme range of the foraging flights of King Shag from Duffer's Reef and the Trio Islands.

Blowhole Point North, Blowhole Point South and Waitata Mid-Channel sites

While these sites have not been recommended for approval by the Panel for other reasons, for completeness we now address the potential effects on King Shag foraging habitat and prey species associated with these sites. This can be done quite briefly because the conclusions expressed above as to the adaptive management regime's

controls to maintain water quality and in particular chlorophyll-a increase effects are all equally applicable to these sites.

If these sites had been satisfactory in other respects then their approval would have meant that a larger surface area of potential foraging habitat closer to Duffer's Reef and Trio Island would have been affected when the surface structures were installed.

However, in respect of the Waitata Mid-Channel site, its depths are such that we would have concluded it would not have an adverse effect on the foraging habitat for the King Shag beyond a very minor degree.

In respect of the other two sites the depths are such that only part of the pens would be in water depths of over 50 m. However, we would have concluded the adverse effect on foraging habitat, even on a cumulative basis, was minor. This is for two reasons. The first is that the area affected by the surface structures at depths of less than 50m was only 20% at Blowhole Point North and 30% at Blowhole Point South. The second reason is that this limited adverse effect would be off-set by surrender of the Forsyth Bay site at a depth of 30-32 m which is in the preferred depth for foraging. The off-set of the Crail Bay sites would be far less as they are at the extreme end of the foraging range, but more importantly, they have not been used for over five years. Furthermore, any proposed use of those sites if the Proposal was not to proceed was only to be transitory for smolt holding.

In summary, therefore, had these sites not involved other adverse effects, the effects on the King Shag habitat and on their prey species would not have been sufficiently adverse to warrant recommending the Proposal not proceed at those sites.

Chapter 7 Conclusions

This proposal has been advanced as a relocation proposal with the base consultation document being specifically entitled:

'Potential relocation of salmon farms in the Marlborough Sounds'

The sub-title repeats that relocation theme:

'Proposal to amend the Marlborough Sounds Resource Management Plan to enable the relocation of up to six existing salmon farms by regulations made under section 360A of the resource Management Act 1991'

We received many comments and presentations challenging the validity of that description and asserting that given the relatively short time frame before the consents for the existing sites expire, the proposal was really to obtain new sites for new high-flow farms. However, we have concluded that the proposal is a genuine relocation proposal because it is predicated on a set of conditions which require:

- The surrender of the consents on another existing low-flow site as part of the process of making application for consent to farm salmon on one of the new high-flow sites
- A sequence for the surrender of those low-flow sites
- The prohibition of marine farming on the site being surrendered

Those are all facets which both individually and collectively would not apply if the new sites proposed were indeed merely new sites and not replacement sites.

The following summary addresses our findings on the relevant issues raised in the comments and presentations to us.

Positive or beneficial effects of the Proposal

We accept that Proposal will have a number of positive benefits:

- The improvement that would result from natural processes in the benthos under the surface structures from the cessation of salmon farming in a low flow locality and recovery of anoxic affected areas of the seabed.
- An associated gain, albeit small, in preferred foraging areas generally closer to King Shag roosting areas, and in shallower waters more amenable to their diving and foraging practices.
- A removal of adverse visual effects of salmon farm structures from areas such as Otanerau Bay, Waihinau Bay and Ruakaka Bay readily visible from nearby residences, or commonly visited areas of high visual attractiveness
- In the case of Otanerau Bay removal of a salmon farm from an area of special significance for Te Ātiawa.
- A reduction in risk of disease in the fish as result of removing them from suboptimal growing conditions.

There was in reality no challenge to those asserted positive effects either in written comments lodged or presentations made at our hearings. Many of those supporting the proposal also stressed those positive benefits which would flow from the proposal.

Broader benefits asserted in support of the proposal included the economic and social benefits that could flow from enhanced production that can be gained from use of high-flow sites. Those benefits at their varying economic scales included potential significant added national export receipts, greatly enhanced regional GDP, and significantly increased regional employment options. In the section of the report addressing economic matters we have accepted those advantages are real.

