MARLBOROUGH
DISTRICT COUNCIL

RESOURCE CONSENT APPLICATION

U200368

Biomex Trustees Limited, Gary William Rountree and Pamela Alinson Hale

Squally Cove, Crosilles Harbour

Submissions Close

5.00 pm Monday 22 June 2020

Bea Gregory-5252

From: Anna Eatherley-7530
Sent: Tuesday, 28 April 2020 2:15 PM
To: Bea Gregory-5252
Subject: FW: An Application has been submitted

From: RCInbox
Sent: Friday, 24 April 2020 10:18 a.m.
To: RCInbox
Subject: An Application has been submitted

New resource consent application received

An application for a new resource consent has been received by Council on 24/04/2020

Applicant(s): Biomex Trustees Limited, Gary William Rountree, Pamela Alinson Hale
Consent(s) applied for: Coastal Permit - Activity

Download and review the application.

View the application online.

Version 0

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EMAIL: mdc@marlborough.govt.nz
www.marlborough.govt.nz

Application for Resource Consent

Applicant details

Application for Resource Consent

Sections 88 and 145, Resource Management Act 1991

To

Marlborough District Council

Applicant

I,

Biomex Trustees Limited

11 Merton Place
Annesbrook
Nelson 7011

699097

Gary Rountree

11 Merton Place
Annesbrook
Nelson 7011

0272 139 530
gary.rountree@maclab.co.nz

Gary William Rountree

11 Merton Place
Annesbrook
Nelson 7011

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gary.rountree@maclab.co.nz

Pamela Alinson Hale

11 Merton Place
Annesbrook
Nelson 7011

0272 139 530
gary.rountree@maclab.co.nz

Apply for the following type(s) of resource consent

Coastal

Agent

Aquaculture Direct Limited

PO Box 213
Blenheim 7240

Bruce Cardwell

021 451 284

bruce@aquaculturedirect.co.nz

Project reference

Marine Farm 8268

Property details

Site and location details

The site at which the proposed activity is to occur is as follows:

Site address

MARINE FARM SITE 8268 SQUALLY COVE, CROISILLES HARBOUR, MARLBOROUGH

Legal description

Marine Farm 8268

Is there locale information in regards to the site?

No - there is no locale information in regards to the site

Site description

Description of the site at which the activity is to occur

The site is located “offshore of the northern shoreline of Squally Cove, approximately 700 m east-north-east of Matarau Point, Croisilles Harbour. Matarau Point is a cuspate foreland formed by coastal processes acting to deposit cobble, pebble and small boulder sized material forming a triangular shaped intertidal and subtidal feature. The headland is located on the outer northern shore of Squally Cove, the eastern arm of Croisilles Harbour. Matarau Point is roughly 8 km from the entrance to Croisilles Harbour and some 47 km by sea from the entrance to Port Nelson.” (Robertson Environmental Report, attached).

The farm sits alongside other farms on the northern shoreline of Squally Cove. The nearest marine farms to 8268 are the adjacent farm to the west 8267 and to the east 8269 and 8270.

The adjacent land is zone Rural 1. The nearest residence is approximately 1.2km from the site in Oyster Bay.

The site lies within the boundary of Coastal Marine Zone 2 (CMZ2).

Owners and occupiers of the application site

Applicant is the only owner and occupier?

Yes - the applicant is the only owner and occupier

Proposed activity

Description of the activity

The activity to which the application relates (the proposed activity) is as follows:

Biomex Trustees Limited & Gary William Rountree & Pamela Alinson Hale has applied to renew the existing resource consent MFL202 and MPE924/U090436 for marine farm site 8268 (total 5.970ha) for the purpose of farming Greenshell mussels (Perna canaliculus), scallops (Pecten novaezelandiae), Blue Mussel (Mytilus galloprovincialis), Dredge oysters (Tiostrea chilensis) and Seaweed (Macrocystis pyrifera, Gracilaria, Ecklonia radiata and Pterocladia lucida), using conventional long line methods. (Refer attached layout diagrams illustrating the site.)

MFL202 – 3.7500 ha parent farm was granted in January 1982 and expires 31st December 2024.

MPE924/U090436- 2.2200ha extension was granted in August 2009 and expires 31st December 2024.

The Applicant seeks a 20-year term.
The Parent farm MFL 202 is assessed as a restricted discretionary activity in the current Marlborough Sounds Resource Management Plan.

The extension U090436 is non-complying under rule 35.4 as the farm extends beyond 200 metres from the shore.

Marine farm licence MFL202 was issued to the original consent holder in January 1982 for a 3.75ha site. It was issued under the Marine Farming Act 1971.

In April 2002 Council granted resource consent U001234 for a 2.22ha an extension seaward and south.

The application is for a continuation of the activities currently consented on the site and combine the licence and consent into one consent. No changes to the activities are proposed.

The site lies within the boundary of the CMZ2, an area in which marine farming activity is a discretionary activity.

As this is a ‘like for like’ Application by an existing permit holder, the Application should be processed under section 165ZH. The Applicant’s adherence to the industry codes of practice, and its commitment to environmental programmes and activities, along with its compliance with the conditions of the existing Consent, are conduct in the Applicant’s favour in terms of section 165ZJ(1).

The applicant currently has consent for 18 long lines but the proposed application is for 11 lines.

The site dimensions are as per the layout plans attached. The application includes 11 long lines, each being approximately 204-297 metres long. Originally the farm layout was for a crop farm however the applicant uses it exclusively for a spat holding farm. Although the proposed application has reduced the number of lines the total backbone length is increased to accommodate spat. Spat has a very low benthic impact below the backbones due to reduced biomass.

There are currently 9 lines installed and operating at the site that hold grow Greenshell mussel spat.

The site layout is attached to the application.

Biomex is part of the Maclab group which pioneered the nutraceutical market for greenshell mussels since 1973 and remains the market leader. Maclab has been expanding their manufacturing and marine operations in anticipation of accelerating demand for products in international markets through their business partner Pharmalink International. Maclab has recently built a state-of-the-art mussel vessel and is leading the expansion of new open water farms in Golden Bay and Tasman Bay to supply their manufacturing operations in Nelson.

Gary Rountree is the Chief Financial Officer of Maclab and has been in the industry for over 6 years. He was instrumental in setting a new supply strategy for Maclab reducing the dependency on third party suppliers and developing Maclab's marine farming operations. He has also been a key driver behind setting a culture of commitment towards improvement in sustainable practices and climate friendly initiatives at Maclab. He is committed to driving the growth for the New Zealand mussel industry believing in the need for New Zealand to shift dependency from commodity based high carbon businesses to high value sustainable industries.

Dr Pamela Hale is married to Gary Rountree and is a specialist physician and leader at the Nelson Marlborough District Health Board and board member of the NZ Medical Council.

The Applicant's farm is managed by Maclab (NZ) Limited who adheres to the 'Greenshell Mussel Industry Environmental Code of Practice' and its successor, the Environment Management Framework and is an active participant of the Marine Farming Association's Environmental Programme.

This programme covers the activities of marine farmers "on water" activities. This Programme includes being an active participant in beach clean ups and adhering to the following Codes of Practice:
- 'Marine Farming Operating Standards Marlborough Sounds, Tasman and Golden Bays'.
- 'Code of Practice to avoid, remedy or mitigate noise from marine farming activities in the Marlborough Sounds, Golden Bay and Tasman Bay, on other users and residents'.
- 'Reducing Pollution and Emissions from Marine Farming 'On Water' Activities'.
- 'Reducing Waste taken to Landfill from Marine Farming 'On water' Activities'.

Maclab (NZ) Limited are a recipient of Environmental Certification status from the Marine Farming Association. This is achieved through complying with all requirements of the Marine Farming Association's Environmental Programme and having passed audits of the farms and vessels.

Other activities that are part of the proposal to which the application relates

Are there permissions needed which do not relate to the Resource Management Act 1991?

Yes - there are permissions needed which do not relate to the Resource Management Act 1991

Permissions needed which do not relate to the Resource Management Act 1991

Other activities that relate to this application include permissions that do not relate to the Resource Management Act, including;
1. Fish farming licence

Are there permitted activities that are part of this application?

Yes - there are permitted activities that are part of this application

Permitted activities that are part of this application:

The application is for a new consent to replace MFL202 and MPE924/U090436 in Squally Cove, Croisilles Harbour, to seed, cultivate and harvest species Greenshell mussels (Perna canaliculus), scallops (Pecten novaezelandiae), Blue Mussel (Mytilus galloprovincialis), Dredge oysters (Tiostrea chilensis) and Seaweed (Macrocystis pyrifera, Gracilaria, Ecklonia radiata and Pterocladia lucida), including occupation of 5.970ha of the coastal marine area. Consent is also sought to allow the existing seabed anchoring devices to remain (and be replaced as required), to harvest marine farming product from the marine farm (including the discharging of coastal seawater and discharge of biodegradable and organic waste matter) and all other activities that are ancillary to the operation on site 8268.

The movement of vessels is a permitted activity: s27 Marine and Coastal Area (Takutai Moana) Act 2011. This right includes anything reasonably incidental to vessel movement (s27(2)).
The proposed activity has been assessed against the relevant provisions of the:
1. New Zealand Coastal Policy Statement 2010;
2. Marlborough Regional Policy Statement;
3. Marlborough Sounds Resource Management Plan; and
4. Proposed Marlborough Environment Plan

at Sections 23 and 24/Appendices A – C of this Assessment of Environmental Effects.

Additional resource consents

Are any additional resource consents needed for the proposal to which this application relates?

No - no additional resource consents are needed for the proposal to which this application relates

Consent summary

I apply for the following resource consents.

Consent information

Marine Farm 8268

Consent type

Coastal

Subcategory type

Activity

Description of consent being applied for

Biomex Trustees Limited & Gary William Rountree & Pamela Alinson Hale has applied to renew the existing resource consent MFL202 and MPE924/U090436 for marine farm site 8268 (total 5.970ha) for the purpose of farming Greenshell mussels (Perna canaliculus), scallops (Pecten novaezelandiae), Blue Mussel (Mytilus galloprovincialis), Dredge oysters (Tiostrea chilensis) and Seaweed (Macrocystis pyrifera, Gracilaria, Ecklonia radiata and Pterocladia lucida), using conventional long line methods. (Refer attached layout diagrams illustrating the site.)

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The application is for a continuation of the activities currently consented on the site and combine the licence and consent into one consent. No changes to the activities are proposed.

The site lies within the boundary of the CMZ2, an area in which marine farming activity is a discretionary activity.

As this is a 'like for like' Application by an existing permit holder, the Application should be processed under section 165ZH. The Applicant's adherence to the industry codes of practice, and its commitment to environmental programmes and activities, along with its compliance with the conditions of the existing Consent, are conduct in the Applicant's favour in terms of section 165ZJ(1).

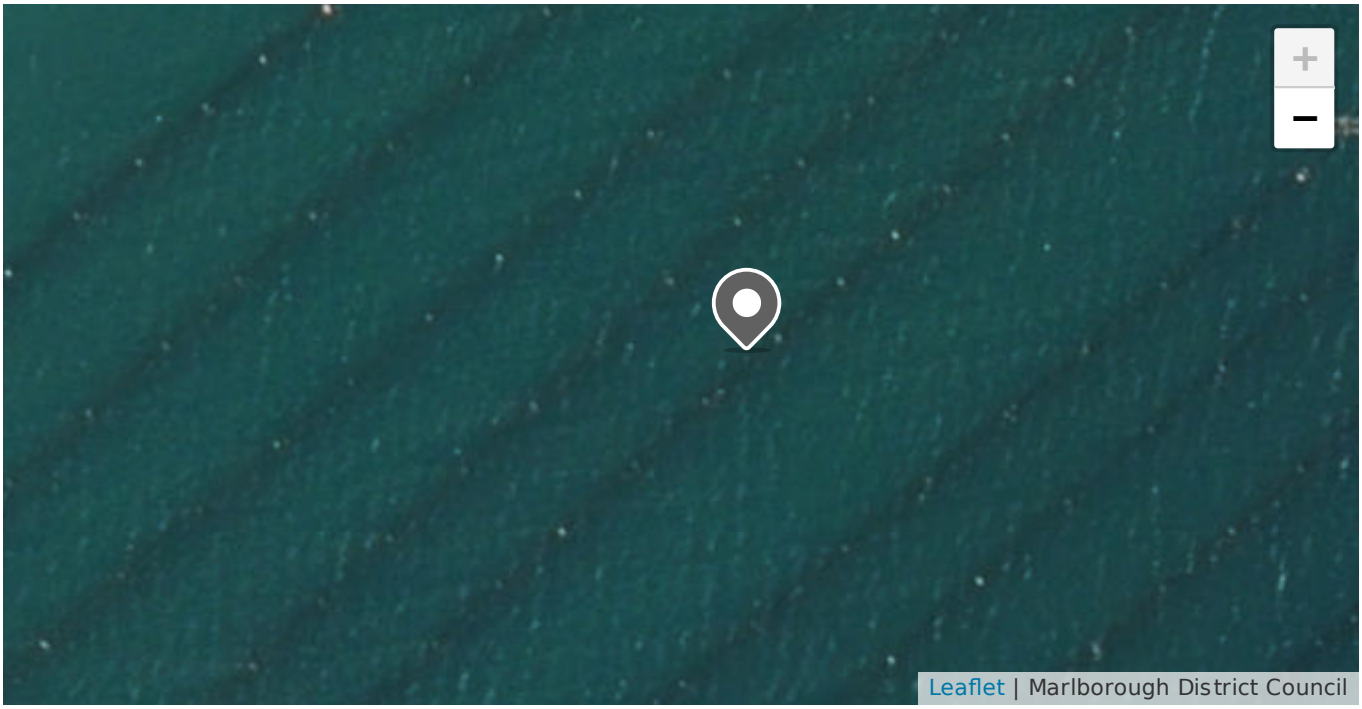
Location of the consent

Easting

1659539.58

Northing

5455138.195



Triggering rules

Rules which trigger the consent

I include an assessment of the proposed activity against any relevant provisions of a document referred to in section 104(1)(b) of the Resource Management Act 1991, including the information required by clause 2(2) of Schedule 4 of that Act.

