MARLBOROUGH DISTRICT COUNCIL

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RESOURCE MANAGEMENT ACT 1991

Decision of Marlborough District Council

RESOURCE CONSENT:	U190438
APPLICANT:	The New Zealand King Salmon Co. Limited
LOCATION:	North of Te Uku/Cape Lambert, Northern Marlborough).

THIS IS THE DECISION ON THE APPLICATION FOR RESOURCE CONSENT:

DECISION: **Granted**

New coastal permit to establish and operate two salmon farms within a 1,000 hectares site, on the site coordinates shown as points 5-8 (the south farm) and points 9-11 (the north farm) and to install and maintain cardinal marks shown as points 1-4 on the as detailed on the OCEL drawing SK-051103-521, Rev 6, dated 15 June 2022 attached as Appendix 1.

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Pursuant to sections 34A(1) and 104B, and after having regard to Part 2 matters[1] and sections 104, 104B, 104D, 105 and 107 of the Resource Management Act 1991, the Marlborough District Council **grants** a coastal permit to establish and operate two salmon farms within a 1,000 hectares site, on the site coordinates shown as points 5-8 (the south farm) and points 9-11 (the north farm) and to install and maintain cardinal marks shown as points 1-4, as detailed on the OCEL drawing SK-051103-521, Rev 6, dated 15 June 2022 attached as Appendix 1 subject to conditions imposed under section 108 of the Resource Management Act 1991 shown on the attached Certificate of Resource Consent.

Reasons

Proposal

1. The application was first lodged with Council on 5 July 2019. Further information was requested by Council on 23 August 2019 and was provided by the Applicant on 8 October 2019. The application was publicly notified by Council on 18 October 2019. Following the end of the period for public submissions the Applicant commissioned further scientific and other work in support of its application.

2. This resulted in a revised proposal called "Blue Endeavour" being provided to Council on 10 August 2021[2]. This work included various technical reports that were submitted as part of a "Submitter Engagement Package" to assist with pre-hearing consultation. In addition, we note that some of the original technical reports were submitted with the revised application as "still relevant to the updated proposal". These technical reports were referenced in the Applicant's evidence where appropriate.

3. The revised proposal ("**Blue Endeavour**" or the "**proposa**l") is described below. Certain aspects of the proposal were amended during the course of the hearing as outlined below.

4. The New Zealand King Salmon Co. Limited (the "**Applicant**" or "**NZKS**") seeks resource consent to establish and operate two new salmon farms (a north-eastern farm and a south-western farm[3]) within a 1,000 hectare site (the "**Site**") located 5 kilometres to the north of Te Uku/Cape Lambert, in northern Marlborough. The proposal is called "**Blue Endeavour**". The general location is shown in Figure 1 below, and a specific site plan is included in Appendix 1.

[1] As discussed below, we have had regard to Part 2 RMA on a precautionary basis (noting the decisions in *King Salmon* and *Davidson* apply to our consideration of Part 2 and section 8 RMA).
[2] Submitter Engagement Package, Appendix 1 Revised Proposal Description for Blue Endeavour 10 August 2021.
[3] The bulk of the evidence referred to the north farm and the south farm to refer to the north-east and south west farm. The terms are used interchangeably which makes no material difference to our decision.

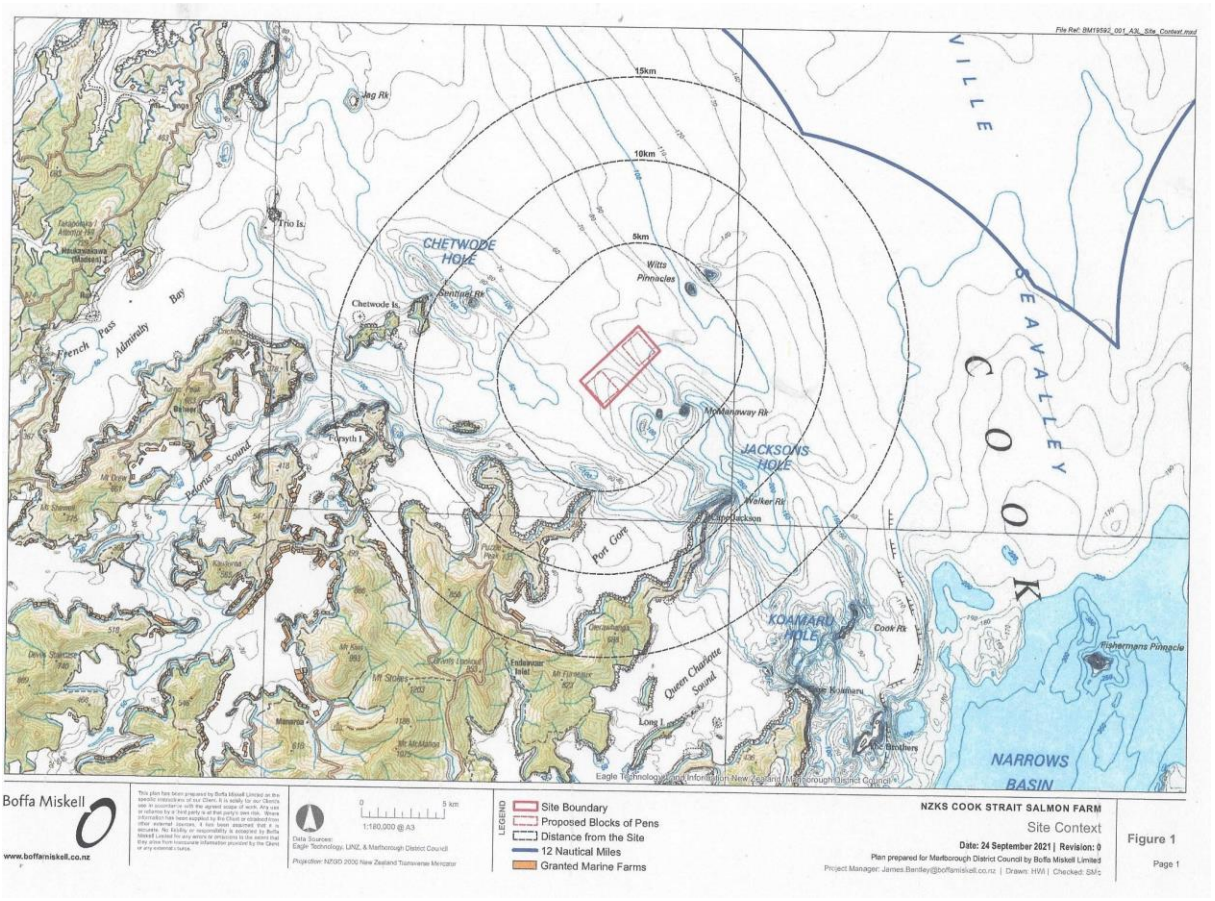

Figure 1: General Location Plan of the Blue Endeavour Proposal

Dimensions

5. The 1000 hectare footprint is bounded by cardinal markers shown as points 1-4 on the site plan (Appendix 1). The north-east farm is bounded by points 9-12, whilst the south-west farm is bounded by points 5-8 on the site plan. The site plan shows indicative locations of a barge that will service each farm, 10 pens within each farm and a series of anchors and mooring lines.

6. The area of exclusive occupation outlined in the proposal was discussed at the hearing. The Applicant clarified that they did not seek exclusive occupation of the area bounded by the cardinal markers. The area of exclusive occupation sought is the physical space occupied by all surface and subsurface structures, including all the space within the salmon pens, within barges, feed pipes, and ancillary structures such as monitoring equipment, lines and mooring systems and cardinal markers. For clarity, the areas that the Applicant has not sought exclusive occupation for, will be available for public use.[4]

7. The pens will be anchored as shown in the areas bounded by points 5 to 8 and 9 to 12 on the site plan. The area bounded by these points (**the farm footprints**) is approximately 190 hectares. All pens and moorings will be confined to those areas except during installation, maintenance or when being taken to and from the site.

MI note 20230622:
190 x 2 = 380 ha

Pens

8. The flexible circular pen structures consist of two concentric surface floating circles formed from high density polyethylene (**HDPE**) pipe bent in a circle, butt welded to complete the circle and connected by steel L shaped brackets that hold the circles together in a toroidal shape in the horizontal plane. The brackets incorporate an upstand supporting another smaller diameter horizontal handrail ring above the inner circle.

[4] This is for the purposes of the RMA, not necessarily for health and safety, or maritime legislation.

9. The proposal referred to the maximum internal circumference of each pen being up to 240m. However, the Applicant stated that initially the pens will be 168m internal circumference, and the expert engineering evidence[5] was based on this dimension.

10. Each pen maintains buoyancy by virtue of a floating collar from which a grower net is suspended. Above water there will be a walkway to enable access around the pen, a jump fence to prevent seals entering the pen, and a net suspended from either the top of the inner handrail or the top of the jump fence and extending in the air across the top of the pen to discourage birds and seals entering the pen (the bird net). The pens will also incorporate feeding systems and other necessary support structures for the maintenance of fish welfare.

11. The net system will house the fish and prevent predators from entering the pens. Currently NZKS anticipates using a mesh size no larger than 50mm half mesh internal aperture (knot to knot). The proposal was based on a single net system, with the proviso that a double net system might be used in future. However, the double net system was not assessed in any detail and raised issues with respect to effects on marine mammals. On the basis of the evidence we heard with respect to marine mammals,[6] we have decided to grant consent for a single net system, and this has been specified as a condition of consent. This means that a switch to a double net system will require a separate application to change a condition of consent.

Barges

12. Each farm will be serviced by a barge with dimensions up to 70m long, 15m beam and air draught (overall height above the water) 14m (excluding aerials or similar).

13. The permanent barge moored at each block of pens will store and deliver the salmon food. Diesel generators will provide power for feeding equipment, underwater lighting and staff facilities. The barge also provides the platform that houses the system which enables remote control of farming functions as well as accommodating farm staff from time to time.

14. All garbage from the barge will be transported to shore, recycled (where appropriate) or disposed of at the appropriate land-based facility.

15. All sewage on the barges will be contained on the barge, and from time to time will be pumped into tanks on a visiting vessel and transferred to a municipal sewerage system for processing. Stormwater and greywater will be discharged to the ocean.

Mooring system

16. The mooring lines for each pen are attached to the brackets which are linked by steel cables, the purpose of which is to ensure that the HDPE pipes are not the main structural element for the transfer of mooring loads to the mooring cables. The cables also ensure that the circular shape of the pens is maintained in the case of pipe rupture.

17. Both blocks of pens will be anchored by high holding power (**HHP**) anchors, 56 per block, however the effects of 61 per block were assessed to allow for a margin of error. Each anchor will be connected to the mooring grid via a mooring warp, with a catenary chain tail connection to the anchor.

18. The barge that accompanies each farm will have its own independent mooring with up to 12 HHP anchors, positioned as shown on the site plan. The maximum dimensions of each barge are 70m length, 15m beam and a height of 14m above the water surface (excluding aerials).

19. Further details regarding the structures and the mooring system are outlined in the structural integrity section of this decision.

[5] Mr Teear, Primary Evidence, paragraph 16.
[6] Particularly the evidence of Ms McConnell which we discuss in more detail below.

Lighting

20. Underwater lighting will be used at the site to slow the maturation of farmed salmon. LED lighting is likely to be used, although technology may change over time. The luminance resulting from the submerged artificial lighting used in each pen will be deployed at least 5m below the surface of the water and will not exceed 35 x 600W LED.

21. The lights are generally switched on in January/February, and off in October. They run up to 14 hours per day over darkness. The Applicant stated that they aim to minimise the period which the underwater lights are on, to minimise on farm power consumption and any perceived adverse effects.

22. The Applicant volunteered a condition, which we have accepted, to remove the bird nets at night, or to switch the submerged artificial lights off at night, to address potential bird entanglement risk from the lights.

23. Navigation lighting and marks will be installed in accordance with the approval of the Harbourmaster pursuant to the Maritime Transport Act 1994. It is anticipated that the outer four corners of the site will be marked with cardinal marks (which have white lights), and that navigation marks (with yellow lights) will mark each of the four corners of the two blocks.

24. Each permanently moored barge is likely to require two all-round white lights visible for three nautical miles to be displayed where they can best be seen[7]. Consent conditions have been included to require curtains, blinds or shutters on barge windows which are effective at preventing light spill at night. These are to be closed to prevent light spill. Only external lights that are required for navigation safety, deck and boat handling work or for health and safety purposes are to be installed. These must be shielded and angled downwards and turned off when not being used for deck and boat handling work.

25. While it will not be the norm, from time-to-time vessels will operate at Blue Endeavour at night, and in those circumstances flood lights will be used in order to ensure the safety of staff, livestock and infrastructure.

Feeding

26. The Applicant stated that the main objective of feeding is to achieve maximum growth of the salmon while minimising the amount of food used. The Applicant will use the principle of satiation feeding to ensure that the salmon are fed an amount that matches their appetite, which varies throughout the salmon life cycle.

27. Salmon food will be stored within silos in the permanent barge at each block. Food will be moved either hydraulically or pneumatically through pipes to the pens and spread around the pens using a roto-spreader.

28. Salmon are crepuscular (twilight feeders), so meals will often be fed at dawn and dusk. Smaller salmon may be fed five meals a day, while larger salmon may only receive one meal a day.

29. The feeding rate will be monitored by an underwater video-camera (5m deep), which will be watched constantly during feeding. As soon as food passes by the camera, feeding will stop.

30. Control of daily feeding and monitoring will occur either from the permanent barge, or remotely from another site using cameras and other monitoring equipment. When the weather permits (about 80% of the time), staff will travel out to the site in the crew transport vessel. This team will be responsible for mortality recovery (via the airlift systems plumbed into the nets), and site security and to carry out maintenance inspections.

31. The proposed feeding regime was restricted to not more than 2,286t of salmon feed per month per farm within an annual limit of not more than 10,000t per annum per farm in any given year commencing on 1 October. The proposal also stated that no staging would occur.

MI note 20230622:
10000 x 2 = 20000t

[7] 5 Maritime Rules Part 22: Collision Prevention, Rules 22.22 and 22.30(1).

32. However, during the course of the hearing, the Applicant introduced a staged approach (for each farm) around a reduced feeding regime to remove uncertainty with respect to actual and potential adverse effects of the discharge on benthic ecosystems. This comprised discharging 1,143 tonnes of feed per month at each farm at a level of 8,000 tonnes for two consecutive years commencing on 1 October. This was to enable monitoring and further assessment against proposed benthic quality standards (discussed in more detail below) within a modelled deposition footprint (Refer Appendix 2 of our decision). It was proposed that if the benthic quality standards outlined in proposed conditions are met, then feed levels could be increased to 2,286 tonnes of feed per month up to a maximum of 10,000 tonnes.

33. The permanent barge feed silos will be refilled by a vessel approximately weekly. This vessel will be about 25m in length and will collect the 1mt bags of salmon food from a port (Havelock or Whakatū/Nelson) and transport the food to the site. The vessel will moor alongside the permanent barge and transfer the food, either by crane or using a grain conveyor.

Vessel movements

34. The proposal included a table of possible support vessel movements associated with installation and operation of both farms which we accept.

Farm establishment

35. Barges and workboats will be used to deploy the mooring grid system during the installation phase of Blue Endeavour. Tugboats will be used to set the anchors of the mooring grid. The pens are constructed offsite, and tugboats will be used to re-locate the pens to the site for installation. Once the pens are on site, they will be moored to the mooring grid. This work is conducted from the workboats.

36. Tugboats will also be used to locate the permanent barges to the site, and the workboats will complete the mooring attachment work.

37. It is anticipated that salmon will be relocated to Blue Endeavour using a wellboat. The wellboat is a vessel approximately 45m in length which contains a hold (or series of holds) full of water that can be used to transport salmon. The aqueous environment within the hold is monitored to ensure appropriate dissolved gas levels are maintained (such as oxygen and carbon dioxide) to ensure the health and welfare of the salmon. The wellboat will pump the hold's contents (water and salmon) into the pens at Blue Endeavour for on-growing.

Operations

38. The farms will be operated in accordance with management plans that are referenced in the conditions of consent. Draft copies of the management plans were provided in evidence and discussed during the course of the hearing.

39. Daily operations will be carried out using specific vessels for each job as follows:

    a) Staff will commute to the site (as weather permits) in a crew transport vessel. This vessel will be approximately 15-20m long;

    b) A vessel carrying a net-cleaner will clean the nets once a week at each block of pens on a rotational basis. This vessel will be approximately 25m long;

    c) A dive vessel will commute to the site to undertake routine repairs and maintenance;

    d) A works vessel will be on site when mooring work is required to be undertaken. This is generally mechanised work, which requires the use of lifting and tensioning equipment. This vessel will be approximately 22m in length.

40. Every net will be cleaned on a weekly basis. The net cleaning vessel will travel to the site and moor alongside the pen it is required to clean. Net cleaning will be carried out by using an ROV style net-cleaner, much the same as it is on the inshore farms. This net-cleaner 'flies' around the net and uses high pressure water to blast the biofouling (encrusting sea organisms which naturally settle on the net) from the net, using patterns like when mowing a lawn.

41. The ROV operator will also inspect the net integrity using the cameras on the net-cleaner at the same time as cleaning. Any repairs required will be reported to the works team to affect the repair.

Discharges

42. Copper based antifouling will not be used on any nets and the Applicant did not seek consent to discharge antibiotics or therapeutics.

43. Greywater will be discharged to the ocean. Greywater volumes based on existing inshore farms are estimated to be 100 litres per person per day. Greywater will not include the production of any conspicuous oil or grease films, scums or foams, or floatable or suspended materials, any conspicuous change of colour or visual clarity, any emission of objectionable odour, or any significant adverse effects on aquatic life.

44. Stormwater will also be discharged to the ocean.

45. Most of the benthic nutrient enrichment around a well-managed salmon farm derives from faeces excreted by the salmon, not from uneaten food. NZKS's existing farms use food detection systems to avoid all but on average 0.1% uneaten pellet loss[8]. This was taken into account in the deposition modelling.

Harvesting

46. Harvesting of the salmon will either be carried out on site by a harvest vessel, or the salmon will be transferred into a wellboat and moved to an inshore site for harvesting.

Maintenance

47. Regular maintenance on the structures will occur in accordance with the manufacturers' requirements and the conditions of this consent. The Applicant stated they intend to maintain the structures in class through life. Assurance from the Classification Society will be provided to the Council.

48. A works team will travel to the site on a works vessel. They will be primarily focussed on subsea inspections of all mooring equipment and the associated repairs and maintenance. This team is also dive capable, so will carry out tasks to ensure tensions are maintained within the mooring lines.

49. Empty pens will be relocated from the site for routine maintenance as required by a tugboat (usually at the end of each cycle of salmon – approximately every year). Pen maintenance will be carried out at either an existing inshore salmon site (Forsyth or Waihinau) or on a suitable shore base (like Whakatū/Nelson slipway or Shakespeare Bay in Picton).

50. Further details with regard to the installation, operation and maintenance of each farm was provided in the evidence of Mr Preece, which we accept unless stated otherwise.

Activity Status

51. The proposed Marlborough Environment Plan (**PMEP**) was publicly notified on 9 June 2016, prior to the proposal being lodged on 5 July 2019. However, it did not include rules controlling marine farming. Those rules remained under review until notification of Variation 1 and Variation 1A of the PMEP on 2 December 2020.

52. Chapter 35 of the Marlborough Sounds Resource Management Plan (**MSRMP**) sets out the activities which require resource consent in order to be carried out in the coastal marine zones, along with their activity class in terms of section 87A of the RMA. Under Rule 35.5, unless otherwise specified to be a controlled, restricted discretionary or discretionary activity, marine farms within the CMZ2 constitute a non-complying activity where they are located either:

[8] NIWA Feed Loss Report referenced in Mr Preece's Primary Evidence.

a) Inside a line drawn 50 metres from mean low water mark at right angles to a line normal to the nearest part of mean high water mark; or

b) Beyond a line drawn 200 metres from mean low water, at right angles to a line normal to the nearest part of mean high-water mark.

53. According to Mr Johnson the proposed farms would be entirely new farms and therefore do not fall within any of the controlled, restricted discretionary or discretionary activity statuses accorded to existing marine farms in Chapter 35. The entire application site is located further than 200m from the mean low water mark. Therefore, the proposal is a non-complying activity under Rule 35.5 of the Sounds Plan.

54. Ms Munro discussed the extent to which the marine faming Rules 16.6.13 and 16.6.15 proposed under Variation 1 and 1A of the PMEP (which make marine farming a discretionary activity) are relevant. However, we note that the Applicant's legal counsel considered that the non-complying activity status is the more restrictive of the two and is both bundled and/or preserved by s88A of the RMA 1991[9]. We accept this.

55. Ms Yozin's planning evidence considered that the proposed activity also triggers certain other rules[10] in the MSRMP. However, she then stated that she agreed with the "Council Officers rule assessment with regards to the MSRMP".

56. The Applicant's legal counsel considered that Marine Farming is defined comprehensively to include all aspects of marine farming (the rules are "omnibus" in nature)[11]. We accept this.

57. We accept that the proposal should be assessed overall as a **non-complying activity**.

Background

Existing Environment

58. The existing environment is described in detail in the application documentation and the evidence[12] of the numerous experts that attended the hearing. The description outlined below provides a summary of the existing environment taken from that evidence. The summary provides context for our decision. Further details regarding the existing environment may be found in the relevant evidence supplied at the hearing. Where required, we provide a more in-depth description of the existing environment in the principal issues section of our decision.

59. The site is located approximately 5km due north of Te Uku/Cape Lambert, in Raukawakawa/Cook Strait, and is approximately 7.5km from Sentinel Rock and around 9.5km from the Chetwode Islands.

60. There are two Ecologically Significant Marine Sites (ESMS) identified in the PMEP that are located near to the site, including Te Mete Mahinga/McManaway Rock (ESMS 2.28) located about 2.5km southeast of the site, and Witts Rock (ESMS 2.29) located approximately 4km to the northeast. Other ESMS located further from the site include:

a) Waitui Bay (ESMS 2.30) approximately 6km to the southwest;

b) Te Anamāhanga/Port Gore (ESMS 2.31) about 7km to the south[13];

c) Port Jackson (ESMS 7.1) about 9km southeast;

d) Tīti Island (ESMS 2.26) located about 6km to the southwest; and

e) Chetwode Islands (ESMS 2.20) about 9.5km to the west.

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[9] Section 88A provides that the type of activity (being controlled, restricted, discretionary, or non-complying) for which the application was made continues to be processed, considered, and decided as an application for the type of activity that it was for, or was treated as being for, at the time the application was first lodged.

[10] Paragraph 36 Primary Evidence.

[11] Paragraph 37 legal submissions.

[12] Including supplementary evidence and responses to questions.

[13] Paragraph 93, Dr Wilson's primary evidence.

61. The water depth at the site ranges from 60 to 110m. However, the water depth in the proposed southern farm is about 80m deep, and the water depth at the proposed northern farm site is about 100m deep. A narrow ridge located in approximately 60 metres of water and orientated in a northwest southeast direction separates the two proposed farm sites (refer Appendix 2 and 3 of our decision).

62. The proposal area is influenced by the strong tidal currents of Raukawakawa/Cook Strait. These currents mix coastal water from the Marlborough Sounds to the south of the site, with oceanic water from the Pacific Ocean and Tasman Sea passing through the Strait.

63. The circulation and hydrology of Raukawakawa/Cook Strait are complex. Coastal upwelling is important in nutrient transport and the Kahurangi Shoals upwelling near Cape Farewell is an important feature in the present context. A series of cold-core eddies trace a path from the Kahurangi Shoals down into the vicinity of the entrance to Te Hoiere/Pelorus Sound, a process known as the Kahurangi Upwelling Plume which transports nutrients into the area of the site[14].

64. Mean midwater current velocities are described as being high at 35 cm/sec (peaking 60-90 cm/sec range) and may be related to the documented high tidal mixing discussed above. The southeast/northwest axis of current flow is consistent with the mostly southerly, local action of the Kahurangi Upwelling Plume.

65. The initial water column report[15] provides information on temperature, salinity, and turbidity at the site, which were shown to be mostly uniform with depth and having nutrient levels referred to as "unremarkable and within the range of concentrations measured at an existing farm in Te Anamāhanga/Port Gore". The diatoms taken in water samples indicated "a moderately-nutrient enriched and well mixed water column"[16].

66. Existing water column properties at the sites were assessed from data collected from three sampling trips and instruments deployed specifically for this application. Information from a nearby location at the entrance to Te Anamāhanga/Port Gore (40.981598°S, 174.266863°E), including monthly data collected over the period May 2014 to June 2016 (with some samples reported in Broekhuizen (2015), were also used to assess the baseline conditions at the site. These are presented in Table 1[17].

Table 1: Summary of mean, minima and maxima water column properties at or near to the Blue Endeavour site used to assess baseline conditions

Water column property (units)	Minimum	Mean	Maximum	Sources
Total ammoniacal nitrogen (mg/m^3)	5	20.5	100	Te Anamāhanga/Port Gore entrance (n = 24)
Dissolved inorganic nitrogen (mg/m^3)	48	66	71	Te Anamāhanga/Port Gore entrance (n = 24)
Total nitrogen (mg/m^3)	120 Blue	157.8	450	Site (mean, n = 5) Te Anamāhanga/Port Gore entrance (min and max, n = 24)
Chlorophyll-a (mg/m^3)	0.2	0.6	3.93	Te Anamāhanga/Port Gore entrance (min and mean, n = 24), Blue Endeavour 11m deep sensor (max, n = 5490)
Dissolved oxygen (mg/l)	6.89	7.76	9.42	Blue Endeavour 10m deep sensor (n=6110)

[14] Paragraph 31, Mr Taylor's primary evidence.
[15] Newcombe et al., (2019).
[16] Paragraph 31(h), Mr Taylor's primary evidence.
[17] Paragraph 37 Mr Knight's primary evidence.

67. Overall, Mr Knight assessed the water quality environment as an oligotrophic or low nutrient environment. However, he noted that despite the region around the farm having a low concentration of nutrients, the water column assessment report estimates that due to the large water flows in Raukawakawa/Cook Strait, existing natural fluxes of nitrogen through the Strait are very large (1.2 to 19 million tonne per annum).

68. Seven benthic habitat types were initially identified in the evidence including:

a) Biogenic habitat - horse mussel / brachiopod beds';

b) Biogenic habitat - patch reef;

c) Biogenic habitat - clump reef;

d) Transitional habitat;

e) Low density epifauna - coarser sediments;

f) Low density epifauna - softer sediments; and

g) Undefined mixed habitats.

69. The general location of these habitat types were initially mapped in the application and refined through expert witness caucusing and further field work (during the hearing process). The resultant final benthic habitat map[18] with the footprint of the proposal and the modelled deposition footprint overlaid is shown in Appendix 3 of our decision. This work also standardised the names of the various habitat types and the categories outlined in Appendix 3 are used in the remainder of this decision.

70. The final benthic habitat map updates the list of habitat types by including “outcrop areas” and an area of “biogenic mixed habitat”. The biogenic mixed habitat occurs on the raised ridge approximately midway between the north farm and the south farm.

71. The prevailing wind follows the coast from the northwest and from Raukawakawa/Cook Strait to the south. This is primarily due to the topography of the application site in relation to the local coastline. The prevailing sea and wave direction is from the northwest and to a lesser extent, the southeast.

72. The site is located to the west of Taonui-a-Kupe/Cape Jackson and is not subject either to the high energy sea-states associated with ocean swell from the southeast or to the maximum strength of the tidal currents[19].

73. Wave measurements from wave buoys over a 1-year deployment and 10-year hindcast wave data were used to calculate 10, 50 and 100 year return period values for significant wave heights in 8 directions. In addition, design wave parameters were derived from a separate, later (Sept. 2021) MetOcean Solutions (MOS) wave hindcast report. The report gave a maximum significant wave height for the 50-year return period of Hs = 6.55 m with a peak period Tp = 10.7 secs. This was for a wave from the northwest.

74. The Hs = 6.55 m figure illustrates the relatively sheltered nature of the site in comparison to locations east of Taonui-a-Kupe/Cape Jackson, which are exposed to the full force of ocean swell from the southeast.

75. A diverse community of seabirds forage or transit through the Marlborough Sounds and Raukawakawa/Cook Strait area. These species groups (orders) include albatrosses, shearwaters, petrels, and storm petrels (Procellariiformes), penguins (Sphenisciformes), gulls and terns (Charadriiformes), skua (Stercorariidae), and gannets and shags (Pelecaniformes).

76. The wild fish that are present at the site are either associated with the ocean bottom (benthic species) or inhabit the water column above (pelagic species). Appendix C to Mr Taylor’s evidence includes a substantial list of benthic and pelagic fish that may be present at the site,

[18] Joint Witness Statement – Benthic Habitat Mapping 21 April 2022.
[19] Sea-state information extracted from Mr Teear’s primary evidence.

which we accept. This includes sharks and other Elasmobranchs (rays, elephant fish, and skates).

77. The greater Raukawakawa/Cook Strait and South Taranaki Bight region, in associations with the Marlborough Sounds, appears to be an important area for a large portion of New Zealand's (NZ's) cetacean (whales, dolphins and porpoises) and pinniped (seals and sea lions) species. Of the more than 50 species of marine mammals known to live and / or migrate through NZ waters, at least 28 cetacean and four pinniped species have been recorded in this area.

78. The most frequently occurring species within the Raukawakawa/Cook Strait region are common, bottlenose and dusky dolphins, NZ fur seals, orca, and southern right and humpback whales.

79. Bottlenose, dusky and common dolphins regularly travel through Raukawakawa/Cook Strait and utilise nearby coastal waters of the outer and inner Marlborough Sounds. Bottlenose and common dolphins are observed year-round while the dusky dolphins are mainly sighted over colder months[20].

80. Several established breeding colonies for fur seals occur relatively close (within 20km) to the proposed farm sites at the Trio Islands and nearby Stephens Island.

81. Increasing numbers of humpback, southern right and blue whales have been documented in and around Raukawakawa/Cook Strait waters. Humpback and southern right whales occur in the wider area for a limited period each year; mainly in the winter and spring months, and most only remain for a day or less (the exception being southern right whales who may remain for several days to weeks).

82. A pilot study to test the efficacy of using underwater acoustic recorders at the proposal site was undertaken during August and September 2018. Over the 43-day deployment period, two separate acoustic moorings (~6 km apart) detected a total of 136 dolphin events (i.e. bottlenose, common or dusky dolphins) and 363 whale events (mainly humpback and blue whales).

83. The proposed northern farm site lies just across the boundaries of the Raukawakawa/Cook Strait Whale Migration Zone identified in Map 17 of the PMEP.

84. There are three existing aids to navigation (AtonN)[21] within eight nautical miles of the site that would be visible to boats at the application site, including:

    a) Taonui-a-Kupe/Cape Jackson light – Three white flashes every 20 seconds, nominal range 9NM. This light is located on a highpoint at the end of Taonui-a-Kupe/Cape Jackson. The light is nominally visible across the application site and will be seen to the southeast;

    b) Ninepin Rock light – One white flash every four seconds, nominal range 8NM. This light is located on the southern end of the Chetwode Islands in the entrance to Te Hoiere/Pelorus Sound and is nominally visible only in the southwest quadrant of the application site and will be seen to the southwest;

    c) Stephens Island light – One white flash every six seconds, nominal range 18NM. This light is located to the northwest of the application site, high on Stephens Island and is nominally visible only outside of the westerly edge of the application site.

85. There are four shoal areas that can be considered navigational hazards and that could pose a danger to large and relatively deep-draught vessels and may pose a danger to smaller vessels in poor sea conditions. These hazards will generally influence the navigation of vessels transiting the area:

    a) Shoal water and dangers (e.g. Walker Rock) extending 1NM to the North East from Taonui-a-Kupe/Cape Jackson;

    b) Shoal water and dangers extending 0.2NM around Sentinel Rock;

[20] Marine mammal information extracted from Dr Clement's primary evidence.
[21] Nautical information extracted from Mr MacKenzie's primary evidence.

c) Witts Rock, with a charted depth of 12.2m;

d) Te Mete Mahinga/McManaway Rock with a charted depth of 11.9m.

86. Aside from the headlands and islands mentioned that mark the extremities of the immediate area, the coastline to the south and west of the application site is notable for its rugged lesser headlands, rocky islands, and many inlets and bays. To the north is the open and exposed Raukawakawa/Cook Strait with its well-known sea conditions, currents and changeable weather.

87. Mr MacKenzie (navigation expert for the Applicant) built up plots of vessel movements onto a chart using Automatic Identification System (AIS) data (refer Figure 2). He noted that the chart will not cover all vessels, as AIS is not a requirement for vessels under 300 gross tonnes. However, he stated that in his opinion the chart gives "a good indication of the density and tracking of marine traffic in the area". "Moreover, the non-AIS equipped vessels will be overwhelmingly small craft which are unlikely to stray far from the security of the coastline out towards the application site." This was not challenged, and we accept this.

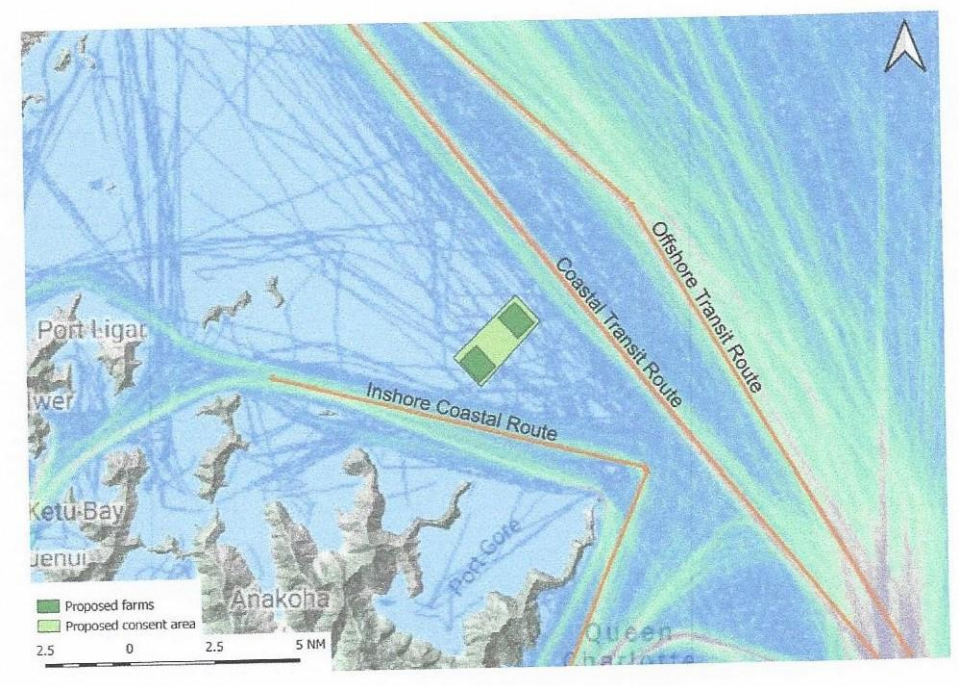

Figure 2: AIS Vessel Traffic with traffic routes overlaid

88. The chart shows three distinct traffic routes:

a) Inshore coastal route – the traffic following the natural transit route created by the headlands extending from Taonui-a-Kupe/Cape Jackson, Waitui Bay, and Forsyth Island, to the entrance to Te Hoiere/Pelorus Sound;

b) Coastal transit route – the traffic following the natural transit route from the north of Stephens Island and the entrance to Raukawakawa/Cook Strait, passing to the south of Witts Rock and the north of Te Mete Mahinga/McManaway Rock;

c) Offshore transit route – the traffic following the natural transit route from the north of Stephens Island and the entrance to Raukawakawa/Cook Strait, passing to the north of Witts Rock.

89. Traffic on the coastal transit and offshore transit routes to the north typically consists of larger vessels undertaking coastal passage through Raukawakawa/Cook Strait – as most of these can be expected to be equipped with AIS, the tracks as shown can be considered reasonably complete. The southern inshore coastal route typically consists of smaller commercial vessels that operate in and out of the Marlborough Sounds, as well as recreational vessels based in the Sounds or, in the summer months, those visiting the area.

90. The site is a blue-water marine recreation setting according to a Department of Conservation (**DOC**) Recreation Opportunity Setting analysis (that is, it is not a coastal setting), and it has no site-specific recreation values other than being within a transit area between Tōtaranui/Queen Charlotte Sound and the northern end of Chetwode Island or the northern area of Rangitoto/D'Urville Island, and near the fishing sites at the McManaway and Witts Rock[22].

91. During the course of the hearing we heard evidence and legal submissions in relation to whether commercial fishing has been and is able to be carried out in and around the site. There was discussion as to whether this commercial fishing formed part of the existing environment, and also whether it is capable of forming part of the permitted baseline for the site.

92. On the basis of the evidence we heard we accept that commercial fishing, in particular bottom trawling, does occur in and around the site, albeit relatively infrequently. We consider that this activity forms part of the existing environment.

93. We acknowledge that commercial fishing is permitted at the site by the Fisheries Act. However, as commercial fishing is not part of the proposal, the permitted baseline argument under section 104(2) is not relevant to our decision[23]. Alternatively, we do not have regard to the permitted baseline under our discretion, and instead have regard to all relevant actual and potential effects of the proposal.

Notification and Affected Parties

94. The application was publicly notified on 18 October 2019. The period for submissions closed at 5.00pm on 16 December 2019. Council received 56 submissions. Of those submissions, 39 were in support, 14 in opposition, and 3 were either neutral or did not specify their stance.

95. Appendix 6 of Mr Johnson's Section 42A Report (s42A Report) provided a detailed summary of submissions in table form including the name of each submitter, whether they supported or opposed the proposal, whether they wished to be heard, and the key points raised in the submissions.

96. We have reviewed the submissions and the summary of submissions table. We consider that the summary of submissions table is generally an accurate account of the points raised in each submission. However, we did note a few issues that were not covered off as outlined below. These were:

    a) **DOC**. Additional issues included: the application placing significant reliance on the development and implementation of management plans after the grant of consent; draft management plans for this activity/site have not been included in the application;

    b) Marlborough Environment Centre (**MEC**). Additional issues included: the need for coastal occupation charges; inshore farms must be removed if open ocean sites are approved; the application is being made at a time of significant planning and policy uncertainty;

    c) Kenepuru and Central Sounds Residents Association (**KCSRA**). Additional issues included: disease risk, biosecurity issues and salmon mortality; confusion over modelling deposition; the need for some sort of bank guarantee (referred to in the Act as a 'bond'); NZCPS Policy 11, 13 and 15 not adequately addressed; and unknown vessel traffic generated by the proposal;

    d) Environmental Defence Society (**EDS**). Additional issues included: concern over the size of the proposal and reliance on adaptive management; it won't meet the s104D gateway test; and biodiversity issues must be fully assessed;

    e) Ministry for Primary Industry (**MPI**). Additional issues included concerns over reliance on management plans to address effects and these have not been drafted; unknown biosecurity risk and biosecurity management options being inadequately addressed. In addition, the fourth point in Mr Johnson's Appendix 6 table is incorrectly referenced – it refers to the proposal "using" a precautionary, adaptive approach to sustainable

[22] Recreational information extracted from Mr Greenaway's primary evidence.

[23] The permitted baseline provides us with the optional means of excluding adverse effects of that activity which would otherwise be inherent in the proposal. Paragraph 91 opening legal submissions.

management. This should read "The proposal "should use" a precautionary, adaptive approach to sustainable management".

f) East Bay Conservation Society (**EBCS**). Additional issues identified included: significant reliance on the development and implementation of management plans after the grant of consent; no draft management plans are provided; contamination of the capes and headlands of the outer sounds including the top of Arapawa Island in the event of a failure/breakup in wild weather; and the proposal should be determined after the PMEP is finalised;

g) Clifford Marchant, Te Anamāhanga/Port Gore Group (**PGG**). Additional issues included: Te Anamāhanga/Port Gore being the receiving environment of the mess from any catastrophic failure; the decision should be delayed until the PMEP is finalised; conditions should specify that service vessels, barges and pen structures are excluded from waters of Te Anamāhanga/Port Gore;

h) Sea Sheppard NZ. Additional issues included the need to adopt a precautionary approach (and decline the application).

i) Royal Forest and Bird Protection Society of NZ Incorporated (**RFBPS**). Additional issues identified included: possible significant adverse effects on natural character, landscape, seascape, benthos, marine environment and marine fauna; and the proposal is inconsistent with listed objective and policies of the RPS, MSRMP, and PMEP;

j) Southern Inshore Fisheries Management Co. Ltd and Challenger Scallop Enhancement Company Ltd (**SIFM&CSE**). Additional issues included: a reduction in fish stock available for fishing; dispersal of effluent onto nearby finfish and shellfish beds; monitoring needs to be in adjacent areas not just beneath the farm; testing of seabed effects needs to be made public on MDC website; concerns about lighting maintenance; concerns about the safety and security of the structures;

k) McGuiness Institute. Additional issues included: negative impacts on outstanding natural character, landscape and visual effects.

97. Many of the issues outlined above were expanded on by submitters during the hearing process as discussed further below. No party raised concerns about inaccuracies in the table during the hearing. Subject to the refinements we listed above, we accept the summary of submissions provided in Appendix 6 of Mr Johnson's s42A Report and adopt it for our decision.

98. Further information with respect to the submissions of parties who attended the hearing is outlined below. We noted that several of the issues raised in the submissions were addressed via the revised proposal that was submitted on 10 August 2021.

99. Affected party approval has been given by the nearest private landowner (Waitui Holdings Limited) in the vicinity of the site, owning Pouataikino/Alligator Head up to Puzzle Peak and across into Te Anamāhanga/Port Gore.

The Hearing and Appearances

100. The hearing commenced at 9.00 am on Monday 18 October 2021 in the Council Chambers[24] at the Marlborough District Council (MDC). We heard from 63 people over the course of 11 days. The hearing dates were:

a) Monday 18 October 2021 to Friday 22 October 2021;

b) Wednesday 1 December 2021 and Thursday 2 December 2021;

c) Tuesday 21 December 2021;

d) Tuesday 26 April and Wednesday 27 April 2022; and

e) Friday 29 April 2022.

[24] On Wednesday 30 October 2021 we sat at the ASB Theatre for the day to enable Zoom issues to be resolved.

101. We adjourned the hearing on Friday 29 April 2022 to enable further circulation of evidence and proposed conditions and to enable the Applicant to provide a written Right of Reply. There were several adjournments to enable the provision of further information and expert caucusing. Further details with respect to the course of the hearing including the reasons for adjournment are outlined in the Minutes in Appendix 4 of our decision.

102. During the hearing from Monday 18 October 2021 to Tuesday 21 December 2021, we heard from the following parties:

The Applicant:

- Ms Sally Gepp - Legal Counsel, NZKS;
- Mr Quentin Davies - Solicitor, Gascoigne Wicks;
- Mr Mark Preece – Seawater Operations Manager, NZKS;
- Mr Paul McIntyre – Sustainability and Stakeholder Manager, NZKS;
- Ms Jemma McCowan – General Manager, Brands and Sustainability, NZKS;
- Dr Zachary Waddington – Fish Health and Welfare Manager, NZKS;
- Dr Lauren Fletcher – Marine Ecologist, Cawthron Institute;
- Dr Benjamin Diggles – Aquatic Animal Health Consultant, DigsFish Services Pty Ltd;
- Dr Della Bennet – Senior Avifauna Ecologist, Wildland Consultants Ltd;
- Dr Deanna Clement – Marine Ecologist, Cawthron Institute;
- Mr Duncan McKenzie – Lead Consultant, Navigatus Consulting Limited;
- Mr Kai Karstensen – Vice President Corporate Projects and Floating Constructions, ScaleAQ Norway;
- Mr Martin Sõreide – Technical Director of Marine Engineering, ScaleAQ;
- Mr Gary Teear – Managing Director, Offshore and Coastal Engineering Limited;
- Mr Geraint Bermingham – Risk Management Consultant and Professional Engineer, Navigatus Consulting Limited;
- Mr Paul Taylor – Wild Fish Consultant, Statfishtics Limited;
- Dr Tim Dempster – Professor of Marine Biology and Aquaculture, University of Melbourne, Australia;
- Mr Ben Knight – Marine Biophysical Scientist, Cawthron;
- Mr Rob Greenaway – Director, Rob Greenaway and Associates;
- Dr Don Morisey – Senior Coastal Scientist, Cawthron Institute;
- Dr Malcolm Smeaton – Oceanographer, Cawthron Institute;
- Dr Nigel Keeley – Senior Scientist, (part time) Cawthron Institute and Researcher Institute of Marine Research, Norway;
- Dr Ben Robertson – Director, Robertson Environmental Limited;

- Mr John Hudson – Landscape Architect and Principal, Hudson Associates;
- Dr Bill Kaye-Blake – Principal Economist, NZ Institute of Economic Research;
- Ms Bridgette Munro – Director, Enspire Consulting Limited.

Mr Grant Rosewarne CEO and Managing Director of NZKS was present during parts of the hearing but did not present evidence.

The Submitters:

- Mr Gary Hooper - CEO Aquaculture NZ;
- Mr Julian Ironside - Barrister;
- Ms Claire Pinder – Treasurer, Guardians of the Sounds (GOS);
- Mrs Haneke Kroon – Marine Committee Member, KCSRA;
- Ms Bev Doole – MEC;
- Mr Peter Coldwell – General Manager, Marlborough Chamber of Commerce;
- Ms Bryony Miller – Principal Marine and Freshwater Ecologist, e3Scientific Limited;
- Mr Clifford Marchant – PGG;
- Mr Robert Schuckard – Ornithology Expert, Friends of the Nelson Haven and Tasman Bay Incorporated (**FNHTB**);
- Mr Raymond Smith – Environmental Manager, Ngāti Kuia;
- Mr Leroy Mason – Chairperson, Ngāti Kuia;
- Mr Laws Lawson – Te Ohu Kaimoana;
- Mr Morgan Slyfield - Counsel, McGuinness Institute;
- Ms Wendy McGuinness – Chief Executive, McGuinness Institute;
- Dr Elisabeth Slooten – Professor Emeritus University of Otago;
- Ms Abby Bradford – Legal Counsel, MPI;
- Mr Daniel Lees – Manager of Aquaculture and Development, MPI;
- Dr Philip Heath – Principal Scientist, MPI;
- Dr Daniel Kluza – Principal Adviser, Biosecurity NZ (a business unit of MPI);
- Mr Matt Pemberton – In-house Lawyer, Director General of Conservation (DGC);
- Mr Andrew Baxter – Technical Advisor (Marine), DOC;
- Dr Niall Broekhuizen – Principal Scientist Ecological Modelling, National Institute of Water and Atmospheric Research (NIWA);
- Dr Tara Anderson – Marine Ecology Scientist, DOC;
- Ms Nardia Yozin – Senior RMA Planner, DOC;

- Mr William Jennings – Counsel, RFBPS;
- Ms Deborah Martin – Regional Conservation Manager, RFBPS.

Council Reporting Officers:

- Mr John Oldman – Principal Coastal Scientist, DHI Water and Environmental Ltd;
- Dr Peter Wilson – Principal Coastal Scientist, 4Sight Consulting;
- Mr Rob Davidson – Director, Davidson Environmental Ltd;
- Dr Hilke Giles – Coastal and Systems Scientist, Pisces Consulting Ltd;
- Professor Stephen Wing – Department of Marine Science – University of Otago;
- Ms Helen McConnell – Principal Consultant, SLR Consulting Ltd;
- Mr Luke Grogan – Harbourmaster, MDC;
- Mr James Bentley – Senior Principal Landscape Architect, Boffa Miskell Ltd;
- Mr Peter Johnson – Environmental Planner, MDC.

Dr Mark Morrison – Marine Scientist, NIWA provided evidence for MDC but did not attend the hearing.

Dr Andrew Lohrer – Marine Ecologist, NIWA provided evidence in the form of letter on behalf of the MDC but did not attend the hearing.

Applicant

103. Ms Gepp opened the proceedings for the Applicant's case by providing an overview of the proposal and ecological considerations. This included reference to an assessment of alternatives, mesh size of the grower net (MPI guidance suggests a maximum underwater mesh size of 60mm on the bar), minimising lighting, types of service vessels and feeding regimes. Also, it identified effects on benthos, marine mammals and seabirds as important considerations. Ms Gepp considered sufficient baseline information was provided to support a consent decision. She commented on benthic standards and objectives in benthic conditions that changed considerably during the course of the hearing.

104. Mr Davies' **legal submissions** acknowledged tangata whenua and introduced the framework of the case, noting that the Applicant does not seek recourse to Part 2 of the RMA, as Part 2 is given effect to in the coastal environment through the planning instruments. We accept this, but have undertaken an assessment of Part 2 on a precautionary basis below. Mr Davies addressed the parameters of the proposal, and the activity status, saying that the application is for the activity of marine farming which is a non-complying activity pursuant to Rule 35.5 of the MSRMP and that this approach covers all aspects of the marine farming activity (the omnibus approach). This was not disputed by the parties and we accept this approach to the Application.

105. We also accept Mr Davies' argument that the barges associated with the proposal are not ships because they are not used in navigation. However, we note that the Applicant has volunteered to adopt the regulatory approach to the engineering and safety of ships in the conditions of consent.

106. The legal submissions covered section 104D matters, and consideration of the proposal under sections 104,104B, 105 and 107. This covered the existing environment, the permitted baseline, precedent effects, actual and potential effects on the environment, tangata whenua, aquaculture settlement regime, Marine and Coastal Area (Takutai Moana) Act claims, safety management, and commercial fishing.

107. The legal submissions also addressed section 104(1)(b) – policy statements and plans. This covered an approach to interpreting policy statements and plans, uncertainty and the RMA, risk, Variation 1 and 1A of the PMEP, PMEP, landscape mapping, MSRMP, MRPS, relevant provisions of the NZCPS. The latter drew out matters that Mr Davies considered to be relevant when assessing indigenous biological diversity (Policy 11), natural character (Policy 13), and landscapes (Policy 15).

108. The submissions discussed other matters, other approvals required under other legislation, adaptive management, coastal occupation charges, bonds, exclusive occupation, impacts on public access, "leap frogging" the planning process, and the relevance of existing compliance.

109. Mr Preece provided primary evidence, rebuttal evidence and supplementary evidence relating to the **operation of the proposed salmon farm**.

110. His primary evidence[25] described the company's current salmon farms including smolt production and transfer, seafarms overview, mortality management, fish welfare, harvesting, processing and distribution. He discussed the factors considered in selecting the site which included operational requirements (shelter, engineering limits and temperature) and siting the proposal away from ecologically significant marine site and overlays, navigation routes, marine mammal migration routes and Kawau (King shag) feeding areas. Outstanding natural landscape, natural character and benthic ecosystems were also considered. Paragraphs 53 to 55 describe the benthic information that was considered. He stated that the company "aimed to site the pens over the habitat that is most suitable for salmon farming, and to avoid biogenic habitat so far as possible[26]".

111. It is worth noting that NZKS sought to establish a deep water salmon farm location offshore, partly in response to community concerns over the effects of their operations in the Marlborough Sounds. By careful selection of the Site, we find (for reasons set out below) that NZKS was able to avoid, remedy and mitigate a number of the key potential effects arising from the proposal. In our view, the Site selected was, on the evidence, a suitable and appropriate location.

112. Mr Preece considered the proposal helps to implement the New Zealand Government Aquaculture Strategy 2019 (**Aquaculture Strategy 2019**).

113. Mr Preece outlined how the proposal will operate. It will work in conjunction with existing facilities. He described the mooring grid and pens which house the salmon, including a detailed description of net mesh size. He noted, the nets which contain the salmon generally have the meshes sized to avoid any animal entanglement – salmon, wild fish, birds and mammals. Half mesh internal aperture is of most relevance as it focuses on the size of the opening of the mesh and is independent of twine size. It is this measurement that is critical to avoid entanglement.

114. His evidence described the characteristics of the barges and how they will operate and discussed the classification and maintenance of the mooring systems, pens and barges, including three monthly post deployment checks, routine maintenance checks and "special event" inspections.

115. Mr Preece outlined how fish feeding will occur and possible feeding regimes, including methods and limits.

116. His evidence addressed lighting (navigation, barge and underwater), vessel movements, managing day-to-day operations, and waste management. Mr Preece provided us with a draft waste management plan at the hearing.

117. Mr Preece commented on operational responses to potential environment effects (structural integrity and safety of the pens and mooring systems, navigational safety, marine mammals and sharks, seabirds, biosecurity, benthic, and landscape and natural character). He also responded to the Council's s42A Reports (marine mammals, seabirds, biofouling, benthic

[25] Provided with the aid of a visual presentation.
[26] Paragraph 68 primary evidence.

framework, navigational safety, light and noise, the relationship between inshore sites and offshore sites, moorings for monitoring equipment, barge design and domestic wastewater).

118. Mr Preece stated that the 168m pen has been modelled and is a good fit for the anticipated production volume. He clarified that this proposal is for pens up to 240m internal circumference, acknowledging that should the company wish to deploy these larger pens, it will do so only after going through the necessary modelling, design and structures classification/certification process that any consent conditions may require. The increase in pen size would not result in an increase in food discharge levels (and hence salmon waste).

119. Mr Sõreide's evidence (for the Applicant) confirmed that 168m pens had been modelled. He stated there will need to be an engineering certification process before the pen size could be increased (to up to 240m circumference). Such a step will be required under class society rules.

120. We consider that it is appropriate to include a consent condition specifying that the internal circumference of the pens shall not exceed 168m in length as this is the size that was modelled and the technical evidence is based on this. As this is a condition of consent, the Consent Holder is able to apply for a variation to the conditions to increase the pens size with the appropriate supporting information. We consider this is a precautionary approach that enables the company to operate to its anticipated production volume, but provides options to expand based on supporting evidence.

121. The final section of his evidence responded to submission points (alternatives considered, relationship with inshore salmon farms, Te Anamāhanga/Port Gore issues, structural integrity, biosecurity, lack of infrastructure and capacity to farm offshore, seabirds and marine mammals).

122. Mr Preece's rebuttal evidence responded to the evidence of Ms Miller (salmon food digestibility and wastage), Dr Heath (predator net mesh size, alignment with *Finfish Open Ocean Aquaculture Guidelines* with respect to baseline monitoring and monitoring data availability), Mr Schuckard (temperature profile, modelling, amount of food to be discharged, volume of nets, maximum standing biomass, nitrogen discharge), and Mr Baxter (proposed conditions allow for very high marine ecological naturalness in the deposition area to be significantly altered). Mr Preece's response to the latter point formed the basis for the staged farming approach outlined in the conditions of consent. This approach was refined through further evidence and joint witness statements over the course of the hearing as outlined below.

123. His supplementary evidence set out hypothetical food consumption at a single farm to illustrate the relationship between the 10,000mt per year limit and two monthly limit options being 1,143mt per month and 2,286mt per month, noting that there were a number of ways that each farm could be farmed to achieve these limits.

124. Mr McIntyre's evidence summarised the **consultation process** undertaken by the Applicant, particularly regarding the pre-hearing meeting process and iwi consultation.

125. Ms McCowan's evidence discussed the **company brands** (NZKS, Ōra King, Regal and Southern Ocean), community involvement, company accreditations, including with the Monterey Bay Seafood Watch Program which helps seafood buyers make choices for healthy oceans.

126. Dr Waddington's evidence addressed biosecurity aspects of the proposal in terms of **fish disease and pests or harmful aquatic organisms (HAO) from an operational perspective**. His evidence discussed biosecurity generally referring to the implementation of a Biosecurity Management Plan (**BMP**) attached to his evidence. It outlined standard operating procedures referenced in the BMP and provided a practical example of biosecurity practices (spawning, eyed-egg transport, smolt rearing, smolt transfer to in-shore nursery sea site, juvenile fish transferred to the site to grow out, harvest fish transferred to dedicated harvest site, harvesting, and processing).

127. Dr Waddington addressed the management of HAO risks, and fish disease, and provided a brief response to submissions.

128. Dr Fletcher provided an assessment of **biosecurity-related risks** to the marine environment associated with the proposal, including the potential for marine pest species to be introduced to, and/or spread within the wider Marlborough Region. The focus of her evidence was on risks from macroscopic species (i.e. generally those that are conspicuous to the naked eye).

129. The evidence described the proposal (pens, mooring layouts and net systems, vessel movements, management plans), and biosecurity risks and finfish aquaculture (overview of marine biosecurity management in New Zealand, transport vectors associated with finfish aquaculture, farm-scale biosecurity risks). It addressed existing regional biosecurity risks (existing populations of non-indigenous species, existing aquaculture activities in the Marlborough region, activities unrelated to aquaculture).

130. Her evidence included an assessment of effects (marine pest risks), noting that potential effects are summarised in Table 2 of the Biosecurity Report[27]. The assessment covered transfer of marine pests via vessel or structure movements; equipment of gear movements; stock movements; facilitation of marine pest establishment through changes to the local environment, and increased abundance and spread of marine pests from the creation of novel habitat.

131. She addressed risk mitigation measures for marine pests (referencing section 5 of the Biosecurity Report), biosecurity management plan, consent conditions, effects of the proposal in terms of NZCPS Policy 12, and response to submissions and the s42A Report.

132. Dr Diggles appeared on zoom. His evidence focused on his assessment of **salmon and wild fish disease risks** potentially arising from the proposal but he also addressed **biosecurity as it relates to fish diseases**. Dr Diggles noted that he authored the Disease Risk Assessment Report (20 February 2019)[28].

133. His evidence summarised the findings of the report. This included an assessment of effects – disease risk (disease agents in global salmon seapen culture, interactions with indigenous biological diversity of wild fish), and risk mitigation. Dr Diggles also responded to submissions (disease risk for wild fish, disease and mortality of farmed fish, biosecurity management plan content, biosecurity and fish health and animal welfare benefits). He provided brief comment on the s42A Reports of Dr Wilson and Dr Oldman with regard to modelling used for oxygen depletion, and Mr Wing with regard to potential for transmission of parasites between wild and farmed fish.

134. Dr Bennet provided primary evidence and rebuttal evidence in relation to her assessment of effects of the application on **seabirds**. Her assessment considered the seabird assessment lodged with the application[29], and MPI's draft Guidelines for Managing Potential Effects of Open Ocean Aquaculture on Seabirds 2021 (**Seabird Guidelines 2021**).

135. Her evidence summarised relevant aspects of the proposal, and described the seabird species in the Marlborough Sounds/Raukawakawa/Cook Strait area including threatened and at risk species known to utilise this area. Dr Bennet provided an assessment of effects on seabirds based on a review of relevant literature (habitat exclusion, benthos effects, changes in abundance of wild fish, provision of roosts, disturbance, ingestion of foreign objects and debris, entanglement, lighting, and collision with farm structures). She outlined risk mitigation measures and addressed a draft Seabird Management Plan that was appended to her evidence as well as the Seabird Guidelines 2021.

136. Dr Bennet responded to seabird matters raised in submissions including foraging and distribution, effects on wild fish, effects of lighting, undetermined overall structure, general risks, and the submission of Ngāti Kuia. She concluded with a response to a question raised in the s42A Report (visibility of nets).

137. Dr Bennet's rebuttal evidence responded to aspects of the expert evidence filed by Dr Heath and Mr Schuckard.

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[27] Supplied as Appendix K in parts of the original application still relevant.
[28] Supplied as Appendix L in parts of the original application still relevant.
[29] Authored by Dr Rachael McClellan from Wildlands Consultants Limited.

138. Dr Clement produced primary evidence and rebuttal evidence in relation to her assessment of effects of the application on **marine mammals**. The evidence outlined relevant aspects of the proposal (pens and mooring layout, net systems, barge systems, lighting, antifoul on nets, antibiotics and therapeutics (not being used)), and the existing environment (approach, marine mammals in the wider Raukawakawa/Cook Strait region, summary overview).

139. Her assessment of effects on marine mammals addressed habitat exclusion or attraction, entanglement, underwater noise disturbance, artificial lighting, possible flow on effects due to alterations in trophic pathways, and cumulative impacts. Dr Clement discussed recommended mitigation measures and monitoring with reference to a draft Marine Mammal and Shark Management Plan (draft MMSMP) appended to her evidence before addressing points raised in submissions (limited data, migrating whales, farm design and staging concerns, cooperative feeding strategies of dolphins). She responded to the s42A Report of Ms McConnell (potential effects, recommendations for the draft MMSMP, recommendations for monitoring).

140. Dr Clement's rebuttal evidence responded to the evidence of Dr Heath (discrepancy in draft MMSMP and SMP mesh size), and Assoc. Professor Slooten (potential effects on marine mammals, 'before and after' experimentally designed studies, use of existing data, assessment approach, entanglement records, Hector's and Maui dolphin, structure and operation of the farm).

141. Mr McKenzie prepared an assessment of **navigation effects**. This assessment included a description of possible vessel movements associated with the farms, a risk assessment report (attached as Appendix 2) and a draft Navigation Risk Management Plan (**draft NRMP**) (attached as Appendix 3 of his evidence).

142. His evidence outlined the risk assessment methodology, an overview of the environment and the proposal (location, study area, sea and wind conditions, boat traffic, (offshore, coastal and inshore transit routes), proposal summary). The navigation risk assessment addressed general risks, specific risks associated with the proposal, development site risk identification, and risk mitigation. Mr McKenzie outlined residual risks given implementation of the mitigation measures (high residual risk, medium residual risk), and benefits of the proposal.

143. The evidence summarised the content of the draft NRMP, and discussed effects and outcomes (in the context of the RMA and relevant policy and planning documents, existing characteristics of the area in terms of navigation safety and public access). It also addressed potential effects on navigation and safety of other users of the area (adverse effects, positive effects, rating of effects), proposed consent conditions, and responded to submissions (recreational use and navigation routes, vessel movement and duration, navigational lighting) and the s42A Report (Mr Grogan and Mr Johnson).

144. Mr Karstensen appeared on zoom from Norway. He provided evidence regarding **engineering design of the proposed barges**. This covered the design process, barge design aspects, and maintenance. He also responded to submissions and the evidence of Mr Grogan (barge colour, classification society).

145. Mr Sõreide appeared on zoom from Norway. His evidence addressed **engineering design of the farm structures** (pens, nets and moorings). This included the design process, the structures and assumptions, Norwegian and European Standards, modelling testing of the pens, mooring chain movement, tsunami and breakaway of structures. He provided a conclusion on design with reference to a Mooring Analysis Report attached to his evidence, and addressed maintenance, and relocation of pens between sites.

146. Mr Sõreide responded to submissions (use of structures overseas and particularly in exposed locations, maintenance requirements, breakaway) and the s42A Report (classification, pen movement behavior). His supplementary evidence provided further information on farms operating in conditions similar to the proposal site[30].

[30] This was provided subject to a confidentiality order, as outlined in the minutes attached to this decision (our Appendix 4).

147. Mr Teear supplied primary evidence and supplementary evidence in relation to **structural integrity** of the farms. At the hearing he noted that he was the New Zealand based auditor of the ScaleAQ work. His evidence addressed the proposal and the farm structures, site description and characterisation, ScaleAQ design and design process (including tsunami design case), underlying strata, anchor drag and mooring chain movement (anchor installation, anchor chains), overall conclusion on design, and maintenance of structures. Mr Teear discussed the proposed conditions, submission points, and the s42A Report comments relating to engineering design.

148. Mr Teear's supplementary evidence addressed the structures assessed by ScaleAQ, how his assessment provided for a range of alternative anchors up to 6 tonnes in size depending on the substrata at the site, steps taken to reduce risk (how the coring work will confirm which anchors should be used at the site, how a pull-out test will give further confidence that the right structures has been chosen, how the position of the farm structures will be monitored to ensure that they are located and moving as intended, which component in the mooring system is the most likely point of failure, based on the factors of safety in the ScaleAQ report, oversight from an internationally recognised organization).

149. Included with Mr Teear's evidence was a report (Raukawakawa/Cook Strait Finfish Farm Hindcast Wave Summary prepared by MetOcean Solutions September 2021), which Mr Teear referenced.

150. Mr Bermingham's evidence covered the proposed **classification regime** for the proposal structures which captures design, build and through life assurance. He described safety case regimes, and addressed engineering assurance, scope of assurance for the proposal, overview of classification societies, classification societies available to the development, and justification for classification. Mr Bermingham provided comment on the proposed conditions, responded to the Maritime New Zealand (MNZ) letter included in the s42A Report[31] and Mr Grogan's s42A Report.