The social benefits that flow to the hundreds presently earning their family incomes through direct employment in the industry, or in industries supporting the salmon industry, are also very real. The witnesses we heard directly involved in the industry, or in fields related to it, were enthusiastic supporters because of the employment income the industry provided for them to support their families in Marlborough or Nelson.

Many of them also stressed that their own recreational interests took them into the Sounds, and some even lived there. We accept that, particularly in relatively small regional economies like Marlborough and Nelson, those economic and social effects are significant.

Provided the industry can operate otherwise in a sustainable manner environmentally, then those benefits are a significant positive benefit that can flow from the Proposal.

Consequences of recommending the Proposal not proceed

The call in many of the opposing comments that we recommend that the Proposal be declined, would mean that the existing negative effects of salmon farming in suboptimal conditions sought to be avoided by this Proposal would potentially continue for the next seven years at all sites other than Ruakaka, and at Ruakaka for five years.

It would also mean that hotly contested, expensive and divisive litigation would almost certainly ensue at the stage of applications being considered for renewal of consents at those sites.

We consider those outcomes to be almost the complete antithesis of sound sustainable management of resources.

Once again, the solution urged upon us in many comments that we should recommend the Proposal is rejected so that the salmon industry in the Sounds is compelled to effectively wither, would significantly reduce national and regional income. In turn that would lead over time to serious loss, not only of future employment opportunities, but also the loss of many current jobs which could not be sustained.

Once more, in our view that is the antithesis of what sustainable management and use of resources for our community, while safeguarding the environment, is all about.

Precautionary Principle and Term Issues

The Proposal contains no limitation provision as to the term for which consents are to be granted. The default provision in s.123A of the RMA would, therefore, apply meaning consents could be granted for the relocation sites for 35 years. That section provides:

123A Duration of consent for aquaculture activities

(1) A coastal permit authorising aquaculture activities to be undertaken in the coastal marine area must specify the period for which it is granted.

(2) The period specified under subsection (1) must be not 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; or

(c) a national environmental standard expressly allows a shorter period.

(3) The period specified under subsection (1) must be not more than 35 years from the date of commencement of the consent under section 116A.

(4) This section applies subject to section 125.

If a period of thirty-five years was to be enabled, that would mean that there was a contrast with the limitation in respect of marine farms in the CMZ 2 zone of the operative MSRMP which at present provides in respect of a discretionary activity consent for a marine farm:

35.4.2.9.2 Terms

A coastal permit in respect of the activity may be granted for a period up to but not exceeding 20 years.

That same limitation does not at present appear in the Plan in the CMZ 3 zone created by the Board of Inquiry report, as the Board decided the term for consents in that zone should be 35 years.

The precautionary principle was constantly urged upon us by those who made comments both in the written comments and in presentations made at the hearings. It is a very important principle expressed as follows in the NZCPS at Policy 3:

(1) Adopt a precautionary approach towards proposed activities whose effects on the coastal environment are uncertain, or little understood, but potentially adverse.

We have addressed this issue by way of acceptance of the evidence of the benthic and water column quality experts that the application of the Benthic Guidelines, coupled with the adaptive management regime and strict monitoring of near-field and far-field

effects as required in the standards in the Proposal will altogether provide a precautionary approach to this relocation Proposal.

Principle 3(2) of the NZCPS then requires the principle to particularly apply to the use and management of coastal resources potentially vulnerable to effects from climate change so that avoidable social and economic loss and harm to communities does not occur, as well as providing for natural adjustments to occur, and natural character and other issues meet the needs of future generations.

In respect of Policy 3(2) many comments stressed that climate change may well cause sea temperatures in the long term to rise above those that can provide a relatively stress-free environment for NZ King Salmon which ideally should be reared in waters below 17 degrees Celsius. Whether climate change does cause those significant long-term temperature rises in Pelorus Sound has yet to be shown empirically, so we do not consider the Plan Change Proposal can be refused on that ground.

However, what is clear from an overall appreciation of the effects of this industry is that its long-term effects, particularly on a far-field basis, do remain uncertain, and at present unknown. Indeed, in some respects, e.g. Harmful Algal Blooms (HABS) and other toxic algae blooms, the causes remain little understood. Therefore, while the modelling evidence, coupled with the development and application of the Benthic Guidelines and the adaptive management regime, which has the support of one year's detailed monitoring results for a closely similar regime on three other sites, provides a significant measure of confidence such as to enable the Proposal to proceed in part, these far-field uncertainties do continue.

