



Client Ref: MFE BRF-34/DOC 21-B-0569

20 September 2021

Office of the Hon David Parker Private Bag 18041 Parliament Buildings WELLINGTON 6160

Attention: Hon David Parker

Dear Minister

COVID-19 Recovery (Fast-Track Consenting) Act 2020 – Hananui Aquaculture Project – Request for further information

This letter responds to the 8 September 2021 request from you and Minister Allan for further information in relation to the Hananui Aquaculture Project. Answers to Questions 1 and 2 of your request are outlined below, and answers to Questions 3 and 4 are addressed in the separate report attached to this letter.

Question 1

When does the applicant anticipate completing all baseline monitoring and environmental assessments including those identified in the request for further information issued for the resource consent application lodged with the Southland Regional Council?

The gathering of baseline information for the necessary technical assessments to support the resource consent application to Environment Southland for the Hananui Aquaculture Project was completed in 2019 and 2020 and is reported in the various technical assessments and the Assessment of Environmental Effects that accompanied that application under the RMA. This information will be contained in any application submitted under the COVID-19 Recovery (Fast-track Consenting) Act 2020.

As is typical for a large marine aquaculture proposal, further detailed baseline monitoring to inform the development and adaptive management of the project will commence once consent has been granted. As the Ministers will appreciate, the process of gathering extensive data in a dynamic marine environment such as Foveaux Strait is expensive, and the investment required can only be justified once Ngāi Tahu Seafood knows that it has the necessary consent to develop the project.

A year's worth of baseline monitoring is planned and a proposal for that has been developed and is currently being discussed with Environment Southland, the Department of Conservation and Fisheries New Zealand, followed by consultation with and input from Murihiku Papatipu Rūnanga. The proposed baseline monitoring will be outlined in any application under the COVID-19 Recovery (Fast track consenting) Act 2020.

Since the application for referral was lodged with the Ministers the last of the environmental assessments (a wild fish assessment requested by Environment Southland as part of its request for further information) has been completed. All environmental assessments are now complete.

Question 2

If the Project is referred under the FTCA:

- a. when does the applicant anticipate being able to lodge a consent application with all supporting technical information to the Environmental Protection Authority (EPA)?
- b. is the applicant proposing to submit technical assessments with or without peer reviews with a FTCA application to the EPA?

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PO Box 13-052 Armagh Christchurch 8141 TEL +64 3 366 7449 FAX +64 3 366 7780 As noted above in response to Question 1, the last of the environmental assessments has been completed. Since lodging the application for referral under the COVID-19 Recovery (Fast track consenting) Act 2020 Ngāi Tahu Seafood has worked on updating the existing resource consent application to reflect the section 92 response information provided to Environment Southland and to further refine the thresholds, monitoring and adaptive management approach for the Project. Ngāi Tahu Seafood has also met with technical experts from Environment Southland and the Department of Conservation to discuss and agree a series of measures to further manage the interaction of marine species (marine mammals, seabirds and sharks) and the proposed marine farms, and intends to continue discussions with Environment Southland, the Department of Conservation, Fisheries New Zealand and Murihiku Papatipu Rūnanga in relation to the development of proposed consent conditions to reflect the technical assessments. The outcome of all of these discussions will be included in any application.

Ngāi Tahu Seafood anticipates that a consent application with all supporting technical information would be lodged with the Environmental Protection Authority before the end of the year, if the application for referral is accepted.

Each of the technical assessments has been subject to internal peer review as part of the standard quality assurance processes of each provider. In addition, after making its request for further information and receiving updated technical information, Environment Southland has commissioned a series of reviews and made drafts of these available to Ngāi Tahu Seafood, and notes have been taken at each of the discussions with Environment Southland, the Department of Conservation and Fisheries New Zealand. All of this information will be provided with any application to the Environmental Protection Authority.

Yours sincerely

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Frances Lojkine Senior Principal Planner Stantec New Zealand

Reviewed By: Richard Peterson

Encl.:

Response in relation to Question 3 and Question 4

Hananui Aquaculture – Response to Ministerial Request for further information

PREPARED FOR NGAI TAHU SEAFOOD RESOURCES | SEPTEMBER 2021

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Revision Schedule

0 15/9/ 1 22/9/	/9/21 First draft /9/21 Final		Prepared by FL	Checked by EA	Reviewed by RP	Approved by FL
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1 Purpose of this report

On 8 September 2021 Stantec New Zealand (Stantec), on behalf of Ngāi Tahu Seafood Resources, received a request for further information from Minister David Parker (Minister for the Environment) on behalf of himself and Minister Kiri Allan (Minister of Conservation) in relation to the application for the Hananui Aquaculture Project to be referred under the COVID 19 Recovery (Fast track consenting) Act 2020.

Two of the questions posed by the Minister have been answered in a covering letter, but Question 3 and Question 4 required more detailed answers. The purpose of this report is to provide those more detailed answers. The report first addresses Question 3 (including through associated appendices) and then Question 4.

2 Question 3 – Consistency with NZCP

Question 3 of the Ministerial request for further information is as follows:

Our consideration of whether to accept your application for referral requires consideration of the Project's consistency with the New Zealand Coastal Policy Statement (NZCPS). We note that policies 3 (precautionary approach), policy 8 (aquaculture), and policies 11, 13 and 15 require adverse effects on threatened species, ecosystems and habitat, natural character of the coastal environment and outstanding natural landscapes to be avoided. These policies appear to be the most directly relevant policies of the NZCPS. Please provide information regarding how the proposed adaptive management approach is consistent with the NZCPS, and in particular policies 11, 13 and 15.

The sections that follow provide the analysis requested. Values of the coastal environment that are relevant to the NZCPS policies are identified in Appendices A, B and C of this report. As Policy 3 of the NZCPS refers to the management of effects that are uncertain, unknown or little understood, the analysis that follows deals first with the specific topics addressed in Policies 11, 13 and 15 in order to give context to those effects, and then turns to Policy 3, before concluding with comments in relation to the enabling policy for aquaculture, Policy 8.

2.1 Adaptive management and the NZCPS

Any discussion of adaptive management needs to be set within the hierarchy of management of effects that is outlined in Policies 11, 13 and 15 of the NZCPS. 'Adaptive management' as a concept encompasses a wide range of measures that can be aimed at avoiding, remedying and or mitigating adverse effects, and so the type of and applicability of adaptive management for any particular effect depends at least in part on the policy direction for managing that effect.

Policies 11, 13 and 15 of the NZCPS all adopt an approach of specifying areas, components or species in the coastal environment on which adverse effects are to be avoided, Policy 11 focusing on threatened and at risk species, ecosystems and habitats, Policy 13 on outstanding natural character and Policy 15 on outstanding natural features and outstanding natural landscapes. Policy 11(b) then identifies a number of further specific values of the coastal environment where significant adverse effects are to be avoided, and other effects are to be avoided, remedied or mitigated. By contrast Policies 13 and 15 are broader and apply to all areas of the coastal environment outside outstanding areas, and require that significant adverse effects be avoided, remedied or mitigated.

Adaptive management is typically used to manage effects either where complete avoidance is not required (for example where significant adverse effects need to be avoided, but other effects can be managed) or as an additional layer to strengthen measures adopted to avoid effects. Adaptive management also encompasses a wide range of measures, from the staged and progressive development of a project with comprehensive monitoring and feedback loops to manage adverse effects and avoid them becoming significant, to finer scale operational management through management plans tied to objectives and outcomes to support avoidance of effects. Different types of adaptive management are planned for the Hananui Aquaculture Project, commensurate with the level of risk and scale of effects. Where avoidance of effects is the prime management measure and a small risk remains, adaptive management is proposed as part of the measures to address that small residual risk. Where avoidance of effects is not required to achieve the protection of values addressed in the NZCPS, and effects may be more widespread as a result, broader scale, but appropriately targeted adaptive management is proposed.

The prime focus for Ngāi Tahu Seafood in developing the Hananui Aquaculture Project has been to avoid adverse effects where required by the NZCPS, for example on threatened and at risk marine species, ecosystems and habitats, on areas of outstanding natural character and on outstanding natural features and outstanding natural landscapes. Avoidance of these effects is largely achieved for this project through careful siting of the proposed farms, appropriate engineering design of structures, and prudent management practices including feed management and single year class farming. Adaptive management is only proposed to strengthen attainment of this avoidance in relation to threatened and at risk ecosystems and habitats, and at the finer operational level where management plans tied to defined objective es and outcomes can be used to both avoid effects and respond to any isolated incidents so that adverse effects on populations of marine species are avoided. All other outstanding areas have been avoided in the development of the project.

Where significant adverse effects need to be avoided, adaptive management through staged and progressive management of development of the site is proposed. Environmental objectives have been defined, thresholds for ensuring those environmental objectives are attained have been developed, and monitoring and feedback loops are being discussed with Environment Southland, the Department of Conservation, Fisheries New Zealand and Murihiku Papatipu Rūnanga. The project will commence at a feed level well below the maximum proposed, with staged increases in feed levels dependent on acceptable monitoring results and the maintenance of the receiving environment consistent with the defined environmental objectives. This approach is consistent with consenting of finfish marine farming over the last ten years, including the decision of the Supreme Court in *Sustain our Sounds Inv v NZ King Salmon Company* [2014] NZCS 40.