The assessment under this section must include an assessment of the activity against
(a) Rules in a document; and
(b) Any relevant requirements, conditions, or permission in any rules in a document; and
(c) Any other relevant requirements in a document (for example, in a national environmental standard or other regulations))

Triggering rules assessment

The application is for a new consent to replace MFL202 and MPE924/U090436 in Squally Cove, Croisilles Harbour, to seed, cultivate and harvest species Greenshell mussels (Perna canaliculus), scallops (Pecten novaezelandiae), Blue Mussel (Mytilus galloprovincialis), Dredge oysters (Tiostrea chilensis) and Seaweed (Macrocystis pyrifera, Gracilaria, Ecklonia radiata and Pterocladia lucida), including occupation of 5.970ha of the coastal marine area. Consent is also sought to allow the existing seabed anchoring devices to remain (and be replaced as required), to harvest marine farming product from the marine farm (including the discharging of coastal seawater and discharge of biodegradable and organic waste matter) and all other activities that are ancillary to the operation on site 8268.

The movement of vessels is a permitted activity: s27 Marine and Coastal Area (Takutai Moana) Act 2011. This right includes anything reasonably incidental to vessel movement (s27(2)).
The proposed activity has been assessed against the relevant provisions of the:
1. New Zealand Coastal Policy Statement 2010;
2. Marlborough Regional Policy Statement;
3. Marlborough Sounds Resource Management Plan; and
4. Proposed Marlborough Environment Plan

at Sections 23 and 24/Appendices A – C of this Assessment of Environmental Effects.

Assessment of Effects on the Environment (AEE)

Clause 6 - Information required in assessment of environmental effects

6.1 An assessment of the activity's effect on the environment must include the following information:

6.1(a) if it is likely that the activity will result in any significant adverse effect on the environment, a description of any possible alternative locations or methods for undertaking the activity

Refer to attached Assessment of Environmental Effects

6.1(b) an assessment of the actual and potential effect on the environment of the activity

The actual and potential effects of the proposed activity on the environment are detailed in the attached Assessment of Environmental Effects

6.1(c) if the activity includes the use of hazardous installations, an assessment of any risks to the environment that are likely to arise from such use

Provision not relevant

6.1(d)(i) if the activity includes the discharge of any contaminant, a description of the nature of the discharge and the sensitivity of the receiving environment to adverse effects

As part of this Application, the Applicant seeks to continue harvesting mussel crops. The right to navigate to and from the farm, and to anchor, moor and load crop is preserved by section 27 of the Marine and Coastal Area (Takutai Moana) Act 2011. However, consent is required for the amount of organic waste matter which is discharged during the harvesting process and for the take and use of coastal water. No significant historical adverse effects have been recorded or are anticipated and any visual evidence of harvesting quickly dissipates in the coastal environment.

Vessels will be required to service the farm on an irregular basis (refer 8.5).

6.1(d)(ii) if the activity includes the discharge of any contaminant, a description of any possible alternative methods of discharge, including discharge into any other receiving environment

See assessment in question 6.1 (d) (i)

6.1(e) a description of the mitigation measures (including safeguards and contingency plans where relevant) to be undertaken to help prevent or reduce the actual or potential effect.

The Applicant's farm is managed by Maclab (NZ) Limited who adheres to the 'Greenshell Mussel Industry Environmental Code of Practice' and its successor, the Environment Management Framework and is an active participant of the Marine Farming Association's Environmental Programme.

This programme covers the activities of marine farmers "on water" activities. This Programme includes being an active participant in beach clean ups and adhering to the following Codes of Practice:

- 'Marine Farming Operating Standards Marlborough Sounds, Tasman and Golden Bays'.
- 'Code of Practice to avoid, remedy or mitigate noise from marine farming activities in the Marlborough Sounds, Golden Bay and Tasman Bay, on other users and residents'.
- 'Reducing Pollution and Emissions from Marine Farming 'On Water' Activities'.
- 'Reducing Waste taken to Landfill from Marine Farming 'On water' Activities'.

Maclab (NZ) Limited are a recipient of Environmental Certification status from the Marine Farming Association. This is achieved through complying with all requirements of the Marine Farming Association's Environmental Programme and having passed audits of the farms and vessels.

6.1(f) identification of the persons affected by the activity,

An e-mail has been sent to all Iwi listed below identifying the site prior to the application being submitted.

Ngati Koata Trust PO Box 1659, Nelson 7040 (03) 548 1639
Te Runanga a Rangitane o Wairau PO Box 883, Blenheim 7240 (03) 578 6180
Te Runanga O Ngati Kuia PO Box 1046, Blenheim 7240 (03) 579 4328
Ngāti Apa ki te Rā Tō PO Box 708, Blenheim 7240 (03) 578 9695
Te Atiawa Manawhenua Ki Te Tau Ihu Trust PO Box 340, Picton 7250 (03) 573 5170
Ngati Toarangatira Manawhenua Ki Te Tau Ihu Trust PO Box 5061, Blenheim 7240 (03) 577 8801
Ngati Rarua Trust PO Box 1026, Blenheim 7240 (03) 577 8468

6.1(f cont.) any consultation undertaken,

See assessment in question 6.1 (f)

6.1(f cont.) and any response to the views of any person consulted

See assessment in question 6.1 (f)

6.1(f cont.) and any iwi consultation undertaken

See assessment in question 6.1 (f)

6.1(g) if the scale and significance of the activity's effects are such that monitoring is required, a description of how and by whom the effects will be monitored if the activity is approved.

Overall, the proposal is considered relatively benign in terms of ecological impacts based on the farming activity, long history of farming at the site, and the existing values, and therefore the life-supporting capacity of associated coastal ecosystems will be maintained through the operation of the consent"

6.2 Recommendations for addressing adverse residual effects that cannot be avoided or minimised
Monitoring of the associated coastal environment is not proposed given that the reconsent is expected to have less than minor effects on associated ecological values.

6.1(h) if the activity will, or is likely to, have adverse effects that are more than minor on the exercise of a protected customary right, a description of possible alternative locations or methods for the exercise of the activity (unless written approval for the activity is given by the protected customary rights group).

The applicant recognises that Ngāti Apa ki te Rā Tō, Ngāti Kuia, Rangitāne o Wairau, Ngāti Kōata, Ngāti Rārua, Ngāti Tama ki Te Tau Ihu, Te Ātiawa o Te Waka-a-Māui and Ngati Toa Rangatira have statutory acknowledgments in the area of the application site. Those acknowledgements have been considered during the preparation of this application, as outlined above.

The iwi management plans of Ngāti Kōata and Te Ātiawa o Te Waka-a-Māui have been reviewed.

There are also no established areas of protected customary rights or customary marine title within the meaning of the Marine and Coastal Area (Takutai Moana) Act 2011.

The Applicant will discuss the proposal further with relevant Iwi representatives.

Clause 7 - Matters that must be addressed by assessment of environmental effects

7.1 An assessment of the activity's effects on the environment must address the following matters:

7.1(a) any effect on those in the neighbourhood and, where relevant, the wider community, including any social, economic, or cultural effects

8.1 The Shoreline
The distance from the shoreline according to the original Cadastral mapping is inside the conventions established in the Marlborough Sounds Resource Management Plan.

8.2 Headlands
There are no headlands immediately adjacent to the site.

8.3 Navigational Routes (Formal/Informal)
The shoreline in which the farm sits is not on a normal navigation route, however, vessels that wish to navigate within the area can proceed through the farm and either inside or outside of the site.

The farm does not impede vessel movements along the coastline or access to the adjacent land.

8.4 Anchorages or Mooring Areas (Formal/Informal)
There is no registered mooring in the vicinity of the site.

There not a jetty in the vicinity of the site.

8.5 Indirect Effects-Servicing vessels at site
The Applicant estimates farming and harvesting vessels will visit the site on an average of 10-20 days a year, for periods of 0.5 to 6 hrs to undertake farm maintenance, seeding and harvesting.

The total number of hours spent on these activities is estimated to be 80-90 hrs annually.

8.6 Water Ski Lanes
There are no formal water ski lanes in the vicinity.

8.7 Sub-Marine Cables
There are no sub-marine cables in the immediate vicinity of the farm.

The visual impact of the marine farm will change in a minor way due to the lengthening of the backbones.

Access to the coast for recreationalists is maintained.

7.1(b) any physical effect on the locality, including any landscape and visual effects

9.1 Land Zoned for Residential Use or Proximity to Residences
The land adjacent to the site is zone Rural 1.

There are no residences directly adjacent to the site.

9.2 Scenic Value
9.2.1 Landscape
The area has not been identified within the current Marlborough Sounds Resource Management Plan as being an area of outstanding natural landscape value.

The area is alongside an area that has been described as an area of outstanding nature landscapes and features in the proposed Plan, these assessments were made with the farms already in place and operational. There was no direction given in the plan that the marine farms should be removed for the area to be assessed as having outstanding nature landscapes and features.

Section 6(b) of the Act requires decision makers to recognise as a matter of national importance the protection of outstanding natural features and landscapes (ONFLs) from inappropriate subdivision, use and development. Policy 15(a) of the New Zealand Coastal Policy Statement 2010 (NZCPS) requires adverse effects of activities on ONFLs in the coastal environment to be avoided. NZCPS policy 15(b) requires significant adverse effects from activities on other natural features and natural landscapes in the coastal environment to be avoided, and other adverse effects to be avoided, remedied or mitigated.

The operative Marlborough Sounds Resource Management Plan (MSRMP) identifies Areas of Outstanding Landscape Value (AOLV).

The proposed Marlborough Environment Plan (MEP) contains landscape overlay maps based on the 2015 Marlborough Landscape Study. While these maps are generally considered to be based on more up-to-date methodology than the MSRMP, they are the subject of a large number of submissions. The application site is adjacent to an ONFL in the MEP.

In assessing whether the proposal is appropriate in the context, we must understand what is sought to be protected, namely the values of the area. The values for each of those areas are listed in the schedules in MEP Appendix 1.

Aquaculture is part of the Marlborough Sounds environment. A marine farm in this location does not interfere with the listed values, because it is consistent with the mixed use/working character of this part of the Sounds, is low profile in nature and only visible at close range (with visual effects diminishing in some conditions depending on lighting and weather), and will not interfere with significant ecological values, as addressed elsewhere in this application. In addition, Greenshell mussels are naturally occurring in New Zealand and are indigenous. Aquaculture is perhaps the only form of farming where the effects are fully reversible.

On this basis, adverse effects from the activity on identified ONFLs are avoided, consistent with NZCPS policy 15(a); and significant adverse effects on other natural features and natural landscapes are avoided, consistent with NZCPS policy 15(b).

9.2.2 Natural character
The area has been described as having high natural character in the proposed Plan, these assessments were made with the farms already in place and operational. There was no direction given in the plan that the marine farms should be removed for the area to be assessed as having high natural character.

The preservation of the natural character of the coastal environment and protection from inappropriate subdivision, use and development is another matter of national importance under s 6(a) of the Act. In addition, NZCPS policy 13(1)(a) requires adverse effects from activities on areas of the coastal environment with outstanding natural character to be avoided. Further, significant adverse effects must be avoided, and other adverse effects avoided, remedied or mitigated in the remainder of the coastal environment, in line with policy 13(1)(b).

Areas of natural character are not mapped in the MSRMP, although the overall natural character of the Marlborough Sounds and the natural character of identified marine and land areas are outlined in Appendix 2. The MEP contains Coastal Natural Character overlay maps, showing areas of outstanding, very high and high natural character. These overlay maps are the subject of a large number of submissions.

The application site is within an area of high natural character as mapped in the MEP.

As with landscape, in determining whether a marine farm is appropriate in this location, we must consider whether it interferes with the natural character values that require protection.

The application site sits within the Coastal Marine Area 2, in Appendix 2 of the MEP. The values contributing to high, very high and outstanding coastal natural character are also outlined in Appendix 2.