The precautionary principle in the context of this Proposal requires that potential adverse effects on the benthos, water column quality, and on the threatened species of King Shag, are managed by tight monitoring and adaptive management techniques. The aim of the monitoring and tightly controlled adaptive management increases in discharges is to ensure that modelled or predicted outcomes can be verified, or not, by actual monitoring.

In the context of this Proposal, the broader-based state of the coastal environment physical sampling and monitoring of water column quality conducted by the Marlborough District Council, is proposed to be supplemented in a major way. That is to be achieved by the imposition of standards in the Plan Change requiring consent holders in this new CM4 zone to provide six real-time monitoring buoys –see standard 32 Appendix D4. The ability of those real-time buoys to provide multi-layered 24/7 digital data on many aspects of the quality of the water column will significantly enhance the state of environment Council monitoring.

The consequence will be a far greater certainty of the ability of the water column scientists to assess actual effects on the quality of the water column from salmon farming and other influences such as sediments, and to be able to verify, or not, the modelled predictions as to those effects. That far more detailed outcome will occur both at near field locations close to the discharge sites, and at far field locations.

The result is that as the precautionary principle is applied in that very real practical manner, a major positive environmental benefit will occur from greatly enhanced knowledge of how water column quality components function.

In addition to that enhanced water column quality safeguard, the Proposal will address the problem that the existing operational farms are not bound to meet the Benthic Guidelines by their existing consent conditions. Those farms will be able to be replaced by farms in higher-flow areas for which consents will have to be sought. A condition of any consent on such applications will be a requirement to meet the Benthic Guidelines, and regular monitoring to ensure such compliance. Again, that outcome must be regarded as a significant positive benefit arising from the Proposal, given that the present existing low flow consents do not require compliance with the Benthic Guidelines.

Until 2015, and before the BOI in its considerations, there remained a major weakness in the ability to establish a reliable base line for the King Shag population. Without such a reliable base line, it was not possible for definite conclusions to be reached about the stability or otherwise of the population. However, all experts before us were agreed that in 2015, for the first time, a reliable method of establishing a baseline population was able to be achieved. The Proposal takes the step urged upon us by the experts of more regular census monitoring, so as to provide annual counts.

Measured against the minor effect of limited increased discharges at high-flow sites at the extreme of the King Shag foraging range, which is offset by restoration of shallower sites more amenable to their foraging, we believe that the beneficial outcome of additional detailed population monitoring will ensure more reliable information is gained over time about the stability of the King Shag population. That will be a positive effect that arises from the Proposal proceeding. If it were not to proceed at all the counter factual would be a need to rely on tri-annual census data which will take many more years to provide a reliable picture of the stability of the population.

The uncertainties as to far-field effects will remain until such time as long-term farfield monitoring proves the modelled predictions, which the peer reviewer said 'stretched' the model. To that extent then we are in agreement with the approach the BOI took when it said:

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.¹⁵¹

¹⁵¹ Board of Inquiry, New Zealand King Salmon Requests for Plan Changes and Applications for Resource Consents, 22 February 2013, paragraph 1338

However, where we depart from the view taken by the Board of Inquiry is when it then continued to state:

... This could be addressed, if necessary, by the Council through the review process.

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.¹⁵²

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.¹⁵³

Our reasons for holding a different view on this issue of term are a combination of several points. If there is a state of uncertainty beyond twenty years, and after the lapse of that period it was to be considered questionable whether consents should be renewed, then we do not agree that Council can satisfactorily address issues by way of review provisions in a consent in a manner that reduces the term of a consent. Council's powers to review conditions of consent are limited by the terms of s.128 of the Act. That section limits Council's powers to review primarily for the purpose of dealing with adverse effects on the environment which arise from the exercise of the consent. They do not extend to a reduction of the term of a consent. That is the reason why in situations of uncertainties as to broader cumulative effects, which are difficult to pin-point to the exercise of any one consent, councils commonly limit terms of consent so as to enable Plan Reviews or Changes to address such major issues on a Plan-wide basis. A common example of that is found in many regional plans on terms of consent for aquifer takes where uncertainties as to the cumulative effects of takes often exist.