2.2 Policy 11

Policy 11 of the NZCPS concerns indigenous biological diversity, and lists species and habitats for which adverse effects should be avoided (Policy 11(a)) and areas and habitats where significant adverse effects should be avoided and all other adverse effects should be avoided, remedied or mitigated (Policy 11(b)).

2.2.1 Policy 11(a)

Policy 11(a)(i), (ii), (iii) and (iv) are relevant to the Hananui Aquaculture Project.

With respect to Policy 11(a)(i) and (ii), six marine mammal species, three shark species and thirty-one species of birds found within a broad area of the Southland coastal marine area that includes the proposed site are listed as threatened or at risk on the New Zealand Threat Classification System or the IUCN Red List or both. For six bird species (including one species that is not threatened or at risk) Rakiura or its offshore islands provide the southern-most breeding colonies for the species, meaning that they potentially fall within Policy 11(a)(iv), although their foraging habitat is wider than the area of the proposed site.

The Hananui Aquaculture Project has been assessed against these sections of Policy 11 of the NZCPS on the basis of effects at the species and population level. This approach has been adopted recently in the decision by the consenting panel on the Te Ara Tupua – Ngauranga to Petone Shared Path (a listed project under the COVID 19 Recovery (Fast-track Consenting) Act 2020)¹. It is an appropriate approach in relation to species that have widespread populations. The one exception to this is the Whenua Hou diving petrel, a recently described bird species previously considered a sub-population of South Georgia diving petrel, which has a small population restricted to Whenua Hou (an offshore island to the west of Rakiura). The breeding colony for this species is too remote from the proposed site for it to be affected by activities, and the proposed site occupies only a very small part of its foraging range, so the potential for adverse effects has been considered in that context.

Marine mammals (Policy 11(a)(i) and (ii))

As part of the technical work associated with the project to date, Ngāi Tahu Seafood commissioned the Cawthron Institute to undertake an assessment of potential effects on marine mammals. While documented effects on marine mammals from aquaculture activities primarily relate to habitat displacement/exclusion and entanglement in structures, in order to be comprehensive, Cawthron has also assessed the potential effects of underwater noise, submerged lighting and flow-on effects due to alterations in trophic pathways. In summary:

- The likelihood of habitat displacement or avoidance behaviours associated with marine farms at the proposed site is considered low for marine mammals, and finfish aquaculture is not known to generate intense or consistently loud underwater sounds or involve large volumes of vessel traffic that could result in habitat displacement any greater than other existing human activities in the coastal marine area;
- The risk of attraction (primarily to a food source) is considered to be moderate for marine mammals;
- Consequences of any displacement effects (if they occur) are uncertain, particularly for whale species, due to a lack of adequate data (both in New Zealand and internationally), but the proposed farm area is not considered to be particularly rare and/or unique in terms of feeding, resting or breeding habitats for the identified threatened species, so significant adverse effects are not anticipated;
- The proposed site represents a very small part of the overall home range of resident or visiting marine mammal species;
- The likelihood of entanglement is considered low for all the marine mammal species considered;
- In rare circumstances, the consequence of an entanglement could have regional level population repercussions depending on the animal involved (for example, the entanglement and death of a mature female NZ sea lion could conceivably cause an adverse effect on the local population, as there is a small but recovering breeding population

¹ Te Ara Tupua – Ngā Ūranga ki Pito-One – Shared Path, Decision of the Expert Consenting Panel 5 February 2021, paragraphs 207 – 211.

of NZ sea lion on Rakiura at Port Pegasus, but would probably not have an effect on the population of the species overall);

- Risks can be reduced through appropriate farm design and strict operational procedures to avoid the farms becoming known as a food source to local marine mammals;
- Any effects of noise from the proposed marine farms and their associated operations are expected to be nil to negligible;
- Marine mammals may be attracted to any increase in wild fish activity associated with the use of underwater lighting. This attraction is not an effect in itself, but becomes a potential issue in terms of entanglement, which has been noted above;
- The large home ranges and generalist feeding strategies of most marine mammals ensure that any localised effects on prey resources do not have substantial flow-on effects to the marine mammal population.

The greatest risk therefore appears to be one of entanglement. Ngāi Tahu Seafood is intending to use semi-rigid outer nets with an appropriate mesh size to prevent marine mammal entanglements, and to manage the marine farm sites to avoid them acting as a food source for marine mammals. A meeting of technical experts from Ngāi Tahu Seafood, the Department of Conservation and Environment Southland has resulted in a series of recommendations concerning net type, mesh size and operational procedures that will be implemented to reduce the risk of adverse effects. Adverse effects on individual marine mammals will be avoided if no entanglements occur. The approaches that will be proposed by the applicant, and would be subject to appropriate consent conditions, will minimise the risk of entanglement of Conservation and Environment Southland. Attaining a zero residual risk of entanglement is not possible (as will always be the case in proposals such as this which take place in locations that might be accessed by what are highly mobile species), but the project is not anticipated to result in adverse effects on any marine mammal species overall, as required by Policy 11(a)(i) and (ii) of the NZCPS.

While it is anticipated that adverse effects on marine mammal species at a population level will be avoided through the appropriate location, design and operation of the proposed marine farms, any risks to individual animals will be managed by the use of fine scale operational management, with Ngãi Tahu Seafood in the process of developing a marine mammal management plan to support the avoidance of effects during the operation of the marine farm. Objectives and outcomes for management of interaction with marine mammals will be defined, and a continuous learning and adaption process put in place to manage the residual risk of effects. Ngãi Tahu Seafood is also committed to employing dedicated staff members and trained staff to implement the plan and monitor marine mammal activity within the vicinity of the proposed marine farms. Should an entanglement happen review of the circumstances surrounding entanglement and revision of operational practices against the objectives and outcomes specified in the plan will occur, so that management of the proposed marine farms continues to adapt to the presence of marine mammals over the life of the project. This is considered to be an appropriate approach based on confidence in the measures adopted to avoid effects on threatened and at risk marine mammal populations.

Seabirds (Policy 11(a)(i), (ii) and (iv))

Ngāi Tahu Seafood has commissioned Boffa Miskell Limited to provide advice and assessment in relation to potential effects of the proposed marine farms on seabirds.

In common with marine mammals a number of potential risks to seabirds exist from the establishment and operation of the proposed marine farms – entanglement, habitat exclusion, changes to food supply, disturbance, marine litter, boat propellor strike and attraction to artificial lighting at the site. Fifteen of the thirty-one identified threatened species were identified as key species to consider for these effects, based on either their natural diving behaviour potentially putting them at risk of entanglement, or the presence of local breeding colonies increasing the consequences of effects on the birds. These species are relevant to a consideration of Policy 11(a)(i) and (ii). Six bird species (including one that does not have a threatened status) have also been identified as having their southernmost breeding colonies on Rakiura and offshore islands in the vicinity, although their foraging ranges will extend beyond this area. These species are relevant to a consideration of Policy 11(a)(v). All species are identified in the policy analysis contained in Appendix A of this report.

In summary:

- The potential exists for diving birds attracted to the penned fish and any waste feed being injured or drowned as a result of entanglement with nets. The use of appropriately sized mesh, dark colours and rigid netting means the magnitude of effects has been assessed as low to negligible for the relevant threatened and at risk species;
- The habitat for surface feeding seabirds would be reduced by the physical presence of farm structures, although only at a local scale. The magnitude of the effect has been assessed as negligible, based on the small area occupied by the proposed marine farms in relation to the large area of foraging habitat available;
- Finfish marine farming has the potential to change seabird food supply through provision of a food supply from farm
 waste, aggregation of seabird prey fish around the farm structures, and changes to the benthic habitat. The
 potential adverse effect would arise if changes to the seabed resulted in adverse changes to food supply for benthic
 foraging seabirds. The magnitude of the effects has been assessed as negligible, based on the small area occupied
 by feed added aquaculture in the area compared to the large total area of suitable habitats available for foraging
 seabirds;
- The presence of marine farms and activities associated with them (including additional small boat traffic) can disturb breeding and feeding seabirds. The potential effects have been determined to be negligible, based on the small

area occupied by the proposed site compared to the large total area of suitable habitats available for foraging seabirds;

- Ingestion of marine litter can lead to seabird death through dehydration, blockage of the digestive tract or toxins
 released from the litter. Provided that a waste management plan is developed and implemented by Ngāi Tahu
 Seafood to avoid the occurrence of marine litter, the potential effect on seabirds will be negligible;
- Underwater propellor strike poses a potential risk for penguin species. The potential effect has been determined to be negligible, as the proposed marine farms would not significantly increase boat traffic in the area (which is already subject to relatively high levels of boat traffic), and the deeper foraging depths of the two threatened penguin species;
- Artificial lighting may attract seabirds, leading to collisions with structures, and may reduce the availability of bioluminescent prey as they avoid lit areas of the water column. Effects have been determined to be low to negligible on the susceptible seabird species (shags and petrels) based on lighting being angled downwards and underwater lighting being confined to within the areas of the net pens.