151. Mr Taylor provided primary evidence and supplementary evidence focusing on **wild fish habitats (benthic and pelagic)**. He was the co-author of the Wild Fish Report (**WFR**)[32].

152. His primary evidence addressed the existing environment (ocean habitats and species types, pelagic and benthic habitats at the site), fish present or potentially present at the site (pelagic species, benthic species, rationale for the presence of teleost[33] species, further information not presented in the WFR, sharks), ecosystem productivity and feeding in pelagic finfish species. It provided an overview of relevant aspects of the proposal, and outlined potential effects of marine fish farms on wild fish and their causes (types of effects, vulnerability of wild fish to marine fish farms).

153. Mr Taylor provided an assessment **of effects of the proposal on wild fish generally** (aggregation, benthic habitat, diet, attraction to farm structure, attraction of sharks, effects on quota species, effects on recreational species, customary fishing, commercial scallop catch), and an assessment of effects on sharks (potential effects, level of effect at the site). The evidence also discussed the relevance of a no-fishing restriction at the site, commented on the NZCPS, responded to s42A Reports (Professor Wing and Dr Morrison) and submissions (FNHTB, SIF), and discussed other issues (monitoring and investigation, best management practice document).

154. His supplementary evidence responded to Dr Anderson's evidence in relation to juvenile fish habitat on top of the bank midway between the two farms and reiterated points from other issues in his primary evidence.

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[31] Appendix 8 of Mr Johnson's s42A Report.

[32] *Effects of salmon farming on the pelagic habitat and fish fauna of an area in north western Raukawakawa/Raukawakawa/Cook Strait and management options for avoiding, remedying and mitigating adverse effects.* Paul Taylor and Tim Dempster July 2019. Supplied in the original application (still relevant to this proposal).

[33] The largest infraclass in the class Actinopterygii, the ray-finned fishes, containing 96% of all extant species of fish (Wikipedia).

155. Dr Dempster produced primary and rebuttal evidence relating to the importance of **feed management in managing effects on wild fish** and how feed loss can be managed and measured. He was the co-author of the WFR.

156. His evidence addressed why feed loss and feed management is important, available feed management technologies, best practice feed loss study methods, principles for a feed loss study at the site. He also responded to the s42A Reports (Dr Morrison and Professor Wing) and the submissions of Ngāti Kuia (customary fishing), NZ Sport Fishing Association (fishing at Witts Rock and Te Mete Mahinga/McManaway Rock), and SIF & Challenger Scallop Enhancement Co Ltd (exclusion of commercial fishing).

157. His rebuttal evidence responded to the evidence of Ms Miller (feed loss), and Dr Heath (wild fish monitoring program).

158. Mr Knight provided primary evidence and rebuttal evidence on the **water column environment**. He outlined the proposal and the existing environment (natural character of the water column). His assessment of effects focused on nutrient releases and oxygen use by farmed fish. This assessment outlined modelling, model comparison to measurements, comparison of updated modelling to previous modelling, effects on phytoplankton, potential for trophic state changes, dissolved oxygen changes, comparisons to Tory Channel farm effects, and additional dissolved oxygen analysis and assessment. He also addressed effects management, mitigation and monitoring before responding to submissions (modelling, data and scale of modelling, nutrient exchange, reversibility of effects, harmful algal blooms) and the s42A Reports (Mr Oldman's modelling report, Dr Wilson's water column effects report and Mr Johnson planning report).

159. A draft Water Column Monitoring and Management Plan for the proposal was included with his evidence. His rebuttal evidence responded to the evidence of Mr Schuckard (scale of nitrogen inputs, effects of climate change on harmful algal blooms, ability of monitoring to assess salmon aquaculture influence on harmful algal blooms) and Dr Broekhuizen (water quality modelling and inference).

160. Mr Greenaway's evidence addressed potential effects of the proposal on **recreation and tourism**. It outlined the scope of his assessment[34] and relevant planning matters (RMA, NZCPS, RPS, MSRMP, PMEP), attributes of the study area (terrestrial recreation, marine recreation demand generally, fishing, boating and boat passage, diving, surfing, tourism, conclusion as to recreation amenity). It addressed the recreational opportunity spectrum and the findings of his assessment with respect to natural character and amenity, fishing, navigation safety. He responded to the submissions of the KCSRA and New Zealand Sports Fishing Council (**NZSFC**), and relevant sections of the s42A Report (Mr Johnson with respect to public access, Mr Grogan with respect to the merits of enhanced visibility, exclusion zone), Mr Bentley (amenity values).

161. He provided supplementary evidence that reviewed the graphic supplement showing the proposed 70m barge produced by Mr Hudson in response to Minute 2. This review did not change the findings in Mr Greenaway's primary evidence.

162. Dr Morrisey produced primary evidence, supplementary evidence, rebuttal evidence and further information. He was also involved in assessment of seabed effects work.

163. His primary evidence covered the **ecological importance of habitats** in and around the site in relation to the NZCPS and PMEP. It addressed the revised proposal and assessment of seabed effects, classification of benthic habitats against policy and planning documents (NZCPS Policies 11(a)(i-vi), low-density epifauna, classifications against NZCPS Policies 11(b)(i-vi), classification of Te Mete Mahinga/McManaway Rock against Policy 11 areas and values, and classification against the PMEP. He responded to the s42A Reports (Dr Lohrer, Mr Davidson, Dr Morrison). A Cawthron Report No.3407 entitled *Biology and Ecology of Horse*

[34] Mr Greenaway was the author of the *NZKS Blue Endeavour Salmon Farm Proposal Recreation and Tourism Assessment* Report, August 2021 provided as part of the submitter engagement package.

Mussels (Atrina Zelandica) with reference to the outer Marlborough Sounds was appended to his evidence[35].

164. Dr Morrisey's supplementary evidence addressed the **potential benthic effects of anchor structures**, including potential adverse effects, area impacted by anchors, anchor setting, anchor chain sweep, assessment of effects, potential beneficial effects of the presence of anchors and other farm structures, and effects mitigation and monitoring. He responded to the s42A Reports of Dr Lohrer, Mr Davidson and Dr Morrison.

165. His rebuttal evidence responded to the evidence of Dr Anderson and Ms Miller and covered the robustness of habitat definitions in relation to NZCPS Policy 11, the presence of indigenous vegetation at the proposed farm site, national significance of isolated Raukawakawa/Cook Strait reefs and other matters relating to Te Mete Mahinga/McManaway Rock.

166. Dr Morrisey's further information responded to the submission of Ms Doole (MEC), and covered information on horse mussel beds, barge anchors, addition of topographic data to Figure 2 from the benthic workshop, and mapping of the area receiving solids flux equivalent to enrichment state 3.5 or more.

167. We note here that the benthic habitat mapping and mapping of the area of deposition, including allowance for depositional uncertainty, were amended over the course of the hearing, primarily via further field work and further work undertaken by the relevant experts (refer to the joint witness statement section below).

168. Dr Smeaton produced primary evidence, supplementary evidence, and rebuttal evidence covering **physical oceanography (waves and currents)** and **modelling work undertaken to predict the pattern of waste deposited to the seabed**.

169. His primary evidence described the waves and currents at the site, depositional modelling (particle dynamics, particle mass and decay, linking model outputs to ecology, model outputs, limitations to the VenOM model). He also addressed points raised during the benthic workshop 30 August 2021 (closeness of model to steady-state, max/min solids flux, max/min residual solids, probability of resuspension threshold exceedance, effects of seasonality of currents, appropriateness of the digestibility coefficient). He responded to submissions (modelling) and the s42A Report of Mr Oldman.

170. His rebuttal evidence responded to the evidence of Dr Niall Broekhuizen (benthic modelling), and Ms Miller (benthic modelling). Dr Seaton responded to questions at the hearing in his supplementary evidence and addressed the effects of pausing feeding during storm conditions, surface-only feed release model sensitivity.

171. Dr Keeley supplied primary evidence, supplementary evidence, and rebuttal evidence relating to the **potential benthic effects** of the proposal.

172. His primary addressed the revised proposal description (location and structures, feed discharge, management plans), Cawthron benthic surveys and reports, seabed characterisation, depositional model results, assessment of benthic effects (effects from organic enrichment on soft sediment communities and epibiota (biogenic habitat, low density epifauna, transitional habitat), other effects, potential beneficial ecological effects).

173. It also addressed NZCPS Policy 11, effects mitigation, management and monitoring, and responded to submissions and issues raised by pre-hearing meetings and benthic workshops[36] and questions raised by Dr Anderson as part of the prehearing work. The response addressed horse mussel distributions specifically in relation to the modelled footprint, likelihood that horse mussels will be impacted, clump reef within the modelled footprint, general comment on uncertainty in the application, notes on uncertainty associated with the predicted effects boundaries, spatial extent of effects in relation to the nearby features including Te Mete Mahinga/McManaway Rock, reversibility of effects, ability to effectively monitor biogenic and reef habitats at the site, parameters and specificity.

[35] He was a co-author of this report.
[36] 30 August and 7 September 2021 – prehearing.

174. He responded to the s42A Reports (Mr Davidson, Dr Lohrer, Mr Oldman, Dr Giles, Dr Morrison). A draft Baseline Environmental Monitoring Plan was appended to his primary evidence along with other supporting appendices.

175. His rebuttal evidence responded to issues raised in the evidence of Ms Miller, Dr Anderson, Mr Baxter, Dr Broekhuizen, and Mr Schuckard.

176. Dr Keeley's supplementary evidence addressed four issues in respect to which the Panel had requested further information (proportion of clump reef within the total modelled footprint under a maximum 1,143 tonnes of feed per month per block scenario, current enrichment state of the soft sediment habitats at the site, can an enrichment state number be included as a condition of consent, different modelled footprints between 1,143 tonnes feed per month and 2,286 tonnes per month).

177. Dr Robertson supplied evidence covering field survey work and the **effects of organic waste on 'far-field' benthic habitat**[37]. He was also the author of the *Blue Endeavour Seabed Investigation Report* December 2020[38].

178. The evidence addressed the revised proposal, described the existing seabed environment, seabed investigation (survey methodology, results, results comparison), assessment of potential cumulative effects on far-field biogenic habitat (habitat values and significance, cumulative effects assessment, review of proposed conditions (relating to benthic habitat matters). Also, it responded to the s42A Reports (Dr Lohrer, Mr Davidson, Dr Morrison, Mr Oldman).

179. Mr Hudson provided primary evidence, supplementary evidence, and rebuttal evidence relating to the **landscape, natural character and amenity effects** of the proposal. He also provided a graphic supplement showing images of the 70m barges overlaid on the seascapes from various viewpoints.

180. His primary evidence outlined his assessment method and key findings, the planning framework, his assessment[39] based on seven key issues (relevant landscape character and natural character for assessing effects, key values of landscape character and natural character at each identified landscape scale, identified ONFLs and ONCs and High Amenity Landscapes (HAL), adverse effects on ONFLs and ONCs and HALs, does the project cause significant adverse effects on landscape character and natural character areas, cumulative effects, does the proposal meet the requirements of relevant statutory provisions). His evidence addressed other relevant matters including cultural matters, comments on submissions (amenity effects for recreational fishers, effects on seascapes, effects on Te Anamāhanga/Port Gore, connection with the land, is the area 'untouched', appropriate mitigation measures), and response to the s42A Report of Mr Bentley.

181. His supplementary evidence attached drawings showing the relationship between the farm structures and the landscape character overlays. Mr Hudson's rebuttal evidence responded to issues raised in the evidence of Mr Baxter (the concept of natural character, pristine benchmark for natural character, preservation of natural character, context and scale, consideration of benthic habitat, presence of trawling).

182. Dr Kaye-Blake supplied primary evidence, supplementary evidence, and rebuttal evidence relating to his **cost benefit assessment** of the proposal. His primary evidence covered details of the analysis, summary of the cost benefit assessment method, preparing the economic model, solving the economic model, non-market impacts, economic valuation of non-market impacts, results of CBA, comments on submissions (effect on GDP, employment, McGuiness Institute submission, effects on commercial fishing, NZ Government Aquaculture Strategy).

183. His rebuttal evidence referred to expert evidence filed by submitters to identify potential effects on the CBA. This assessment did not result in a change to Mr Kaye-Blake's CBA results. His

[37] Identified in the application benthic mapping material as Areas A and B.
[38] Part of the package of information supplied in the Submitter Engagement Package.
[39] Mr Hudson was the author of the *Landscape Character Assessment Proposed Blue Endeavour Salmon Farm* Report August 2021 supplied in the submitter engagement package.

supplementary evidence provided the map of the Whakatū/Nelson Bays area used in Cole, et al. (2018) referenced in his primary evidence.

184. Ms Munro provided primary evidence, supplementary evidence, and rebuttal evidence relating to **planning matters**. Her primary evidence addressed resource consents required, the existing environment, relevant statutory planning instruments (NZCPS, MSRMP, PMEP including Variation 1 and 1A), her planning assessment of the relevant objectives and policies within those planning instruments. Also, it provided a planning response to submissions (MEC, KCSRA, EDS, EBCS, RFBPS, DOC) and commented on the proposed conditions, before addressing section 104D and Part 2 of the Act. The annexures to the evidence included more detail with respect to the planning provisions considered and a copy of the proposed consent conditions.

185. Ms Munro's supplementary evidence identified PMEP provisions that expressly provide for minor or transitory effects and, in terms of the section 104D assessment, the most directive policies within the MSRMP, PMEP including Variations 1 and 1A. Her rebuttal evidence responded to the planning evidence of Ms Yozin (areas of agreement, assessment of rules to variations 1 and 1A PMEP, clarification section 4.18 of her evidence in chief, assessment of effects).

Submitters

186. Mr Hooper tabled evidence in support of the proposal on behalf of **Aquaculture NZ**. This provided an overview of Aquaculture in NZ (global demand, revenue, employment, social benefits, Māori investment, sustainability, marine biosecurity), and considered aquaculture is a strategic priority for growth. He discussed unlocking open ocean aquaculture, open ocean aquaculture and climate change, and open ocean aquaculture in Marlborough.

187. Mr Ironside provided summary observations to accompany submissions and evidence by Friends of Nelson Haven and Tasman Bay (FONHTB), KCSRA, GOS, MEC and Mr Marchant. This covered the NZCPS (natural character and landscape policies 13 and 15, discharges and the benthic environment, and conditions). He provided an addendum document with regard to Policy 11 NZCPS focusing on seabirds and the benthic environment.

188. Ms Pinder provided evidence in opposition to the proposal on behalf of **GOS**. This covered an overview of the Applicants consenting history, and expressing the view that there are gaps in the information provided with respect to the proposal. GOS consider the location is part of the Marlborough Sounds, and the proposal should be located further offshore.

189. Mrs Kroon provided evidence in opposition to the proposal on behalf of **KCSRA**. This addressed previous NZKS farm applications (Board of Inquiry, salmon farm relocation), issues with the location chosen (suitability in terms of significant adverse environmental impacts), sea temperature (Te Hoiere/Pelorus Sound, the site, additional temperature data), salmon mortality, disease and biosecurity including the Controlled Area Notice, the role of the MDC landfill, engineering and mooring design, outstanding landscape and natural character values.

190. Ms Doole provided evidence in opposition to the proposal on behalf of **MEC**. This addressed five key issues (failure to consider alternatives in the AEE, lack of information to make a decision, lack of consideration of the effects of climate change, the need for a precautionary approach and failure of fair process. The evidence was supported by a slide presentation.

191. Mr Coldwell provided evidence in support of the proposal on behalf of **Marlborough Chamber of Commerce**. He considered that the proposal would bring significant economic benefit to the region, providing high values jobs, driving productivity, and helping smaller businesses that provide goods and services to NZKS. He provided further evidence addressing the flow on effect to small businesses.

192. Ms Miller provided technical evidence on the **potential for benthic effects** of the proposal on behalf of **FONHTB, KCSRA, GOS, MEC**. The evidence addressed five questions including whether the characterisation of the benthic habitat likely to be affected is robust and appropriate, whether the depositional modelling accurately reflects the environmental conditions and the proposed activity, whether the marine ecological effects assessment is robust given the characterisation of the existing environment and the depositional modelling undertaken, whether

the enrichment state is utilised appropriately and is a sufficient measure to rely on to assess the impact of the proposal, whether adaptive management approach is appropriate for this application. We note here that these questions assisted the Panel in seeking further information via additional field work and through the joint witness caucusing as outlined in the Minutes and discussed below.

193. Ms Miller provided supplementary evidence pertaining to rebuttal evidence from Dr Morrisey, Dr Smeaton, and Dr Keeley addressing site characterisation, assignment of value, assessment of effects, and management of effects. It also included direct response to points raised by Dr Morrisey and Dr Keeley.

194. Ms Miller provided further rebuttal evidence in response to Dr Keeley's rebuttal evidence point 29 (feed discharge limits).

195. Mr Marchant provided evidence in opposition to the proposal on behalf of **PGG**. His evidence covered visual effects (the site being visible from his property and neighbours property) from the structures and underwater lighting, loss of wilderness qualities, potential effects on recreational fishing and diving, use of Te Anamāhanga/Port Gore for farm equipment or support vessels, and loss of amenity values.

196. Mr Schuckard provided primary evidence[40], rebuttal evidence (21 October 2021) and comment on the conditions and rebuttal evidence (31 October 2021) on behalf of **FNHTB** in opposition to the proposal regarding the effects of the proposal on **seabirds**.

197. His primary evidence included an introduction which covered several generic matters (definition of offshore, uncertainty, monitoring data, biodiversity decline, appropriateness of site allocation, warming oceans, appropriateness of adaptive management) and a discussion on what is proposed. It addressed seabirds (issues with the applicant's seabird assessment focusing on lack of baseline survey to assess seabird values, foraging areas leading to inadequate assessment of effects, and use of lights), eutrophication and harmful algae blooms.

198. His first piece of rebuttal evidence responded to the evidence of Dr Bennet (relevant NZCPS policies, appropriateness of information used to assess the seabird species and their marine habitat, regulatory and conservation management framework, salmon farm effect on seabirds and their environment, cumulative effects).

199. His second piece of rebuttal evidence provided further comment on the proposed conditions in relation to seabirds, and provided further comment on Dr Bennet's rebuttal evidence.

200. Mr Smith formally opened with a mihi and introduced the **Ngāti Kuia** representatives present including Mr Lewis Smith (Environmental Manager), Mr Leroy Mason (Chairperson Ngāti Kuia, Kaitiaki), Ms Ngaire Kingi (Administrator), and Mr Moana Smith (Kaitiaki). He indicated that Ngāti Kuia is appearing to find a solution to the issues associated with this type of aquaculture in line with their strategic plans and statutory plans, with reference to certainty and long term sustainability. He referred to ongoing issues with current salmon farming and previous applications and thinks that this proposal could be a solution.

201. He stated mana and integrity needs to be restored through a process and he referenced a Memorandum of Understanding developed between Ngāti Kuia and NZKS. He referred to the relevant Statutory Acknowledgements, and the importance of adaptive management. He questioned whether Norway experts are accountable for their advice. He noted that MPI expansion expectations do not lay out a pathway. Kaitiakitanga is a driving force for Ngāti Kuia, and they have aspirations for waka navigation around the area. They expect intergenerational solutions. Ngāti Kuia seeks certainty around spatial allocation, and that Ngāti Kuia are not left out of any future allocation process.

202. Mr Smith talked to his submission and identified that the key submission issues are the potential loss or alteration of traditional fishing grounds from deposition and accumulation has not been

[40] This evidence was dated 21 October 2021 and was submitted as an update (track changed) to his primary evidence dated 6 October 2021.

taken into consideration, environmental protection and kaitiakitanga. He noted the plan attached to the submission that shows sites of significance in relation to the proposal Site.

203. Mr Mason referenced Te Whakatau (their Deed of Settlement) and issues associated with implementing this. Titirangi Island is a significant site for Ngāti Kuia, they hold annual wananga (places of learning) at Titirangi. He presented us with a video on a recent wananga (2017) to Titirangi involving around 35 people and he explained the significance of this.

204. Mr Smith continued to address the submission and discussed a mataitai reserve application, outlining its boundary and implications. He discussed a harvest application and the process undertaken to maintain an ongoing sustainable titi harvest process. He addressed certainty around aquaculture, commercial fishing, Te Whakatau, the MDC Plan, environmental integrity (particularly initial feed tonnages), Kotahitanga mo te Taiao Alliance, technology and discharge limits, mortalities (momo kai), displacement, engagement process, recommendations and the position of Ngāti Kuia.

205. Mr Smith provided hearing notes the following week that included draft conditions on cultural matters and a map of Te Kupenga-a-Kuia.

206. Mr Lawson's evidence introduced **Te Ohu Kaimoana** and outlined their role as a representative organization for 58 Mandated Iwi Organisations that were established through the passage of the Māori Fisheries Act 2004. Te Ohu Kaimoana support action that will enable sustainable open ocean aquaculture. They support the application in principle as it will lead to social and economic benefits and the location provides a relatively good location to trial open ocean farming. However, the support is on the basis that development operates within an adaptive management framework with continuous monitoring of performance that is within conditions that set limits of acceptable change. The evidence also addressed uncertainty (concerns have been resolved somewhat with the revised application), guidelines (these have been completed), conditions providing certainty of action and responsibility, processes for change are not defined in the management plans. Mr Lawson also discussed allocation of aquaculture space.

207. Mr Slyfield provided an outline of legal submissions for the **McGuinness Institute** in opposition to the proposal. His submissions addressed the Aquaculture Strategy, emissions, climate change, eutrophication, effects on marine mammals with reference to NZCPS policies.

208. Ms McGuinness provided evidence in opposition to the proposal and evidence in reply. Her primary evidence covered a response to Dr Kaye-Blake's evidence, and NZKS's financial position (high stock levels, cost of feed and feed conversion on the increase, health events, profitability, financial stability), the investment proposal. She amended a feed comparison figure in response to proposed new feeding rates. Ms McGuiness also supplied a working paper 2021/14 about the role of ocean water temperature in climate change policy (a NZKS case study), and a working paper 2021/15 about looking for a taxonomy for Aotearoa NZ's oceans.

209. Her rebuttal evidence responded to the evidence of Mr Lees (MPI) regarding the Aquaculture Strategy.

210. Dr Slooten provided evidence and evidence in reply on behalf of McGuinness Institute on the potential effects of the proposal on **marine mammals**. Her primary evidence addressed the structure and operation of the proposal, potential impacts on marine mammals, and insufficient data on impacts. Her evidence in reply covered marine mammals in the area, impacts of the proposal on marine mammals, effectiveness of proposed conditions in reducing impacts on marine mammals, and responded to the evidence of Dr Clement.

211. Ms Bradford provided legal submissions and introduced witnesses from the MPI in support of the application in respect of its alignment with the Government's Aquaculture Strategy, the Open Ocean Aquaculture Guidelines and how biosecurity risks have been addressed. Her submissions covered the role of **MPI** with respect to the Fisheries Act 1996 including the role in relation to aquaculture activities, scope of evidence, MPI's original position on the application, discussions with NZKS and DOC, MPI's position on the revised application (alignment with the Government's Aquaculture Strategy, alignment with open ocean aquaculture guidelines, biosecurity).

212. Mr Lees (MPI) supplied evidence addressing the Government's Aquaculture Strategy, its outcomes (sustainable, productive, resilient, and inclusive) and the relevance of the strategy to the application.

213. Dr Heath, also of MPI, provided evidence addressing the alignment of the application with Fisheries NZ best management practice guidelines in relation to siting, managing and monitoring open ocean finfish farms. He also provided graph showing the number of bottom trawls within the application area.

214. His primary evidence covered the Fisheries NZ Open Ocean Aquaculture Guidelines development process, alignment of the MMSMP with Marine Mammal Guidelines[41], alignment of the SMP with the Seabird Guidelines[42], alignment with the draft Benthic and Water Quality Guidelines[43], the evidence of Ms Munro in relation to proposed consent conditions, the evidence of Mr Taylor in relation to **monitoring wild fish populations**.

215. Dr Kluza (MPI) provided evidence relating to **biosecurity**. The evidence addressed the relevant statutory framework, context to biosecurity management of salmon farming in Marlborough (controlled area notice, biosecurity technical guidance documents, comprehensive aquaculture biosecurity programme), NZKS draft biosecurity management plan, and commented on the evidence of Dr Fletcher and Dr Diggles.

216. Mr Pemberton tabled legal submissions generally supportive of open-ocean salmon farming but he stated that the **DGC** chief concerns relate to the proposal's consistency with NZCPS Policy 11 (benthic ecosystems, habitats and species), Policy 13 (natural character), and Policy 15 (landscape). He introduced Mr Baxter, Dr Broekhuizen, Dr Anderson, and Ms Yozin. His submissions addressed the DGC's position, options available to the Panel in the circumstances of the case, the legal framework for considering the case, non-complying activity gateway (s104D, minor, contrary to), the adverse effects of the application, the "environment" – what it includes, the relevance of part 2.

217. He addressed the precautionary approach (Policy 3 – NZCPS), indigenous biodiversity (Policy 11 NZCPS), preservation of natural character (Policy 13 NZCPS), comments on the s42A Officers Report, depositional modelling and benthic effects, conclusion benthic effects (effects on Horse Mussel/brachiopod beds (HMBB), effects on patch reef, effects on clump reef, effects on mixed-biogenic habitat), natural character, landscape, planning evidence, and part 2 of the RMA 1991.

218. Mr Pemberton's speaking notes provided an updated position with respect to the Applicant's proposed staging approach (proposed at the hearing), initial comments on proposed conditions of consent (22 October 2021) focusing on the benthic conditions, Policy 11 NZCPS, Policy 13 and 15 NZCPS, points from the Applicant's legal submissions (how the *Davidson* case should be applied, precautionary approach, ONC ratings map, trawling information, Mr Baxter's natural character assessment), and points from Applicant's further submission (permitted baseline).

219. Mr Pemberton also provided legal submissions in response to three issues raised by the Panel during the hearing (minor and transitory qualifiers NZCPS Policies 13, 15 and 11, relevance of the Clearwater case regarding minor and transitory qualifiers not applying to Policy 11, did the High Court's approach in the Davidson case confirm the Environment Court (EC) approach regarding cumulative effects)

220. He provided the Panel with a legal case book for our reference.

221. Mr Baxter provided primary and supplementary evidence relating to the **marine ecological components of natural character**. His primary evidence addressed biophysical factors and natural character of the coast, context and scale (natural character), marine pressures general,

[41] Fisheries NZ Guidelines on Best Practices and Technologies Available to Minimise and Mitigate the Interactions Between Finfish and Open Ocean Aquaculture and Marine Mammals (MPI 2021a).

[42] Fisheries NZ Guidelines on Best Practices and Technologies Available to Minimise and Mitigate the Interactions Between Finfish and Open Ocean Aquaculture and Seabirds (MPI 2021b)

[43] Draft Best Practice Guidelines for Benthic and Water Quality Monitoring of Open Ocean Finfish Culture in NZ (MPI 2021c).

effects of aquaculture on seabed naturalness, effects of fishing gear on seabed naturalness, outer Marlborough Sounds and site level 5 assessment, effects of the proposal on seabed naturalness, and areas of alignment between Mr Hudson and Mr Bentley.

222. His supplementary evidence covered follow up issues arising from Mr Hudson's rebuttal evidence, and questions relating to the effects of trawling on seabed naturalness.

223. Dr Broekhuizen provided evidence relating to **modelling (numerical simulation) of the intensity and spatial extent of effects upon the seabed and water quality (dissolved oxygen and nitrogen-status/trophic status), and inferences (related to the AEEs)** drawn from the modelling. This addressed hydrodynamic simulations, introduction to transport models, concerns about the hydrodynamic simulations, observable discrepancies between real-world measurements of currents and simulated currents, choice of contour values (for primary deposition and residual solids) selected for use in defining the benthic footprint perimeter. Also, it addressed the deposition model and inferences concerning seabed effects (simplifying assumptions with VENOM, influence of parameter value upon outcomes: a qualitative introduction, numerical scheme, sinking speeds and dispersion coefficients, resuspension, decay of faeces and feed), dissolved oxygen modelling and inferences, nutrient plume modelling and inferences, other matters (consent condition issues – water quality and benthic), and areas of alignment (Mr Oldman and Dr Wilson, Mr Knight, Dr Giles).

224. Dr Anderson supplied primary evidence and supplementary evidence relating to the biogenic habitats and their associated communities potentially affected by the proposal, and their relevance to NZCPS Policy 11. She provided an overview of benthic reports (benthic report methods as relevant to benthic habitats, benthic habitats recorded within the proposal study area[44], biogenic – HMBB, biogenic – 'patch-reef', biogenic – clump-reefs, low density epifauna (coarse and softer sediments), transitional habitat, undefined mixed habitat, and an additional habitat within the nearfield (top of the raised bank)).

225. Dr Anderson also addressed the benthic habitats within the survey area, and their relevance to Policy 11a(i-iv) and 11b(ii) and (iii) of the NZCPS, horse mussel beds (combined ecosystems), predicted boundaries of finer-scale habitat types (video sub-classes) including 'predicted' boundaries of the HMBB within the BE-area, predicted area of clump-reefs vs patch-reefs, benthic effects (HMBB, clump-reef habitat, patch-reef habitat), monitoring effects (proposed monitoring presented in Dr Keeley's evidence), and issues/concerns regarding mapped habitats.

226. Her presentation of primary evidence was supported by a slide show showing 3D images of the benthic habitat (i.e. it showed the features of the proposal and depositional footprint and habitats overlaid on the bathymetry) in and around the proposed site. We found this most useful for understanding the site and for directing caucusing on benthic matters as outlined in our Minutes and discussed below.

227. Dr Anderson's supplementary evidence responded to our request to provide recommended seafloor video (ground truthing) transects to improve understanding of the boundaries of the various biogenic habitats in and adjacent to the site and the deposition footprint.

228. Ms Yozin provided primary evidence and supplementary evidence relating to planning. Her primary evidence addressed the proposed activity, DOC's submission (concerns addressed by the revised application and remaining concerns), activity status, assessment of key effects (benthic, natural character, natural landscapes/seascape, certainty about the nature and scale of effects), appropriateness of management plans to manage potential effects, statutory planning framework (NZCPS, RPS, MSRMP, PMEP, RMA 1991 s104, s104D – gateway test).

229. Her supplementary evidence responded to a request from the Panel to provide comment on the PMEP and MSRMP of a directive nature, provisions in the PMEP relating to "minor and transitory" effects, and to identify policies in the PMEP and MSRMP that the proposal is contrary to (relating to the s104D assessment).

[44] Including areas A and B in the Robertson Report as discussed above.

230. Mr Jennings provided legal submissions and supplementary legal submissions on behalf of RFBPS. His legal submissions addressed the legal requirements under s104D, effects in the evidence, relevant objectives and policies including weight to place on the various planning documents, MSRMP, PMEP, Variation 1 and 1A of the PMEP, proposal/effects and the NZCPS (policies 11,13,15 and 23), Policy 3 the precautionary approach.

231. His supplementary submissions responded to two questions from the Panel (has the amended proposal appeased any of the issues raised in RFBPS submission and does RFBPS agree with the Applicant that the NZCPS Policy 11(a) does not apply to minor or transitory effects?).

232. Ms Martin supplied evidence that addressed RFBPS's connection with the Marlborough Sounds, concerns that the proposal is still within the waters of Marlborough Sounds, indigenous biodiversity findings (Policy 11 NZCPS), and landscape and natural character findings (Policies 13 and 15 NZCPS).

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233. Mr Oldman prepared evidence in relation to **modelling of both benthic and water quality** aspects of the proposal including the **hydrodynamic model**. His evidence addressed modelling best practice, change in trophic state approach, water column dissolved oxygen modelling, water column nutrient and phytoplankton modelling, and benthic footprint modelling. He also responded to specific questions he was asked to address by the MDC.

234. Dr Wilson provided primary evidence and addendum evidence on **potential effects of the proposal on water quality**. His primary evidence covered potential water quality effects (nutrient enrichment (peak monthly feeding, trophic state approach, near field effects, far field and cumulative effects), oxygen depletion), artificial lighting effects, comments on consent conditions, response to questions asked by MDC, and recommendations (identification of appropriate water quality monitoring locations, routine monitoring, baseline monitoring for 12 months, high frequency measurement of dissolved oxygen near the farm to confirm modelling results, annual feed limit of 20,000 tonnes over a 12 month rolling period, clarification on the use of LED bulbs or not).

235. His addendum evidence commented on updated information presented at the hearing including water quality objectives, monitoring locations and consent conditions.

236. Mr Davidson provided primary evidence and addendum evidence on potential effects of the proposal on **benthic effects (review of benthic habitat types, methodology, assessment of effects and management of potential effects**). His primary evidence responded to questions supplied to him by MDC, and provided a brief summary of benthic, monitoring and management reports provided by the Applicant (Robertson 2020, Elvines 2021, Elvines 2021A), and an update of altered aspects of the proposal from those raised in his 2019 proposal review.

237. The evidence addressed ecological significance and important features (habitats and communities, detectability of habitats/communities, ecological importance, ecological significance criteria scores and the NZCPS, consideration and principles when assessing site significance, relative importance of biological features at and near the application site (reef and pinnacle, horse mussel and brachiopod, patch reefs, relative importance), threats to biogenic habitat).

238. It also covered monitoring and impact detection (sediment monitoring, enrichment monitoring, anchor impact and fouling drop off monitoring, contaminants, monitoring logistics, performance goals and ecological standards, sampling zones, sampling sites, stations and methods (soft sediment EQS, Te Mete Mahinga/McManaway Rock, biogenic habitat, other sampling), and adoption, update and reviews of monitoring and plans.

239. Mr Davidson's addendum evidence provided an update of his primary evidence based on information he heard during the course of the hearing. This covered benthic habitats and communities and their importance, benthic impacts, monitoring: what, where and how (performance standards/thresholds, summary of monitoring), threats (fishing, sedimentation, salmon farm, threat assessment).

240. Dr Giles provided primary evidence and addendum evidence relating to her assessment of the **benthic effects monitoring and management** described in the application documents.

241. Her primary evidence was divided into four parts, A through D. Part A summarised predicted seabed effects paraphrased from Elvines et al (2021a and b), requirements for the framework of consent conditions, management and monitoring plans, monitoring needs and uncertainties to be addressed. Part B looked at assumptions made by Elvines et al (2021b) on adoption of mitigation and management options (mooring installation, presence of structures, active farm operations (deposition)).

242. Part C critiqued effects monitoring and management recommended by Elvines et al (2021b) and commitment to uptake by the Applicant (characteristics of sediments and infauna communities measured in 2019, transferability of the Enrichment State (ES)[45] index to the site, environmental performance goals and iEQS[46], management response process, monitoring – addressing uncertainty through monitoring, monitoring soft sediments, monitoring the Te Mete Mahinga/McManaway Rock EMS, monitoring biogenic habitat, pre-farm baseline sampling, pilot survey, supplementary investigations - research).

243. Part D provided comments on the proposed benthic conditions including comparison of consent conditions to recommendations made by Elvines at al (2021b) and general comments (definitions, consent condition 3 – benthic objectives, condition 5 – standards, condition 6 and 7 – benthic management plan, condition 8 initial benthic monitoring plan, condition 9 benthic monitoring plan, condition 10 - benthic report, and condition 11 – regional benthic review).

244. Dr Giles addendum[47] evidence was divided into four parts. Part 1 provided an update on her primary evidence, identifying aspects of her primary evidence addressed by the Applicant and outstanding issues. Part 2 described uncertainties in the application and implications for effects monitoring and management. The uncertainties related to the prediction of effects (mapping of habitats, effects deposition modelling, the response and tolerance of benthic habitats and species to organic deposition), the proposed monitoring of effects and the proposed management of effects (including iEQS and response actions). She noted that, due to these uncertainties, she was of the opinion that adequate protection of habitats, species and ecosystems that are ecologically valuable were not assured under the application.

245. Part 3 provided comments on five additional matters that require further consideration (the proposed staging criteria, the initial benthic monitoring plan, methodologies and logistical challenges for baseline surveys and monitoring, the complexity and implications of documents referred to in consent conditions, and recently identified inconsistencies in the benthic management plan).

246. Part 4 outlined recommendations related to improving certainty (as discussed in part 2) and recommendations to address the issues described in part 3.

247. Dr Giles also took us through "hearing speaking notes" that covered spatial representation of model results with reference to **model uncertainty and natural variability of underlying data**, and a proposed table to set out a structured process for collating information presented by experts to address **uncertainty with respect to the outcomes of the various benthic effects** assessments. Dr Giles stated that at this point in the proceedings "she was having difficulty obtaining a clear picture of the likely effects of the application, particularly in a spatial sense". We accepted this, and note here that the "hearing speaking notes" provided useful background for us to set directions relating to further work on benthic effects to address uncertainty as outlined in detail the Minutes (Appendix 4).

248. Professor Wing provided primary evidence and addendum evidence relating to his assessment of the effects of the proposal on **pelagic fish**. This evidence focused on a review of the Taylor and Dempster, Pelagic Fish report discussed above, and a response to questions provided to

[45] Enrichment Stage is defined as– a multi-metric index used to calculate soft sediment enrichment, along a scale of 1–7, with 1 being 'pristine' and 7 being 'azoic'. Appendix NK1.
[46] Initial Environmental Quality Standard.
[47] Dated 25 November 2021.

Dr Wing by the MDC. His addendum evidence provided comments on the updated evidence of Dr Dempster and Dr Taylor.

249. Ms McConnell supplied primary evidence relating to her review of the Applicant's assessment of effects of the proposal on **marine mammals and the associated MMSMP**. She also provided general comments regarding the implications of the proposal in light of the NZCPS Policy 11.

250. Ms McConnell's addendum evidence outlined issues from her primary evidence that were satisfactorily resolved by Dr Clements, issues that remained unresolved relating to the MMSMP. She also addressed baseline data collection, and risk on entanglement if predator exclusion nets are used.

251. Mr Grogan's primary evidence outlined his findings with respect to a review of the application and supporting information relating to **navigation safety**. This included a recommendation for completion of an Offshore Marine Farming Safety Case and comments on the proposed consent conditions.

252. He provided addendum evidence that responded to issues that arose during the hearing including site location, collision risk and visibility, orange stripes, and the safety case. Mr Grogan appended an example of a vessel safety case for reference.

253. Mr Bentley provided primary, addendum, and supplementary evidence, and a graphic supplement to accompany his evidence. His primary evidence included a peer review of Mr Hudson's landscape character report discussed above, and his assessment concerning the **natural character, landscape and visual amenity** aspects of the proposal. This addressed the proposal, existing environment (the outer sounds regional scale landscape, broad setting, the site and immediate setting), statutory requirements, baseline natural character condition (broad scale, local scale), baseline landscape values (broad scale, local scale), baseline visual amenity and quality of the environment). The evidence outlined Mr Bentley's assessment of effects (general effects, natural character effects, landscape effects, visual amenity effects).

254. His addendum evidence covered a summary of his primary evidence, a response to issues raised by Mr Hudson in his evidence, pertinent matters that arose during the questioning of Mr Hudson (why did the ONL and natural character outer sounds extent in the PMEP 'go in a straight line', justification of a 3km 'local scale', mitigation measures proposed by the Applicant, Mr Hudson's comment under paragraph 17 of his rebuttal evidence concerning 'emphasis on important biogenic habitat in his natural character assessment, barge graphic supplement), and response to other matters observed during the hearing (temporal baseline, Mr Greenaway's reference to the Taranaki oil and gas platforms off the coast of Taranaki).

255. Mr Johnson supplied primary evidence and two pieces of addendum evidence relating to **planning matters**. His primary evidence summarised the proposal, and the receiving environment (zones and overlays), and addressed the activity class, notification and submissions, environmental effects, assessment of relevant objectives and policies (NZCPS, MRPS, MSRMP, PMEP, Variation 1 and 1A) and Part 2 of the RMA.

256. He included a series of appendices in his evidence covering site location map with distances, extract from MSRMP Appendix B – areas of ecological value, MSRMP zoning and overlay maps, PMEP zoning and overlay maps, PMEP coastal management units map, summary of submissions, MSRMP assessment criteria, Maritime New Zealand comments, relevant NZCPS provisions, NZIER report summary, relevant MRPS, MSRMP, PMEP provisions, and PMEP criteria for determining significant adverse effects on natural character.

257. Mr Johnson's first addendum responded to questions from the Panel with respect to greywater discharges, relevant objectives and policies, the relevance of Variation 1 and 1A, aspects of uncertainty in the proposal that were addressed by Mr Preece in particular, and remaining areas of uncertainty in the proposal details, consideration of non-complying activities, and areas of disagreement with Ms Munro's evidence.

258. His second addendum was provided in response to Minute 7 and Minute 8 and addressed a natural character mapping issue, and outlined objectives and policies in the MSRMP and PMEP that (in his opinion) the proposal is contrary to, in terms of the s104D second gateway test.

259. Dr Morrison provided evidence on **demersal/benthic fish and their relationships with the benthic biogenic habitats at the site** that addressed the information reviewed and summary of key issues (biogenic habitats, ecological importance of these habitats (horse mussels), benthic fish), summary of key issues, conclusions and recommendations (with respect to biogenic habitat and demersal fish monitoring).

260. Dr Lohrer reviewed the **sampling and assessment of the marine seafloor habitats** associated with the application. He responded to seven specific questions provided to him by the MDC and also provided his thoughts on monitoring, environmental quality standards and mitigation measures.

261. We asked several questions of the applicant, submitter and council witnesses during this stage of the hearing process[48]. We have taken their evidence and the response to questions into account in our decision and have directly referred to their evidence or answers to questions where appropriate.

Joint Witness Statements and Benthic Field Work

262. We directed caucusing between relevant experts on several matters as outlined in the Minutes (Appendix 4). These included landscape and natural character, navigation safety, benthic habitat and benthic modelling uncertainty, seabirds, and water quality. At the conclusion of the caucusing the witnesses provided a Joint Witness Statement (JWS) outlining areas of agreement and any areas of disagreement. We discuss the JWS's in more detail in the principal issues in contention section below.

April Hearing Matters

263. During the hearing from Tuesday 26th April 2022 to Friday 29th April 2022, we heard evidence in relation to the following outstanding matters as outlined in Minute 19:

    a) Effects of bottom contact trawling; (Dr Heath and Dr Tuck (MPI), and Mr Roach (for the Applicant), Mr Pemberton (DOC) benthic experts (Dr Anderson, Dr Giles, Dr Rob Major (for the Applicant), and Dr Robertson).

    b) Structural integrity (Mr Teear);

    c) Landscape and natural character (Mr Hudson and Mr Bentley);

    d) JWS Benthic Habitat Mapping (Dr Major, Dr Giles, Dr Anderson);

    e) Benthic effects (Dr Keeley);

    f) Submitter and Council comments on conditions.

264. At the adjournment of the hearing on 29th April 2022 we issued Minute 20 to address any outstanding matters. We received the information outlined in Minute 20 as directed.

Right of Reply

265. We received the written Right of Reply on 22 August 2022. This included closing legal submissions with a table outlining responses to council and submitter comments on conditions, and an updated set of proposed conditions dated 19 August 2022.

266. The closing submissions covered the Applicant's positions with respect to the benthic environment, water column, wild fish, marine mammals, biosecurity and fish disease, natural character, landscape, cultural, navigation, engineering and structures, climate change, alternatives, coastal occupation charges, bond, section 104D, section 104, Variation 1A, permitted baseline and existing environment.

267. We have taken the legal submissions on these matters into account in our decision.

Closure of hearing and extension of decision deadline

268. We closed the hearing at 5.00pm on 12 September 2022 as we considered we had sufficient information to make a decision. We extended the time period to release our decision to 50 working days under section 37A(5) RMA, due to the complex nature of the case and the

[48] 18 October 2021 through to 21 December 2021.

significant amount of evidence we needed to consider. The Applicant agreed to the extension. We took into account the interests of the parties and the community in achieving an adequate assessment of the effects of the proposal, and our duty to avoid unnecessary delay as required by s37A(1). The extension also provided time for the MDC to release the decision taking into account the logistics involved in this process. We considered there are no natural justice issues arising from the extension.

Site Visit

269. We visited the site on Wednesday 29th September 2021 on the MDC harbour master vessel *Resolution* skippered by Mr Alex Moore. Mr Moore is an MDC Maritime Officer who is not involved in the hearing process. We were accompanied by Ms Bulfield-Johnston who assisted us with navigation and identification of key features associated with the proposal.

270. We left Picton harbour at approximately 9.00 am, travelled around Taonui-a-Kupe/Cape Jackson and headed directly to the site. The sea was relatively calm inside Tōtaranui/Queen Charlotte Sound but was rough when we rounded Taonui-a-Kupe/Cape Jackson with at least a 1 metre swell from the northwest. We spent approximately 15 minutes at the site looking back towards the various islands and headlands discussed in the evidence.

271. Due to the sea state, we decided not to visit Sentinel rock, but travelled to and around Titi Island. From there we visited Pouataikino/Alligator Head, Te Uku/Cape Lambert and circled Te Anamāhanga/Port Gore before heading back towards Taonui-a-Kupe/Cape Jackson taking note of the various bays and peninsulas. Whilst in Te Anamāhanga/Port Gore we noted the view back toward the site (assisted by Mr Moore).

272. We also visited the Clay Point salmon farm for approximately an hour around high tide (3pm). We were shown around the site, and shown how the farm operates, by Mr Salvador Delgado and Mr Ryan Steer. Mr Steer and Mr Delgado are not involved in the hearing process.

273. Our visit included viewing the feed bins, barge and feed control station, various salmon pens that contained salmon, walkways, bird nets, pen nets, predator nets, roto-feeders, cameras, power supply lines and feed pipelines. Mr Steer explained the feeding, fish husbandry and handling practices and the harvesting process. We took note of the surrounding environment including seabirds roosting on the bird nets and seals swimming nearby. We also noted one seal that had hauled out onto a small service barge associated with the farm.

274. We arrived back at Picton at approximately 4.30 pm.

275. The site visit assisted us in gaining a better understanding of the context for the application, its effects and the issues identified in submissions, evidence and discussed during the hearing.

Procedural Matters

276. Several minor procedural matters arose during the course of the hearing. These were addressed verbally during the hearing or via Minutes as outlined in our Appendix 4.

Planning Provisions

277. The planning experts assessed the zoning and activity status of the proposal under the MSRMP and the PMEP. We discussed the activity status earlier in our decision.

278. The NZCPS is applicable to this application. The NZCPS is a national policy statement under the RMA. The purpose of the NZCPS is to achieve the purpose of the RMA in relation to the coastal environment of New Zealand.

Section 104 Assessment

279. Section 104(1) requires that when we consider the application and any submissions received, we must, subject to Part 2 of the Act, have regard to:

    (a) any actual or potential effects on the environment of allowing the activity; and

    (ab) any measure proposed or agreed to by the applicant for the purpose of ensuring positive effects on the environment to offset or compensate for any adverse effects on the environment that will or may result from allowing the activity; and

(b) any relevant provisions of -

(i) a national environmental standard:

(ii) other regulations:

(iii) a national policy statement:

(iv) a New Zealand coastal policy statement:

(v) a regional policy statement or proposed regional policy statement:

(vi) a plan or proposed plan; and;

(c) any other matter the consent authority considers relevant and reasonably necessary to determine the application.

280. The adverse effects of the proposal, relevant provisions of planning documents, and other matters are discussed in detail below.

281. Under Section 104(2), when forming an opinion for the purposes of subsection (1)(a), a consent authority may disregard an adverse effect of the activity on the environment if a national environmental standard of the plan permits an activity with that effect.

282. Section 104(3) requires that, in considering the applications, we must not have regard to trade competition or the effects of trade competition, and any effect on any person who has given written approval to the application. Trade competition, or the effects of trade competition, are not matters that arose when we considered the proposal. As outlined above, written approval was provided by the nearest private landowner (Waitui Holdings Limited). We have not considered effects on Waitui Holdings Limited.

283. Under Section 104(3)(c), we must not grant a resource consent contrary to section 107.

Principal Issues in Contention and Findings – Section 104(a)

284. On the basis of the evidence before us, we identified the following as the principal issues of contention arising from the proposal:

a) Positive effects;

b) Structural integrity;

c) Natural character, landscape and amenity effects;

d) Benthic effects;

e) Tangata whenua/iwi issues;

f) Effects on wild fish excluding sharks;

g) Marine mammal and sharks effects;

h) Effects on seabirds;

i) Water quality effects;

j) Effects on recreational activities;

k) Biosecurity issues(new organisms/fish disease);

l) Navigation safety;

m) Effects on commercial fishing.

285. The following assessment of these matters addresses Section 104(1)(a) of the RMA 1991. Planning matters are addressed in the section entitled Relevant Statutory and Plan Provisions – Section 104(1)(b).

Positive Effects

286. Mr Kaye-Blake estimated the annual economic benefit to NZ from the proposal to be $58.1 million. He also estimated the number of new employed persons nationally at 746. This evidence was not independently reviewed or challenged by other parties to the proceedings.

287. Mr Hooper on behalf of Aquaculture NZ and Mr Lawson from Te Ohu Kaimoana considered the proposal would have significant social and economic benefits.

288. Mr Coldwell on behalf of Marlborough Chamber of Commerce considered that the proposal would bring significant economic benefit to the region, providing high value jobs, driving productivity, and helping smaller businesses that provide goods and services to NZKS. In his supplementary evidence, he noted that NZKS 'currently have over 700 suppliers, not only will many of these benefit from build and operation of Blue Endeavour, but the number of suppliers will increase'.

289. We heard no evidence disputing the benefits outlined above and find that the proposal will have significant economic and social benefits, particularly at the regional level. The employment opportunities and multiplier effects are substantial.

Structural Integrity

Issues

290. The submissions raised concerns about structural integrity focusing primarily on contamination issues in the event of sections of the farms breaking off, or from complete failure of the moorings. PGG expressed concerns about Te Anamāhanga/Port Gore being the receiving environment of the 'mess' from a catastrophic failure.

291. We also considered navigation safety issues that could occur from pieces of the farms breaking away or from complete failure of the moorings.

Discussion and Findings

292. Structural integrity was addressed through the technical evidence of Mr Teear, Mr Karstensen, Mr Sõreide, and Mr Bermingham. We have outlined the topics they addressed in the hearing section of our decision. We received no opposing technical evidence.

293. Mr Preece's evidence outlined that ScaleAQ will provide the barges and pens and associated structures for the proposal. He stated that staff from NZKS visited all the major salmon aquaculture countries to view first-hand the offshore technology and equipment available to support the proposal. The results of these visits culminated in selecting a global supplier of aquaculture infrastructure – ScaleAQ. ScaleAQ have years of experience in supplying barges, pens, nets, and mooring systems into environments like Blue Endeavour. NZKS considers that ScaleAQ follow an evidence and science based approach, which NZKS believe is required to ensure the safety of the structures, personnel, and investment.[49]

294. Mr Karstensen noted that the barges will be built and maintained in Class, through either of the Classification Societies Det Norske Veritas (DNV) or Bureau Veritas (BV). Regular in water surveys can be undertaken to confirm the barge is maintained in Class.

295. Mr Bermingham explained the Classification Societies (including DNV and BV) in his evidence. Classification Societies set technical rules based on experience and research, confirm that designs and calculations meet these rules, survey ships and structures during the process of construction and commissioning, and periodically survey vessels to ensure that they continue to meet the rules. Classification Societies are also responsible for assessing and putting oil platforms and other offshore structures into Class.

[49] Paragraphs 237 and 238 primary evidence.

296. MNZ lists five Classification Societies as being 'Recognised Organisations[50]' in New Zealand to supply classification services, this includes DNV and BV.[51]

297. Mr Birmingham noted[52] BV and DNV claimed a capability to classify fish farms. However, to date no farms have yet been put into classification in the Oceania region. Of the five MNZ Recognised Organisations, it became evident to Mr Birmingham that only BV and DNV were practical options for the Blue Endeavour development as they both have the in-country capacity to carry out surveys and assessments through the operational phase of the farm. He advised NZKS that classification would give the company added confidence in the correctness of the design and construction as well as offer a method of ensuring ongoing assurance to all stakeholders over the life of the proposed development. This despite the apparent complexity and added cost of being the first to do so in this part of the world. NZKS accepted this view.

298. Mr Grogan stated[53] that designing, building and installing structures to the Classification and Certification standards such as those of BV is strongly encouraged. However, where such standards are applied it is essential that the classification agency that set the standard signs off its having been achieved. In his view it would severely undermine the integrity of any such standard if the society or agency that set the standard was not directly involved in assessing achievement of the standard.

299. We accept the points outlined above. The consent conditions include the requirement to engage a Recognised Organisation to assign Class to the barges and farming structures and to maintain these in Class.

300. Mr Sõreide provided evidence in relation to the Norwegian Standard NS9415:2009 which is used for aquaculture site design all over the world. This Standard has recently been revised and published in Norwegian as the NS9415:2021 version.

301. The NS9415 standard was used for the mooring test work undertaken by ScaleAQ. We received a copy of this standard subject to a copyright order (Minute 23). Mr Teear considered this is a comprehensive standard, the primary focus of which is on design to reduce the risk of fish escape and covers all aspects of risk assessment, structural engineering, serviceability and durability of the farm structures. A condition has been included to require the design criteria for Class to include this standard.

302. To avoid a breakaway situation, ScaleAQ included simulations on various accidental limit designs. That includes simulations where multiple mooring lines fail simultaneously. The analysis and results can be seen in the Mooring Analyses Report attached to Mr Sõreide's evidence as Appendix MS1. The analyses were performed in both ultimate, accidental and fatigue limit states. The Mooring Analysis Report shows that the structures can be designed to withstand the environmental conditions at this location. This includes tsunami conditions with significant wave height, Hs, of 2.5m and a current velocity of 1.65m/s (converted from 3.2 knots). These tsunami conditions were provided to Scale AQ by NZKS and are explained in the evidence of Mr Teear as a 1 in 500 year event.[54]

303. With respect to the design of the farms, Mr Teear considered the flexible circular pen structures that will be employed for the Blue Endeavour site are well proven in offshore environments. The deployment at the Blue Endeavour site is within the combination of allowable operational environmental parameters for the structures in terms of significant wave heights and peak energy wave periods and maximum current speeds for the site, as determined by the specific site investigation work undertaken for the site.[55]

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[50] The consent conditions define Recognised Organisation as meaning a classification society authorised as a recognised organisation by Maritime New Zealand in terms of the definition in Part 21 Maritime Rules rule 21.5.

[51] Mr Birmingham's primary evidence paragraph 50.

[52] Paragraph 52 and 53 primary evidence.

[53] Paragraph 12(e) of his report.

[54] The tsunami design case is discussed in paragraph 43 to 52 of Mr Teear's primary evidence.

[55] Paragraph 77 primary evidence.

304. With respect to the maintenance of the structures, Mr Teear stated[56] that each block is being purchased as a complete standalone package with anchors and moorings. The farm structures will be maintained to class with periodic surveys by a classification society. As part of this package well established and proven user and maintenance manuals will also be supplied. These will fit into the NZKS maintenance manual system, with some customisation to suit the specific application for NZKS. ScaleAQ provide detailed maintenance plans for their complete systems (moorings, pens and nets) and NZKS intend to integrate them into its existing maintenance system.

305. As part of the maintenance system for their existing farms NZKS employ load cells to routinely monitor and record actual loads in mooring systems for comparison with the loads used for the design of the structure. Any anomalies are investigated. The same system will be used for the Blue Endeavour site. Mr Teear reviewed the ScaleAQ maintenance manuals for the farm system and found them comprehensive and fit for purpose reflecting actual operational experience.

306. Mr Teear reviewed the proposed consent conditions relevant to engineering design. He found them to be sensible and practical, providing a higher level of assurance than for inshore farms, with structures required to be designed, built and maintained in Class. He stated this provides the comfort of oversight by an internationally recognised Classification Society.

307. The final proposed conditions have remained largely the same since the version that Mr Teear commented on. In his supplementary evidence provided in response to Minute 8 (9 December 2021) and Minute 15 directions (9 March 2022) he provided further evidence on how the conditions addressed steps to be taken to reduce the risk of failure once the farm is installed.

308. His supplementary evidence concluded that there would have to be a concatenation of component failures or events for the farm to fail, with each event being of low probability. The probability of a combination of low probability failures resulting in the failure or breakaway of the farm itself would be very low. In his opinion there was no prospect of individual pens breaking away from the farms.

309. We invited the Applicant to undertake testing of the seabed strata to assess its suitability for the proposed anchors, however, the Applicant considered this was not necessary and has therefore assumed the risk (if any) of the seabed being unsuitable for the anchor systems.

310. Mr Teear is a New Zealand based Chartered Engineer (CPEng, PE (Int)) and an Engineering New Zealand member with 50 years' experience in offshore, subsea, coastal and port engineering and marine civil engineering. He audited the work of Mr Karstensen and Mr Sõreide who work for ScaleAQ in Norway. We placed significant weight on Mr Teear's local knowledge and experience and were satisfied that he provided an independent audit of the ScaleAQ work.

311. We acknowledge the substantial relevant experience of the expert witnesses and consider that their evidence addresses any structural integrity concerns. We accept the evidence of these experts and adopt it in our decision.

312. Overall, on the basis of the technical evidence we received regarding structural integrity, and subject to the conditions of consent, we consider that the risk of structural failure resulting in adverse effects on the environment is extremely low and that these risks will be appropriately managed.

Natural Character, Landscape and Amenity Effects

313. Landscape and natural character are both matters of national importance under s6 RMA. They are distinct topics, and require distinct assessment, each with their own attributes and considerations, as reflected in (*inter alia*) Objective 2, Policies 13 and 15 of the NZCPS, and Objectives 6.2 and 7.2 of the PMEP.

314. Landscape encompasses three broad attributes: biophysical, perceptual and associative. Natural character is the expression of natural elements, patterns and processes in a landscape.

[56] Paragraphs 78 to 81.

It includes the biophysical and perceptual components of landscape.[57] The New Zealand Institute of Landscape Architects (NZILA) Guidelines, *Te Tangi a te Manu* (2022), interpret natural character as the naturalness or degree of modification of an area, and an area's distinct combination of natural characteristics and qualities. Natural features and landscapes include the values and relationships of tangata whenua with their ancestral lands, waters, wāhi tapu, sites, and other taonga, often referred to as cultural landscapes.

315. Amenity values are defined by the RMA and include a combination of aesthetic and perceptual factors such as visibility, aesthetics, ambient noise, air quality, recreational and cultural attributes. They are a relevant consideration under s7 RMA. The Site forms part of the High Amenity Landscape identified by the PMEP.

316. The Proposal is a first of its kind for the region, both in terms of technology and location, in an area of open-ocean away from the Marlborough Sounds. By its' nature, the Proposal will introduce new and anthropocentric elements into an otherwise uninterrupted ocean setting (or "seascape") identified as having high, very high, and/or outstanding[58] landscape and natural character values, as well as high amenity values.

317. Change does not necessarily result in adverse effects, as Messrs Hudson and Bentley reminded us in their evidence. Accordingly, a key issue identified by the Applicant, and many submitters, is whether and the extent to which the Proposal (including both the North and South Farms) results in actual or potential adverse effects on landscape, natural character, and amenity values. Relevant factors in this assessment include the sensitivity of the receiving environment, and the nature and magnitude of change caused by the Proposal.[59]

Identifying the values

318. A natural starting point for our Decision is to identify the values, both locally (within the vicinity of the Site), and in the wider context, before moving to an assessment of the actual or potential effects of the proposal on those values. The answer is partly complicated by planning instruments which have adopted different assessments of those values. Dealing with these in turn:

    a) The operative RPS does not identify any mapped landscape or natural character areas. This instrument is subject to review at present. [60]

    b) The Site is identified in the MSRMP as part of the marine natural character management area (Area B Marine – Rangitoto/D'Urville Island – Northern Raukawakawa/Cook Strait).[61] It is not within any ecology area, or any area of outstanding landscape value, as mapped under the MSRMP.[62]

    c) In terms of planning instruments, the PMEP has the most up to date assessment of the underlying values. The PMEP assessment was underpinned by a number of regional studies including the Marlborough Landscape Study (2015) and the Natural Character of the Marlborough Coast (2014).

    d) The decisions version of the PMEP identifies the south-western part of the Site as Outstanding Natural Landscape (ONL), and a combination of High and Very High/Outstanding Natural Character (ONC). There are no ONL or ONC overlays mapped on the north-eastern half of the site.

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[57] Relevantly discussed in the evidence of both John Hudson and James Bentley; and the JWS (Landscape and Natural Character).

[58] Depending on the expert's perspective, as we discuss below.

[59] Hudson, Landscape and Natural Character Assessment (August 2019) at [17] and [22], referring to both landscape and natural character effects. Mr Bentley explained his qualified use of "sensitivity" of the receiving environment, as broadly qualitative, and therefore appropriate (despite concerns identified by Te Tangi a te Manu, around this phrasing).

[60] Primary evidence of John Hudson (30 Sept 2021) at [28], and cross referencing the (Hudson) Landscape Assessment 2021

[61] Primary evidence of John Hudson (30 Sept 2021) at [26] to [27] and cross referencing the (Hudson) Landscape Assessment 2021

[62] Hudson, Landscape and Natural Character Assessment (August 2019), at [60] and Figure 2

e) Figures 3 and 4 to Mr Bentley's evidence illustrate the Site in relation to these overlays.[63] Until recently, approximately 45% of the proposal was located within the Outer Sounds ONL, as mapped in the PMEP.[64] The site is part located (south western half) within an area of ONC, and within an area of High and Very High Natural Character.

f) The PMEP identifies the relevant attributes for the local and wider context of the Site. These attributes were agreed as between Messrs Hudson and Bentley, and we adopt their description from the JWS.[65]

g) A consent order issued by the Environment Court, dated 10 October 2022, reduced the outer extent of ONL overlay in the vicinity of the Blue Endeavour Site. The Site is now almost entirely outside the new ONL line identified by the consent order.[66] This change to the PMEP reflected the agreed position recorded in the JWS Landscape that the Blue Endeavour structures are not located within an ONL.[67] But as noted by Mr Bentley, the Site remains close to the Outer Sounds ONL, and values associated with this broad overlay do not 'stop' where the ONL line is drawn.[68] Contextual assessment is required to assess effects on outstanding and other landscape values. The consent order refers to the ONL as being located in the Inner Raukawakawa/Cook Strait.

h) The relevant directive provisions of Objective 2, and Policies 13 and 15, of the NZCPS are relevant and apply to the assessment of landscape and natural character effects. [69]

i) It was common ground that the Site is located in an area of High Amenity Landscape values, with the amenity landscapes of the whole Marlborough Sounds being relevant.[70]

319. Māori cultural landscape values are a material aspect of the overall landscape values for the Site and its wider context. These were described by Ngāti Kuia in their submission and presentation to us. They are also addressed (albeit in general terms) as part of the attributes identified by the PMEP overlays. We received limited information or assessment from Messrs Hudson and Bentley on cultural landscape values, and the effects of the Proposal on those values. We discuss this below in our findings.

Environment Court appeals against the PMEP

320. The PMEP overlays (and provisions) received the greatest attention by Messrs Hudson and Bentley, in their evidence. They merited greater weight, as the most specific and up to date Regional Plan assessment of the relevant landscape and natural character values and attributes.

321. Mr Johnson helpfully updated us in his final Report on recent consent orders that have amended relevant policy provisions in the PMEP.[71] Appeals against the ONC overlay that affects the southern part of the Site remain unresolved.

322. Our starting point is that we must rely on the decisions version of the PMEP, unless and until appeals are withdrawn, or consent orders are released by the Environment Court that change the overlays or amend the relevant plan provisions. In other words, we must take the PMEP as we find it, as at the date of this Decision.

323. Accordingly, we were unable to rely on consent memoranda resolving appeal points against the PMEP, unless these were reflected in consent orders issued by the Environment Court. Where consent orders have been drawn to our attention, we have updated our assessment and

[63] Refer James Bentley (s42A Report, 24 Sept 2021) at [7.6]
[64] Primary evidence of John Hudson (30 Sept 2021) at [20]. The ONL overlay was amended by consent order on 10 October 2022.
[65] JWS (Landscape and Natural Character)
[66] The consent order was issued after the hearing closed. But we are entitled to take "judicial notice" of the Environment Court's consent order, because it was received before our decision was finalised. It is a matter of public record, from a superior authority, and binding on us.
[67] JWS (Landscape and Natural Character) at [8]
[68] JWS (Landscape and Natural Character) at [8]
[69] Primary evidence of John Hudson (30 Sept 2021) at [29]
[70] JWS (Landscape and Natural Character) at [10]
[71] Refer consent order dated 25 March 2022, which amended PMEP Policy 7.2.4

determination in light of those amended PMEP provisions. This relevantly includes the consent orders dated 25 March 2022, and 10 October 2022.