The marine farm will not interfere with the biophysical values of the adjoining land. In terms of the biophysical values in the Coastal Marine Area, we know that benthic effects from shell drop are localised to beneath and in close proximity to the droppers. The community shift that occurs as a result is not typically regarded as adverse in a scientific sense. Neither will the marine farm interfere with the perceptual values of natural character. Marine farming can be seen as 'cultured nature': it is a sustainable form of food production, mussels are naturally occurring in the water column, and the effects of marine farming are reversible (consistent with intergenerational sustainable management).

On this basis, adverse effects from the activity on identified areas of outstanding natural character are avoided, consistent with NZCPS policy 13(1)(a); and significant adverse effects on natural character in all other areas of the coastal environment are avoided, consistent with NZCPS policy 13(1)(b).

9.2.3 Visual Amenity
Section 7(c) of the Act requires decision makers to have particular regard to the maintenance and enhancement of amenity values. The entirety of the Marlborough Sounds Coastal Landscape, is mapped as a High Amenity Landscape in the MEP. The values of this amenity landscape are outlined in Appendix A. An individual marine farm at this location will not have an impact on a high amenity landscape of the scale mapped in the MEP.
"The adjacent landscape features coastal hillslopes which rise from a relatively narrow band of rocky cobbled intertidal to ridges approximately 100-150 m in height. Predominantly landuse cover is a combination of commercial forestry (currently supporting maturing Pinus radiata) and regenerating native vegetation." (Robertson Environmental Report, attached).

The effect of the marine farm on the adjacent area will not have an effect on the flora and fauna of this area.

7.1(c) any effect on ecosystems, including effects on plants or animals and any physical disturbances of habitats in the vicinity

The actual and potential effects of the proposed activity on the environment are detailed in the attached Assessment of Environmental Effects

7.1(d) any effect on natural and physical resources having aesthetic, recreational, scientific, historical, spiritual, or cultural value, or other special value, for present or future generations

The actual and potential effects of the proposed activity on the environment are detailed in the attached Assessment of Environmental Effects

7.1(e) any discharge of contaminants into the environment, including any unreasonable emission of noise, and options for the treatment and disposal of contaminants

As part of this Application, the Applicant seeks to continue harvesting mussel crops. The right to navigate to and from the farm, and to anchor, moor and load crop is preserved by section 27 of the Marine and Coastal Area (Takutai Moana) Act 2011. However, consent is required for the amount of organic waste matter which is discharged during the harvesting process and for the take and use of coastal water. No significant historical adverse effects have been recorded or are anticipated and any visual evidence of harvesting quickly dissipates in the coastal environment.

The Applicant's farm is managed by Maclab (NZ) Limited who adheres to the 'Greenshell Mussel Industry Environmental Code of Practice' and its successor, the Environment Management Framework and is an active participant of the Marine Farming Association's Environmental Programme.

This programme covers the activities of marine farmers "on water" activities. This Programme includes being an active participant in beach clean ups and adhering to the following Codes of Practice:

- ‘Marine Farming Operating Standards Marlborough Sounds, Tasman and Golden Bays’.
- ‘Code of Practice to avoid, remedy or mitigate noise from marine farming activities in the Marlborough Sounds, Golden Bay and Tasman Bay, on other users and residents’.
- ‘Reducing Pollution and Emissions from Marine Farming ‘On Water’ Activities’.
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Maclab (NZ) Limited are a recipient of Environmental Certification status from the Marine Farming Association. This is achieved through complying with all requirements of the Marine Farming Association’s Environmental Programme and having passed audits of the farms and vessels.

7.1(f) any risk to the neighbourhood, the wider community, or the environment through natural hazards or hazardous installations

8.1 The Shoreline
The distance from the shoreline according to the original Cadastral mapping is inside the conventions established in the Marlborough Sounds Resource Management Plan.

8.2 Headlands
There are no headlands immediately adjacent to the site.

8.3 Navigational Routes (Formal/Informal)
The shoreline in which the farm sits is not on a normal navigation route, however, vessels that wish to navigate within the area can proceed through the farm and either inside or outside of the site.

The farm does not impede vessel movements along the coastline or access to the adjacent land.

8.4 Anchorages or Mooring Areas (Formal/Informal)
There is no registered mooring in the vicinity of the site.

There not a jetty in the vicinity of the site.

Applicant's proposed conditions for this activity

Biomex Trustees Limited & Gary William Rountree & Pamela Alinson Hale has applied to renew the existing resource consent MFL202 and MPE924/U090436 for marine farm site 8268 (total 5.970ha) for the purpose of farming Greenshell mussels (Perna canaliculus), scallops (Pecten novaezelandiae), Blue Mussel (Mytilus galloprovincialis), Dredge oysters (Tiostrea chilensis) and Seaweed (Macrocystis pyrifera, Gracilaria, Ecklonia radiata and Pterocladia lucida), using conventional long line methods. (Refer attached layout diagrams illustrating the site.)

Part 2 RMA

Matters of national importance (Section 6 Resource Management Act 1991)

1. Assess your application against the following matters of national importance:

6.1 (a) the preservation of the natural character of the coastal environment (including the coastal marine area), wetlands, and lakes and rivers and their margins, and the protection of them from inappropriate subdivision, use, and development:

Section 6(a) is given effect through Policy 13 of the New Zealand Coastal Policy Statement and is considered further below.

6.1 (b) the protection of outstanding natural features and landscapes from inappropriate subdivision, use, and development:

The area has not been identified within the current Marlborough Sounds Resource Management Plan as being an area of outstanding natural landscape value. The effects of the Application on the landscape will be the same as the present Consent and any effects will not impact on the values which contribute to the landscape.

The area is alongside an area that has been described as an area of outstanding nature landscapes and features in the proposed Plan, these assessments were made with the farms already in place and operational. There was no direction given in the plan that the marine farms should be removed for the area to be assessed as having outstanding nature landscapes and features.

6.1 (c) the protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna:

"The adjacent landscape features coastal hillslopes which rise from a relatively narrow band of rocky cobbled intertidal to ridges approximately 100-150 m in height. Predominantly landuse cover is a combination of commercial forestry (currently supporting maturing Pinus radiata) and regenerating native vegetation." (Robertson Environmental Report, attached).

6.1 (d) the maintenance and enhancement of public access to and along the coastal marine area, lakes, and rivers:

Public access is maintained with good separation from the coast and main navigational routes.

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

The Applicant will continue to discuss this through consultation with Iwi.

6.1 (f) the protection of historic heritage from inappropriate subdivision, use, and development:

The applicant is unaware of any historical sites on land nearby and will continue to discuss this through consultation with Iwi

6.1 (g) the protection of protected customary rights.

The applicant recognises that Ngāti Apa ki te Rā Tō, Ngāti Kuia, Rangitāne o Wairau, Ngāti Kōata, Ngāti Rārua, Ngāti Tama ki Te Tau Ihu, Te Ātiawa o Te Waka-a-Māui and Ngati Toa Rangatira have statutory acknowledgments in the area of the application site. Those acknowledgements have been considered during the preparation of this application, as outlined above.

The iwi management plans of Ngāti Kōata and Te Ātiawa o Te Waka-a-Māui have been reviewed.

There are also no established areas of protected customary rights or customary marine title within the meaning of the Marine and Coastal Area (Takutai Moana) Act 2011.

The Applicant will discuss the proposal further with relevant Iwi representatives.

6.1 (h) the management of significant risks from natural hazards.

The industry has developed a tsunami management plan.

Other matters (Section 7 Resource Management Act 1991)

1. Assess your application against the following matters:

7.1 (a) kaitiakitanga:

This matter has been considered earlier in the original proposal. This application is not anticipated to have any additional effects over and above what already exists.

7.1 (aa) the ethic of stewardship:

The Applicant's farm is managed by Maclab (NZ) Limited who adheres to the 'Greenshell Mussel Industry Environmental Code of Practice' and its successor, the Environment Management Framework and is an active participant of the Marine Farming Association's Environmental Programme.

This programme covers the activities of marine farmers "on water" activities. This Programme includes being an active participant in beach clean ups and adhering to the following Codes of Practice:

- 'Marine Farming Operating Standards Marlborough Sounds, Tasman and Golden Bays'.
- 'Code of Practice to avoid, remedy or mitigate noise from marine farming activities in the Marlborough Sounds, Golden Bay and Tasman Bay, on other users and residents'.
- 'Reducing Pollution and Emissions from Marine Farming 'On Water' Activities'.
- 'Reducing Waste taken to Landfill from Marine Farming 'On water' Activities'.

Maclab (NZ) Limited are a recipient of Environmental Certification status from the Marine Farming Association. This is achieved through complying with all requirements of the Marine Farming Association's Environmental Programme and having passed audits of the farms and vessels.

7.1 (b) the efficient use and development of natural and physical resources:

This matter has been considered earlier in the original proposal. This application is not anticipated to have any additional effects over and above what already exists.

7.1 (ba) the efficiency of the end use of energy:

Provision not relevant

7.1 (c) the maintenance and enhancement of amenity values:

This matter has been considered earlier in the original proposal. This application is not anticipated to have any additional effects over and above what already exists.

7.1 (d) intrinsic values of ecosystems:

This matter has been considered earlier in the original proposal. This application is not anticipated to have any additional effects over and above what already exists.

7.1 (f) maintenance and enhancement of the quality of the environment:

This matter has been considered earlier in the original proposal. This application is not anticipated to have any additional effects over and above what already exists.

7.1 (g) any finite characteristics of natural and physical resources:

This matter has been considered earlier in the original proposal. This application is not anticipated to have any additional effects over and above what already exists.

7.1 (h) the protection of the habitat of trout and salmon:

Provision not relevant

7.1 (i) the effects of climate change:

The effects of climate change on mussel farms is unknown, however, mussels can withstand a large change in temperatures and growing environment. They are currently grown through-out New Zealand from Southland to Coromandel.

7.1 (j) the benefits to be derived from the use and development of renewable energy

Provision not relevant

Treaty of Waitangi (Section 8 Resource Management Act 1991)

Assess your application against the principles of the Treaty of Waitangi (Te Tirti o Waitangi)

The applicant recognises that Ngāti Apa ki te Rā Tō, Ngāti Kuia, Rangitāne o Wairau, Ngāti Kōata, Ngāti Rārua, Ngāti Tama ki Te Tau Ihu, Te Ātiawa o Te Waka-a-Māui and Ngati Toa Rangatira have statutory acknowledgments in the area of the application site. Those acknowledgements have been considered during the preparation of this application, as outlined above.

The iwi management plans of Ngāti Kōata and Te Ātiawa o Te Waka-a-Māui have been reviewed.

There are also no established areas of protected customary rights or customary marine title within the meaning of the Marine and Coastal Area (Takutai Moana) Act 2011.

The Applicant will discuss the proposal further with relevant Iwi representatives.

Statutory instruments

I include an assessment of the proposed activity against any relevant provisions of a document referred to in section 104(1) (b) of the Resource Management Act 1991, including the information required by clause 2(2) of Schedule 4 of that Act.

The assessment under this section must include an assessment of the activity against –
(a) Any relevant objectives, or policies in a document; and
(b) Any relevant requirements, conditions, or permission in any rules in a document; and
(c) Any other relevant requirements in a document (for example, in a national environmental standard or other regulations)

Statutes that are relevant to your proposed activity

Assessment under the Resource Management Act 1991

Refer to attached Assessment of Environmental Effects and appendices.

Assessment under the New Zealand Coastal Policy Statement

Refer to attached Assessment of Environmental Effects and appendices.

Assessment under the Marlborough Regional Policy Statement

Refer to attached Assessment of Environmental Effects and appendices.

Assessment under the Marlborough Sounds Resource Management Plan

Refer to attached Assessment of Environmental Effects and appendices.

Assessment under the Proposed Marlborough Environment Plan

Refer to attached Assessment of Environmental Effects and appendices.

Additional information

Applications affected by Section 124 or 165ZH(1)(c) of the Resource Management Act 1991

Does this application relate to an existing consent held by the applicant which is due to expire, and the applicant is to continue the activity?

Yes - this application relates to the following existing consent

Consent number

MFL202 and MPE924/U090436

The value of investment of the existing consent holder is

As part of this Application to renew site 8268, the Applicant is seeking to re-consent the site for a period of 20 years. As a result, this is an Application to which section 165ZH(1)(c) applies and the Council must, when considering the application, have regard to the value of the investment of the existing consent holder under section 104(2A).

The site has been held by the applicant since 2017. From that time the applicant has maintained the farm. The farm is used for spat growing and is of high strategic importance to the Maclab group. This is because farm is in an area where there is a low incidence of blue mussel infestation and the site is very reliable for nurturing and growing spat. A large portion of Maclab's farming portfolio is in Tasman and Golden Bay area's where growing spat is a riskier proposition due to blue mussel over-settlement and the need to have spat in various locations as a risk management strategy.

The spat grown from the site may support up to 1800 tons of Maclab annual crop grown in various areas in Marlborough, Tasman and Golden Bay or around 25% of current requirements.

The availability and retention of spat is the single biggest challenge the industry is facing and it is therefore critical to ensure what spat is available or caught is held in locations that will provide the best opportunity to thrive with low risks of mortality occurring.