From the assessment of effects on seabird species, the greatest risks to threatened species may arise from entanglement (for Foveaux Shag) and artificial lighting affecting bioluminescent prey availability (for Whenua Hou diving petrel).

In terms of the entanglement risk, Ngāi Tahu Seafood is intending to use rigid nets with an appropriate mesh size to prevent seabird entanglements, with mesh size determined based on the size of the smallest birds likely to be at risk (Whenua Hou diving petrel and common diving petrel). The marine farm sites will also be closely managed to avoid them acting as a food source for seabirds. A meeting of technical experts from Ngāi Tahu Seafood, the Department of Conservation and Environment Southland has resulted in a series of recommendations concerning net type, mesh size and operational procedures that will be implemented to reduce the risk of adverse effects. Adverse effects on individual birds will be avoided if no entanglements occur. The approaches that will be proposed by the applicant, and would be subject to appropriate consent conditions, will minimise the risk of entanglement to the greatest practicable extent, in line with the advice of experts engaged by Ngāi Tahu Seafood, the Department of Conservation and Environment Southland. Attaining a zero residual risk of entanglement is not possible (as will always be the case in proposals such as this which take place in locations that might be accessed by what are highly mobile species), but the entanglement of an individual of any given species is not anticipated to result in adverse effects on the species overall, as required by Policy 11(a)(i) and (ii) of the NZCPS.

The key to avoiding adverse effects on individual Foveaux Shag is to adopt design and operational procedures (including use of dark coloured rigid nets) to avoid entanglements occurring as far as possible, and to respond promptly and thoroughly to any entanglements that do occur. Any risks to individual birds will be managed by the use of fine scale operational management, with Ngāi Tahu Seafood in the process of developing a seabird management plan to support the avoidance of effects during the operation of the marine farms. Objectives and outcomes for management of interaction with seabirds will be defined, and a continuous learning and adaption process put in place to manage the residual risk of effects. Ngāi Tahu Seafood is also committed to employing dedicated staff members and trained staff to implement the plan and monitor seabird activity within the vicinity of the proposed marine farms. Should an entanglement occur review of the circumstances surrounding entanglement and revision of operational practices against the objectives and outcomes specified in the plan will occur, so that management of the proposed marine farms continues to adapt to the presence of seabirds over the life of the project. This is considered to be an appropriate approach based on confidence in the measures adopted to avoid effects on threatened and at risk seabird populations.

In terms of the risk of changing bioluminescent prey availability, the area of the water column affected by underwater lighting would be restricted to the pens. The surface area proposed to be occupied by net pens totals an area of approximately 0.16 km² compared to the approximately 3,300 km² of Foveaux Strait, which in itself represents only part of the foraging range for Whenua Hou diving petrel based on available seabird tracking data. On this basis, the hypothesis that a reduction in the availability of bioluminescent prey in an extremely small area of the potential foraging range would lead to an adverse effect on the population of Whenua Hou diving petrel is not a reasonable conclusion to draw, and the proposed marine farms are therefore not anticipated to have adverse effects on the species.

Sharks (Policy 11(a)(i) and (ii))

Ngāi Tahu Seafood has commissioned NIWA to provide advice and assessment in relation to potential effects of the proposed marine farms on sharks.

White sharks are listed by the IUCN as a threatened species. There are no records of great white shark entanglements with marine farms in New Zealand, but white sharks have been recorded in Foveaux Strait and would be likely to be attracted to the fish contained within any net pens. Attraction of white sharks can be minimised as far as possible by regular removal of any dead fish from the net pens. Risks of entanglement can be reduced by utilising a net design that minimises the chances of shark interactions, generally either the double-net system comprising a grower net and a surrounding predator exclusion net, or by use of a rigid single net system. For management of the risks to marine mammals, seabirds and sharks Ngāi Tahu Seafood is intending to implement a semi-rigid outer net at the site, with a softer inner grower net, but well removed from the outer net to avoid possibility of entanglement for all marine species.

There are examples of successful removal of white sharks from marine farm nets internationally, and so entanglement may not result in fatalities. As with seabirds, while adverse effects on individuals may potentially occur (although that

potential appears to be very low), the lack of white shark interactions with marine farms in New Zealand to date, the low number of recorded interactions internationally, and the presence of white shark populations well beyond Southland, mean that adverse effects at a global population level are not anticipated, consistent with Policy 11 of the NZCPS.

Any risks to individual sharks will be managed by the use of fine scale operational management, with Ngāi Tahu Seafood in the process of developing a shark management plan to support the avoidance of effects during the operation of the marine farms. Objectives and outcomes for management of interaction with seabirds will be defined, and a continuous learning and adaption process put in place to manage the residual risk of effects. Ngāi Tahu Seafood is also committed to employing dedicated staff members and training staff to implement the plan and monitor white shark activity within the vicinity of the proposed marine farms. Should an entanglement occur review of the circumstances surrounding entanglement and revision of operational practices against the objectives and outcomes specified in the plan will occur, so that management of the proposed marine farms continues to adapt to the presence of white sharks over the life of the project. This is considered to be an appropriate approach based on confidence in the measures adopted to avoid effects on threatened and at risk shark populations.

The IUCN also lists spiny dogfish and school shark as threatened species. Commercial fisheries (predominately set net) in Foveaux Strait take school shark and spiny dogfish (as target catch or bycatch). In addition, neither species is large enough to break into marine farm pens and adverse effects on them as a result of the Hananui Aquaculture Project are not anticipated.

Threatened indigenous ecosystems and vegetation types (Policy 11(a)(iii))

Biogenic habitat (bushy bryozoans and bryozoan sponge reefs) is an indigenous ecosystem found in Foveaux Strait, and identified as important in the Southland Murihiku Conservation Management Strategy (CMS) and in NZCPS guidance, and are therefore relevant to Policy 11(a)(iii). Whether these ecosystems are considered to be 'threatened' is not clear however, as no definition of the term is included in the NZCPS. In a generic sense, bushy bryozoans and bryozoan sponge reefs in Foveaux Strait are threatened by a number of existing activities, predominantly the ongoing operation of a dredge oyster fishery, but also some bottom trawling and the regular anchoring of ships (the latter particularly in the vicinity of the proposed Hananui Aquaculture Project site. Insufficient information is available to determine whether there are 'naturally rare' indigenous ecosystems in Foveaux Strait, however measures proposed to avoid effects on threatened indigenous ecosystems will provide the same level of protection from effects for any naturally rare habitats that could be affected by the proposed activities.

The proposed marine farms will be located over sandy habitat rather than areas of bushy bryozoans and bryozoan sponge reefs, to avoid physical damage from farm mooring systems. The response of species within these areas to low levels of enrichment (from waste feed and fish faeces) is not certain, but enrichment may act as a food source at low levels. Given the uncertainty, more broad scale adaptive management is key to ensuring that adverse effects on these areas are avoided. The proposed marine farms have been positioned to avoid significant deposition on biogenic habitat. Discharges of feed are proposed to start at 40% of the maximum discharge level proposed, with comprehensive monitoring of all seabed habitat, and increases in feed levels contingent on acceptable environmental effects, including on areas of bushy bryozoans and bryozoan sponge reefs. Feedback loops included in adaptive management processes will then enable production to be reduced if there are indications that adverse effects on the areas of bushy bryozoans and bryozoan sponge reefs. Recent technical discussions with Environment Southland, the Department of Conservation and Fisheries New Zealand have confirmed that this is an appropriate approach, and work is continuing on developing consent conditions to set out monitoring and triggers for adaptive management to avoid adverse effects on this habitat.

2.2.2 Policy 11(b)

Policy 11(b)(ii), (iii), (iv) and (v) are relevant to the Hananui Aquaculture Project.

Habitats in the coastal environment that are important during the vulnerable life stages of indigenous species (Policy 11(b)(ii))

The coastal marine area along the coast of Rakiura may provide winter mating habitat for Southern right whale, although this is not confirmed, and the regular anchoring of ships in the vicinity of the proposed site likely already reduces the chances that this area is currently important for this. Waters around Rakiura also provide habitat for a recovering breeding colony of NZ sea lions, which are establishing on Rakiura (particularly around Port Pegasus in the southeast of the island).

Any potential adverse effect on the habitat of these species would be caused by the presence of structures and the potential species displacement or entanglement risks that arise. Both of these potential effects have been discussed in relation to Policy 11(a)(i) and (ii) above, as both Southern right whale and NZ sea lion are threatened or at risk. Referring to that discussion adverse effects on either species on a regional or national population basis are not anticipated, thus also ensuring consistency with Policy 11(b)(ii). The role of adaptive management in ensuring this relates to responses to any isolated entanglement incidents, which would prompt a review of potential causes and operational procedures to reduce the chances that entanglement will occur again.

Indigenous ecosystems and habitats found only in the coastal environment and that are particularly vulnerable to modification (Policy 11(b)(iii)

Biogenic habitat (bushy bryozoans and bryozoan-sponge reefs) are indigenous ecosystems and habitats that are only found in the coastal environment and are particularly vulnerable to modification.