Another factor of concern on this Proposal, which the BOI did not face, is that this proposal necessarily 'relocates' one farm from Queen Charlotte Sound to Te Hoiere or Pelorus Sound. That is because there is an imbalance between the two farms in Queen Charlotte Sound sought to be moved from Ruakaka and Otanerau Bays, and the fact that only one relocation site at Tio Point exists in the Proposal for Queen Charlotte Sound. Even on the reduced basis that we recommend the Proposal proceeds, those two operative farms still exceed the Tio Point relocation provision. The result is a shift by way of relocation of one salmon farm from Queen Charlotte Sound to Pelorus Sound.

The consequence is that the two iwi with customary relationships with the affected area, Ngāti Kuia and Ngāti Koata, have strongly expressed their disenchantment with the effect on their kaitiakitanga responsibilities, and their concerns at the Sound-wide

¹⁵² Ibid paragraph 1339

¹⁵³ Ibid paragraph 1340

or far-field effects over which they seek to exercise shared decision-making. To expand that past one generation, as the BOI pointed out, conflicts with the generational aspect of those kaitiaki responsibilities. Iwi are far more able to be involved in those broader Sounds-wide reassessments of effects in a Plan Change or Review process, rather than in seeking to participate in much more closely confined consent review processes.

Those concerns as to far-field effects are not ever going to be able to be readily addressed on a single permit review process. They are effects which will require a Sounds-wide analysis over a period of no more than 20 years to ensure that modelled far-field effects from this source are indeed proven by the state of the environment monitoring, supported by the far-field monitoring required by this Proposal augmented by the real-time buoys. The provisions of s.6 (e), 7(b) and s. 8 require that iwi are involved in that broader environmental control process.

For those reasons, we recommend that a 20 year term, as applies in the CMZ2 zone for general marine farms, applies to the relocation sites in this Proposal.

Moreover, an added consideration in this regard is, as we alluded to earlier in this report that if this industry could economically utilise alternative methods, either onshore in recirculating systems or offshore where massive dilution of discharges could occur, then the future development of the industry would not be restrained.

The evidence from both NZKS and MPI was that the long-term future of a sustainable salmon industry able to develop further was recognised as requiring on-shore or off-shore developments which were economically and environmentally sustainable. The evidence both from MPI and NZKS was that such economic viability was not there at present, but was anticipated to be available in a time frame of about 10-15 years.

However, we remain concerned that human nature, and the reality of balance sheet bottom lines and the need for dividend payments, often result in the expense of capital-intensive major change in production methods or locations being avoided, or merely deferred, if that is possible. We consider this industry will actually benefit from a continuing and looming pressure of shorter term consents as to the need to continue to research and develop alternatives methods or locations for production.

We have also earlier commented on the extremely fractious nature of the current plan and consenting processes, and have drawn the Minister's attention to our view that such processes are not a sound way for an industry like this to advance its future potential.

The best, and really only, management mechanism available to the Minister to ensure that ongoing pressure is applied on the industry to continue to research and develop alternative locations or methods, is to provide in the Proposal for a policy acknowledging the need for that research to continue at pace. Such a policy could provide that the consent authority should limit the term of any consent to a period of 20 years for the other reasons referred to above. That is a period which is reasonably commensurate with the time frame stated to us by the industry itself as being the period needed for these inshore alternative high flow sites in the Marlborough Sounds to reach their maximum feed input discharge levels, if the adaptive management and related monitoring allows those increases to occur, while other better locations or methods are developed. It also generally coincides with the industry evidence as to its best estimate of when alternative methods or locations may be proven to be both sustainably feasible and viable.

Potential Adverse effects

The potential asserted adverse effects from the Proposal proceeding have been addressed in detail in Chapters 5 and 6 of this report in the respective sections dealing with generic and site-specific issues. That led to site specific reasons for not recommending the two Blowhole Point sites. In respect of the Waitata Mid-Channel the Panel does not recommend relocation because of a combination of adverse cultural, natural character and seascape effects, and increased navigation risk.