The farm is used for holding mussel spat however if it was converted to a production farm it is estimated that it would produce approximately 160 tonnes per annum ($1400/ Green Weight Tonne (GWT)) and after processing the final ½ shell product would be sold on the export market at approximately $532,000. Approximately 95% of mussel products are exported.

The mussels are processed in Maclab Nelson where they provide a critical part of the production to maintain processing to the factory which employees 40-65 FTE's depending on the season and time of year. Maclab are forecasting to grow the business substantially over the next 5 years with significant investment in capital and job creation.

Section 85 of the Marine and Coastal Area (Takutai Moana) Act 2011

Is the proposed activity to occur in an area within the scope of a planning document prepared by a customary marine title group under section 85 of the Marine and Coastal Area (Takutai Moana) Act 2011?

No - the proposed activity does not occur in such an area

Additional information required for subdivision consent

Does your application include one or more consents for subdivision?

No

Additional information required for application for reclamation

Does your application include one or more consents for reclamation?

No

Plans and technical reports

Report type	Report title	Author	External reference	Keywords	Document
Site Plan	-	-	-	-	8268.pdf (7 MB)
Benthic report	-	-	-	-	RobEnv_EcolAsses Farm 8268_v1.0 (00 MB)
Miscellaneous	-	-	-	-	8268 AEE April 2020.pdf (497 kB)

Affected person approvals

Have you obtained affected person(s) approvals?

No - I have not obtained affected person(s) approvals

Iwi

Have you obtained approvals from iwi?

No - I have not obtained approvals from iwi

Public notification (Section 95A(2)(b)) of the Resource Management Act 1991

Is public notification of the application requested by the applicant?

No - public notification of application is not requested

Lodgement fee

Please see Marlborough District Council's fees page for more information.

Payment ID Code

00LYAR

Do you require a GST receipt for a bank payment?

Yes - I do require a GST receipt for a bank payment

If further charges are incurred, please invoice

Applicant

If refunds are applicable, please refund

Applicant

Fee comments

The applicant is to be charged directly for the lodgement fee.

Declaration

I confirm that the information provided in this application and the attachments are accurate.

Yes

Authorised by (your full name)

Bruce Raymond Cardwell

Authorising person is:

Person authorised to sign on behalf of the applicant

Note to applicant

You must include all information required by this form. The information must be specified in sufficient detail to satisfy the purpose for which it is required.

You may apply for 2 or more resource consents that are needed for the same activity on the same form. If you lodge the application with the Environment Protection Authority, you must also lodge a notice in form 16A at the same time.

You must pay the charge payable to the consent authority for a resource consent application under the Resource Management Act 1991 (if any).

If your application is to the Environment Protection Authority, you may be required to pay actual and reasonable costs incurred in dealing with this matter (see section 149ZD of the Resource Management Act 1991).

Privacy information

The information you have provided on this electronic form is required so that your application can be processed and so that statistics can be collected by Council. The information will be stored on a public register and held by Council. Details may be made available to the public about consents that have been applied for and issued by Council. If you would like access to or make corrections to your details, please contact Council.

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ASSESSMENT OF ENVIRONMENTAL EFFECTS
FOR A COASTAL PERMIT
OCCUPANCY AND DISTURBANCE OF THE SEABED

APPLICATION BY BIOMEX TRUSTEES LIMITED & GARY WILLIAM ROUNTREE & PAMELA ALINSON HALE
TO RENEW EXISTING CONSENT FOR MARINE FARM SITE 8268
SQUALLY COVE, CROISILLES HARBOUR, MARLBOROUGH

1.0 INTRODUCTION – OVERVIEW OF APPLICATION

Biomex Trustees Limited & Gary William Rountree & Pamela Alinson Hale has applied to renew the existing resource consent MFL202 and MPE924/U090436 for marine farm site 8268 (total 5.970ha) for the purpose of farming Greenshell mussels (Perna canaliculus), scallops (Pecten novaezelandiae), Blue Mussel (Mytilus galloprovincialis), Dredge oysters (Tiostrea chilensis) and Seaweed (Macrocystis pyrifera, Gracilaria, Ecklonia radiata and Pterocladia lucida), using conventional long line methods. (Refer attached layout diagrams illustrating the site.)

MFL202 – 3.7500 ha parent farm was granted in January 1982 and expires 31st December 2024.

MPE924/U090436- 2.2200ha extension was granted in August 2009 and expires 31st December 2024.

The Applicant seeks a 20-year term.

The Parent farm MFL 202 is assessed as a restricted discretionary activity in the current Marlborough Sounds Resource Management Plan.

The extension U090436 is non-complying under rule 35.4 as the farm extends beyond 200 metres from the shore.

Marine farm licence MFL202 was issued to the original consent holder in January 1982 for a 3.75ha site. It was issued under the Marine Farming Act 1971.

In April 2002 Council granted resource consent U001234 for a 2.22ha an extension seaward and south.

The application is for a continuation of the activities currently consented on the site and combine the licence and consent into one consent. No changes to the activities are proposed.

The site lies within the boundary of the CMZ2, an area in which marine farming activity is a discretionary activity.

As this is a 'like for like' Application by an existing permit holder, the Application should be processed under section 165ZH. The Applicant's adherence to the industry codes of practice, and its commitment to environmental programmes and activities, along with its compliance with the conditions of the existing Consent, are conduct in the Applicant's favour in terms of section 165ZJ(1).

The applicant currently has consent for 18 long lines but the proposed application is for 11 lines.

The site dimensions are as per the layout plans attached. The application includes 11 long lines, each being approximately 204-297 metres long. Originally the farm layout was for a crop farm however the applicant uses it exclusively for a spat holding farm. Although the proposed application has reduced the number of lines the total backbone length is increased to accommodate spat. Spat has a very low benthic impact below the backbones due to reduced biomass.

There are currently 9 lines installed and operating at the site that hold grow Greenshell mussel spat.

The site layout is attached to the application.

Biomex is part of the Maclab group which pioneered the nutraceutical market for greenshell mussels since 1973 and remains the market leader. Maclab has been expanding their manufacturing and marine operations in anticipation of accelerating demand for products in international markets through their business partner Pharmalink International. Maclab has recently built a state-of-the-art mussel vessel and is leading the expansion of new open water farms in Golden Bay and Tasman Bay to supply their manufacturing operations in Nelson.

Gary Rountree is the Chief Financial Officer of Maclab and has been in the industry for over 6 years. He was instrumental in setting a new supply strategy for Maclab reducing the dependency on third party suppliers and developing Maclab's marine farming operations. He has also been a key driver behind setting a culture of commitment towards improvement in sustainable practices and climate friendly initiatives at Maclab. He is committed to driving the growth for the New Zealand mussel industry believing in the need for New Zealand to shift dependency from commodity based high carbon businesses to high value sustainable industries.

Dr Pamela Hale is married to Gary Rountree and is a specialist physician and leader at the Nelson Marlborough District Health Board and board member of the NZ Medical Council.

The Applicant's farm is managed by Maclab (NZ) Limited who adheres to the 'Greenshell Mussel Industry Environmental Code of Practice' and its successor, the Environment Management

Framework and is an active participant of the Marine Farming Association's Environmental Programme.

This programme covers the activities of marine farmers "on water" activities. This Programme includes being an active participant in beach clean ups and adhering to the following Codes of Practice:

- 'Marine Farming Operating Standards Marlborough Sounds, Tasman and Golden Bays'.
- 'Code of Practice to avoid, remedy or mitigate noise from marine farming activities in the Marlborough Sounds, Golden Bay and Tasman Bay, on other users and residents'.
- 'Reducing Pollution and Emissions from Marine Farming 'On Water' Activities'.
- 'Reducing Waste taken to Landfill from Marine Farming 'On water' Activities'.

Maclab (NZ) Limited are a recipient of Environmental Certification status from the Marine Farming Association. This is achieved through complying with all requirements of the Marine Farming Association's Environmental Programme and having passed audits of the farms and vessels.

2.0 INTRODUCTION – THE APPLICATION

2.1 Size: The site is 5.970ha.

2.2 Structures: The site dimensions will be: inshore boundary 250 metres long, outer boundary 347 metres, western boundary 222 metres long and eastern boundary 200 metres long (refer attached site plan).

There will be a total of 11 longlines (refer attached layout diagram).

2.3 Species: It is proposed to farm and harvest farming Greenshell mussels (Perna canaliculus), scallops (Pecten novaezelandiae), Blue Mussel (Mytilus galloprovincialis), Dredge oysters (Tiostrea chilensis) and Seaweed (Macrocystis pyrifera, Gracilaria, Ecklonia radiata and Pterocladia lucida), using conventional long line methods.

The application is for a continuation of the activities currently consented at the site. No changes to the activities are proposed.

3.0 PERMITTED ACTIVITIES

The application is for a new consent to replace MFL202 and MPE924/U090436 in Squally Cove, Croisilles Harbour, to seed, cultivate and harvest species Greenshell mussels (Perna canaliculus), scallops (Pecten novaezelandiae), Blue Mussel (Mytilus galloprovincialis), Dredge oysters (Tiostrea chilensis) and Seaweed (Macrocystis pyrifera, Gracilaria, Ecklonia radiata and Pterocladia lucida), including occupation of 5.970ha of the coastal marine area. Consent is also sought to allow the

existing seabed anchoring devices to remain (and be replaced as required), to harvest marine farming product from the marine farm (including the discharging of coastal seawater and discharge of biodegradable and organic waste matter) and all other activities that are ancillary to the operation on site 8268.

The movement of vessels is a permitted activity: s27 Marine and Coastal Area (Takutai Moana) Act 2011. This right includes anything reasonably incidental to vessel movement (s27(2)).

The proposed activity has been assessed against the relevant provisions of the:

1. New Zealand Coastal Policy Statement 2010;

2. Marlborough Regional Policy Statement;

3. Marlborough Sounds Resource Management Plan; and

4. Proposed Marlborough Environment Plan

at Sections 23 and 24/Appendices A – C of this Assessment of Environmental Effects.

Other activities that relate to this application include permissions that do not relate to the Resource Management Act, including;

1. Fish farming licence

4.0 TERMS OF CONSENT

MFL202 expires 31st December 2024.

MPE924/U090436 expires 31st December 2024.

The expiry date of the existing consent is 2024, along with over 250 marine farms located in the Marlborough Sounds.

As there will be a large bottleneck of applications to the Marlborough District Council around this time, the applicant has requested that if the consent is granted, then the commencement date of the new consent could be delayed for 3 years until 2023.

The applicant is aware of the impending bottleneck and this is the reason for submitting the application prior to the expiry date. It is believed this early submission will assist the Marlborough District Council processing of applications, availability of specialists to complete appropriate reports and be timely for submitters.

The Applicant seeks a 20-year term expiring in 2043 and to combine the extensions and the original licence into one consent.

5.0 THE SITE - LOCATION

The site is located "*offshore of the northern shoreline of Squally Cove, approximately 700 m east-north-east of Matarau Point, Croisilles Harbour. Matarau Point is a cuspate foreland formed by coastal processes acting to deposit cobble, pebble and small boulder sized material forming a triangular shaped intertidal and subtidal feature. The headland is located on the outer northern shore of Squally Cove, the eastern arm of Croisilles Harbour. Matarau Point is roughly 8 km from the entrance to Croisilles Harbour and some 47 km by sea from the entrance to Port Nelson."* (Robertson Environmental Report, attached).

The farm sits alongside other farms on the northern shoreline of Squally Cove. The nearest marine farms to 8268 are the adjacent farm to the west 8267 and to the east 8269 and 8270.

The adjacent land is zone Rural 1. The nearest residence is approximately 1.2km from the site in Oyster Bay.

The site lies within the boundary of Coastal Marine Zone 2 (CMZ2).

6.0 THE SITE - DIMENSIONS

The site dimensions are as per the layout plans attached. The depth of the water at each of the site corners is 9.8 metres (NW), 11.6 metres (NE), 11.7 metres (SE), and 10.7 metres (SW).

The application includes 11 long lines, each being approximately 204-297 metres long.

There are currently 9 lines installed and operating at the site that grow Greenshell mussel spat.

The site layout is attached to the application.

The warp lengths are 24 metres from each end of the backbone (see line layout diagram for individual longline lengths). The warp ratio is approximately 2:1.

The farm is identified as being onsite as shown on the Marlborough District Council website (smart maps).

7.0 THE PRESENT ENVIRONMENT

7.1 The Marine Environment

In November 2019 Robertson Environmental Ltd, undertook a biological study of the ecology of the marine area of site 8268 (Report attached).

The Report indicates that the impact of the existing activity is similar to other mussel farming activities in Marlborough. In particular, the report states the following;

"4.3 Summary of Effects Assessment
An estimate of habitat change resulting from the proposed reconsent can be undertaken by importing the proposed design into a GIS environment. This allows a semi-quantitative estimate to be made of the benthic habitat likely to be impacted. The areal footprint of the reconsent area and existing surface farming structures overlaid on a map of benthic habitat types is shown above in Figure 3.3. Reconsent of the proposed site would not likely alter the soft mud-dominated habitat. It is unlikely that those remaining habitats adjacent to the reconsent would be appreciably altered by the proposal. Given that the size of the survey area was selected based on the scale of proposed reconsent, these calculations suggest that approximately 57% of the soft mud habitat, and 0% of the nearshore coarser-grained habitat in the study area will be situated beneath the proposed reconsent (i.e. existing farming structures) (Table 3.1).