Bryozoan-sponge reefs are particularly vulnerable to physical modification, with damage to erect bryozoan colonies taking decades to recover. Bryozoan-sponge reefs in Foveaux Strait are already affected by oyster dredging, bottom trawling and ship anchoring in the Strait. For the Hananui Aquaculture Project, the proposed marine farms will be located over sandy habitat rather than areas of bushy bryozoans and bryozoan sponge reefs, to avoid physical damage to them.

The response of species within areas of bushy bryozoans and bryozoan-sponge reefs to low levels of enrichment and measures to avoid adverse effects have been discussed in relation to Policy 11(a)(iii) above. The approach outlined with respect to that policy ensures that the proposal is consistent with Policy 11(b)(iii) as well.

Habitats of indigenous species in the coastal environment that are important for recreational, commercial, traditional or cultural purposes (Policy 11(b)(iv))

Biogenic habitat within Foveaux Strait provides habitat for Bluff oyster and blue cod, both important recreational, commercial and cultural species.

A variety of other fish species are caught commercially, recreationally and for cultural purposes in Foveaux Strait, but either do not have a particular habitat identified as important to them, or have habitat identified that is not likely to be affected by the Hananui Aquaculture Project (e.g. coastal rocky reef areas).

The proposed site is likely to provide foraging habitat for sooty shearwater (titi).

As described in relation to Policy 11(a)(iii), significant adverse effects on these habitats are not anticipated as a result of the Hananui Aquaculture Project. Use of adaptive management to avoid adverse effects, consistent with Policy 11(a)(iii) means that the activity will also be consistent with Policy 11(b)(iii).

Habitats, including areas and routes, important to migratory species (Policy 11(b)(v))

Foveaux Strait is used by white sharks during their annual migrations. The region may also be used by broadnose sevengill shark as they are suspected to move seasonally between the South Island and Rakiura, but movements of this species have not been quantified. Foveaux Strait is also used as a migration route by Southern Right Whale and Humpback Whale.

The implementation of design and operational procedures (including adaptive responses) as discussed in relation to Policy 11(a)(i) and (ii) above aims to ensure that adverse effects on migrating species are avoided, meaning that the activity is also consistent with Policy 11(b)(v).

2.3 Policy 13

Policy 13 of the NZCPS relates to the preservation of the natural character of the coastal environment and its protection from inappropriate use and development, and seeks to ensure that adverse effects of activities on areas of outstanding natural character are avoided, and in all other areas of the coastal environment significant adverse effects are avoided and all other adverse effects are avoided, remedied or mitigated. Policy 13 achieves Objective 2 of the NZCPS, which necessitates a recognition of the characteristics and qualities that contribute to natural character, and identification of areas where activities would be inappropriate.

Policy 13 identifies that natural character is to be preserved in part by assessing the natural character of the coastal environment of each region by mapping or otherwise identifying at least areas of high natural character, and by ensuring that regional policy statements and plans identify areas where preserving natural character requires objectives, policies and rules and including those provisions. The Southland Regional Policy Statement post-dates the NZCPS but does not give effect to Policy 13's requirements. Instead, it leaves that to be achieved via a review of the operative Regional Coastal Plan. Environment Southland has not yet publicly notified a reviewed Regional Coastal Plan and while a review has commenced there is currently no indication as to when notification will occur.

Irrespective of this, Ngāi Tahu Seafood commissioned Rough and Milne Landscape Architects to undertake an assessment of natural character for the Hananui Aquaculture Project. Their assessment of the existing natural character, and conclusion in relation to whether areas can be described as outstanding is contained in Appendix B of this report.

In summary, Rough and Milne conclude that the Coastal Terrestrial Area (the area from mean high water springs inland to the dominant ridgeline between Hananui / Mt Anglem, Little Mt Anglem, The Paps and further south along the closest highpoints above the northern coastline of Rakiura between Saddle Point to the north and Port William to the south) is an area of outstanding natural character. The Coastal Marine Area (the area from mean high water springs out to sea) is considered to be an area of moderate high natural character. On the basis of that assessment, Policy 13 of the NZCPS anticipates adverse effects should be avoided on the Coastal Terrestrial Area; significant adverse effects should be avoided on the Coastal Marine area and all other adverse effects should be avoided, remedied or mitigated.

In relation to the potential effects on natural character, the assessment by Rough and Milne concludes that:

- While the proposal would result in a low (less than minor) level of adverse effects on abiotic, biotic and experiential aspects of natural character, the natural character of the Coastal Marine Area will remain moderate high
- There will be no adverse effects on the outstanding natural character of the coastal terrestrial area on Rakiura/Stewart Island

In order to be consistent with Policy 13 therefore, management of the Hananui Aquaculture Project would need to ensure that the less than minor adverse effects anticipated on the natural character of the Coastal Marine Area are avoided, remedied or mitigated.

Minor adverse effects on the biotic aspects of natural character are intended to be avoided, remedied or mitigated through the implementation of the proposed staged development and adaptive management approach for the project. Minor adverse effects on the abiotic aspects of natural character will be avoided or mitigated by the location of the proposed marine farms in an area of active seabed movement, where sediment resuspension resulting from anchor installation will quickly remedy effects and the installation of structures at the site over a period of time will allow monitoring of effects and adjustment of installation processes if required. Anchors and anchor blocks will reduce natural character of the seabed in their immediate area, but areas with high natural values (such as areas of bushy bryozoans and bryozoan sponge reefs) will be avoided and over time structures are likely to be become buried by movement of sediment.

Minor adverse effects on the experiential attributes of natural character will be mitigated by the location of the Hananui Aquaculture Project in an area of the Southland coastal marine area that is already subject to human activity through ship movements and fishing activities. With the exception of navigational lighting, there will be minimal lighting at night on the feed barges, and it will be shielded and directed downwards. Underwater lighting is not anticipated to be visible beyond the edges of the net pens. Navigational lighting will be additional to that already occurring in Foveaux Strait, but given the existing level of lighting Rough and Milne anticipate that the lighting associated with the project will be incidental and accepted as part of the receiving environment. Adverse effects on experiential attributes can be managed if necessary by the reversibility of the project; structures are not permanent and could be removed if effects greater than those currently anticipated occurred.

Overall the Hananui Aquaculture Project is therefore considered to be consistent with Policy 13 of the NZCPS.

2.4 Policy 15

Policy 15 of the NZCPS relates to the protection of the natural features and natural landscapes (including seascapes) of the coastal environment from inappropriate subdivision, use and development. The policy seeks to ensure that adverse effects on outstanding natural features and outstanding natural landscapes are avoided, and that significant adverse effects on all other natural features and natural landscapes are avoided (and that all other adverse effects are avoided, remedied or mitigated). Policy 15 achieves Objective 2 of the NZCPS, which necessitates a recognition of the characteristics and qualities that contribute to natural features and landscape values, and identification of areas where activities would be inappropriate.

Policy 15 identifies that natural features and natural landscapes are to be protected in part by identifying and assessing the natural features and natural landscapes of the coastal environment of a region, ensuring that regional policy statements and plans map or otherwise identify areas where the protection of natural features and natural landscapes requires objectives, policies and rules, and including those provisions in plans. The Southland Regional Policy Statement post-dates the NZCPS but does not give effect to Policy 15's requirements. Instead, it leaves that to be achieved via identification of natural features and landscapes in the Regional Coastal Plan. The current Regional Coastal Plan for Southland pre-dates the NZCPS and while a review has commenced Environment Southland has not yet publicly notified a reviewed Regional Coastal Plan and there is currently no indication as to when notification will occur.

Irrespective of this, Ngāi Tahu Seafood commissioned Rough and Milne Landscape Architects to undertake a landscape assessment for the Hananui Aquaculture Project. Their assessment of the existing landscape values, and conclusion in relation to whether natural features or natural landscapes can be described as outstanding is contained in Appendix C of this report.

In summary, Rough and Milne conclude that the Coastal Terrestrial Area (the area from mean high water springs inland to the dominant ridgeline between Hananui / Mt Anglem, Little Mt Anglem, The Paps and further south along the closest highpoints above the northern coastline of Rakiura between Saddle Point to the north and Port William to the south) and the Coastal Marine Area from mean high water springs to a distance of 2km offshore is an outstanding natural landscape. Beyond 2km offshore the landscape/seascape has landscape values, but is not considered to be outstanding. On the basis of that assessment Policy 15 of the NZCPS anticipates adverse effects should be avoided on the Coastal Terrestrial Area and the Coastal Marine Area from mean high water springs to a distance of 2km offshore, and significant adverse effects should be avoided and all other adverse effects should be avoided, remedied or mitigated on landscapes/seascapes beyond 2km offshore.

In relation to the potential effects on natural landscapes, the assessment by Rough and Milne concludes that:

- The distance offshore means that the proposed activity will have no adverse effects on outstanding natural landscape values;
- The relationship between the proposed activity and established ongoing fishing/harvesting activity in the vicinity means that the proposed activity will have very low (less than minor) effects on the values associated with other natural landscapes.