Issues

324. The issues were traversed in detailed legal (and lay) submissions, and evidence, but with a particular focus on the competing evidence of the two relevant experts, Messrs Bentley and Hudson. We also received direct evidence from tangata whenua on cultural landscape values, which form an important context for the wider landscape, and we address this below.

325. Many submitters[72] relied on landscape, natural character, and (in some cases) amenity effects as a basis on which we should find that the s104D threshold was not met by the Proposal. Their collective position was that these effects merited decline under ss104 and 104B RMA, even if the s104D threshold was met.

326. Indeed, Mr Johnson's final planning advice was that the Proposal resulted in more than minor adverse effects to the relevant landscape and natural character values; was contrary to the relevant objectives and policies relating to landscape and natural character; and accordingly, did not meet either limb of the s104D threshold test. Mr Johnson's planning assessment relied on the expert evidence of Mr Bentley. If we did not accept Mr Bentley's assessment, then we could not accept Mr Johnson's recommendation to decline the Proposal.

327. It was common ground between Messrs Hudson and Bentley that:

- Activities that are proximate to, but located outside, areas with outstanding values, can still have adverse effects on those values;
- Overlays identified by the PMEP were not determinative of the assessment. Mr Bentley noted that, while the overlays assist, they were mapped for different reasons. Context is imperative to the assessment. Landscape and natural character values need to be spatially assessed on a project-specific basis.
- Both Mr Hudson and Mr Bentley disputed the ONL identification provided by the decisions version of the PMEP, which (prior to the recent consent order) involved a "straight-line" approach to the boundary of the ONL. There are few straight-lines in nature.[73]
- Mr Hudson identified the "local" context as being an area of 3km around the Site. This was the area within which the Blue Endeavour farms would be likely to be visible. Mr Bentley agreed with the 3km "local" extent, but noted the line between local and wider context was not absolute.
- Both experts disputed the boundary lines for Outstanding and very high Natural Character areas, as identified by the PMEP. As is often the case with a site-specific inquiry for the purposes of a resource consent proposal, these experts provided their own assessment.
- Mr Bentley's position on the underlying natural character values shifted during the hearing, largely in reliance on new information on the extent of trawling in proximity to the Site. Mr Hudson's position did not change as a result of information on trawling.

328. While there was significant unanimity between Messrs Hudson and Bentley on background matters, context, and attributes, the experts differed in their conclusions on likely effects of the Proposal on those values.

329. The relevant issues were largely identified by the JWS prepared by the two experts. Relevant matters include:

a) What are the baseline ratings for landscape, natural character, and amenity values in the local and wider context;

b) What are the landscape effects of the Proposal on those baseline ratings;

[72] Refer our summary of submitter evidence above.

[73] The straight-line approach to the ONL (in the vicinity of the Site) has been amended by the Environment Court in their consent order dated 10 October 2022.

c) What are the natural character effects of the Proposal on those baseline ratings; and

d) What are the amenity effects of the Proposal on those baseline ratings.

Baseline ratings

330. Given the volume of evidence, we have set out in summary form the ratings identified by the PMEP, and the main conclusions reached by the experts in their JWS:

Baseline ratings: PMEP

a) The PMEP identifies part of the southern site as ONL and ONC, with high and very high natural character values. The ONC identification remains subject to appeal. The ONL overlay has been reduced by consent order dated 10 October 2022. There are no natural character or landscape overlays for the northern part of the site;

b) Both the North and South farms form part of the Marlborough Sounds High Amenity Landscape, as identified by the PMEP;

Baseline Ratings: Landscape

John Hudson:

c) Very high in the broader context, and moderate for localized context;

James Bentley:

d) Very high in the broader context, with ONL also apparent closer to land, and (at least) high in the localized context;

Baseline Ratings: Natural Character

John Hudson:

e) Very high to outstanding in the broader context, and high for localized context;

James Bentley:

f) High, very high, and outstanding in both the broader and localized context;

Baseline Ratings: Amenity

John Hudson & James Bentley:

g) High Amenity Landscape.

Effects of the proposal on Landscape values

John Hudson:

331. Adverse effects on ONL values are avoided. Key values identified by the PMEP are terrestrial. Where these attributes are relevant to the open ocean, they are not adversely affected.

332. There are no significant adverse effects on landscape character that is not ONL. Effects of the Proposal are very low for broader context, and low for localized context.

333. Cultural landscape values are difficult to interpret unless local iwi participate in their interpretation.

James Bentley:

334. The Outer Sounds is a very special landscape, full of slender peninsulas, islands, sanctuaries, special benthos, and a unique landscape for associative values. Principal values affected are perceptual, including aesthetics, openness, naturalness and wildness. Adverse effects on the broader ONL values are not avoided.

335. The Proposal results in “moderate to high” adverse landscape effects. These are not “significant” adverse landscape effects on Mr Bentley’s scale. The proposal will not protect the seascape of the Site from inappropriate development under Policy 15(b) of the NZCPS.

336. Cultural landscape values are difficult to interpret unless local iwi participate in their interpretation.

Effects of proposal on Natural Character

John Hudson

337. Mr Hudson relied on the Applicant's ecological experts for advice on biotic and abiotic effects on site specific natural character. Adverse effects on ONC values are avoided, and effects are otherwise minor. Key values are terrestrial.

James Bentley

338. Mr Bentley relied on Council's benthic and ecological evidence in relation to natural character. Adverse effects on ONC values are adverse and significant for reasons identified in his written evidence.

Effects of proposal on High Amenity Landscape Overlay

John Hudson

339. The PMEP generally focuses effects on terrestrial and coastal values. Amenity effects are very low to low, depending on proximity.

James Bentley

340. Proposal does not maintain amenity values. Adverse effects on amenity values are moderate-high (but not significant). If consented, the Proposal will not affect the extent of the mapped overlay in the PMEP.

Discussion and Findings

341. While natural character and natural landscape values are assessed separately, there is some overlap in relation to the "natural" values that underlie both (abiotic, biotic, experiential).

342. Counsel for the Applicant identified two primary issues for natural character, being:

a) The extent to which very high and outstanding natural character encroaches on the area impacted by the proposal; and

b) The effects of the proposal on natural character.[74]

343. This essentially captured the key issues. The landscape experts agreed that a broader context, and localized area, were both relevant to the assessment of natural character.

344. Counsel for the Applicant identified as a legal issue that natural character is not static, and changes over time. Their contention was that we should factor evolving natural character as part of our assessment of relevant effects. We partly agree. The *Hawthorn* decision [75] identifies the extent to which the future environment may be relevant, in terms of permitted activities and the receiving environment. It is not necessary to go beyond *Hawthorn*, particularly as our findings largely rely on evidential findings about the effects of the Proposal, rather than legal issues.

345. Mr Hudson identified broader context and localized areas as relevant to assessment (Figures 3 & 4); this included a 3km limit for local natural character scale.

346. Mr Bentley identified broadly similar scales. He accepted a 3km limit for local scale, but noted there are broad and localized qualities that contribute. Natural character is scale-related; and both broad and localized areas are important.[76]

347. The extent of the broad scale was partly in dispute, although the extent of difference between the two experts appeared more perceived than real, with Mr Bentley stating in the JWS that the

[74] Closing submissions at [145], [151]
[75] *Queenstown Lakes District Council v Hawthorn Estate Ltd* [2006] NZRMA 424 (CA)
[76] JWS (Landscape and natural character) at [2]

broad seascape setting was "reasonably consistent with Mr Hudson's approach."[77] To the extent there was a difference, we preferred Mr Bentley's broader scale, which in our view reflects the "bigger picture" context of the Inner Raukawakawa/Cook Strait and seascape within which the Site is located.

348. We briefly summarise our findings on this topic.

349. As a general proposition, we preferred Mr Bentley's assessment of the relevant context and values (both local and wider) for landscape values. We preferred Mr Hudson's assessment of the effects of the Proposal on those values.

350. In terms of context, we agree with Mr Bentley that seascapes are not all the same. Seascapes retain different levels of sensitivity, both in terms of their values and sensitivity to change. The Inner Raukawakawa/Cook Strait contains a plethora of landscape values that are virtually all natural or naturally focused. Development is not readily apparent, and is focused within bays and closer to land. While many of the attributes in the PMEP are terrestrial, at least some of the attributes relate to the open ocean setting for the Site. It is not the number of attributes that is important, but instead the weighting to be applied to the attribute (or attributes). As Mr Bentley emphasized, context is key. A terrestrial focus in the PMEP does not preclude a wider assessment of attributes when relevant to the open ocean setting.

Landscape effects

351. The PMEP identifies a small part of the Site as ONL.[78] Neither expert considers that an ONL overlay for the Site is appropriate. We agree.

352. Counsel for the Applicant noted a possible dispute raised by Mr Bentley, and (arguably) Mr Johnson's evidence, as to interpretation of Policy 15 NZCPS (which includes at least two directive verbs: protect, and avoid).

353. We agree that the more likely interpretation is that protection is achieved by compliance with the sub-paragraphs that follow (which refer to "avoid" adverse effects, etc).

354. It is not necessary for us to finally resolve the point, as we prefer Mr Hudson's assessment of the landscape effects of the Proposal. This includes his assessment of the seaward extent of the ONL boundary line. Both the land and the land-sea interface are broadly unaffected by the proposed development. Largely the values identified in the PMEP in Volume 3, Appendix 1, are place-based (and terrestrial). While we agree with Mr Bentley's in-principal position that a seascape can be outstanding, absent terrestrial factors; that does not advance the position in context of the merits of the location selected by the Applicant.

355. Whether a landscape (or seascape) has attributes sufficient to make it an ONL requires an essentially factual assessment based upon the inherent quality of the landscape (seascape) itself.[79] The generic depends on the specific. Mr Hudson provided a more systematic assessment. There is nothing in the values that Mr Bentley identifies which suggests why this location has greater "sensitivity" than other locations.[80] Mr Hudson has more carefully followed the values identified by the PMEP (alongside his site-specific assessment).[81]

356. Finally, as Mr Hudson noted, one important factor to reduce the potential visual impact for land-based views (and the corresponding landscape values) of the Proposal is the location of Blue Endeavour and the extent of separation distance from shore.[82] Additional mitigation measures are proposed through conditions to further reduce visual prominence from long distance views,

[77] JWS at [1] ("Broad setting"); Mr Bentley seemed to extend the "broad" area to encompass more of the Outer Sounds landscape setting, both for natural character and landscape assessments. This included "..the eastern flanks of D'Urville Island to the far west and the outer waters of Queen Charlotte Sound (Cape Koamaru and The Brothers) also contribute to the Outer Sounds landscape setting."
[78] Consent order dated 10 October 2022
[79] *Man O'War Station Ltd v Auckland Council* [2017] NZCA 24 at [61]
[80] C.f. Closing submissions for Applicant, at [257]
[81] Closing submissions for Applicant at [261]
[82] Hudson, Landscape and Natural Character Assessment (August 2019) at [25]

as well as the scale of visual dominance from nearby, water-based views. Most of the bulk of the pens, anchors, chains and ropes, will be below the waterline, and thus generally not visible to people.

Natural character effects

357. Counsel for the Applicant noted that the natural character assessment relies heavily on the scientific information presented. As soon as we descend beneath the surface of the water, we descend into more of a scientific realm.[83] We agree. While natural character includes biotic, abiotic, and perceptual factors, the sole source of information about the condition of the benthos was led by marine scientists (and, to a limited extent, evidence on trawling), and then interpreted by landscape architects.[84]

358. We have made findings that the benthic and water quality effects are (subject to consent conditions) minor, or less than minor.

359. We do not place significant weight on the trawling evidence. There was minimal evidence of trawling in the vicinity of the Site, and there were some limitations in the pre-2019 dataset. To the extent relevant, we find that trawling was not a regular occurrence at or near the Site, based on evidence and information provided by the benthic experts, and MPI.

360. Damage to biogenic habitat in the vicinity of the Site, was attributable to a combination of natural and anthropogenic causes. Effects of sedimentation from the farms will be orders of magnitude less than from natural processes [85] (and anthropocentric factors, such as land use and erosion). The natural character of an area that is periodically subject to high levels of sedimentation is less than an area which does not receive those high levels of sedimentation.

361. We preferred Mr Hudson's assessment and conclusions on natural character effects. We agree that the biotic and abiotic values present, and experiential factors, are high to very high in the local context, and very high to outstanding in the wider context. The proposal avoids more than minor or transitory adverse effects on those natural character values, through appropriate site selection, and via the proposed consent conditions.

362. We placed less weight on Mr Bentley's assessment of the natural character effects of the Proposal, partly because he placed too much weight on the trawling data as material, potentially determinative, of the natural character effects. In the JWS, he described the trawling data as "..the pivotal piece of information that assists us as landscape architects determine the condition of natural character.."[86] We disagree. We have placed weight on the agreed position reached between the benthic experts. We accept that the North and South farms will introduce human structures into an area of expansive open ocean, but we accept Mr Hudson's assessment that these effects are minor on the biotic, abiotic, and experiential elements. This is consistent with our findings on the benthic and water quality effects.

363. Mr Bentley placed weight on earlier iterations of benthic evidence, that benthic effects were likely to be greater than minor. This evidence was largely superseded as a result of further benthic habitat mapping which resulted in the JWS Benthic.[87] Mr Bentley also placed undue weight on the confidential trawling maps, which indicate occasional commercial fishing in the general area, but have limited utility given the lack of detailed information available. By contrast, Mr Hudson placed no weight on the confidential trawling maps. His assessment ultimately better aligned with the benthic expert evidence, which we traverse in greater detail in the Benthic Effects section of our Decision.

Amenity effects

364. We agree with Mr Hudson that effects on amenity values are generally low, and acceptable. The aesthetic coherence of the open ocean setting within which Blue Endeavour is located will be maintained due to the extensive scale of the context, small scale of the Proposal, and

[83] Closing submissions for Applicant, citing *Clearwater* (EC) at [163]
[84] Closing submissions for Applicant at [167]
[85] Closing submissions for Applicant, citing evidence of Dr Keeley
[86] JWS at [6]
[87] JWS Benthic Habitat Mapping 21 April 2022

design. Recreation effects are unlikely to be more than minor, with a focus for fishing charters on McManaway and Witts Rock sites; other forms of recreational use of the Inner Raukawakawa/Cook Strait (and Outer Sounds) will not be materially affected, and remain remote with a blue water boating experience.

365. This includes actual and potential effects associated with noise, odour, lighting, appearance of structures, reflective surfaces, building materials, and boat movements. The remote location means that the Proposal results in no more than minor adverse effects on these values. It will result in less than minor adverse effects on recreational and commercial boat traffic in the immediate area.

Cultural landscape effects

366. Māori cultural landscape values are a material aspect of the overall landscape values for the Site and its wider context. The PMEP has identified some of the relevant cultural landscape attributes, but these are described in general and high-level terms. Tangata whenua are of course experts in their tikanga and understanding of their relationship with their ancestral lands, waters, and taonga, and only tangata whenua can validate the existence and nature of these values.

367. Te Tangi a te Manu (2022) identifies that landscape experts should approach tangata whenua for direct evidence on cultural landscape values, to inform their assessment of effects. We received limited information from Messrs Hudson and Bentley on those values. Their original assessments and evidence predate the arguably "operative" date of the Te Tangi a Manu guidelines.[88] Moreover, this is an evolving part of landscape assessment.

368. While this was a potential gap in the evidence, we note that Te Rūnanga o Ngāti Kuia, provided context for assessment of the cultural landscape values and the potential impacts of the Proposal on those values. Cultural and spiritual values, including whakapapa to the landscape, form part of these values.[89] We have had regard to their submission, presentation and evidence on their whakapapa and connection to the land, Inner and Outer Sounds, and open ocean, and the potential effects of the Proposal on those connections.

369. We have relied on Ngāti Kuia's expression of support for the Proposal; and the submission by Te Ohu Kaimoana (which referenced the interests of other Iwi Authorities with relevant statutory acknowledgments). We have therefore concluded that the Proposal (subject to proposed consent conditions) is not inconsistent with the cultural landscape values, and adverse effects will be no more than minor. Further context is provided in our Cultural Effects section of our Decision.

370. In light of our conclusions on landscape, natural character, and amenity effects, the Proposal is generally consistent, and not contrary to the relevant objectives and policies identified by the planning experts, under the NZCPS, MSRMP, and PMEP. This includes directive objectives and policies in the Sounds Plan and PMEP[90]; and the recent amendments made (by consent order) to PMEP Policies 7.2.4 and 7.2.8. Consent conditions relevant to landscape, natural character, and management of amenity effects are addressed elsewhere.

Benthic Effects

Context

Benthic habitat

371. As outlined in the existing environment section above, the initial uncertainties expressed by submitters[91] and council experts with respect to the benthic habitat types and their location was

[88] Understood to be April 2022

[89] C.f. *Western Bay of Plenty District Council v Bay of Plenty Regional Council* [2017] NZEnvC 147 at [90]

[90] Amongst other places, these are identified by Mr Johnson in his final Report dated 29 July 2022. Generally these policies are effects-based. Therefore our conclusions on effects confirm the Proposal is not contrary to, or inconsistent with, these policies.

[91] Ms Miller's evidence in particular highlights a number of uncertainties which we acknowledged when considering caucusing.

addressed through field work (which occurred in March 2022) and by expert caucusing resulting in a Joint Witness Statement – Benthic Habitat Mapping dated 21 April 2022 (JWS-BHM).

372. The JWS-BHM agreed that the benthic habitat comprises:

a) Biogenic patch reef;

b) Biogenic clump reef;

c) Biogenic horse mussel/brachiopod bed;

d) Biogenic mixed habitat;

e) Transitional habitat;

f) Low density epifauna;

g) Low density epifauna with prominent scour;

h) Outcrop;

i) Undefined mixed habitat.

373. The location of these habitats is shown in Appendix 2 and Appendix 3 of our Decision. Dr Keeley and Dr Anderson provided evidence outlining the size of the area covered by each habitat type. We note here that they were generally in agreement with respect to these areas, subject to some minor caveats outlined in Dr Anderson's supplementary evidence dated 10 June 2022, which we accept. These caveats had no bearing on Dr Keeley's finding in our opinion as they were more points of clarification.

374. The JWS-BHM experts noted that it is possible environmental conditions will change over time and that this needed to be considered in the development of a monitoring approach.[92]

Benthic habitat values with respect to NZCPS Policy 11

375. Policy 11 of the NZCPS[93] was identified as a key policy in relation to the benthic effects assessment which we accept. Dr Morrisey assessed the ecological importance of the benthic habitats in and around the site, primarily in relation to Policy 11 of the NZCPS. Dr Anderson also carried out this assessment.

376. Both experts agree that no species recorded within the benthic habitats are listed as rare or threatened under Policy 11a (i or ii), but that some could be present but undetected.

377. Dr Anderson considered that the individual sub-types of biogenic habitat meet the criterion of Policy 11(a)(iii) both individually and in combination as part of a larger biogenic ecosystem. In her evidence dated 10 June 2022 Dr Anderson clarified that the "outcrop" in her opinion meets the criterion of Policy 11(a)(iii).

378. Dr Morrisey considered that the applicability of Policy 11(a)(iii) to the four described biogenic 'habitats' depends on whether each is considered to represent an ecosystem, or if they only do so in combination. He noted that in his opinion the categories of biogenic habitat identified in the AEE should be taken together and that they constitute an ecosystem.

379. Dr Morrisey stated[94] the DOC's definition of 'habitat' in its Policy 11 guidance note seems to be the more appropriate description for clump reef and the other three types of biogenic habitat, with 'ecosystem' applying to the larger-scale patchwork of the four different biogenic habitats taken together. In this case, Policy 11(a)(iii) applies only to the biogenic habitats taken together, not individually.

380. However, in his rebuttal evidence[95] Dr Morrisey considered that refinement of the definitions and characterisation of biogenic habitats has no significant effect on assessment of effects on

[92] Paragraph 24 Expert Conferencing JWS – Benthic Habitat Mapping 21 April 2022.
[93] Policy 11 Indigenous biological diversity (biodiversity).
[94] Paragraph 9 rebuttal evidence.
[95] Paragraph 17.

benthic habitats in the Blue Endeavour context, including adverse effects in relation to Policy 11 of the NZCPS. This is because for the purpose of assessing effects the Applicant's experts have taken a conservative approach and assumed that biogenic habitat, as a whole and as individual sub-types (patch reef, clump reef, etc.), meets the criteria of Policy 11(a) and (b).

381. We prefer Dr Anderson's assessment as being more cautious and note that in effect Dr Morrisey considers this is a reasonable approach.

382. There was agreement amongst the experts that the low density epifauna areas comprised two sub-classes: coarser sediments and softer sediments. Dr Keeley noted that the 'low density epifauna' habitat is effectively soft sediment habitats and has the lowest epifaunal diversity and ecological quality in the region. It is not unlike those habitats that occur in association with existing high flow farms in the Marlborough Sounds.

383. We understand that these low density epifauna areas also provide habitat for infauna. Dr Robertson stated that the sediments are well oxygenated with relatively low organic content (2.4–4.5%). Rich infaunal communities are present within sediments across the Red Survey Area[96] and are said to be typical of those present at deep high-flow areas within the Marlborough Sounds.[97]

384. Ms Miller considered the low density epifauna meets the Appendix 3 ecological significance criteria under Diversity and Pattern (Medium) within the PMEP; and the significance criteria for National Environmental Standards – Marine Aquaculture (NES-MA) as it has areas of shell hash >40%.

385. We understand that the NES-MA provides the framework for regional councils to determine applications for replacement coastal permits for existing marine farms. We are not considering a replacement coastal permit. We consider the assessment criteria in the NZCPS and PMEP are the appropriate criteria to apply.

386. Elvines et al (2019) (pages i-iii) summarised the seafloor as supporting a rich infauna typical of deep high-flow areas of the Marlborough Sounds.

387. Mr Davidson reviewed this report and considered:

> *It is unlikely that the infaunal communities described by Elvines et al. (2019) in the survey area would be considered significant or sensitive. The infaunal community at the site is widespread in the outer Marlborough Sounds as well as having similarities with some sites inside the Sounds (see McKnight and Grange, 1991).*[98]

388. Mr Davidson has been involved in projects assessing the significance of marine areas under the criteria in the PMEP criteria. He provided a detailed discussion on ecological significance and important features in his primary evidence. We prefer his evidence over Ms Miller's and accept that the low density epifauna is not significant from a PMEP perspective.

389. Dr Anderson stated[99] the:

> *'Low density epifaunal' zones were comprised of similar aggregate substrata to those of the clump-reef, but had little to no vertical relief. These relatively flat gently-sloping hard bottom habitats, appear to be regularly scoured and periodically buried by sediment flows moving down-slope, which would explain the low % cover of epifauna on these otherwise hard bottom habitats.*

390. No experts challenged this statement. The habitat map in Appendix 3 of our decision shows areas of low density epifauna with prominent scour at the southwest farm. Mr Davidson considered the site is a very high energy site.[100] There seems to be no doubt amongst all the

[96] Red boundary overlay in Figure 1 of his evidence.
[97] Paragraph 31 primary evidence.
[98] Page 60 primary evidence.
[99] Paragraph 29 primary evidence.
[100] Paragraph 26 primary evidence.

relevant experts that the site is subject to strong currents. The high energy environment at the site is referenced elsewhere in our decision.

391. Dr Morrisey considered that the 'low-density epifauna' in the footprint of the proposed farm is not considered to be of special ecological importance and does not meet any of the Policy 11(a) or 11(b) criteria.

392. On the basis of the evidence discussed above we find that the low density epifauna areas which include infauna are not ecologically significant and do not meet the NZCPS Policy 11 criterion. We accept that the infauna located at the site is widespread and that the low density epifauna areas are located in a high energy environment subject to strong currents with dynamic sediment flow.

Issues

393. Dr Keeley's primary evidence included a table NK4 which outlined activities that cause adverse benthic effects and the relevant benthic effects that need to be considered (column 1 and column 2). These are:

a) Mooring installation:

   i. Destruction and smothering of habitats/biota;

b) Presence of structures:

   i. Fouling organisms drop onto the seabed, potentially changing composition of biological communities and increasing predation; and

   ii. Shading by structures resulting in reduced food source for some organisms;

c) Active farm operation:

   i. Nutrients (mainly nitrogen and phosphorus) released from organic material resulting in increased algal growth;

   ii. Increased predation on biological communities from mobile organisms attracted to biodeposition and organic enrichment;

   iii. Effects of organic enrichment on epifaunal communities and sensitive taxa ranging from food supplementation to sublethal adverse effects or displacement;

   iv. Near-bottom oxygen depletion, ultimately causing oxygen stress to epifaunal and infaunal species;

   v. Alteration to infaunal communities from organic enrichment, ultimately leading to displacement;

   vi. Accumulation of contaminants in the sediment cause toxic effects on biota.

394. Dr Morrisey assessed the effects of anchor chains sweeping the surface of the seabed after farm pens are installed. This is also relevant to subsection (b) – presence of structures.

395. We accept that the range of effects outlined above are the relevant issues that we need to address in our decision. We note here that the effects listed under the heading active farm operation all relate to the deposition of waste material (salmon feed and salmon waste[101]). These effects are generally addressed together in the deposition modelling and associated effects assessments of the experts. We address the depositional effects of operation of the farms and mooring installation and chain sweep in more detail below.

Discussion and Findings

396. Dr Keeley considered the significance of the adverse effects associated with fouling organisms dropping onto the seabed, and potentially changing the composition of biological communities and increasing predation is less than minor. This was not challenged by other experts and we adopt it in our Decision for the reasons outlined in his evidence.

[101] Noting here that we accept that most of the deposition material arises from faeces excreted by the salmon, not from uneaten food.

397. Dr Keeley stated that the significance of shading by structures resulting in reduced food source for some organisms was negligible which we accept for the reasons outlined in his evidence. Again, we noted that this was not challenged by other experts.

Depositional effects of the operation of the farms

Biogenic Habitat

398. The depositional effects arising from the operation of the salmon farms was a significant issue discussed in the hearing. This is reflected in the large volume of evidence we received on this matter.

399. The Applicant undertook modelling of the depositional footprint at both farm sites using two feeding rates, being 1,143 tonnes per month and 2,286 tonnes per month. Two types of depositional models were used, the primary deposition predicted effects footprint (PD-PEF) and the residual solids predicted effects footprint (RS-PEF) which models resuspension of particles and allows for natural decay of the particles.

400. Dr Keeley stated the RS-PEF is considered less reliable in terms of likely effects (Elvines et al. 2021c) but is believed to provide valuable additional information about where the particles might be transported to as a result of the resuspension processes that are likely to be present at the site (due to the strong currents). Three different levels of residual solids (thresholds) are presented in the modelling work (7, 12.5 and 18 g/m^2). These are considered to correspond approximately to different levels of likelihood in terms of predicted effects (possible, probable, and likely, respectively). Elvines et al. (2021c) recommended the use of the 'midpoint', i.e., 12.5 g/m^2 essentially because it was considered most likely to be correct.[102]

401. Furthermore, he explained that the predicted depositional flux rates (both RS-PEF and PD-PEF) were used to predict the level of organic enrichment that can be expected in the soft-sediment habitats beneath and around the farm site. This enrichment state was then used to predict the effects of the waste deposition.

402. During the hearing, various benthic experts pointed out issues with the modelling that promoted uncertainty in the modelling results.

403. Dr Giles and Ms Miller pointed out issues with using enrichment state, an effects metric calculated for inshore soft-sediment infauna communities, in the modelling (referred to in the JWS-MU as ecological interpretation uncertainty).

404. Dr Broekhuizen referenced a 200-600m zone of ecological response uncertainty in his primary evidence that was referenced by other experts as the hearing progressed, stating that he believed that the combination of modelling uncertainty (simplifying assumptions), parametric uncertainty and uncertainty associated with the expert opinion means it is conceivable that 'biologically meaningful' change might arise outside of the proposed consented benthic effects perimeters. He believed the expert opinion/uncertainty is in the range +/- 200-600 m around much of the proposed consented benthic effects perimeter.

405. In order to address uncertainty in the modelling results (including the point raised by Dr Broekhuizen) we directed that the relevant experts caucus to address these uncertainties. The experts produced a Joint Witness Statement – Model Uncertainty (JWS-MU) on 27 May 2022 which we accept.

406. In summary, the JWS-MU distinguished between 'technical model uncertainty' and 'ecological model uncertainty'. Technical model uncertainty is associated with model structure or other technical aspects of the formal numerical simulation of the deposition rate and incremental deposited footprint. There was agreement amongst the experts that technical model uncertainty is relatively low.

407. The experts agreed that ecological interpretation uncertainty is the greatest contributor to uncertainty associated with the model predictions, especially uncertainty in the ecological response of biogenic habitat and epifauna to organic matter deposition and/or accrual.

[102] Paragraph 55e primary evidence.

408. Footnote 1 on page 5 of the JWS-MU clarifies how the 1,143 and 2,286 footprint were derived. The phrases '1143 modelled footprint' or '2286 modelled footprint' are used to refer to the modelled footprints representing the larger (i.e., farther distance from the farms) footprint based on an outer contour of either predicted solids flux (0.5 kg/m2/y) or residual solids accrual (12.5 g/m^2) for respective monthly maximum feed discharge of 1143 or 2286 tonnes/month/farm, respectively (as described in the evidence by Dr Smeaton, dated 30 September 2021).

409. The origin of the 200-600m zone of uncertainty estimate referred to in the hearing originates from the Tory Channel modelling of salmon farm deposition and benthic effects, specifically from the uncertainty around when effects would start to be realised (at what level of residual solids).

410. The 12.5 g/m^2 residual solids accrual threshold was chosen by Cawthron for the Tory Channel modelling as the value at which it was 'likely for effects' to be realised. The 7 g/m^2 was a lower threshold where it was less likely but possible for effects to be realised, and the 18 g/m^2 was a higher threshold where effects were 'very likely'.

411. The previously discussed estimate of 200-600m (initially raised by Dr Broekhuizen) relates to the approximate distance between the 7g/m^2 and 18 g/m^2 model footprint contour lines in the simulations of solids accrual for the Blue Endeavour farm blocks. This can be visually represented as the area between the 7 and 18 g/m^2 contours as shown in Appendix 3 of our Decision (the cross hatched area).

412. Furthermore, the estimate of 200-600 m is a reflection of the uncertainty of how soft sediment communities respond to organic loading as this was the benthic impact of relevance in the Tory Channel modelling. This estimate does not reflect uncertainty associated with the response of biogenic habitats or species to organic matter deposition.

413. Paragraph 22 of the JWS-MU makes the point. No information is available on appropriate residual solids accrual threshold reflecting the likelihood of effects on biogenic habitats or epifauna. This reflects an important aspect of ecological interpretation uncertainty, especially in the areas where the 1,143 and 2,286 modelled footprints overlap or are near biogenic habitat.

414. The JWS-MU combined with the JWS-BHM made a significant contribution to removing uncertainty (flagged at the start of the hearing) associated with the predictions of benthic effects. However, the JWS-MU[103] reiterated that because biota in biogenic habitat (including epifauna in the other non-biogenic habitats) may respond differently to organic matter deposition, it is not known how ecologically meaningful the 7, 12.5, and 18 g/m^2 thresholds are for biogenic habitats and epifauna.

415. The results of these JWS's were utilised by the experts to provide an update on their assessment of effects on benthic habitats which we address below.

416. Paragraph 44 of the JWS-BHM suggested that with regard to updating the benthic effects evidence it was most appropriate for the Applicant's experts to revise and submit their assessment of effects and for other parties to then review and comment on the revised assessment. We adopted this approach and Dr Keeley and Dr Morrisey updated their evidence accordingly for the April portion of the hearing. Dr Morrisey's updated evidence related to the effects of mooring installation and chain sweep and is discussed below.

417. Dr Keeley's revisions focused on updating table NK3 from his primary evidence relating to the effects on biogenic habitat (with reference to relevant sections of Policy 11 NZCPS) of deposition from farm waste, trace metals, and other contaminants on the seabed within the modelled footprint.

418. Dr Keeley stated in his updated NK3 assessment that because the habitat subclass 'horse mussel and brachiopod beds' was not found within the modelled footprint, and is considered unlikely to be present, effects on this habitat type are unlikely to occur.

[103] Page 18.

419. In all other cases he found the effects on biogenic habitat to be less than minor with the exception of clump reef where he stated that the effects are unlikely to be more than minor.

420. Dr Anderson responded to the Dr Keeley's updated evidence and reached the following conclusions with respect to the various biogenic habitat categories[104]:

> *Consequently, if the observed-farm effects remain within the predicted 2286-footprint, then I would agree that effects on the HMBB would be unlikely.*
>
> *If patch-reef is considered as an outer buffer zone of the larger HMBB (which ecologically it is) and examined by combining patch-reef and the HMBB, then this brings the total down to only 6%. So, unless patch-reef habitats are supporting different epibiont/epifaunal communities* (see footnote[105]), *then in my opinion the impact to patch-reef should be considered minor, rather than less than minor.*
>
> *No mixed habitat occurs within the three polygons (2286-footprint, Soft Sediment Habitat Response Uncertainty, or the 600 m buffer/ vicinity boundary).*
>
> *No rock outcrops occur within the '2286-footprint' or the 'Soft Sediment Habitat Response Uncertainty', However 50% of rock outcrops do occur within the 'local-vicinity' (600 m buffer zone), indicating their rather close proximity to the outer edge of the 2286-footprint. These outcrops also lie directly along the primary axis of waste transport. This, in my opinion, would indicate the importance of monitoring sites within this habitat to adequately assess organic waste accumulation downslope, and ensure the ongoing health of these deep rock outcrop habitats*

421. With regard to clump reef, Mr Davidson considered the biogenic clump habitat/community located in the southern footprint is likely to be regarded as ecologically important and should be monitored as it is currently found in the southern footprint.[106]

422. Dr Anderson added to this in her supplementary evidence dated 10 June 2022. Based on the albeit limited visibility of the ground truthing surveys, most of the clump reef habitats observed adjacent to the north farm were characterised by very low relief structure with what appeared to be lower density community composition, compared to clump reefs south of the south farm, with higher relief.

423. Furthermore, the epibiont/epifaunal communities of clump reef habitats adjacent to the North Farm were hard to identify, but appeared to share some visual similarity with those of nearby patch reef habitat. In contrast, the clump reef habitats, adjacent to the South farm (i.e., 'southern clump reef feature', appeared to have a more distinct and diverse community structure that also supports juvenile fishes.

424. This led her to conclude:

> *In relation to effects within the 2286 footprint - Northern farm: Most of the clump reef habitats observed adjacent to the north farm were characterised by very low relief structure with what appeared to be lower density community composition that was similar to nearby patch reef habitats; therefore, I consider effects to be no more than minor.*
>
> *Southern farm: Most (>65%) of clump reefs is beyond the 2286- footprint, therefore I consider effects to be no more than minor.*
>
> *If clump reef is considered as a stand-alone ecosystem for the purposes of a Policy 11(a)(iii), in relation to effects within the Area of Soft Sediment Habitat Response*

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[104] Dr Anderson clarified that her assessment looked at all five biogenic habitats: the four ground truthed (HMBB, patch-reef, clump-reef, Mixed-habitat) and the unground truthed rock outcrops – refer paragraph 8.

[105] The footnote Dr Anderson refers to reads "I note here that the video imagery is not of a quality to determine species identities across the data can't tell us one way or the other, especially given the HMBB was surveyed using an ROV while the eastern patch reefs were surveyed with a towed sled".

[106] Paragraph 28 primary evidence.

Uncertainty[107] then my conclusions are as follows: i. Northern farm: For reasons given above, I consider effects to be no more than minor. ii. Southern farm: As stated above the higher relief clump reef feature is partially within the 'Area of Soft Sediment Habitat Response Uncertainty", therefore I would consider effects to be more than minor if clump reef within this area was adversely impacted.

425. Paragraph 5 of Mr Pemberton's legal submissions dated 14 July 2022 provided an overall comment based on Dr Anderson's evidence. He stated the

> *DGC is now satisfied that the Applicant has demonstrated that effects on biogenic habitat will be avoided in a manner consistent with NZCPS policy 11 if effects on biogenic habitat are wholly contained within the 2286 footprint.*

426. Mr Davidson also provided a response to the updated benthic effects assessments. Based on the new information he stated that his previous summary remains little changed. However, he revised his previous comments on the importance of epibenthic habitats. He now considered that the patch reef supports biological attributes of a lower quality compared to the other biogenic habitats. Patch reef showed signs of physical damage such as broken biogenic structures and uprooted horse mussels. He also stated it is also unlikely the patch reef would trigger NZCPS (Policy 11).[108]

427. Mr Davidson created a risk/threat assessment matrix based on 2286 t/block/month for the southern and northern application sites, assisted by the new Cawthron data.[109] We have placed little weight on this matrix in our decision as it was provided late in the hearing and other parties did not have a chance to respond to it, it was new evidence rather than a response to the evidence provided by the Applicant, and it did not address significance of adverse effects.

428. In his primary evidence, he considered any adverse impacts within the depositional footprint on biogenic habitats would be more than minor. However, this opinion was provided before the JWS process outlined above and was not updated subsequently.

Findings – Biogenic Habitat

429. We prefer the evidence of Dr Anderson with respect to her findings on the adverse effects of deposition from proposed farm operations on biogenic habitat, being no more than minor if the observed farm effects remain within the 2,286 footprint. We note the importance of the biogenic clump reef to the east of the southern farm outside the modelled footprint.

430. Dr Anderson's findings with respect to the significance of effects on biogenic habitat inside the 2,286 footprint of both farms are supported by the evidence of Dr Keeley.

431. The Applicant has proposed to manage the farm operations so that adverse effects on biogenic habitat are avoided outside the 2,286 (t/farm/month) modelled footprint. This is reflected in Objective 58(b)(ii). We have included this as a condition of consent. This is consistent with Dr Anderson's assessment.

432. We note that with respect to the North Farm, Dr Anderson considered the adverse effects on biogenic habitat would be no more than minor out to the edge of the Area of Soft Sediment Habitat Response Uncertainty. However, DOC's position with respect to the NZCPS Policy 11 being met inside the 2,286 modelled footprint together with the Applicants volunteered condition leads us to determine that the cautious approach would be to require the farms to operate to the 2,286 modelled footprint (which is inside the Area of Soft Sediment Habitat Response Uncertainty).

433. On the basis of the farms being operated so that adverse effects on biogenic habitat outside the 2,286 modelled footprint are avoided we accept that adverse effects on biogenic habitat will be minor and that the requirements of NZCPS Policy 11 will be met.

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[107] Refer Appendix 3.
[108] Evidence prepared following the collection of new data and expert caucusing 2022, 8 June 2022, Paragraph 12.
[109] Evidence prepared following the collection of new data and expert caucusing 2022, 8 June 2022.

434. The experts generally agreed that adverse effects on Te Mete Mahinga/McManaway Rock are unlikely to occur due to its distance from the site, but that monitoring was important as it is noted as an ESMS in the PMEP, which makes it a significant site. We accept this.

Other (Non- Biogenic) Habitats

435. Dr Keeley provided an assessment of depositional effects which includes the other (non-biogenic) habitats in Table NK4 of his primary evidence. This assessment of depositional effects takes into account "effects based management" (as outlined in his evidence) and feed optimization to avoid waste. We note here that the consent conditions provide for effects based management based on monitoring and reporting. We have heard that feed optimization is applied to avoid waste (the feed is expensive). He also refers to washing of nets to minimise antifoulant leaching (if copper based antifouling is used) and good husbandry to avoid the need for therapeutics. The use of antifouling and therapeutics is not proposed (discussed above).

436. He concluded that the magnitude of the deposition effects listed range from negligible to minor.

437. Dr Keeley explained the effects of the deposition from the proposal on soft sediment communities in his primary evidence. Paragraph 58 provides an overview of the assessment. He stated the predicted depositional flux rates (both RS-PEF and PD-PEF) have been used to predict the level of organic enrichment that can be expected in the soft-sediment habitats beneath and around the farm site. This has been achieved through previous validation studies conducted at existing high-flow farms in Tory Channel (Keeley et al. 2013, Elvines et al. 2021c). In effect, modelled footprints for historical scenarios are used to predict the solids flux for corresponding historical monitoring sites (with environmental data). This is conducted for multiple sampling stations at multiple farms over multiple years, and the relationship between predict flux and observed organic Enrichment Stage (ES, Table 1, Figure 5) are thereby described numerically.

438. According to the Cawthron Report attached to his evidence as NK1 (section 3.1) the response of soft sediments habitats to enrichment from salmon farms are typically well understood in an inshore context in New Zealand. No witnesses disputed this.

439. Dr Keeley was confident that this approach could be transferred to the site we are considering and utilised with respect to soft sediment habitat effects predictions. Ms Miller pointed out several concerns with this approach in her evidence[110] particularly with the use of this approach to assess effects on epifauna including biogenic habitats. Dr Keeley provided rebuttal evidence on this matter explaining that ES is not proposed to be used for assessing epifauna communities[111] which we accept. We have outlined our findings with respect to biogenic habitat above.

440. An additional concern of Ms Miller was that the relationships between the modelled flux and ES that were developed from the high flow sites in Tory Channel cannot be applied to the Blue Endeavour site. Dr Keeley replied to this transferability issue.[112] He acknowledged there are recognised challenges in transferring assumptions from one environment to another. However, hydrodynamic and depositional models take most of the site-specific physical differences into account, and the predicted spatially explicit fluxes remain our best means of estimating what the benthic environment should experience and provide the best evidence available, short of having an existing open ocean farm in the same type of environment to compare to. The flux-to-effects relationships should approximately hold and represent the best available tool for predicting benthic effects from fish farm discharges.

441. We accept Dr Keeley's statement on this transferability matter.

442. In his conclusion in his primary evidence, Mr Keeley stated that soft-sediment enrichment is predicted to occur across a large area (hundreds of ha) of seabed, but the magnitude of effects is relatively low (Enrichment Stage 4 or less) compared to any and all existing inshore farms.

[110] Response to question 4 paragraphs 71 through 78.
[111] Paragraph 75.
[112] Paragraph 77.

443. What this means is explained in paragraph 60 of his primary evidence. High enrichment (cf. Enrichment Stage 4 in Marlborough Sounds, Table 1, Figure 5) is described as "a transitional stage between moderate effects and peak macrofauna abundance. A major change in community composition is evident. Opportunistic species predominate, but other taxa may still persist. Major sediment chemistry changes (approaching hypoxia), patches of Beggiatoa-like bacteria likely to be visible. We accept this.

444. Dr Keeley provided an assessment of effects on infauna at the site. Dr Keeley considered some of the more sensitive infauna species will likely be lost in most enriched areas, but communities will still be reasonably diverse with a reasonable capacity to assimilate wastes. Also, a large area within the deposition footprint may show a 'fertilisation' effect, with enhanced abundances and taxa richness, which could also occur outside of the deposition footprint.

445. He stated that effects would be persistent for the duration of farm, but the highest magnitude of effects will be periodic in accordance with feed use cycles, or less intense if constant discharge feeding is used (within the 10,000 tonne limit). Recovery back to background state is in the order of years following farm removal[113].

446. He noted that in the case of periodically high feed use at the site, periods of lower (or nil) feed use between production cycles and early in the grow-out phase may alleviate benthic effects to some degree.

447. However, Dr Keeley noted in paragraph 152 of his evidence that there are currently very few studies that have examined recovery trajectories at highly dispersive (i.e., high-flow) sites. However, the evidence available does indicate that recovery can be considerably faster than for low-flow sites.

448. No other experts provided a contra opinion to Dr Keeley's evidence with respect to the significance of effects on the other (non-biogenic) habitats.

Overall Findings Other (Non-Biogenic) Habitats

449. We accept that the low density epifauna areas which include infauna are not ecologically significant and do not meet the NZCPS Policy 11 criterion. We also accept that the areas are widespread and that, at the site, they are located in a high energy environment subject to strong currents with dynamic sediment flow.

450. Subject to the conditions of consent, we accept Dr Keeley's evidence that the depositional effects on other (non-biogenic) habitat will be minor for the reasons outlined above.

Effects of mooring installation and chain sweep

451. The effects of mooring installation and chain sweep were addressed in the supplementary evidence of Dr Morrisey during the October session of the hearing. He updated this evidence based on the JWS-BHM discussed above and presented this to the April session of the hearing.

452. Dr Morrisey's evidence considered the (short-term) effects on the seabed from the setting and presence of anchors, and the ongoing effects of anchor chains sweeping the surface of the seabed after farm pens are installed. Based on information on the areas and types of habitats affected, he concluded these effects as minor or less than minor.

453. Dr Morrisey also considered potential benefits to seabed habitats that may derive from the exclusion of destructive activities, such as bottom fishing, from the area bounded by the farm structures. He assessed this benefit as probably very limited given that some of these areas are potentially affected by deposition of organic material from the proposed farm,[114] and the relatively limited intensity of bottom fishing in this part of inner Raukawakawa/Cook Strait.

[113] Primary evidence, Appendix NK4.

[114] His assessment related to both farms, this statement applies to both farms. Dr Morrisey was referring to both blocks of pens north and south sites as a farm.

454. Dr Anderson responded to his updated evidence on 10 June 2022.[115] She reviewed and agreed with Dr Morrissey's calculations with respect to the habitats disturbed by anchor placement and chain sweep (2.98 ha of biogenic habitat, being 2.04 ha of patch reef and 0.94 ha of clump reef). In addition, she agreed with his findings with regard to adverse effects with the caveat that in case of anchor failure requiring an anchor to be relocated, the area of disturbance would be of low aerial impact and the impacts of this would also be expected to be minor where only a few relocated anchor sites were required. The latter caveat had no implications with regard to Dr Morrisey's findings in her opinion.

455. Dr Anderson also responded to the statement about the potential benefits of excluding other destructive activities as being very limited, stating that she had re-assessed the multibeam imagery (that shows the very fine-scale 3-dimensional biogenic structure over the site), and found there to be no notable fishing evidence across or within the biogenic habitats located within the 'area bounded by the farm structures'. Consequently, she agreed with Dr Morrisey's statement that there would be 'limited' (if not, no) benefit from the inclusion of these farm structures on the underlying biogenic habitats.

Overall Findings Effects of Mooring Installation and Chain Sweep

456. On the basis of this discussion above, we accept and adopt Dr Morrisey's findings and consider that the adverse effects of anchor installation and chain sweep will be minor.

Staged Approach to Farm Start Up

457. In response to the uncertainty regarding benthic effects (that was highlighted in the October portion of the hearing), the Applicant proposed a staged approach to address this uncertainty. This provided for consent to be granted initially allowing 1,143 tonnes per month of feed which could be adjusted to 2,286 per month after meeting benthic quality standards and other requirements (as outlined in conditions 31 and 32 August 19 2022 version).

458. Although staging was volunteered by the Applicant we do not consider that it is necessary or proportionate. On the basis of the evidence received in the latter part of the hearing, we have determined that the staged approach to starting up the Farms is not required for the following reasons:

a) The staged approach was proposed to address uncertainty with regard to benthic effects. Much of this uncertainty has been addressed by the substantial amount of work by the benthic experts, including the additional field work, and caucusing of the benthic experts (refer JWS-BHM and JWS-MU), to the point where experts were able to provide certainty with respect to assessment of effects;

b) Dr Giles presented a substantial number of concerns about the proposed benthic conditions and the linkages between the proposed staging and the benthic conditions in her response to the final proposed set of conditions and submitters' comments on 29 July 2022, many of which have not been overcome by the Applicant's final set of conditions. In particular with respect to the proposed Benthic Quality Standards (BQS). We consider that Dr Giles has demonstrated that the staged approach is difficult to verify and is unwieldy;

c) The Applicant has volunteered to operate the Salmon Farms so that adverse effects on biogenic habitat are avoided outside the 2,286 (t/farm/month) modelled footprint. The Applicant has demonstrated this can be achieved by adjusting feed and salmon stock levels.[116] As outlined in evidence, this requires a robust monitoring and reporting system to ensure this occurs. The benthic conditions support this requirement; and

d) It is not directly connected to an adverse effect of the proposed activity on the environment or a relevant regional rule.

Benthic Conditions

459. As with the other conditions, the proposed benthic conditions have evolved through the hearing process based on our questions and comments from other parties, including (in the later stages

[115] Paragraphs 10 through 12.
[116] The two main parameters that can be altered to influence the amount of deposition to the seabed.

of the hearing process) MPI, DOC and Dr Giles. We have taken these comments into account in the final conditions.

460. Dr Giles provided a large response to the proposed set of conditions and submitters' comments dated 29 July 2022. We have carefully considered the points raised by Dr Giles and the final conditions address many of the concerns raised by her. We note here that we consider the monitoring that the Applicant has undertaken to date is sufficient to remove the need for a pilot survey referred to by Dr Giles. The survey work to date has tested and refined monitoring methods. The requirement for a baseline survey and ongoing monitoring and reporting will further refine the monitoring methods over time.

461. We consider the final conditions address environmental effects (by setting benthic quality objectives), are measurable and enforceable, less complex (which removes uncertainty and risks to the Consent Holder and the environment) and provide for adaptive management of the farm operation. The conditions also include a Consent Authority review clause should unforeseen adverse effects arise.

462. The conditions are consistent with the MPI Best Practice Guidelines for Benthic and Water Quality Monitoring of Open Ocean Finfish Culture in New Zealand December 2021 (MPI Benthic and Water Quality Monitoring Guidelines) and provide scope to enable the more detailed aspects of the Guidelines to be utilised when implementing the consent conditions.

463. To address concerns raised by Dr Giles and other parties we have amended the final condition set as follows:

a) We have removed the Benthic Quality Standards (BQS) from the conditions and required them to be provided in a final Benthic Monitoring Plan for Council certification;

b) We have removed the Benthic Quality Objectives (BQO) for soft sediment and benthic habitat inside the 2,286 (t/block/month) modelled footprint as we have found that the effects on deposition inside the footprint are no more than minor based on the evidence. However, we have required ongoing monitoring and reporting to occur inside the 2,286 modelled footprint so that if any unforeseen adverse effect on the environment occurs as a result of the exercise of this resource consent it may be addressed by the Consent Authority reviewing the conditions of consent (included in the review condition);

c) The conditions require the Consent Holder to submit an initial Benthic Monitoring Plan (iBMoP) for Council certification prior to undertaking a baseline survey;

d) Following the baseline survey, a Benthic Monitoring Plan (BMoP) will be supplied to the Council for certification. The BMoP will be used to undertake monitoring once any Farm is operational. It will include BQS that provide a quantitative measure of the corresponding BQO, monitoring stations and parameters, monitoring frequency having regard to peak feeding periods (at least annually in the three-month period centred on the month of anticipated Monthly Feed), monitoring methods, and criteria for review (as outlined by Dr Giles);

e) We have removed the tier 1 (screening) and tier 2 (compliance) monitoring approach and initially require all stations and parameters to be sampled noting that the monitoring stations and parameters can be altered over time through a Council certification process (i.e. through certification or review of the BMoP);

f) Once any Farm is operational, monitoring will occur in accordance with the BMoP;

g) An Annual Monitoring Report will be required to be provided to the Council. The report will include the applicable information listed in Dr Giles evidence,[117] including an assessment of whether the seabed state meets the BQO (as demonstrated by the BQS), recommended changes to farm operations to comply with consent conditions (if any) and whether these have been implemented, and any recommended changes to the BMoP;

h) Any ongoing changes to the BMoP will require Council certification.

[117] Paragraph 82e.

Cultural Effects

Context

464. The Application and Mr Johnson, on behalf of MDC, details the following iwi as holding statutory acknowledgements over the entire application site and surrounding coastal marine area:

- Ngāti Apa ki te Rā Tō;
- Ngāti Kuia;
- Rangitāne o Wairau;
- Ngāti Koata;
- Ngāti Rārua;
- Ngāti Tama ki Te Tau Ihu;
- Te Ātiawa o Te Waka-a-Māui; and
- Ngāti Toa Rangatira

465. Two iwi have Iwi Management Plans (IMP): Ngati Koata, and Te Atiawa. The Application provided a review of these Plans and NZKS concluded that the proposed activity does not conflict with either IMP.

466. Ngāti Kuia lodged a submission on the Application and appeared at the hearing. The customary area of Ngāti Kuia is called Te Kupenga-a-Kuia[118] and includes the site of the Blue Endeavour salmon farm. Ngāti Kuia used the resources of their customary area and developed customs, practices, stories and whakatauki connecting Ngāti Kuia to them, through whakapapa and tikanga. They used mahinga kai (harvesting areas), tauranga ika (fishing grounds) and māra (cultivations) in Te Hoiere (the Pelorus area) and Whakatū (Nelson). They had large cultivations at Waimea and harvested tītī (mutton-birds) from the outer Marlborough Sounds Islands. Fish and shellfish were taken along the coastline, particularly in the Marlborough Sounds. Ngāti Kuia had an established pakohe (argillite) industry, and gathered and traded pounamu.[119]

467. Te Ohu Kaimoana also lodged a submission. Te Ohu Kaimoana is a representative organisation (on behalf of 58 Mandated Iwi Organisations) that was established through the passage of the Maori Fisheries Act 2004. Their role includes protecting and enhancing iwi interests in the marine environment, in relation to customary and commercial fisheries and aquaculture.[120] Their submission stated that they do not intend their response to conflict with or override any response provided independently by iwi.[121]

Issues

468. The issues identified in the submissions (of Ngāti Kuia and Te Ohu Kaimoana) have been grouped under the following headings:

a) Environmental capacity of the area including adaptive management framework and continuous monitoring of performance;

b) Protection of marine mammals;

c) Protection of Ngāti Kuia traditional fishing grounds (including biosecurity and wild fish); and

d) Navigation, seabirds, mortalities, engagement process

469. The evidence received on each of these topics is identified below followed by discussion and our findings.

[118] Submission Te Runanga O Ngāti Kuia page 3
[119] Submission Te Runanga O Ngāti Kuia page 3 and 11
[120] Submission Te Ohu Kaimoana para 2
[121] Submission Te Ohu Kaimoana para 5

470. As with other topics assessed in our Decision, there is inter-relationship and crossover. In terms of our assessment of cultural issues we consider that the whole Decision is relevant due to the kaitiaki tuatahi o Te Hoiere role of Ngāti Kuia; their protection obligation including the maintenance of the mauri of natural and physical resources; their exercise of rangatiratanga and kaitiakitanga; and to enhance mauri where it has or will be degraded[122].

Environmental capacity of the area including adaptive management framework and continuous monitoring of performance

471. The submission of Ngāti Kuia raised concerns about the environmental impacts arising from the proposed Salmon Farm. Highlighted was their experience with adverse effects from salmon farming within the Sounds on the seabed, and the deposition footprint underneath the farms.

472. Ngāti Kuia did not oppose the offshore Proposal as they saw it as an opportunity to achieve better environmental outcomes for inner Te Hoiere (Pelorus area) because it is situated away from the Te Hoiere entrance.

473. Ultimately Ngāti Kuia has expectations that monitoring and compliance would be robust to give them certainty that their future environmental integrity is secure. They stated that monitoring is essential for culturally significant aspects.

474. Ngāti Kuia also highlighted the importance of innovative and evolving technologies and included a whakatauki:

> *Te Ao Hurihuri – a changing time*
>
> *Hinga atu he tetekura, aramai he tetekura*
>
> *As one frond grows and dies, another will grow to take its place*
>
> *"Referring to innovation, changing laws and legislation that manage fisheries and our ability to grow with it"*[123]

475. Ngāti Kuia recommended that an adaptive management framework be developed utilising best management practices adapted for offshore salmon farming and that a cautionary approach be adopted.

476. Te Ohu Kaimoana stated that while iwi supports open ocean aquaculture, this is only on the basis that such development operates within an adaptive management framework and continuous monitoring of performance that is within the conditions that set the limits of acceptable change. This is to ensure the site safely operates inside the environmental capacity of the site and its surrounding environment.[124] Their support for adaptive management and monitoring frameworks extended to allow for the use of evolving technology and methods over time. They stated that adaptive management is key to ensuring that a framework is in place for timely response to effects that exceed those predicted. This includes those that occur within or outside of the predicted perimeters.[125]

477. Te Ohu Kaimoana highlighted the importance of ensuring that the conditions of the consent provide certainty of action and responsibility in the event that the performance on the farm does not meet the thresholds set out. They noted that this application is one of the first to propose the establishment of an open ocean salmon farm in New Zealand, and therefore lacks empirical evidence. While good work has been done on modelling impacts of the proposed farm and on the surrounding environment, in this situation there remains an inevitable uncertainty over the precise impacts on that environment. They understand that this is of itself not unusual with new ventures.[126] In circumstances where new aquaculture space is approved in takutai moana, this will trigger allocation of additional aquaculture settlement assets for Iwi Authorities, but this

[122] Submission Te Te Runanga O Ngāti Kuia page 5
[123] Submission Te Te Runanga O Ngāti Kuia page 9
[124] Submission Te Ohu Kaimoana para 7
[125] Submission Te Ohu Kaimoana para 11
[126] Submission Te Ohu Kaimoana para 10

applies by operation of law under The Maori Aquaculture Commercial Claims Settlement Act 2004 and is not governed by the conditions of the proposed resource consents.

Marine mammals

478. Marine mammals are of great cultural importance to Ngāti Kuia. In particular the importance of Kaikaiawaro (a dolphin) their tipuna taniwha is acknowledged who created Te Hoiere by carving it out with his nose and it was Kaikaiawaro who guided the ancestor Matuahautere and his waka to this place.[127]

479. The concern for Ngāti Kuia was about the potential for marine mammals to become entangled with the structures of the Salmon Farm and especially with the net system. They noted that the single net system was new technology that has yet to be proven[128].

Traditional fishing grounds

480. Ngāti Kuia has culturally significant fishing areas surrounding the Site at Pouataikino Mahinga (Alligator Head), Motu Ngarara Mahinga (Titi Island), Te Mete Mahinga (Witts - MacManaway Rock) and Te Uku (Cape Lambert).[129]

481. Their submission states that Ngāti Kuia were also known as "Te Iwi Karakia" their history and waiata tells of their people using the power of the karakia before fishing to calm the sea and provide bountiful fishing and safe passage home. Their traditional fishing practises also saw them utilising their catch to trade with hapū, early explorers and Te Iwi Hou. These practises enabled them to feed their families, trade their catches and also allowed them to provide manaakitanga for manuhiri, which is important to the mana of their iwi. Customary/commercial fishing of the past is also important for their present fishers and for their future generations to allow them to carry on the traditions of their Tipuna. In terms of their commercial fishery interests they noted that customary is the tuakana (elder) of commercial and all of their Settlement entitlements are intertwined and linked.[130]

482. During their presentation at the hearing Ngāti Kuia spoke in some depth about their whanau wānanga that are held, and the immense value in them, especially in the ability to transfer customary fishing[131] knowledge and integrating modern and traditional methods. These wānanga allow Ngāti Kuia to 'walk in the footsteps of their ancestors'.

483. Ultimately Ngāti Kuia was concerned that their ability to utilise their traditional fishing areas could not be compromised. Their taonga species could be reduced in numbers or affected in some other way such as biosecurity risk, displacement through predators, and from seabird aggregation at the Salmon Farm.

Navigation, seabirds, mortalities, engagement process

484. The submission of Ngāti Kuia also highlighted potential navigational issues due to what they perceive as a high navigational area. At the hearing they also spoke about their work towards revitalising waka and waka hourua and they were concerned that the Proposal would involve exclusion zones limiting their ability to undertake these cultural practices.

485. Ngāti Kuia also had concerns regarding seabirds, especially in terms of effects arising from the Salmon Farm on their ability to continue to undertake customary cultural harvest of Titi (Muttonbirds) on Motu Ngarara / Titi Island and the surrounding area. Titi are considered a taonga species and part of their ongoing wānanga promoting whanau reconnection with their customary practices. They were also concerned about potential effects of an aggregation of seabirds around the Salmon Farm structures.

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[127] Submission Te Runanga O Ngāti Kuia page 17
[128] Submission Te Runanga O Ngāti Kuia page 8
[129] Submission Te Runanga O Ngāti Kuia page 5
[130] Submission Te Runanga O Ngāti Kuia page 7
[131] We note that the wānanga are regular and cover a wide range of important cultural matters to Ngāti Kuia in relation to their lands, waters and taonga. For example their ancestral links to mahinga kai Taiao, Titi Island and surrounding islands, the customary harvest of seabirds (Titi), horticultural training, kaitiaki training.

486. They were dismayed with the level of salmon mortalities in the wider Sounds environment, and highlighted the importance of investment in waste management and the need to develop policies to ensure avoidance of any spread of disease to native fish species and to neighbouring salmon farms.

487. In regard to the engagement process, Ngāti Kuia noted that it had been difficult due to a long history of conflicting views and values, and due to the technical extent of the Application. They hold strong opinions that salmon farming should never have been located in the inner sounds and so essentially they support the open ocean location. They have worked with NZKS and developed a Memorandum of Understanding based on achieving environmental outcomes for the site and Te Hoiere as a whole.

Discussion and Findings

488. As a base for our assessment we are mindful and acknowledge the importance of tangata whenua in the coastal environment. The area of the Application is the turangawaewae of Ngāti Kuia; they have statutory acknowledgement also. As noted, other iwi are also likely to have ancestral (as well as statutory) connections to the Site and surrounding areas.

489. We are cognisant of the myriad of statutory planning provisions that provide guidance for decision makers and a road map to persons that are embarking on activities in the coastal environment, with the NZCPS providing a foundation. The objective[132] is to take into account the principles of the Treaty of Waitangi, recognise the role of tangata whenua as kaitiaki, and provide for their involvement in the management of the coastal environment by:

- Recognising the ongoing and enduring relationship of tangata whenua over their lands, rohe and resources;
- Promoting meaningful relationships and interactions between tangata whenua and persons exercising functions and powers under the Act;
- Incorporating mātauranga Māori into sustainable management practices; and
- Recognising and protecting characteristics of the coastal environment that are of special value to tangata whenua.

490. The Application that was lodged with MDC was largely absent of iwi concerns and devoid of cultural analysis, thus resulting in reliance on Ngāti Kuia's submission and the information and evidence presented at the hearing. Ms Munro, on behalf of the Applicant, agreed that the original Application did not address the requirements of the NZCPS detailed above. She thought it was unfortunate that engagement between NZKS and Ngāti Kuia had not progressed to the stage of Ngāti Kuia preparing a formal cultural impact assessment (CIA) and as a result, it has not been possible for NZKS's experts to consider the cultural values and associations.[133]

491. We do acknowledge that some of the Applicant's expert evidence that was lodged for the hearing attempted, to a limited extent, to assess cultural matters.[134] Overall the Panel were disappointed that, for whatever the reason/s, the assessment of potential cultural effects had not advanced to any great extent prior to the hearing. We were grateful for the presentations of Ngāti Kuia at the hearing, as these were insightful and detailed. We also note that a CIA is only one method of identifying cultural values and associations.

492. We acknowledge that some consultation and engagement was undertaken between the lodgement of the Application and the commencement of the hearing as there was the development of a Memorandum of Understanding between Ngāti Kuia and NZKS (discussed above), and some development in the conditions of consent.

493. We are aware that the Salmon Farms themselves will require some protection and so there are necessarily some areas that will be excluded from the public to ensure this is afforded. We find that this is a relatively small area in comparison to the wider coastal area that is available and

[132] NZCPS (2010) objective 3; note also Policy 2 of the NZCPS including the overarching relevance of te Tiriti o Waitangi principles.
[133] Primary evidence Munro para 4.9(d)
[134] For example Mr Hudson paras 40 – 41, 79 – 85

that it is unlikely to impinge on any waka or waka hourua activities that Ngāti Kuia wish to undertake.

494. Ngāti Kuia concerns about the environmental impacts arising from the Salmon Farm were linked to their expectations that monitoring and compliance would be robust to give them certainty that their future environmental integrity is secure. They stated that monitoring is essential for culturally significant aspects.