Although the proposed reconsent would be situated above a high proportion of the soft mud habitat in the surveyed area, the relatively depauperate biological nature of the habitat, in this case dominated by highly mobile fauna (sea cucumber) commonly found beneath established shellfish farms in the Marlborough Sounds, means that it is unlikely that significant changes to ecology will occur. Indirectly, ecology in more distant habitats from the proposed reconsent (e.g. nearshore subtidal habitats inshore of existing farming structures) are also unlikely to be affected by the reconsent given their distance from the farming structures, relatively large extent, shallow depth and high flushing potential driven by periodic wind and wave action.

5 Discussion & Conclusions
Broad scale habitat classification and fine scale inspection (via drop camera) of coastal marine areas as described in this study provides a detail of ecologically meaningful units (habitat type and associated fauna), that can be used as a baseline to detect changes in spatial extent over time, or as a result of a proposed activity.

We note that, because the site of the proposed reconsent where existing surface farming structures are situated is confined to the relatively deep, soft muddy, subtidal area, the current assessment mainly focuses on classifying only habitat and inhabitant fauna physically associated with this zone of the reconsent.

In terms of the overall physical environment, the study area, including the reconsent, exhibits properties characteristic of a deep, subtidal dominated estuary (Robertson et al. 2016), with soft mud featuring as the dominant substratum bordered to the north by a smaller area of nearshore coarser-grained habitat. Mud (i.e. silt and clay), which is the most common subtidal habitat in the sheltered Marlborough Sounds (McKnight and Grange, 1991) and has been traditionally targeted for marine farming activities, typically habours low value biological communities made up of fewer taxa more tolerant of disturbed/muddy conditions (Pearson and Rosenberg 1978; Robertson et al. 2015). For this reason, mud substratum is considered suitable for consideration for marine farming activities in the Marlborough Sounds. Biologically, the results of the survey of this subtidal habitat

confirm this theory, with very few epibenthic macrofauna present within the soft mud habitat, based on representative drop camera photos taken below and adjacent to the consent. Indeed, no species, including sea birds, fish and marine mammals, defined by DoC or MDC as having ecological significance were observed during this reconsent survey (DoC 1996-2006; Davidson et al. 2011).

Mussel farming is expected to enhance rates of sedimentation of organic-rich, fine-grained particles (biodeposits of faeces and pseudofaeces), and the deposition and accumulation of live shellfish, shell litter onto the seabed (Keeley et al. 2009; Stenton-Dozey and Broekhuizen 2019). In this respect, the survey results showed benthic shell debris levels and apparent oxygenation of surface sediments, the latter a screening-level indicator of organic enrichment, to be predominantly within the low impact range known for mussel farms in the Marlborough Sounds. While it is likely that continued shellfish farming at this site will result in the deposition of more shell and fine-grained particles under and near droppers, it is highly unlikely that biogeochemical conditions within the benthic environment (e.g. biotic community structure, surface sediment grainsize distribution and oxygenation/redox conditions) will be further altered by the activity.

In terms of potential water column effects, it is important to consider whether mussel farming at the site may impact productivity in adjacent marine area by way of phytoplankton depletion (i.e. extraction of phytoplankton and organic particulates by the farmed shellfish). The effects of phytoplankton depletion through shellfish consumption are generally only detectable at approximately the farm scale, and are of short duration (Morrisey et al. 2006). The significance of associated effects depends on a variety of factors, including the carrying capacity of the environment, prevailing water currents, weather patterns, and catchment-derived nutrient inputs, with effects more pronounced if farms are located in physically constrained shallow areas with slow currents, compared to deep sites with strong flow and good flushing (Zeldis et al. 2008, 2013; Plew 2011; Broekhuizen et al. 2015). The application site is located nearby to the confluence between the entrance to the Croisilles Harbour and Squally Cove, and hence relatively good circulation (driven by tides and wind) and lower residence times than more quiescent sites located further into the Cove (Davidson and Richards 2014; Davidson 2015). On this basis, and given that no data has been presented to show the ecological carrying capacity of the Sounds has been reached, the effect of phytoplankton depletion outside the boundaries of the consent by feeding mussels will be less pronounced than sites further into the Harbour.

Overall, the proposal is considered relatively benign in terms of ecological impacts based on the farming activity, long history of farming at the site, and the existing values, and therefore the life-supporting capacity of associated coastal ecosystems will be maintained through the operation of the consent". Robertson Environmental Ltd (Report, attached)

The report also indicates that the impact of the current activities is in line with expectations of the environmental impacts of mussel farming. In addition, the current study supports the Ministry of Fisheries assessment which was used to assess the sustainability of the farm and its impact on fishing and fishery resources.

7.2 The Land Environment

The site is located "*offshore of the northern shoreline of Squally Cove, approximately 700 m east-north-east of Matarau Point, Croisilles Harbour. Matarau Point is a cuspate foreland formed by coastal processes acting to deposit cobble, pebble and small boulder sized material forming a triangular shaped intertidal and subtidal feature. The headland is located on the outer northern shore of Squally Cove, the eastern arm of Croisilles Harbour. Matarau Point is roughly 8 km from the entrance to Croisilles Harbour and some 47 km by sea from the entrance to Port Nelson*." (Robertson Environmental Report, attached).

The adjacent land is zoned Rural 1.

"The adjacent landscape features coastal hillslopes which rise from a relatively narrow band of rocky cobbled intertidal to ridges approximately 100-150 m in height. Predominantly landuse cover is a combination of commercial forestry (currently supporting maturing Pinus radiata) and regenerating native vegetation." (Robertson Environmental Report, attached).

The beach is dominated by hard rock and boulders, although small beaches have formed along the coastline in this area.

8.0 NAVIGATION MATTERS

8.1 The Shoreline

The distance from the shoreline according to the original Cadastral mapping is inside the conventions established in the Marlborough Sounds Resource Management Plan.

8.2 Headlands

There are no headlands immediately adjacent to the site.

8.3 Navigational Routes (Formal/Informal)

The shoreline in which the farm sits is not on a normal navigation route, however, vessels that wish to navigate within the area can proceed through the farm and either inside or outside of the site.

The farm does not impede vessel movements along the coastline or access to the adjacent land.

8.4 Anchorages or Mooring Areas (Formal/Informal)

There is no registered mooring in the vicinity of the site.

There not a jetty in the vicinity of the site.

8.5 Indirect Effects-Servicing vessels at site

The Applicant estimates farming and harvesting vessels will visit the site on an average of 10-20 days a year, for periods of 0.5 to 6 hrs to undertake farm maintenance, seeding and harvesting.

The total number of hours spent on these activities is estimated to be 80-90 hrs annually.

8.6 Water Ski Lanes

There are no formal water ski lanes in the vicinity.

8.7 Sub-Marine Cables

There are no sub-marine cables in the immediate vicinity of the farm.

9.0 AESTHETIC

9.1 Land Zoned for Residential Use or Proximity to Residences

The land adjacent to the site is zone Rural 1.

There are no residences directly adjacent to the site.

9.2 Scenic Value

9.2.1 Landscape

The area has not been identified within the current Marlborough Sounds Resource Management Plan as being an area of outstanding natural landscape value.

The area is alongside an area that has been described as an area of outstanding nature landscapes and features in the proposed Plan, these assessments were made with the farms already in place and operational. There was no direction given in the plan that the marine farms should be removed for the area to be assessed as having outstanding nature landscapes and features.

Section 6(b) of the Act requires decision makers to recognise as a matter of national importance the protection of outstanding natural features and landscapes (ONFLs) from inappropriate subdivision, use and development. Policy 15(a) of the New Zealand Coastal Policy Statement 2010 (NZCPS) requires adverse effects of activities on ONFLs in the coastal environment to be avoided. NZCPS policy 15(b) requires significant adverse effects from activities on other natural features and natural landscapes in the coastal environment to be avoided, and other adverse effects to be avoided, remedied or mitigated.

The operative Marlborough Sounds Resource Management Plan (MSRMP) identifies Areas of Outstanding Landscape Value (AOLV).[1]

The proposed Marlborough Environment Plan (MEP) contains landscape overlay maps based on the 2015 Marlborough Landscape Study.[2] While these maps are generally considered to be based on more up-to-date methodology than the MSRMP, they are the subject of a large number of submissions. The application site is adjacent to an ONFL in the MEP.

In assessing whether the proposal is appropriate in the context, we must understand what is sought to be protected, namely the values of the area.[3] The values for each of those areas are listed in the schedules in MEP Appendix 1.

Aquaculture is part of the Marlborough Sounds environment. A marine farm in this location does not interfere with the listed values, because it is consistent with the mixed use/working character of this part of the Sounds, is low profile in nature and only visible at close range (with visual effects diminishing in some conditions depending on lighting and weather), and will not interfere with significant ecological values, as addressed elsewhere in this application. In addition, Greenshell mussels are naturally occurring in New Zealand and are indigenous. Aquaculture is perhaps the only form of farming where the effects are fully reversible.[4]

On this basis, adverse effects from the activity on identified ONFLs are avoided, consistent with NZCPS policy 15(a); and significant adverse effects on other natural features and natural landscapes are avoided, consistent with NZCPS policy 15(b).

9.2.2 Natural character

The area has been described as having high natural character in the proposed Plan, these assessments were made with the farms already in place and operational. There was no direction given in the plan that the marine farms should be removed for the area to be assessed as having high natural character.

The preservation of the natural character of the coastal environment and protection from inappropriate subdivision, use and development is another matter of national importance under s 6(a) of the Act. In addition, NZCPS policy 13(1)(a) requires adverse effects from activities on areas of the coastal environment with outstanding natural character to be avoided. Further, significant adverse effects must be avoided, and other adverse effects avoided, remedied or mitigated in the remainder of the coastal environment, in line with policy 13(1)(b).

Areas of natural character are not mapped in the MSRMP, although the overall natural character of the Marlborough Sounds and the natural character of identified marine and land areas are outlined in Appendix 2. The MEP contains Coastal Natural Character overlay maps, showing areas of outstanding, very high and high natural character.[5] These overlay maps are the subject of a large number of submissions.

The application site is within an area of high natural character as mapped in the MEP.

As with landscape, in determining whether a marine farm is appropriate in this location, we must consider whether it interferes with the natural character values that require protection.

The application site sits within the Coastal Marine Area 2,[6] in Appendix 2 of the MEP. The values contributing to high, very high and outstanding coastal natural character are also outlined in Appendix 2.

The marine farm will not interfere with the biophysical values of the adjoining land. In terms of the biophysical values in the Coastal Marine Area, we know that benthic effects from shell drop are localised to beneath and in close proximity to the droppers. The community shift that occurs as a result is not typically regarded as adverse in a scientific sense. Neither will the marine farm interfere with the perceptual values of natural character. Marine farming can be seen as 'cultured nature': it is a sustainable form of food production, mussels are naturally occurring in the water column, and the effects of marine farming are reversible (consistent with intergenerational sustainable management).

On this basis, adverse effects from the activity on identified areas of outstanding natural character are avoided, consistent with NZCPS policy 13(1)(a); and significant adverse effects on natural character in all other areas of the coastal environment are avoided, consistent with NZCPS policy 13(1)(b).

9.2.3 Visual Amenity

Section 7(c) of the Act requires decision makers to have particular regard to the maintenance and enhancement of amenity values. The entirety of the Marlborough Sounds Coastal Landscape, is mapped as a High Amenity Landscape in the MEP. The values of this amenity landscape are outlined in Appendix A. An individual marine farm at this location will not have an impact on a high amenity landscape of the scale mapped in the MEP.

"The adjacent landscape features coastal hillslopes which rise from a relatively narrow band of rocky cobbled intertidal to ridges approximately 100-150 m in height. Predominantly landuse cover is a combination of commercial forestry (currently supporting maturing Pinus radiata) and regenerating native vegetation." (Robertson Environmental Report, attached).

The effect of the marine farm on the adjacent area will not have an effect on the flora and fauna of this area.

10.0 ECOLOGICAL VALUE

There is no ecological value identified in the Marlborough Sounds Resource Management Plan for Site 8268.

There are no ecologically significant marine sites identified in the proposed Plan in the vicinity of the site.

The effect of the marine farm on the adjacent area will not have an effect on the flora and fauna of this area.

11.0 RECREATIONAL VALUE

The visual impact of the marine farm will change in a minor way due to the lengthening of the backbones.

Access to the coast for recreationalists is maintained.

12.0 HISTORICAL, TRADITIONAL AND CULTURAL VALUES

In preparing this Application, the Applicant has had regard to the Te Tau Ihu Statutory Acknowledgments and has reviewed the Statements of Association for each iwi. The Applicant understands that this Application will be notified to Iwi with statutory acknowledgements in the area and will discuss the Application further with Iwi representatives.

13.0 COMMERCIAL AND RECREATIONAL FISHING

Matters impacting on commercial and recreational fishing are controlled by the Ministry of Primary Industry's (MPI) Undue Adverse Effects test (UAE).