In order to be consistent with Policy 15 therefore, management of the Hananui Aquaculture Project would need to ensure that the less than minor adverse effects anticipated on landscape values beyond 2km offshore are avoided, remedied or mitigated.

Rather than implementing adaptive management, the less than minor effects of the proposed activity on landscape values are mitigated by the comparatively small nature and scale of the proposed marine farms in relation to the wider landscape/seascape context, and the consistency of the activities with the existing associative attributes of the area, being ongoing fishing and hunting practices occurring in the receiving environment. In these circumstances, implementation of adaptive management is not necessary.

Overall, the Hananui Aquaculture Project is therefore considered to be consistent with Policy 15 of the NZCPS

2.5 Policy 3

Policy 3 of the NZCPS seeks the adoption of a precautionary approach towards proposed activities whose effects on the coastal environment are uncertain, unknown or little understood, but potentially significantly adverse. With respect to the values of the coastal environment addressed by Policies 11, 13 and 15, potential adverse effects are not unknown or little understood. Some uncertainty exists in relation to effects on threatened and at risk species (because of the uncertainty about whether there will be effects, and the somewhat uncertain effects on population dynamics of a species if effects occur on an individual) and effects on the seabed and therefore natural character due to the assessment having to be based on modelling, in common with all current open ocean aquaculture applications. Importantly though, the design of the proposal is such that in most cases adverse effects would be avoided, and where this is not practicable the technical assessments have concluded that significant adverse effects would not arise from the proposed activity.

Notwithstanding this, Ngāi Tahu Seafood has adopted a precautionary approach to the proposed development of the Hananui Aquaculture Project. Sixteen technical assessments have been prepared to date to assess effects on the environment of the proposed activity at full development, and a staged development approach has been developed that would see feed discharges at the site commence at 40% of the proposed maximum feed discharge.

Specifically in relation to the matters addressed by Policies 11, 13 and 15, the use of adaptive management to address uncertainties in relation to effects on marine species has been discussed in section 2.1.1 of this report, and the proposed use of adaptive management as a tool to help ensure the requirements of these NZCPS policies are met throughout the life of the proposed project is considered appropriate and in line with the approach endorsed by the Supreme Court in Sustain our Sounds Inv v NZ King Salmon Company [2014] NZCS 40. In relation to effects on the natural character of the seabed, the proposed marine farms have been positioned to avoid significant deposition on biogenic habitat. Discharges of feed are proposed to start at 40% of the maximum discharge level proposed, with comprehensive monitoring of all seabed habitat, and increases in feed levels contingent on acceptable environmental effects, including on areas of bushy bryozoans and bryozoan-sponge reefs. Feedback loops included in adaptive management processes will then enable production to be reduced if there are indications that adverse effects on the areas of bushy bryozoans and bryozoan-sponge reefs may occur or that unacceptable enrichment of sand-based habitat is possible. Recent technical discussions with Environment Southland, the Department of Conservation and Fisheries New Zealand have confirmed that this is an appropriate approach, and work is continuing on developing consent conditions to set out monitoring and triggers for adaptive management to avoid adverse effects on this habitat in line with the approach endorsed by the Supreme Court in Sustain our Sounds Inv v NZ King Salmon Company [2014] NZCS 40. These plans will also be worked through with Murihiku Papatipu Rūnanga.

Overall, the Hananui Aquaculture Project is therefore considered to be consistent with Policy 3 of the NZCPS.

2.6 Policy 8

Policy 8 of the NZCPS provides for recognition of the significant existing and potential contribution of aquaculture to the social, economic and cultural well-being of people and communities, including by regional councils including in regional policy statements and regional coastal plans provision for aquaculture activities in appropriate places. While the Southland Regional Policy Statement post-dates the NZCPS, in common with the approach to natural character and natural features and natural landscapes, the Regional Policy Statement foreshadows that definition of areas that are appropriate for activities in the coastal marine area (including aquaculture) will be undertaken through regional plans. As previously noted, the current Regional Coastal Plan for Southland pre-dates the NZCPS and while a review has commenced Environment Southland has not yet publicly notified a reviewed Regional Coastal Plan and there is currently no indication as to when notification will occur.

While not yet contained within the Regional Coastal Plan for Southland, work on appropriate locations for aquaculture has been ongoing in Southland for some years, motivated in part by the 2015 Southland Regional Development Strategy

(the SoRDS) and its associated Action Plan 2015 – 2025 (which identifies aquaculture as 'the single greatest opportunity to create a new comparative advantage for Southland on an international scale) and the Government's Aquaculture Strategy 2019, one of whom's key drivers is to extend aquaculture into the open ocean.

In 2013 Environment Southland embarked on an Aquaculture Zoning Plan.² The purpose of the project was to provide 'overall strategic planning guidance for aquaculture in the Southland region by identifying areas where aquaculture may be constrained by the environment and other unique features or habitats'. Broken into a Stage 1, Stage 2 and Stage 3A, the project investigated Southland's coastal marine area in an increasing level of detail. In Phase 1 potential opportunities and constraints for marine aquaculture throughout the region were identified. The most significant constraint identified was proximity to conservation areas, followed by exposure to heavy seas and wave action.

Phase 2 took the 'satellite' view of the region's coastal marine area provided by the Phase 1 work and refined it further by looking at specific constraints – particularly the characteristics of the water column and wave environment, the ecological values in each area, adjacent land uses, and whether mataitai/customary areas and/or marine reserves existed in the vicinity. In total 52 separate areas of the Southland coastal marine area were considered in Phase 2 of the project. Twenty of the areas had significant regulatory or ecological constraints identified (e.g. presence of marine reserves, marine mammal sanctuaries or nationally significant habitat) which would make it unlikely that consent could be gained to establish aquaculture in the areas, but 32 areas could be farmed if technological constraints posed by the site or water column characteristics could be addressed.

Phase 3A of the project consisted of an evaluation and ranking of locations that might be worth investigating in further detail for aquaculture proposals. The majority of the top ranked sites are located in areas where marine farming is currently prohibited, and so the report notes that further investigations of these sites would not be warranted unless the regulatory framework was adjusted.

Work on the Aquaculture Zoning Plan by Environment Southland ceased at this point (in 2014), with industry left to take the information and undertake further investigations into sites as they saw fit.

Subsequent to the preparation of the SoRDS and in parallel with the development of its associated Action Plan, a collaborative project between SoRDS, iwi and Government commenced investigations into 5 potential sites in Southland for future aquaculture development, with an initial focus on settlement space under the Māori Commercial Aquaculture Claims Settlement Act. The first major investigation under the SRDS Action Plan was completed in 2017, looking at Port Pegasus (an enclosed area of water in the south-east of Rakiura/Stewart Island). The detailed investigations forecast as necessary by the SoRDS Action Plan were undertaken, with assessments completed on the seabed, water column, landscape and NZ sea lions (known to be resident in the area), as well as the potential economic effects. The investigations led to a conclusion that the water currents in the area were too low for an economically meaningful level of production to be achieved, and that, combined with potential effects on landscape and the resident sea lion population led to a decision not to proceed further with investigations into the use of the site. To date none of the other four sites investigated as part of the SoRDS Action Plan have resulted in any proposals for aquaculture development in Southland.

In developing the Hananui Aquaculture Project Ngai Tahu Seafood has also undertaken a series of technical investigations, consistent with the level of work forecast as necessary by the SoRDS Action Plan. Foveaux Strait was considered as a specific area in the Phase 2 report of the Southland Aquaculture Zoning Plan. Habitat and current were identified as minor potential constraints, but the wind and wave conditions were identified as a potentially significant constraint. It is worth noting that no area investigated under the Phase 2 work was found to be completely free of constraints.

The Phase 3A (site perspective ranking evaluation) report ranked Foveaux Strait as:

- high for water characteristics (temperature, salinity and depth)
- high for seabed suitability from the perspective of seabed type
- having a low-medium current speed
- likely to experience wave height greater than 1.8m (which based on the technology available at the time was not seen as a positive)
- very exposed to prevailing winds, waves and swell
- a Statutory Acknowledgement Area, with known marine mammal habitat and known significant habitat (likely the biogenic reef areas on the seabed).

Overall Foveaux Strait ranked relatively low in terms of areas worth further investigation in the Southland coastal marine area, principally because of the potential wave height and exposure to winds, wave and swell.

It is important to note however that the ranking evaluation carried out under the Phase 3A report applied to Foveaux Strait as a whole. Initial investigations completed by Ngāi Tahu Seafood and the Ministry for Primary Industries in 2018

² https://www.es.govt.nz/about-us/plans-and-strategies/regional-plans/aquaculture-zoning-plan

showed that the wave and wind climate along the northern coast of Rakiura/Stewart Island was not as extreme as other parts of Foveaux Strait due to the Hananui site being located on the leeward side of Saddle Point which provides shelter from the prevailing westerly winds. The Titi Islands and Ruapuke Island also offer protection to the proposed site from large easterly rolls. In addition, since the desktop studies that were undertaken for the Southland Aquaculture Zoning Plan aquaculture technology has made significant advancements in developing aquaculture for exposed coast and open ocean farming that is now readily available. These investigations and developments addressed the major constraints identified through the Southland Aquaculture Zoning Plan, and the beneficial characteristics of the site mean that it is now seen as a very good site for major aquaculture development.