Overall outcome

The net result of the conclusions reached in those chapters is that, on environmental grounds, only three high-flow sites are recommended to the Minister to proceed in the Proposal, those being at:

Tio Point Richmond Bay South Horseshoe Bay

As it transpires, that in fact equates to the number of existing farms actually under production at the present time, being those at Waihinau, Otanerau and Ruakaka Bay. The practical result then of our recommendations is that the objective underlying this Proposal of exchanging like for like is actually achieved.

It follows that it is logical for the 'surrender' conditions to be linked as follows:

Otanerau Bay – Tio Point Waihinau Bay –Richmond Bay South Ruakaka Bay – Horseshoe Bay

That will still leave the sites at Crail Bay and Forsyth Bay available for the possible shorter-term use for smolt holding that NZKS has canvassed as possibilities if the benthic effects can be managed at those locations under the ES 5 level. Although that level contained in the Benthic Guidelines is not specified as a condition on those consents, it is common ground amongst the experts that any exceedance of that level

will result in anoxic conditions. If that were to occur then the provisions of s.17 of the RMA will have application enabling the Council to require abatement of the activity.

Not exceeding the ES 5 level has proven very problematic at Forsyth Bay in the past, and the ability to remain under it is unknown at Crail Bay. We would trust that given that reality in the past at Forsyth Bay, and the known similar low flow issues at Crail Bay, that NZKS would be far more proactive than that, by ensuring its own monitoring did not allow an exceedance of ES 5 to occur at those sites.

Those three consents expire in 2024 and it can be confidently predicted NZKS will face real battles if renewals are applied for – particularly if it has allowed in previous years an exceedance of the ES 5 levels. Moreover, if the modelling is verified by actual real time and sampling monitoring, then by that time further development in production will be possible at the higher flow sites. However, all that is speculation for the future, and falls to be considered under Plan provisions and consent conditions applying at the time.

Recommendations

Our recommendations to the Minister, are contained in detail in Appendix 8.

Dated the 21st day of July 2017

Professor Peter Skelton, Chair

P R Skelton

R D Crosby

Alan Dormer

Ron Crosby

A Dormer

Appendices

Appendix 1.

Terms of Reference for Marlborough Salmon Farm Relocation Panel, 2017. 9 pages. See <u>www.mpi.govt.nz/news-and-resources/consultations/marlborough-salmon-relocation/</u>

Appendix 2.

Full list of Consultation documents including Information for the Public Wishing to Make Comment, summaries of the written comments (4 April 2017), Technical Reports, landscape photos and the Marlborough Salmon Working Group report. See www.mpi.govt.nz/news-and-resources/consultations/marlborough-salmon-relocation/

Appendix 3.

Itinerary of the aerial tour taken by the Panel of the existing and proposed salmon farm sites, 9 April, 2017:

- 1. Blenheim to Crail Bay via Picton, Onahau Bay over Te Mahia, Kenepuru Sound via Nopera
- 2. Crail Bay circle two fallowed sites
- 3. Crail Bay to Horseshoe Bay and circle proposed high flow sites 5 & 4 respectively to south and north of Te Kaiangapipi Point
- 4. Cross Richmond Bay to fly over site E Kopaua
- 5. Cross Waitata Reach to overfly lodge buildings on ridge above Treble Tree point and turn north to fly over site D Waitata
- 6. Circle Waitata Mid-Channel proposed high flow site 3
- 7. Turn west again to overfly low flow site H in Waihinau Bay
- 8. Head east to fly over West Entry Point (Te Akaroa) and then circle high flow proposed sites 2 & 1 respectively south and north of Blow Hole Point.
- 9. Loop out to north towards Nukuwaiata one of the Chetwode Islands and descend to face back into Pelorus Sound from low situation to gain impression of 'entry' to Pelorus Sound
- 10. Then head south passing near to west end of Duffers Reef and over fallowed site I at north west Forsyth Bay
- 11. Head south of Forsyth Island heading for Pig Bay Port Gore to pass over BOI sites in Port Gore en route to Ship Cove and on to East Bay Arapawa island
- 12. Overfly low flow site G in Otanerau Bay then up and over Arapawa Island to Tory Channel (Kura te Au)

- 13. Overfly existing sites C & A at Ngamahau and Clay Point respectively on northern side of Tory Channel
- 14. Circle proposed high flow new site 6 at Tio Point at entry to Oyster Bay
- 15. Overfly existing site B Te Pangu
- 16. Ruakaka Bay to overfly site F at Ruakaka Bay

Appendix 4.