495. We find that the conditions requiring the development of a Mauri Framework (which may include a cultural health index) for monitoring the mauri of Motu Ngarara / Titi Island, Pouataikino / Alligator Head and Te Mete Mahinga / McManaway Rock goes some way to providing for their involvement and in protecting characteristics of the coastal environment that are significant to Ngāti Kuia. The conditions allow for tikanga based responses which we endorse. A report is to be prepared on the outcomes of monitoring under the Mauri Framework with a process set out if monitoring determines adverse effects on mauri as a result of the operation of the Salmon Farm. That report would also be provided to the Compliance Manager.

496. In regard to the adaptive management framework and continuous monitoring of effects on the environment, we find that with compliance with the conditions attached to this Decision, the environmental capacity will be preserved. The conditions specific to the benthic environment, feed discharge, density and biomass, the water column, biosecurity and fish disease and wild fish are robust and allow for monitoring, reporting and management plans to be developed with a focus on early detection of any change and adaptive management including allowing for evolving technology and methods. There are built-in reporting and review requirements supported by operating procedures and consistency with best practice guidelines. These were important to both Ngāti Kuia and Te Ohu Kaimoana.

497. We find that the above-mentioned conditions together with the monitoring and reporting requirements will ensure that the traditional fishing grounds of Ngāti Kuia are protected to ensure that they will be able to continue their customary activities. We also direct the reader to the biodiversity and fish disease, and wild fish sections of our decision where specific aspects of concerns raised by Ngāti Kuia have been addressed in detail.

498. In regard to marine mammals we find that the development of the Marine Mammals and Shark Management Plan (MMSMP), which has several aspects that require the involvement and notification of Ngāti Kuia and the Statutory Acknowledgement Iwi, will ensure that their cultural values are recognised and provided for. For example, Ngāti Kuia will receive the annual report that documents any incidents that have occurred over the course of a monitoring year, they will also receive notification within 24 hours of an incident occurring. They will have the opportunity to provide feedback on the MMSMP or a proposed amendment of it, along with the other Statutory Acknowledgement Iwi.

499. The conditions specific to seabirds along with the monitoring and requirement to develop a Seabird Management Plan (SBMP) follow a similar format as the marine mammals detailed above. There is a requirement for the consent holder to seek Ngāti Kuia feedback on the management plan and notification of Ngāti Kuia and the Statutory Acknowledgement Iwi of any seabird incidences. We find that this process will ensure that they are involved in the management and protection of taonga seabird species, especially the Titi, and any effects from seabird aggregation at the farm.

500. We find that the Waste Management Plan (outlined in the conditions of consent) will address the loss of solid waste debris to the environment and accumulation of solid waste debris along the shoreline and seabed, and a copy of this Plan is to be provided to Ngāti Kuia. This process recognises the importance of the issue to Ngāti Kuia and affords their involvement.

501. Overall we find that, with compliance with the conditions discussed above, the relevant principles of the Treaty of Waitangi have been taken into account, the role of tangata whenua as kaitiaki is recognised, and there is provision for their involvement in the management of aspects of the coastal environment that are important to them. We also consider that the conditions go some way to promote and nurture meaningful relationships.

502. We heard evidence from Ngāti Kuia that the relationship between their iwi and NZKS is important to them, and that this needs to be reflected in the proposed consent conditions relating to cultural effects and monitoring. We have had regard to this request. However, we also recognise that the term of consent is for 35 years and that it is possible that the consent holder may change from the Applicant over the 35 year term of the consent, creating enforceability concerns. We have accordingly amended the consent conditions to refer to the consent holder, while adding an advice note to identify this issue.

Effects on wild fish (excluding sharks)

Context

503. As with many of the issues addressed in this decision there is cross over and inter-relationship in our assessment – Wild Fish is no different. For completeness and efficiency, we have assessed sharks along with marine mammals as although the assessment below is relevant to sharks they are part of the conditions alongside marine mammals including the requirement to prepare and implement a MMSMP.

Issues

504. Fish farms are known to attract large, multi-species assemblages of wild fish which aggregate in their immediate vicinity. Submitters[135] were concerned about the effects on wild finfish from the Blue Endeavour including:

a) Effects of fish aggregating at the farm;

b) Effects of organic material deposited on benthic fish;

c) NZCPS Policy 11(a) and (b);

d) Impact on customary fishing;

e) Impact on commercial / recreational fishing;

f) Water quality from the discharges.

505. The Application was supported by an assessment of the effects of the proposal on wild fish[136] also known as the Wild Fish Report (2019) a co-authored report by Drs Taylor and Dempster whom we also heard evidence from. The evidence of Mr Knight (on behalf of the Applicant) in regards to the water column is also relevant. We discuss effects on the water column elsewhere in our decision. The Wild Fish Report 2019 and the evidence of Dr Taylor and Dr Dempster were reviewed by Prof Wing and Dr Morrison on behalf of MDC.

Effects of fish aggregating at the farm

506. Dr Taylor, for the Applicant, clarified that the relevant wild fish are either associated with the ocean bottom (benthic species) or inhabit the water column above (pelagic species). Because of the wide-ranging nature of particularly the pelagic species, part of his assessment was made with reference to an area beyond the Site[137]. Dr Taylor also referenced and adopted the two Benthic Studies (2019 and 2021) and the Water Column Report 3313 (2019 and 2020) and the water quality modelling report for the characteristics of the pelagic habitat.

507. In his evidence Dr Taylor identified that aggregation of wild fish occurs as a result of feed as well as faecal and other metabolic waste material acting as an attractant through suspension/re-suspension of discharged material into the water column. Other reasons include the 'FAD attraction'[138] of the farm, or the tendency of fish species to be attracted to floating objects and structures, and chemical cues generated from farmed fish. He also suggested that cues from

[135] For example; Friends of Nelson Haven and Tasman Bay, Southern Inshore Fisheries, Ngāti Kuia, NZ Sport Fishing Association, Challenger Scallop Enhancement Co Ltd.

[136] "Effects of salmon farming on the pelagic habitat and fish fauna of an area in north western Raukawakawa/Raukawakawa/Cook Strait and management options for avoiding, remedying, and mitigating adverse effects" (Wild Fish Report) (2019) co-authored by Messrs Paul Taylor and Tim Dempster.

[137] Primary Evidence Taylor 1 October 2021 para 16

[138] 'Fish Aggregating Device' Wild Fish Report Taylor and Dempster (2019) page 41

farm husbandry especially noise and light (including submerged lights) increases the probability that attracted fish may be vulnerable to enhanced night-time predation by other fish and marine mammals for example seals.

508. We note that the submission of FONHTB was specifically concerned about the behaviour of pelagic species to single light sources in an oceanic background. They also submitted that if fish aggregations occur, it is uncertain if the concentration of fish is the redistribution of existing fish populations or an effective increase in biomass of wild fish.[139] Their submission also identifies a relationship between marine bird distributions and fish aggregations – this aspect is discussed in the Seabirds Section of our Decision as it increases risk of seabird entanglement.

509. Dr Taylor stated that the vulnerability or susceptibility to being influenced by the presence of a marine farm installation of a particular wild fish can be described in terms of its habitat, its ecological requirements, the particular effect of the marine farm, and the distance from the marine farm to the area of residence or home range of that fish.

510. There are also impacts on the diet of wild fish. Dr Taylor identified these as arising from eating artificial feed or the availability of forage items generated as part of the biofouling on the farm structure. Dr Dempster noted that the level of lost feed available will in a large part determine the nature and extent of any effects. These effects include alterations to diet, physiological composition, condition, reproduction, spawning success, levels of contaminants in tissues, behaviour (movement and residence) and people's perceptions of how fish caught around salmon farms taste compared to fish caught away from farms.[140]

511. Dr Taylor and Prof Wing (on behalf of MDC) both identify that there is only limited information / lack of studies available on fish aggregations that can be applied to the proposal from NZ marine farms and as a result impacts are difficult to predict. However, the relatively high productivity of the Marlborough Sounds, the prosperity of fisheries within the local and neighbouring fisheries management areas, and the relatively close proximity of a potential migratory corridor (Raukawakawa/Cook Strait) for oceanic species such as albacore tuna, suggest the potential for aggregations similar to that measured overseas.[141]

<u>Effects of organic material deposited on the seabed (including contaminants)</u>

512. Dr Taylor identified in his evidence that the effect of organic material becoming deposited on the seabed, which can extend spatially from beneath the farm pens to some distance outside the perimeter, included modifying the bottom sediments and impacting infaunal and epifaunal prey of benthic wild fish species.[142]

513. Dr Taylor stated that the potential is for a range of organic enrichment that varies with the feeding scenario adopted for the farmed fish, pen block (northern/southern), and general area (footprint vs far-field). He also says that the effect on wild fish will, to some extent, be relative to the effect on their prey, but the mobility of finfish should allow them to avoid any of the "highest level" effects documented as being possible in the Benthic Report (2021) under the maximum permissible periodic feed discharge scenario. He noted that the area over which the "highest level" effects are predicted to occur is relatively small. He concludes that it is therefore expected that the severity of the effect on benthic finfish species would tend to be less than minor under this most intensive maximum permissible periodic feed discharge scenario.[143] This is consistent with our findings in the Benthic Effects Section of our Decision, whereby the deposition modelling and assessment was refined to the extent that the effects inside the 2,286 modelled footprint were found to be no more than minor.

514. Prof Wing considered that there is potential for depositional hotspots and the influence of these on accumulation of organic waste in the benthic and pelagic environments should be considered.[144]

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[139] FONHTB submission paras 16 - 17
[140] Primary Evidence Dempster 30 September 2021 para 16
[141] Primary Evidence Taylor 1 October 2021 para 71
[142] Primary Evidence Taylor 1 October 2021 para 19
[143] Primary Evidence Taylor 1 October 2021 paras 76 - 78
[144] Primary Evidence Wing 24 September 2021 page 25

515. The Wild Fish Report (2019) identified that concentrations of Organohalogenated contaminants (OHCs) have been measured in sediments beneath salmon farms overseas and elevated concentrations were found to be restricted to a local scale of up to 100m from pens. Dr Dempster confirmed that all contaminants investigated remained below safe consumption levels.[145] As the proposal does not seek to discharge OHC's this is not a relevant issue.

516. Fish feed used in New Zealand has been found to contain low levels of trace metals and heavy metals, below that of Australian and European standards. However, there is the ability of heavy metal accumulation in sediments below the farms and in wild fish around salmon farms. Prof Wing agrees with Dr Dempster that concentrations are expected to be below the above-mentioned standards however heavy metals in the sediment below farms could lead to elevation of heavy metal concentrations in the tissues of benthic invertebrates as well as fish that feed on these invertebrates.[146]

NZCPS Policy 11(a) and (b)

517. The Wild Fish Report (2019) attached to the Application considered Policy 11 of the NZCPS as wild fish fall within the scope of that policy.[147] The report considered and answered five questions with reference to the Blue Endeavour site generated from Policy 11. These questions were:

a) Are there any indigenous fish that are listed as threatened or at risk in the NZ Threat Classification System (NZTCS) or listed by the International Union for the Conservation of Nature (IUCN) as threatened?

b) Are there habitats for fish species that are at the limit of their natural range, or naturally rare?

c) Are there any nationally significant fish communities?

d) Are there habitats that are important during the vulnerable life history stages of fish species?

e) Are the concepts of areas and routes for migratory species and ecological corridors relevant to the pelagic fish community?

518. The Wild Fish Report identified four species as meeting the criteria of endemic, diadromous, likely to be distributed in the Raukawakawa/Cook Strait-Marlborough Sounds region and listed as nationally vulnerable or declining on the NZTCS list. These species were the shortjaw kokopu, the longfin eel, the giant kokopu and the bluegill bully.[148] We understand these species would be transiting the site as part of their lifecycle and they will not be living at the site.

519. Dr Taylor stated that the results of the analysis (in the Wild Fish Report) suggested that the effect on threatened or at risk indigenous fish would probably be low (Appendix F Table F1). In addition, no species were identified as being at the limit of their natural range and there was no information available suggesting nationally significant fish communities in the area.[149]

520. Dr Taylor noted that since the writing of the Wild Fish Report it has become clear that the biogenic habitat identified in the Benthic Reports (2019, 2021) are important habitat during vulnerable life history stages (juvenile) of species such as tarakihi and blue cod. However, he stated that the amount of this habitat impacted by the depositional footprints is very small in the context of the total biogenic habitat identified within the surveyed area and even more so within the wider region, which prompts his conclusion that effects will be less than minor.[150]

521. Prof Wing agreed with Dr Taylor and stated that the proposed farm will occupy only a very small proportion of the marine environment through which fish larvae and eels may migrate, the indigenous species being considered are not thought to aggregate closely in the marine

[145] Primary Evidence Dempster 30 September 2021 para 23
[146] Primary Evidence Wing 24 September 2021 page 15
[147] Dr Taylors primary evidence also provides a Table (F1) is a detailed assessment of NZCPS Policy 11 Appendix F page 61
[148] The Wild Fish Report Taylor and Dempster (2019) page 51
[149] Primary Evidence Taylor 1 October 2021 paras 125
[150] Primary Evidence Taylor 1 October 2021 paras 126

environment, and the larvae are expected to be distributed at deeper depths as they move towards the Raukawakawa/Cook Strait. On this basis he concluded that the installation of a finfish farm in the proposed location presents only a very low risk to these species.[151]

522. Overall Dr Taylor considered that the proposal will avoid adverse effects for wild fish as is required by Policy 11(a) and will avoid significant effects and avoid, remedy or mitigate other adverse effects as required by 11(b) of the NZCPS.

Impact on customary fishing

523. The submission of Ngāti Kuia highlighted concerns regarding the potential loss or alteration of their tauranga ika - traditional fishing grounds as a result of the proposal. At the hearing Ngāti Kuia elaborated on their tauranga ika which includes Te Mete Mahinga/McManaway Rock, Witts Rock and Motu Ngarara / Titi Island, describing the importance of these traditional fishing areas not only for physical sustenance but they are also part of their wider ongoing wananga (education camps) that they carry out for whanau.

524. Dr Dempster, drawing on the Wild Fish Report and Dr Taylors evidence, considered that overall customary fishing by Ngāti Kuia should not be greatly affected by the proposal. We undertook this to mean that if wild fish populations are not affected then customary fishing would also not be affected. The Report identified that wild fish aggregations at fish farms are typically seasonal in nature, which means fish move into the area and then later move away on a seasonal basis. This means that while the proposal may attract and draw in certain fish for some time (typically weeks to months), each block of pens and its attractive effect will not remove fish from the population able to be caught in the area over a longer time scale.[152] Specifically in regards to Te Mete Mahinga/McManaway Rock, Witts Rock and Motu Ngarara / Titi Island he stated that fishing will be able to continue and resident fish should not be adversely affected.

525. In relation to far field effects on wild fish populations, based on international studies, Dr Dempster considered that they generally increase in areas of fish farming as productivity in the region is increased due to the added nutrients.

Impact on commercial / recreational fishing

526. The submission from the NZSFC identified that Te Mete Mahinga / McManaway and Witts Rocks are close to the site and important habitat for groper and other fish species making them an important and popular fishing destination. The SIFM&CSE submission was concerned about reducing the area available for fishing, reducing the stock available for fishing, and the effects of marine farm waste dispersal onto nearby commercial finfish and shellfish beds. We address effects on commercial fishing below and the effects of marine farm waste in the Water Quality and Benthic Sections of this Decision.

527. Dr Taylor's evidence described the analysis that was carried out in the Wild Fish Report to investigate the potential effect on recreational species and commercial quota species in the area of the site with the aim of determining which recreational species and commercial finfish species were potentially vulnerable to the probable effects of the proposal and consequently vulnerable to having their populations altered in some way.[153]

528. In summary, in terms of commercial quota species, Dr Taylor identified that the species that are most vulnerable to the effects of the Proposal include school shark, blue moki, john dory, snapper, tarakihi, spiny dogfish, rig, red cod, and gurnard. He stated that the effects impacting this group of commercially harvested fish are the same as those discussed in the relevant sections above for wild fish generally with the severity of effects reflecting those included there.[154]

529. In regard to the commercial scallop catch Dr Taylor noted that there was a low number of events and catch which is consistent with the low numbers of scallop recorded in the

[151] Primary Evidence Wing 24 September 2021 page 20
[152] Primary Evidence Dempster30 September 2021 para 86
[153] Primary Evidence Taylor 1 October 2021 paras 94 – 95, 107 - 108
[154] Primary Evidence Taylor 1 October 2021 para 105

recreational charter boat catch and with the scallop survey map which shows the absence of any currently operational scallop bed in the vicinity of the site outside of Wainui Bay.

530. He stated that this information supports the almost total absence of scallops from the site. Under this situation only a zero to less than minor result can occur from the proposal on the existing scallop population.[155]

531. Dr Taylor concluded for recreational species that it was difficult to be definitive with the dataset. He noted that the closest possible boundary in this data set is quite extensive and includes Te Mete Mahinga/McManaway Rocks which is almost certainly the source of a large but unknown proportion of the recorded charter boat catch. The Te Mete Mahinga/McManaway Rock complex is removed by some distance outside the footprint of Blue Endeavour (Benthic Study, 2021), but may be within the extreme of the far-field deposition and therefore potentially vulnerable to chemical cues from Blue Endeavour. Under this outcome there may be a relatively small proportion of benthic recreational charter boat target species vulnerable to the proposal effects discussed above.

532. Relatively, the pelagic target species attracted and contributing to aggregations are perhaps more vulnerable to farm effects than benthic species under the conditions applying to this group. However, the mitigation of attraction through the management methods discussed above mean that numbers of aggregated fish near Blue Endeavour at any time will be minimised.

533. We outline our findings with respect to displacement of commercial and recreational fishing elsewhere in our Decision.

Water quality from the discharges

534. The issue of concern to submitters is how the discharges from the marine farm by either feed loss or fish excretions affect the quality of the water column and in turn how that could affect wild fish. We have found that the water quality effects of the proposal are minor. Consequently, we consider there would be negligible effects on changes in water quality on wild fish.

Discussion and Findings

535. We agree with the evidence presented to us that wild fish will aggregate at the marine farm(s) primarily as a result of feed loss, faecal and other metabolic waste material through suspension and re-suspension of discharged material into the water column. The farm structures and chemical cues generated from farmed fish along with lighting and noise from the farm operations are also likely to attract wild fish.

536. The experts[156] all agree that the key driver to wild fish aggregation is feed loss and faecal matter and that it is critical to minimise feed loss via strict feed control in order to minimise feed loss from the farm together with a robust and reliable monitoring strategy and we concur. In making this finding we are also cognisant of the evidence of Mr Preece whereby he states that food costs are the most expensive component of producing salmon. The minimisation of lost food is both a commercial and environmental objective of NZKS.[157]

537. Ms Miller (on behalf of FONHTB) stated that salmon are fed different size pellets at different size classes. Pellet size, along with the feeding efficiency of the different size classes, can affect the amount of food wasted. She also opined that it was unclear how the wave environment may affect the proposed operations and the amount of material discharged to the benthos and questioned whether it was possible that in high-wave conditions the percentage of food waste may be higher than 3%.[158]

538. Dr Dempster addresses feed loss management and options to monitor it in his evidence which replaces the monitoring study discussed in the Wild Fish Report. He said that farmers will develop and adapt specific protocols to minimise waste feed at their site through time based on experience and monitoring. This includes trigger points for reducing or stopping feeding based

[155] Primary Evidence Taylor 1 October 2021 para 113, 115
[156] Especially Dempster, Wing and Taylor
[157] Primary Evidence Preece 1 October 2021 para 108
[158] Primary Evidence Millar (FONHTB) 7 October 2021 para 45 - 46

on environmental conditions, such as strong current periods where feed may be rapidly washed sideways in the pen and away from feeding fish and known upper temperature and lower dissolved oxygen thresholds that lead to lower appetite levels.[159] Dr Dempster also discussed feed loss studies that have occurred at NZ King Salmon farms (Te Pangu and Ruakaka) which identified that the daily feed loss is low (0.1 – 0.3% of feed delivered).[160]

539. In terms of feed loss we find that the conditions specific to the monitoring of feed loss require strengthening. Here we take lead from Dr Dempster's evidence where he has identified two key factors; that is monitoring should be undertaken in a way that representatively samples the area covered by lost feed pellets as this will allow estimation of total feed loss at the site, and that monitored feed loss rates are representative of typical on-farm practices. He notes that this could be compromised if the farm manager is aware when feed monitoring is underway and consciously or unconsciously delivers feed more carefully.

540. It is likely not feasible for the farm manager to be unaware of the presence of feed monitoring equipment but setting a monitoring period that is long enough to capture typical feeding management should reduce the likelihood of the bias that could result from a short, well-defined monitoring period.[161] To address these two key factors Dr Dempster details what the monitoring protocol should involve and we have generally adopted this and amended the conditions accordingly.

541. Fish feed used in New Zealand has been found to contain low levels of trace metals and heavy metals. Based on the Applicants assurance that no OHC's or therapeutics would be used we have included a condition on consent to this effect.

542. What is uncertain or less clear is whether the concentration of wild fish at the farms is the redistribution of existing fish populations or an effective increase in biomass of wild fish. Also less certain are the impacts on the diet of wild fish, and the effects of organic material deposited on the seabed (including contaminants).

543. While Dr Dempster recommends that much of this work would be best done at an industry scale rather than at an individual site, Prof Wing disagrees and considers that without data on the effects on New Zealand fishes, or management actions triggered by limits on those effects we cannot confidently assess the scale or impact of those likely effects and we agree. Prof Wing further states that it should be noted that aggregations of sea birds and marine mammals are also linked to wild fish aggregations as part of a modified natural food web,[162] we discuss this aspect in the relative topics of Seabirds and Marine Mammals.

544. Dr Taylor, Dr Dempster and Prof Wing all identify that there is only limited information / lack of studies available on fish aggregations that can be applied to the proposal from NZ marine farms and as a result impacts are difficult to predict and we agree. The lack of information or studies available on the effects on wild fish aggregations specific to NZ has led us to find that a condition requiring monitoring of wild fish aggregations is necessary.

545. We have included a 'Wild Fish Monitoring Method' in the consent conditions to address uncertainties identified by Prof Wing.

546. We also consider that the wild fish monitoring need not be overly onerous and could be partly accommodated utilising camera equipment installed for monitoring feed loss. For example, we find that as part of the monitoring regime cameras could be used to monitor wild fish aggregations around the farms which would identify what fish aggregate at the pens. The benthic monitoring conditions will provide information on benthic fish habitat.

547. Dr Dempster states that should wild fish monitoring and testing of certain effects be considered as part of a condition of consent, his first recommendation would be to test aspects that relate to human health, such as contaminants and heavy metals, as data on these are likely of most

[159] Primary Evidence Preece 1 October 2021 para 28
[160] Primary Evidence Dempster 30 September 2021 para 36
[161] Primary Evidence Dempster 30 September 2021 para 44 - 45
[162] Addendum to evidence Wing 23 November 2021 para 25

interest to stakeholders.[163] We have included zinc and copper as a parameter to be tested in the soft sediment habitat grab samples.[164]

548. In assessing Policy 11 of the NZCPS the Applicant has determined that there are four species identified as meeting the criteria of endemic, diadromous, likely to be distributed in the Raukawakawa/Cook Strait-Marlborough Sounds region and listed as nationally vulnerable or declining on the NZTCS list. These species were the shortjaw kokopu, the longfin eel, the giant kokopu and the bluegill bully. We agree with Dr Taylor and Prof Wing that when considering the species involved aggregation of these species around the salmon farms is unlikely and presents only a very low risk to these species. Overall, we find that with compliance with the amended conditions for wild fish it meets Policy 11 of the NZCPS.

549. In regard to the impact on customary fishing we find that the conditions as we have amended them for feed loss and wild fish monitoring and monitoring of benthic habitat include robust management and monitoring processes that would identify and address any potential effects on species important to Ngāti Kuia. We also find that the conditions specific to cultural matters[165] assist in this as they include the Mauri Framework that provides for monitoring using cultural health indicators and incorporating tikanga based responses and reporting requirements. Overall, with the mentioned condition framework we find that any impact on customary fishing will be less than minor.

550. For water quality we agree that the selected site with its strong currents and deep waters is well-suited to mitigating the water column effects of the proposal – Mr Wilson also supports this view. We also agree that the proposal represents a low risk to the water column environment provided that the conditions of consent as amended by us are complied with. Our findings in the Water Quality effects section are relevant to our overall finding that the effects will be minor.

Overall Findings

551. Overall, we find that with compliance with the conditions of consent as amended by us the effects on wild fish will be managed so that they are less than minor.

Marine mammal and sharks effects

Context

552. The waters of Cook Strait, South Taranaki Bight, and the Marlborough Sounds are an important area for many of Aotearoa's dolphin and pinniped species and a vital migration corridor for several whale species. Species that occur in the vicinity of the Site, or the wider Marlborough Sounds and Cook Strait, include:

- Dolphin species including Hector's, common, bottlenose and dusky;
- Orca;
- Whale species including pilot, southern right, humpback whales;
- NZ fur seals;
- Occasional habitat for blue, minke, sei, fin and Bryde's whales; and
- Sperm whales and beaked whales are deeper water species but may occasionally visit the wider Cook Strait regions with warmer waters. [166]

553. The Site may constitute winter habitat for southern right whales and forms a small part of the humpback whales' northern migration corridor, as identified by Map 17 of the PMEP. Little information is available on where the majority of whales tend to pass through this corridor, once past the Tory Channel headlands to assess what effect this overlap might have.[167] Dr Clement confirmed that the Blue Endeavour Site was a small fraction of the total habitat available to

[163] Primary Evidence Dempster 30 September 2021 para 15
[164] On the basis of paragraph 82 of Dr Keeley's primary evidence.
[165] Conditions 5 – 10
[166] Discussed at (*inter alia*) Cawthron, Marine Mammal Assessment (July 2019), AEE Appendix G at p4ff (**AEE)**; species lists discussed in Professor Slooten's primary evidence at [17], [21]
[167] AEE, Appendix G, and Dr Clement primary at [18], [46]

support these species. [168] Dr Clement therefore adopted a precautionary approach, by assuming both humpback and southern right whales will interact with the Blue Endeavour farms.[169]

554. Relevant to integrated management, there are overlapping statutory frameworks that apply to marine mammals (and protected sharks). This includes the *Marine Mammals Protection Act 1978* (which provides for the conservation, protection, and management of all marine mammals); the *Marine Mammals Protection Regulations 1992* (which includes a permit regime for commercial marine mammal tourism, and prescribes rules for all boats (and aircraft) in the vicinity of marine mammals); and the *Wildlife Act 1953* (which includes protections for great white sharks).

555. Relevant shark species that may interact with Blue Endeavour as identified by the AEE, included common thresher, shortfin mako, porbeagle, and blue shark.[170] There is also potential for interactions with great white sharks (threatened, nationally endangered) in all areas, and basking sharks (threatened, nationally vulnerable) off the east coast of the South Island/Te Waipounamu.[171]

556. We did not receive a great deal of evidence on threatened and at-risk shark species, and potential effects of the Proposal on these species. For the most part, our discussion of the evidence below is necessarily limited to marine mammals. However, we have decided that threatened shark species face similar entrapment and entanglement risks to marine mammals, and should therefore be managed in the same way. This is addressed in proposed consent conditions and the Marine Mammals and Sharks Management Plan (MMSMP).

557. As noted in our Cultural Effects section of this Decision, Ngāti Kuia gave evidence that they have culturally significant fishing areas surrounding the Blue Endeavour Site; they also have kaitiaki duties and responsibilities in relation to their taonga species. While we did not receive direct evidence on this, Ngāti Kuia (and other Iwi) are likely to have whakapapa and customary relationships with a range of whales, dolphins, and other protected species located within the Marlborough Sounds and Cook Strait.[172] This includes the importance of Kaikaiawaro to Ngāti Kuia as their tipuna taniwha.

Issues

558. The main potential effects of the proposal are entrapment or entanglement risk, and possible habitat displacement. Other potential impacts were assessed by Dr Clement and Ms McConnell as being of lower relative concern, and (where relevant) addressed by proposed consent conditions. These included effects of underwater noise, submerged lighting, trophic flow-on effects, vessel strike, marine debris, and discharged chemicals.

559. Professor Slooten largely agreed with this summation of risks, but considered that in the absence of baseline data, and international published material to quantify how cetaceans and other protected species may interact with commercial salmon farms, that a precautionary approach was merited. Professor Slooten considered that the Applicant's data-set involved a "..desk-top study of available, anecdotal information.."; in contrast, her opinion was that a science-based assessment required at a minimum robust data on marine mammals in the Cook Strait and a thorough review of published data on the impacts of salmon farming on marine mammals. Reported entanglements in scientific literature included South American sea lions, NZ fur seals, elephant seals, and a range of other species, with most entanglements being fatal.[173]

[168] Closing submissions for Applicant at [123] and evidence of Dr Clement
[169] Dr Clement, primary at [122]
[170] Not identified as threatened, under (DOC) 2016 Conservation Status
[171] Discussed in AEE Appendix I (2019), sourced from Clinton Duffy (DOC); white sharks and basking sharks are protected under the Wildlife Act and Fisheries Act.
[172] Dr Clement, appropriately, acknowledged the importance of marine mammals to tangata whenua: primary evidence at [13],[113].
[173] Professor Slooten, Executive summary and evidence in reply

560. A number of submitters[174] raised concerns about the effects of the Proposal on the habitat of marine mammals and wild fish (including sharks) generally. We were encouraged to adopt a precautionary approach to protection of iconic and protected species of whale, dolphin, shark, and other cetaceans.

561. Some submitters raised concerns about absence of baseline data, or uncertainty as to how marine mammals would behave in relation to a salmon farm located in the Inner Cook Strait area. This was a key theme of Professor Slooten's evidence, which critiqued the baseline surveys provided by the Applicant, and suggested these were at best anecdotal.

562. Through an iterative process, Dr Clement and Ms McConnell were able to generally agree on the proposed consent conditions and Management Plan framework, with a key residual issue being whether there was sufficient information to justify predator nets being enabled through the consent conditions, following establishment of the farms.

563. Counsel for the McGuinness Institute[175] submitted that more data could, and should, have been obtained concerning marine mammal presence and abundance in the area. NZKS had undertaken underwater acoustic work at the Site in 2018. In Counsel's submission, this could have been followed up, by actively surveying marine mammal activity on Site. NZKS failed to take steps to obtain relevant data.

564. While the criticism of baseline data as anecdotal was overstated, we agree with Counsel for the McGuiness Institute, and Professor Slooten, that some of the relevant species are endemic and endangered, and in those cases, death or injury of even a small number of individuals would incur a "high conservation cost".

565. We also agree that NZCPS Policies 11(a) and 3, are relevant to this topic. But we do not accept Professor Slooten's critique of the baseline information. Ms McConnell aptly made the point that a constraint on providing baseline data is that the key issue will be future interactions of marine mammal species with the Blue Endeavour Site, once established. Ms McConnell considered that:

> "*..while extra data from the pre-development phase would be nice to have, particularly regarding density and frequency of occurrence, I consider there is sufficient information available on which to assess the potential effects on marine mammals from the proposed farm. The collection of marine mammal presence/absence data from monthly boat surveys through 2021/22, as outlined in Dr Clements paragraph [107], will be a valuable additional source of information."*

566. We have therefore relied on Ms McConnell's assessment of the baseline data as satisfactory. It was not simply "anecdotal". We also note Dr Clement's primary evidence that a precautionary approach was adopted, by adopting worst-case assumptions:

> "*[117]..My assessment relies on a worst-case assumption that any or all of the species may be present around the farm at some point (regardless of migration paths or period). As a result, the recommended mitigation and draft MMSP address how the design, layout, and operation of the farms will avoid or mitigate any adverse effects when species are present*."

Findings

567. Based on our assessment of the evidence, and the agreed position reached by Dr Clement and Ms McConnell, we conclude that adverse effects can be avoided on Threatened and At Risk marine mammals and sharks, in terms of the directive policy requirements in Objective 1 and Policy 11 NZCPS, and related policies in the PMEP framework.[176] In light of this finding, the primary issue related to the appropriateness of consent conditions, including management of effects through the MMSMP.

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[174] Submitter evidence is summarized above.
[175] Legal submissions dated 14 October 2021
[176] NZ fur seals are separately addressed (by the consent condition framework) below.

568. Our findings rely on the expert evidence and submissions set out in this Decision. The Applicant's approach to proposed consent conditions for this important topic evolved over the course of the hearing. The final suite of consent conditions included an avoidance threshold: the consent holder must "..avoid entrapment and entanglement of Threatened or At Risk marine mammals or sharks." A slightly lower threshold was adopted for the NZ fur seal ("..as far as practicable..").

569. This condition sets an environmental bottom line approach. Entrapment or entanglement must be avoided for marine mammals and sharks of the greatest conservation value. This proffered condition addresses the inherent value of the individual animal, as well as any wider population consequence.

570. There is minimal data available globally to understand how marine mammals will interact and respond to the proposed salmon farms. The Fisheries NZ Guidelines (2021) note at p10 that home ranges or locations of important habitats for most NZ populations and sub-populations for marine mammal species are not well-quantified. The *Fisheries NZ Guidelines* note that:

> "*..There is little to no peer-reviewed scientific documentation of New Zealand marine mammal interactions with marine farms. The main exceptions are New Zealand fur seals around inshore salmon farms and dusky dolphins within Admiralty Bay*."

571. Absent relevant data or international research, we consider that worst-case assumptions should be applied, in other words, that any and all relevant marine mammal species may interact with Blue Endeavour once established. In our view, this "worst-case" approach also applies to Threatened or At Risk shark species.

572. The likelihood of habitat displacement of marine mammals from establishment of the Site is low, but is dependent on pen design where the use of predator exclusion nets could elevate the likelihood of entanglement.

573. The consequence of an entanglement incident will depend on the threat status of the affected species, and is addressed by the requirement in consent conditions to avoid entanglement of these species, as well as mandatory reporting requirements.

574. We agree with Dr Clements and Ms McConnell that any potential adverse effects can be sufficiently managed (i.e. avoided) by the proposed consent conditions, operating in tandem with the MMSMP.

575. We agree with Ms McConnell's reservations as to use of predator exclusion nets. To date almost all cetaceans entangled in NZ fish farms have drowned in predator exclusion nets or during net changes. With the exception of seals, there is no existing data on non-injurious marine mammal interactions with marine farms. Therefore, as Ms McConnell noted, we do not know if dolphins and whales engage in behaviours around open ocean farms that might predispose them to entanglement. The Fisheries NZ Guidelines (2021)[177] recommends that predator exclusion nets are minimized.

576. Given that predator nets may create an elevated risk of entanglement, we do not support use of predator nets, and we have excluded this from the consent conditions. The consent holder will therefore have to seek separate resource consent if (in the future) they decide this is appropriate.

577. There are still knowledge gaps and uncertainty around how relevant species of marine mammals will perceive open ocean farm structures visually and acoustically, and their reactions to farms. This information is lacking internationally and domestically, and includes the need for mātauranga Māori to inform our understanding of marine mammal populations.[178]

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[177] Fisheries NZ, *Best practices and technologies available to minimize and mitigate the interactions between Finfish Open Ocean Aquaculture and Marine Mammals (2021) (**Fisheries NZ Guidelines**)*

[178] Dr Clements, primary evidence at [21]; Fisheries NZ Guidelines at [3.1], [3.2[

578. Residual uncertainty has been addressed by environmental "bottom-line" consent conditions that require entrapment and entanglement of threatened or at-risk marine mammals or sharks to be "avoided". This puts a significant onus on the consent holder to meet this volunteered bottom line.[179]

579. Baseline monitoring information is sufficient for purposes of assessing what species are likely to use the site, with future monitoring directed at gathering better information on what might attract marine mammals to the farm and how animals interact with the farm and its structures once present.

580. We consider the draft MMSMP is fit for purpose, and in the most part aligned with best practice identified by the Fisheries NZ Guidelines (2021).

581. Results of monitoring will play an ongoing role in quantifying marine mammal presence around the farm (and threatened/at-risk shark species) and ground-truthing the predicted effects.

582. The proposed monitoring programme will provide further detail on interactions with marine mammals (and, potentially, threatened/at risk shark species) over time.

583. We were not greatly assisted by Professor Slooten's evidence, which to some extent relied on hypothetical or speculative positions. While we agree that a precautionary approach was merited, this has been applied through the avoidance condition discussed above.

584. Professor Slooten identified the Site as potential habitat for Māui dolphins. Māui dolphins are one of the rarest and smallest dolphins in the world, but generally understood to be located on the west coast of the North Island. We were unable to give weight to this controversial assertion, and have not addressed it further, except to note that if Māui dolphins are present, then the marine mammal conditions apply, in particular, the avoidance requirement for entanglement. If the Site is habitat for Māui dolphin, then any resultant risk could also be addressed by s128 RMA review.

Effects on seabirds

Context

585. Apart from the RMA, the main statute protecting seabirds in New Zealand is the Wildlife Act 1953. With the exception of black-backed gulls (*Larus dominicanus*), all seabirds breeding within New Zealand are either fully or, in a few cases, partially protected under the Wildlife Act 1953 and its amendments. Seabirds that visit New Zealand waters, but do not breed in New Zealand, are also covered under the Wildlife Act 1953. Under this Act, seabirds are considered protected species and it is an offence to 'take' (which includes among others, disturb, harass, injure or kill) a seabird without a permit.

586. NZCPS Objective 1 and Policy 11 are important with respect to the management of seabird effects that may arise from the Proposal. These require the protection of indigenous biodiversity in the coastal environment.

587. Dr Bennet's primary evidence identified a number of seabird species known to utilise the Marlborough Sounds and Raukawakawa/Cook Strait that trigger NZCPS Policy 11(a) including:

a) subsection (i) - being indigenous taxa that are listed as threatened or at risk in the NZ Threat Classification System (primary evidence, Table 1); and

b) subsection (ii) - being taxa that are listed by the International Union for Conservation of Nature and Natural Resources (IUCN) as threatened[180].

Policy 11(a) requires adverse effects of activities on these taxa to be avoided.

[179] Refer Applicant's final proposed consent conditions dated 19 August 2022, at condition 84
[180] Primary evidence, paragraph 36.

588. We noted that many of the species listed by Dr Bennet in Table 1 are also listed by her in the IUCN list. The exceptions being white chinned petrel and wandering albatross that appear in the IUCN list but not Table 1.

589. The Applicants' proposed consent conditions (dated 19 August 2022) require "avoid adverse effects on Threatened and At Risk seabird species" (as identified in Table 1). This is aimed at addressing the requirements of NZCPS Policy 11(a). However, as some species identified in the IUCN list are not listed as threatened or at risk, we have amended the condition to include taxa that are listed by the IUCN as threatened. This more comprehensively addresses Policy 11(a) of the NZCPS.

590. Dr Bennet also identified species relevant to NZCPS Policy 11(b), which we accept.

591. Dr Bennet paid particular attention to the species relevant to NZCPS Policy 11(1)(a) and Policy 11(1)(b) in her assessment of effects and mitigation measures to address effects.

592. The Seabird Guidelines 2021 introduced previously in our Decision, focuses on mitigation of interactions of seabirds with open ocean aquaculture through site selection, design, and operation of farm infrastructure. They provide a range of monitoring options to assess the effectiveness of mitigation measures. Dr Bennet's evidence has properly taken the guidelines into account, and we have also taken them into account in our Decision, particularly when setting the consent conditions.

593. We have included a requirement to undertake two years of monitoring seabird interactions and incidents at the farm(s) in the conditions of consent. This was suggested by Dr Bennet in her rebuttal evidence but was not included in the final condition set. This monitoring is additional to the night surveys specified in the final condition set and will include daytime monitoring. This monitoring requirement that we have included in the consent conditions is consistent with the Seabird Guidelines 2021.

Issues

594. Dr Bennet provided an assessment of effects of the Proposal on seabirds and considered the relevant issues to address with respect to seabirds were:

a) Habitat exclusion;

b) Effects on benthic habitat;

c) Changes in abundance of wild fish and attraction to feed pellets;

d) Provision of roosts;

e) Disturbance;

f) Ingestion of foreign objects and debris;

g) Entanglement;

h) Lighting effects; and

i) Seabird collision with farm structures.

595. We accept these are relevant issues and address them below. In addition, Mr Schuckard on behalf of FNHTB had concerns about the appropriateness of the information used to assess the seabird species noting in particular the lack of baseline data. Ngāti Kuia identified concerns about effects of the Proposal on tītī (e.g. fairy prion, flesh-footed, fluttering and sooty shearwater).

596. We address the concern about lack of baseline data below.

597. We address Ngāti Kuia's concerns in the Cultural Effects section of our Decision, but note here that the discussion below is relevant to all seabirds including tītī. The condition requiring night time surveys being particularly relevant to tītī.

Discussion and Findings

Habitat Exclusion

598. Dr Bennet stated[181] the Proposal could potentially reduce the foraging habitat available for a great diversity of seabird species, including pelagic seabirds such as *Procellariiformes* (albatrosses, petrels, storm petrels and shearwaters). However, she considered the potential impact will be less than minor as seabirds generally forage over very extensive areas, and the exclusion of seabirds from the small area that the farms will cover is negligible compared to the remaining foraging habitat in the surrounding ocean.

599. She considered that farm activities may result in seabirds (e.g. shags, gulls, gannets) foraging around the periphery of the farm. However, this will not replace the area of foraging habitat displaced by the farm.

600. She addressed concerns that there will be a potential effect on king shag as they can forage up to 24 kilometres from a colony. These effects are unlikely because they generally forage within the Marlborough Sounds and not in the open sea and the water depth at the salmon farm site is deeper than king shag's known foraging depth.

601. Dr Bennet also considered foraging penguins. The proposed salmon farm structures could pose a navigational obstacle to foraging penguins as the farm will have grower nets down to a depth of approximately 25-30 metres. However, little blue penguins have been recorded diving to ~50 metres, which would allow them to swim under the structures (or around them) and the available ocean areas are vast compared to the proposed site. Also, the strong currents in the Raukawakawa/Cook Strait require a greater physical effort for penguins to forage in them. Therefore, penguins may not utilise this area very often, compared with areas within the Sounds. The overall impact on foraging habitat is expected to be less than minor for foraging penguins.

602. We accept Dr Bennet's evidence on this matter and find that habitat exclusion effects will be less than minor.

Effects on Benthic Habitat

603. Dr Bennet addressed effects on benthic habitat from feed pellet loss, fish waste, and material arising from net cleaning in paragraphs 55 to 59 of her primary evidence. She considered changes to the benthic environment will have a less than minor effect on seabirds as the seabed depth is outside of the range of most foraging birds.

604. Suspension of organic matter while cleaning nets may decrease the visibility for visual predators during foraging bouts. Dr Bennet stated this would be a temporary and isolated issue during net and structure cleaning and will pose a less than minor effect on foraging seabirds, given that currents will quickly remove the suspended organic matter.

605. We accept Dr Bennet's conclusion that the effects on seabirds from changes to the benthos and net cleaning will be less than minor.

Changes in abundance of wild fish and attraction to feed pellets

606. Dr Bennet acknowledged the presence of wild fish (attracted to the farm) and the actual fish pellets can attract various seabird species. She considered that although this will provide an increased benefit to seabirds within the Raukawakawa/Cook Strait region, it will also increase the risk of entanglement, collision, and potential ingestion of artificial objects. We discuss these risks below.

[181] Primary evidence, paragraph 51 - 54.

607. She considered the use of a controlled feed out system will mean that the overall effect on seabirds attracted to the feed pellets will be minor. We accept this. Also, we note that bird nets will deter this form of feeding.

Provision of roosting sites

608. Dr Bennet discussed roosting sites in paragraph 62 of her evidence. Salmon farms can provide secure roosting sites for foraging or resting birds, reducing energy expenditure between foraging bouts, especially for gulls, terns, and shags. In addition, roosting sites may provide protection from predators. However, she considered birds should be dissuaded from roosting to reduce the potential risk of entanglement or collision with structures. We have included a condition of consent with respect to minimising roosting sites to address this issue.

Disturbance

609. Dr Bennet evaluated[182] the effects of disturbance of birds from farm vessels including vessels transiting to the site and as part of farm operations.

610. She identified that movement of the salmon installation vessels (e.g. tugs moving salmon pens and feed barge to salmon farm site), as well as vessel movements during usual farm operations (e.g. water taxis delivering staff, feed deliveries, net cleaning and harvest vessels) will have a less than minor effect on seabirds if boats remain 100m offshore when transiting, and if boat speeds are less than five knots if approaching the shore or the salmon farm. We have included a condition of consent to give effect to this.

611. Dr Bennet considered that the proposed salmon farm location will not adversely influence seabird breeding sites. The relevant sites include:

a) Spotted shags which may be found breeding along the coastline adjacent to the proposed salmon farm from Te Uku/Cape Lambert, Waitui Bay to Pouataikino/Alligator Head;

b) A little shag colony situated in Waitui Bay and at Motungarara Island, which is approximately 14 kilometres southwest of the proposed salmon farm;

c) Blue penguin, flesh-footed, fluttering and sooty shearwater, and common diving petrel that roost and breed on Tītī Island; and blue penguins that breed at Taonui-a-Kupe/Cape Jackson;

d) Nesting areas for white-fronted tern, fairy prion, white-faced storm petrel, king and pied shag at the Chetwode Islands and Sentinel Rock.

612. We accept this evidence.

Ingestion of Foreign Objects and Debris

613. Seabirds can ingest foreign objects and plastics as a potential food source, mistaking these items as fish, crustaceans, or zooplankton. This can have considerable impacts on seabird survival as the ingested plastics can cause malnutrition in adults but can also be regurgitated and fed to chicks, reducing juvenile survival rates. Entanglement in debris can also occur where broken or discarded nets and ropes are not suitably disposed of.

614. Dr Bennet identified that NZKS has a Waste Management Plan that aims to avoid or minimise potential operational loss of plastics and other waste materials from the farm. According to Dr Bennet, if the Waste Management Plan is followed, the salmon farm will produce minimal plastic waste and the level of effect will be less than minor.

615. Mr Preece provided a copy of the NZKS Solid Waste Management Plan dated 18 October 2021.[183] The objective of the Plan is to minimise the risk of loss of solid waste debris to the environment and accumulation of solid waste debris along the shoreline and seabed. This

[182] Primary evidence, paragraph 63 to 65.
[183] Modified to include Blue Endeavour, but not reviewed.

objective was not reflected in the final condition set. In light of Dr Bennet's evidence, we have strengthened the conditions of consent relating to solid waste management to address the issues that she has identified.

616. On this basis, we accept that the effects of ingestion of foreign objects and debris will be less than minor.

Entanglement

617. Seabirds can become entangled in nets above and below water during flight, foraging, or when looking for sites to roost on. This can cause birds to become distressed or injured and lead to death.

618. The Seabird Guidelines 2021[184] identify nets as the main factor increasing injury and entanglement risk for seabirds. The Guidelines seek to minimise risk by ensuring nets are taut and/or have certain mesh size. While minimum mesh sizes are recommended by the Guidelines (6cm), these may not account for small-bodied species such as diving petrels and some shearwaters.

619. Dr Bennet identified mitigation measures to address entanglement risk. Mesh size of nets is to be as small as practicable (less than 50mm), all nets are to be kept taut, and checked regularly, repaired and maintained. She considered that implementation of these measures will ensure that the magnitude of residual risk is minor to less than minor.[185] This is consistent with the Seabird Guidelines 2021, and we accept her findings.

620. We have included the mitigation measures identified by Dr Bennet in the conditions of consent.[186] The mesh size of 50mm applies to the pen nets. Nets which are placed over the top of pens (bird nets) are to have a mesh size no larger than 47.5mm half mesh internal aperture (knot to knot). These dimensions are based on the JWS-SB conditions provided by Dr Bennet and Mr Schukard.

621. In addition, the JWS-SB identified other conditions relating to mesh thickness and colour which we have included in the conditions of consent as we understand from the evidence that these requirements assist with minimising entanglement risk.

Lighting Effects

622. Some seabird species (e.g. petrels and shearwaters) can become disorientated or be attracted to lights, which can lead to injury or death through collision with structures, or the inability to take flight (grounded on land).

623. Dr Bennet included recommendations regarding lighting that have been included in the conditions of consent. The recommendations took health and safety into account. She considered that conditions to address light intensity and minimising lighting would reduce the level of potential effect from moderate to minor.

624. Mr Schukard provided comments (dated 31 October 2021) on the proposed conditions of consent dated 22 October 2021 with respect to seabirds (then conditions 78 - 83). Comment RS3 identified concerns with respect to condition 79(e)[187] and in particular he stated: "This condition may be very relevant for the fledging sooty shearwaters and flesh footed shearwaters from Tītī Island. Juveniles are more attracted to light and have higher risk [of] ending up in the pens at night."

[184] Page 7.
[185] Primary evidence, paragraph 89.
[186] Noting also that Mr Schuckard had input into the conditions via with JWS-SB.
[187] Which read "ensure not structure is taller than 10m, being the height of bird net poles, and that all structures are the minimum height necessary to achieve their purpose".

625. We directed[188] that Mr Schukard and Dr Bennet caucus with respect to addressing concerns with the proposed seabird conditions (as raised by Mr Schukard) and in particular identification of any further conditions of consent that may address the issue outlined above.

626. In the JWS-SB Mr Schukard expressed concerns that with 7ha[189] of vertical erected nets and 210,000W of lighting underneath the pens, the structures have the potential to become a significant source for collisions. This can be exacerbated if the submerged lights do attract baitfish and zooplankton and the farm becomes a FAD.

627. This was addressed by Dr Bennet's supplementary evidence dated 18 February 2022. She recommended an additional condition that if the written review of any seabird incident identifies that the submerged artificial lighting is likely to be the cause of any of the incidents specified at condition 106(a) or 106(b) the consent holder shall either remove the bird nets between 9 pm and 6 am, or cease using submerged artificial lighting, unless permitted to resume use of submerged artificial lighting in accordance with a revised and certified SBMP. We accept her response to this matter and consider it adequately addressed the concern raised by Mr Schukard.

628. Also, we have included a condition requiring two years of night surveys to assist with the management of this issue.

629. Subject to the conditions of consent, we accept Dr Bennet's evidence and find that the effects of lighting will be minor.

Seabird Collision with Farm Structures

630. Dr Bennet stated that seabirds colliding with marine farm structures could potentially affect any seabird species present at the site. By minimising vessel and barge lighting and using low reflective paint or dark or recessive colours, the strike risk is likely to be less than minor. She considered the anchor lines may pose a hazard to diving birds, although this effect is likely to be less than minor as the ropes are very thick and should be easily discernible by diving birds.[190]

631. To minimise potential collision with structures, the minimum height possible should be used for all structures, to reduce the potential for bird strike. Any support wires should be marked (e.g., with bird balls or reflective discs) to aid visual prominence by flying birds. Coloured hose sheaths could also be used on wires.[191]

632. Mr Johnson asked whether coloured tape would be used on the nets. Dr Bennet clarified that coloured tape will not be used on the bird nets because the proposed above-water net system with mesh size of approximately 47.5 mm on the bar with a minimum mesh thickness of 2 mm, and constructed with a dark filament, will be more visible to birds.

633. Mr Schukard expressed concerns about possible collision risk from bird balls and reflective disks at night. We amended the relevant condition to address his concerns by including the proviso that the marking methods do not cause seabird collision with supporting wires at night.

Baseline data

634. Mr Schukard contended that two years of baseline data was required to understand seabird effects.

635. The Seabird Guidelines 2021 recommend at least one year of baseline data is collected to understand presence and density of seabirds in the proposed area.

[188] Minute 9.
[189] His calculations.
[190] Primary evidence, paragraph 84.
[191] Primary evidence, paragraph 92.

636. Mr Heath stated that the MPI is generally supportive of the Seabird Assessment and SMP, and he considered that they align well with the Seabird Guidelines. The primary concern was that the SMP does not address a baseline survey of bird activity in the area of the farm and MPI recommended that this is addressed within the consent conditions.

637. Dr Bennet used fisheries observer records and eBird[192] records to identify seabird species within the Marlborough Sounds and Raukawakawa/Cook Strait. In her rebuttal evidence[193] Dr Bennet stated that monthly seabird observations for the Site had been collected for June, July, and September 2021[194] and that individual seabirds observed are consistent with the species expected in the locality, i.e. based on previous records.

638. The Right of Reply confirmed[195] that one year of baseline monitoring has now occurred (as of 3 August 2022).

639. We accept that at least one year of baseline monitoring is appropriate based on the Seabird Guidelines 2021. As this has already occurred we consider that it does not need to be specified as a condition of consent. Also, we consider that Dr Bennet had sufficient information to carry out her assessment.

Overall Findings

640. We accept Dr Bennet's evidence as outlined above and consider that seabird issues raised by submitters including Mr Schukard are addressed by the conditions of consent.

641. Overall, on the basis of the discussion above, and subject to the conditions of consent, we find the adverse effects on seabirds will be minor and that the proposal is consistent with NZCPS Objective 1 and Policy 11.

Water quality effects

Context

642. NZCPS Policy 23 (1) is relevant to our consideration of the water quality effects of the Proposal. Subsection (1) requires us in managing discharges to water in the coastal environment to have particular regard to:

a) The sensitivity of the receiving environment;

b) The nature of the contaminants to be discharged, the particular concentration of contaminants needed to achieve the required water quality in the receiving environment, and the risks if that concentration is exceeded; and

c) The capacity of the receiving environment to assimilate the contaminants; and:

d) Avoid significant adverse effects on ecosystems and habitats after reasonable mixing;

e) Use the smallest mixing zone necessary to achieve the required water quality in the receiving environment; and

f) Minimise adverse effects on the life-supporting capacity of water within a mixing zone

643. The evidence we received addressed these matters and we have had particular regard to these matters in our Decision. The evidence has demonstrated that the receiving environment (the water column) has very large capacity to assimilate the contaminants proposed to be discharged, and that it is not particularly sensitive to the contaminants being discharged. Other matters are addressed in the discussion below.

[192] eBird is a citizen science, global database available online.
[193] 14 October 2022.
[194] Covid19 lockdown prevented data collection in August 2021.
[195] Paragraph 116.

644. Policy 15.1.1 of the PMEP states that as a minimum, the quality of coastal waters will be managed so that they are suitable for the following purposes: Coastal waters: protection of marine ecosystems; potential for contact recreation and food gathering/marine farming; where identified as having these values; and for cultural and aesthetic purposes. The explanation to this policy states that the policy will be primarily implemented through the application of water quality classifications, against which the impact of point source discharges on water quality can be assessed in the preparation of permitted activity rules and the consideration of resource consent applications.

645. The explanation to Policy 15.1.2 is that water quality classifications will be applied through the PMEP to all water and coastal waters. The classifications will, as a minimum, reflect the management purposes set out in Policy 15.1.1. Appendix 5 of the PMEP outlines coastal water specific values, classifications and water quality standards. The PMEP states that the classifications and standards will be described in a manner consistent with the Third Schedule of the RMA, although the standards may exceed those in the Third Schedule.[196] The applicable water quality classification for all coastal water is SG – shellfish gathering.

646. The standards/parameters listed in the PMEP for this water quality class are:

a) Temperature – the natural temperature of the water must not be changed by more than 3°C;

b) Dissolved oxygen - Must exceed 80% of saturation or 6mg/l, whichever is greater;

c) Suitability of fish for human consumption - Must not be rendered unsuitable by the presence of contaminants. - Median faecal coliform content of samples taken over a shellfish gathering season must not exceed a Most Probable Number (MPN) of 14 per 100ml, and not more than 10% of samples must exceed an MPN of 43 per 100ml (or Colony Forming Units per 100ml)

647. Of the parameters listed above, all the water quality experts considered that the key parameter to be considered for this proposal was dissolved oxygen. The experts agreed that no undesirable biological growths as a result of any discharge of a contaminant into water is also relevant. We consider the additional parameter does not undermine the management intention in the PMEP, and strengthens the management of water quality issues associated with the Proposal. We accept the parameters selected by the experts.

648. The '*Best Practice Guidelines for Benthic and Water Quality Monitoring of Open Ocean Finfish Aquaculture in NZ*'[197] is relevant to our consideration of water quality effects. We consider the water quality monitoring conditions are generally consistent with this Guideline.

Issues

649. Mr Knight considered the main issues to address in an assessment of effects on the Proposal on the water column environment were:[198]

a) Increases in water column nutrients from fish excretions into the water column;

b) Potential for increased phytoplankton biomass from new nutrients;

c) Decreased dissolved oxygen (DO) from respiration in salmon;

d) The potential for direct, lethal or sub-lethal, effects to marine biota from elevated concentrations of ammonium, or low oxygen levels (hypoxia);

e) The potential for trophic state changes that could have indirect impacts on the water column and seabed environments around the farm.

650. However, he noted in paragraph 24 that his evidence focused on the assessment of dissolved nutrient loss and depletion of dissolved oxygen in the water column from the proposed salmon farming activities.

[196] Explanation to Policy 15.1.2.
[197] Fisheries NZ December 2021.
[198] Primary evidence, paragraph 14.

651. Dr Wilson reviewed the Applicant's evidence and application documentation and considered that the appropriate water quality effects to consider were:

a) Nutrient enrichment. This is a result of adding feed and fish producing waste. According to Dr Wilson, the key potential consequence of nutrient enrichment is a change in phytoplankton abundance and community composition, which could result in a change in the frequency or magnitude of harmful algal blooms; and

b) Dissolved oxygen depletion. This is primarily a result of fish respiration but can be exacerbated by the microbial degradation of organic matter originating from the farm (e.g., feed or fish faeces).

652. We accept the key issues to consider are nutrient enrichment and dissolved oxygen depletion and this is reflected in the discussion below. We consider the matters listed by Mr Knight can comfortably be discussed under these two key issues and that he approached his assessment in this manner.

Discussion and Findings

653. As discussed in the existing environment section, the Site is considered to be a low nutrient environment, and due to the large water flows in Raukawakawa/Cook Strait, existing natural fluxes of nitrogen through the Strait are very large (1.2 to 19 million tonnes per annum).

654. Mr Knight provided an assessment of nutrient enrichment and dissolved oxygen depletion.

655. He identified Nitrogen (N) as the focus for nutrients in marine systems as it is the limiting nutrient in primary production[199]. Uptake by marine algae (and bacteria) is a likely fate for released nitrogen in the type of oceanic environment around the site. This will produce new organic carbon that forms the basis of prey for higher trophic organisms in the ecosystem (e.g. zooplankton, fish etc.). Burial of nitrogenous compounds and denitrification to nitrogen gas (N^2) are also possible pathways for nitrogen to leave the ecosystem.[200]

656. Mr Knight stated that the addition of the proposed Salmon Farms will result in a new nitrogen load equating to about 49 kg of N for every tonne of feed provided to the farm. Consequently, for the proposed annual maximum feed loading of 20,000 t across the two farms, about 980 t of N could be introduced annually. Therefore, some increases in the in-water nitrogen concentrations are likely to occur because of the proposed activity.

657. In comparison with the large amount of nitrogen estimated to flow through Raukawakawa/Cook Strait annually (1.2 to 19 million tonnes), the estimated emissions from the proposed Salmon Farm are extremely small (<1% of the nitrogen flux in the wider strait). Thus, changes to the nutrient conditions in the wider Raukawakawa/Cook Strait area (including the Marlborough Sounds) are considered very unlikely.[201]

658. However, Mr Knight considered that even though broadscale effects of this Proposal are estimated to be small, potentially sensitive sites, such as Te Mete Mahinga/McManaway Rocks are only a few kilometres from the proposed site and would be periodically downstream of the site due to the tidal flows.[202] Similarly, he noted the health of the salmon in the pens has been raised as a potential disease risk to wild fish and other organisms if water column changes in critical properties such as dissolved oxygen (DO) cause stress on the farmed animals (Diggles 2019). Furthermore, drifting microscopic plankton and larvae could interact with the net pen environment. For those reasons, an assessment of the effects within the farm and near to the Site are relevant. These factors were considered in the Wild Fish section of our Decision.

[199] Primary evidence, paragraph 47.
[200] Primary evidence, text relating to Figure 3.
[201] Mr Knight, Primary evidence, paragraph 49.
[202] We have included McManaway Rock in the monitoring requirements of the conditions.

659. Mr Knight assessed the nutrient enrichment effects within the farm and near to the Site utilising modelling work,[203] and the results of performance data from smaller existing farms in the inner Marlborough Sounds sites. He also utilised existing literature from other sources.

660. The hydrodynamic modelling used in Mr Knight's evidence was updated from that presented in Knight (2021). He noted the new hydrodynamic modelling did not attempt to explicitly model biological processes, but sought to better resolve the net pen dimensions and extend the modelled period. In addition, a higher density culture of 12 pens (6 pens per block) was also analysed.

661. The hydrodynamic modelling was undertaken by MetOcean Solutions[204] using a high-resolution unstructured model, but with more accurate determination of the pen dimensions (Figure 4, Mr Knight's evidence). The model was run for a period of four months covering the period 1 September 2018 to 30 December 2018, as described in the MetOcean Solutions model report appended to Mr Knight's evidence. Passive tracers were used in the model to simulate the release of dissolved material (nitrogen and removal of dissolved oxygen) and were scaled to appropriate concentrations for the proposed development.

662. The modelling work was reviewed by Mr Oldman. Mr Oldman's evidence raised concerns about the model with respect to skill of the underlying hydrodynamic model and he considered that the fundamental issue with the water column modelling approach used in the Application is that there were no biological processes considered.

663. He considered the predicted decreases in dissolved oxygen associated with fish respiration provides worst-case estimates as the model did not allow for reaeration. Actual reductions should be less than predicted and this can be verified as part of the initial monitoring of the development.

664. At the hearing, Mr Oldman noted that concerns outlined in paragraph 65 of his evidence had been addressed (quantification of the skill of the underlying hydrodynamic model) as there were now numbers around how well it performed against observations (evidence of Dr Smeaton). In addition, the concerns outlined in paragraph 74 of his evidence (potential changes in phytoplankton) were addressed because they have been quantified within error bands based on observational data (evidence of Dr Broekhuizen). Overall, he considered that significant progress had been made with respect to defining uncertainties.

665. Dr Broekhuizen[205] provided his own interpretation of the modelled dissolved oxygen and nitrogen results inferred from the modelling results. At distances greater than a few pen diameters from the pens, he agreed that the simulated levels of oxygen depletion are very likely to be over-estimates.

666. He was less confident that oxygen depletion is 'worst case' in the immediate vicinities of the pens (within a few pen diameters). Stating that on one hand, the lack of replenishment combined with tidal oscillations (that may cause some water to pass through the pens several times) will promote excessive depletion. On the other hand, the fact that the hydrodynamic model did not incorporate the drag effects of the pens (and enclosed crop) implied that water has probably flowed through the virtual fish pens too rapidly.

667. On balance, Dr Broekhuizen was inclined to accept the evidence that persistent or extreme hypoxia is unlikely even in the immediate vicinity of the fish pens. Fish are less tolerant of low oxygen concentrations than many other marine biota. He believed that NZKS 'self-interest' to adopt mitigation measures if they find that the performance of their fish crop is persistently or frequently substantively limited by low oxygen levels will minimise any (small) risk that wild, marine organisms in the vicinity of the pens will suffer harm. We accept this, and have imposed consent conditions that relevantly require monitoring of these effects.

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[203] Knight BR 2021. Updated water quality modelling for the Blue Endeavour proposal. Prepared for The New Zealand King Salmon Co. Ltd. Cawthron Report No. 3479. 50 p. plus appendices.

[204] MetOcean Solutions 2021. Raukawakawa/Raukawakawa/Cook Strait Hydrodynamic Modelling: Hindcast for the Blue Endeavour Salmon Farm site, September 2021, 20p.

[205] Primary evidence.