The technical assessments undertaken for the Hananui Aquaculture Project have demonstrated that it is an appropriate place for aquaculture, consistent with Policy 8 of the NZCPS.

2.7 Summary

In summary:

- Adaptive management can be applied at a range of scales, as proposed for the Hananui Aquaculture Project, including broad scale development approaches such as the staging of development and implementation of monitoring and feedback loops, and more fine scale operational based responses, such as the development and implementation of management plans for marine species;
- Adverse effects on threatened and at risk marine species can be avoided, and location of the proposed farms, staged development and adaptive management of the activity through environmental thresholds, monitoring and response mechanisms that conform to the Supreme Court's approach in Sustain our Sound's Inv v NZ King Salmon Company [2014] NZCS 40 will ensure that adverse effects on habitats and ecosystems are avoided as required, and otherwise avoided, remedied or mitigated;
- Adaptive management can be used to respond to any risks that emerge to mobile marine mammals, seabirds and sharks in the project vicinity over its life;
- The location of the project avoids adverse effects on areas of outstanding natural character, outstanding natural features and outstanding natural landscapes, and effects on natural character and natural landscape will be avoided, remedied or mitigated. In particular, adaptive management provides for effects on the natural character of the seabed to be managed to an extent that they are not significantly adverse;
- Effects on the values addressed by Policies 11, 13 and 15 are not unknown or little understood, and technical
 assessments have concluded that adverse effects will largely be avoided and those that cannot be avoided will be
 mitigated and will not be significantly adverse. Notwithstanding this, and acknowledging potential effects on values
 not covered by Policies 11, 13 and 15, Ngāi Tahu Seafood has adopted a precautionary approach to the project,
 undertaking 16 technical assessments, and in consultation with Environment Southland, the Department of
 Conservation, Fisheries New Zealand and Murihiku Papatipu Rūnanga developing a series of measures to
 appropriate manage adverse effects. Proposed measures will be subject to discussion with tangata whenua as well.
 Measures include an adaptive management approach predicated on commencing discharges at a level significantly
 lower than full production, and implementing monitoring and feedback loops to ensure effects on the environment
 reman at appropriate levels as the site is gradually developed;
- While Environment Southland has not to date undertaken an exercise under Policy 8 to identify and note in regional
 plans areas of the coastal environment that are appropriate for aquaculture, a series of investigations have
 demonstrated that the proposed site is such a location.

The proposed Hananui Aquaculture Project, including its adaptive management approach, is therefore consistent with Policies 3, 8, 11, 13 and 15 of the NZCPS.

3 Question 4

Question 4 of the Ministerial request for further information is as follows:

How will the proposed adaptive management approach towards activities with uncertain but potentially significant adverse effects (policy 3) be consistent with the approach supported by the Supreme Court in Sustain our Sounds Inv v NZ King Salmon Company [2014] NZCS 40?

Sustain our Sounds Inv v NZ King Salmon Company [2014] NZCS 40 (the Sustain our Sounds case) primarily concerned the application of adaptive management and a precautionary approach to effects on water quality. In order to provide the Ministers with a comprehensive response to Question 4, the answer has been widened to incorporate the management of adverse effects on the seabed as well.

Before considering the adaptive management approach proposed to address effects on water quality and the seabed, it is worth noting that in the *Sustain our Sounds* case the Supreme Court (and the Board of Inquiry before that) had been critical of a decision made by the applicant to only model the first stage of the development. In contrast, seabed modelling for the Hananui Aquaculture Project has been undertaken based on the proposed maximum feed discharge at the site when it is at full development (25,000T of feed discharge per annum). Water quality modelling has been

undertaken on a maximum discharge of 50,000T of feed per annum (so double the applied for maximum) in terms of predicting 'far-field' effects in Foveaux Strait. A changed configuration for the proposed farms means that the near pen water quality effects may be underestimated in the existing water quality modelling (although the field effects remain appropriately estimated), but the existing work is considered by Cawthron to be fit for Stages 1 and 2 of the project and re-modelling is only recommended once near pen monitoring of the first two stages has been done.

The Supreme Court outlined at paragraph [133] of its decision the components of an adaptive management approach that would be sufficient to diminish risk and uncertainty and ensure that it was a suitably precautionary approach:

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

These four components were then translated through into consent conditions by the Board of Inquiry that were confirmed in the Supreme Court's decision:

- Conditions 56, 57, 59, 61, 62 and 63 concern the collection of baseline information over the course of a 12-month period after the granting of consent;
- Conditions 64 and 65 set out the requirement for the development of a Marine Environmental Monitoring Adaptive Management Plan (a MEM-AMP) and broadly specify the types of monitoring required;
- Environmental Quality Standards for seabed deposition, copper and zinc levels and the water column are outlined in Conditions 38 – 43;
- Within parts of Conditions 38 43 a two-tiered response to the results of monitoring that shows non-compliance with the set standards is set out, to ensure that effects can be remedied before they become irreversible.

In general, the same approach is proposed for the management of the development of the Hananui Aquaculture Project:

- 12 months' worth of baseline monitoring will be required, and a proposal for that has been developed and is currently being discussed with Environment Southland, the Department of Conservation and Fisheries New Zealand. The requirement to undertake this baseline monitoring will be included in proposed consent conditions submitted as part of an application under the COVID-19 Recovery (Fast-track Consenting) Act 2020;
- Thresholds to trigger remedial action were included in the consent application made to Environment Southland. Further work has been undertaken on seabed thresholds over the course of this year, and revised thresholds are currently being discussed with Environment Southland, the Department of Conservation and Fisheries New Zealand. Environmental objectives and thresholds will be included in proposed consent conditions submitted as part of an application under the COVID 19 Recovery (Fast-track Consenting) Act 2020;
- A requirement for ongoing monitoring of the seabed and the water column will be included in proposed consent conditions, and a proposal for monitoring has been developed and is currently being discussed with Environment Southland, the Department of Conservation and Fisheries New Zealand. Practice in consent conditions for finfish farming has evolved in the 10 years since the *Sustain our Sounds* case as it has been recognised that detailed and inflexible prescription of monitoring requirements within consent conditions does not easily allow for targeted monitoring over the course of a consent that recognises technological and best practice improvements and provides the most meaningful information to assess effects and to guide management responses. This adapted approach will be reflected in proposed consent conditions that will set out what monitoring is to achieve and will clearly require appropriate monitoring to the satisfaction of the consent authority to be undertaken, but will allow the details to be specified in a monitoring plan that exists outside the consent conditions, with certification of that plan by the consent authority;
- In common with the Sustain our Sounds case, the effects on the water column and seabed from the proposed Hananui Aquaculture Project are reversible with reductions, management changes or ultimately cessation in marine farming should monitoring show that thresholds are being approached or exceeded.

Key to ensuring the proposed Hananui Aquaculture Project is consistent with the approach supported by the Supreme Court is the staged development of the site, the careful location of the proposed marine farms away from areas of biogenic habitat, and the implementation of single year class farming at the proposed marine farm, which allows seabed and water quality effects to increase and decrease over a production and fallowing cycle. The single year class approach contrasts with existing salmon farming in New Zealand (including the salmon farming consented in the *Sustain our Sounds* case) which operates on a multi-year class basis on a single marine farm, which leads to constant levels of higher discharge of feed as each generation of fish on a marine farm approaches harvest and multiple generations reach harvest in any given 2-year period. The staged development approach proposed commences development at a feed discharge level to the water column that is currently occurring in New Zealand (in Tory Channel) and at feed discharge levels to the seabed that occur at somewhat lower flow sites in Tory Channel without significant adverse effects. The proposed staged development approach will also be reflected in proposed consent conditions to be submitted as part of an application under the COVID-19 Recovery (Fast-track Consenting) Act 2020.

The proposed approach is therefore entirely consistent with the approach supported by the Supreme Court in the *Sustain our Sounds* case.

Released under the provision of 982



Released under the provision of 982

Appendix A Question 3 – policy table

This appendix provides notes on Policies 3, 8, and 11 of the NZCPS particularly in relation to values in the coastal environment that are relevant under each policy. Values of the coastal environment relevant to Policies 13 and 15 are addressed in Appendix B and Appendix C.