Transcripts of oral comments (alphabetical). See <u>www.mpi.govt.nz/news-and-</u> <u>resources/consultations/marlborough-salmon-relocation/hearings/</u>

Appendix 5.

Procedural Minutes issued by the Panel. See 12 May 2017, Panel Minute, Expert Meeting notes and presentations <u>www.mpi.govt.nz/news-and-</u> <u>resources/consultations/marlborough-salmon-relocation/hearings/</u>

Appendix 6.

Expert witnesses' meetings held 9, 10 and 15 May 2017 respectively.

Landscape values (John Hudson, Julia Williams, Dr Michael Steven, Steven Brown)

Economic assessments (Bill Kaye-Blake, Andrew Clark, Chris Money, Wendy McGuinness, Trevor Offen, Kevin Counsell).

King Shags (Dr David Thompson, Dr David Taylor, Paul Taylor, Graeme Taylor, Rob Schuckard, Paul Fisher).

Appendix 7.

Two maps of the existing and potential relocation sites (Pelorus and Queen Charlotte Sounds), over-laid with the Areas of Outstanding Landscape Value designation from the operative Marlborough Sounds Resource Management Plan (2003).

Known as Map 1 and Map 2.





Appendix 8. Recommended Changes to the Proposal

The following policy changes are recommended by the Panel:

- 1. Amend Policy 9.1.2. discussion as follows with addition underlined
 - 9.1.2 Aquaculture Management

The Act states that aquaculture activities (marine farming) can only take place within areas identified in the Plan as Aquaculture Management Areas (AMAs). Marine farming is prohibited outside AMAs. Council has the main role in managing marine farming in the Marlborough Sounds. Providing for marine farming within AMAs enables effects on the community, environment and economy to be managed in an integrated way through the Plan preparation processes, before individual applications for marine farms are considered. The cumulative effects of several marine farms in one area can also be considered.

The Ministry of Fisheries (MFish) continues to play a significant role in the creation of AMAs. Before starting on the public notification processes for including a new AMA in the Plan, Council must request MFish to undertake an assessment as to whether the proposed AMA would have an "*undue adverse effect*" on commercial, customary or recreational fishing. Areas within the proposed AMA that would unduly affect customary or recreational fishing will be removed from the proposal prior to notification. Any areas that would unduly affect commercial fishing will be identified in the Plan and anyone wanting to establish a marine farm in those parts of the AMA must first reach an agreement with the affected quota holders before they can apply for a resource consent.

Part of the Aquaculture Reform 2004 included the settlement of Treaty of Waitangi commercial aquaculture claims through the Maori Commercial Aquaculture Claims Settlement Act 2004. These provisions are intended to settle all Maori claims to commercial marine farming interests since September 1992. Iwi are provided with an allocation of area for marine farming equivalent to 20% of marine farming spaces allocated since 1992 and 20% of new marine farming space. This is partly met through the allocation to iwi of some of the new space that comes available through the creation of AMAs. This is intended to ensure iwi have access to coastal marine space to develop their marine farming interests, and to allow the marine farming industry to develop without risks from ongoing Treaty claims.

Existing lawfully established marine farms are deemed to be AMAs, which

means they do not need to be included in the Plan through a Plan Change. Marine farming permits and licenses granted under previous Marine Farming and Fisheries legislation are generally deemed to be coastal permits.

When resource consents for a marine farm are about to expire, if the site is in an AMA, the existing marine farmer can make an application for a new marine farming consent for the same water space. The application from the existing marine farmer will be decided first, before any other application can be considered for that space.

Where the site is in a CMZ 4 zone and salmon farming has not been developed as an activity on the site by the time the new consent is sought, it is intended that the new consent may authorise the same activity as was permitted on the site at the time the application for the new consent is made, so that existing consent holders are not disadvantaged by the CMZ4 zoning. That approach, particularly at Tio Point, is also consistent with the Te Ātiawa Iwi Management Plan which seeks to enable that iwi to have flexibility to pursue development opportunities in its own rohe.