668. With regard to nutrient enrichment, Dr Broekhuizen noted that during the 2011 plan change hearings in which NZKS sought nine new salmon farming sites inside the Marlborough Sounds and Te Anamāhanga/Port Gore[206], he expressed dissatisfaction about the use of only simple, neutrally buoyant tracer (similar to the one used here but, without any decay). He was less concerned about the use of a comparatively simple tracer model in this application. First, the current meter data and hydrodynamic simulations lead him to believe that it is unusual for waters in differing depth strata to persistently flow in dramatically different directions in the Blue Endeavour region. Second, eyeball comparison of the vertical distributions of the physico-biochemical data from the Blue Endeavour region reveal lesser evidence of vertical stratification than is evident in similar data gathered from many parts of Te Hoiere/Pelorus Sound.[207]

669. Dr Broekhuizen concurred with Mr Knight's broad conclusions that it is very unlikely that the farms will induce persistent, wide-spread, large magnitude phytoplankton increases.[208] He believed it is probable that the farms will (intermittently, and probably only briefly) exacerbate (and, occasionally, perhaps even be the primary driver of) localized increases in phytoplankton abundance. However, he doubted that they would be large enough or persistent enough to be reliably detected in any practical ship- or buoy- based monitoring programme.

670. He supported Mr Knight's recommendation that some in-situ water sampling should be undertaken to support any use of satellite imagery. The consent conditions provide for this sampling.

671. Dr Broekhuizen noted for the TN-plume modelling, faeces and uneaten feed was assumed to degrade into solute instantaneously inside the fish pens. In reality, most of the degradation would occur at the seabed, and the resultant solute would be released into near-bed waters. Given the estuarine circulation that exists in Te Hoiere/Pelorus Sound, near-bed waters are more likely than near-surface waters to enter Te Hoiere/Pelorus Sound from Raukawakawa/Cook Strait. Therefore, it is conceivable that the model simulations have under-estimated nutrient introduction into Te Hoiere/Pelorus Sound (or, Tōtaranui/Queen Charlotte Sound). He concluded that he cannot formally estimate the quantum of any such under-estimation, but he considered that it is unlikely to be large enough to be biologically meaningful.

672. He also agreed that there is little evidence in the international literature to suggest that fish farms have caused or meaningfully contributed to algal blooms.

673. The key points made by Dr Broekhuizen were responded to by Mr Knight in his rebuttal evidence.[209]

674. Mr Knight agreed with many of Dr Broekhuizen's statements and offered plausible explanations in response to other points.

675. Mr Knight agreed that the model overestimates the loss of nitrogen through denitrification. However, for the purposes of estimating nitrogen changes in the surface waters, Mr Knight noted there are other loss processes that he had not included, such as the loss of nitrogen from grazed or dying phytoplankton.

676. Given the fast-flowing turbulent water in the region, Mr Knight considers that phytoplankton aggregations are unlikely.

677. He agreed with Dr Broekhuizen that it is possible that greater amounts of nitrogen than he estimated could enter the Sounds, but that such differences would be unlikely to be biologically meaningful.

678. We have carefully considered the points raised in relation to initial uncertainties in the modelling work being used to predict effects of nutrient enrichment and oxygen depletion, and note that many of the uncertainties were addressed through the evidence of Dr Broekhuizen and the

[206] Board of Inquiry, New Zealand King Salmon Requests for Plan Changes and Applications for Resource Consents, 22 February 2013.
[207] Paragraph 139.
[208] Paragraph 151.
[209] 14 October 2021.

rebuttal evidence of Mr Knight. Mr Oldman also considered that significant progress had been made with respect to addressing these uncertainties. We are not concerned about residual uncertainties in the modelling as these have been acknowledged in the assessments of the experts and the assessments have utilised existing literature including performance literature from existing salmon farms. In other words, we accept that the modelling work is 'fit-for-purpose' in terms of assisting with the water quality assessment of effects.

679. Mr Knight discussed the reversibility of the effects.[210] He considered the largest water column effects are likely to be quickly reversed (i.e., within a few hours to days) of removal of salmon stock, such that cessation of operations at this Site would likely return the majority of the water column environment to a state that is almost indistinguishable from the pre-farm environment. However, some smaller, longer-term changes are possible through additional leeching of nutrients from sediments which could take a similar time as benthic recovery (i.e., years). However, in general, he considered the majority of water column changes would disappear within hours to days of the salmon being removed.

680. Mr Knight concluded that effects on the water column from the Proposal are unlikely to be measurable beyond the site boundaries.[211] Observable changes may be moderate for short periods of time near the net pens during maximum theoretical intensities of farming. However, due to the strong currents in the region, relatively small changes are predicted overall.[212]

681. Comparisons with available limits suggested to Mr Knight that exceedances of ecological thresholds for ammonium and dissolved oxygen are also unlikely, except occasionally within, or very near, the net pens. Consequently, in his opinion the proposal represents a low risk to the water column environment. This was on the basis of several recommendations relating to stock levels, dissolved oxygen and phytoplankton blooms that are addressed in the conditions of consent.

682. Dr Wilson considered that some elevation of nitrogen is expected near the farm, but due to the high flow conditions, chronic adverse effects on water quality near the farm would not be expected.[213]

683. He considered that there are large uncertainties regarding the modelled nitrogen inputs into each of the Pelorus and Tōtaranui/Queen Charlotte Sounds. He considered robust water quality monitoring is required to determine the actual effects of the farm. He recommended locations near the farm and in nearby sheltered areas that are more susceptible to nutrient enrichment (e.g., algal blooms), such as the nearby Te Anamāhanga/Port Gore and sheltered bays near the mouth of Pelorus and Tōtaranui/Queen Charlotte Sounds. The conditions of consent address this recommendation.

684. Overall, Dr Wilson agreed that potential reductions of dissolved oxygen are likely to be localised, and unlikely to have adverse far-field effects. Further, he considered that farm management around dissolved oxygen would be important for the Applicant as large, sustained decreases in oxygen could affect salmon stocks.

685. Paragraph 95 of his evidence stated that based on the information provided, it does not appear that the proposal is likely to result in significant adverse environmental effects. In response to questions at the hearing Dr Wilson refined this statement. He considered that, subject to conditions, the effects of dissolved oxygen depletion would be less than minor, and that adverse effects of nutrient and phytoplankton would be less than minor.

Conditions

686. During the hearing process we directed the relevant expert witnesses to caucus on consent conditions for water quality. Dr Giles and Dr Wilson provided a draft set of conditions in a JWS dated 20 December 2021.[214] Mr Knight provided a response to this draft set of conditions in a report dated 18 February 2022. Dr Knight, Dr Wilson and Dr Broekhuizen provided a further

[210] Primary evidence, paragraph 134.
[211] The boundaries indicated by the cardinal markers.
[212] Primary evidence, paragraph 178.
[213] Primary evidence, paragraph 103.
[214] In response to Minute 8.

JWS on conditions dated 9 June 2022.[215] The Applicant provided an updated set of proposed conditions based on the JWS work and we have utilised this in the conditions of consent.

687. We consider the experts have used the smallest mixing zone reasonably necessary to achieve the required water quality in the receiving environment.

688. We have strengthened the conditions of consent by including compliance limits based on the objectives and standards outlined in the Applicants final proposed conditions of consent. The evidence is that these compliance limits will be able to be met within the feed limits proposed by the Applicant. We consider that compliance limits establish a clear environmental bottom line that the consent holder must work within.

689. Whilst we have set compliance limits, we have simplified the standard with respect to undesirable biological growth. The approach we have taken is consistent with the standard outlined for undesirable biological growth in Schedule 3 RMA. The method selected to demonstrate compliance with the compliance limits has not been determined (as was the case in the 19 August 2022 version of consent conditions). We note that in the 19 August version, a footnote had been included suggesting a change to the undesirable biological growth standard[216] with respect to Chlorophyll-a that could be implemented via the compliance manager. If the standard with respect to Chlorophyll-a was 'hard-wired' into the compliance limits, the compliance manager would be unable to change this. The approach we have taken provides clear guidance as to what is to be achieved, but does not direct the method to determine this. The method would be established through monitoring and reporting.

690. The monitoring regime recommended by the experts has been adopted and this will enable information to be gathered to address compliance limits via reporting. We included a condition requiring the consent holder to provide the coordinates of the monitoring stations before operational monitoring resumes.

Overall finding

691. Overall, based on the evidence we heard, and subject to the conditions of consent, we consider that the adverse effects of the proposal on water quality will be minor.

Effects on recreational activities

Context

692. The coastal marine area is an extensive area of public space for the public to use and enjoy. Maintaining and enhancing public access to the coastal marine area is therefore a matter of national importance under section 6(d) RMA. Objective 4 and Policies 18 and 21 of the NZCPS identify that public open space should be provided in appropriate locations, for public use and appreciation, as well as active and passive recreation.[217]

693. For reasons of health and safety, efficiency, and operational requirements, the Proposal seeks resource consent to exclusively occupy parts of the Site, as identified in the relevant plans produced by the Applicant. The areas involved are (in absolute terms) comparatively substantial, but (in relative terms), insignificant compared to the areas of open ocean available in the immediate vicinity of the Site, as well as the Marlborough Sounds and Raukawakawa/inner Cook Strait.

694. It was a common theme of many submitters, that the Marlborough Sounds, and Raukawakawa/inner Cook Strait, are an important area for recreation and tourism activities. This includes sailing, boating, and recreational fishing, and wider viewpoints (at distance) from public and private land over the Blue Endeavour Site. Mr Marchant (who is a well-known pilot) reminded us during the hearing that views of the Site will also be had from the air, albeit transitory ones.

[215] In response to Minute 20 subparagraph 2c.
[216] In the footnote under Table 3.
[217] While not a planning assessment, Mr Greenaway identified additional relevant regional planning provisions, in his primary evidence at paragraphs [40] to [49].

695. In addition, Ngāti Kuia and other Iwi and hapū have undertaken customary fishing (as well as transiting) in the vicinity of the Site for many generations.

Issues

696. Some submitters raised concerns that granting approval to the Proposal would adversely affect the ability of recreational users (including fishing charters, yachties, and other marine craft) to use the space occupied by the Proposal (particularly where exclusively occupied by Blue Endeavour). The Kenepuru and Central Sounds Residents Association identified "..high levels" of recreational charter boat use in the area, and the NZ Sport Fishing Council noted the proximity of Te Mete Mahinga/McManaway and Witts Rock.

697. While in a literal sense, boats will not be able to travel through areas occupied by Blue Endeavour's infrastructure and operational areas, we agree with Mr Johnson's assessment that boat traffic can readily avoid the Site, and transit elsewhere;[218] and Mr Greenway's assessment that there is no apparent recreation destination within the Site, meaning that the main localized activities are transit and navigation-based (largely passage-making between Cape Jackson and the northern end of the Chetwode Islands or the northern area of Rangitoto/D'Urville Island (which includes routes for vessels travelling to Te Mete Mahinga/McManaway and Witts Rock)).

698. The main issue, as identified by Mr Greenaway, therefore related to whether, and the extent to which, the Proposal results in actual and potential effects on recreational activities, including fishing (customary, recreational, diving, tourism), and broader recreational amenity.

699. Mr Greenaway's assessment necessarily relied on the assessments undertaken by other subject experts, such as wild fish populations (which are of interest to tangata whenua and other fishers); landscape, natural character, and amenity (which are directly relevant to recreational amenity, such as remoteness, and other experiential, perceptual, and visual effects[219]); navigation safety (the Site includes structures that may constitute marine hazards, but also provides a waypoint for navigation purposes, and the proposed real-time weather station, which provides localized weather conditions); presence and abundance of marine mammals, other sealife, and seabirds.

Findings

700. Mr Greenaway provided an insightful analysis of the actual and potential recreational effects arising from the Proposal. There was no counterpart expert with opposing evidence. We essentially agree with Mr Greenaway's conclusions, which we briefly restate below.

701. Given the general presumption of public access in the coastal marine area, we agree that the Proposal will, to a limited extent, impair recreational access through the Site, particularly areas required for infrastructure or operational areas (which are exclusively occupied). This is a less than minor effect. The evidence from Mr Greenaway confirmed that the Site is not a fishing or tourist destination in the same way as Te Mete Mahinga/McManaway Rock or Witts Rock.

702. The Site is defined as a blue-water marine recreation setting, meaning that it is not a coastal setting (according to a DOC Study cited by Mr Greenaway). It has no site-specific recreation values other than being within a transit area between Tōtaranui/Queen Charlotte Sound and (as noted) the northern end of the Chetwode Islands or the northern area of Rangitoto/D'Urville Island, and near the fishing sites at the Te Mete Mahinga/McManaway and Witts Rock.

703. The majority of boating activity is nearby within coastal waters nearer Taonui-a-Kupe/Cape Jackson, Te Uku/Cape Lambert, and Pouataikino/Alligator Head. Amenity effects on boats making passage are less than minor, given the remoteness of the Site. The boating experience will remain a blue-water experience, as noted by Mr Greenaway.

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[218] The proposed farms would ",,merely alter the available access routes through the immediate farm sites..", s42A report at [114]

[219] This included an assessment of the visibility of 70m barge simulations prepared by Mr Hudson dated 18 October 2021. Mr Greenaway's evidence (in reliance on Mr Hudson) was that the visual appearance of the barges from the various viewpoints identified did not change the less than minor adverse recreational effects of the Proposal.

704. Fishing charters use the McManaway and Witts Rock areas. Their clients are likely to have a strong sense of having left the coastal waters of the Sounds for a remote and adventurous fishing experience. As the Site is over 3km from Te Mete Mahinga/McManaway and Witts Rock, both fishing sites will retain a remote situation, given separation from both the coast and the Site, and their exposed blue-water setting.

705. In summary, the Site forms part of the wider recreation setting offshore from the Marlborough Sounds, but the Site itself does not have any site-specific recreation values. This reflects the location of the Site, low level of recreation use of that area, scale of the wider setting, and limited capacity for the Blue Endeavour Site to interfere with navigation. We consider that recreational effects are less than minor.[220]

706. We have not proposed any additional consent conditions in relation to this topic. Recreation amenity-related effects are addressed through navigation safety, lighting, structural integrity, barge appearance, noise, and related conditions.

Biosecurity issues (new organisms/fish disease)

Context

707. Biosecurity effects are managed under several overlapping legislative regimes. Our focus is of course the RMA and planning framework, in particular the NZCPS. Of particular relevance is Policy 12 of the NZCPS – harmful aquatic organisms, which seeks to control activities in or near the coastal marine area that could have adverse effects on the coastal environment by causing harmful aquatic organisms[221] to be released or otherwise spread. The Ministry of Primary Industries (MPI) implements the Biosecurity Act (1993) and is primarily concerned with the prevention of pest establishment in NZ and managing risk to any national or regional value associated with inter-regional vector movement.

Issues

708. The NZKS Proposal is the first open ocean finfish farm and has the potential to release or spread marine pests that are not currently present, as well as increase the abundance of non-indigenous species already at the site, through a range of farm-related activities. Several submitters[222] had concerns for the wider Marlborough region from the potential risk of the introduction and / or spread of marine pest species. Their focus was on the prevention of introduction and pathway management of human-mediated vectors[223] to ensure protection of the marine environment.

709. The NZKS Application was accompanied by an assessment of biosecurity effects.[224] The potential biosecurity effects are summarised under the following headings which we have adopted for efficiency:

a) Transfer of marine pests via vessel and structure movements;

b) Transfer of marine pests via equipment/gear movements;

c) Transfer of marine pests via stock movements;

d) Facilitation of marine pest establishment through changes to the local environment; and

e) Increased abundance and spread of marine pests from the creation of novel habitat.

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[220] C.f. primary evidence of Rob Greenaway at paragraphs [100] to [102], [120]

[221] The NZCPS defines Harmful aquatic organisms as: Aquatic organisms which, if introduced into coastal water, may adversely affect the environment or biological diversity, pose a threat to human health, or interfere with legitimate use or protection of natural and physical resources in the coastal environment.

[222] For example, Ngāti Kuia, MPI, KCSRA, DOC.

[223] Associated with pathways are the physical means by which the organism is transported, referred to as 'vectors'. Vectors include vessels and moveable structures (e.g. finfish farm pen structures, oil rigs) or equipment (e.g. fishing gear) that move among different geographic locations (both within and outside a region), which could exacerbate the spread of marine pests. Primary evidence Dr L Fletcher 30 September 2021 para 39.

[224] Cawthron Report No. 3222 NZKS Co. Limited: Open Ocean Farm Assessment of Environmental Effects – Biosecurity 24 June 2019 Dr L Fletcher.

710. Related to biosecurity risk are the risks arising from the Proposal of the transfer of aquatic disease agents and the disease risk to wild fish and also salmon cultured by NZKS. For assessment we have collated these issues under the following headings:

a) Disease risk for wild fish;

b) Disease and mortalities of farmed fish; and

c) Biosecurity and fish health and animal welfare benefits.

711. The biosecurity and fish disease issues listed above are each considered in turn below.

Transfer of marine pests via vessel and structure movements

712. Aquaculture operations present vector risks that can lead to marine pests being transported within or between growing regions. The submission from MPI highlighted the risk to biosecurity due to the increase of vessel movements as a result of the farms within the area.

713. Dr Fletcher, on behalf of the Applicant, identified that the movement of vessels, structures, equipment or gear can all harbour pests or biofouling organisms[225] that 'hitch-hike' when transfers are made between farms or between farms and other areas for example ports and marinas. She stated that vessel and structure movements are generally considered the most important anthropogenic pathway for the spread of marine non-indigenous species. Risks can also arise from non-industry vessels performing specific tasks on farms (for example the installation of the farm anchors) or passing near the farms such as other commercial and recreational activities.

714. Dr Fletcher identified that there are two phases of potential biosecurity risk due to transport vector risks; the construction phase and the operational phase of the farm(s) and with either phase slow moving vessels may pose an increased risk. A table indicating possible vessel movements was provided during the hearing which showed movements split into those associated with each phase of the farm. In terms of the construction phase Ms Fletcher noted that specialised service vessels from outside the region or from overseas will likely be engaged especially for the installation of the anchors and freight barges and these vessels may operate within the Marlborough region for a considerable period of time.

715. For the operational phase of the farms, Ms Fletcher stated that five vessel movements would originate from outside the Marlborough region. Two will be discrete events - a tug departing from Whakatū/Nelson will tow the feed barges to the site. The remaining three will be on an on-going basis including weekly feed deliveries via an offshore vessel originating from Whakatū/Nelson, and movement of the wellboat from Whakatū/Nelson to transfer fish between the inshore nursery/harvest sites and Blue Endeavour and possible direct deliveries of smolt via wellboat transfer potentially originating from Lyttelton or Marlborough Sounds.[226]

716. Mr McKenzie included a complete overview of vessels that will service the farms (as outlined in the Navigation Risks section of our decision). Biosecurity risks from these vessels will be dependent upon whether the region of origin has established populations of marine pests not currently present within the Marlborough region, and what risk mitigation measures have been undertaken for these vessels prior to their passage to the proposed site.[227]

717. Dr Fletcher states that all other vessel movements occurring as part of farm installation and day-to-day operations will occur predominantly within the Marlborough region, departing from Picton or Havelock. There will also be vessel movements between the Blue Endeavour site and some current inshore farms. Pen structures will also be moved to and from the Blue Endeavour site as part of ongoing operations. It is expected that each pen will need to be towed inshore once per year for maintenance purposes (with nets lifted beforehand). She concluded that intra-

[225] Biofouling refers to the gradual accumulation of organisms and biogenic structures on artificial surfaces submerged in marine or freshwater environments. These assemblages can vary greatly in complexity and composition but may typically include microbial organisms, sessile algae and invertebrates (e.g., mussels, bryozoans, sponges, etc.).

[226] Primary evidence Dr L Fletcher 30 September 2021 para 80. Mr Preece also discusses vessel movements in his Primary evidence paras 132 – 145.

[227] Ibid para 82

regional vessel and structure movements associated with the Blue Endeavour development will represent a very small subset of biosecurity risk pathways that already exist in the region.[228]

718. In regard to vessels from outside of the Marlborough region (including from overseas) introducing pest species, Dr Fletcher considered this to be a minor incremental effect which is dependent upon region of origin and level of risk mitigation undertaken prior to arrival and that this can be appropriately mitigated through adhering to national-level guidelines produced by MPI relating to vessel maintenance, in particular acceptable levels of hull fouling.

719. Ultimately, Dr Fletcher states that biosecurity risks from day-to-day operations vessels would be mitigated by adhering to good maintenance practices to prevent growth of biofouling and accumulation of sediment or debris.

Transfer of marine pests via equipment/gear movements

720. As with the above section the transfer of marine pests via equipment/gear movement brings the risk of inadvertently introducing pest species and this is also relevant for both the construction phase and the operational phase of the farms.

721. The construction of the farm site is expected to use all new materials, and this removes the risk of a marine pest introduction at the construction stage due to use of previously-used infrastructure.[229]

722. Movement of farm-related equipment or gear during the operational phase is not expected to give rise to biosecurity risk that is considerably greater than that for existing sources of biosecurity risk in the region. Any movement of equipment or gear is likely to be regionally restricted and will be relatively infrequent. Overall Dr Fletcher considered that a minor incremental effect is possible, but this would be mitigated by all previously used equipment/gear being thoroughly cleaned and disinfected prior to movement between farm sites.

Transfer of marine pests via stock movements

723. Stock movements/transfers according to Mr Preece are expected to occur via a wellboat from the nursery site to the Blue Endeavour site. Following 12 months at the Blue Endeavour site they will be transported to an inshore harvest site again via a wellboat. Dr Fletcher stated that with regards to marine pest risk, the water in which fish are transferred may contain both juvenile (e.g. invertebrate larvae, seaweed spores) and adult life-stages (including fragments capable of asexual reproduction) of a range of organisms. If this water is subsequently discharged at another location, any associated pests may be transferred.

724. Dr Fletcher stated that she has been advised that wellboat transfer will involve water treatment (including filtration and ultraviolet/ozone disinfection) as standard practice.[230] Mitigation actions include the development of standard operating procedures (SOPs) that incorporate industry best practice.[231]

Facilitation of marine pest establishment through changes to the local environment

725. Dr Fletcher identified that physical disturbance and alteration of the seabed as a result of construction activities (e.g., installation of farm anchors, ongoing chain sweep) may increase the susceptibility of seabed habitats to colonisation by marine pests. Day-to-day farm operations at the proposed open ocean Site may also alter the local environment (e.g., change water or sediment quality) and create conditions that facilitate or increase biosecurity risks. Organic enrichment of the seabed as a result of farming activities may lead to a change in the abundance of existing non-indigenous species at the site. Organic enrichment may also increase the susceptibility of seabed habitats to colonisation by other disturbance-tolerant pest species. The identified mitigation included management of the farm within acceptable environmental limits with regards to seabed enrichment.

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[228] Primary evidence Dr L Fletcher 30 September 2021 para 87

[229] Cawthron Report No. 3222 NZKS Co. Limited: Open Ocean Farm Assessment of Environmental Effects – Biosecurity 24 June 2019 Dr L Fletcher page 19

[230] Primary evidence Dr L Fletcher 30 September 2021 para 91

[231] Cawthron Report No. 3222 NZKS Co. Limited: Open Ocean Farm Assessment of Environmental Effects – Biosecurity 24 June 2019 Dr L Fletcher Table 2 page 22

Increased abundance and spread of marine pests from the creation of novel habitat

726. This is where the farm becomes a reservoir for the subsequent spread of pests to nearby natural habitats with associated values. Dr Fletcher considered that this would be a minor incremental effect whereby secondary spread from farm structures are dependent on habitat requirements of pest species, and would be limited for some species due to predominantly soft-sediment substrate in the immediate area.

727. The mitigation measures identified by Dr Fletcher include surveillance within the farm to enable timely detection of known and unknown pest species and regular defouling of farm infrastructure to prevent the establishment of large populations of pest species.[232] Mr Preece stated that the nets will be regularly cleaned.

Disease risk for wild fish

728. Ngāti Kuia[233] (and other submitters such as KCSRA) highlighted in their submission the need to protect any spread of disease to native fish species and to neighbouring farms.

729. Dr Diggles undertook a Disease Risk Assessment Report[234] – a qualitative risk analysis undertaken using internationally recognised methodology for assessment of risks of transfer of aquatic disease agents.

730. This analysis included assessment of the likelihood of any changes to the existing disease status of King Salmon, or native fishes within the Marlborough Sounds or Raukawakawa/Cook Strait, and assessed the consequences of disease spread (should it occur).[235] He found that 12 non-infectious diseases of cultured salmon in NZ would not pose any additional negative or cumulative threat to the health of wild finfish in the Marlborough Sounds or Raukawakawa/Cook Strait and were not considered further.

731. The Disease Risk Assessment Report found that five infectious disease agents should be considered as potential diseases of concern that required detailed risk assessment. The detailed risk assessment identified that, with the exception of infection with Piscirickettsia-like bacteria (NZ-RLO), the risk associated with each of the potential diseases of concern is either less than minor or negligible. As such, no additional risk management is required for these disease agents.

732. Dr Diggles considered that there is a minor risk associated with infection with Piscirickettsia-like bacteria, which means that additional risk management is required for this disease agent. The most important risk factor is water quality, which needs to be optimized via site selection and farm management to maximize the immune competence of the fish. He considered that the Proposal represents an attempt by NZKS to employ best practice risk reduction methods to mitigate risks posed by Piscirickettsia-like bacteria (NZ-RLO) via appropriate site selection.[236]

733. Dr Diggles concludes that the proposed Blue Endeavour site would allow NZKS to maintain safe fish stocking densities in the seapens, in a farming area with high water quality separated from other farming areas by ideal buffer zones. All of these management arrangements are known to assist salmon farming industries in other countries to avoid emergence of new infectious diseases, and better manage existing diseases.[237]

734. Mr Knight (on behalf of the Applicant) notes that an additional concern with nutrient enrichment is the potential for an increased occurrence of phytoplankton blooms also known as Harmful Algal Blooms (HABs) and this is supported by Dr Wilson[238] (for MDC) also. We discuss this issue in detail in the Water Quality Effects section of our Decision. Some phytoplankton toxins

[232] Cawthron Report No. 3222 NZKS Co. Limited: Open Ocean Farm Assessment of Environmental Effects – Biosecurity 24 June 2019 Dr L Fletcher Table 2 page 22
[233] Submission Ngati Kuia 13 October 2021 page 9
[234] The date of this report is 2019 - it is a review of the previous risk analysis undertaken by Dr Diggles three years earlier in 2016 (Diggles 2016).
[235] Primary evidence Dr Diggles 30 September 2021 para 18
[236] Primary evidence Dr Diggles 30 September 2021 para 26
[237] Primary evidence Dr Diggles 30 September 2021 para 29(a)
[238] Primary evidence Dr Wilson 24 September 2021 para 33 - 36

can be directly toxic to fish, and others can accumulate in shellfish and other filter feeders, and cause sickness in consumers.

735. Mr Knight stated that while his evidence focuses on the productivity of phytoplankton in general, based on the analysis of his colleague Dr Lincoln Mackenzie, presented in Newcombe et al. (2020), it appears the risks for enhanced HAB effects are very small from salmon farming in 'good' locations (deep with high current flows) such as the Blue Endeavour site.[239]

Disease and mortalities of farmed fish

736. Ms Kroon, on behalf of KCSRA, discussed the Controlled Area Notice (CAN) and was concerned with stock and equipment movements between farms within and outside of the zones because of the potential to spread the unwanted organism. She also spoke of the Association's concerns with the increasing sea temperatures and when this occurs for ongoing periods salmon become stressed because they cannot regulate their body temperature and highlighted that farmed salmon cannot take evasive action. She added that stressed fish are more susceptible to disease.[240]

737. Ngāti Kuia identified in their submission that they had high concerns regarding Salmon mortality (referred to as 'morts' in the industry). They stated that the mortalities were 'massive' and added to the burden of pollution and highlighted the importance of waste management and policies to protect any spread of disease to native fish species and to neighbouring farms.[241]

738. Dr Kluza, for MPI, noted that the Blue Endeavour will be setting a precedent for future farms in the open ocean and needs to set a high bar with respect to proposed biosecurity management. He further stated that International best practice suggests that when a water source is unable to be controlled, as is the case in open system sea pen farming currently undertaken by NZKS, separation of different year classes of fish in space and time should occur, and fallowing of sites prior to restocking, as this minimises the risk of older fish transmitting diseases to younger, newly stocked fish.

739. MPI have a strong preference that NZKS move towards operating its existing salmon farms in the Te Hoiere/Pelorus Sound with a sole focus on servicing Blue Endeavour (i.e., as nursery and or harvest sites) thus installing best biosecurity practice.

740. Dr Diggles acknowledged the recent emergence of disease outbreaks in the Marlborough Sounds which have been associated with infection by endemic bacteria including the NZ-RLO. He states that site selection is extremely important for biosecurity management and the proposed establishment of an offshore farm area in Raukawakawa/Cook Strait has several advantages in this regard. Particularly in relation to improved water quality and reduced vessel traffic, large (>16 km) buffer zones between the Site and other salmon farming zones, and increased water depth which reduces proximity to bottom dwelling fishes which can act as vectors for birnaviruses, sealice and also potentially other diseases of concern including NZ-RLO.[242]

741. Dr Kluza also spoke of the CAN introduced in 2016 for two zones in the Marlborough Sounds (Outer Te Hoiere/Pelorus Sound and Tōtaranui/Queen Charlotte Sound) to manage the spread of Rickettsia-like organism[243] (an Unwanted Organism). Dr Kluza states that under the CAN, a permit is required from MPI to move live salmon, equipment and materials, or specified items of personal equipment out of a contained zone. Movement of dead salmon out of a contained zone for testing at a laboratory or for processing does not require a permit (subject to conditions).

742. He further notes that the Blue Endeavour Site is located outside of the boundaries of these zones but will require permits if transferring stock/equipment from a CAN boundary. Dr Kluza identified that permits from MPI would be required for these activities and that this is not directly relevant to the consent decision, but the CAN information is useful background.

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[239] Primary evidence B Knight 30 September 2021 para 82
[240] Primary evidence of H Kroon paras 19 - 27
[241] Submission Ngati Kuia 13 October 2021 page 9
[242] Primary evidence Dr Diggles 30 September 2021 para 79
[243] NZ *Rickettsiaceae* sp.

Biosecurity and fish health and animal welfare benefits

743. Dr Diggles stated that Salmon were introduced to New Zealand as ova only between 1875 and 1907, thus eliminating the risk of introduction of many diseases that have since emerged in northern hemisphere salmon in recent years. This, together with the absence of wild populations of King Salmon within the Marlborough Sounds region, has put New Zealand in a unique position to be able to undertake salmon farming here without most of the disease constraints that limit production in other parts of the world.[244]

Discussion and Findings

744. Of particular relevance, Policy 12 of the NZCPS recommends that decision-makers include conditions on resource consents to assist with managing the risk of activities that could have adverse effects on the coastal environment by causing harmful aquatic organisms to be released or otherwise spread.

745. As Dr Fletcher stated due to the difficulties in managing established marine pests, preventing incursions through the management of high-risk vectors is a critical aspect of marine biosecurity in New Zealand and we agree. As prevention is the critical aspect, we have amended the final condition set, deleting 'minimises' and replacing it with the words 'avoids to the greatest extent practicable'. We consider that this aligns better with the evidence that we heard and recognises the precautionary approach that we have adopted with NZ's first open ocean salmon farm.

746. The key way of achieving 'prevention' of introduction and pathway management of human-mediated vectors to ensure protection of the marine environment is through the requirement to prepare a Biosecurity Management Plan (BioMP) and that it is certified by the Compliance Manager. A draft Biosecurity Management Plan (BioMP) was developed by Dr Waddington (for the Applicant) in conjunction with Dr Fletcher and Dr Diggles. Dr Waddington stated that the BioMP prioritises fish health and welfare to ensure NZ King Salmon has robust stock which is inherently more resistant to disease.

747. The draft BioMP addressed both marine pest and disease risk and outlines the procedures/protocols for mitigating biosecurity risk associated with vessel, structure, equipment, and stock movements. It also outlines procedures for on-farm surveillance of pest organisms or those that exhibit unusual patterns of population growth, as well as maintenance requirements for farm infrastructure. Requirements for staff training relating to surveillance for pest organisms are documented.[245]

748. Dr Waddington noted that the draft BioMP references numerous SOP's which we note are important explicit instructions for mitigating biosecurity risk that has been identified in evidence and submissions as outlined above.

749. Dr Kluza is supportive of the draft BioMP and stated that of special importance is the proposed establishment of the Blue Endeavour as its own 'Biosecurity Control Zone'. He stated that NZKS will need to ensure that the Control Zone-Level Protocols that apply to movement between Control Zones as outlined in the BioMP (and the relevant SOPs referenced within) are implemented.

750. Overall, this addresses MPI's previous concerns that the risk of increased vessel movements, biological fouling of farm structures and equipment, and risk of fish diseases and pests.[246]

751. Both MPI[247] and Ms Fletcher identified that there are a range of best management practices available to assist, especially regarding the set up and operation of marine farms that can help reduce biosecurity risks and strengthen on-farm biosecurity management.[248] These documents collectively highlight prevention and show a consistent importance of biosecurity risk.

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[244] Primary evidence Dr Diggles 30 September 2021 para 29(d)
[245] Primary evidence Dr Fletcher 30 September 2021 para 116
[246] Primary evidence Dr D Kluza MPI 8 October 2021 para 6.9(b)
[247] Primary evidence Dr D Kluza MPI 8 October 2021 paras 5.5 - 5.9
[248] For example AQNZ's Sustainable Management Framework and the jointly produced Aquaculture Biosecurity Handbook.

752. In regard to the potential for an increase in the frequency or intensity of phytoplankton blooms and/or a change in phytoplankton community composition Dr Giles and Dr Wilson[249] considered that it was unlikely that a change in phytoplankton community would be of ecological concern and we concur.

Overall Finding

753. Our overall finding is that we accept the expert evidence that if the conditions (as amended by the Panel) are complied with as discussed above that the Blue Endeavour Proposal will pose a no more than minor biosecurity risk and is consistent with Policy 12 of the NZCPS. This finding is also consistent with the expert opinions that we heard during the course of the hearing.[250]

Navigation safety

Context

754. Paragraph 16 of Mr McKenzie's primary evidence provides a comprehensive list of rules, regulations and guidelines that address navigation safety in NZ. We understand that navigation safety is primarily managed by Maritime New Zealand (MNZ) under the Maritime Transport Act (MTA) 1994.

755. In accordance with s89A of the Act, MNZ provided comment on any navigation related matters that it considered were relevant to the Application. The MNZ report is included in Appendix 8 of Mr Johnson's primary evidence. Section 89A(5)(b) of the RMA requires us to take those comments into account in our consideration of the Application. The matters included comments on conditions relating to structural integrity and aids to navigation. The matters raised by MNZ were addressed in the evidence of Mr McKenzie and we have taken their report into account in our Decision.

756. Mr Grogan noted that care should be taken to ensure consent conditions prescribed under the RMA do not attempt to limit or constrain risk controls that may be categorised as reasonably practicable under the MTA.[251] We were cognisant of this when we finalised the conditions of consent relating to navigation safety.

757. MNZ has produced a Marine Farms Guideline: Navigational Safety 2018 (MNZ Guideline 2018) which provides recommendations and good practice examples on matters of navigation safety, particularly for aids to navigation on marine farms. Appendix 1 of the MNZ Guideline 2018 defines "aid to navigation" and notes that a "special mark" (which we utilise in the conditions of consent) is an aid to navigation indicating a special area or feature.[252] Appendix 3 of the Guideline states that navigation related matters should be considered in the context of a risk assessment and associated navigation related consent conditions may apply to one or more of the following: local conditions; other water and neighbouring users, marine farm design and structure; and other matters including vessel traffic generated by the marine farm itself, existing aids to navigation, and responding to emergency events.

758. We have taken the MNZ Guideline 2018 into account in our decision and noted that Mr McKenzie's assessment included reference to it.

Issues

759. Mr McKenzie's risk assessment required an understanding of the context of the development, and included a hazard and risk identification, identification of risk mitigation options and controls, and finally, a re-evaluation of risk post-mitigation (the residual risk). The risk assessment was not challenged by any party and was supported by Mr Grogan.

760. Mr McKenzie identified three main vessel traffic routes, including an inshore coastal route, coastal transit route and offshore transit route.[253] He described the types of vessels using these

[249] Dr Wilson and Dr Giles response to Minute #8 20 December 2021 para 3 and 4
[250] For example; MPI, DOC, Mr Johnston (MDC).
[251] S42A Report addendum paragraph 15.
[252] It is yellow and its topmark is an 'X'.
[253] Refer Figure 2 above.

routes and volume of traffic.[254] He noted that vessels presently choosing to take the offshore transit route will pass to the North of the local unmarked navigational danger associated with Witts Rock will not be influenced or impacted by the proposal. The presence and activity of any such vessels was therefore not included in the navigation risk assessment.

761. Mr McKenzie stated there are no significant commercial ports within 10NM or recommended anchorages within 3NM of the application Site. Notwithstanding the charted shoals and rocks, in his opinion, given all other hazards are typically visible from a distance and well charted, the local water space is not an area that that can be considered difficult to safely navigate through provided the visibility is reasonable and skippers know the area.[255]

762. The navigation risk assessment was undertaken assuming that both farms were operating to maximum potential capacity. His evidence included a table[256] of possible vessel movements for farm installation and operations which he utilised in his assessment. This table was not challenged during the hearing process, and we accept it as a realistic representation of vessel movements associated with the Proposal and that it addresses the concerns of KCSRA about unknown vessel traffic generated by the Proposal.

763. Mr McKenzie identified the following navigation risks associated with the proposal, which we accept:

a) Vessel collision near the application site;

b) Small vessel collision whilst transiting the application site;

c) Vessel under command contacts a block of pens or barge;

d) Operational or maintenance vessel makes contact with a block of pens or barge;

e) Vessel not under command contacts a block of pens or barge;

f) Vessel under command grounds; and

g) Vessel not under command grounds.

764. PGG raised concerns about limited information on the extent of service vessel /barges within Te Anamāhanga/Port Gore and considered that a condition of consent should specify that vessels, barges and pen structures are excluded from the waters of Te Anamāhanga/Port Gore. Whilst this could be viewed as an amenity issue, we address it here as it relates to Mr McKenzie's evidence. The Applicant volunteered a consent condition excluding vessels servicing the Salmon Farms from transiting into Te Anamāhanga/Port Gore which we have accepted in the final conditions. We have extended this condition to include farm barges and pens.

765. Mr Downing (who submitted but was not heard) considered the proposal is situated in an isolated area with low impact on navigation routes, whilst KCSRA considered the farm would impact the high level of recreational boat use in the area. MEC considered boaties travelling from Taonui-a-Kupe/Cape Jackson to Rangitoto/D'Urville Island would have to make a sharp detour to avoid the farm.

766. SIFM&CSE were concerned about navigation lighting maintenance. These issues are addressed below.

Discussion and Findings

767. With regard to the navigation risks identified above, Mr McKenzie assessed the likelihood and consequence of each risk, and identified a pre-mitigation risk rating as outlined in Table 5 of his evidence.

768. He identified risk mitigation measures aimed at reducing the level of residual risks to being "As Low As Reasonably Practicable" (ALARP). He noted that ALARP is a long established and well accepted risk acceptance criterion that has been tested in the courts and forms the basis of

[254] Paragraph 51 to 54.
[255] Primary evidence paragraph 55.
[256] Appendix DBM1.

some safety legislation. Mr Grogan stated that the Council maintains maritime safety by reducing harbour risk to a level that is ALARP. We accept this approach to managing risk.

769. The risk mitigation measures identified by Mr McKenzie included generic measures and site-specific mitigation measures.

770. The generic mitigation measures (referred to as controls) included:[257]

a) The boundaries of Blue Endeavour are designed to limit the overlap with current traffic routes;

b) After placement and marking of the blocks of pens, vessels not on the common routes will simply be able to take a slightly different route;

c) The extent of the Blue Endeavour site will be marked with suitable AtoN[258] to the satisfaction of the Harbourmaster and MNZ;

d) Farm infrastructure that is to be fitted with AIS[259] will be registered and approved by MNZ;

e) The traffic route currently follows a line that passes to the north of Te Mete Mahinga/McManaway Rock. This will not be adversely altered.

771. Mr McKenzie considered that given Witts Rock and Te Mete Mahinga/McManaway Rock are relatively close by, they should be marked with a Virtual AIS to aid navigation and the situational awareness of bridge crews and other mariners.

772. Site specific mitigation measures identified by Mr McKenzie included:

a) Application site correctly charted and notified;

b) Application site correctly marked with visible AtoN including cardinal marks and virtual beacons;

c) Extent of farm pen blocks hazardous areas and barges are clearly visible to mariners by means of special marks;

d) Application site boundary aligned to vessel routes;

e) Water users notified through standard maritime notification channels whenever normally submerged elements are brought to the surface or are out of proper location;

f) All farm support vessels and barges used in navigation are managed under the Maritime NZ vessel safety management regime – known as MOSS;

g) All farm support vessel crew are suitably qualified and experienced;

h) Assurance that the farm mooring system is correctly designed and maintained as per the NRMP[260] and a suitable assurance scheme – for example classification to an applicable set of class rules;

i) Each farm position continuously monitored;

j) Farm operational procedures designed to avoid loose debris;

k) Ship-husbandry discipline maintained by crew to prevent loss of items and rubbish over the side;

l) Farm componentry designed to avoid release or loss of fixtures and fittings;

m) Use of transitional risk control program that includes informing other water users of the installation of and major change to the pen blocks or other key elements.

[257] Primary evidence, Paragraph 87.
[258] Aids to Navigation.
[259] Automatic Identification System.
[260] Refer to the JWS on conditions. NRMP means the Navigation Risk Management Plan. The NRMP has been replaced with a Safety Case and this is reflected in the conditions of consent.

773. Mr McKenzie stated that after controls (mitigation measures listed above) have been applied to the identified risks, there are six medium risks and one high residual risk associated with the proposal.[261]

774. The high residual risk related to an operational or maintenance vessel making contact with the farm. It was considered to be high risk due to the nature of operations and requirement to interact in close proximity with the infrastructure during normal operating and maintenance activities. With respect to this risk Mr McKenzie indicated that further operational mitigations may be required at a later date, during the detailed design phase.

775. These operational mitigations may include relative movement limits between vessels and structures, maximum weather or sea conditions, or technological solutions to enable standing off at a greater distance. He considered these operating limitations should be developed and incorporated into NZKS standard operating procedures (SOPs) in order to reduce the risk to ALARP. Mr McKenzie noted that the development of the above is usual for maritime operations and detailed operational rules and SOPs will be developed prior to and refined following commissioning.[262]

776. The medium residual risks (vessel collision near proposed farm, small vessel collision whilst transiting the farm, vessel under command contacts farm, vessel not under command contacts farm, vessel under command grounds, and vessel not under command grounds) were assessed as ALARP.

777. Mr McKenzie considered what the findings of the Navigation Risk Assessment Report (NRAR) mean in the context of the RMA and relevant policy and planning documents. Table 10 of his evidence outlines the risk event, residual risk rating (post mitigation), whether the risk is ALARP and the significance of the effects in the context of the RMA. He found that the overall effect of the proposal on navigational safety in RMA terms is minor.

778. Mr Grogan reviewed Mr McKenzie's NRAR and evidence and stated in his s42A Report that it is apparent there has been considerable effort made by NZKS to understand navigation safety risk and to propose and implement adequate risk controls.

779. Nonetheless, Mr Grogan considered there remains a degree of uncertainty with this Proposal which the draft risk assessment and associated proposed risk controls, including the draft emergency response plan cannot overcome. According to Mr Grogan, this should not be unexpected given that the Proposal introduces new technologies and farming practices to an environment that differs considerably from where and how salmon farming has previously occurred in the region.

780. Mr Grogan recommended that the consent conditions require the completion of an Offshore Marine Farm Safety Case to address this residual risk. This was accepted by the Applicant and a 'safety case' section has been added to the conditions of consent.

781. We note here that the safety case is an extension of the NRMP referred to in Mr McKenzie's evidence. We have checked that the matters referred to in the previously proposed NRMP condition (and relied upon in the evidence of Mr McKenzie) have been addressed by the matters covered in the Safety Case condition. We consider they have been adequately addressed.

782. Mr Grogan's addendum s42A Report identified matters that needed to be addressed by consent conditions. He stated that he was not intending to suggest specific wording but rather highlighting conditions that he considered would be more likely to lead to the navigation safety outcomes the Applicant seeks.

783. On the basis of Mr Grogan's evidence we directed Mr Grogan and Mr McKenzie to caucus and provide us with comments by way of a joint witness statement on navigation conditions and Safety Case conditions. They were joined in caucusing by Mr Bermingham (on behalf of the

[261] Summarised in Table 7 of his primary evidence.
[262] Paragraph 93.

Applicant) which we considered was appropriate given that Mr Bermingham provided evidence on risk and the Safety Case.

784. The joint witness statement (JWS-NS) provided a common set of conditions agreed by all experts, with the exception that Mr Grogan wanted the underlined additional requirement:

> *The Maritime Safety Case is to include a requirement to use automated means to monitor the position of each block of salmon pens and alert relevant persons and agencies including the Harbourmaster and enable live-tracking of a structure if it should be outside pre-defined positional parameters*

785. The Right of Reply discussed this point of difference in paragraph 292 stating:

> *Mr Mackenzie and Mr Bermingham considered that might be appropriate in some instances, but could also raise practical difficulties (in the absence of engineering advice), be unnecessary in the case of false alarms, or prove to be onerous on those other parties. The Harbourmaster preferred to receive an alert. The Applicant's 1 July conditions proposed a halfway house, with the Harbourmaster but not agencies included*.

786. We accept that the suggestion within the Right of Reply and have included this in the final conditions of consent. We note that the Applicants' proposed conditions of consent dated 19 August 2022 are formatted differently to the JWS-NS[263] and are more detailed (for example they include a review clause for the Safety Case and a requirement for it to be prepared by a SQEP) but that the wording and intent as agreed by the experts remains intact.

787. With respect to submitter concerns about impacts on navigation routes, Mr McKenzie considered that given the positioning of the Farms away from natural navigation routes (outlined above) and the small area of the Farms relative to the overall water-space in the vicinity, there will be no material impact on access to the general area and only limited obstruction in the immediate vicinity of Blue Endeavour, which will be clearly marked and charted. He stated that as with any floating structure that is expected to be in place for an extended period, the Farm area will need to be appropriately notified and marked / charted (including shapes, lights and AIS) and the charting and markings approved by the relevant maritime authority (Harbourmaster and MNZ for harbours and port areas, and MNZ for coastal areas and for virtual beacons).

788. Mr McKenzie addressed navigational lighting issues in paragraphs 143 to 149 of his evidence.

789. We consider his evidence on navigation routes and lighting to be thorough and we adopt it in our decision.

Overall finding

790. Overall, we consider that navigation safety issues raised by submitters, including any effects on existing navigation routes, and concerns raised about navigation lighting will be appropriately addressed by the conditions of consent.

791. Mr McKenzie considered that if all of the navigation risk management actions he proposed are adopted, the effect of Blue Endeavour on navigation safety will be minor.

792. We consider the navigation risk management actions he referred to are addressed by the conditions of consent (noting that they enable the MNZ and Harbour Master to address navigation safety requirements under the MTA) and on that basis accept Mr McKenzie's finding that effects on navigation safety will be minor.

793. We also consider that the installation of a weather station on one of the barges and publishing the wind speed and direction data on the internet, as required in the conditions of consent, will provide some benefit to navigation safety. We have included a requirement for the published data to be in real time.

[263] For example, the JWS-NS has one heading – "Maritime Safety", whereas the 19 August 2022 version of consent has two headings – "Safety Case" and "Navigation".

Effects on commercial fishing

794. We have considered effects on commercial fishing. The main issue of concern is the potential displacement of commercial fishing occurring at the site. We were provided evidence that the site is not regularly or well used for commercial fishing (refer to the benthic effects section).

795. The "site" is now better defined and is significantly smaller than outlined in the initial Application that submissions were based on. The Site is also insignificant compared to the overall area available for commercial fishing. For these reasons we find that the adverse effects of the proposal on commercial fishing are negligible.

796. Our section on the effects arising from the Farm on Wild Fish found that effects on wild fish populations would be minor overall. Hence, we consider that commercial fish stocks will not be affected by the proposal.

Overall findings under section 104(1)(a)

797. Overall, on the basis of the discussion above and subject to the conditions of consent, we find that the adverse effects of the Proposal will be no more than minor. In addition, the Proposal will have significant social and economic benefits, particularly at a regional level.

Offsets – Section 104(1)(ab)

798. Section 104(1)(ab) requires us (subject to Part 2) to have regard to any measure proposed or agreed to by the applicant for the purpose of ensuring positive effects on the environment to offset or compensate for any adverse effects on the environment that will or may result from allowing the activity.

799. The Applicant did not offer any offsets of compensation for any adverse effects on the environment that will or may result from allowing the activity.

Relevant Statutory and Plan Provisions – Section 104(b)

800. This assessment addresses Section 104(1)(b) of the RMA 1991.

801. In considering the relevance of the various matters under RMA s104(1)(b), we accept that relevant provisions from the following statutory instruments have been appropriately identified by the planning experts.[264] The relevant policy statements and plans to be considered are the NZCPS, the MRPS, the MSRMP, and the PMEP.

802. We have had regard to these in reaching our Decision.

803. Prior to our consideration of the above-mentioned statutory instruments we turned our minds to the weighting of the planning instruments. We note that there is an operative plan and a proposed plan (MSRMP and PMEP) – the proposed plan is subject to various appeals and there are two variations (Variation 1 and Variation 1A).

804. The planning experts agreed that comparatively little weight should be given MRPS and the MSRMP due to them being operative prior to the NZCPS coming into effect and that comparatively more weight should be given to the NZCPS and PMEP (excluding Variation 1 and Variation 1A) provisions[265] and we agree.

805. In terms of the weighting of Variation 1 and Variation 1A of the PMEP, Mr Johnson and Ms Yozin were in agreement that these variations (including their objectives and policies) can be given little weight irrespective of them having legal effect. Ms Yozin states that this is because Variation 1 and 1A were notified in December 2020, approximately 18 months after the Application for the proposed activity was lodged[266] and therefore the provisions do not apply. We do not entirely agree, as the policies may have some minor relevance, even if the activity status is not relevant.

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[264] Mr Johnson, Ms Munro and Ms Yozin

[265] See for example Addendum Johnson 25 November 2021 para 20, Primary evidence Munro 2 October 2021 para 4.52, Primary evidence Yozin 8 October 2021 para 97, 103

[266] The application was lodged July 2019

806. Counsel for the Applicant also agreed that the variations carried little weight and reiterated that the Application was made prior to the notification of the variation and consequently s88A applies. This is despite the fact that aquaculture rules have immediate legal effect in terms of s86B(3). Under s88A, the application should be considered and decided as an application for a non-complying activity (due to bundling) under Rule 35.5 of the MSRMP[267] and we agree.

807. We have otherwise accepted the uncontested view of the planning experts that the Proposal is generally consistent with the remaining relevant objectives and policies in the planning instruments.

808. For the reasons set out below and having applied a fair appraisal of the objectives and policies read as a whole, we find that the proposal is consistent with or neutral to most relevant policy provisions in the Plans. There was no compelling evidence presented to support a finding that the Proposal will be contrary to, or inconsistent with, the objectives and policies of the various planning instruments overall.

809. We note here that the key difference between the planning experts[268] is encapsulated by Ms Munro where she states that she both accepts and acknowledges that reliance upon different technical and expert evidence can lead to different conclusions as to the consistency with the applicable planning instruments.[269] Mr Johnson states that as the policy framework is to a large extent effects-based[270] it is necessary to draw conclusions of the adverse effects from the relevant experts. This to us is not surprising; the planning assessments against those objectives and policies are 'logically' strongly influenced by the conclusions of the respective experts reached on adverse effects.

810. This underscores the importance of carefully considering the policy framework as a whole, the directiveness of the language used and, where interpretation is unsettled, the extent to which the overarching objectives may ultimately be achieved by additional means over and above those expressed in the policies.

811. Taking into account the discussion above, for completeness we provide a brief overview of all relevant planning instruments below. Our assessment pays particular attention to the provisions of the key objectives and policy directives of the NZCPS and the PMEP and the key areas of contention remaining as at the close of the hearing. These are addressed in turn below, and include:

    a) Benthic Habitat: NZCPS Objective 1, Policy 11, PMEP Policies 8.1.3, 8.2.1, 8.2.4, 8.2.9, 8.2.10, 8.2.13, 8.3.1, 8.3.4, 8.3.5, 8.3.8;

    b) Natural Character: NZCPS Objective 2, Policy 13, PMEP Policies 6.2.1, 6.2.2, 6.2.3, 6.2.4, 6.2.5 and 6.2.6; and

    c) Landscape: NZCPS Objective 2, Policy 15, PMEP Policies 7.1.4, 7.2.5, 7.2.7, 7.2.12.

812. In focusing on the key objectives and policies, we have nonetheless viewed these in the wider context of the instruments, to ensure a fair appraisal we have also considered the following:

    a) Provisions that are enabling of aquaculture: Objective 6, Policies 6 and Policy 8 NZCPS, PMEP Objectives 4.1, 13.2, 13.20, Policies 4.1.2, 13.2.2, 13.2.6; and

    b) Provisions relevant to cultural effects on tangata whenua relationships and values, and Treaty principles: Objective 3 and Policy 2 NZCPS, PMEP Objectives 3.1, 3.3, 3.4 and 3.6, Policies 3.1.1, 3.1.3, 3.1.5.

[267] Legal submissions 15 October 2021 para 141 - 142
[268] Ms Munro (Applicant), Mr Johnson (MDC) and Ms Yozin (DOC)
[269] Rebuttal evidence Munro 14 October 2021 para 5
[270] Addendum Johnson 20 December 2021 para 3

National Policy Statements / National Environmental Standards

NZCPS

813. The NZCPS took effect on 3 December 2010. Its purpose is to state policies in order to promote the sustainable management of natural and physical resources of the coastal environment.

814. Mr Johnson provides a comprehensive list of the relevant objectives and policies[271] which we adopt for efficiency. We note that this is largely consistent with Ms Munro and Ms Yozin.

815. As identified above we focus our assessment here on the key areas of contention or materiality as identified above. We direct the reader to other Sections of our Decision for further NZCPS assessment for example Cultural (Objective 3 and Policies 2 and 17), Recreation (Objective 4 and Policies 16, 18 and 20), and Biosecurity and Fish Disease (Policy 12).

816. The provisions that remained contentious, and were material to our determination under s104(1)(b) during the course of the hearing are:

- Objective 1 – Ecosystems
- Objective 2 – Natural character and landscape
- Policy 11– Indigenous biological diversity;
- Policy 13 – Preservation of natural character; and
- Policy 15 – Natural features and natural landscapes;

817. The enabling provisions which we considered to ensure a fair appraisal included:

- Objective 3 – Principles of the Treaty of Waitangi
- Objective 6 – Use and development
- Policy 2 – The Treaty of Waitangi, tangata whenua and Māori heritage;
- Policy 6 – Activities in the coastal environment; and
- Policy 8 - Aquaculture

818. Policy 3 of the NZCPS is also relevant to our assessment of each of the above. This policy states that a precautionary approach should be adopted where effects of an activity are uncertain and potentially significantly adverse. All planning experts considered a precautionary approach is necessary and appropriate with the predominant reason being that the Proposal is New Zealand's first open ocean salmon farm, with residual uncertainties in terms of actual and potential effects. The extent of the application of the precautionary approach is addressed through our assessment below and relies on the scientific and expert evidence presented, coupled with the mitigation requirements that are a feature of the conditions and associated monitoring and management plans.

819. For completeness we note that Ms Munro states that no national environmental standards apply.[272] The existence of the Resource Management (National Environmental Standards for Marine Aquaculture) Regulations 2020 (or 'the NESMA') was noted. Regulation 11 of the NESMA is clear that this planning instrument applies only to the replacement of coastal permits for existing marine farms. As a consequence, the NESMA does not apply to the Proposal.

820. Before we assess Policies 11, 13 and 15, and their counterpart Objectives, we make a brief comment as to minor and transitory qualifiers. Counsel for DOC contends that when it comes to Policy 11 NZCPS, all adverse effects, including minor or transitory effects, must always be

[271] Primary evidence Johnson 24 September 2021 Appendix 9, in summary Objectives 1, 2, 3, 4 and 6 and 29 supporting policies.
[272] Primary evidence Munro 2 October 2021 footnote 6 page 3

avoided.[273] Counsel for the local environmental groups, Mr Ironside, took a similar approach in oral submissions.

821. NZKS's position is that:

a) In some instances, minor or transitory effects may need to be avoided to ensure indigenous biodiversity is protected in accordance with Policy 11. This requires a contextual assessment; and

b) However, Policy 11 NZCPS does not require that minor or transitory adverse effects must always be avoided. Policy 11 NZCPS provides a discretion for decision makers to authorise activities that have (no more than) minor or transitory adverse effects, as do Policies 13 and 15 NZCPS.[274] This is despite the fact that Policy 11 does not include a threshold for "appropriate" activities.

822. NZ King Salmon submits that within the environmental bottom lines established by the NZCPS, including those in Policy 11, there is some tolerance for impacts that are transitory, or not more than minor.[275] This position is based on the obiter dicta statement of the Supreme Court in *Environmental Defence Society Inc v NZ King Salmon Co Ltd*[276] ("King Salmon") that it is:[277]

> *… improbable that it would be necessary to prohibit an activity that has a minor or transitory adverse effect in order to preserve the natural character of the coastal environment, even where that natural character is outstanding. Moreover, some uses or developments may enhance the natural character of an area.*

823. Counsel for Royal Forest and Bird Protection Society of New Zealand Inc confirmed that they agreed with the Applicants position.[278]

824. Ultimately the Panel agrees with the position of NZ King Salmon for the reasons set out in their legal submissions.[279] Context plays a part when addressing minor and transitory adverse effects for a regionally significant aquaculture proposal, and in light of the proposed consent condition regime. We return to the subject of minor and transitory when we address the PMEP below.

Objective 1 and Policy 11 – Indigenous biological diversity

825. Objective 1 relevantly requires that the integrity, form, functioning and resilience of the coastal environment is safeguarded, and ecosystems are sustained (including by maintaining and enhancing natural biological and physical processes). This Objective is implemented through Policy 11, which is in two parts; the first part seeks to protect indigenous biodiversity by avoiding adverse effects, and the second part seeks to protect indigenous biodiversity by avoiding significant adverse effects and avoiding, remedying or mitigating other adverse effects.

826. The evidence presented to us agreed that both limbs of Policy 11 are relevant (as discussed in the Sections of our Decision relating to Seabirds, Marine Mammals and Benthic habitat).

827. In relation to seabirds we direct the reader to our assessment on Seabirds above. Overall, we accepted Dr Bennet's evidence and consider that seabird issues raised by submitters including Mr Schukard are addressed by the conditions of consent. We found that the adverse effects on seabirds would be minor and that the proposal is consistent with NZCPS Policy 11.

[273] Opening submissions Pemberton 14 October 2021 paras 58 and 61
[274] Legal Submissions Applicant in response to two issues raised by Panel during hearing 29 October 2021 para 3.3
[275] Opening legal submissions Applicant 15 October 2021 para 184
[276] (2014) NZSC 38
[277] King Salmon at 145
[278] Supplementary Legal Submission Jennings 17 December 2021 Royal Forest and Bird Protection Society Inc.
[279] Legal Submissions Applicant in response to two issues raised by Panel during hearing 29 October 2021 para 3.1 – 3.17

828. Our assessment regarding Marine Mammals and threatened or protected Sharks above concluded that overall the effects on marine mammals would be avoided through proposed consent conditions, including the Marine Mammal and Shark Management Plan and precluding use of a double net.

829. The biogenic habitat types and their locations were the subject of initial uncertainties expressed by submitters and council experts. This was addressed through additional field work and then expert caucusing resulting in a Joint Witness Statement – Benthic Habitat Mapping (JWS-BHM).[280] Dr Keely and Dr Anderson provided evidence outlining the size of the area covered by each habitat type which was largely agreed upon subject to some minor caveats by Dr Anderson,[281] which we consider are more points of clarification and accept.

830. We have given a full assessment of Policy 11 where it relates to the benthic habitat values in our assessment of Benthic Effects above. In summary we found that the Applicant has proposed to manage the farm operations so that adverse effects on biogenic habitat are *avoided* outside the 2,286 (t/farm/month) modelled footprint. We agree with Dr Anderson's finding that the adverse effects of deposition from proposed farm operations on biogenic habitat being no more than minor if the observed farm effects remain within the 2,286 footprint. We have included conditions of consent to that effect.

831. In reaching our decision we have taken into account and agree with the Applicants Counsel position in regard to minor and transitory effects as discussed above.

832. In summary we find that the Applicant has demonstrated that the effects on biogenic habitat will be avoided in a manner consistent with NZCPS Policy 11 if effects on biogenic habitat are wholly contained within the 2,286 footprint. We note that Counsel on behalf of the Director-General of Conservation also takes this view.[282] We consider there are no significant adverse effects and that other adverse effects are appropriately avoided, remedied or mitigated such that the second limb of Policy 11 is met.

Objective 2 and Policy 13 – Preservation of natural character

833. Objective 2 relevantly seeks to preserve the natural character of the coastal environment, and is implemented by Policy 13, which seeks to preserve the natural character of the coastal environment and to protect it from inappropriate use and development.

834. In considering this policy we are mindful of case law (such as the *King Salmon* decision) for the term 'inappropriate', whereby this must be assessed by reference to what is sought to be protected.

835. We note that the northern salmon farm is not within a mapped ONC whereas the southern salmon farm is partly within the mapped ONC that is the subject of appeal.

836. The landscape architects caucused[283] and their respective positions were recorded in a Joint Witness Statement (JWS). In respect of natural character, the two principle areas of difference are:

a) The extent to which very high and outstanding natural character encroaches on the local and wider areas impacted by the application; and

b) The effects of the proposal on natural character.[284]

837. We have fully assessed Policy 13 within our Natural Character topic above. In summary we found that the Site and its wider context has high and very high natural character values. In light of the proposed consent conditions, the Proposal will avoid adverse effects on the Benthic

[280] The additional field work occurred March 2022 and the caucusing JWS 21 April 2022
[281] Supplementary evidence Anderson 10 June 2021 paras 5 – 8
[282] Legal Submissions Pemberton 14 July 2022 paras 4 – 5
[283] Expert Witness Caucusing Conference and Joint Witness Statement: Landscape and Natural Character on 16 February 2022
[284] Applicant closing submissions 19 August 2022 para 151

environment and will otherwise have minor (and less than minor) adverse effects on the natural character of the coastal environment.

Objective 2 and Policy 15 – Natural features and natural landscapes.

838. Objective 2 relevantly seeks to protect natural features and landscapes by identifying characteristics and qualities that contribute to natural features and landscapes, and protecting identified areas from inappropriate activities, and is implemented by Policy 15. Policy 15 shares the same basic structure as Policy 13 to protect natural features and natural landscapes from inappropriate subdivision, use, and development. Outstanding areas need to be identified, mapped and protected and significant effects cannot occur in or beyond matter areas and effects need to be avoided, remedied and mitigated. As with Policy 13 above we have considered case law for what 'inappropriate' means.

839. The northern site is not within a mapped ONL. The southern site is within a mapped ONL, which is under appeal.[285] A consent order issued by the Environment Court, dated 10 October 2022, reduced the outer extent of ONL overlay in the vicinity of the Blue Endeavour Site. The Site is now almost entirely outside the new ONL line identified by the consent order. [286]

840. The Applicant's closing submission identified that there was some disagreement between Mr Hudson and Mr Bentley as to how to interpret Policy 15 of the NZCPS. The submission stated that Mr Bentley and perhaps Mr Johnson interpret Policy 15 as requiring the proposal to 'protect' the seascape of the site from inappropriate subdivision, use and development. The requirement to protect landscapes is achieved by managing effects in a way that meets the requirements of the subparagraphs in Policy 15. Protecting landscape is not a separate and additional requirement to the direction to "avoid" (etc) adverse effects.[287]

Objective 6, Policy 6 and Policy 8 – enabling provisions

841. These provisions are to some extent enabling of activities that provide for social, cultural and economic wellbeing, and are functionally reliant on the coastal environment. Objective 6 is enabling, while at the same time recognising the need for protection of ecological and other values. Policy 6 is equally enabling of activities that are functionally reliant on the coastal environment and enables wellbeing of people and communities. Policy 8 is specific to aquaculture and recognises the significant existing and potential contribution of aquaculture to the social, economic and cultural wellbeing of people and communities. Policy 8 is less directive than Policies 11, 13 and 15, and requires an assessment of the extent to which the PMEP provides for the Proposal (despite its non-complying status, and in light of its envelope of effects). Policy 8 notes that we should take into account the social and economic benefits of aquaculture, including national and regional benefits. We have addressed positive effects (which were largely uncontested) above.