NZCPS Policy	Comment
Policy 3	
 Adopt a precautionary approach towards proposed activities whose effects on the coastal environment are uncertain, unknown, or little understood, but potentially significantly adverse. 	Part (2) of Policy 3 is not considered to be relevant
Policy 8	
 contribution of aquaculture to the social, economic and cultural well-being of people and communities by: (a) including in regional policy statements and regional coastal plans provision for aquaculture activities in appropriate places in 	The Southland Regional Policy Statement 2017 does not identify appropriate places in the coastal environment for aquaculture activities, but forecasts that that will take place through the Regional Coastal Plan for Southland. Review of the Regional Coastal Plan commenced in 2019 but there is currently no timeline for public notification of a reviewed plan.
 the coastal environment, recognising that relevant considerations may include: (i) the need for high water quality for aquaculture activities; and (ii) the need for land-based facilities associated with marine farming; (b) taking account of the social and economic 	Information on national and regional economic benefits was provided in the application for referral under the COVID-19 Recovery (Fast track consenting) Act 2020.
 (c) benefits of aquaculture, including any available assessments of national and regional economic benefits; and (c) ensuring that development in the coastal environment does not make water quality unfit for aquaculture activities in areas approved for that purpose. 	
Policy 11	
To protect indigenous biological diversity in the coastal environment: (a) avoid adverse effects of activities on:	
(i) indigenous taxa that are listed as threatened or at risk in the New Zealand Threat Classification System lists;	Marine mammals recorded in the Area of Interest ³ Orca, Southern elephant seal (threatened – nationally critical) Bottlenose dolphins (threatened – nationally endangered) NZ sea lion, Hector's dolphin (threatened – nationally vulnerable) Southern right whale (at risk – recovering)
	Seabirds that breed or forage within the wider Foveaux Strait area Whenua Hou diving petrel, Salvin's mollymawk, Black billed gull (threatened
	Yellow eyed penguin/hoiho, Black fronted tern (threatened –

³ The Area of Interest for marine mammals stretches from approximately Waihola (Otago) round to West Cape in Fiordland, up to 60km offshore and up to 120km south of the southern end of Rakiura.

NZCPS	Policy	Comment
		Southern little penguin, Sooty shearwater, NZ white capped albatross, White fronted tern, Red billed gull, NZ pied ovstercatcher (at risk – declining)
		Buller's shearwater, Cape petrel, Grey petrel, Westland petrel, Northern royal albatross, Southern royal albatross, Southern Buller's albatross, Brown skua (at risk – naturally uncomposition)
		Broad billed prion, Fairy prion, Cook's petrel, Mottled petrel, White-face storm petrel, Grey-backed storm petrel, Common
		Pied shag, Variable oystercatcher (at risk – recovering)
		Sharks recorded in Foveaux Strait Great white shark (threatened – nationally endangered)
(ii)	taxa that are listed by the International Union for Conservation of Nature and Natural Resources as threatened;	Marine mammals recorded in the Area of Interest NZ sea lion, Hector's dolphin, humpback whale (endangered) Sperm whale (vulnerable)
		Seabirds Whenua Hou diving petrel (critically endangered) Xellow eved penguin/holino, Black fronted tern, Westland petrel
		Northern royal albatross (endangered) Buller's shearwater, Southern royal albatross, Cook's petrel, White chinned petrel, Salvin's mollymawk, Foveaux shag (vulnerable)
		Sharks
		Great white shark (vulnerable) Spiny dogfish (vulnerable)
(iii)	indigenous ecosystems and vegetation types that are threatened in the coastal environment, or are naturally rare;	Biogenic habitat (bushy bryozoans and bryozoan sponge reefs) is an indigenous ecosystem found in Foveaux Strait, and identified as important in the Southland Murihiku Conservation Management Strategy (CMS) and in NZCPS guidance. Whether these ecosystems are considered to be threatened is not clear however.
		Insufficient information is available to determine whether there are 'naturally rare' indigenous ecosystems in Foveaux Strait.
(iv)	habitats of indigenous species where the species are at the limit of their natural range, or are natural rare;	Breeding habitat for Fiordland crested penguin, Cook's petrel, Whenua Hou diving petrel, Foveaux Shag, Spotted shag and Pied shag exists on Rakiura and its associated islands, and on islands in Foveaux Strait, where the southern-most breeding colonies for these species are located. No effects on land or breeding habitat are anticipated from the Hananui Aquaculture project.
v X		The area of the proposed site potentially provides foraging habitat for Fiordland crested penguin, Cook's petrel, Whenua Hou diving petrel, Foveaux Shag, Spotted shag and Pied shag. While information on the complete foraging range of any of these bird species is not available petrels and penguins have a large foraging range and for shags the proposed site is not at the limit of their foraging range.
(V)	areas containing nationally significant examples of indigenous community types;	None present
(vi)	areas set aside for full or partial protection of indigenous biological diversity under other legislation; and	None present



(b) avo rem		Comment
acti	id significant adverse effects and avoid, nedy or mitigate other adverse effects of vities on:	
(i)	areas of predominantly indigenous vegetation in the coastal environment	None present that will be affected by the proposed activities
(ii)	habitats in the coastal environment that are important during the vulnerable life stages of indigenous species	Potential winter mating habitat for southern right whale. Breeding colony of NZ sea lion on Rakiura is re-establishing and would be likely to use the waters in the vicinity of the proposed site.
(iii)	indigenous ecosystems and habitats that are only found in the coastal environment and are particularly vulnerable to modification, including estuaries, lagoons, coastal wetlands, dunelands, intertidal zones, rocky reef systems, eelgrass and saltmarsh	Biogenic habitat (bushy bryozoans and bryozoan sponge reefs) are indigenous ecosystems and habitats that are only found in the coastal environment and are particularly vulnerable to modification. Bryozoan sponge reefs are particularly vulnerable to physical modification, with damage to erect bryozoan colonies taking decades to recover. Bryozoan sponge reefs in Foveaux Strait are already affected by oyster dredging, bottom trawling and ship anchoring in the Strait.
(iv)	habitats of indigenous species in the coastal environment that are important for recreational, commercial, traditional or cultural purposes	Biogenic habitat within Foveaux Strait provides habitat for Bluff oyster and blue cod, both important recreational, commercial and cultural species. A variety of other fish species are caught commercially, recreationally and for cultural purposes in Foveaux Strait, but either do not have a particular habitat identified as important to them, or have habitat identified that is not likely to be affected by the Hananui Aquaculture project (e.g. coastal rocky reef areas). The proposed site provides foraging habitat for sooty shearwater (titi)
(v)	habitats, including areas and routes, important to migratory species	Foveaux Strait is used by white sharks during their annual migrations. The region may also be used by broadnose sevengill shark as they are suspected to move seasonally between the South Island and Rakiura, but movements of this species have not been quantified. Foveaux Strait provides a migration route for southern right whale and humpback whale.
(vi)	ecological corridors, and areas important for maintaining biological values identified under this policy	None identified as relevant to this proposal

Appendix B Existing natural character

Attributes of the Coastal Terrestrial Area (CTA) and Coastal Marine Area (CMA)

and ous of the obustal refrestrial Area (or A) and obus	
Receiving Environment – Coastal Terrestrial Area	Receiving Environment – Coastal Marine Area
Abiotic NC Attributes:	Abiotic NC Attributes:
Coastal hills rise to steep ridgelines. The coastline is less	Northeast facing coastline open to Foveaux Strait
exposed to coastal processes than other parts of	Changeable weather conditions, strong NE – SW
Rakiura.Hinterland dominated by Mt Anglem – regionally	currents and big waves dominate the character of this
significant cirque and tarn.	marine area.
Comparatively shallow indented coastline, with high	Water depth 20 – 60 m. Quality of water clear with low
rugged coastal bluffs and rock outcrops interspersed with	turbidity.
heltered bays between headlands. Gravel beaches	Seabed sediments a mix of rocky patch reef, sand and
orth of Garden Point and golden sandy beaches to the	fine gravels, flat gravels with clean shell and / encrusted
south between Garden Point and Port William.	shell, flat gravels, red algae, kaeos, flat sand and
Stream types typically short and steep coastal streams.	gravels, flat sand gravels and biogenic patches.
Most notable is Murray River with associated tidal	Sand ripples, waves and large sand banks are frequently
estuary.	found.
The catchments are generally stable, and the lithology is	Large fan-shaped subtidal dunes are known to extend to
hard rock, hence sediment loadings in streams are low.	the northeast from Garden Point, near the survey area.
Streams on Rakiura tend to have brown, tannin-stained	due to the convergence of tidal currents.
waters and many are notable for their rich riparian	Seabed modification has likely occurred from
vegetation including thick moss and lichen carnets	anchoring vessels at and around anchorage sites
	Where dredging has occurred pits and furrows remain as
	modified features of the seabed event where sands are
	mobile
Riotic Attributes:	Biotic Attributes:
udigenous coastal shruhlands to dense mature forest	Diverse habitat types are found in Foveaux Strait with
Coastal vegetation on headlands — some regenerating	natches of briozoans, sponges, coral, large bivalve
where undergrowth was modified by burning over the	beds tubeworms sea tulins and complex reef
where undergrowth was modified by burning over the	(Cawthron 3315A)
lears to racintate numbing.	A rich variety of macroalgae reported for shallow rocky
ales than other parts of the Island	reefs in Foveaux Strait region Rock wall communities
Netlands and peat bors on Mt. Anglem. Streams are	have a very high diversity of encrusting invertebrates
notable for their rich riparian vegetation including thick	Within proposed consent area the three dominant
moss and lichon carpots	habitate are sand, bushy bryozoan thickote and
Tioss and lichen carpers.	hrvozoan spondo roofs
Presence of indigenous / andemis found including forest	High biodiversity essure on bryezoon thickets and
and soabirds and mammals	high blouversity occurs on bryozoan thickets and
Presence of evotic mammale such as deer	Shallow subtidal and peritic reef babitats are
resence of exolic manimals such as deer.	selected for commercial fishing of naua, kina, blue
	cod and rock lobster. Enifaunal reefs and
	surrounding environments are fished for trawled
	species and dredged for oveters
	The distribution of the enifaunal reefs has been
$(\lambda - (\lambda))$	significantly modified by commercial oveter
	dredging over the last 150 years noting that
	changes to the seabed hists and removal of some
	changes to the seabed blota and removal of some
	felling native forest
	Plue and habitat in reduced in this area due to
	blue cou habitat is reduced in this area due to
	removal of epilaunal reels and blue cod densities
	are reported to be declining. Observed fish species
	Include plue cod, leather jacket and terakini.
	Presence of sea pirds including species classified as
	Inreatened or at risk. Penguin (yellow-eyed and little)
	preeding habitat along Murray, Golden, Big Bungaree
	and Oaverage has a has
	and Sawyers beaches.
	and Sawyers beaches. Variable oystercatcher breeding habitat at Murray
	and Sawyers beaches. Variable oystercatcher breeding habitat at Murray Beach
	and Sawyers beaches. Variable oystercatcher breeding habitat at Murray Beach Terns, shags, red-billed gulls roost along northern
	and Sawyers beaches. Variable oystercatcher breeding habitat at Murray Beach Terns, shags, red-billed gulls roost along northern coastline. Breeding colony of Foveaux shag at Golden
	and Sawyers beaches. Variable oystercatcher breeding habitat at Murray Beach Terns, shags, red-billed gulls roost along northern coastline. Breeding colony of Foveaux shag at Golden Beach
	and Sawyers beaches. Variable oystercatcher breeding habitat at Murray Beach Terns, shags, red-billed gulls roost along northern coastline. Breeding colony of Foveaux shag at Golden Beach Presence of transient sea mammals and those