Creating new AMAs requires a Plan Change. There are three different processes available to undertaken this:

- a Council-initiated Plan Change, where Council decides to undertake a plan change to establish an AMA in the coastal marine area;
- a standard Private Plan Change, where any person or organisation can request a change to the Plan to establish an AMA in the coastal marine area; and

• a Council Invited Private Plan Change (I P P C), which involves the Council inviting applications from the public to establish new AMAs. The Council may identify areas of the coastal marine area which will be excluded from applications. These Plan Changes are processed in a similar manner to Private Plan Changes.

All these processes follow the consultation and public notification processes set out in the Act.

Removal or modification of existing AMAs in the Plan, including deemed AMAs, also involves a Plan Change process.

Once an AMA is created, 20-40% of authorisations (or the right to apply for a resource consent for marine farming) are allocated by the Council to a trustee to resolve historic Treaty claims, and the remaining authorisations become publicly available.

Where AMAs have been created through a Council-initiated Plan Change, the remaining authorisations are allocated by public tender. Where an AMA has been created through the IPPC process the remaining authorisations are allocated to the person or organisation that requested the Plan Change. Where an AMA has been created through the standard Private Plan Change process the Act specifies that the authorisations are allocated by public tender unless an alternative method of allocation is used. Once the authorisations have been allocated, the holders of the authorisations then need to apply for resource consents for marine farming.

2. Amend Policy 1.15 in Policy 9.2.1.1 as follows (amendment underlined)

Policy 1.15

Enable the renewal as controlled activities of marine farms authorised by applications made prior to 1 August 1996 as controlled activities, apart from exceptions in <u>Appendix D2</u> in the Plan, <u>and enable the renewal of existing activities on sites in the CMZ 4 zones which have not been occupied by salmon farming structures at the time the application for the new coastal permit for the renewal is made.</u>

3. Amend Policy 9.2.1.1.17 by:

Amendment of b) to re-order the priority as follows:

1.Waihinau

- 2. Otanerau
- 3. Ruakaka

And *by deleting*: 4. Forsyth Bay 5. Crail Bay MFL48 6. Crail Bay MFL32

And addition of:

c) ensuring that where appropriate resource consents granted to enable relocation contain relevant conditions which reflect or adopt the standards contained in Appendix D4. d) where maximum limits appear in Appendix D4 for discharges from salmon sites in Waitata Reach in the CM4 zone, ensuring that:

(i) the conditions of consent allow for flexibility and equality of impact of those conditions if consents for salmon farming in all the three CMZ4 zoned areas are not held by the same consent holder; and

(ii) a mechanism is prescribed in the resource consents as to how that is to be equitably achieved having regard to the productive ability of each farm.

e) ensuring that where appropriate combined consents are issued for salmon farms in the CM4 zone, or conditions of separate consents for salmon farms in the CM4 zone are interrelated, so as to ensure costs of far-field and King Shag population monitoring and provision of five real time monitoring buoys required in the standards to Appendix D4 are shared equitably between the consent holders.

f) ensuring that if consents for salmon farming in all the three CMZ4 zoned areas are not held by the same consent holder, that a mechanism is prescribed in the conditions to each of the respective resource consents as to how the cost of the provision of the far-field and King Shag population monitoring and provision of five real-time monitoring buoys is to be equitably shared, having regard to the productive ability of each salmon farm consent.

And amending the reference in the following discussion to read 'three' not 'six' sites in CMZ 4 and to add the following at the conclusion of that discussion:

"In order to encourage research into off-shore or on-shore salmon farming with lesser environmental effects the term of consents for salmon farming in the CMZ4 shall not exceed 20 years."

4. *Amend* Policy 9.3.2.1.12 e) by deleting the word 'statistically' and replacing it with 'ecologically'

The following rule changes are recommended by the Panel:

5. Amend Rule 35.3.3

By deleting all references to Blowhole Point North, Blowhole Point South and Waitata Mid-Channel

And adding a new rule 35.3.3.4 as follows:

35.3.3.4

<u>Term</u>

A coastal permit in respect of the activity may be granted for a period of up to but not exceeding 20 years.