Objective 3 and Policy 2 – Treaty of Waitangi

842. These provisions relevantly require that we consider the relationship and tikanga of tangata whenua with their ancestral lands, waters, wāhi tapu and taonga; and have regard to relevant Treaty principles, which in this case includes the exercise of rangatiratanga and active protection of taonga. We have addressed Cultural Effects above. We have relied on the submission of Ngāti Kuia which showed support for the Proposal[288]. In light of this support, we consider that the Proposal is not inconsistent with these provisions.

Overall Finding for NZCPS

843. Overall we find that the Proposal, subject to compliance with the conditions attached to this Decision, is generally consistent with the relevant provisions of the NZCPS and any effects arising from the set up and operation of the Salmon Farms would be no more than minor. Given our findings on effects, there are no irreconcilable or competing directive provisions.

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[285] Legal submissions NZKS 15 October 2021 para 224

[286] The consent order was issued after the hearing closed. But we are entitled to take "judicial notice" of the Environment Court's consent order, because it was received before our decision was finalised. It is a matter of public record, from a superior authority, and binding on us.

[287] Applicant closing submissions 19 August 2022 para 219(a)

[288] Submission Ngāti Kuia page 11

Marlborough Regional Policy Statement

844. The MRPS was made operative on 28 August 1995. It provides an overview of Marlborough's significant resource management issues and contains objectives, policies and methods to achieve integrated management of the natural and physical resources of the district.

845. Although the MRPS remains operative pending resolution of appeals on the PMEP, it has not been revised to give effect to the NZCPS. Given the advanced stage of the PMEP through the RMA Schedule 1 process, Mr Johnson considered that comparatively more weight should be given to the PMEP provisions, particularly those which have not been appealed.[289] This opinion was shared among the planning experts and in fact Ms Munro questioned if the MRPS can still be relied upon to accurately articulate Marlborough's response to the obligations that are set down by the Act. She further stated that it almost certainly does not give effect to the NZCPS.[290]

846. The MRPS objectives and policies which we consider to be of most relevance to the Application are listed in Appendix 11 of Mr Johnsons s42A report (24 September 2021) and not repeated here. Through a combination of different provisions, the MRPS establishes four broad environmental limits of particular relevance to the proposal, being species diversity, habitat protection, landscape protection and preservation of natural character, and consideration of the relationship and tikanga of tangata whenua with their ancestral lands, waters, wāhi tapu and taonga.[291] Those provisions are generally expressed in directive terms of maintenance, protection and preservation. Enabling provisions are also relevant, and we have addressed those provisions in context of our assessment of positive effects.

847. We accept the view of the planning experts and note our desire to concentrate on provisions in contention with the most relevant instruments being the NZCPS and the PMEP (as stated above).

The Marlborough Sounds Resource Management Plan

848. The MSRMP was notified on 31 July 1995 and was made operative in parts in 2003 and operative in full on 25 August 2011. It is a combined regional, regional coastal and district plan and sets out objectives, policies and methods to promote the sustainable management of the natural and physical resources of the Marlborough Sounds.

849. The MSRMP objectives and policies which we consider to be of most relevance to the application are reproduced in full in Appendix 12 of Mr Johnsons s42A report and for the sake of efficiency we adopt those for our decision. The key relevant themes concern the preservation of natural character; landscape management; the protection of significant species; and appropriate management of adverse effects.

850. As with our assessment of the evidence for the MRPS above and given the collective view of the planning experts that this document does not give effect to the NZCPS, and our focus on provisions in contention with the most relevant instruments being the NZCPS and the PMEP (as stated above) we have not provided a detailed assessment of the evidence.

The Proposed Marlborough Environmental Plan – Appeals Version 2020

851. The PMEP was publicly notified on 9 June 2016, with decisions on submissions notified on 21 February 2020. It is a combined regional policy statement, regional plan, regional coastal plan and district plan for the entire Marlborough district. Mr Johnson stated in his s42A report that fifty-one appeals were lodged on various provisions and most of those remain under mediation at the present time.[292]

852. Marine farming is not within the scope of the PMEP as specific aquaculture objectives, policies and rules have been advanced through Variation 1 and Variation 1A.

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[289] Johnson s42A 24 September 2021 paras 92-93

[290] Primary evidence Munro 2 October 2021 Annexure F para 1

[291] We have not set out the relevant cultural and tangata whenua provisions of the MEP, given that the issue of cultural effects was not contentious in reliance on Ngāti Kuia's position on the proposal. Ms Munro provided a planning assessment of the relevant provisions which we adopt.

[292] Johnson s42A 24 September 2021 para 123

853. The entire application Site falls within the Coastal Marine Zone – the following overlays are also within the locality:

- High Natural Character;
- Very High Natural Character;
- Outstanding Natural Character;
- Marlborough Sounds High Amenity Landscape;
- Outstanding Natural Feature and Landscape;
- Ecologically Significant Marine Sites; and
- Marine Mammal Distribution.[293]

854. In line with the above, we have focused on provisions in contention during the hearing. Those provisions relate to benthic habitat, natural character and landscape – these are assessed in turn below.

855. Before we turn to our assessment of the evidence, we comment on two related aspects; the directive nature of the provisions in the PMEP, and whether or not the PMEP provisions allow for minor and transitory effects. We asked Ms Yozin and Ms Munro to provide comment on both aspects during the course of the hearing.

856. In regard to the directive nature of the provisions Ms Yozin and Ms Munro were largely in agreement however Ms Yozin identified additional policies that she considered were relevant and directive in nature.[294] In viewing the additional policies, we agree that they are applicable and directive, and we have taken them into consideration when reaching our overall conclusions as set out below.

857. Ms Munro identified two policies that allowed for minor and transitory effects. Ms Yozin agreed with these but added a further eight to the list.[295] We accept the additional policies identified by Ms Yozin together with Ms Munro's and agree that they are relevant to our consideration. As with the directive provisions we have taken them into account in our overall findings.

Benthic Habitat

858. We have adopted the summary of provisions from the indigenous biodiversity chapter of the PMEP from Mr Johnson's s42a report.[296] He states that this chapter of the Plan has only two simple objectives: protection of the intrinsic values of Marlborough's remaining indigenous biodiversity (Objective 8.1); and an increase in the extent of Marlborough's indigenous biodiversity and improvement in the condition of degraded areas (Objective 8.2). The supporting policies are grouped under three headings concerning: identification of habitats with significant indigenous biodiversity value; protecting and enhancing indigenous biodiversity; and managing effects of development on indigenous biodiversity.

859. With regard to the first group of policies, it is clear from Policy 8.1.2, the explanatory text and the PMEP decision (Topic 6: Indigenous Biodiversity) that until a site is formally mapped in the PMEP as an Ecologically Significant Marine Sites (ESMS), then it cannot fall under the control of ESMS-specific provisions such as Policies 8.3.1(b) and (d) and 8.3.8. Nonetheless, Policy 8.1.3 seeks that baseline biodiversity information is gathered to enable effects' assessments on biodiversity values. The explanatory text records that there are significant gaps in our knowledge and filling those gaps is important to assist decision making on resource consent applications. This was the approach we took in issuing directions to undertake more field work and with regard to caucusing on benthic habitat mapping and modelling uncertainty.

[293] Johnson s42A 24 September 2021 para 32
[294] Additional policies included 4.1.3, 4.3.2, 13.13.4, 13.13.7, 13.21.7, 13.22.2, 13.22.3, 15.1.1 and 15.1.9
[295] Full list of policies included: 4.1.2, 4.2.4.3, 6.2.3, 7.1.1, 7.1.3, 7.2.4, 13.10.1, 13.13.4, 13.13.7, 15.1.11
[296] Johnson s42A 24 September 2021 paras 133 – 137

860. With regard to the second group of policies, there is a recurring theme of protection, maintenance and enhancement of ecosystems and habitats, even where these are not classed as ESMS.

861. The third group of policies seek to avoid adverse effects where the habitats are those set out in Policy 11(a) of the NZCPS (Policy 8.3.1(a)); avoid significant adverse effects and avoid, remedy or mitigate other adverse effects where the ecosystems are those set out in Policy 11(b) of the NZCPS (Policy 8.3.1(c)); and use buffers to avoid adverse effects of activities on ESMS (Policy 8.3.1(d)). Policy 8.3.4 sets out a range of adverse effects to be avoided, remedied or mitigated, including fragmentation of or a reduction in size and extent of ecosystems and habitats; impacts on habitats important as feeding areas for birds; and effects that contribute to a cumulative loss or degradation of habitats and ecosystems.

862. Mr Johnson identifies the key themes of this chapter as being protection, maintenance and enhancement of indigenous biodiversity.

863. In considering the provisions of this chapter we have had the benefit of a number of high-quality scientific evaluations from experienced ecological experts on behalf of the Applicant, Council, DOC and other submitters and this is also acknowledged by both Mr Johnson and Ms Munro.

864. Overall Ms Munro is of the opinion that with appropriate conditions and management plans in place, as proposed, the Proposal can be advanced in a manner that achieves the outcomes sought in this aspect of the MEP's policy framework.[297]

865. Ms Munro highlighted the Biosecurity Management Plan which seeks to manage biosecurity risk and fish disease of the Salmon Farm.

866. In regard to marine mammals, Ms Munro relies on Dr Clements evidence, that given the presence of threatened species potentially traversing the Site, a robust suite of actions (which have been included within the proposed resource consent conditions and draft MMSMP) are appropriate to apply in this instance; to both protect marine mammals, manage displacement and entanglement and maintain their habitat.

867. For seabirds, Ms Munro relies on Dr Bennet who opined that any residual risks to seabirds as a result of the Proposal can be mitigated via the adoption of best practice measures at the Site (which she noted are included within the proposed resource consent conditions and within the draft SMP) to ensure that the level of risk to seabirds is minor.

868. In relation to the biogenic habitat, Ms Munro relies on Dr Keeley and Dr Morrisey whose assessments confirm that there is biogenic habitat within the Proposal site thus triggering the protection requirements of Policy 11(a). They also confirm that with the appropriate management and monitoring measures in place, as prescribed within the conditions the effects brought about by the Proposal will be minor. It is acknowledged that while low levels of farm-derived particulates may be widespread via resuspension, impacts to Te Mete Mahinga/McManaway Rock are not expected to occur.[298] This was primarily due to the buffer created via appropriate site selection.

869. Ms Yozin on the other hand (relying on the evidence of Dr Anderson) considered that the clump reef, horse mussel/branchiopod beds, patch reef and mixed-biogenic habitat meet the criteria of NZCPS Policy 11(a) and that the mixed biogenic habitat also meets the criteria of Policy 11(b). She recognises that the Applicant has proposed to reduce feed levels. However, even with these reduced feed levels, clump reef and other biogenic habitat will still be adversely affected.[299] Based on Dr Anderson's evidence and further discussions in response to the Applicant's amended proposal, Ms Yozin considered that the directions to protect (objective 8.1), at least maintain non-significant values (policy 8.2.10), or avoid certain effects on the values listed in policy 8.3.1 is not being achieved. It was therefore her view that the proposed activity is contrary to objective 8.1 and policies 8.2.10 and 8.3.1.

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[297] Primary evidence Munro 2 October 2021 para 4.64(a) – (e)

[298] Primary evidence Keeley paras 27 – 79

[299] Speaking notes Counsel for Director-General of Conservation Pemberton 1 December 2021 para 18

870. In taking into consideration the various experts' opinions and assessments including the directive nature of the provisions and the allowance for minor and transitory effects we find that we prefer the assessment of Ms Munro and agree that the Proposal is consistent with the provisions of the indigenous biodiversity chapter of the PMEP. Dr Anderson's supplementary evidence dated 10 June 2022 assisted us in reaching this conclusion. We have imposed consent conditions to avoid adverse effects to the relevant benthic habitat.

Natural Character

871. The key provisions were summarised by Mr Johnson[300] as:

a) Objective 6.1 and the related policies concern the identification and mapping of natural character. The methods of implementation at 6.M.2 state that areas of high, very high and outstanding natural character have been mapped in the PMEP and that Appendix 2 of the PMEP identifies the attributes that contribute to those mapped areas of the coastal environment.

b) Objective 6.2 largely echoes the protective intent of Policy 13 of the NZCPS and Section 6(a) of the RMA. Policy 6.2.1 seeks to avoid adverse effects on areas with outstanding natural character. The explanatory text relevantly states *"that is not to say no subdivision, use or development can occur within the coastal environment – activities may not adversely affect the natural character of the surrounding environment, or may include features or benefit that maintain the existing levels of natural character."* Policy 6.2.2 concerns all areas of the coastal environment with less than outstanding natural character and seeks to avoid significant adverse effects on the characteristics that contribute to natural character. The criteria used to assist in such an assessment are set out at Appendix 4 of the PMEP, which is also subject to appeal. Supporting policies 6.2.3, 6.2.4, 6.2.5 and 6.2.6 seek that particular matters be recognised, considered or had regard to.

872. We heard evidence from Messrs Hudson and Bentley on all those relevant matters including elements, patterns, processes and experiential attributes that contribute to natural character.

873. Mr Hudson provided an assessment against the natural character provisions within his Landscape Assessment (August 2021) and concluded that the Blue Endeavour would have low effects on natural character. He opined that the Proposal would not interfere with coastal processes or the overall coherent pattern of the water's surface. Ms Munro, relying on Mr Hudson concluded that the Proposal is able to achieve the requirements of the natural character objectives and policies.[301]

874. Ms Yozin relied on Mr Baxter and Mr Bentley to draw her conclusions. Mr Bentley disagreed with Mr Hudson and stated that 'natural character, landscape and visual amenity values and level of naturalness are high, with much of this area being an Outstanding Natural Landscape or Outstanding Natural'.[302] Mr Bentley then concluded in his addendum that 'adverse effects on natural character will be within the moderate-high range at the broad scale and high at the local scale. The Proposal would affect the natural cohesiveness of the seascape, directly affecting experiential aspects. Whilst more sensitive benthic habitats seem to have been avoided by the farm locations, the Proposal will interrupt and be discordant with the natural elements, patterns and processes that are currently present within the broader and more local area. The concentration of structures and activity to a specific part of the seascape, will, in his view, create significant adverse natural character effects at the local scale.[303] In Ms Yozin's opinion the effects at the local scale would mean that the proposed activity is contrary to objectives 6.2, and policies 4.3.2, 6.2.1 and 6.2.2.[304]

875. We have preferred the effects assessment undertaken by Mr Hudson, in relation to the relevant natural character effects of the Proposal. Overall, we prefer the evidence of Ms Munro and agree that the Salmon Farm is able to achieve the requirements of the natural character objectives and policies for the reasons stated above, and in our discussion of natural character.

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[300] Johnson s42A 24 September 2021 paras 127 – 128
[301] Primary evidence Munro 2 October 2021 para 4.60 a – b
[302] Primary evidence Bentley 24 September 2021 Para 9.2
[303] Addendum Bentley 25 November 2021 para 4.2
[304] Supplementary Response Yozin 17 December 2021 para 30

Landscape

876. The key landscape provisions were summarised by Mr Johnson as:[305]

a) Objective 7.1 and the related policies concern the identification and mapping of outstanding natural features, outstanding natural landscapes and landscapes with high amenity value. The methods of implementation at 7.M.1 state that such landscapes have been mapped in the PMEP and that Appendix 1 of the PMEP identifies the values that make each landscape significant. Policy 7.1.4 seeks to refine the mapped boundaries in response to physical changes, more detailed assessments and new information. However, it is stated that any such mapping changes are to be progressed through the plan change process.

b) Objective 7.2 largely echoes the protective intent of Policy 15 of the NZCPS and sections 6(b) and 7(c) of the RMA. Policy 7.2.5 seeks to in the first instance avoid adverse effects on outstanding natural landscapes. The explanatory text relevantly states that "*this does not mean that there can be no new resource use within…outstanding natural landscapes; rather, the use or development of…resources may be able to be undertaken in a way that the quality and significance of the values is not diminished.*" The text further states that "*the option of remedying adverse effects on landscape values does not apply to activities occurring within the coastal environment, as Policy 15 of the NZCPS requires that such adverse effects are avoided*."

c) Policy 7.2.7 provides a non-exhaustive list of desired outcomes for the Marlborough Sounds High Amenity Landscape, which takes in the entire application site. Relevantly in respect of structures the policy seeks to avoid visual intrusion on skylines and minimise the intrusion of built form into the landscape. Policy 7.2.12 provides direction for decision makers in assessing cumulative effects on landscapes.

877. As with natural character we heard from Messrs Hudson and Bentley. They were in agreement that in the broader context the rating was very high, however disagreed for the localised context. Mr Bentley considered that the localised context rating was (at least) high whereas Mr Hudson considered it was moderate.

878. Ms Yozin[306] relied on the evidence of Mr Bentley which discusses landscape and amenity effects and considered that the proposed activity is located within an area of outstanding natural landscape values and that the effects on these values as a result of the proposed activity would be moderate to high. It was therefore her view that the proposed activity is contrary to policies 7.2.5 and 7.2.7.

879. Ms Munro,[307] relying on Mr Hudson, on the other hand considered that the Proposal is consistent with the landscape provisions. She stated that within his Landscape Assessment Mr Hudson recorded that the open ocean location ensures the Proposal is located away from topographical and geological components. In addition, he states that transient and dynamic qualities of the Site will continue to be appreciated. While the Proposal will introduce human-made structures into this context, she understands Mr Hudson's evidence to be that with his recommendations, as included within the proposed conditions in place (which include specifications regarding the visual appearance and colouring of the structures and barges associated with the Proposal), the Proposal will avoid adverse effects on outstanding natural features and landscapes, will avoid significant adverse effects on natural features and natural landscapes, and will avoid, remedy or mitigate other adverse effects, including cumulative adverse effects of activities on natural features and natural landscapes in the coastal environment.

880. A consent order concerning the landscape provisions of the PMEP was issued 25 March 2022. This consent order saw amendments to Policy 7.2.4, 7.2.7 (new) and 7.2.8 which Mr Johnson details in his addendum; Ms Munro also provides an addendum.[308] Ms Munro maintains that the Proposal is consistent with the amendments while Mr Johnson, relying on Mr Bentley,

[305] s42A Johnson 24 September 2021 paras 129 – 131
[306] Supplementary Response Yozin 17 December 2021 para 31
[307] Primary evidence Munro 2 October 2021 para 4.62(b)
[308] Final comments Johnson 29 July 2022 paras 5 – 14, Supplementary response Munro updated to reflect consent order 30 June 2022

maintains that such adverse effects on natural character, landscape values and amenity values would be more than minor.

881. For reasons stated elsewhere, we have preferred Mr Hudson's conclusions on the relevant landscape and amenity effects of the Proposal in light of the proposed consent conditions, including the limited visibility of the farms in their broader context. We concur with Ms Munro that the Proposal is consistent with the landscape objectives and policies for the PMEP for the reasons outlined above, including those amendments made by the Consent Order of 25 March 2022.

Variations 1 and 1A

882. These Variations refer to Marine and Finfish Farming respectively. There was common agreement among the planning experts (and Counsel) that these variations carry very little, if any, weight to which we agree.

883. We note the closing submissions of the Applicant whereby Counsel identified that at the conclusion of the Aquaculture variations hearing the Panel sought input from iwi as to how to proceed in face of the fact that no submitter spoke in support of Variation 1A.[309] Iwi, TPKM and MPI recommended to the Panel that it be withdrawn – we understand that this has not happened yet. NZKS's Counsel submits that if Variation 1A is withdrawn, that would leave the only specific 'planning' for finfish aquaculture as being NZCPS Policy 8 and the Marlborough Sounds Resource Management Plan provision which suggests that "beyond 200m from mean low water mark, marine farms are non-complying activities. In those areas marine farming involving finfish farming may be appropriate and it is recognised that consent may be granted by a resource consent application."[310]

884. We note that the Application is made under Rule 35.5 of the MSRMP.

885. In broad terms, Mr Johnson identifies that the relevant objectives are to protect and maintain the values of the coastal environment (Objective 13.21) and that marine farms are operated sustainably and address individual and cumulative adverse effects (Objective 13.22). Related Policy 13.21.4 relevantly states that a marine farm in CMU8 is inappropriate if such a farm is in:

a) A mapped area of high, very high or outstanding natural character and the farm would have:

   i. adverse effects on the values and characteristics of the mapped area of outstanding natural character; and/or

   ii. significant adverse effects on the values and characteristics of the mapped area of high or very high natural character;

b) A mapped area of outstanding natural features or landscapes and the farm would have adverse effects on the values and characteristics of that area.

886. Policy 13.21.6 sets out the assessment matters which include adverse effects on any of the natural and human use values of the coastal marine area including those identified in the 'Values Report 2018'. Mr Johnson noted that reference in this policy to the 'Values Report 2018' was in error and is sought to be deleted by numerous submitters including Council. The remainder of Policy 13.21.6 then describes where in CMU8 marine farms might be allowed. Apart from restating the natural character and natural landscape restrictions from Policy 13.21.4 above, the other relevant spatial restrictions broadly concern navigational routes; feeding or breeding habitat for important species; whale migration routes; ecologically significant marine sites; and reefs and benthic habitats.

887. Mr Johnson stated that policies 13.21.4 and 13.21.6 offer little support for the location of the proposed farms. While neither recognised navigational routes nor mapped ESMS appear to apply, at least parts of the application site contain biogenic habitats, feeding habitat for important species, and/or are mapped as an outstanding natural landscape and/or as having outstanding natural character.

[309] Closing legal submissions Applicant 19 August 2022 para 333
[310] Closing legal submissions Applicant 19 August 2022 para 336

888. Policy 13.22.3 then seeks that the proposed new farms be developed, monitored and managed in a precautionary manner, using staged or adaptive management. Part (b) of the policy sets out what staged or adaptive management will include, which in essence is a first stage of up to half the feed granted (in this case 10,000 tonnes) for a minimum of two production cycles before progression to subsequent stages.[311]

889. Mr Johnson concluded that the Proposal sits uncomfortably at best with the relevant provisions of Variation 1 and Variation 1A to the PMEP. However, given their current stage through the RMA Schedule 1 process, he considered that little weight could be given to those provisions.[312]

890. In Ms Munro's opinion, the Proposal can be advanced in accordance with Policy 13.21.1. In that regard, this policy provides for marine farms in offshore coastal management units (or 'CMU's') where appropriate, noting that such proposals will be assessed in terms of Policy 13.21.6 which she considers is a key policy for the assessment of the Proposal.

891. Ms Munro stated that, while the Proposal cannot meet the specific requirements of Policy 13.21.6, given the features of and overlays associated with the same, she was advised it can be advanced to manage adverse effects so that they are minor or less. This suggests to her that the Proposal does not cut across the intent of the policy. The proposed conditions of consent and associated monitoring and management plans are the key, in her opinion, to ensuring that this occurs. Further, once the Proposal is established, she is of the opinion that the proposed conditions will ensure that the Proposal can be operated in a sustainable manner. She also considered that the approach taken by NZKS and within the proposed resource consent conditions is precautionary, thus can be advanced to accord with the thresholds prescribed in Policy 13.22.3. Further, she understands that all of the structures associated with the Proposal are removable and that any litter or debris will be disposed of at the appropriate land-based facility. Finally, she understands that the proposed layout, positioning, design and operation of the proposed structures will be appropriate to the open water environment within which they are to be located.[313]

892. Specific to Variation 1A, Ms Munro opined that the establishment of clear environmental objectives and quality standards, and the requirements associated with the production, certification and review of the various management and monitoring plans are both robust and comprehensive, and will, in her opinion, achieve the outcomes required by policies 13.22.10 and 13.22.11.

893. Ms Yozin made no assessment of the provisions of Variation 1 or Variation 1A as she considered that they carry little weight, and as discussed above we agree.

894. However, for completeness in considering the above commentary we find that we concur with Ms Munro; the conditions of consent as attached to this Decision are appropriately precautionary and will ensure that the activity can be operated in a sustainable manner within prescribed thresholds. The Proposal is in accordance with the provisions of the variations, regardless of weight.

Section 104(1)(c) of the RMA 1991

895. Section 104(1)(c) of the RMA 1991 requires us to have regard to any other matter we consider relevant and reasonably necessary to determine the application. We discuss these matters below.

Te Mana o Te Taiao – Aotearoa New Zealand Biodiversity Strategy 2020

896. Ms Yozin considered that 'Te Mana o Te Taiao – Aotearoa New Zealand Biodiversity Strategy 2020' ("Te Mana o Te Taiao") is a relevant matter to be considered. Te Mana o Te Taiao is a government policy strategy which is developed to provide an overall strategic direction for

311 s42A Johnson 24 September 2021 paras 145 – 148
312 s42A Johnson 24 September 2021 para 149
313 Primary evidence Munro 2 October 2021 para 4.78 c – d

biodiversity over a 30-year period nationally. Te Mana o Te Taiao sets out goals and objectives, which is supported by an implementation plan.[314]

897. Ms Yozin considered that Objective 10 'Ecosystems and species are protected, restored, resilient and connected from mountain tops to ocean depths' is relevant to the proposed activity. More specifically she stated that in the year 2030 goals, goal 10.4.2 states 'No loss of the extent or condition of marine and coastal habitats which have been identified, mapped and designated as having high biodiversity value.' Goal 10.5.2 states that "Significant progress has been made in protecting marine habitats of high biodiversity value". Based on her reading of the evidence of Dr Anderson, Mr Baxter and Dr Broekhuizen, the revised application is not supportive of objective 10, and particularly goals 10.4.2 and 10.5.2 being met.[315]

898. We agree with Ms Yozin that Te Mana o Te Taiao – Aotearoa New Zealand Biodiversity Strategy 2020 is relevant to the Proposal. Given our assessment above for NZCPS Policy 11 and our assessment of the effects on the biogenic habitat above we find that the Proposal is consistent with the provisions to the extent applicable.

Statutory Acknowledgements

899. The settlements for Te Tau Ihu iwi were legislated in 2014 and were enacted on 1 August 2014. There are eight iwi of Te Tau Ihu to which these statutory acknowledgements and areas relate:

a) Ngāti Apa ki te Rā Tō;

b) Ngāti Kuia;

c) Rangitāne o Wairau;

d) Ngāti Koata;

e) Ngāti Rārua;

f) Ngāti Tama ki Te Tau Ihu;

g) Te Ātiawa o Te Waka-a-Māui; and

h) Ngāti Toa Rangatira.

900. We agree that these statutory acknowledgements are relevant, and we have taken them into consideration in making our decision.

Fisheries New Zealand / Tini a Tangaroa Guidelines

901. Also relevant are the recent guideline publications prepared by Fisheries New Zealand / Tini a Tangaroa:

- *Best Practice Guidelines for benthic and water quality monitoring of open finfish culture in New Zealand*;
- *Best practices and technologies available to minimise and mitigate interactions between finfish open aquaculture and seabirds; and*
- *Best practices and technologies available to minimise and mitigate interactions between finfish open aquaculture and marine mammals.*

902. These Guidelines were addressed by the relevant benthic, marine mammals and seabird experts and we have considered them in our assessments above.

Cost Benefit Assessment

903. Dr Kaye-Blake's undertook a cost benefit assessment (CBA) of the proposal. CBA is an internationally recognised decision-making framework. It assesses economic costs and benefits and non-market (social, cultural and environmental) costs and benefits. Dr Kaye-Blake stated that for his CBA, the non-market environmental impacts (i.e., adverse effects on the

[314] Primary evidence Yozin 8 October 2021 para 116 - 117
[315] Primary evidence Yozin 8 October 2021 para 118

environment) are costs. Non-market environmental benefits are possible as well. However, due to uncertainties in assessment of environmental benefits, the value of the non-market benefits was not estimated in his assessment.[316]

904. For this Proposal, the research to estimate the non-market costs was not conducted.[317] Mr Kaye-Blake estimated the dollar value of these non-market costs (adverse effects) using benefit transfer, i.e utilising environmental cost estimates from another site and applying them to this site in consultation with the Applicant experts' findings regarding effects.

905. We recognise that CBA is an aid to decision making as outlined in paragraph 21 of Mr Kaye-Blake's evidence. Mr Kaye-Blake also noted that it is not intended to replace the broader non-economic analysis of environmental, social and cultural considerations required under the RMA.

906. We gave no weight to the CBA results in our decision. This is because we are required to consider any actual and potential effects on the environment of allowing the activity under the decision-making framework provided by the RMA. This includes weighing up the evidence relating to effects (positive and adverse) that were identified by the relevant experts and submitters and presented to us.

907. The Benefit part of the CBA presented to us in Mr Kaye-Blake's evidence are solely economic benefits (not non-market benefits identified by the various experts – for example the benefits of an aid to navigation). We considered the economic benefits of the proposal elsewhere in our Decision.

908. If we were to include the Cost part of Mr Kaye-Blake's evidence then we would be effectively looking at the adverse effects on the environment twice, i.e., double counting. We consider this is not appropriate.

Section 104D – Non-Complying Activity

909. Following accepted legal and planning practice, the consent activities that make up the Proposal have been 'bundled' with respect to activity status. As noted in our Decision, the status is non-complying under Rule 35.5 of the MSRMP.

910. The non-complying activity status is triggered via the Marlborough Sounds Resource Management Plan. Mr Johnson sets this out as follows:

> *Chapter 35 of the Sounds Plan sets out the activities which require resource consent in order to be carried out in the coastal marine zones, along with their activity class in terms of section 87A of the RMA. Under Rule 35.5, unless otherwise specified to be a controlled, restricted discretionary or discretionary activity, marine farms within the CMZ2 constitute a non-complying activity where they are located either:*
>
> *(a) Inside a line drawn 50 metres from mean low water mark at right angles to a line normal to the nearest part of mean high water mark; or*
>
> *(b) Beyond a line drawn 200 metres from mean low water, at right angles to a line normal to the nearest part of mean high water mark.*
>
> *The proposed farms would be entirely new farms and would thereby not benefit from any of the controlled or restricted discretionary allowances accorded to existing marine farms in Chapter 35. The entire application site is undoubtedly located further than 200 metres from the mean low water mark. The proposal is therefore classed as a non-complying activity under Rule 35.5 of the Sounds Plan[318].*

911. As the application falls for consideration as a non-complying activity, pursuant to Section 104D of the Act a 'gateway test' is required to be met before a decision on whether consent can be granted. Section 104D prescribes that the consent authority may proceed to the substantive

[316] Primary evidence, paragraph 13(e).
[317] Primary evidence, paragraph 23.
[318] s42A Johnson 24 September 2021 paras 35 – 36

assessment (s104), and make a decision on whether to grant a resource consent application for a non-complying activity, only if it is satisfied that either:

a) The adverse effects of the activity on the environment will be minor; or

b) The application is for an activity that will not be contrary to the objectives and policies of the relevant plan (in this case, the operative MSRMP and the PMEP).

912. First we summarise the opinions of the planning experts followed by our finding for each 'limb'.

913. In regard to the first limb of the gateway test, Mr Johnson opined that there were several key matters upon which the experts were unable to agree that being biogenic habitats, natural character, landscape values and amenity values. He stated that with regard to biogenic habitats, there appears to be general agreement that some areas of biogenic habitat will certainly be adversely affected by the farm anchoring systems and deposition of organic material. However, based on the estimated proportions of habitat that would be affected, the conclusion appears to be that the overall level of adverse effects might not be more than minor. With regard to natural character, landscape values and amenity values, there appears to be agreement between experts that the effects resulting from the Proposal would be adverse (as opposed to positive or neutral). Relying on the evidence of Mr Bentley, in his assessment such adverse effects on natural character, landscape values and amenity values would be more than minor and thereby fails the first gateway test.[319]

914. Ms Munro, relying on the expert evidence considered that a number of the proposal's adverse effects are expected to be minor or less, once they have been appropriately remedied or mitigated (for example with the appropriate management and / or monitoring plan in place). Given this she concluded that it seems probable that the Proposal can pass the 'minor effects' gateway test.[320]

915. It was Ms Yozin's opinion that the proposed activity does not meet the effects will be minor gateway. This determination is based on the evidence of Dr Broekhuizen, Mr Baxter and Mr Bentley who consider that effects on the benthic environment, indigenous biodiversity, natural character and natural landscapes will be more than minor. We note here that this assessment was undertaken before Dr Anderson supplied her supplementary evidence dated 10 June 2022.

916. Taking into consideration the views of the planning experts and our assessment of the potential effects arising from the set up and operation of the Blue Endeavour, including conditions of consent appended to this Decision, we find that the Proposal meets the first limb of the gateway test – that being that the actual and potential adverse effects will be no more than minor.

917. We now turn our mind to the second limb – whether the activity is contrary to the objectives and policies of the MSRMP and the PMEP – we first consider the planning evidence followed with our finding.

918. Mr Johnson, in his final response, stated that in terms of the MSRMP he found that the Proposal is contrary to Objective 2.2.1 (preservation of natural character) and Policy 2.2.1.1 (avoid adverse effects of subdivision, use or development ...). He noted that many of the other relevant policies in the MSRMP seek to avoid, remedy and/or mitigate adverse effects on various matters and in his assessment the proposal is not contrary to those provisions. It was therefore his opinion that the proposed activity is not contrary in an overall sense to the objectives and policies of the MSRMP.[321]

919. Specific to the PMEP and relying on Mr Bentley's mapping of outstanding natural character dated 18 February 2022 and his conclusions concerning the adverse effects of the proposal on natural character, landscape values, and amenity values, it is Mr Johnsons assessment that the proposal is contrary to Objectives 6.2, 7.2 and 13.21 and Policies 6.2.1, 6.2.2, 7.2.8(a)(i), 13.1.1(a), 13.21.4(d) and 13.21.6(b), (f) and (h) of the PMEP and thereby fails the second gateway test.[322] Mr Johnson placed determinative weight on the landscape and natural

[319] Final response Johnson 29 July 2022 paras 18 - 20
[320] Primary evidence Munro 2 October 2021 para 7.4 – 7.5
[321] Final response Johnson 29 July 2022 paras 22 – 23
[322] Final response Johnson 29 July 2022 para 24 – 25

character objectives and policies, in reaching his view that the Proposal was contrary under the second limb of s104D. We note for our part that an overall assessment was required of the other material objectives and policies (for both the MSRMP and the PMEP) before reaching this view.

920. Ms Munro was of the opinion that the Proposal can be advanced in a manner that is not contrary to the relevant objectives and policies of the MSRMP and PMEP. Indeed, she was of the opinion that the Proposal is consistent with the intent or outcomes that are sought by the relevant objectives and policies of the PMEP, and V1 and V1A. It follows, therefore, that she was also of the opinion that the Proposal can achieve the second gateway test, and can be considered on its merits in accordance with section 104 of the Act.[323]

921. Ms Yozin did not consider that effects on natural character and naturalness are being avoided as directed by objective 2.2.1 and policy 2.2.1.1 of the MSRMP. She also considered that within the coastal environment provisions effects were not adequately avoided, remedied or mitigated. Given the policy direction of the PMEP she considered that the activity would be contrary to the provisions as:

a) Based on the evidence of Dr Anderson and Dr Broekhuizen, the benthic environment below the proposed farm site is considered to have significant indigenous biodiversity values and there is potential for significant adverse effects as a result of the proposed activity;

b) The evidence of Mr Bentley, which draws on Mr Baxter's evidence, determines that the area in which the proposed activity is located would qualify as having very high and outstanding natural character and that effects on these values would range from adverse to significantly adverse; and

c) Mr Bentley also considers that the area in which the proposed activity is located has outstanding natural landscape values and that effects of the proposed activity on these values would be moderate-high.[324]

922. We find, after considering the above expert opinions and applying a fair appraisal of the provisions as a whole based on our findings with respect to adverse effects discussed in detail above, that the Proposal is in general accordance, and not contrary, to the objectives and policies of the MSRMP and the PMEP. In light of our findings on adverse effects, there are no irreconcilable or competing directive policies that merit decline.

923. That said, we consider that the Proposal, subject to the conditions of consent, meets both tests of the non-complying gateway; the effects will be no more than minor and it is not contrary to the objectives and policies of the MSRMP and the PMEP.

Section 105 and 107 of the RMA 1991

924. Section 105 requires us (in addition to the matters in section 104(1)) to have regard to:

a) The nature of the discharge and the sensitivity of the receiving environment to adverse effects; and

b) The applicant's reasons for the proposed choice; and

c) Any possible alternative methods of discharge, including discharge into any other receiving environment.

925. We have had regard to these matters as discussed in detail in the water quality effects section of our decision.

926. Except as provided in subsection (2), Section 107(1) restricts us from granting a coastal permit allowing the discharge of a contaminant or water into water if, after reasonable mixing, the contaminant or water discharged (either by itself or in combination with the same, similar, or other contaminants or water), is likely to give rise to all or any of the following effects in the receiving waters:

[323] Primary evidence Munro 2 October 2021 para 7.7
[324] Primary evidence 8 October 2021 para 127

a) The production of any conspicuous oil or grease films, scums or foams, or floatable or suspended materials;

b) Any conspicuous change in the colour or visual clarity;

c) Any emission of objectionable odour;

d) The rendering of fresh water unsuitable for consumption by farm animals; and

e) Any significant adverse effects on aquatic life.

927. Subsection (2) provides that we may grant a coastal permit that may allow any of the effects described in subsection (1) if we are satisfied:

a) That exceptional circumstances justify the granting of the permit; or

b) That the discharge is of a temporary nature; or

c) That the discharge is associated with necessary maintenance work— and that it is consistent with the purpose of this Act to do so.

928. Applicants legal Counsel[325] identifies the following discharges resulting from the proposal:

a) Discharge of feed to salmon pens;

b) Discharge of residual feed and organic matter (salmon excreta) to the water column and seabed; and

c) Discharge of greywater from barges. No refuse or blackwater is to be discharged.

929. We heard from Mr Preece that feed is the largest cost of salmon farming operation and so there are commercial as well as environmental drivers to minimise feed waste. The conditions of consent require a feed loss study as this is linked to wild fish aggregation, they also require benthic and water column monitoring. We understand that the discharge of greywater from barges will be discharged to the ocean and will not include matters listed in s107 a – d above.[326]

930. The only potentially relevant provision of s107 is the requirement not to have significant adverse effects on aquatic life. This matter has been assessed in detail in our decision in relation to Policy 11 of the NZCPS and the benthic habitat assessments where we found that any effects would be less than minor.

Part 2 RMA 1991

931. Section 104(1) RMA states that our consideration of the Application is subject to Part 2 of the RMA, which covers sections 5 – 8, inclusive. Case law, in particular the *King Salmon* and *Davidson* decisions, indicate that we may have regard to Part 2 RMA for the purposes of a resource consent application, but that it may be unnecessary to do so, largely depending upon the status of the relevant planning instruments.

932. We of course acknowledge that the NZCPS has implemented Part 2 RMA, and that any consideration of Part 2 is therefore precautionary, in light of the unresolved state of the regional planning instruments. Our starting point is that Part 2 RMA (with the exception of section 8) does not require consideration, but we have set out our views on a precautionary basis below.

933. The overall purpose of the RMA is "to promote the sustainable management of natural and physical resources". In turn, "sustainable management" means:

"... managing the use, development, and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic, and cultural well-being and for their health and safety while –

a) Sustaining the potential of natural and physical resources (excluding minerals) to meet the reasonably foreseeable needs of future generations; and

[325] Legal submissions Applicant 15 October 2021 para 248
[326] Primary evidence Preece 1 October 2021 para 85

b) Safeguarding the life-supporting capacity of air, water, soil and ecosystems; and

c) Avoiding, remedying, or mitigating any adverse effects of activities on the environment".

934. We consider that subject to the conditions outlined in the certificate of resource consent, that our Decision meets the overall purpose of the RMA 1991. Granting the consents for the salmon farms provides for the positive effects of the Proposal whilst meeting the other requirements of section 5 of the RMA.

935. The matters of national importance set out in section 6 have been recognised and provided for in our Decision. We consider that all matters listed, with the exception of (g) – protected customary right and (f) historic heritage – to be relevant to the Application.

936. We have had particular regard to the matters listed in section 7 where we consider all but two are relevant to the Application. We consider that section 7(ba) and (j) which addresses the efficiency of the end use of energy, and the benefits derived from the use and development of renewable energy have limited, if any, relevance to the Proposal.

937. We have taken into account the principles of the Treaty of Waitangi (Te Tiriti o Waitangi) in our Decision – that being the duty to act in good faith, the duty to make informed decisions through consultation; and the principle of mutual benefit.

938. We are satisfied that the granting of the Application is consistent with the purpose and principles in Part 2 of the Act.

Consent Duration and Lapse

939. We have considered the duration and lapse term for the consent. Due to the scale of the proposal, the considerable investment required to install and maintain the farms, and taking into account our findings with regard to the effects of the proposal, we have decided that a suitable duration period is 35 years and an appropriate lapse term is 10 years. These were the time frames sought by the Applicant.

Decision

940. The coastal permit is **granted** subject to the conditions set out in the attached Certificate of Resource Consent.

……

Commissioner Craig Welsh (Chair)

……

Commissioner Liz Burge

……

Commissioner Rob Enright

Decision Dated: Thursday 10 November 2022

Certificate of Resource Consent

Consent Holder:	The New Zealand King Salmon Co. Limited
Consent Type:	Coastal Permit
Consent Number:	U190438.1
Lapse Date:	This consent will lapse on 10 December 2032 unless given effect to prior to that date.
Expiry Date:	If this consent is given effect to, the consent will expire on 10 December 2057.
Part 3, Section	S12(1)(b), (c), (d); 12(2)(a),12(3), 15(1)(a)

Pursuant to sections 34A(1) and 104B and after having regard to Part 2 matters and sections 104D and 104 of the Resource Management Act 1991, the Marlborough District Council **grants** a coastal permit to establish and operate two new salmon farms (the north farm and the south farm) located approximately 5 kilometres to the north of Te Uku/Cape Lambert, in northern Marlborough as detailed on OCEL drawing SK-051103-521, Rev 6, dated 15 June 2022 (attached) subject to conditions imposed under section 108 of the Resource Management Act 1991 below.

Conditions

General

1. The consent holder shall always and only undertake the activity provided for by this resource consent in accordance with:

   a) The conditions of this resource consent; and

   b) A certified version of each Management Plan required by the conditions of this resource consent.

   In the event that there is an irreconcilable conflict between the conditions of this resource consent and a Management Plan, the conditions shall prevail. In the event of an inconsistency between Management Plans, the more stringent requirement will prevail.

2. There shall be no use of Organohalogenated Contaminants (OHC's), therapeutics or antibiotics at either Salmon Farm.

3. No separate predator nets are to be installed as part of this consent.

Lapsing

4. This resource consent shall have been given effect to (in terms of section 125 RMA) once any Salmon Farm structure has been installed pursuant to this resource consent.

Cultural Matters

5. The consent holder shall assist Ngati Kuia to develop a Mauri Framework (which may include a cultural health index) for monitoring the mauri of Titi Island, Pouataikino/Alligator Head and Te Mete Mahinga/McManaway Rock.

6. The Mauri Framework will specify:

   a) Baseline monitoring to be undertaken for a period of 12 months beginning within one month of a date agreed between Ngāti Kuia and the consent holder;

   b) Cultural health indicators for monitoring mauri;

   c) Tikanga based responses for managing adverse effects on mauri; and

   d) Time periods for reporting on monitoring under the Mauri Framework.

7. The consent holder shall engage Ngāti Kuia or a Cultural Advisor(s) to undertake monitoring required by the Mauri Framework, and to prepare a report on the outcomes of monitoring under the Mauri Framework including any recommended tikanga based responses, in accordance with the time periods specified in the Mauri Framework. The report is to be provided to the Compliance Manager within 15 working days of completion.

8. Should the report prepared in accordance with condition 7 of this resource consent determine adverse effects on mauri as a result of the operation of the Salmon Farm and the report recommend any tikanga based responses, the consent holder shall:

   a) Review the report, with Ngāti Kuia or any Cultural Advisor(s) to ensure understanding;

   b) Identify which recommended tikanga responses it will adopt and which it will not adopt and advise Ngāti Kuia of this decision in writing, providing reasons for its decision on each recommended tikanga responses; and

   c) Implement adopted tikanga based responses.

9. The consent holder shall review the Mauri Framework's use and application with Ngāti Kuia on an annual basis.

10. Any document required to be sent to Ngāti Kuia shall be sent in a manner prescribed by Ngāti Kuia.

Advice note: For clarity, we have referred to the "consent holder" in these conditions. This is intended to address the direct relationship between The New Zealand King Salmon Co. Limited (NZ King Salmon) and Ngāti Kuia, including any successor consent holder to NZ King Salmon over the term of this consent.

Occupancy

11. The consent holder may exclusively occupy:

   a) The physical space occupied by all surface and sub-surface structures (as they exist from time to time), including all the space within the Salmon Pens, within the barges and within the feedpipes; and

   b) All other areas necessary to ensure the safety and security of personnel, members of the public, the salmon and the Salmon Farms (including the cardinal marks, monitoring equipment, lines, feedpipes and mooring systems).

MI note 20230622:
6 x 2 = 12 ha

Structures

12. Each Salmon Farm shall be located and secured so as to remain in general accordance with Plan SK-051103-521-Revision 6 at all times, other than during construction, or when being moved during or for maintenance, or when being taken to and from the Salmon Farm(s).

13. The maximum surface area of the Salmon Pens at each Salmon Farm shall not exceed six hectares in area.

14. The internal circumference of each Salmon Pen installed at the Salmon Farms shall not exceed 168 metres in length.

15. One permanently moored barge may be moored at each Salmon Farm. The length of the barge (as defined under Maritime Rule Part 40C) shall not exceed 70 metres. The beam overall shall not exceed 15 metres in width (measured at its widest point). The air draught (overall height above the waterline) shall not exceed 14 metres (excluding aerials or similar) under any design load condition.

16. After the installation of Salmon Pens, the consent holder is to position special marks as directed by the Harbourmaster in accordance with condition 40. Those special marks, when connected by imaginary lines, will form an imaginary quadrilateral. The consent holder shall ensure that, when measured under calm conditions, no pen mooring line:

    a) Is to be within five metres of the surface of the water between one metre and 100 metres outward from that imaginary quadrilateral;

    b) Is to be within 10 metres of the surface of the water between 100 metres and 400 metres outward from that imaginary quadrilateral; and

    c) Is to be within 20 metres of the surface of the water beyond 400 metres outward from that imaginary quadrilateral.

Visual Appearance

17. Except as specifically required by the Harbourmaster or as provided for in the Safety Case, MMSMP or SBMP (whose requirements shall prevail over this condition):

    a) The upper works of each barge above the gunwales shall be painted in a nautical colour scheme (such as white and blue);

    b) The hull of each barge shall be a dark colour(s) (such as black);

    c) All other surface structures at each Salmon Farm shall:

        i. Be painted or finished in dark or recessive colour(s); or

        ii. Be the natural colour of the materials if these are recessive (such as galvanised carbon steel); and

    d) Where reasonably practicable, structures of the same type shall be painted or finished in such a way to allow the whole of each floating part to be discernible and contiguous (such as by using consistent and coherent colours).

Lighting

18. The luminance resulting from the submerged artificial lighting used in each Salmon Pen may not exceed 23 x 600W LED underwater lights (or equivalent luminance) and shall be deployed at least five metres below the surface of the water.

19. The consent holder shall minimise light spill from the barge(s) by ensuring that:

a) Curtains, blinds or shutters which are effective at preventing light spill at night are provided for all windows on the barges resident at the Salmon Farm;

b) The curtains, blinds and shutters installed in accordance with condition 19a) are closed to prevent light spill at night;

c) Only external lighting that is required for navigation, deck and boat handling work, or health and safety purposes is installed at the Salmon Farms;

d) Lights for deck and boat handling work shall only be used while that work is being undertaken; and

e) All external lights are angled downwards, except where they are required to be angled upwards for navigation or health and safety purposes.

20. Where vessels operate at the Salmon Farm(s) at night, floodlights may only be used to:

a) Ensure the safety of staff;

b) Prevent harm to salmon; or

c) Protect each Salmon Farm, or ancillary infrastructure, from damage or failure.

Engineering and Design

21. The consent holder shall engage a Recognised Organisation to:

a) Assign class to each permanent feed barge; and

b) Assign class to each assembly of farming structures, comprising anchors, moorings, and salmon pens.

22. Design criteria for class shall include:

a) A tsunami with a current of 3.2 knots and wave height of 2.5 metres; and

b) NS9415:2021 or any successor standard accepted by the Recognised Organisation.[327]

23. The consent holder shall provide Ngāti Kuia, the Compliance Manager and Maritime New Zealand with a copy of the certificate of class from a Recognised Organisation not more than five working days after obtaining that certificate of class and before salmon are brought to the Salmon Farm(s).

24. The consent holder shall engage a Recognised Organisation to maintain in class each permanent feed barge and each assembly of farm structures, comprising anchors, moorings, and salmon pens.

25. The consent holder shall maintain the structures so that they are in good order, and in accordance with any endorsements of the certificate of class including in respect of periodic surveys, and any conditions of class of the Recognised Organisation.

26. The consent holder shall provide Ngāti Kuia, the Compliance Manager and Maritime New Zealand with evidence of maintenance of class from a Recognised Organisation annually within three months of the certificate of class being given.

27. The consent holder shall authorise the Recognised Organisation to provide the following notices directly to Ngāti Kuia, the Compliance Manager and Maritime New Zealand:

[327] Recognised Organisation means a classification society authorised as a recognised organisation by Maritime New Zealand in terms of the definition in Part 21 Maritime Rules rule 21.5.

a) Any notice of suspension of class; and

b) Any notice of withdrawal of class; and

shall provide any such notice to the Compliance Manager and Maritime New Zealand within one working day of receiving notice from the Recognised Organisation.

Carbon Reporting

28. The consent holder shall comply with the Financial Markets Conduct Act 2013 and the Financial Reporting Act 2013 (and any successor legislation) as they relate to carbon reporting.

Feed discharge, Density and Biomass

29. The consent holder shall not discharge more than 10,000 tonnes per annum per Salmon Farm.

30. The consent holder shall keep a record of the amount of feed discharged at each salmon pen and at each Salmon Farm in each month. Records of the amount of feed discharged at each salmon pen are to be made available to Ngāti Kuia and the Compliance Manager on request. Records of the amount of feed discharged at each Salmon Farm each month shall be provided to Ngāti Kuia and the Compliance Manager.

31. The consent holder shall operate the Salmon Farm so that the density of salmon does not exceed 25 kg/m^3 at each Salmon Farm. The consent holder shall supply evidence that it is complying with this condition on the request of the Compliance Manager.

32. The consent holder shall operate the Salmon Farm so that the biomass of salmon does not exceed 18,000 tonnes in total at each Salmon Farm. The consent holder will supply evidence that it is complying with this condition on the request of the Compliance Manager.

33. Prior to each Monitoring Year, the consent holder shall provide, to the Suitably Qualified and Experienced Person referred to in condition 64 the Anticipated Annual Feed for the following Monitoring Year. Owing to its commercial sensitivity, that statement may be provided to the Compliance Manager on the provision of an undertaking to keep the information confidential, except where disclosure of that information is required by law.

Safety Case

34. A Safety Case shall be prepared as part of the design and development process for the Salmon Farms and to form the basis of, or inform all procedures, the conduct of which may affect maritime safety. The purpose of the Safety Case is to form a flexible and dynamic safety framework that ensures and demonstrates that the Salmon Farms' development is designed, constructed, operated and maintained in a safe manner, meets legislative requirements and can incorporate lessons learnt post installation. The Safety Case shall document the inherent significant safety hazards and demonstrate the engineered barriers and a Safety Management System that shall be designed and applied to prevent the hazards from becoming a significant risk to maritime and personnel safety.

35. The consent holder shall engage a Suitably Qualified and Experienced Person(s) to lead the preparation of the Safety Case. This Safety Case shall be prepared in consultation with the consent holder and the Harbourmaster. A copy of the exposition (as described in condition 36(a)) of the first fully developed version of the Safety Case shall be submitted for information, to Ngāti Kuia and the Compliance Manager no later than one month prior to the installation of the structures.

36. The Safety Case shall include / address all of the following matters:

a) An exposition setting out how the various components of the Safety Case and Safety Management System are structured and meet all legislative and regulatory requirements;

b) A maritime safety risk register, a means of assessing identified risks and a description of the risk profile;

c) Detail the Salmon Farm(s) design requirements and ongoing measures to mitigate the risks associated with collision, allision and grounding of vessels;

d) Establish and maintain a Safety Management System;

e) The schedule for reviewing the risk profile in (b) above;

f) Require the use of automated means to monitor the position of each Salmon Farm to alert the consent holder and, if outside pre-defined positional parameters, the Harbourmaster. In addition, the system will enable live-tracking of a Salmon Farm if it should break free of its moorings;

g) Establish the Emergency Response Procedures to be included in the Safety Case and require periodic training to ensure that those working at the Salmon Farms are familiar with the actions that are to be undertaken in the event of an emergency. The Emergency Response Procedures are to include the actions that will be undertaken if a Salmon Farm and/or one of its component parts is detected to be outside of its correct location, as set out in Plan SK-051103-521-Revision 6.

37. The Safety Case shall include a requirement that, in addition to the official national requirements such as Notices to Mariners, or charting and listing of lights, the consent holder is to engage with the Harbourmaster regarding advising local mariners of the general nature of the Salmon Farm(s) including sub-surface structures, associated navigational aids, activities that may be occurring at the Salmon Farms, and from time to time any material changes to the activities.

38. The Safety Case is to be maintained to ensure the standards of the activities, operations, structures and other factors are effective in maintaining maritime safety. Copies of the extant Safety Case exposition is to be subsequently made available to Ngāti Kuia and the Compliance Manger from time to time on request throughout the life of this resource consent.

39. The consent holder shall engage a Suitably Qualified and Experienced Person(s) to lead the review of the Safety Case on a three yearly basis. The review is to be completed by the third anniversary of the previous review. The review is to be undertaken in consultation with the consent holder and the Harbourmaster.

Navigation

40. The consent holder shall, at least three months prior to the navigation marks being installed to mark the Salmon Farms, notify Ngāti Kuia of their planned installation and seek formal Maritime New Zealand approval via the Harbourmaster, through the established process for the marks to be approved, laid, notified and charted and lights listed.

41. The consent holder shall, at least five working days prior to each major works programme or changes that may influence the safety of maritime traffic notify Ngāti Kuia and the Harbourmaster of the programme of change. The purpose of notification is to indicate the area and nature of the works or changes and the anticipated period of the associated activity.

42. The consent holder shall, at least five working days prior to the planned placement of the cardinal marks and the first structure forming part of the Salmon Farm(s), notify Ngāti Kuia of their planned installation and request, via the Harbourmaster, that an announcement alerting mariners to the presence and location of the buoys or new structures is broadcast on a marine radio channel as advised by the Harbourmaster. This notice shall be broadcast on each day the structure(s) or group of connected structures are being installed, and for one week after the installation is complete.

43. As built plans showing the structures forming part of the Salmon Farm(s) and marine farm lighting and marking are to be provided to the Compliance Manager 20 working days after:

    a) Initial installation is complete; and

    b) The addition of salmon pen(s) or barge(s) is completed.

44. The type, design, functionality, and placement of marine farm lighting and marking shall be in accordance with International Association of Marine Aids to Navigation and Lighthouse Authority Guidelines and shall be installed in accordance with the approval provided by the Harbourmaster under his or her Maritime Delegation from the Director of Maritime New Zealand pursuant to sections 200, 444(2) and 444(4) of the Maritime Transport Act 1994.

45. Subject to the approval of Maritime New Zealand, Automatic Identification System signals or similar technology shall be used for the purpose of indicating the extent of the Salmon Farms to vessels navigating in the vicinity of the structures.

46. Each Salmon Farm shall be fitted with at least one radio beacon and one 'out of location' electronic location monitoring system for the purpose of:

    a) Sending an alert if the structures' position is outside of specified parameters; and

    b) Monitoring the location of a structure if it were to break away.

47. The electronic location devices required by condition 46 shall monitor the location of each Salmon Farm every 15 minutes. The transmissions from each device are to be monitored by the consent holder. Any indication that a Salmon Farm has deviated from its expected location will trigger the responses set out in the Safety Case.

48. The consent holder shall maintain all structures and parts authorised by this resource consent to ensure that they are restrained, secure and in working order at all times so as to not create a navigational hazard, and take all practicable actions necessary to ensure that the structural integrity of each Salmon Farm is maintained at all times.

49. Should any item or part associated with the structures or operation of the Salmon Farms be lost into the environment, it shall, to the greatest extent practicable, be recovered by the consent holder.

50. In the case of the loss into the environment of any item or part associated with the structures or operation of the Salmon Farm(s) that may represent a hazard to mariners, the consent holder shall notify the Harbourmaster and Ngāti Kuia of the loss and details of that item or part as soon as practicable after becoming aware of the lost item or part.

Noise

51. The Salmon Farms shall be operated so as to ensure that any noise emissions from them do not exceed the following noise limits when measured no closer than 250 metres from the outer edge of the area defined by Points 5 to 8 and 9 to 12 on Plan SK-051103-521-Revision 6:

At All Times	**70 dBA L_{Aeq}**

The following activities are exempt from having to comply with that noise limit:

a) Noise generated by navigational aids, safety signals, warning devices or the operation of emergency pressure relief values;

b) Noise generated by emergency work arising from the need to respond to an immediate health and safety risk or prevent loss or serious damage to property or minimise or prevent environmental effects; and

c) Noise ordinarily generated by the arrival and departure of vessels servicing the Salmon Farms.

52. At the Compliance Manager's request, the consent holder shall commission a report from a Suitably Qualified and Experienced Person(s) to monitor the noise emitted from the operation of the Salmon Farms. Noise is to be assessed in accordance with NZS 6802:2008. The results of the monitoring, together with a report from the consent holder that assesses compliance with the noise limit set in condition 51, shall be provided to the Compliance Manager within one month of monitoring being completed.

53. The noise emitted from the construction activities associated with installation and/or maintenance of the Salmon Farms' structures shall not exceed the noise limits specified in Table 2 of New Zealand NZS 6803:1999 (Acoustics – Construction Noise).

Benthic

Compliance Limits

54. The following benthic habitat compliance limits shall apply outside the 2,286 (t/block/month) modelled footprint as shown in Appendix 1 to these conditions, to all discharges to the seabed from the salmon farm(s). The discharges shall not cause:

a) In non-biogenic habitat, any organic enrichment-related adverse effects;

b) In biogenic habitat, adverse effects;

c) Adverse effects on Te Mete Mahinga/McManaway Rock ESMS.

Initial Benthic Monitoring Plan

55. Prior to undertaking the baseline survey in accordance with condition 56, an initial Benthic Monitoring Plan (iBMP) shall be prepared by a Suitably Qualified and Experienced Person(s) and submitted to the Compliance Manager for Certification no later than 12 months before feed is discharged at either salmon farm. The iBMP shall:

a) Describe the methods to be used to undertake the baseline survey;

b) Specify the coordinates of the monitoring stations referred to in condition 56;

c) Identify draft Benthic Quality Standards (BQS) to be used to assess compliance with the benthic habitat compliance limits;

d) Specify key taxa that could be indicators of farm-related effects, or those that have a high ecological importance within the habitat(s), and may include brachiopods and horse mussels;

e) Require environmental parameters to be recorded (e.g. tides, currents, sediment movement, water clarity);

f) Be prepared having regard to the Ministry for Primary Industries Benthic and Water Quality Monitoring Open Ocean Aquaculture Best Practice Guidelines 2021 or replacement Guidelines.

Baseline Monitoring

56. Prior to the first discharge of feed at either Salmon Farm baseline monitoring is to be undertaken at the direction of a Suitably Qualified and Experienced Person(s) in accordance with the certified iBMP at monitoring stations shown in Figure 1 and Figure 2 (all stations) for all the parameters shown in Table 1.

Figure 1 - Non Biogenic Habitat Monitoring Stations

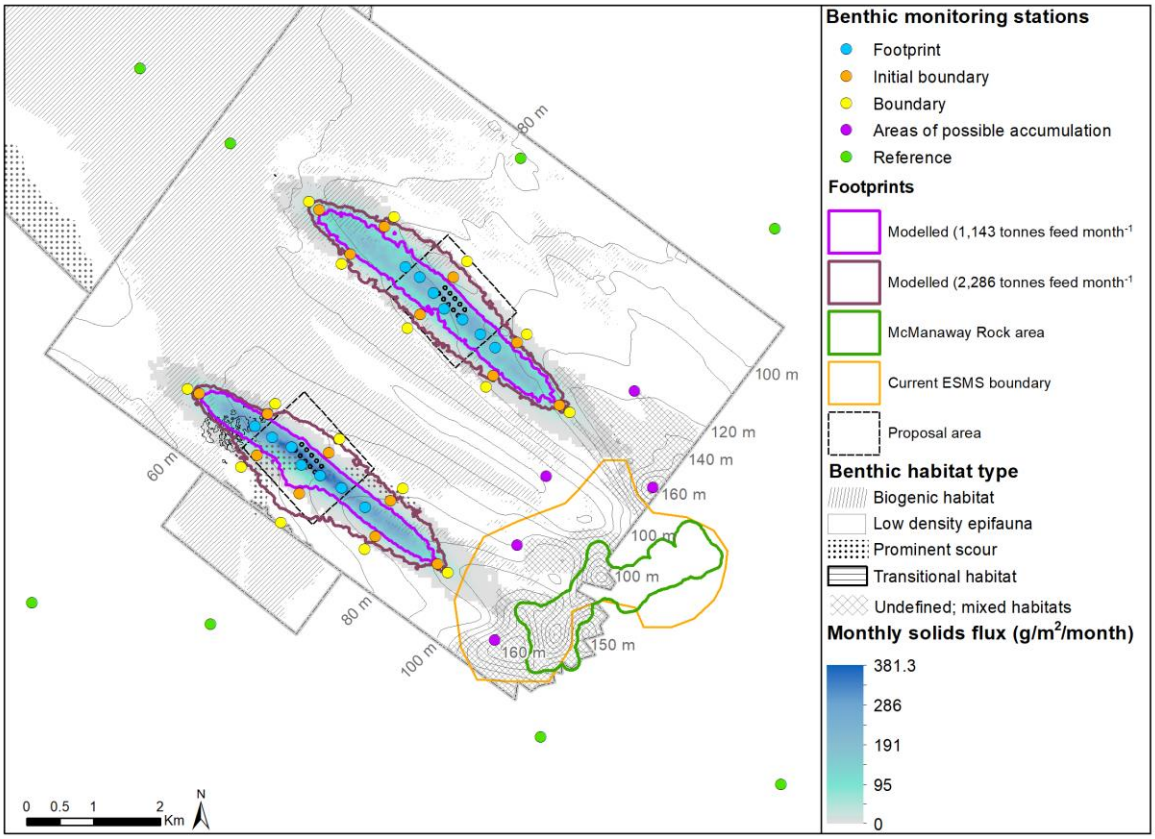


Figure 2 – Biogenic Habitat Monitoring Stations

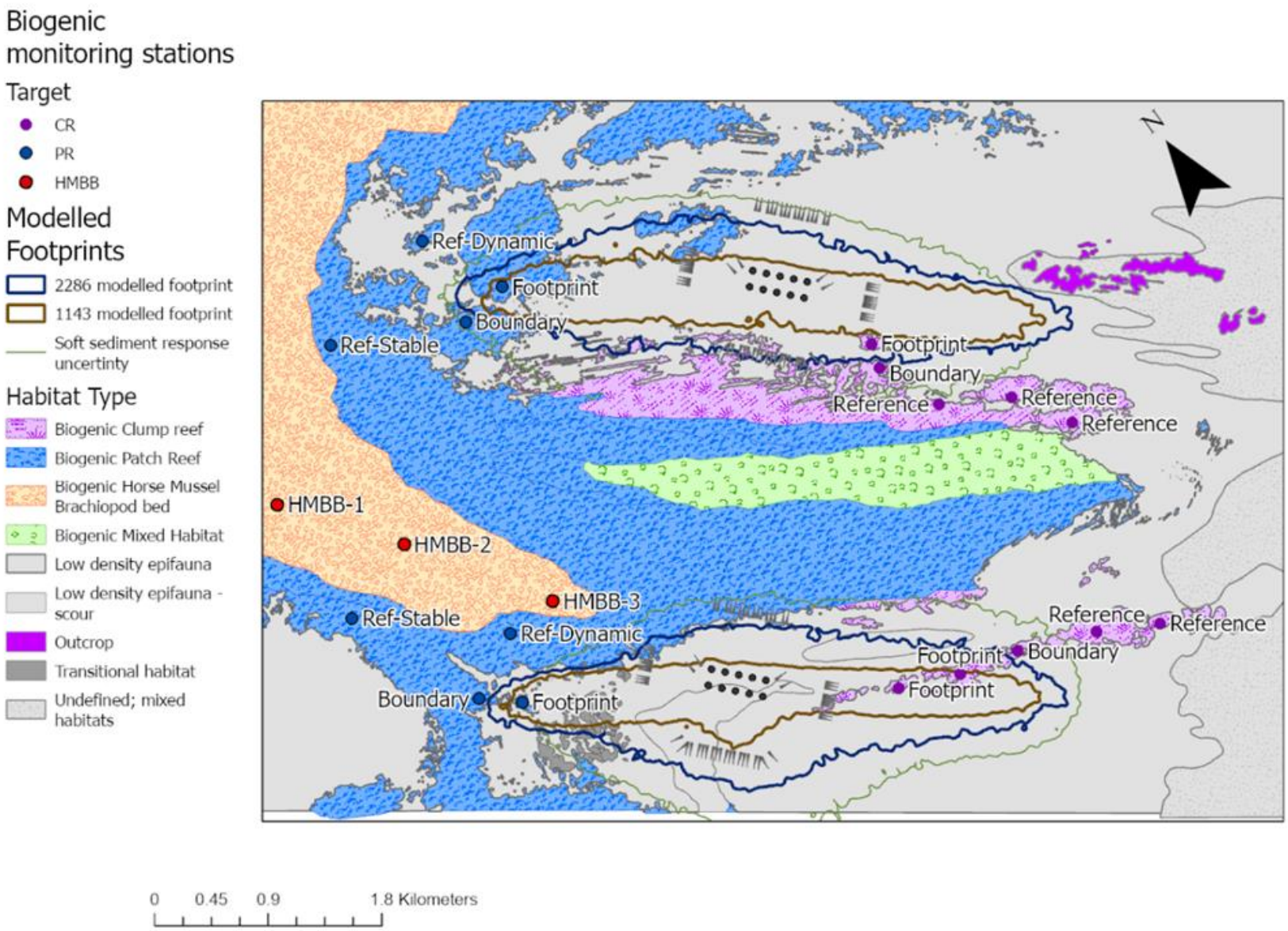


Table 1 – Baseline Survey Monitoring Parameters

Habitat Type	**Monitoring Parameters**							
Non-Biogenic Habitat	**S^{2-}** (ISE or UV)	**b-MBI**	**%S**	**AMBI**	**M-AMBI**	**BQI**	**d**	**Copper and Zinc**
Biogenic Habitat	**Qualitative assessment including sediment influence (if any)**		**Quantitative assessment Densities of Key Taxa**		**Quantitative Assessment - Taxonomic richness**			

%S = percent species richness (infauna) of comparable reference, AMBI = AZTI Marine Biotic Index, M-AMBI = Multivariate AMBI, BQI = Benthic Quality Index, d = Margalef's richness.