13.1 Commercial Fishing

Commercial fishing is not known to occur in Squally Cove but may occur offshore. The farm will not interfere with commercial fishing operations. No artificial feed or attractants are added.

13.2 Recreational Fishing

It is the Applicant's view that the marine farm at the site enhances opportunities for recreational fishing, as marine farms generally tend to create an ecosystem which is conducive to the presence of reef fish and other fish species.

14.0 VISUAL EFFECTS OF THE FARM

Visual effects will remain the same as they exist at the present. The farm is consented for 18 long lines and the farm structures presently consist of 9 long lines each being approximately 200 metres in length containing black mussel buoys ranging between approximately 4 and 20 per line. The total back bone area will increase however spat farms require less flotation than crop farms.

At the end of each longline an orange buoy will be displayed and an orange buoy will be displayed in the middle of each of the seaward most and landward most longlines.

A yellow light, radar reflector and a band of reflective tape will be displayed on the seaward corners and radar reflectors and a band of reflective tape will be displayed on the landward corners or as requested on the lighting plan provided by the Harbour Master.

15.0 EFFECTS ON WATER QUALITY AND ECOLOGY

Water quality of the area is suitable for mussel spat farming. The site relies on water quality to enable the process of mussel farming to flourish. The site 8268 has a good capacity for mixing of water with regular tidal currents, wind and wave action.

The effect on the ecology of the site from the existing activity is attached in the Robertson Environmental Limited Report.

16.0 EFFECTS ON PRODUCTIVITY

Water quality is unlikely to be a problem for mussel farming in Squally Cove. The continuing activity itself is unlikely to create any significant detrimental effects on water quality.
Exert from Robertson Environmental Report (Benthic Report, refer attached).

"In terms of potential water column effects, it is important to consider whether mussel farming at the site may impact productivity in adjacent marine area by way of phytoplankton depletion (i.e. extraction of phytoplankton and organic particulates by the farmed shellfish). The effects of phytoplankton depletion through shellfish consumption are generally only detectable at approximately the farm scale, and are of short duration (Morrisey et al. 2006). The significance of associated effects depends on a variety of factors, including the carrying capacity of the environment, prevailing water currents, weather patterns, and catchment-derived nutrient inputs, with effects more pronounced if farms are located in physically constrained shallow areas with slow currents, compared to deep sites with strong flow and good flushing (Zeldis et al. 2008, 2013; Plew 2011; Broekhuizen et al. 2015). The application site is located nearby to the confluence between the entrance to the Croisilles Harbour and Squally Cove, and hence relatively good circulation (driven by tides and wind) and lower residence times than more quiescent sites located further into the Cove (Davidson and Richards 2014; Davidson 2015). On this basis, and given that no data has been presented to show the ecological carrying capacity of the Sounds has been reached, the effect of phytoplankton depletion outside the boundaries of the consent by feeding mussels will be less pronounced than sites further into the Harbour."

17.0 THE BENTHIC ENVIRONMENT

In terms of the benthic environment, the ecology of this area has been documented in Robertson Environmental Ltd Report (refer to 7.1 above).

The farm structures are located over habitat considered suitable for this type of activity. No monitoring appeared to be necessary.

The applicant is mindful of the need to consider the cumulative effects of this farm over time and in combination with other effects, as required by s 3(d) of the Act. The effects of a farm at this specific location are assessed elsewhere in this assessment of environmental effects.

The aquaculture industry has contributed and is contributing to a better understanding of cumulative effects on a number of fronts, including:

(a) The Marine Farming Association co-funded the 2017 NIWA history of seabed change in Pelorus Sound project;[7]
(b) A king shag working group has been formed to draft and implement an *Action Plan and Research Strategy for the NZ King Shag*, which involves several stakeholders, including government departments and industry;
(c) King shag population counts are undertaken by aerial survey as part of New Zealand King Salmon's consent conditions;
(d) Many benthic surveys have been conducted throughout the Sounds as part of marine farm consent applications. This has contributed to our overall understanding of Marlborough's marine environment;
(e) Water quality monitoring is undertaken as part of the Marlborough Shellfish Quality Programme; and
(f) Fisheries Resource Impact Assessments (FRIA) were collective industry-led bay by bay assessments on the impacts of aquaculture on fisheries resources.

The applicant continues to support the industry's collective response to these issues.

Aquaculture is part of the Marlborough Sounds environment. We cannot look at this application in isolation from its wider environment. We know that the marine environment in the Sounds has been modified by human activities, including physical disturbance from historical dredging and trawling, as well as from catchment effects such as historic land clearance.[8] In a relative sense, we know that aquaculture is having less of an impact on the marine environment than many anthropogenic stressors, including climate change, ocean acidification, sedimentation from land-based activities, dredging and trawling, and coastal engineering.[9]

We also know that mussel farms provide benefits or "ecosystem services." Farmed mussels have replaced the natural mussel beds that were present throughout the Pelorus Sound in the 1960s prior to extensive commercial dredging.[10] Mussels remove nutrients derived from land-use practices.

The applicant agrees with other stakeholders who are calling for a strategic assessment of cumulative effects.[11] That exercise is required by policy 7(2) of the New Zealand Coastal Policy Statement 2010. It is more than can be expected of one applicant. It is best undertaken via the proposed Marlborough Environment Plan process, or in partnership with local and central government.

18.0 ALIENATION OF PUBLIC SPACE

The general area of this part of Croisilles Harbour has been utilised by marine farmers in excess of 38 years. Recreation and commercial boat owners are aware of marine farms in this area and all vessels have the opportunity to use the site and transit through it. The spacing between the long lines provides opportunity for access by vessels wanting to transit the site.

19.0 HARVESTING

As part of this Application, the Applicant seeks to continue harvesting mussel crops. The right to navigate to and from the farm, and to anchor, moor and load crop is preserved by section 27 of the Marine and Coastal Area (Takutai Moana) Act 2011. However, consent is required for the amount of organic waste matter which is discharged during the harvesting process and for the take and use of coastal water. No significant historical adverse effects have been recorded or are anticipated and any visual evidence of harvesting quickly dissipates in the coastal environment.

Vessels will be required to service the farm on an irregular basis (refer 8.5).

20.0 ON SHORE FACILITIES

The applicant's farm work and harvesting are completed by Maclab (NZ) Limited who already has onshore marine farm facilities based in Nelson.

21.0 VALUE OF INVESTMENT

As part of this Application to renew site 8268, the Applicant is seeking to re-consent the site for a period of 20 years. As a result, this is an Application to which section 165ZH(1)(c) applies and the Council must, when considering the application, have regard to the value of the investment of the existing consent holder under section 104(2A).

The site has been held by the applicant since 2017. From that time the applicant has maintained the farm. The farm is used for spat growing and is of high strategic importance to the Maclab group. This is because farm is in an area where there is a low incidence of blue mussel infestation and the site is very reliable for nurturing and growing spat. A large portion of Maclab's farming portfolio is in Tasman and Golden Bay area's where growing spat is a riskier proposition due to blue mussel over-settlement and the need to have spat in various locations as a risk management strategy.

The spat grown from the site may support up to 1800 tons of Maclab annual crop grown in various areas in Marlborough, Tasman and Golden Bay or around 25% of current requirements.

The availability and retention of spat is the single biggest challenge the industry is facing and it is

therefore critical to ensure what spat is available or caught is held in locations that will provide the best opportunity to thrive with low risks of mortality occurring.

The farm is used for holding mussel spat however if it was converted to a production farm it is estimated that it would produce approximately 160 tonnes per annum ($1400/ Green Weight Tonne (GWT)) and after processing the final ½ shell product would be sold on the export market at approximately $532,000. Approximately 95% of mussel products are exported.

The mussels are processed in Maclab Nelson where they provide a critical part of the production to maintain processing to the factory which employees 40-65 FTE's depending on the season and time of year. Maclab are forecasting to grow the business substantially over the next 5 years with significant investment in capital and job creation.

22.0 PART II RESOURCE MANAGEMENT ACT ISSUES

22.1 Section 5

Section 5 of the Resource Management Act 1991 is given effect through the New Zealand Coastal Policy Statement, Marlborough Regional Policy Statement and Marlborough Sounds Resource Management Plan.

In terms of the enabling provisions in Section 5 of the Resource Management Act, the marine farm industry has been, and will continue to be, a source of substantial revenue generation and job creation in the Marlborough Sounds and, in the Nelson/Marlborough region.

The majority of mussels produced from the site will be exported, thereby generating foreign exchange earnings for the country. Applications such as this enable the sustainable use of the marine environment.

22.2 Section 6

Matters of national importance have been assessed under the requirements of the Marlborough Sounds Resource Management Plan.

The Proposal recognises:

a. *The preservation of the natural character of the coastal environment (including the coastal marine area), wetlands, and lakes and rivers and their margins, and the protection of them from inappropriate subdivision use, and development:*

Section 6(a) is given effect through Policy 13 of the New Zealand Coastal Policy Statement and is considered further below.

b. *The protection of outstanding natural features and landscapes from inappropriate Subdivision, use, and development:*

The area has not been identified within the current Marlborough Sounds Resource Management Plan as being an area of outstanding natural landscape value. The effects of the Application on the landscape will be the same as the present Consent and any effects will not impact on the values which contribute to the landscape.

The area is alongside an area that has been described as an area of outstanding nature landscapes and features in the proposed Plan, these assessments were made with the farms already in place and operational. There was no direction given in the plan that the marine farms should be removed for the area to be assessed as having outstanding nature landscapes and features.

c. *The protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna:*

"*The adjacent landscape features coastal hillslopes which rise from a relatively narrow band of rocky cobbled intertidal to ridges approximately 100-150 m in height. Predominantly landuse cover is a combination of commercial forestry (currently supporting maturing Pinus radiata) and regenerating native vegetation*." (Robertson Environmental Report, attached).

d. *The maintenance and enhancement of public access to and along the coastal marine area, lakes, and rivers:*

Public access is maintained with good separation from the coast and main navigational routes.

e. *The relationship of Maori and their culture and traditions with their ancestral lands, water, sites, waahi tapu, and other taonga.*

The Applicant will continue to discuss this through consultation with Iwi.

22.3 Section 7

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

(a) Kaitiakitanga:

(b) The efficient use and development of natural and physical resources:

(c) The maintenance and enhancement of amenity values:

(d) Intrinsic values of ecosystems:

(e) Recognition and protection of the heritage values of the sites, buildings, place, or areas:

(f) Maintenance and enhancement of quality of the environment:

(g) Any finite characteristics of natural and physical resources:

(h) The protection of the habitat of trout and salmon.

Matters under Section 7 (a - g) have been considered earlier in the original proposal. This Application is not anticipated to have any additional effects over and above what already exists. Section (h) is not relevant to this Application.

23.0 NEW ZEALAND COASTAL POLICY STATEMENT 2010 (NZCPS)

The New Zealand Coastal Policy Statement 2010 is of general relevance to this Application and all policies have been considered in the development of the proposal.

Policies of specific relevance are considered below.

23.1 Policy 2

Policy 2 sets out a number of matters which are relevant to the taking into account of the principles of the Treaty of Waitangi and kaitiakitanga, in relation to the coastal environment.

The applicant recognises that Ngāti Apa ki te Rā Tō, Ngāti Kuia, Rangitāne o Wairau, Ngāti Kōata, Ngāti Rārua, Ngāti Tama ki Te Tau Ihu, Te Ātiawa o Te Waka-a-Māui and Ngati Toa Rangatira have statutory acknowledgments in the area of the application site. Those acknowledgements have been considered during the preparation of this application, as outlined above.

The iwi management plans of Ngāti Kōata and Te Ātiawa o Te Waka-a-Māui have been reviewed.

There are also no established areas of protected customary rights or customary marine title within the meaning of the Marine and Coastal Area (Takutai Moana) Act 2011.

The Applicant will discuss the proposal further with relevant Iwi representatives.

23.2 Policy 6

Policy 6 of the NZCPS is in two parts; the first dealing with activities in the coastal environment more broadly, and the second with those in the coastal marine area more specifically.

The farm is part of the existing built environment, so is in accordance with subpart 1(f), as continuation of the farm would not result in a change in the present character of Squally Cove.

No areas of indigenous biodiversity or historic heritage value have been identified in relation to the site, so the farm complies with subpart 1(j).

Subpart 2 of Policy 6 is particularly relevant. Mussel farming clearly has a functional need to be located in the coastal marine area. The farm directly contributes to the social and economic wellbeing of people and communities, in accordance with subpart 2(a). This is discussed in relation to Policy 8 below.

23.3 Policy 8

Policy 8 of the NZCPS provides for the recognition of the significant existing and potential contribution of aquaculture to the social, economic and cultural wellbeing of people and communities by:

> *(a) including in regional policy statements and regional coastal plans provision for aquaculture activities in appropriate places in the coastal environment, recognising that relevant considerations may include:*
>
> *i. The need for high quality water for aquaculture activities; and*
>
> *ii. The need for land-based facilities associated with marine farming.*
>
> *(b) Taking account of the social and economic 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.*

The Application will enable the continuation of production from the site, contributing to the social and economic benefits of aquaculture to the community. No changes to the impact on water quality are anticipated. This Application satisfies the requirement of Policy 8.