Receiving Environment – Coastal Terrestrial Area	Receiving Environment – Coastal Marine Area
	Known as an active area for the internationally
	protected great white shark.
Experiential Attributes:	Experiential Attributes:
NWC track along coastline largely confined to forest.	Relatively exposed open coastille with strong tidal
Expansive sea views from beaches and wit Hanahul.	Innuences – lidai range up to 2 m.
In the lee of the prevaiing wind so this part of the	Shellered bays.
the other sides of Bakiura with shaltered candy	restricted by weather conditions
heaches. Sheltered heaches in lee of prevailing wind	Weather is a dominant influence on experiences
Very high expression of naturalness conveyed by the	Dominant forces of the waves, tides and winds
dominance of and continuous indigenous vegetation	contribute to wildness.
sequences from the ridgeline to MHWS.	Presence of seabirds and marine mammals including
The coastal interface is generally free of modification –	penguins in relative abundance are of recreational
although some evidence of human habitation is present	interest.
including built structures (huts, track infrastructure and	Fisheries Management Areas included for oyster,
some exotic species around the huts.	blue cod, paua, rock lobster and kina associated
Land owned by Maori at Murray Beach.	with resource harvesting. Commercial fishing
Remoteness is somewhat impermanent and dependent	occurs along the coastline and within Foveaux
on level of human activity within Foveaux Strait, and	Strait.
along the coastline track. The level of human activity	
ranges between low to moderate.	OYU 5 and BC05 stock areas set aside as
Presence of humans including recreational activities	commercial fishing areas within CMA. Oyster
(walking, camping, hunting blocks 1 - 5), scenic flights.	dredging continues to occur over the oyster season
Christmas Village is a popular spot for water taxi drop	- 31 March - 31 August
otts.	Comparatively frequent presence of commercial marine
Seven trampers plus a team of approximately four DOC	activity - fishing poats, water taxis and frequent presence
invostigations. Hunting parties' book coastal blocks on a	or larger vessels traversing Foveaux Strait including
regular basis throughout the year	Sheltered anchorages off Murray Beach / Garden Point
Archaeological sites and historic relics including timber	Roller Beach and Saddle Point for fishing boats and large
mill and derelict wharf at Murray Beach and old tramline	ships One tanker at anchor and three fishing boats were
min and derenet what at mainly beden and out turnine.	seen over a period of two days.
	Relative abundance of mammals, fish / shellfish provide
	recreational opportunities - hunting and fishing, including
	oyster dredging and blue cod.
	Dark night sky is reduced by ships at anchor, vessels
	traversing Foveaux Strait, Dog Island lighthouse and
	NWC Track hut habitation.
Degree of Existing Natural Character of the Coastal Terro	estrial Area and Coastal Marine Area
Receiving Environment	Receiving Environment
CTA Outstanding Natural Character:	CMA Outstanding Natural Character:
The presence of some modification reduces the level of	Primarily the significant level of seabed modification
Natural Character from Very High to High particularly in	(through dredging and anchoring) and removal of

the areas of modification apparent, it is considered that the CTA of the receiving coastal environment retains High abiotic, biotic and experiential characteristics that deem it to be an area of outstanding natural character.

Primarily the significant level of seabed modification (through dredging and anchoring) and removal of epifaunal reefs and associated habitats for other species reduces the level of Natural Character from Very High to **Moderate High**. The experiential level of NC is also reduced by the amount of working activity including lighting on vessels at anchor, presence of fishing vessels and general traffic traversing Foveaux Strait. Overall the CMA of the receiving coastal environment is considered to be an area of **moderate high natural character**.

Appendix C Existing landscape values

Summary of Landscape Values of the Receiving Coastal Environment

Landscape Values of the CTA and seascape **Biophysical Attributes** Sensory Attributes Associative Attributes The north-facing coastline is open Steep bush clad foothills of Mt. National Park status and Anglem/ Hananui converge at the undeveloped Maori land at Murray and exposed to Foveaux Strait. Hinterland dominated by the coast and demonstrate a high level Beach and Port William. highest point of Rakiura - Mt of legibility. Anglem/Hananui. The NWC track along the coast with Very high levels of naturalness huts located at Big Bungaree and Mt Anglem/Hananui cirgue and present despite the occasional built Murray beaches and Christmas tarns are regionally significant element. Village Bay. geographical features. Landscape features express the processes of Mt Anglem is listed as a Statutory The dominant presence of natural formation elements, patterns and processes Acknowledgement and subject to a Deed of Recognition. including the seascape contribute to Natural coastal processes a sense of spirituality, and / or experience of tranquility or wildness Important archaeological sites dominate and are expressed by wind and salt spray affected located along the coast to identify vegetation, erosion and tidal In comparison with other parts of cultural history and values for both influences. Rakiura, the receiving coastal European and Maori. environment is less visually dramatic but aesthetically displays a very high Steep and in some places moderate Van Leeuwen Landing coastal hills and ridgelines extend to visual coherence and scenic beauty commemorates landing site of first the coastline. similar to the majority of Rakiura swimmer to cross the Strait. coastline conveyed by the interplay of Regular sheltered bays with a water and landscape. Hunting blocks 1-5 located along mixture of sandy and gravel the coastline. beaches. Panoramic views from Hananui and viewshafts to distant islands offer Recreational fishing including oyster Landscape comprises an intact high scenic quality, dramatic scenery beds are located within 2 km off the shoreline between Saddle Point and ecological vegetation and topographical sequence from the Weather a determining factor relating Mamaku Point. mountains to the sea. to wildness experience. Remoteness partly reduced by signs The topography and coastal interface provide a wide diversity of of habitation evident in some places habitats with abundant biota. along the NWC track Indigenous flora and endemic fauna High transient qualities recognised are dominant components of the by the presence of forest birds, white coastal environment. tailed deer, sea birds and marine mammals which contribute to a Brown algae forests are common off wilderness experience. rocky points and reefs. Darkness of the night sky is valued albeit modified by passing vessels, the lighting on ships at anchor and the Dog Island lighthouse.

Landscape Status of the Receiving Coastal Environment

Landscape Values in the CTA includ	ling the seascape	
Biophysical Attributes	Sensory Attributes	Associative Attributes
The receiving coastal environment	High legibility expressed by the	Strong associative values related to
relevant to determining landscape	landform and seascape coastal	European and Maori history and
values has very high natural science	processes.	heritage.
attributes pertaining to the presence		
of natural elements, patterns and	Transient values present.	Continuing cultural connections and
processes.		traditional cultural practices occur.
	Overall exceptional visual coherency	
	and scenic beauty conveyed by the	Widely recognised by the
	consistent vegetation cover to the	community with strong tourism and
	coastline, comprising intimate	recreational opportunities.

	beaches separated by rocky
	headlands.
	A sense of spirituality and
	experience of tranquility and
	wildness.
Based on these values it is conc high threshold for being an Outs	cluded that the entire CTA and part of the seascape from MHWS meets the standing Natural Landscape and the balance seascape is an other natural
landscape.	
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