Baseline Monitoring Report

57. Within three months of completion of the baseline monitoring required by condition 56, the consent holder shall provide a Baseline Monitoring Report to Ngāti Kuia and the Compliance Manager. The Report shall include:

    a) A description of the monitoring undertaken;

    b) An assessment of the results of baseline monitoring;

    c) Details of the existing environment (environmental parameters, benthic habitats) at the time of monitoring based on the monitoring results;

    d) Recommendations for changes to monitoring stations and parameter (if any);

    e) An assessment of the suitability of the draft BQS and recommendations for final BQS to be used to assess compliance with the benthic habitat compliance limits; and

    f) A critique of the suitability of the monitoring methods and recommendations for future monitoring including monitoring frequency.

Benthic Monitoring Plan – Post Baseline Survey

58. Three months prior to discharging any feed to either Salmon Farm, the consent holder shall submit a Benthic Monitoring Plan (BMP) prepared by a Suitably Qualified and Experienced Person(s) to the Compliance Manager for Certification. The BMP shall:

    a) Identify BQS to be used to assess compliance with the benthic habitat compliance limits;

    b) Enable identification of adverse effects on the environment which may arise following commencement of the consent, including adverse effects on biogenic and non-biogenic habitat;

    c) Identify the updated monitoring stations (including coordinates) and parameters to be monitored;

    d) Specify the frequency of monitoring noting that a benthic monitoring report is required to be submitted annually;

    e) Describe the monitoring methods;

    f) Require environmental parameters to be recorded (e.g. tides, currents, sediment movement, water clarity);

    g) Be prepared having regard to the Ministry for Primary Industries Benthic and Water Quality Monitoring Open Ocean Aquaculture Best Practice Guidelines 2021 or replacement Guidelines.

Provision of Monitoring Results

59. The consent holder shall submit the results of the monitoring undertaken in accordance with BMP to Ngāti Kuia and the Compliance Manager no later than the fifth working day after the results become available.

Annual Benthic Monitoring Report

60. The consent holder shall submit an Annual Benthic Monitoring Report prepared by a Suitably Qualified and Experienced Person(s) to Ngāti Kuia and the Compliance Manager no later than sixty working days after the monitoring year. The BMP shall:

    a) Provide an overview of relevant farm operations including salmon feeding data;

b) Provide an overview of the monitoring undertaken, including the location, frequency, method and parameters recoded;

c) Outline relevant environmental conditions associated with each monitoring event (e.g. tides, currents, sediment movement, water clarity);

d) Include the results of the benthic monitoring during the monitoring year;

e) Evaluate compliance with the benthic habitat compliance limits;

f) Identify any adverse effects on the benthic environment arising from farm operations, including adverse effects on biogenic and non-biogenic habitat;

g) Identify recommendations for management practices to address compliance matters or adverse effects on the benthic environment arising from farm operations;

h) Outline recommendations or considerations for future review of the BMP.

Advice Note: Monitoring Year means the 12 month period from 1 October in any one year until 30 September in the next year.

Review of Benthic Monitoring Plan

61. The consent holder shall review the BMP as required to achieve compliance with the conditions of consent and at least every two years. The review shall be prepared by a Suitably Qualified and Experienced Person(s). The results of the review shall be provided to Ngāti Kuia and the Compliance Manager. Any changes to the BMP arising as a result of the review shall be prepared by a Suitably Qualified and Experienced Person(s) and provided to the Compliance Manager for Certification.

Advice Note: A change of consent conditions, such as a change to the monitoring regime or compliance limits will generally occur in accordance with s127 or s128 of the RMA.

<u>Water Quality</u>

Receiving Water Compliance Limits

62. The following water quality compliance limits shall apply, after reasonable mixing, to all discharges to water in the coastal marine area from the salmon farm(s). The discharges shall not cause:

a) Dissolved oxygen concentrations to fall below a mean of 80% saturation for two successive months within any five metre depth bin, disregarding any depth bin below 10 metres of the bottom of any salmon pen in the Salmon Farms;

b) Undesirable biological growths in the receiving water.

The reasonable mixing zone for the discharges from the Salmon Farms shall be within the area defined by Points 5 to 8 and 9 to 12 on Plan SK051103-521-Revision 6. Effects beyond the reasonable mixing zone are measured at Boundary NE, NW, SE and SW as shown on Figure 3.

Advice Note: As provided for by Schedule 3 of the RMA 1991, the compliance limits disregard the effect of any natural perturbations that may affect the water body

Water Quality Monitoring

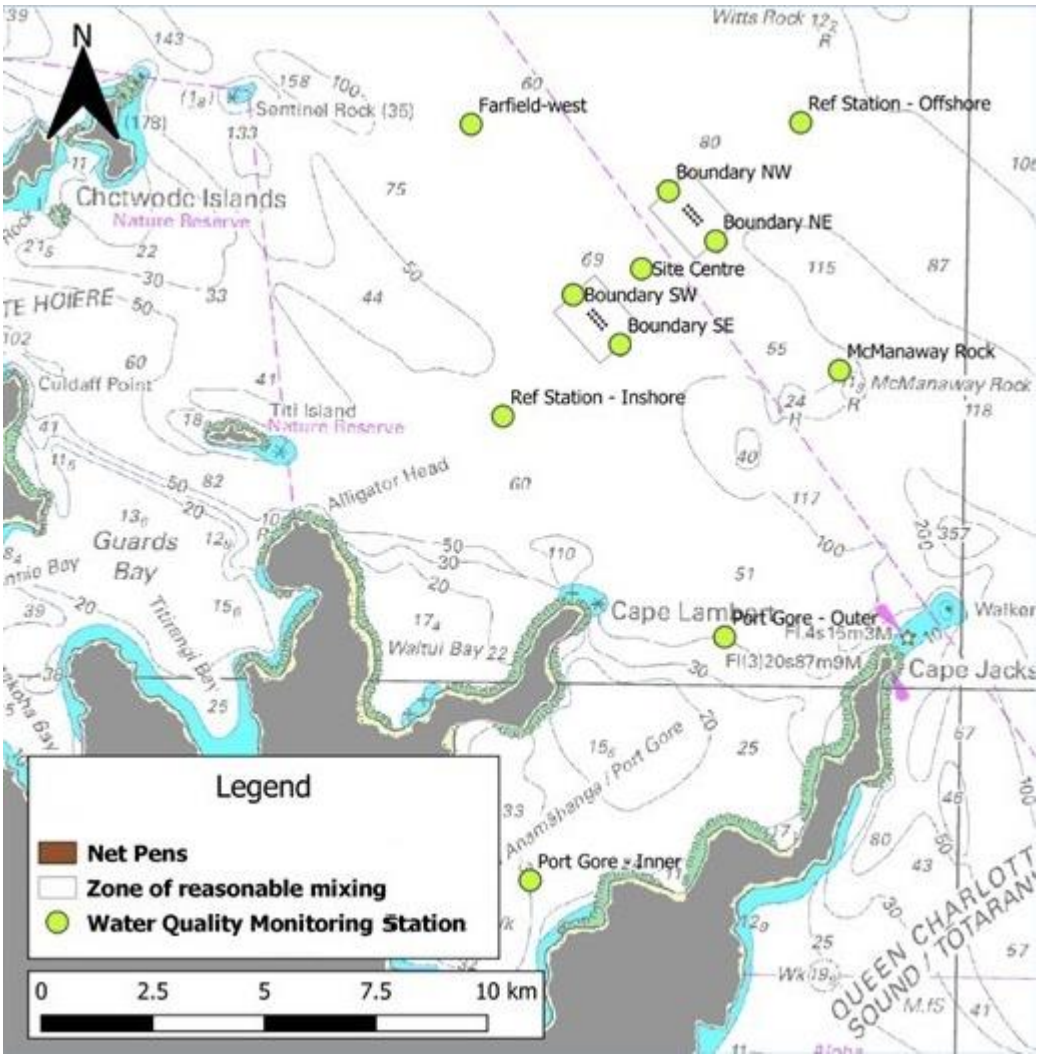
Table 2: Specification of intensive and long-term minimum monthly water column monitoring at the Salmon Farms, at locations specified in Figure 1. Parameter abbreviations are: TN = Total Nitrogen, Chl-a = chlorophyll-a, TAN = Total Ammoniacal Nitrogen, DO= Dissolved Oxygen, Phyto counts = full phytoplankton counts (to a feasible taxonomic resolution).

Type	Monitoring Station (as showing in Figure 1)	Monitored Parameter				
		TN	Chl-a*	TAN	DO	Phyto counts
Intensive (Up to 8 years of monthly monitoring, targeted at 3 x 24-month periods)	Boundary sites (Between 1 and 5 hours after the turn of a tide NW & NE and SW & SE)†	X		X	X	
	Site Centre	X	X			X
	Far-field west	X	X			
	McManaway Rock	X	X	X	X	
	Port Gore (Outer)*	X	X		X	X
	Port Gore (Inner)*	X	X		X	X
	Ref Station-Inshore*	X	X		X	X
	Ref Station -Offshore*	X	X		X	
Long-term (ongoing monthly monitoring)	Boundary sites (Between 1 and 5 hours after the turn of a tide NW & NE and SW & SE) †				X	
	Site Centre		X			X
	Far-field west					
	McManaway Rock	X	X	X	X	
	Port Gore (Outer)					
	Port Gore (Inner)		X			
	Ref Station-Inshore		X			X
	Ref Station -Offshore		X			

** Chlorophyll-a* for long-term monitoring may consist of surface chlorophyll-a satellite derived monitoring where, after receiving advice from a Suitably Qualified and Experienced Person(s), the Compliance Manager has agreed in writing that such monitoring is suitably accurate for the selected long-term station.*

† *Where feed has only been discharged at one Salmon Farm in the preceding month, only that Salmon Farm shall be sampled*

Figure 3: Water quality monitoring stations and reference (Ref) for monthly monitoring of parameters specified in Table 2.



Baseline Data Reporting and Monitoring Station Coordinates

63. Three months prior to the first feed discharge at either Salmon Farm, the consent holder shall provide the following data to the Compliance Manager:

a) Total Nitrogen;

b) Chlorophyll-a (lab analysed from filtered samples not exceeding a nominal pore size of 1.2um, i.e. a GF-C filter);

c) Phytoplankton counts of the dominant species and genera (where speciation is not feasible) that are able to be feasibly identified through standard light microscopy techniques;

d) Depth profile data, including salinity, temperature and dissolved oxygen; and

e) The monitoring station coordinates.

Water samples shall be collected at the surface, 15 metre depth and an integrated 15 metre sample (i.e. covering the depths from 15m to the surface). Sampling should be undertaken monthly within Points 1 to 4 and 5 to 8 on Plan SK051103-521-Revision 6, with data provided for at least two months of every season (i.e. at least 8 months in total and which may occur in different years).

Advice Note: The sampling may have occurred prior to this resource consent commencing.

Intensive and Long Term Monitoring

64. Where feed has been discharged at the Salmon Farms in the preceding month, monthly water column monitoring and associated laboratory work shall be undertaken at the direction of a Suitably Qualified and Experienced Person(s) and shall occur:

    a) As specified as "intensive" in Table 2:

        i. For two Monitoring Years following the first feed being discharged at the Salmon Farm;

        ii. For two years beginning in the Monitoring Year when the Anticipated Annual Feed is greater than 7,000 tonnes per annum and the Actual Annual Feed for both Monitoring Years is greater than 5,600 tonnes at either Salmon Farm;

        iii. For two years beginning in the Monitoring Year when the Anticipated Annual Feed is greater than 14,000 tonnes per annum and the Actual Annual Feed for both Monitoring Years is greater than 11,200 tonnes at both Salmon Farms;

        iv. For at least two years beginning in the Monitoring Year when the Anticipated Annual Feed is greater than 18,000 tonnes per annum and the Actual Annual Feed for all Monitoring Years is greater than 14,400 tonnes at both Salmon Farms.

        Where there has been less than four Monitoring Years of "intensive" monitoring, monitoring shall continue until there has been four Monitoring Years of "intensive" monitoring; and

    b) At other times, as specified as "long-term" in Table 2.

Advice Note: Monitoring Year means the 12-month period from 1 October in any one year until 30 September in the next year. Monitoring specified in (iii) and (iv) address cumulative effects of both farms operating.

Monthly Reporting

65. The results of the monitoring in accordance with Table 2 shall be reported on in respect of compliance with the WQS in condition 62 by a Suitably Qualified and Experienced Person(s) and submitted to Ngāti Kuia and the Compliance Manager no later than the fifth working day after the end of each month after the results become available from the laboratory.

Water Quality Monitoring and Compliance Review

66. After an aggregate of 50,000 tonnes of feed has been discharged at any given Salmon Farm and that Salmon Farm has been operating for at least five years (whichever happens last) and after each five year period subsequent (the "Review Date"), the consent holder shall commission a Water Quality Monitoring and Compliance review utilising the data collected in accordance with condition 64 of this resource consent, as well as any other data available, such as state of the environment monitoring or satellite data, by a Suitably Qualified and Experienced Person(s). The results of the review(s) shall be reported and submitted to Ngāti Kuia and the Compliance Manager no later than five months after each Review Date. That review shall detail:

    a) A summary of the extent to which the monitoring results have been consistent with the WQS in condition 62;

    b) A timeline showing the monthly feed discharge against the survey timing, and discussion of these where necessary;

    c) A discussion of any long-term trend evident in the data;

d) A discussion as to whether that long-term trend (if any) is, or may be, farm related;

e) If required, any additional monitoring (beyond that specified in Table 2) to verify the compliance limits specified in Condition 62; and

f) Whether monitoring should continue owing to a lack of observed effects at a range of feed loadings.

Advice Note: A change of consent conditions, such as a change to the monitoring regime based on the outcome of the review, could occur in accordance with s127 or s128 of the RMA.

Marine Mammals and Sharks

67. Effects on marine mammals and sharks shall be managed to:

a) Minimise interactions of marine mammals and sharks with farm structures, including by the consent holder ensuring that:

i. There is no feeding of marine mammals and sharks by staff, contractors or visitors to the Salmon Farm;

ii. Dead fish are removed from the salmon pens as soon as reasonably practicable, and stored in a manner that does not attract predators;

iii. Lighting (other than as required for navigation purposes) is compliant with conditions 18 to 20; and

iv. The best practicable option is adopted to minimise above water and underwater noise emissions; and

b) Avoid:

i. As far as practicable the entrapment or entanglement of the New Zealand fur seal, Arctocephalus forsteri; and

ii. Entrapment or entanglement of marine mammals (excluding the New Zealand fur seal, Arctocephalus forsteri) or Threatened or At Risk sharks;

c) Minimise the risk of incidents involving marine mammals or sharks, including by the consent holder ensuring that:

i. Overlap or crossing of mooring lines is minimised;

ii. All Salmon Farm lines are secured at all times, and any loose lines are secured or retrieved as soon as reasonably practicable;

iii. Any waste debris that is lost from the Salmon Farms is promptly retrieved and disposed of at an approved waste facility onshore;

iv. Grower nets that are not being used for production will either be removed from the Salmon Farms, or kept taut and weighted as though they were being used to house fish; and

v. Grower and jump nets are appropriately designed and installed to minimise entanglement risk, including using predator resistant materials and completely enclosed structures and ensuring nets are weighted and kept taut; and

vi. All nets, ropes and mooring lines are kept under tension;

d) Manage interactions and incidents involving marine mammals and sharks if they occur:

i. In a manner that ensures as far as practicable the safety of marine mammals and sharks, while also ensuring the health and safety of farm workers and other people in their interactions with marine mammals and sharks; and

ii. Through compliance with reporting and response procedures, including entanglement protocols that apply in the event of an interaction or incident.

68. A Marine Mammals and Shark Management Plan (MMSMP) shall be prepared by a Suitably Qualified and Experienced Person(s) and submitted to the Compliance Manager for certification at least three months prior to the planned installation of any of the structures forming part of the Salmon Farms.

69. The purpose of the MMSMP is:

a) To set out design requirements, actions and management techniques that the consent holder shall use to ensure the Salmon Farm is designed and operated in a manner that achieves the outcomes in condition 67;

b) The methods by which any monitoring results can be included in a suitable publicly accessible regional or national database; and

c) To achieve integration with the requirements of the Marine Mammals Protection Regulations 1992 and any separate permit granted to the consent holder by the Department of Conservation under the Marine Mammals Protection Act 1978.

70. The MMSMP shall be prepared in general accordance with Ministry for Primary Industries Marine Mammal Open Ocean Aquaculture Best Practice Guidelines 2021[328] or replacement Guidelines, and using the draft MMSMP that is produced in the evidence of Dr Deanna Clement (dated 30 September 2021) as a base document and shall address all of the following matters:

a) Actions and management techniques to minimise interactions of marine mammals and sharks with farm structures and vessels in accordance with condition 67(a), including:

i. Best practice protocols;

ii. The staff training in marine mammals and sharks that shall be undertaken by the consent holder;

iii. The vessel operating guidelines that the consent holder shall use to minimise the risk of vessel strike (including compliance with the Marine Mammals Protection Regulations 1992 or any successor regulations);

b) Protocols, actions and management techniques to minimise the risk of incidents including entanglement, or entrapment of marine mammals or sharks in the farm structures in accordance with condition 67b), including:

i. The best practicable option for net design parameters, including mesh size that minimises predators' ability to penetrate the net with their head, flipper or tail, net tension, and net inspection and maintenance;

ii. Identification of times and activities that present a higher risk of incidents, and procedures for active monitoring and restrictions on work that may be undertaken if marine mammals are present;

c) Methods that will be employed to respond to sharks or marine mammals entering the farm structures or becoming entangled, including:

i. Procedures that will be used by the consent holder for capture and release of any entrapped or entangled marine mammal or shark, including establishing and implementing a Seal Handling Protocol;

ii. Procedures to be used for the retrieval, storage and transport (subject to Department of Conservation and Marlborough Statutory Acknowledgement Iwi guidance) of dead marine mammals and protected shark species for formal identification and autopsy and/or appropriate disposal or other action, including to iwi where appropriate; and

iii. Procedures to identify how the animal entered the Salmon Farm and to correct any faults found; and

d) A monitoring programme(s) that the consent holder must implement to enable:

[328] Clement D. et al, *Best practices and technologies available to minimise and mitigate the interactions between finfish open ocean aquaculture and marine mammals,* New Zealand Aquatic Environment and Biodiversity Report No. 273 (Fisheries New Zealand, October 2021).

i. Improved understanding of how marine mammals and sharks use the wider area that the Salmon Farm is located within, how they behave near offshore farm structures and how they respond to new farm structures;

ii. The effectiveness of the MMSMP to be assessed, and a Suitably Qualified and Experienced Person(s) to make recommendations as to the changes that need to be made to the MMSMP to improve its effectiveness;

iii. The Salmon Farm's compliance with the standards set out in condition 67 to be assessed; and

e) The MMSMP shall not enable the use of Predator Nets; and

f) Reporting and response procedures.

Advice Note: For clarity, use of predator net(s) in 70(e) above is not authorised by this consent, and requires an amendment under s127 RMA or its equivalent.

71. A Marine Mammal Monitoring Programme shall be implemented to enable:

a) Improved understanding of how marine mammals and sharks use the 'Farm Site' and the 'Wider Area' that the Salmon Farms are located within, how they behave near offshore farm structures and how they respond to new farm structures. Noting that for the purpose of this condition:

i. The 'Farm Site' means to the area within points 1 to 4 and 5 to 8 on Plan SK-051103-521-Revision 6 plus a 300 metre buffer; and

ii. The 'Wider Area' shall, as a minimum, include the area covered by any vessel undertaking farm-related activities while transiting to and from the Farm Site;

b) The minimum requirements for data collection in accordance with the MMSMP, being:

i. Quantification of observed marine mammal and shark occurrence within the Wider Area that the Salmon Farms are located and within the Farm Site(s); and

ii. Description of the types and rates of any interactions (non-injurious) and incidents (entrapment, injury and entanglement) between marine mammals/sharks and farm structures; and

iii. Identification of any obvious changes in occurrence rates or interaction/incident rates relative to operational changes;

c) The effectiveness of the MMSMP to be assessed, and a Suitably Qualified and Experienced Person(s) to make recommendations as to the changes that need to be made to the MMSMP to improve its effectiveness; and

d) The Salmon Farm(s) compliance with the standards set out in condition 67 of this resource consent to be assessed.

72. A full description of the methodology for the Marine Mammal Monitoring Programme shall be given in the MMSMP. Two distinct periods of monitoring will be undertaken: 'Farm Construction Monitoring' and 'Operational Monitoring', where:

(a) Farm Construction Monitoring covers the period from commencement of any physical works at the Salmon Farms to the point at which the first salmon pen is stocked with salmon;

(b) Operational Monitoring commences when the first pen is stocked with salmon;

(c) The Salmon Farms cannot be stocked with salmon until at least 12 months of Farm Construction Monitoring covering four seasons has been carried out in accordance with the MMSMP; and

(d) Operational monitoring shall be ongoing in accordance with the MMSMP, but the need for it can be reviewed after five years of the Salmon Farms being stocked.

73. The consent holder must produce and provide an annual report to Ngāti Kuia, the Compliance Manager and the Department of Conservation that documents any incidents that have occurred over the course of a Monitoring Year.

74. The consent holder shall, within 24 hours of the incident occurring or being discovered, notify Ngāti Kuia, the Compliance Manager and the Department of Conservation of any incident resulting in entrapment (excluding seals) or accidental injury or death of a marine mammal or a Threatened or At Risk shark.

75. The consent holder shall, within five working days of an incident occurring or being discovered, undertake an internal review of practices and document any measures that are to be undertaken by the consent holder to address the circumstances that led to an incident occurring and the estimated timeframes for the implementation of those measures.

76. The consent holder shall keep records of results of monitoring required by the MMSMP.

77. The consent holder shall engage a Suitably Qualified and Experienced Person(s) to review and amend the MMSMP:

    (a) following injury or death of a marine mammal or Threatened or At Risk shark; and

    (b) if the consent holder considers, having regard to the reports, notifications and records produced in accordance with conditions 73 to 76, that the MMSMP measures require amendment to better address risks to marine mammals; and

    (c) Notwithstanding reviews to the MMSMP in condition 77(a) and 77(b) above, the MMSMP shall be reviewed every two years by a Suitable Qualified and Experienced Person(s) and submitted to the Compliance Manager for certification.

78. The consent holder shall submit a copy of the report setting out the findings of the review and any proposed amendments to the MMSMP to the Compliance Manager for certification of the amended MMSMP, and shall provide a copy to Ngāti Kuia.

79. Prior to submitting the MMSMP or a proposed amendment of the MMSMP to the Compliance Manager for certification, the consent holder shall consult with both the Marlborough Statutory Acknowledgement Iwi and the Department of Conservation in respect of the content of the MMSMP or any proposed amendments to the MMSMP. All written feedback provided by the Marlborough Statutory Acknowledgement Iwi and the Department of Conservation shall be appended to the MMSMP / proposed amendment to the MMSMP and provided to the Compliance Manager along with a separate document (prepared by the consent holder) which demonstrates how the outcomes of the consultation have been taken into account, and what changes were made to the MMSMP / the proposed amendments to the MMSMP as a consequence of the feedback that was received.

Waste Management Plan

80. A Waste Management Plan (WMP) shall be prepared by a Suitably Qualified and Experienced Person(s) and submitted to the Compliance Manager for Certification at least three months prior to the planned installation of any of the structures forming part of a Salmon Farm. The purpose of the WMP is to minimise the risk of loss of solid waste debris to the environment and accumulation of solid waste debris along the shoreline and seabed.

81. The WMP that shall include / address all of the following matters:

    (a) Measures to prevent loss of solid waste to the environment including waste containment;

    (b) Measures to retrieve any lost debris where practicable;

    (c) Greywater management;

    (d) Recycling;

(e) Beach and seabed clean-up programmes.

82. A copy of the WMP shall be provided to Ngāti Kuia and to the Compliance Manager.

Seabirds

83. The consent holder shall undertake the activity authorised by this resource consent so as to:

(a) avoid adverse effects on:

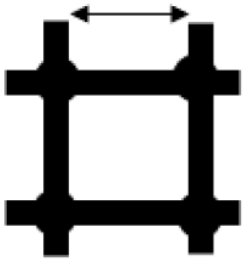
i. Threatened and At Risk seabird species (including juveniles from nearby nesting or roosting sites); and

ii. Taxa that are listed by the International Union for Conservation of Nature and Natural Resources (IUCN) as threatened;

(b) And otherwise minimise risks to seabirds from debris and foreign objects (including physical structures), artificial lighting, entanglement or collisions, and disturbance of nesting or roosting sites.

84. The consent holder shall:

(a) *Ensure that the single net system has a mesh size no larger than 50mm half mesh internal aperture (knot to knot) as follows;*



(b) Nets which are placed over the top of pens (bird nets) are to have a mesh size no larger than 47.5mm half mesh internal aperture (knot to knot);

(c) The mesh thickness for all nets is to be a minimum of 2mm;

(d) For bird nets, use mesh that is dark in colour, but may contain fibres of a lighter colour;

(e) Ensure that all nets are kept taut while hung and in a good state of repair;

(f) Avoid providing roosting surfaces on salmon pens for large congregations of birds of any species (more than 10 individuals) by adopting the best practicable option to minimise suitable roosting surfaces and discourage roosting on salmon pen surfaces where roosting occurs or could occur;

(g) Ensure no structure including bird net poles is taller than 10 metres (excluding permanent barges), and that all structures are the minimum height necessary to achieve their purpose;

(h) Mark all support wires using bird balls, reflective discs or other method that ensures visual prominence for flying birds, provided these marking methods do not cause seabird collision with supporting wires at night;

(i) Ensure that any above-surface lighting used at night (excluding navigation lighting) is shielded, downward-facing and turned off after use, and that interior barge lighting is screened with blackout curtains;

(j) Comply with a limit for submerged artificial lights used for controlling salmon maturation of 23 lights per pen for 168 metre diameter pens of maximum 600W LED or equivalent luminance;

(k) Ensure that vessels under the control of the consent holder or its contractors that are transiting to and from the Salmon Farm:

iii. Remain at least 100 metres away from the coast including any stacks, islets or islands unless berthing at a port or jetty or accessing the coast e.g. for beach clean-up;

iv. Transit at speeds of less than five knots if within 200 metres of the Salmon Farm or when berthing or accessing the coast;

(l) Implement a comprehensive programme to control rodents on its vessels and barges which service the Salmon Farm(s).

85. A Seabird Management Plan (SBMP) shall be prepared by a Suitably Qualified and Experienced Person(s) and submitted to the Compliance Manager for certification at least three months prior to the planned installation of any of the structures forming part of the Salmon Farm. The purpose of the SBMP is to set out design requirements, actions and management techniques that the consent holder shall use to ensure the Salmon Farm is designed and operated in a manner that is consistent with best practice and achieves the outcomes in condition 83 of this resource consent.

86. The SBMP shall be prepared in general accordance with Ministry for Primary Industries Seabirds Open Ocean Aquaculture Best Practice Guidelines 2021 or replacement Guidelines, and using the draft SBMP that was appended to the evidence of Dr Bennet dated 30 September 2021 as a guideline document, and shall include / address all of the following matters (as relevant to managing risks to seabirds):

(a) Details of methods to ensure the standards at condition 84 are achieved;

(b) The methodology, timing, duration and frequency of initial night surveys to confirm the extent to which seabirds are attracted to submerged artificial lighting at the Salmon Farm(s), and to determine whether any birds have become entrapped in above-water nets;

(c) Requirements to review and change management practices at the Salmon Farm(s) if the night surveys indicate that artificial lighting is attracting seabirds and resulting in an entrapment risk;

(d) Ongoing seabird monitoring, reporting and review requirements;

(e) The methods by which any monitoring results shall be included in a suitable publically accessible regional or national database;

(f) Protocols for handling injured, entangled or dead birds, including a requirement to liaise with the Department of Conservation;

(g) Staff training requirements in relation to identification of seabird species and protocols for handling birds; and

(h) Requirements for recording and reporting seabird injuries or mortalities including the time of day, weather condition, and the likely cause of injury or mortality.

87. For the first two years of operation of the farm(s) the consent holder shall undertake night surveys at the direction of a Suitably Qualified and Experienced Person(s) to confirm the extent to which seabirds are attracted to the farm structures and the submerged lights and to check for any entrapped birds in the above-water nets. Surveys shall be undertaken:

(a) Monthly for two consecutive nights to record data on bird interactions, one night with and the other without the underwater lights on; and

(b) Once every hour during those two nights, ensuring each salmon pen is surveyed at least every second hour (e.g. pens 1-5 in hour 1, pens 6 – 10 in hour 2 and so on).

88. The data from the initial night surveys required by condition 87 shall be recorded. That data shall be summarised by the Suitably Qualified and Experienced Person in a yearly report. That report shall be made available to the Compliance Manager.

89. Prior to submitting the SBMP or a proposed amendment of the SBMP to the Compliance Manager for certification, the consent holder shall provide the draft SBMP or amendment to, and seek written feedback from, both the Marlborough Statutory Acknowledgement Iwi and the

Department of Conservation. All written feedback provided by the Marlborough Statutory Acknowledgement Iwi and the Department of Conservation shall be contemporaneously provided to the Compliance Manager in a separate document prepared by the consent holder which demonstrates how the outcomes of the feedback have been taken into account, and what changes were made to the SBMP / the proposed amendments to the SBMP as a consequence of the feedback that was received.

90. If any of the following incidents occur at the Salmon Farm:

(a) Injury or mortality of an individual of a Threatened or At Risk seabird species or Taxa that are listed by the IUCN as threatened; or

(b) Injury or mortality of three individual seabirds within 12 months where the injury or mortality is due to the same hazard;

the consent holder shall:

(c) Within 24 hours of the consent holder becoming aware of an incident described in condition 90(a), or within 48 hours of the consent holder becoming aware that the series of incidents described in condition 90(b) have occurred, report:

i. The incident(s); and

ii. Any proposed changes to farm operations or the SBMP that have been identified and implemented to minimise the likelihood of further occurrences of the incident to Ngāti Kuia, the Department of Conservation and the Compliance Manager;

(d) Engage, within five working days of the consent holder becoming aware of any of the incidents set out in conditions 90(a) to (b), a Suitably Qualified and Experienced Person(s) to undertake a written review of and recommend any necessary amendments to the SBMP. The written review and recommendations shall be produced within 25 working days of the consent holder becoming aware of the incident;

(e) Provide the written review and recommendations to Ngāti Kuia, the Department of Conservation and the Compliance Manager within 30 working days of the consent holder becoming aware of the incident; and

(f) Where the written review recommends changes to the SBMP, provide the revised SBMP to the Compliance Manager for Certification within 45 working days of the consent holder becoming aware of the incident.

91. Without limiting the management actions that may be recommended in accordance with condition 90, if the written review identifies that the submerged artificial lighting is likely to be the cause of any of the incidents specified at condition 90(a) or 90(b) the consent holder shall either remove the bird nets between 9 pm and 6 am, or cease using submerged artificial lighting, unless permitted to resume use of submerged artificial lighting in accordance with a revised and certified SBMP.

92. Notwithstanding reviews to the SBMP in response to incidents as outlined above, the SBMP shall be reviewed every two years by a Suitably Qualified and Experienced Person(s) and submitted to the Compliance Manager for certification.

Biosecurity

93. The consent holder shall operate the Salmon Farm(s) so as to ensure that it avoids to the greatest extent practicable the risk of introducing or spreading:

(a) Marine pests; and

(b) Disease agents.

94. A Biosecurity Management Plan (BioMP) shall be prepared by a Suitably Qualified and Experienced Person(s) and submitted to the Compliance Manager for Certification at least three months prior to the planned installation of any of the structures forming part of the Salmon Farm. The purpose of the BioMP is to set out the management techniques and actions that are

to be used by the consent holder to manage the risk of introduction or spread of any marine pest(s) and/or diseases into Cook Strait and the Marlborough Sounds.

95. The BioMP shall be prepared using the draft BioMP that is attached to the evidence of Mr Zachary Waddington dated 30 September 2021 as a base document and shall include / address all of the following matters:

(a) The on-farm as well as vector-based management measures that are to be used by the consent holder to avoid to the greatest extent practicable the risk of pests and disease agents being spread, including:

i. To prevent, control or contain biosecurity risks to the greatest extent practicable; and

ii. Methods to manage vectors that could spread marine pests and disease agents to or from the Salmon Farm(s);

iii. Routine practices to manage fouling of the Salmon Farm(s);

iv. A passive surveillance regime to facilitate early detection of unusual (such as an organism to which s44 Biosecurity Act 1993 applies) or notifiable organisms associated with the Salmon Farm(s);

v. An effective disease surveillance regime for salmon stock;

vi. The use of husbandry and harvesting methods consistent with best practice to avoid to the greatest extent practicable disease risk;

vii. On-farm management measures

(b) The parties to be notified should any new biosecurity risk (from marine pests or disease agents) be identified at the Salmon Farm(s).

96. The consent holder shall:

(a) Engage a Suitably Qualified and Experienced Person(s) to review and amend the BioMP every year. The reviewed BioMP shall be submitted to the Compliance Manager for certification;

(b) Consider whether a review or minor and technical amendment to the BioMP is required within one month of the consent holder being advised that a new notifiable organism or World Organisation for Animal Health/Office International des Épizooties listed disease of fish has been notified by the Ministry for Primary Industries.

Wild Fish

97. The consent holder shall take all reasonable steps to minimise effects on the local and extended wild fish population by controlling the feeding of farmed salmon so as to minimise the amount of uneaten feed lost from each Salmon Farm.

98. There shall be no greater than 2% annual average feed loss. Whether this requirement is met shall be determined through measuring feed loss in accordance with condition 99. A feed loss report shall be prepared annually by an Independent Suitably Qualified and Experienced Person(s) and shall be provided to the Compliance Manager. This report shall include at a minimum:

(a) A record of the volume and composition of the feed pellets and environmental conditions at the time of recording;

(b) An assessment of the results from the monitoring of feed loss undertaken in condition 99 including confirmation of the average feed loss levels, and how these vary with location and time.

99. Feed loss shall be measured for the life of the consent in accordance with:

(a) The recommendations of an Independent Suitably Qualified and Experienced Person(s), and shall include as a minimum:

i. Five individual pens at each Salmon Farm.

ii. Six times per season, with each individual monitoring event separated by at least one week. For the purposes of this condition the seasons are December-February, March-May, June-August, September-November.

iii. Sample periods of sufficient duration and indicative of the duration of typical daily pen feeding events;

If Pellet Collection Devices (PCDs) are to be used they shall be used in the following manner:

iv. Multiple PCDs per pen, each with a collection area of known size, such that the non-sampled space between PCDs can be interpolated to give an estimate of the total mass of pellets lost per pen per day;

v. PCDs placed within, and/or immediately outside of pens in a manner such that wild fish cannot intercept lost pellets before they reach the PCD;

vi. PCDs should also be designed so that wild fish or invertebrates cannot consume any pellets that reach the PCD before those pellets are recorded;

vii. PCDs should be distributed in an array that spans the area over which pellets are scattered by the feeder, with consideration of prevailing currents. Feed loss will be underestimated if PCDs are placed outside the path of sinking pellets;

viii. PCD's shall be periodically cleaned of biofouling.

100. A Wild Fish Monitoring Method (WFMM) shall be prepared by a Suitably Qualified and Experienced Person(s) and submitted to the Compliance Manager for Certification at least three months prior to the planned installation of any of the structures forming part of the Salmon Farm. The purpose of the WFMM is to set out the management techniques and actions that are to be used by the consent holder to manage any adverse effect on wild fish arising from the Salmon Farm.

101. The WFMM shall be prepared having regard to the Pelagic Fish Report (Appendix J of the Application) A proposed method for assessing the impact of farm deployment on wild fish species and include / address at a minimum all of the following matters:

(a) The spatial extent of the monitoring;

(b) The specific habitat to be monitored;

(c) Aims and hypotheses; and

(d) Data collection including:

i. Spatial considerations;

ii. Temporal considerations;

iii. Fish counts;

iv. Fish capture;

v. Sampling design;

vi. Data processing and analysis; and

vii. Impacts of feed on wild fish behaviour and aggregation.

Port Gore

102. Salmon Farm pens or barges or the vessels constructing or servicing the Salmon Farm(s) shall not transit into Port Gore except where:

(a) A vessel has a purpose specific to Port Gore, including but not limited to cultural purposes or scientific monitoring; or

(b) It is necessary for the purposes of saving or protecting life or health, or preventing serious damage to property or avoiding an actual or likely adverse effect on the environment.

Wind Speed and Direction Monitoring

103. The consent holder shall install a weather station on one of the permanent barges to monitor wind speed and direction within one year of the first installation of any of the structures forming

part of the Salmon Farm, and maintain that weather station over the life of this resource consent. The wind speed and direction data shall be published in real time on the internet.

Review of Consent Conditions

104. In accordance with the provisions of sections 128 and 129 of the RMA (or any provision in substitution thereof) the Council may, at the time(s) specified in Table 3 below, review the conditions of this resource consent by serving notice of the intention to do so for one or more of the purposes in Table 3.

Table 3: Purpose and Times of Potential Review of Conditions of Consent

Purpose(s)	**Times of Service of Notice**
To deal with any adverse effect on the environment which may arise from the commencement of the consent and which cannot be adequately avoided, remedied or mitigated by any term or condition incorporated within the consent.	On the first working day of any month.
To require the consent holder to adopt the best practical option to avoid, remedy or mitigate any adverse effect on the environment relating to the activity.	On any anniversary of the granting of this consent.
To address any matter which might be incorporated into or that is absent from any Management Plan prepared in accordance with this resource consent.	Within 90 working days of the Compliance Manager being provided with a Management Plan or revised Management Plan.
To address any matter which might arise from a notice of suspension of class or notice of withdrawal of class from a Recognised Organisation.	Within 90 working days of the Compliance Manager being provided with such a notice.
To address issues arising from an incident reported pursuant to conditions 74 and 90 of this resource consent.	Within 90 working days of the Compliance Manager receiving an incident report pursuant to conditions 74 and 90.
To address issues arising from a review of Best Management Practice Guidelines relevant to this consent or any subsequent version of these guidelines.	Within 90 working days of revised best management practice guidelines being adopted by the Compliance Manager.
To address any issues arising from the Benthic Review Report.	Within 90 working days of the Compliance Manager receiving the Benthic Review Report.
Ensuring the conditions of this consent are consistent with any National Environmental Standards, Regulations, relevant plans and/or the Regional Policy Statement.	As required.

Removal of Structures

105. The consent holder shall, at its expense, remove all structures associated with the activity authorised by this resource consent and provide written confirmation of the removal to the Compliance Manager, within three months of any of the following events occurring:

(a) The term of the resource consent(s) has expired and the consent holder has not lodged an application to renew the consent for those structures, or if such an application has been lodged the consent has been refused and all rights of appeal exhausted; or

(b) The resource consent has been surrendered by the consent holder or cancelled by the Council; or

(c) The structures in the opinion of the Compliance Manager are redundant or derelict.

Other Matters

106. Pursuant to section 36 of the RMA and the Council's Schedule of Fees, the consent holder shall be responsible for all actual and reasonable costs associated with the administration, monitoring and review of this resource consent.

107. The consent holder shall pay coastal occupation charges if they are imposed through Council's resource management plans.

108. Where these resource consent conditions require a Management Plan or review of a Management Plan to be 'certified' the following process shall be followed ('certify' and *'certification' have the equivalent meanings):*

(a) The consent holder, shall provide the Management Plan or reviewed Management Plan to Ngāti Kuia and any Cultural Advisor to ensure it is consistent with the Mauri Framework; and

(b) In answer to any response received from Ngāti Kuia or any Cultural Advisor within 20 working days of being provided with the Management Plan or reviewed Management Plan the consent holder shall prepare a document which demonstrates how that response(s) has been taken into account, and what changes were made to the Management Plan or proposed amendment(s), as a consequence of the feedback that was received; and

(c) The consent holder shall provide the document prepared in accordance with paragraph (b) above to Ngāti Kuia, and to the Compliance Manager when the Management Plan or reviewed Management Plan is submitted to the Compliance Manager for certification; and

(d) Should the Management Plan or reviewed Management Plan in the opinion of the Council, achieve the requirements of the relevant condition(s), the Compliance Manager shall issue a written confirmation (certification) of the Management Plan to the consent holder; and

(e) If the Council is not satisfied that the Management Plan or reviewed Management Plan achieves the requirements of the relevant condition(s), the Compliance Manager shall advise (in writing) the consent holder of the Council's concerns and ask that the Management Plan be modified so as to address the concerns, and then be resubmitted; and

(f) This process shall be repeated until the Compliance Manager is able to confirm (certify) that the requirements of the applicable condition(s) have been satisfied; and

(g) Where no written confirmation is provided within:

i. 50 working days of the first or initial version of a report or Management Plan or reviewed Management Plan being provided to the Council;

ii. 20 working days of each subsequent report or Management Plan or reviewed Management Plan being provided to the Council; or

iii. Such other time as the Council may specify in writing

the Management Plan or reviewed Management Plan shall be deemed to be certified for the purpose of the respective condition to which the document pertains.

(h) Minor and technical amendments to each certified Management Plan (such as updating relevant contact details, hyperlinks or references to external content) may be made without Certification by the Compliance Manager. A version of the Management Plan with minor and technical amendments shall be provided to the Compliance Manager within one month of the amendment.

Advice Notes

1. All electronic correspondence relating to the operation of this consent and compliance with consent conditions should be sent to: monitoring@marlborough.govt.nz.

2. Pursuant to section 36 of the Resource Management Act 1991 and the Marlborough District Council's schedule of fees, the consent holder will be responsible for all actual and reasonable costs associated with the administration and monitoring of this resource consent and conditions herein.

3. The consent holder will in the future be required to pay coastal occupation charges if they are imposed through Council's resource management plans.

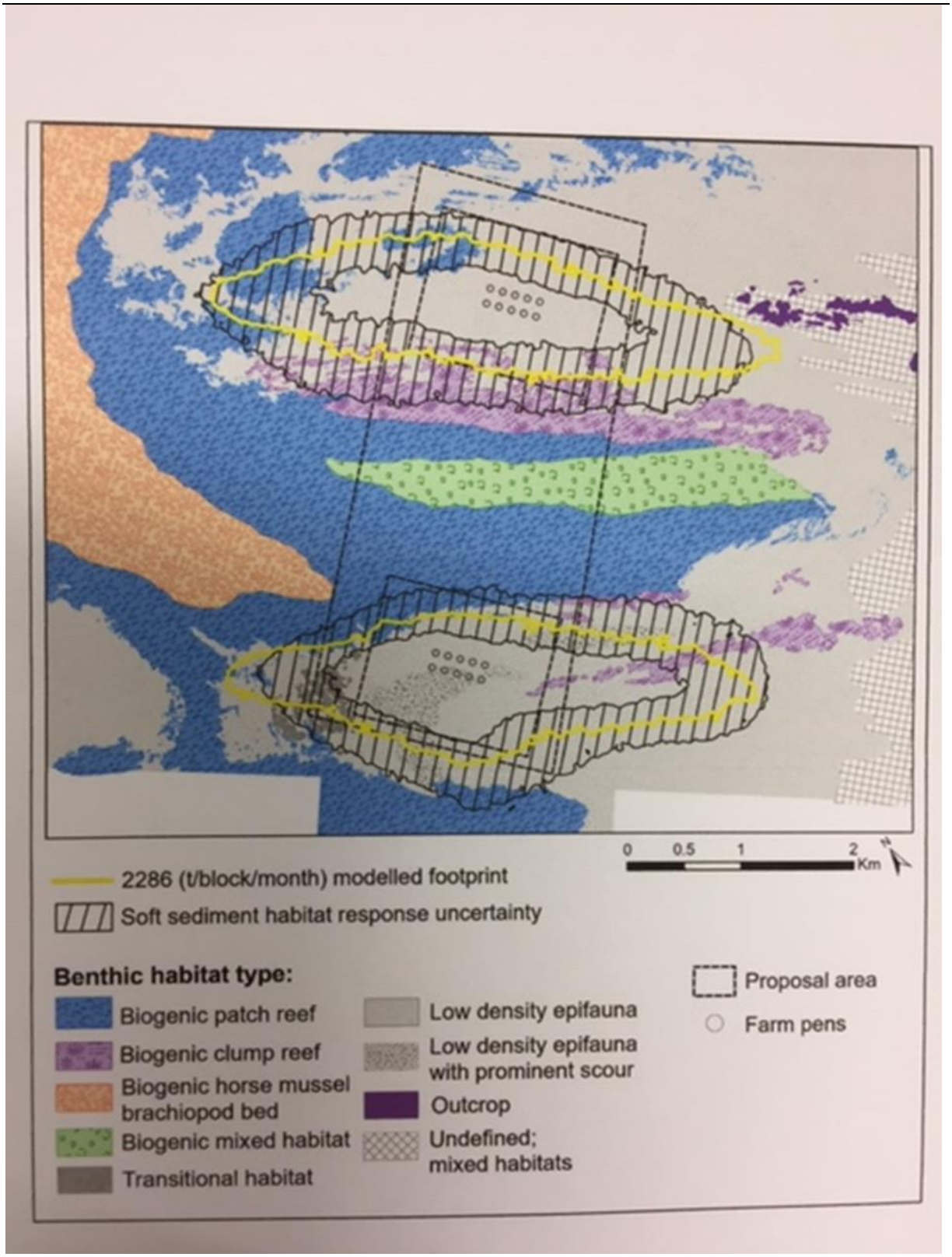
4. If you wish to materially change the design and/or location of the structures and/or activity you will need to apply to change the applicable condition(s) of this consent under Section 127 of the RMA 1991, or potentially apply for a replacement consent subject to the degree of change sought.

5. At expiry of the resource consent it is a breach of section 12 of the RMA 1991 for the structures to remain in the coastal marine area. The consent holder must ensure their removal to avoid the risk of enforcement action.

6. This consent cannot commence other than in accordance with section 116A of the Resource Management Act 1991.

7. Pursuant to section 114(4)(c)(ii) of the Resource Management Act 1991, the Marlborough District Council is required to request an aquaculture decision from the Ministry for Primary Industries (MPI) after the appeal period is completed or all appeals are determined for this consent. The MPI will undertake an assessment of the undue adverse effects on customary, recreational and non-quota commercial fisheries resources. Depending on the MPI's decision, the consent holder may be able to establish the marine farm as granted, or the Marlborough District Council may have to modify or reverse this decision.

Conditions Appendix 1: 2,286 (t/block/month) modelled footprint



Conditions Appendix 2: Definitions

In this resource consent, unless the context requires otherwise:

Annum and **per Annum** means during any Monitoring Year

Actual Annual Feed means the feed discharged during a Monitoring Year

Anticipated Monthly Feed means a projection, prepared at the beginning of each Monitoring Year by the consent holder, which identifies the mass of feed per Salmon Farm which is as likely as not to be discharged

Anticipated Annual Feed means sum of all months of Anticipated Monthly Feed for a Monitoring Year

BioMP means Biosecurity Management Plan

BMP means Benthic Monitoring Plan

Certified and **Certify** with respect to Management Plans mean that the process in condition 108 is to be followed

Compliance Manager means the Compliance Manager, Marlborough District Council

Council means the Marlborough District Council

Cultural Advisor means a person or persons who is recommended by Ngāti Kuia and agreed by Ngāti Kuia and NZ King Salmon as having the Mātauranga Māori knowledge and practice relevant to the topic being assessed

GPS means Global Positioning System

Interaction, in relation to marine mammals and sharks, means any physical contact between a marine mammal or shark and part of the Salmon Farm, including rubbing ropes, or bumping against a structure

Incident, in relation to marine mammals and sharks, means an interaction that results in an injury (e.g., rope cut, abrasion), death, or entanglement (live or fatal) or entrapment (within a Salmon Pen or between nets)

McManaway Rock ESMS means the ecologically significant marine site 2.28 as identified in the Marlborough Environment Plan

Marine Mammal means any species of pinniped or cetacean, and includes the species commonly known as seals, sea lions, dolphins and whales

Maritime New Zealand means the authority known as Maritime New Zealand, to which s 429 of the Maritime Transport Act 1994 applies, and includes any successor organisation. Any document required to be sent to Maritime New Zealand shall be sent in a manner prescribed by Maritime New Zealand

Marlborough Statutory Acknowledgment Iwi, in the context of this resource consent, means Ngāti Apa ki te Rā Tō, Ngāti Kuia, Rangitāne o Wairau, Ngāti Kōata, Ngāti Rārua, Ngāti Tama ki Te Tau Ihu, and Te Ātiawa o Te Waka-a-Māui in terms of the Ngāti Apa ki te Rā Tō, Ngāti Kuia, and Rangitāne o Wairau Claims Settlement Act 2014 and Ngāti Kōata, Ngāti Rārua, Ngāti Tama ki Te Tau Ihu, and Te Ātiawa o Te Waka-a-Māui Claims Settlement Act 2014

Mauri Framework means the cultural monitoring framework required by conditions 5 and 9 of this resource consent

Monitoring Year means the 12-month period from 1 October in any one year until 30 September in the next year

MMSMP means Marine Mammal and Shark Management Plan

Ngāti Kuia means an entity which represents the Marlborough Statutory Acknowledgment Iwi Ngāti Kuia.

Night means the period between nautical dusk and nautical dawn

Recognised Organisation means a classification society authorised as a recognised organisation by Maritime New Zealand in terms of the definition in Part 21 Maritime Rules rule 21.5

RMA means the Resource Management Act 1991 or any successor legislation

Salmon Farm means a block of up to 10 Salmon Pens, including the mooring and anchor system, feedpipes, and associated permanent feed barge. **Salmon Farms** means Blue Endeavour North and Blue Endeavour South.

Salmon Pen means a flexible circular structure that contains the salmon being farmed at the Salmon Farms.

SBMP means the Seabird Management Plan

Shark means any large elasmobranch species of shark including great white, basking, bronze whaler, mako, porbeagle, blue and thresher shark, and also means manta rays

SMS means Safety Management System

Suitably Qualified and Experienced Person means a person or persons:

(a) With a recognised tertiary qualification(s) relevant to the topic being assessed and who has more than seven years relevant experience in the topic being assessed;

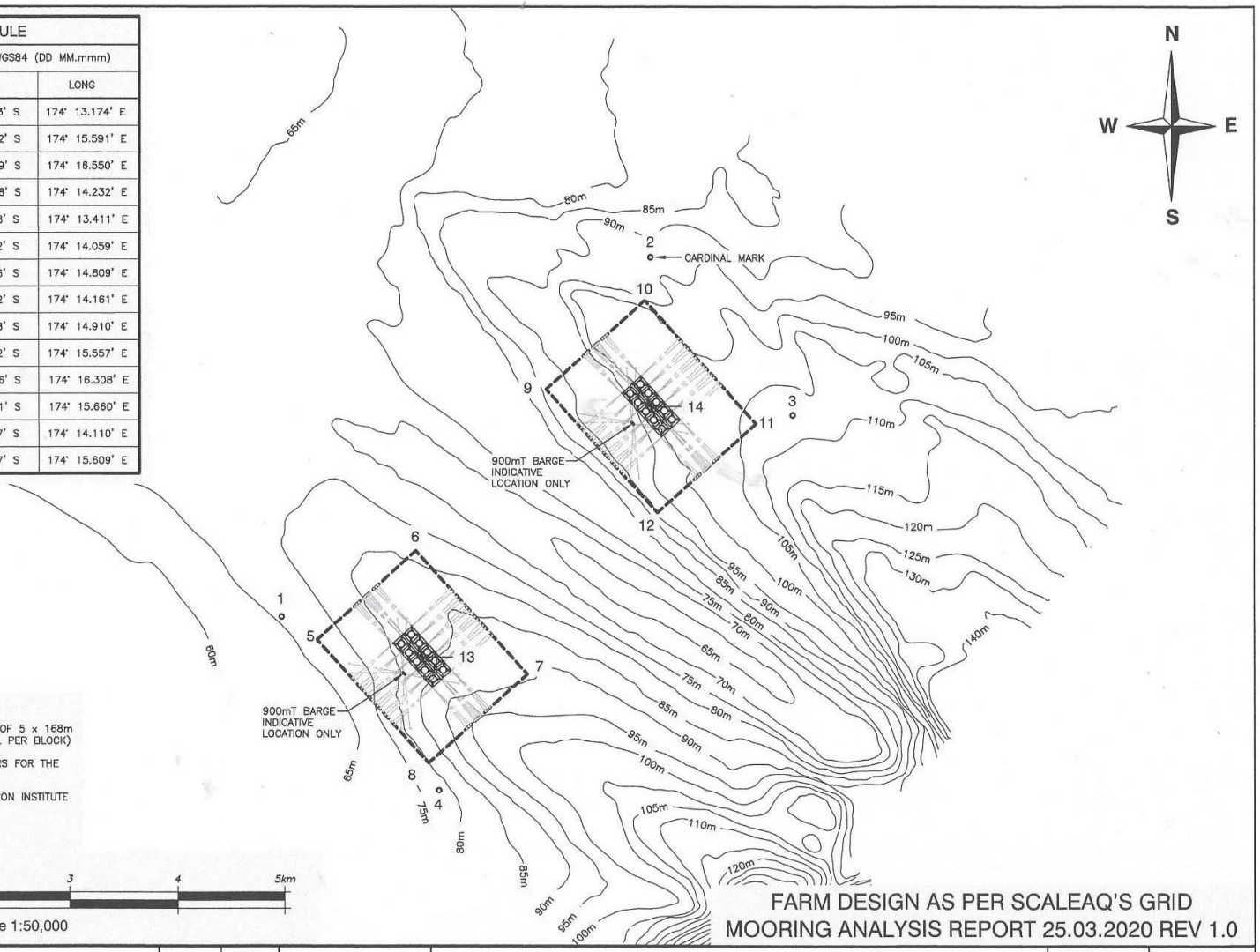
(b) or another person who has, in the opinion of the Compliance Manager, the required qualifications and experience.

WMP means Waste Management Plan

WFMM means Wild Fish Monitoring Method

APPENDIX 1 Site Plan

COORDINATE SCHEDULE				
POINT	NZTM2000		WGS84 (DD MM.mmm)	
	mE	mN	LAT	LONG
1	1702687.63	5469049.62	40° 55.393' S	174° 13.174' E
2	1706128.62	5472407.76	40° 53.552' S	174° 15.591' E
3	1707453.85	5470932.15	40° 54.339' S	174° 16.550' E
4	1704149.75	5467428.35	40° 56.258' S	174° 14.232' E
5	1703016.44	5468834.02	40° 55.508' S	174° 13.411' E
6	1703937.70	5469664.01	40° 55.052' S	174° 14.059' E
7	1704975.19	5468512.44	40° 55.666' S	174° 14.809' E
8	1704053.93	5467682.45	40° 56.122' S	174° 14.161' E
9	1705153.86	5471172.19	40° 54.228' S	174° 14.910' E
10	1706075.12	5472002.18	40° 53.772' S	174° 15.557' E
11	1707112.61	5470850.61	40° 54.386' S	174° 16.308' E
12	1706191.36	5470020.62	40° 54.841' S	174° 15.660' E
13	1703995.81	5468673.23	40° 55.587' S	174° 14.110' E
14	1706133.24	5471011.40	40° 54.307' S	174° 15.609' E



NOTE:

1. EACH BLOCK TO CONSIST OF UP TO 2 ROWS OF 5 x 168m CIRCUMFERENCE PENS (UP TO 10 PENS TOTAL PER BLOCK)
2. EACH BLOCK WILL INCLUDE UP TO 61 ANCHORS FOR THE PENS AND 12 ANCHORS FOR THE BARGE
3. DETAILED BATHYMETRY SOURCED FROM CAWTHRON INSTITUTE

LEGEND:

- CARDINAL MARK LOCATION

0 1 2 3 4 5km

Scale 1:50,000

FARM DESIGN AS PER SCALEAQ'S GRID
MOORING ANALYSIS REPORT 25.03.2020 REV 1.0

OCEL OFFSHORE AND COASTAL ENGINEERING LIMITED

14 Richardson Terrace
Christchurch
New Zealand

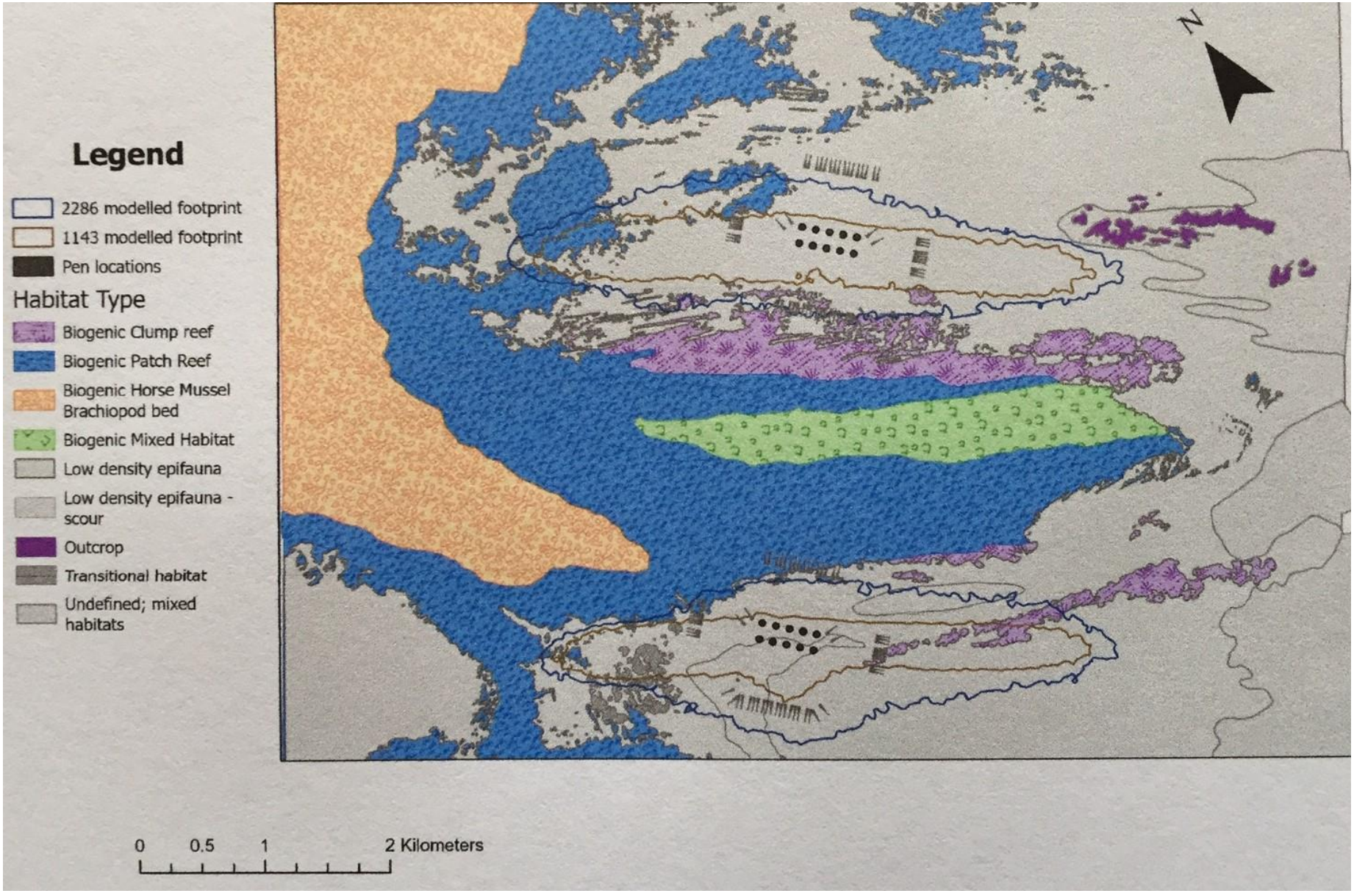
Tel (03) 3790444
Email: mail@ocel.co.nz
www.ocel.co.nz

Drawn	RVE
Checked	
Traced	
Approved	
Date	15/06/2022

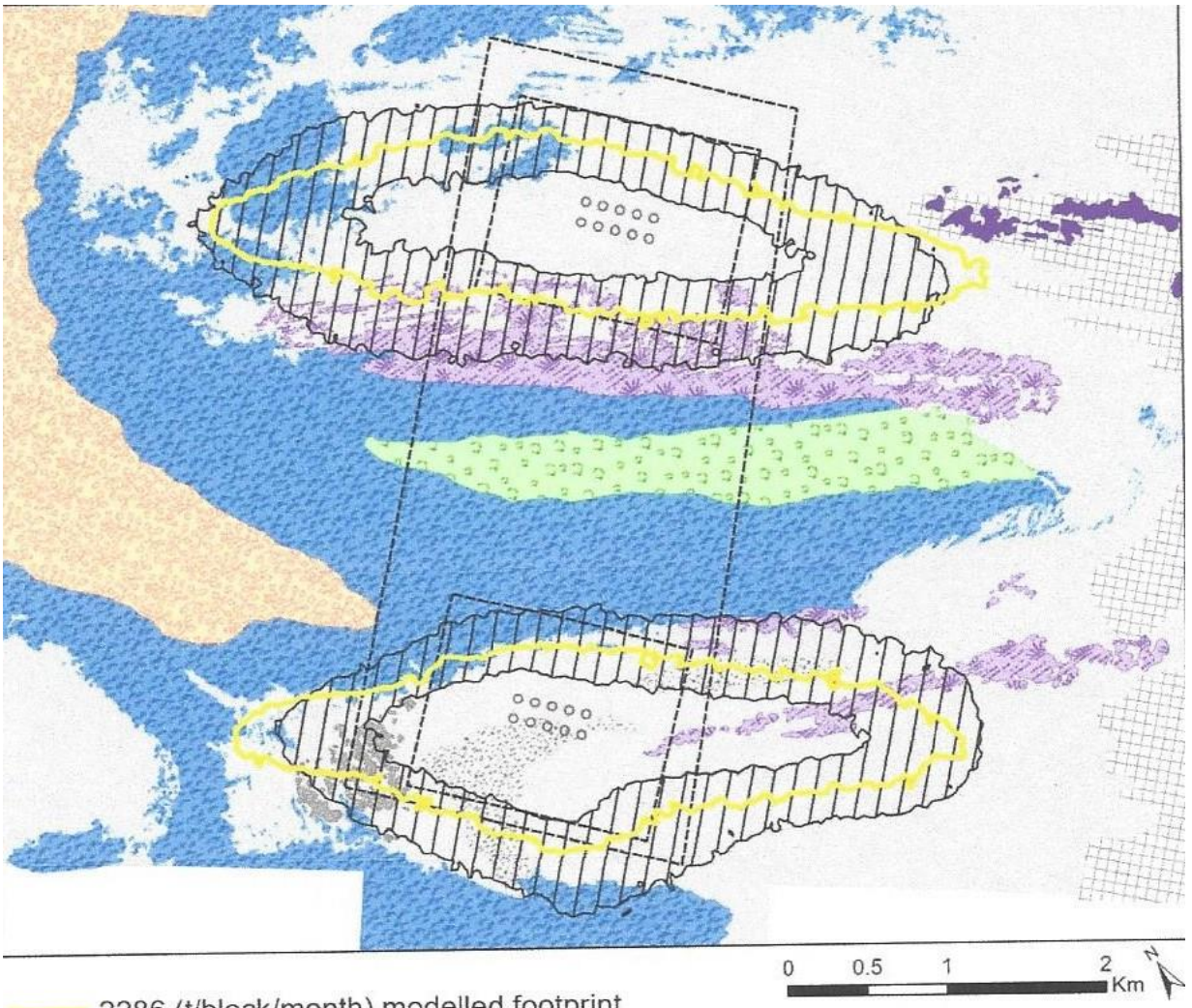
NEW ZEALAND KING SALMON Co. LIMITED
PROPOSED OFFSHORE SITE
BLUE ENDEAVOUR - OUTER MARLBOROUGH SOUNDS
2 x 5 PEN CONFIGURATION

Scale (A4)	ACAD Filename
1:50,000	051103/SK-051103-521R6
Drawing No.	Rev.
SK-051103-521	6

APPENDIX 2 Final Benthic Habitat Map Showing Proposal Footprint and Deposition Modelling Footprint Relative to Farm and Barge Anchor Locations and Salmon Pen Locations


Legend
2286 modelled footprint
1143 modelled footprint
Pen locations
Habitat Type
Biogenic Clump reef
Biogenic Patch Reef
Biogenic Horse Mussel Brachiopod bed
Biogenic Mixed Habitat
Low density epifauna
Low density epifauna - scour
Outcrop
Transitional habitat
Undefined; mixed habitats
N
0
0.5
1
2 Kilometers

APPENDIX 3 BENTHIC HABITAT MAP SHOWING FARM FOOTPRINT AND AREA OF MODELLING UNCERTAINTY


0
0.5
1
2
Km
N
2286 (t/block/month) modelled footprint
Soft sediment habitat response uncertainty
Benthic habitat type:
Biogenic patch reef
Biogenic clump reef
Biogenic horse mussel brachiopod bed
Biogenic mixed habitat
Transitional habitat
Low density epifauna
Low density epifauna with prominent scour
Outcrop
Undefined; mixed habitats
Proposal area
Farm pens

APPENDIX 4 MINUTES OF THE HEARINGS COMMISSIONERS

IN THE MATTER of the Resource Management Act 1991
AND

IN THE MATTER of application U190438 by The New Zealand King Salmon Company Limited for Coastal Permit (Marine Farm) – North of Cape Lambert, North Marlborough

BEFORE **Marlbourough District Council (MDC)**

Minute # 1 of the Hearing Commissioners – Procedural Matters

1. The hearing panel received, via the MDC Administration and Hearings Facilitator, two separate emails from Guardians of the Sounds, and the Kenepuru and Central Sounds Residents Association who are submitters to the Application.
2. The submitters' emails outlined concerns with the information provided in the Applicant's *Submitters' Engagement Information Pack* which was provided to all the parties to the proceedings by an email from Ms Bulfield-Johnston on Friday 13 August 2021.
3. The email from the Kenepuru and Central Sounds Residents Association outlined concerns that the appropriate technical information had not been released and urged the Council to take action to have the Applicant meet the terms of the statutory direction as set out in the email from Ms Bulfield-Johnston.
4. The email from Guardians of the Sounds had concerns that a detailed engineering assessment had not been provided and requested that the hearing date be amended to 69 days following the provision of all the technical matters relevant to the hearing.
5. The panel has carefully considered the matters raised in the submitters' emails. We have referred to the email from Ms Bulfield-Johnston, the original submissions, and the content of the Submitters' Engagement Information Pack.
6. We note that the process outlined in subparagraph's (a) through (c) of Ms Bulfield-Johnston's email was accepted by Council and that the Council made a direction confirming this process pursuant to section 41C(1)(c) of the Resource Management Act (RMA) 1991.
7. The process outlined in the email of Ms Bulfield-Johnston is intended to give the opportunity for submitters and statutory agencies to participate in pre-hearing meetings with the Applicant at which further information can be requested and a process agreed for addressing any remaining concerns and/or making adjustments to the proposal if agreed. We view this as a proactive approach to engaging with submitters that will assist with the provision of information that we require to make a decision and in narrowing down the issues in contention that we need to consider.
8. This is a fundamentally different process to the requirements to exchange evidence within statutory timeframes set out under section 103B of the RMA 1991. The section 103B requirements will need to be met prior to the hearing and will be set out in correspondence from Ms Bulfield-Johnston at a later stage in the process.
9. We have determined that there is no reason for us to intervene in the pre-hearing process established in the aforementioned Council directions or to provide additional

directions to the Applicant at this stage in the proceedings. We can also see no reason to defer the hearing of the application.