23.4 Policy 11

Policy 11 relates to protecting the indigenous biological diversity of the coastal environment.

The longlines are located over mud habitat and avoids any reef areas or any other areas of significant biodiversity. There will be no adverse modified effects on indigenous biodiversity.

23.5 Policy 13

Policy 13 provides for the avoidance of significant adverse effects on areas of the coastal environment with outstanding natural character and the avoidance, remediation and mitigation of other adverse effects on natural character.

The area has not been identified within the current Marlborough Sounds Resource Management Plan as being an area of outstanding natural character.

The area has been described as having high natural character in the proposed Plan, these assessments were made with the farms already in place and operational. There was no direction given in the plan that the marine farms should be removed for the area to be assessed as having high natural character.

23.6 Policy 15

Policy 15(a) provides for the avoidance of adverse effects of activities on outstanding natural features and outstanding natural landscapes in the coastal environment.

Policy 15(b) provides for the avoidance of significant adverse effects and the avoidance, remediation, and mitigation of other adverse effects of activities on other natural features and natural landscapes in the coastal environment.

There will be no further impact on the landscape than those already occurring under the current consent. The effects of the Application on the landscape will be minor and the effects are not likely to impact on the values which contribute to the landscape.

23.7 Policy 18

Policy 18 recognises the need for public open space within and adjacent to the coastal marine area, for public use and appreciation including active and passive recreation.

The visual impact of the marine farm will not change. Access to the coast for recreationalists is maintained.

There is no registered mooring in the vicinity of the site.

There are no formal water ski lanes.

Opportunities for recreational fishing may be enhanced by the presence of the marine farm.

23.8 Policy 22

Policy 22 requires an assessment of sedimentation levels, and that use will not result in a significant increase in those levels. Robertson's biological report, discussed above, stated that while shell and fine sediment would be deposited under and in proximity to droppers, the farm structures are located over habitat considered suitable for this type of activity. No monitoring appeared to be necessary.

23.9 Policy 23

Subpart 1 of Policy 23, which relates to managing discharges to water in the coastal environment, is relevant to this Application. Silts and organic matter released at harvest are readily assimilated into the water column and seabed. The effects of harvesting mussels are only transitory, and quickly become indistinguishable from background sedimentation.

Conclusion

The effects of the Application on the landscape will be no more than minor and will result in no change to the existing status. The effects are not likely to impact on the values which contribute to the landscape.

24.0 REGIONAL POLICY STATEMENT/MARLBOROUGH SOUNDS RESOURCE MANAGEMENT PLAN

Certain provisions of the Marlborough Regional Policy Statement have relevance to this application and are considered in Appendix A.

The Marlborough Sounds Resource Management Plan contains a number of provisions that are relevant this application. An assessment of the application against the requirements of the plan is contained in Appendix B.

Conclusion
Taken overall, the application is consistent with the relevant objectives and policies of the Regional Policy Statement and Marlborough Sounds Resource Management Plan.

25.0 CONSULTATION

An e-mail has been sent to all Iwi listed below identifying the site prior to the application being submitted.

Name	Address	Phone
Ngati Koata Trust	PO Box 1659, Nelson 7040	(03) 548 1639
Te Runanga a Rangitane o Wairau	PO Box 883, Blenheim 7240	(03) 578 6180
Te Runanga O Ngati Kuia	PO Box 1046, Blenheim 7240	(03) 579 4328
Ngāti Apa ki te Rā Tō	PO Box 708, Blenheim 7240	(03) 578 9695
Te Atiawa Manawhenua Ki Te Tau Ihu Trust	PO Box 340, Picton 7250	(03) 573 5170
Ngati Toarangatira Manawhenua Ki Te Tau Ihu Trust	PO Box 5061, Blenheim 7240	(03) 577 8801
Ngati Rarua Trust	PO Box 1026, Blenheim 7240	(03) 577 8468

26.0 CONCLUSION

The Applicant considers that the renewal of site 8268 is appropriate, thereby allowing the continued farming of Greenshell mussel spat at the site.

The site is in that part of Croisilles Harbour where aquaculture has long been present and has no more than a minor impact on other values in the area.

Appendix A: Marlborough Regional Policy Statement – Policy Analysis

Objective	Policy	Assessment
5.3.2: That water quality in the coastal marine area be maintained at a level which provides for the sustainable management of the marine ecosystem	5.3.5: Avoid, remedy or mitigate the reduction of coastal water quality by contaminants arising from activities occurring within the coastal marine area.	No artificial feed or attractants are added. No Chemicals, antibiotics or other theraputants added Any discharges of organic matter associated with harvesting will be transitory.
5.3.10: The natural species diversity and integrity of marine habitats be maintained or enhanced	5.3.11: Avoid, remedy or mitigate habitat disruption arising from activities occurring within the coastal marine area.	Any disruption associated with the existing mooring of the farm is minor in scale and transitory. The seabed is already in a modified state due to terrestrial run off.
7.1.9: To enable present and future generations to provide for their wellbeing by allowing use, development and protection of resources provided any adverse effects of activities are avoided, remedied or mitigated.	7.1.10: To enable appropriate type, scale and location of activities by: • clustering activities with similar effects; • ensuring activities reflect the character and facilities available in the communities in which they are located; • promoting the creation and maintenance of buffer zones (such as stream banks or 'greenbelts'); • locating activities with noxious elements in areas where adverse environmental effects can be avoided, remedied or mitigated.	The marine farm is consistent with the current Policy and the designated consented area is within a bay with other marine farms.
	7.1.12: To ensure that no undue barriers are placed on the establishment of new activities (including new primary production species) provided the life supporting capacity of air, water, soil and ecosystems is safeguarded and any adverse environmental effects are avoided, remedied or mitigated.	The marine farm is located within the consented area which marine farming is a permitted activity. There will be no change in permitted activity or permitted structures when the consent is renewed.

7.2.7 The subdivision use and development, of the coastal environment, in a sustainable way.	7.2.8: Ensure the appropriate subdivision, use and development of the coastal environment.	The marine farm is within a bay with other marine farms. The marine farm's activity is biologically sustainable.
	7.2.10(a) - (d)	The marine farm is located within the consented area which is permitted for marine farming.
7.3.2: Buildings, sites, trees and locations identified as having significant cultural or heritage value are retained for the continued benefit of the community.	7.3.3: Protect identified significant cultural and heritage features	No sites of cultural or heritage significance have been identified on the area of the application site
8.1.2: The maintenance and enhancement of the visual character of indigenous, working and built landscapes.	8.1.3: Avoid, remedy or mitigate the damage of identified outstanding landscape features arising from the effects of excavation, disturbance of vegetation, or erection of structures.	There will be no further impact on the landscape than those already permitted under the current consent. The effects of the application on the landscape will be minor and the effects are not likely to impact on the values which contribute to the landscape. The farm is well managed and complies with the Greenshell Mussel Environmental Code of Practice.
	8.1.5: Promote enhancement of the nature and character of indigenous, working, and built landscapes by all activities which use land and water.	The marine farm will have no additional impact on landscape values.
	8.1.6: Preserve the natural character of the coastal environment.	The site will have no additional impact on the natural character of the coastal environment.

Appendix B: Marlborough Sounds Resource Management Plan – Policy Analysis

Objective	Policy	Assessment
Ch 2, 2.2, Obj 1: The preservation of the natural character of the coastal environment, wetlands, lakes, and rivers and their margins and the protection of them from inappropriate subdivision, use and development.	Policy 1.1: Avoid the adverse effects of subdivision, use or development within those areas of the coastal environment and freshwater bodies which are predominantly in their natural state and have natural character which has not been compromised.	This application is set in an area which is regenerating bush. The marine farm is within a bay with other marine farms.
	Policy 1.2: Appropriate use and development will be encouraged in areas where the natural character of the coastal environment has already been compromised, and where the adverse effects of such activities can be avoided, remedied or mitigated.	Refer above.
	Policy 1.3: To consider the effects on those qualities, elements and features which contribute to natural character, including: a) Coastal and freshwater landforms; b) Indigenous flora and fauna, and their habitats; c) Water and water quality; d) Scenic or landscape values; e) Cultural heritage values, including historic places, sites of early settlement and sites of significance to iwi; and f) Habitat of trout.	These matters have been considered in the assessment of environmental effects.
	Policy 1.4: In assessing the actual or potential effects of subdivision, use or development on natural character of the coastal and freshwater environments, particular regard shall be had to the policies in Chapters, 3, 4, 5, 6, 12, 13 and Sections 9.2.1, 9.3.2 and 9.4.1 in recognition of the components of natural character.	The application will not have any additional impact on the components of these policies which impact natural character values.

	Policy 1.6: In assessing the appropriateness of subdivision, use or development in coastal and freshwater environments regard shall be had to the ability to restore or rehabilitate natural character in the area subject to the proposal.	Any residual impact on natural character will naturally rehabilitate on removal of the farm.
	Policy 1.7: To adopt a precautionary approach in making decisions where the effects on the natural character of the coastal environment, wetlands, makes and rivers (and their margins) are unknown.	The effects of this application are not unknown and are discussed elsewhere in the assessment of environmental effects. A precautionary approach is not justified.
Ch 4, 4.3, Obj 1: The protection of significant indigenous flora and fauna (including trout and salmon) and their habitats from the adverse effects of use and development	Policy 1.2: Avoid, remedy or mitigate the adverse effects of land and water use on areas of significant ecological value.	The effect of the marine farm on the adjacent area will not have any effect on the flora and fauna of this area.
Ch 5, 5.3, Obj 1: Management of the visual quality of the Sounds and protection of outstanding natural features and landscapes from inappropriate subdivision, use and development	Policy 1.1: Avoid, remedy and mitigate adverse effects of subdivision, use and development, including activities and structures, on the visual quality of outstanding natural features and landscapes, identified according to criteria in Appendix One.	The effects of the application on the landscape will be the same as the current permitted activity and the effects are not likely to impact on the values which contribute to the landscape.
Ch 6, 6.1.2, Obj 1: Recognition and provision for the relationship of Marlborough's Maori to their culture and traditions with their ancestral lands, waters, sites, waahi tapu and other taonga.	Policies 1.1-1.5	In preparing this application, the applicant has had regard to the Statutory Acknowledgments and has reviewed the statements of association for each iwi. An initial letter has been sent to all Iwi identifying the site prior to the application being submitted.
Ch 8, 8.3, Obj 1: That public access *to and along* the coastal marine area, lakes and rivers be maintained and enhanced.	Policy 1.2: Adverse effects on public access caused by the erection of structures, marine farms, works or activities in or along the coastal marine area should as far as practicable be avoided. Where complete avoidance is not practicable, the adverse effects	There are no additional adverse effects on public access caused by the marine farm.

	should be mitigated and provision made for remedying those effects, to the extent practicable.	
	Policy 1.3: To prevent the erection of structures and marine farms that restrict public access in the coastal marine area where it is subjected to high public usage.	There are no additional adverse effects on public access caused by the marine farm.
	Policy 1.8: Public access to and along the coastal marine area should be maintained and enhanced except where it is necessary to [circumstances do not apply].	There are no additional adverse effects on public access caused by the marine farm.
Ch 9, 9.2.1, Obj 1: The accommodation of appropriate activities in the coastal marine area whilst avoiding, remedying or mitigating the adverse effects of those activities.	Policy 1.1: Avoid, remedy and mitigate the adverse effects of use and development of resources in the coastal marine area on any of the following: a) Conservation and ecological values; b) Cultural and iwi values; c) Heritage and amenity values; d) Landscape, seascape and aesthetic values; e) Marine habitats and sustainability; f) Natural character of the coastal environment; g) Navigational safety; h) Other activities, including those on land; i) Public access to and along the coast; j) Public health and safety; k) Recreation values; and l) Water quality.	The way in which adverse effects on the stated values will be avoided, remedied and mitigated is addressed elsewhere in the assessment of environmental effects. Overall, the proposal is consistent with this policy.
	Policy 1.2: Adverse effects of subdivision, use or development in the coastal environment should as far as practicable be avoided. Where complete avoidance is not practicable, the adverse effects should be mitigated and provision made for remedying those effects to the extent practicable.	The marine farm is within a bay with other marine farms. There are no additional adverse effects on the coastal environment from this farm. The navigational lighting requirements will not change from the existing consent.