6. Amend Rule 35B.2.1.1

By deleting all references to Blowhole Point North, Blowhole Point South and Waitata Mid-Channel

7. *Amend* Rule 35B.2.1.2 (this is the alternative method rule) to read:

An application for a coastal permit for salmon farming in a CMZ4 zone may only be made by a person who holds a consent for the corresponding identified site to be surrendered as follows, or who has binding commercial arrangements in place with that consent holder enabling the surrender of the consents for the identified site to be surrendered as follows:

• The application is for the Richmond Bay South CMZ4 site and the surrender of consents for the Waihinau Bay CMZ2 site

• The application is for the Tio Point CMZ4 site and the surrender of consents for the Otanerau Bay CMZ2 site

• The application is for the Horseshoe B ay CMZ4 site and the surrender of consents for the Ruakaka Bay CMZ2 site

8. *Amend* Rule 35B.2.1.2(c) (this is the allocation sequencing rule) order to read

- 1. Waihinau Bay
- 2. Otanerau Bay
- 3. Ruakaka Bay

And *delete* all references to Blowhole Point North, Blowhole Point South and Waitata Mid-Channel

9. Amend Appendix D4 as follows:

<u>Condition 5</u> – *amend* all references to dBA L10 to read dB LAeq

<u>Condition 10</u> - *delete* all references to Blowhole Point North, Blowhole Point South and Waitata Mid-Channel and *amend* areas to read:

Richmond Bay South 1.490 ha

Horseshoe Bay 0.739 ha

Tio Point 0.739 ha

Condition 11 amend 9 hectares to read 2.968 ha

<u>Condition 12(a)</u> *delete* references to Blowhole Point North and Blowhole Point South

Conditions 13 & 14 delete and renumber following conditions

<u>Condition 19</u> - *delete* all references to Blowhole Point North, Blowhole Point South and Waitata Mid-Channel

<u>Condition 20</u> - *delete* all references to Blowhole Point North, Blowhole Point South and Waitata Mid-Channel and *amend* total figure from 6,000 tonnes to 3,500 tonnes

Amend sub-heading after condition 20 to read 3,500 tonnes rather than 6,000 tonnes

<u>Condition 21</u> - *delete* all references to Blowhole Point North, Blowhole Point South and Waitata Mid-Channel and *amend* figure from 6,000 tonnes to 3,500 tonnes

Condition 22 - amend figure from 6,000 tonnes to 3,500 tonnes

And in Table 1 *delete* columns headed BHN, BHS, WMC <u>Condition 24</u> - *delete* all references to Blowhole Point North, Blowhole Point South and Waitata Mid-Channel

Amend sub-heading after condition 24 to read 3,500 tonnes rather than 6,000 tonnes

<u>Condition</u> 25 – *delete* all references to Blowhole Point North, Blowhole Point South and Waitata Mid-Channel and *amend* figure from 6,000 tonnes to 3,500 tonnes

And in Table 2 amend 6,000 to read 3,500 and amend 1800 to read 1075

<u>Condition</u> 28 - *delete* all references to Blowhole Point North, Blowhole Point South and Waitata Mid-Channel

<u>Condition 38</u> – *delete* the words 'to achieve the following average...' and *replace with* 'to be under the following...' benthic Quality Standards

<u>Conditions 53 & 54</u> – *amend* so that wherever reference is made to "Marine Mammal and Shark Management Plan" it reads "Marine Mammal, Pelagic Fish and Shark Management Plan" and so that all references to "sharks" reads as "pelagic fish and sharks"

Condition 58 – add (d) as follows:

(d) A **King Shag Management Plan** to establish accurate data as to King Shag colonies and populations, particularly by implementing and maintaining annual monitoring by aerial flyovers planned in conjunction with a King Shag expert panel of independent persons with appropriate knowledge and expertise, such monitoring to be integrated as far as possible with any similar such monitoring required in the existing management plans for marine farms in CMZ 3, in accordance with condition 59.

10. <u>Appendix D5</u>

Amend to include only details relating to Otanerau and Waihinau sites

11. <u>Appendix D6</u> – *delete*

12. <u>Appendix D7</u> – *include with* plans showing sites only at Tio Point, Richmond Bay South and Horseshoe Bay

13. <u>Appendix 2</u>

delete all references to Blowhole Point North, Blowhole Point South and Waitata Mid-Channel

END