10. I direct that the Administrator and Hearings Facilitator, Sue Bulfield-Johnston, circulate this minute and all information outlined above to all parties to the proceedings.

Dated: 25 August 2021.

Craig Welsh

Chairman

IN THE MATTER of the Resource Management Act 1991

AND

IN THE MATTER of application U190438 by The New Zealand King Salmon Company Limited for Coastal Permit (Marine Farm) – North of Cape Lambert, North Marlborough

BEFORE **Marlbourough District Council (MDC)**

Minute # 2 of the Hearing Commissioners – Barges – Landscape Graphic Supplement

1. The hearing panel visited the site of the proposal on Wednesday 29 September 2021. During the site visit we noted that recreational vessels were reasonably easy to see on the horizon several kilometres away (distance verified by the Harbour Master driving our boat).
2. We consider that the landscape evidence would benefit from inclusion of a graphic supplement with the proposed barges (i.e. vessels of the same bulk) overlaid on the horizon from various viewpoints such as those used by Mr Bentley in his graphic supplement. In particular we are interested in the view looking north towards the Site from Cape Lambert, approximately 5.60 kilometres from the Site boundary.
3. We hereby direct that the Applicant provide a barge graphic supplement as outlined in Paragraph 2. This should be provided prior to hearing the landscape evidence from Mr Hudson.
4. I direct that the Administrator and Hearings Facilitator, Sue Bulfield-Johnston, circulate this minute and all information outlined above to all parties to the proceedings.

Dated: 6 October 2021.

Craig Welsh

Chairman

IN THE MATTER of the Resource Management Act 1991

AN

IN THE MATTER of application U190438 by The New Zealand King Salmon Company Limited for Coastal Permit (Marine Farm) – North of Cape Lambert, North Marlborough

BEFORE **Marlbourough District Council (MDC)**

Minute # 3 of the Hearing Commissioners – Caucusing on Benthic Matters and Council Witness Addendum Timetable

1. The panel received a memorandum of counsel dated 9 November 2021 seeking directions regarding convening an expert benthic workshop prior to the reconvened hearing on 1 December 2021.
2. We have carefully considered the request and consider that it would be premature to convene a benthic workshop prior to 1 December 2021.
3. We would prefer to hear from the remainder of the submitters and the Council expert witnesses before we consider issuing directions with respect to possible expert caucusing.
4. We are aware that the Council expert witnesses are preparing addendums to their evidence based on what has already been presented at the hearing. The intention to update their primary evidence based on what they heard over the course of the hearing was outlined in their primary evidence.
5. In order to assist us with questioning during the next phase of the hearing process, we hereby direct that the Council expert witnesses provide their addendums by Thursday 25 November 2021.
6. I direct that the Administrator and Hearings Facilitator, Sue Bulfield-Johnston, circulate this minute and all information outlined above to all parties to the proceedings.

Dated: 11 November 2021.

Craig Welsh

Chairman

IN THE MATTER of the Resource Management Act 1991

AND

IN THE MATTER of application U190438 by The New Zealand King Salmon Company Limited for Coastal Permit (Marine Farm) – North of Cape Lambert, North Marlborough

BEFORE **Marlbourough District Council (MDC)**

Minute # 4 of the Hearing Commissioners – MPI Evidence

1. The Panel received an application on behalf of the Ministry for Primary Industries (the MPI application) seeking leave to file further evidence out of time. Specifically a map that shows estimated trawl tracks in the area surrounding the application site, and an accompanying statement to explain the map (together called the "information").
2. The information has a higher level of detail than other information that has been presented at the hearing. However, the information is commercially sensitive to fishers for reasons explained in the MPI application. For this reason, MPI seeks and order that the information be provided only to the members of the Panel, and the Applicant.
3. Paragraph 9 of the MPI application identified specific confidentiality orders sought that effectively mean that the information is not available to the submitters or the general public.
4. We have carefully considered the request and have decided to deny the request to file the evidence out of time and to issue confidentiality orders.
5. This is because at this stage we consider that this information is not required to assist us in our decision making. As a result confidentiality orders are not required.
6. I direct that the Administrator and Hearings Facilitator, Sue Bulfield-Johnston, circulate this minute and all information outlined above to all parties to the proceedings.

Dated: 17 November 2021.

Craig Welsh

Chairman

IN THE MATTER of the Resource Management Act 1991

AND

IN THE MATTER of application U190438 by The New Zealand King Salmon Company Limited for Coastal Permit (Marine Farm) – North of Cape Lambert, North Marlborough

BEFORE **Marlbourough District Council (MDC)**

Minute # 5 of the Hearing Commissioners – Order Under s42 RMA 1991 – Norwegian Standard NS9415:2009 Marine Fish Farms

1. The Applicant seeks an order under Section 42 Resource Management Act in relation to provision of Norwegian Standard NS9415:2009 Marine Fish Farms to ensure that the standard is not used in a manner that would infringe copyright.
2. We hereby direct that the Norwegian Standard NS9415:2009 Marine Fish Farms – *Requirements for site survey, risk analyses, design, dimensioning, production, installation and operation* is provided for the purpose of the hearing of this application, being a judicial proceeding in terms of s59(1) Copyright Act 1994. The Statement shall be provided by the Applicant to the Marlborough District Council. Submitters may request a copy of the Statement from Sue Bulfield-Johnston. Where the Standard has been obtained in this manner, the Standard may not be used other than for the purpose of this proceeding.
3. I direct that the Administrator and Hearings Facilitator, Sue Bulfield-Johnston, circulate this minute and all information outlined above to all parties to the proceedings.

Dated: 26 November 2021.

Craig Welsh

Chairman

IN THE MATTER of the Resource Management Act 1991

AND

IN THE MATTER of application U190438 by The New Zealand King Salmon Company Limited for Coastal Permit (Marine Farm) – North of Cape Lambert, North Marlborough

BEFORE **Marlbourough District Council (MDC)**

Minute # 6 of the Hearing Commissioners – Order Under s42 RMA 1991 – Farms Operating in Conditions Similar to Blue Endeavour Proposal

1. The Applicant seeks an order under Section 42 of the Resource Management Act 1991 in relation to provision of further information (requested by the panel) of example salmon farms that are operating in conditions similar to the Blue Endeavour Proposal. The information is commercially sensitive to the operators of the farms and to ScaleAQ as the manufacturer.
2. We hereby direct that the further information of example salmon farms that are operating in conditions similar to the Blue Endeavour Proposal is provided for the purpose of the hearing of this application, being a judicial proceeding in terms of s59(1) Copyright Act 1994.
3. The information shall be provided by the Applicant to the Marlborough District Council (MDC). The information is not to be made public on a website, including the MDC's portal for the Blue Endeavour Application. Submitters may request a copy of the Statement from Sue Bulfield-Johnston. Submitters may share this information with experts engaged to provide evidence in relation to the Application, but may not circulate the information more widely.
4. Where the information has been obtained in this manner, the information may not be used other than for the purpose of the proceedings.
5. I direct that the Administrator and Hearings Facilitator, Sue Bulfield-Johnston, circulate this minute and all information outlined above to all parties to the proceedings.

Dated: 2 December 2021.

Craig Welsh

Chairman

IN THE MATTER of the Resource Management Act 1991

AND

IN THE MATTER of application U190438 by The New Zealand King Salmon Company Limited for Coastal Permit (Marine Farm) – North of Cape Lambert, North Marlborough

BEFORE **Marlbourough District Council (MDC)**

Minute # 7 of the Hearing Commissioners – Further Information

1. Following an adjournment on 3 December 2021, we are scheduled to complete hearing from s42A report writers on 21 December 2021. This includes James Bentley, providing evidence on relevant landscape and natural character effects of the proposal. We would like more information on a mapping issue identified by the Applicant's legal submissions at paragraph [163].

2. The Applicant provided us with a copy of a consent memorandum dated 7 July 2021, filed with the Environment Court. This identified an agreed position to amend the natural character rating from ONC to HNC in an area that overlaps with the subject proposal (the proposed southern farm). The consent memorandum identifies "reservations" that mean consent orders cannot be issued at this stage. We would like to know whether those reservations have been resolved. If so, whether a request has been made to the Environment Court to consider issuing the consent order relating to ONC as soon as reasonably possible, to assist our deliberations in these proceedings.

3. Also, at [163] of the Applicant's submissions, it is contended that the Proposed Marlborough Environment Plan hearings panel removed the very high natural character purple colour, but (in error) retained the ONC overlay, for the so-called tooth/bulge shape identified by those submissions. If correct, then we would like Council to advise whether it has considered using Clause 16 of the 1st Schedule RMA to correct a minor (mapping) error that seems to be agreed by all relevant parties? Alternatively, we request that Council provide additional information to confirm that the tooth/bulge shape identified as ONC is an acknowledged mapping error that will be resolved through the appeals process. This could be in the form of an addendum to Peter Johnson's evidence/reports.

4. Finally, we request an update from the Applicant / MPI as to whether further information will be provided on trawling activities in the vicinity of the subject proposal, being information identified in general terms by Andrew Baxter in his supplementary evidence. Such information would need to be made available to all submitters for consideration. It seems likely to be relevant to Mr Bentley's assessment of natural character. It would be helpful for this information to be received prior to 21 December 2021.

5. In issuing this minute, we have formed no view on the merits of the proposal but would like to receive all relevant information.

6. I direct that the Administrator and Hearings Facilitator, Sue Bulfield-Johnston, circulate this minute and all information outlined above to all parties to the proceedings.

Dated: 9 December 2021.Craig Welsh
Chairman

IN THE MATTER of the Resource Management Act 1991

AND

IN THE MATTER of application U190438 by The New Zealand King Salmon Company Limited for Coastal Permit (Marine Farm) – North of Cape Lambert, North Marlborough

BEFORE **Marlbourough District Council (MDC)**

Minute # 8 of the Hearing Commissioners – Further Information

1. During the adjournment the hearing panel has identified further information that we would like to receive prior to reconvening the hearing on 21 December 2021. This information is outlined below and consists of four matters:

   a) Structural integrity;

   b) Planning matters;

   c) Water quality conditions; and

   d) Cultural matters.

   Structural Integrity

2. We have heard that benthic effects and structural integrity of the farms are important issues with respect to this Application. Paragraph 57 of Mr Teear's evidence in chief states that:

   > *Geotechnical investigations are standard in professional engineering practice to reduce the risk of failure when the structure is installed and the ground is subsequently found to be unsuitable to take the loads generated by the environmental forces activing on the structure*.

   Further in paragraph 59 the evidence states:

   > *The seabed investigation work will be undertaken following the granting of a resource consent for the farm. A coring operation will likely be undertaken using existing screw anchor installation equipment operated by Marine Services NZ to drill into the seabed and obtain relatively undisturbed cores.*

   Further in paragraph 60 the evidence states:

   > *The magnitude of the anchor drag experienced is directly related to the strength of the sediment the anchor is set into*.

3. The extent of anchor drag will influence the benthic effects from installation of the anchors.

4. We have been considering the merits of requiring cores sampling to be undertaken now to remove uncertainty around the extent of anchor drag and to improve knowledge regarding the risk of anchor failure when the structure is installed. As part of our consideration of this matter we direct that the Applicant provide feedback on the relative merits of this idea before we decide on the matter. The Applicant should provide this information by 21 December 2021.

Planning Matters

5. We have indicated to Mr Johnson that we will be asking him to make a planning recommendation with respect to refusing or granting consent at the reconvened hearing. Further to this we hereby direct that Mr Johnson to provide an addendum to his evidence outlining any objectives or policies in the relevant plan and the relevant proposed plan that the proposal is contrary to in terms of Section 104D(1)(b) - the second "gateway test". Mr Johnson should provide this information by 21 December 2021.

Water Quality Conditions

6. Immediately prior to the adjournment, we heard evidence from Dr Peter Wilson. Dr Wilson was questioned in relation to draft water quality conditions based on the amended 22 October 2021 version with comments in the side-bar. He seemed to agree that using the wording from Schedule 3 (Water Quality Standards) of the RMA 1991 with respect to dissolved oxygen and undesirable biological growths was an appropriate approach to setting water quality compliance limits as a condition of consent. We discussed the mixing zone that could apply. We are also aware that Schedule 3 provides for natural perturbations. In addition, we discussed the possibility of bringing monitoring from the Draft Water Column Monitoring and Management Plan identified in the evidence of Dr Knight into the conditions of consent to provide certainty with respect to the monitoring requirements. This monitoring could be broken down into compliance monitoring and state of the environment monitoring, outlining parameters to be monitored, and frequency of monitoring as a minimum.

7. We hereby direct that Dr Wilson and Dr Giles to work together to provide us with a draft set of water quality conditions following on from the discussion at the hearing as outlined above. Dr Wilson and Dr Giles should provide this information by 21 December 2021.

Cultural Matters

8. The initial set of conditions that was attached to Ms Munro's evidence dated 2 October 2021 had a placeholder for Cultural Matters (Condition 94). During the hearing in October we heard from both the Applicant and Ngati Kuia who stated that some work in regard to the conditions for Cultural Matters had occurred and this was detailed in the revised condition set dated 22 October 2021 Conditions 94 - 100. Both the Applicant and Ngati Kuia agreed that further work needed to occur in relation to those conditions.

9. When we reconvene, we would like to receive an update from the Applicant as to the progress of this further work and whether there are further additions or alterations to the revised condition set dated 22 October 2021. The Applicant should provide this information by 21 December 2021.

10. We reiterate that all parties will be provided with an opportunity to comment of any draft consent conditions.

11. In issuing this minute, we have formed no view on the merits of the proposal but would like to receive all relevant information.

12. I direct that the Administrator and Hearings Facilitator, Sue Bulfield-Johnston, circulate this minute and all information outlined above to all parties to the proceedings.

Dated: 9 December 2021.

Craig Welsh
Chairman

IN THE MATTER of the Resource Management Act 1991

AND

IN THE MATTER of application U190438 by The New Zealand King Salmon Company Limited for Coastal Permit (Marine Farm) – North of Cape Lambert, North Marlborough

BEFORE **Marlbourough District Council (MDC)**

Minute # 9 of the Hearing Commissioners – Further information and caucusing

1. The hearing panel has identified further information that we consider will assist us in making a decision on the application. This information is outlined below and consists of six matters:

   a) Benthic habitat mapping;

   b) Landscape and natural character matters;

   c) Water quality conditions;

   d) Navigation conditions;

   e) Seabird conditions; and

   f) Bottom trawling clarification.

Benthic Habitat Mapping

2. Dr Anderson provided the panel with some recommended seafloor video transect locations to ground-truth the predicted boundaries of biogenic habitats. The recommended video transects were detailed in her supplementary evidence dated 15 December 2021.

3. We would like to provide other relevant benthic experts with the opportunity to comment on the recommended video transects through caucusing and production of a joint witness statement identifying final video transects that would assist in identifying the boundaries of biogenic habitat. In order to facilitate this we would like the applicant to provide the panel with a list of the relevant experts (applicant, submitters, and council officers) by 15 January 2022 for us to approve before caucusing commences. We would like caucusing to be completed by 31 January 2022.

4. We will issue further directions regarding field work and habitat map outputs at a later stage once we receive the joint witness statement outlining final video transects.

Landscape and natural character

5. We have heard landscape and natural character evidence from Mr Hudson and Mr Bentley and direct the following to be completed by 18 February 2022:

   a. Referring to Mr Bentley's addendum report 25 November 2021 paragraph 4.5 bullet point 2. We would like Mr Bentley to state clearly which part of the site holds ONC;

b. Mr Hudson and Mr Bentley shall through caucusing produce a joint witness statement identifying areas of agreement and disagreement with respect to their landscape and natural character assessments;

c. Mr Hudson to provide supplementary evidence identifying how his landscape and natural character findings would alter if he were to consider the northern farm only; and

d. Mr Bentley also to provide supplementary evidence identifying how his landscape and natural character findings would alter if he were to consider the northern farm only.

Water Quality Conditions

6. The panel was provided with proposed water quality conditions by Dr Wilson and Dr Giles in a report dated 9 December 2021. We would like Mr Knight to provide us with his comments on these proposed conditions by 18 February 2022.

Navigation Conditions

7. Referring to the proposed conditions of consent dated 22 October 2021 we direct that Mr Grogan and Mr McKenzie caucus and provide us with comments by way of a joint witness statement on conditions 18, and 30-48 inclusive.

8. In addition, they should provide us with a recommended condition of consent relating to provision of a Farm Maritime Safety Case as outlined in paragraph 30 of Mr Grogan's supplementary evidence dated 26 November 2021. The joint witness statement shall be provided by 18 February 2022.

Seabird Conditions

9. Mr Schukard provided comments (dated 31 October 2021) on the proposed conditions of consent dated 22 October 2021 with respect to seabirds (conditions 78 - 83). Comment RS3 identified concerns with respect to condition 79(e) and in particular he stated:

> *"This condition may be very relevant for the fledging Sooty Shearwaters and Flesh footed Shearwaters from Titi Island. Juveniles are more attracted to light and have higher risk [of] ending up in the pens at night.*"

10. We direct that Mr Schukard and Dr Bennet caucus with respect to addressing concerns with the proposed seabird conditions (as raised by Mr Schukard) and in particular identification of any further conditions of consent that may address the issue outlined in italics in paragraph 9 above. The results of this caucusing should be captured in a joint witness statement and provided to us by 18 February 2022.

Bottom Trawling Clarification

11. The Ministry of Primary Industry provided us with a reported bottom trawling map in confidence as directed at the hearing. We asked Mr Heath some questions of clarification via zoom at the reconvened hearing 21 December 2021.

12. Further to these questions we would like Mr Heath to clarify the type of bottom trawling activity, i.e whether it is benthic trawling (on the seabed) or demersal trawling (towing the net just above the benthic zone). This will have implications with respect to the level of seabed disturbance and its influence on existing natural character.

13. We would like Mr Heath to provide us with this information by 18 February 2022.

14. We reiterate that all parties will be provided with an opportunity to comment on any draft consent conditions.
15. In issuing this minute, we have formed no view on the merits of the proposal but would like to receive all relevant information to assist us in our decision making.
16. I direct that the Administrator and Hearings Facilitator, Sue Bulfield-Johnston, circulate this minute and all information outlined above to all parties to the proceedings.

Dated: 22 December 2021.

Craig Welsh
Chairman

IN THE MATTER of the Resource Management Act 1991

AND

IN THE MATTER of application U190438 by The New Zealand King Salmon Company Limited for Coastal Permit (Marine Farm) – North of Cape Lambert, North Marlborough

BEFORE **Marlbourough District Council (MDC)**

Minute # 10 of the Hearing Commissioners – Benthic Habitat Mapping Caucusing

1. This minute responds to a memorandum of counsel regarding benthic caucusing dated 14 January 2022. The panel has read the memorandum and hereby issues the following directions.
2. Caucusing is to take place on 27 January 2022 and is to be held via remote access technology.
3. We have considered the issue regarding a suitable facilitator and hereby direct that Dr Hilke Giles facilitate the caucusing. Dr Giles attended the hearing and is an independent Council expert witness.
4. I direct that the Administrator and Hearings Facilitator, Sue Bulfield-Johnston, circulate this minute and all information outlined above to all parties to the proceedings.

Dated: 18 January 2022.

Craig Welsh
Chairman

IN THE MATTER of the Resource Management Act 1991

AND

IN THE MATTER of application U190438 by The New Zealand King Salmon Company Limited for Coastal Permit (Marine Farm) – North of Cape Lambert, North Marlborough

BEFORE **Marlbourough District Council (MDC)**

Minute # 11 of the Hearing Commissioners – Benthic Habitat Mapping Caucusing

1. Our minutes number 9 and 10 refer.
2. We understand that caucusing of the relevant benthic experts (with respect to Dr Anderson's recommendations in her supplementary evidence 15 December 2021) took place on 27 January 2022. That caucusing raised several questions that are attached to this minute and shown in blue. These questions stem from the caucusing agenda questions that are shown in black.
3. We wish to reiterate that we consider additional video transects (as outlined by Dr Tara Anderson in her supplementary evidence dated 15 December 2021) are required to assist with biogenic habitat mapping. Dr Anderson supplementary evidence clearly shows the area we are interested in.
4. Currently, there is notable uncertainty with respect to the spatial extent of the Biogenic Habitat (HMBB, patch reef, clump reef, and mixed). There is also is conflicting evidence regarding the significance of the adverse effects of the farm structures and waste deposition on biogenic habitat. This in turn influences how NZCPS Policy 11 and PMEP policies relating to benthic habitat are interpreted.
5. We will be seeking the benthic experts to caucus to utilise slide 4 of Dr Giles speaking notes to determine the significance of the residual adverse effects on benthic habitat as outlined in the final column of the slide 4. The significance of adverse effects on benthic habitat and biogenic habitat in particular is important to the Applicant's case as the proposal is a non-complying activity which must be able to pass at least one limb of the section 104D Gateway Test. The results of the benthic effects assessment are critical to this test.
6. However, in the meantime, the crux of the mapping issue before us is summed up in paragraph 229 of Dr Anderson's primary evidence as follows:

   "*Presently, the inability of the delineate finer-scale (ecologically significant) habitats (i.e., HMBB, Patch-reef, Clump reef and Mixed[1]biogenic habitats) across the benthic habitat map is directly relevant to NZCPS Policy 11(a-b) in regards to 'avoiding adverse effects' to all four biogenic habitats (individually and as a whole); and identifies the importance of determining their proximity to the proposed farms, the predicted footprint and potential adverse depositional and enrichment effects (which are predicted to decrease with distance away from the farms)*."
7. We consider that the uncertainty in the spatial extent of the biogenic habitat within the area shown in Dr Anderson's map (supplementary evidence 15 December 2021) needs

to be addressed as recommended by Dr Anderson before the significance of effects (slide 4 Dr Giles speaking notes) can be completed. Dr Anderson has recommended some video transect work that addresses this. The current caucusing we have directed provides the parties with the opportunity to comment on Dr Anderson's recommendations.

8. The panel is aiming to reconvene the hearing on the week of 26 April 2022 to cover outstanding matters including matters including those listed in minutes 7 to 9, and draft conditions of consent. We will issue a separate minute regarding circulation of conditions of consent to all parties to the hearing post February 18 2022.

9. We are mindful that the applicant will need time to undertake field work and for the relevant benthic experts to caucus as outlined in paragraph 5. Hence, we direct that the caucusing required to comment on Dr Anderson's recommended video transect locations be completed by 11 February 2022. In the absence of any logical reasons to not accept these locations, then we will direct (via a separate minute) that the field work outlined by Dr Anderson should be undertaken.

10. I direct that the Administrator and Hearings Facilitator, Sue Bulfield-Johnston, circulate this minute and all information outlined above to all parties to the proceedings.

Dated: 31 January 2022.

Craig Welsh
Chairman

IN THE MATTER of the Resource Management Act 1991

AND

IN THE MATTER of application U190438 by The New Zealand King Salmon Company Limited for Coastal Permit (Marine Farm) – North of Cape Lambert, North Marlborough

BEFORE **Marlbourough District Council (MDC)**

Minute # 12 of the Hearing Commissioners – Benthic Habitat Field Work

1. Our minutes numbered 9 - 11 refer.
2. We have received and read the following document:
    a. The signed joint witness statement (JWS) reflecting the outcome of benthic caucusing as requested in minutes 9 to 11;
    b. A timeline for the survey of the identified transects and data analysis; and
    c. Dr Tara Anderson's Statement in response to the JWS dated 20 February 2022.
3. We appreciate the effort that the parties have put into the JWS and consider the output to be high quality. We understand that Dr Andersons' statement and additional maps / data analyses contain some points that the other experts have not had an opportunity to respond to via caucusing. However, this information was supplied by Dr Anderson to assist us in determining the scope of further field work as she could not participate in the second zoom meeting due to what we consider to be exceptional circumstances. Furthermore, the points reiterate many of the matters that we heard via her evidence. We do not consider that any fairness issues arise from this sequence, but we have allowed the participating experts a short opportunity to reply, if that is considered necessary. For our part, we have been able to integrate the information in the JWS and Dr Andersons statement.
4. The directions below utilise the Maps shown in Appendix A page 9 of the JWS.
5. Subject to paragraph 12 below, we hereby direct that the Applicant is to undertake the benthic field work as outlined in the JWS subject to the following amendments:
    a. Transect "7-Ex" shown on Map 2 is reduced to transect "7" on Map 1;
    b. Transects "2-EX" shown on Map is reduced to transect "2" on Map 1;
    c. Transects M1 and M3 on Map 1 are included.
6. The reasons for these amendments are clearly stated in Dr Andersons' statement.
7. Also, we direct that a field guide be drafted as per paragraph 17 of the JWS and that it include goals for each group of transects as per paragraph 16 of the JWS.
8. We direct that the analysis and results of the field work use the sub habitat nomenclature "HMBB, patch reef, clump reef and mixed" as the results of the field work will be used by the benthic experts to caucus utilising slide 4 of Dr Giles speaking notes to determine the significance of the residual adverse effects on benthic habitat as outlined in the final

column of the slide 4[329]. Hence, we do consider that delineating the boundaries of the sub habitat types is important.

9. We direct that the position of the new transects shall be (to the extent practicable) +/-5 metres or worst case no greater than 10 metres.
10. We direct that the timeline for the field work and analysis shall to the extent practicable follow the Gantt chart provided in the "timeline for video collection and analysis" supplied with the JWS.
11. Further directions regarding witness caucusing utilising slide 4 of Dr Giles speaking notes will be issued in due course. However, we note and appreciate the experts have also provided an indicative timeline for this work which we accept and this will be brought into the further directions.
12. Our directions will take effect at 4pm on Monday 28 2022. If any of the expert witnesses that participated in caucusing wish to respond to Dr Anderson's statement dated 20 February 2022, then they should do so by 3pm on 28 Feb 2022. If necessary, this can be a preliminary (and not detailed) response. If required, we will then issue further directions, or vary our above directions at paragraph 5.
13. I direct that the Administrator and Hearings Facilitator, Sue Bulfield-Johnston, circulate this minute and all information outlined above to all parties to the proceedings.

Dated: 25 February 2022.

Craig Welsh
Chairman

[329] Refer to Minute 11 for a more in depth overview of the proposed future caucusing once the field work and analysis is completed.

IN THE MATTER of the Resource Management Act 1991

AND

IN THE MATTER of application U190438 by The New Zealand King Salmon Company Limited for Coastal Permit (Marine Farm) – North of Cape Lambert, North Marlborough

BEFORE **Marlbourough District Council (MDC)**

Minute # 13 of the Hearing Commissioners – Circulation of updated proposed conditions for comment

1. As indicated in previous minutes and at the hearing, we would like to provide all parties with the opportunity to comment on a revised set of proposed conditions on a "without prejudice" basis.

2. We hereby direct the following:

    a. The Applicant is to supply an updated set of proposed conditions based on information that has been heard and the results of expert caucusing on conditions as directed in recent minutes. This updated set of proposed conditions is to be supplied to MDC by Friday 11 March 2022. These updated proposed conditions shall be circulated to all parties to the hearing;

    b. Submitters who are a party to the hearing provide their comments on the updated proposed conditions by Thursday 31 March 2022. These comments shall be circulated to all parties to the hearing;

    c. Council officers and consultants for Council to provide their comments on the updated proposed conditions and submitter feedback on the updated proposed conditions by Thursday 14 April 2022.

3. Recognising the agreed timeline set out in Dr Giles Gantt chart attached to the joint witness statement referred to in Minute 12, we hereby direct the following in respect of the provision of conditions on benthic habitat:

    d. The Applicant is to supply an updated set of proposed conditions based on the information that has been heard and the result of expert caucusing as directed in recent minutes. This updated set of proposed conditions is to be supplied to MDC by Monday 11 April 2022. These updated proposed conditions shall be circulated to all parties to the hearing.

    e. Submitters who are a party to the hearing are to provide their comments on the updated proposed conditions by Tuesday 19 April 2022. These comments shall be circulated to all parties to the hearing.

    f. Council officers and consultants for Council to provide their comments on the updated proposed conditions by Friday 22 April 2022. Given the short timeframe between the provision of comments and the reconvened hearing on Tuesday 26 April 2022, these persons should be available at the hearing, if possible, to present their comments if required.

4. We note that this may be an appropriate juncture for the Applicant to clarify their position with respect to possible staging of the salmon farms that was discussed during the hearing.
5. We reiterate that by seeking feedback on an updated set of proposed conditions we are not indicating that we have reached a decision with respect to the application. Rather we are requesting further information that will assist us in our decision making.
6. I direct that the Administrator and Hearings Facilitator, Sue Bulfield-Johnston, circulate this minute and all information outlined above to all parties to the proceedings.

Dated: 1 March 2022.

Craig Welsh
Chairman

IN THE MATTER of the Resource Management Act 1991

AND

IN THE MATTER of application U190438 by The New Zealand King Salmon Company Limited for Coastal Permit (Marine Farm) – North of Cape Lambert, North Marlborough

BEFORE **Marlbourough District Council (MDC)**

Minute # 14 of the Hearing Commissioners – Seabed Coring Work

1. We received the Applicants response to Minute 8 with respect to seabed core sampling and have determined that seabed core sampling is not required to assist us in our decision making. We consider that we have sufficient information with respect to this issue without the need to undertake core sampling now. If consent is ultimately granted, then conditions may be imposed relating to validation of structural integrity.
2. The memorandum of Counsel in response to Minute 9 dated 18th February stated that "Dr Morrisey can re-do his calculations using the revised anchor drag diagram for weak sedimentary rock". We consider that this is not required as it appears that the extent of anchor drag is reduced under this scenario compared to the conservative assessment that was undertaken for soft clay which we understand to be the worst case anchor drag scenario.
3. I direct that the Administrator and Hearings Facilitator, Sue Bulfield-Johnston, circulate this minute and all information outlined above to all parties to the proceedings.

Dated: 24 February 2022.

Craig Welsh
Chairman

IN THE MATTER of the Resource Management Act 1991

AND

IN THE MATTER of application U190438 by The New Zealand King Salmon Company Limited for Coastal Permit (Marine Farm) – North of Cape Lambert, North Marlborough

BEFORE **Marlbourough District Council (MDC)**

Minute # 15 of the Hearing Commissioners – Matters to be covered in reconvened hearing

1. On 18 February 2022, MDC issued a notice that the New Zealand King Salmon Co. Limited resource consent hearing would be reconvened on Tuesday 26 April 2022, and if required on Wednesday 27 April 2022. This notice referred to a minute that would follow setting out the matters that will be covered at this reconvened hearing. This minute sets out those matters. The matters are based upon information that has been provided in response to Minutes 8 to 14.
2. We hereby direct that the following matters will be covered in the reconvened hearing:
    a. The results of the updated benthic assessment of effects (to be completed following the benthic habitat field work). This assessment should take into account the Ministry of Primary Industry clarification with respect to the type of bottom trawling activity shown in response to Minute 9;
    b. Natural character matters in relation to the supplementary evidence of Mr Bentley and Mr Hudson and their Joint Witness Statement;
    c. Landscape matters in relation to the supplementary evidence of Mr Bentley and Mr Hudson and their Joint Witness Statement;
    d. Structural integrity matters. We note here that Mr Teear's additional information covered off anchor drag but did not cover off our primary concern outlined in Minute 8 which relates to the risk of anchor failure once the farm is installed;
    e. Council officers and consultation comments on circulated conditions. We noted in Minute 13 that given the short timeframe between receiving submitters' comments and the reconvened hearing that Council officers and consultants should be available to present their comments if required.
3. The order in which the matters appear under paragraph 2 represents the order in which the matters will be heard.
4. We note that we did request other information via the above mentioned minutes. However, this information related to the conditions of consent which subsequently fed into the conditions that have been circulated (for example, caucusing on seabird conditions, caucusing on water quality conditions, caucusing on navigation conditions, and update on cultural conditions). Hence, we will not be revisiting this information when we reconvene.

5. Any submitters who have an interest in the specified matters outlined in paragraphs 2(a) to (e) above and wish to speak on those matters are invited to register their interest with Ms Bulfield-Johnston at least one week prior to the hearing. We reiterate that this is not an opportunity to cover matters that we have already heard, we will be focusing on the specific matters listed.
6. We have noted that the information provided by the Ministry of Primary Industries in relation to the type of bottom trawling included an outline of effects of the environment that went beyond the scope of our minute. We direct that this information should be struck out.
7. We have structured the reconvened hearing on the basis that the Applicant will be providing a written Right of Reply.
8. I direct that the Administrator and Hearings Facilitator, Sue Bulfield-Johnston, circulate this minute and all information outlined above to all parties to the proceedings.

Dated: 9 March 2022.

Craig Welsh
Chairman

IN THE MATTER of the Resource Management Act 1991

AND

IN THE MATTER of application U190438 by The New Zealand King Salmon Company Limited for Coastal Permit (Marine Farm) – North of Cape Lambert, North Marlborough

BEFORE **Marlbourough District Council (MDC)**

Minute # 16 of the Hearing Commissioners – Trawling Activity and Effects

1. This Minute responds to the *Memorandum of counsel for the Applicant in response to Minute 15 dated 15 March 2022* (the memorandum).
2. The panel appreciates the issues raised in the memorandum, and agrees that the issue of the extent to which the Blue Endeavour site and its immediate surrounds has been or will be trawled (bottom contact/benthic trawling) is relevant for reasons outlined in the memorandum. Also, the extent to which it could be trawled is relevant as noted further in the memorandum.
3. We recognise the confidential nature of the trawling lines has resulted in the information being provided on a piecemeal basis through the course of the hearing. We appreciate the efforts that the Ministry of Primary Industry has made to provide the panel and other parties with information on bottom contact/benthic trawling whilst retaining confidentiality.
4. In response to paragraph 3 of the memorandum, we note that Dr Anderson did not state that the site could not be trawled, rather she commented that there was no evidence of bottom trawling on the video footage.
5. This raises an important point and leads us to direct that the analysis of the video footage from the additional benthic field work that we requested in previous minutes should include the relevant experts looking for evidence of bottom contact/benthic trawling activity in the new and existing footage.
6. There were several reasons for the panel directing (as part of Minute 15) that Dr Tuck's additional information be struck out. These included: the information was new and the Applicant and other parties had not had a chance to comment on it; Dr Tuck's experience and qualifications were not made know to us; and that he had not recognised the Environment Court's Code of Conduct for Expert Witnesses 2014 and agreed to comply with it.
7. In Minute 15 we directed that the Ministry of Primary Industry clarification with respect to the type of bottom trawling activity be fed into the benthic effects caucusing which is to occur prior to the hearing.
8. Having regard to the concerns raised in the memorandum and taking into account the convoluted manner in which we have received information regarding bottom contact/benthic trawling that has occurred and it effects, we hereby direct the following:
    a. Prior to hearing the update benthic assessment of effects matter (paragraph 2a in Minute 15), we will address bottom contact/benthic trawling matters;

b. In order to address this matter effectively and efficiently at the hearing, the Ministry of Primary Industry should submit Dr Tuck's additional information as evidence (addressing qualifications, experience and code of conduct);

c. It would assist the panel if the Applicant provided further evidence on the ability of trawlers to undertake bottom contact/benthic trawling activity in and around the area covered by the farms structures, and the modelled deposition footprints;

d. The information outlined in paragraph 8b and 8c above should be provided by Tuesday 12 April 2022;

e. Any party who has an interest in the matters outlined in paragraph 8b or 8c and wishes to speak on those matters are invited to register their interest with Ms Bulfield-Johnston at least one week prior to the hearing.

9. I direct that the Administrator and Hearings Facilitator, Sue Bulfield-Johnston, circulate this minute and all information outlined above to all parties to the proceedings.

Dated: 16 March 2022.

Craig Welsh
Chairman

IN THE MATTER of the Resource Management Act 1991

AND

IN THE MATTER of application U190438 by The New Zealand King Salmon Company Limited for Coastal Permit (Marine Farm) – North of Cape Lambert, North Marlborough

BEFORE **Marlbourough District Council (MDC)**

Minute # 17 of the Hearing Commissioners – Biogenic Habitat Effects

1. We understand that the benthic field work directed in earlier minutes has been completed and that the experts seek further directions with regard to caucusing as outlined in our Minute 11.
2. We direct that the results of the benthic field work be used to update the biogenic habitat boundaries on the biogenic habitat map within the area depicted in Figure 2 of Dr Anderson's Supplementary Response dated 15 December 2021.
3. The updated biogenic habitat map in paragraph 2 shall be overlaid by:
    a. The modelled deposition footprint (depicting model uncertainty either as a "fuzzy line" outlined in Dr Giles speaking notes 21 December 2021 or as a "zone of uncertainty" as outlined in Dr Anderson's Supplementary Response dated 15 December 2021). The modelled deposition footprint should reflect the feed scenarios outlined in the latest draft of the consent conditions dated 11 March 2022. We understand from Dr Keeley's supplementary evidence that these have already been modelled ;
    b. The farm and barge anchor structures including the area of chain sweep. We have been supplied with two calculations relating to area of disturbance from anchor drag and chain sweep (memorandum of counsel dated 18 February 2022 paragraphs 20 and 21). Both of these scenarios should be accounted for.
4. We direct that the information above be used by the benthic experts to determine (in their opinion) the significance of the adverse effects of the farm structures and waste deposition on the biogenic habitat identified in paragraph 2. This significance of the adverse effects should be expressed as "less than minor", "minor", "moderate" or "significant".
5. We direct that the results of the assessment outlined above shall be used to identify benthic habitat monitoring locations and monitoring methodology to assess changes in biogenic habitat over time.
6. We direct that the results of the caucusing be presented in a joint witness statement so that areas of agreement and disagreement can be clearly identified.
7. I direct that the Administrator and Hearings Facilitator, Sue Bulfield-Johnston, circulate this minute and all information outlined above to all parties to the proceedings.

Dated: 29 March 2022.

Craig Welsh
Chairman

IN THE MATTER of the Resource Management Act 1991

AND

IN THE MATTER of application U190438 by The New Zealand King Salmon Company Limited for Coastal Permit (Marine Farm) – North of Cape Lambert, North Marlborough

BEFORE **Marlbourough District Council (MDC)**

Minute # 18 of the Hearing Commissioners – Benthic Joint Witness Statement and Draft Benthic Conditions

1. The memorandum of Counsel dated 31 March 2022 refers. This minute also addresses a further memorandum received this afternoon seeking a time extension.
2. The memorandum includes reference to a Joint Witness Statement being completed and circulated by 8 April 2022 and then refers to a complex timeframe for exchange relating to benthic conditions and a supplementary statement of evidence about monitoring methodology and/or practical consideration for monitoring (stating that it might be accompanied by information on a benthic monitoring protocol).
3. The timetable outlined in the memorandum appears to be "urgent" for two reasons. Firstly by stating that the Joint Witness Statement (benthic) is due on 8 April and secondly by having a full circulation of conditions relating to benthic conditions prior to the reconvened hearing.
4. The purpose of this minute is to remove this urgency which we consider places unnecessary pressure on all parties (especially given the Easter break). Also, we wish to make the hearing focused in order to get through the matters listed in Minute 15 in the two days allocated.
5. We have not issued a direction that the Joint Witness Statement is due on 8th April 2022. We note that the Gaant chart attached to the first Joint Witness Statement regarding location of benthic transects for further field work included a date of 8th April which was the approximate date that the interpretation/caucusing of results of the field work would occur. This is a necessary step in the production of the Joint Witness Statement but it is not a deadline we expect the final Joint Witness Statement to be completed by.
6. We would like the experts to take the time between now and the hearing to focus on the Joint Witness Statement rather than becoming involved in production of further evidence in support of benthic conditions and producing supplementary evidence about monitoring methodology and/or practical considerations for monitoring (the latter is useful and we suggest that it be included as an appendix to the Joint Witness Statement).
7. We note that we have requested evidence from the Applicant on the ability of trawlers to undertake bottom contact/benthic trawling activity in an around the area covered by the farm structures and the modelled deposition footprint (due Tuesday 12 April 2022).
8. Against this background we hereby direct:
    a. That the Applicant prepare draft benthic conditions for presentation to the panel. Following the hearing a further draft set of benthic conditions shall be circulated

for comment from all parties. This direction replaces the timetable outlined in Minute 13 paragraph 3;

b. The Joint Witness Statement shall be provided to the Council by Thursday 21 April 2022. The benthic experts shall utilise the time between now and the hearing working on the Joint Witness Statement rather than on further evidence as outlined in the memorandum. Comments about monitoring methodology and/or practical considerations shall be appended to the Joint Witness Statement. We are looking to narrow down the issues we need to consider;

c. The panel will ask questions about the Joint Witness Statement and the draft benthic conditions and do not require supplementary evidence supporting them. The Applicant shall provide a brief introduction to the Joint Witness Statement and the draft benthic conditions prior to the panel asking questions.

9. We remind the parties that the matters to be covered at the hearing are outlined in Minute 15. We shall address the draft benthic conditions after we have heard comments in relation to the circulated conditions (not benthic).

10. We consider that at a minimum the following persons will need to be present for questions:

    a. The author of the evidence referred to in paragraph 7 above;

    b. Mr Tuck – Ministry of Primary Industry;

    c. Benthic experts involved in the production of the Joint Witness Statement;

    d. Mr Bentley and Mr Hudson (joint witness statement and supplementary evidence on landscape and natural character effects of the northern farm only);

    e. Mr Teear (Structural integrity);

    f. Submitters who commented on the conditions that were circulated or who have an interest in the matters outlined above and in Minute 15;

    g. Council officers and Council consultants who commented on the conditions that were circulated or who have an interest in the matters outlined above and in Minute 15;

11. I direct that the Administrator and Hearings Facilitator, Sue Bulfield-Johnston, circulate this minute and all information outlined above to all parties to the proceedings.

Dated: 11 April 2022.

Craig Welsh
Chairman

IN THE MATTER of the Resource Management Act 1991

AND

IN THE MATTER of application U190438 by The New Zealand King Salmon Company Limited for Coastal Permit (Marine Farm) – North of Cape Lambert, North Marlborough

BEFORE **Marlbourough District Council (MDC)**

Minute # 19 of the Hearing Commissioners – Response to memorandum and indicative timetable

1. The panel received the benthic experts Joint Witness Statement this morning. We note that the experts were unable to make a determination about significance of effects and that they suggested that the Applicant revise and submit their assessment of effects (taking the new information regarding benthic habitats in the JWS into account) and for other parties to then review and comment on the revised assessment.
2. Concurrently we received a memorandum of counsel on behalf of the Applicant that sought leave for the Applicant's experts (Dr Keeley and Dr Morrisey) to review their earlier evidence in light of the agreed biogenic habitat map filed with the JWS, to make changes in mark up and to file that mark-up today.
3. Given the findings in the JWS and in order to advance the proceedings we consider the suggestion outlined in paragraph 2 would be most useful. We hereby grant leave for this evidence to be introduced at the hearing and have allocated time accordingly. The experts involved in the benthic JWS process will be provided with an opportunity to respond to this evidence (after the hearing adjourns) as suggested in the JWS.
4. We have no questions of Dr Keeley with respect to the JWS, so that part of the hearing will not be influenced by this availability.
5. The indicative timetable for the hearing is attached. We consider that the landscape and natural character experts will be able to read the benthic evidence referred to in the memorandum and draw their own conclusions as its implications before we hear from them.
6. I direct that the Administrator and Hearings Facilitator, Sue Bulfield-Johnston, circulate this minute and all information outlined above to all parties to the proceedings.

Dated: 22 April 2022.

Craig Welsh
Chairman

U190438 New Zealand King Salmon Hearing Indicative Speaking Order

26 and 27 April 2022

Witness (Party)	**Topic**	**Date 26th April 2022**	**Indicative time**
Chair	Introduction		9.00am
Mr Tuck (MPI)	Effects of bottom contact trawling		9.10am
Mr Roach (Applicant)	Ability to undertake bottom contact trawling		9.30am
Mr Teear (Applicant)	Structural integrity		9.45am
Dr Major (Applicant)	Introduction to benthic JWS		10.00am
Morning Tea			10.15am
Benthic Experts	Panel regarding JWS		10.30am
Lunch			12.00pm
Mr Hudson	Landscape and natural character		1.00pm
Mr Bentley	Landscape and natural character		2.00pm
Recess			3.00pm
Dr Keeley (Applicant)	Revision to benthic assessment of effects in light of JWS		4.00pm
Dr Keeley (Applicant)	Revision to benthic conditions		4.45pm
		27th April 2022	
Department of Conservation	Conditions and matters in minute 15 and 18		9.30am
Morning tea			10.45am
Council officers and consultants	Revised conditions and matters in minute 15 and 18		11.00am

IN THE MATTER of the Resource Management Act 1991

AND

IN THE MATTER of application U190438 by The New Zealand King Salmon Company Limited for Coastal Permit (Marine Farm) – North of Cape Lambert, North Marlborough

BEFORE **Marlbourough District Council (MDC)**

Minute # 20 of the Hearing Commissioners – Timetabling for Outstanding Matters

1. At the adjournment of the hearing on Friday 29th April 2022, the panel outlined a timetable to address outstanding matters. We indicated that we would confirm this timetable in a minute subject to the panel receiving an indicative project brief with respect to addressing uncertainty in the modelled deposition footprint as outlined in paragraphs 26 and 27 and 28 of the Benthic Habitat Mapping Joint Witness Statement dated 21 April 2022.

2. This project brief was intended to assist us in drafting this minute. We have not received this brief, nevertheless we consider that we have enough information to address the work that needs to be done. Furthermore, there is a need to address the outstanding matters in a timely fashion and hence we direct the following:

    a. The modelling experts involved in this hearing, including Dr Smeaton, Dr Broekhuizen, and Mr Oldman shall caucus to attempt to determine an agreed spatial layer depicting model uncertainty. This should consider the uncertainty associated with two scenarios, being deposition of 1143 tonnes and 2246 tonnes of feed per month per farm (one farm comprising 10 pens). The results of the caucusing shall be provided in a Joint Witness Statement (JWS) by Friday 27 May 2022. We direct that Dr Hilke Giles coordinate the caucusing and the production of the JWS;

    b. The relevant benthic effects experts who provided evidence at the hearing shall utilise the results of the JWS in paragraph 2a above, to respond to the evidence of Dr Morrisey and Dr Keeley (updated effects assessment table and evidence relating to revised benthic conditions) provided to the April hearing; and update their own evidence if required. This work shall be provided by 10 June 2022;

    c. The water quality experts who have been caucusing with respect to the current version of the water quality conditions shall supply the results of their caucusing in the form of a revised set of water quality conditions appended to a JWS outlining any areas of disagreement. This JWS shall be provided by 10 June 2022;

    d. The Applicant shall respond to the work outlined in paragraphs 2a to 2c above, and provide an updated set of final proposed conditions by 24 June 2022. The final proposed conditions shall take into account questions raised by the panel at the hearing. It would be useful it the final proposed conditions were presented as “track-changed” versions of the April 23 2022 version of conditions and a clean version;

e. Submitters' comments on the final proposed set of conditions shall be provided by 8 July 2022. At this juncture we would like to receive a specific response from Ngati Kuia as to whether or not they are comfortable with the conditions that refer to them. Also, the Department of Conservation shall provide an update on their position with respect to Policy 11 of the NZCPS;

f. Council staff and their consultants shall respond to the final proposed set of conditions including any comments made by submitters and this shall be provided by 15 July 2022. At this juncture we direct Mr Johnson to provide an update on his assessment of the proposal with respect to section 104D and his overall recommendation;

g. The Applicant shall provide a written Right of Reply by Friday 5 August 2022.

3. I direct that the Administrator and Hearings Facilitator, Sue Bulfield-Johnston, circulate this minute and all information outlined above to all parties to the proceedings.

Dated: 11 May 2022.

Craig Welsh
Chairman

IN THE MATTER of the Resource Management Act 1991

AND

IN THE MATTER of application U190438 by The New Zealand King Salmon Company Limited for Coastal Permit (Marine Farm) – North of Cape Lambert, North Marlborough

BEFORE **Marlbourough District Council (MDC)**

Minute # 21 of the Hearing Commissioners – Timetable Extension

1. We have received a memorandum of Counsel for the Applicant (21 June 2022) seeking a one week extension to the timetable outlined in paragraph 2(d)-(g) of Minute 20. We accept the reasons for the extension and consider there are no natural justice issues arising from the extension. Therefore, we direct that the timetable outlined in Minute 20 is adjusted as per the revised timetable outlined in the memorandum dated 21 June 2022.
2. I direct that the Administrator and Hearings Facilitator, Sue Bulfield-Johnston, circulate this minute and all information outlined above to all parties to the proceedings.

Dated: 22 June 2022.

Craig Welsh
Chairman

IN THE MATTER of the Resource Management Act 1991

AND

IN THE MATTER of application U190438 by The New Zealand King Salmon Company Limited for Coastal Permit (Marine Farm) – North of Cape Lambert, North Marlborough

BEFORE **Marlbourough District Council (MDC)**

Minute # 22of the Hearing Commissioners – Timetable Extension

1. My Minute number 21 refers.
2. Rescheduling the timetable to address the Applicant's memorandum has resulted in timetable and resource issues for the Council officers with respect to meeting the 22 July 2022 deadline.
3. An extension of one week is requested to enable the Council response to be supplied on Friday 29 July 2022. The panel can see no natural justice issues with this request and hereby direct that the timetable circulated in Minute 21 be adjusted as follows:
    a. Council staff and their consultants shall respond to the final proposed set of conditions including any comments made by submitters and this shall be provided by 29 July 2022. At this juncture we direct Mr Johnson to provide an update on his assessment of the proposal with respect to section 104D and his overall recommendation;
    b. The Applicant shall provide a written Right of Reply by Friday 19 August 2022.
4. I direct that the Administrator and Hearings Facilitator, Sue Bulfield-Johnston, circulate this minute and all information outlined above to all parties to the proceedings.

Dated: 27 June 2022.

Craig Welsh
Chairman

IN THE MATTER of the Resource Management Act 1991

AND

IN THE MATTER of application U190438 by The New Zealand King Salmon Company Limited for Coastal Permit (Marine Farm) – North of Cape Lambert, North Marlborough

BEFORE **Marlbourough District Council (MDC)**

Minute # 23 of the Hearing Commissioners – Order Under s42 RMA 1991 – Norwegian Standard NS9415:2021

1. The Applicant seeks an order under Section 42 Resource Management Act in relation to provision of Norwegian Standard NS9415:2021 Floating Aquaculture Farms: Site Survey, Design, Execution and Use to ensure that the standard is not used in a manner that would infringe copyright.
2. We hereby direct that the Norwegian Standard NS9415:2021 *Floating Aquaculture Farms: Site Survey, Design, Execution and Use* is provided for the purpose of the hearing of this application, being a judicial proceeding in terms of s59(1) Copyright Act 1994. The Statement shall be provided by the Applicant to the Marlborough District Council. Submitters may request a copy of the Statement from Sue Bulfield-Johnston. Submitters may share this information with experts engaged to provide evidence in relation to the Application, but may not circulate the information more widely.
3. Where the Standard has been obtained in this manner, the Standard may not be used other than for the purpose of this proceeding.
4. I direct that the Administrator and Hearings Facilitator, Sue Bulfield-Johnston, circulate this minute and all information outlined above to all parties to the proceedings.

Dated: 16 August 2022.

Craig Welsh
Chairman

IN THE MATTER of the Resource Management Act 1991

AND

IN THE MATTER of application U190438 by The New Zealand King Salmon Company Limited for Coastal Permit (Marine Farm) – North of Cape Lambert, North Marlborough

BEFORE **Marlbourough District Council (MDC)**

Minute # 24 of the Hearing Commissioners – Point of Clarification

1. The panel has been reviewing the information provided by the parties to give due consideration to closing the hearing. We have identified a point of clarification with respect to Dr Keeley's Revised Appendix 3 edits from June 8 2022 that we would like to be addressed.
2. Page 4 of the table refers to 16.3ha of clump reef being within the 1143t area of soft sediment response uncertainty. We would like clarification of the area that relates to the proposed north farm and the area that relates to the proposed south farm (i.e. how the 16.3 ha is split between the two proposed farms). We direct that the Applicant supply this information by **5pm Thursday September 8 2022**.
3. We direct that no other information is to be provided.
4. We consider that no natural justice issues arise from the request.
5. I direct that the Administrator and Hearings Facilitator, Sue Bulfield-Johnston, circulate this minute and all information outlined above to all parties to the proceedings.

Dated: 5 September 2022.

Craig Welsh
Chairman

IN THE MATTER of the Resource Management Act 1991

AND

IN THE MATTER of application U190438 by The New Zealand King Salmon Company Limited for Coastal Permit (Marine Farm) – North of Cape Lambert, North Marlborough

BEFORE **Marlbourough District Council (MDC)**

Minute # 25 of the Hearing Commissioners – Closure of Hearing and Extension of Decision Release Deadline

1. The Panel has reviewed the information provided during the hearing process. We now consider we have sufficient information to make a decision. Accordingly, we direct that the hearing is closed from 5.00pm on 12 September 2022.
2. We hereby extend the statutory time period to release our decision to 50 working days under section 37A(5) RMA due to the complex nature of the case and the significant amount of evidence we needed to consider. The Applicant has agreed to the extension.
3. In making the decision to extend the deadline we took into account the interests of the parties and the community in achieving an adequate assessment of the effects of the proposal, and our duty to avoid unnecessary delay as required by s37A(1). The extension also provides time for the MDC to release the decision taking into account the logistics involved in this process. We considered there are no natural justice issues arising from the extension.
4. We acknowledge and thank all the parties for their contribution to the hearing process.
5. I direct that the Administrator and Hearings Facilitator, Sue Bulfield-Johnston, circulate this minute to all parties to the proceedings.

Dated: 12 September 2022.

Craig Welsh
Chairman

Additional Important Information for Resource Consent Holders

The following information provided in this information sheet is a guide to the legal rights of applicants and submitters.

If you want to discuss matters raised in this information sheet you are welcome to contact Council. However, if you require specific advice you should contact an independent professional and refer to the relevant sections of the Resource Management Act 1991.

Commencement of a Resource Consent

Refer to section 116 of the Resource Management Act 1991

- Where no submissions were lodged or any submissions were withdrawn, a resource consent commences, (and may be actioned) on the date of the receipt of the decision.
- Where submissions were lodged to the application, and not withdrawn, the resource consent commences once the time for lodging an appeal has passed, provided no appeals have been received, or when all appeals have been resolved or withdrawn.
- If the resource consent was for activities controlled by the district plan on reclaimed land or land in the coastal marine area, or a restricted activity; then there are specific provisions regarding the commencement of resource consent. These provisions are outlined in section 116 of the Resource Management Act 1991.

Lapsing

Refer to section 125 of the Resource Management Act 1991

- If no lapse date is specified in the conditions of this consent, the consent will lapse 5 years after the decision date, unless the consent has been actioned (given effect to).
- Establishment conditions must be fully implemented to avoid a state of lapse. You may apply to vary these conditions or extend the lapse date.

Conditions of Resource Consent

Refer to section 108 of the Resource Management Act 1991

- If conditions are imposed these will be set out in the decision document.
- Please read your consent and ensure that you fully understand any conditions.
- If you have concerns with any condition(s), in the first instance you should discuss your concerns with Council, although an option may be to lodge an appeal or objection.
- It is a legal requirement that there be **compliance with** all conditions.
- If any conditions are contravened it may be that the Council or members of the public will initiate enforcement action (outlined in Part XII of the Resource Management Act 1991).

Change or Cancellation of Conditions of Resource Consent

Refer to section 127 of the Resource Management Act 1991

- The consent holder may apply to the Council to change or cancel conditions of the consent, except a condition specifying duration.

Monitoring Fees

Refer to section 36 of the Resource Management Act 1991 and the Council's Schedule of Fees

- The consent holder will be charged for actual and reasonable costs associated with the monitoring of this consent.

Objections

Refer to section 357 of the Resource Management Act 1991

- In certain circumstances the applicant has the right to object to the Council's decision.
- Any objection shall be made in **writing** and will need to outline the reasons for the objection.
- An objection needs to be lodged with the Council within **15 working days** of the Council's decision being received by you or your agent.

Appeals

Refer to Form 16 and sections 120 and 121 of the Resource Management Act 1991

- The applicant and any submitters have the right to appeal the whole or any part of the Council's decision, however there is no right of appeal against the whole or any part of the decision to the extent that the decision relates to one or more of the following, but no other, activities:

  a) a boundary activity, unless the boundary activity is a non-complying activity;

  b) a subdivision, unless the subdivision is a non-complying activity;

  c) a residential activity as defined in section 95A(6), unless the residential activity is a non-complying activity.

- A submitter can only appeal to the Environment Court if their appeal is related to a matter raised in their submission and their submission, or the part of their submission to which the appeal relates, has not been struck out under section 41D of the Resource Management Act 1991.
- A notice of appeal must be lodged with the Environment Court and the Council, within **15 working days** of the Council's decision being received (or received by your agent on your behalf). A copy also needs to be served on the applicant and submitters to the application within 5 working days of the notice being lodged with the Environment Court.

Before lodging an objection or an appeal it is recommended that you seek professional advice.

Subdivision Consents

Refer to sections 223 and 224 of the Resource Management Act 1991

- If no lapse date is specified in the conditions of this consent, the consent will lapse 5 years after the decision date, unless the consent has been actioned (given effect to). The lapse date is subject to the provisions of section 125 of the Resource Management Act 1991.
- The consent holder has a further 3 years following the issue of the section 223 approval to obtain a section 224 certificate from Council and lodge the survey plan for deposit with Land Information New Zealand prior to the resource consent lapsing.
- Payment of any compensation due as a result of road vesting or esplanade acquisition will be made upon receipt of your invoice and evidence that the new certificates of title have issued with the esplanade strip agreement registered on them, or vesting completed.

Annotation History

Date	Reason for Amendment/Alteration