	Policy 1.3: Exclusive occupation of the coastal marine area or occupation which effectively excludes the public will only be allowed to the extent reasonably necessary to carry out the activity.	Consistent with other marine farms in the Marlborough Sounds, exclusive occupation of the consent area is not sought, other than for the area physically occupied by the lines and anchoring devices.
	Policy 1.6: Ensure recreational interests retain a dominant status over commercial activities that require occupation of coastal space and which preclude recreational use in Queen Charlotte Sound, including Tory Channel, but excluding Port and Marina Zones.	Not applicable
	Policy 1.7: Avoid adverse effects from the occupation of coastal space in or around recognised casual mooring areas.	Exclusive occupation of the consent area is not sought. There is no mooring located in the vicinity of the farm.
	Policy 1.12: To enable a range of activities in appropriate places in the waters of the Sounds including marine farming, tourism and recreation.	Policy 1.12 enables marine farming in appropriate places. Site 8268 is consented for marine farming, there are other marine farms consented in the bay.
	Policy 1.13: Enable the renewal as controlled activities of marine farms authorised by applications made prior to 1 August 1996 as controlled activities, apart from exceptions in Appendix D2 in the Plan.	NA
Ch 9, 9.3.2, Obj 1: Management of the effects of activities so that water quality in the coastal marine area is at a level which enables the gathering or cultivating of shellfish for human consumption (Class SG).	Policies 1.1 to 1.11	This application is not anticipated to have any impact on shellfish quality.
Ch 9, 9.4.1, Obj 1:	Policy 1.1: Avoid, remedy or mitigate the adverse effects of activities that disturb or alter the foreshore	There will be no additional disturbances of the seabed.

	and/or seabed on any of the following: [criteria specified in Plan].	
Ch 9, 9.4A.1, Obj 1:	n/a	These policies are no longer relevant due to abolition of AMAs through legislation.
Ch 19, 19.3, Obj 1: Safe, efficient and sustainably managed water transport systems in a manner that avoids, remedies and mitigates adverse effects.	Policy 1.1: Avoid, remedy or mitigate the adverse effects of activities and structures on navigation and safety, within the coastal marine area.	There have been no reported navigational incidences in the bay. There will no changes to the existing consent conditions regarding the navigational aids placed on the farm.
Ch 22, 22.3, Obj 1: To avoid, remedy and mitigate the adverse effects of unreasonable noise, while allowing for reasonable noise associated with port activities.	Policy 1.1: Avoid, remedy and mitigate community disturbance, disruption or interference by noise within coastal, rural, and urban areas.	The nearest residence is approximately 1.2km from the site in Oyster Bay. A servicing vessel is estimated to spend approximately 80-90 hours per annum maintaining and harvesting the lines per year. The applicant complies with the 'Code of Practice to avoid, remedy or mitigate noise from marine farming activities in the Marlborough Sounds, Golden Bay and Tasman Bay on other users and residents'

Appendix C: Analysis of Consistency with the Proposed Marlborough Environment Plan (Volume 1)

MEP Provision	Evaluation
Objective 3.2 – Natural and physical resources are managed in a manner that takes into account the spiritual and cultural values of Marlborough's tangata whenua iwi and respects and accommodates tikanga Māori. [RPS]	The applicant has prepared the application in a manner that takes into account the spiritual and cultural values of Marlborough's tangata whenua iwi. Recognition is given to Māori culture and traditions and confirmation from Iwi is sought to ensure the proposal does not affect these values.
Objective 3.3 – The cultural and traditional relationship of Marlborough's tangata whenua iwi with their ancestral lands, water, air, coastal environment, waahi tapu and other sites and taonga are recognised and provided for. [RPS]	See sections 12 and 22 AEE.
Objective 3.5 – Resource management decision making processes that give particular consideration to the cultural and spiritual values of Marlborough's tangata whenua iwi. [RPS]	The applicant has given particular consideration to the matters in objective 3.5, as discussed, the AEE at sections 12 and 22, in order to assist decision makers.
Policy 3.1.1 – Management of natural and physical resources in Marlborough will be carried out in a manner that: (a) takes into account the principles of the Treaty of Waitangi/Te Tiriti o Waitangi, including kāwanatanga, rangatiratanga, partnership, active protection of natural resources and spiritual recognition. (b) recognises that the way in which the principles of the Treaty of Waitangi/Te Tiriti o Waitangi will be applied will continue to evolve; (c) promotes awareness and understanding of the Marlborough District Council's obligations under the Resource Management Act 1991 regarding the principles of the Treaty of Waitangi/Te Tiriti o Waitangi among Council decision makers, staff and the community; (d) recognises that tangata whenua have rights protected by the Treaty of Waitangi/Te Tiriti o Waitangi and that consequently the Resource Management Act 1991 accords iwi a status distinct from that of interest groups and members of the public; and (e) recognises the right of each iwi to define their own preferences for the sustainable management of natural and physical resources, where this is not inconsistent with the Resource Management Act 1991.	See above.

MEP Provision	Evaluation
[RPS]	
Policy 3.1.2 – An applicant will be expected to consult early in the development of a proposal (for resource consent or plan change) so that cultural values of Marlborough's tangata whenua iwi can be taken into account. [RPS]	See above.
Policy 3.1.3 – Where an application for resource consent or plan change is likely to affect the relationship of Marlborough's tangata whenua iwi and their culture and traditions, decision makers shall ensure: (a) the ability for tangata whenua to exercise kaitiakitanga is maintained; (b) mauri is maintained or improved where degraded, particularly in relation to fresh and coastal waters, land and air; (c) mahinga kai and natural resources used for customary purposes are maintained or enhanced and that these resources are healthy and accessible to tangata whenua; (d) for waterbodies, the elements of physical health to be assessed are: i. aesthetic and sensory qualities, e.g. clarity, colour, natural character, smell and sustenance for indigenous flora and fauna; ii. life-supporting capacity, ecosystem robustness and habitat richness; iii. depth and velocity of flow (reflecting the life force of the river through its changing character, flows and fluctuations); iv. continuity of flow from the sources of a river to its mouth at the sea; v. wilderness and natural character; vi. productive capacity; and vii. fitness to support human use, including cultural uses. (e) how traditional Māori uses and practices relating to natural and physical resources such as mahinga maataitai, waahi tapu, papakāinga and taonga raranga are to be recognised and provided for. [RPS]	The applicant has had regard to the matters in Policy 3.1.3, as set out above, and in the AEE. Ecological effects have been assessed by Robertson Environmental in the report annexed to this application.

MEP Provision	Evaluation
Policy 3.1.5 – Ensure iwi management plans are taken into account in resource management decision making processes. [RPS]	The applicant has reviewed the Iwi management plans of Ngāti Kōata and Te Ātiawa o Te Waka-a-Māui.
Objective 4.1 – Marlborough's primary production sector and tourism sector continue to be successful and thrive whilst ensuring the sustainability of natural resources. [RPS]	The application will support the mussel farming industry in Marlborough and provide an opportunity for that industry to grow. The proposal ensures the sustainability of natural resources, as the adverse effects of mussel farming at the site are likely to be limited, as per the Robertson Environmental report. Within months of removing the farms, any trace of their presence will dissipate. Therefore, the proposal does not restrict the ability of future generations to decide how they wish to use these resources.
Policy 4.1.2 – Enable sustainable use of natural resources in the Marlborough environment. [RPS]	As above at Objective 4.1.
Policy 4.1.3 – Maintain and enhance the quality of natural resources. [RPS]	The proposal will have no more than minor effects on the quality of the natural resources at the site, and those effects are reversible upon removal of the farms.
Objective 4.3 – The maintenance and enhancement of the visual, ecological and physical qualities that contribute to the character of the Marlborough Sounds. [RPS]	The ecological character of the site will be maintained (see Robertson Environmental report). The application site is located over a habitat of sandy mud, typical of similar areas in the Sounds. The effects of low intensity farming are not likely to be significant. The relatively strong currents at the site are sufficient to prevent the accumulation of organic deposition. The existing character of the area is a working landscape. It is well-suited to the proposed activity due to the existing level of modification from farming and aquaculture. The proposed renewal is unlikely to adversely affect the existing values of the area.

MEP Provision	Evaluation
Policy 4.3.2 – Identify the qualities and values that contribute to the unique and iconic character of the Marlborough Sounds and protect these from inappropriate subdivision, use and development. [RPS]	The applicant has had regard to the qualities and values identified by the Council in the MEP, as indicated elsewhere in this policy assessment and in the application. Overall, the proposal is appropriate.
Policy 4.3.3 – Provide direction on the appropriateness of resource use activities in the Marlborough Sounds environment. [RPS]	The aquaculture provisions of the MEP have yet to be notified. The proposed site is zoned CMZ2 under the operative MSRMP, which suggests that aquaculture is appropriate in the area.
Policy 4.3.4 – Enhance the qualities and values that contribute to the unique and iconic character of the Marlborough Sounds. [RPS]	The proposal will not have significant effects on the qualities and values of the Sounds, and any effects are reversible upon removal of the farms.
Policy 4.3.5 – Recognise that the Marlborough Sounds is a dynamic environment [RPS]	The applicant recognises that the Sounds is a dynamic environment. The appropriateness of the farm can be re-assessed by future generations in the context of the future environment of the area through the resource consenting process.
Objective 5.10 – Equitable and sustainable allocation of public space within Marlborough's coastal marine area. [RPS, C]	The applicant acknowledges that it is a privilege to occupy public space in the coastal marine area. The public will still have access around and through the site, and the proposal will not affect the ability of future generations to enjoy that public space.
Policy 5.10.1 – Recognition that there are no inherent rights to be able to use, develop or occupy the coastal marine area. [RPS, C]	The applicant recognises that it has no inherent right to occupy and use the coastal marine area and requires resource consent for the proposed activity.
Policy 5.10.2 – The 'first in, first served' method is the default mechanism to be used in the allocation of resources in the coastal marine area. Where competing demand for coastal space becomes apparent, the Marlborough District Council may consider the option of introducing an alternative regime. [RPS, C]	The applicant considers that the first in first served method of allocation is appropriate for applications that meet the statutory requirements.

MEP Provision	Evaluation
Policy 5.10.3 – Where a right to occupy the coastal marine area is sought, the area of exclusive occupation should be minimised to that necessary and reasonable to undertake the activity, having regard to the public interest. [RPS, C]	The design of the site layout ensures the public will have access inshore of and through the farm.
Policy 5.10.4 – Coastal occupancy charges will be imposed on coastal permits where there is greater private than public benefit arising from occupation of the coastal marine area. [C]	The applicant has insufficient information on coastal occupancy charges to understand the implications.
Policy 5.10.5 – The Marlborough District Council will waive the need for coastal occupancy charges for the following: … (b) monitoring equipment; [C]	Robertson Environmental has not indicated that ongoing monitoring is necessary at this site.
Policy 5.10.6 – Where there is an application by a resource consent holder to request a waiver (in whole or in part) of a coastal occupation charge, the following circumstances will be considered: [(a) – (d)] [C]	Refer Policy 5.10.4
Objective 6.2 – Preserve the natural character of the coastal environment, and lakes and rivers and their margins, and protect them from inappropriate subdivision, use and development. [RPS, R, C, D]	The farm will not adversely compromise the existing values of the area and is appropriate development
Policy 6.2.1 – Avoid the adverse effects of subdivision, use or development on areas of the coastal environment with outstanding natural character values… [RPS, R, C, D]	N/A –site is not identified in the MEP has having outstanding natural character values.
Policy 6.2.2 – Avoid significant adverse effects of subdivision, use or development on coastal natural character, having regard to the significance criteria in Appendix 4. [RPS, R, C, D]	The proposal avoids significant adverse effects. There will be no damage, loss or destruction. The effects are reversible upon removal of the farm.

MEP Provision	Evaluation
Policy 6.2.3 – Where natural character is classified as high or very high, avoid any reduction in the degree of natural character of the coastal environment or freshwater bodies. [RPS, R, C, D]	The site is classified as having high natural character in the MEP. There will be no change in the degree of the biological components of natural character. These assessments were made with the farms already in place and operational. There was no direction given in the plan that the marine farms should be removed for the area to be assessed as having high natural character.
Policy 6.2.4 – Where resource consent is required to undertake an activity within coastal or freshwater environments with high, very high or outstanding natural character, regard will be had to the potential adverse effects of the proposal on the elements, patterns, processes and experiential qualities that contribute to natural character. [RPS, R, C, D]	See above and AEE sections 9 and 22.3.
Policy 6.2.5 – Recognise that development in parts of the coastal environment and in those rivers and lakes and their margins that have already been modified by past and present resource use activities is less likely to result in adverse effects on natural character. [RPS, R, C, D]	The proposal is less likely to have an adverse effect on natural character, given existing development in the area.
Policy 6.2.6 – In assessing the appropriateness of subdivision, use or development in coastal or freshwater environments, regard shall be given to the potential to enhance natural character in the area subject to the proposal. [RPS, R, C, D]	The effects are not of a scale to justify an enhancement programme.
Policy 6.2.7 – In assessing the cumulative effects of activities on the natural character of the coastal environment, or in or near lakes or rivers, consideration shall be given to: (a) the effect of allowing more of the same or similar activity; (b) the result of allowing more of a particular effect, whether from the same activity or from other activities causing the same or similar effect; and (c) the combined effects from all activities in the coastal or freshwater environment in the locality. [RPS, R, C, D]	There are existing aquaculture activities in the area and the farm has been operating for a number of years. There are unlikely to be cumulative effects issues.

MEP Provision	Evaluation
Objective 7.2 – Protect outstanding natural features and landscapes from inappropriate subdivision, use and development and maintain and enhance landscapes with high amenity value.	The area is alongside an area that is mapped as ONFL (although these maps are subject to challenge through the consultation process on the MEP). These assessments were made with the farms already in place and operational. There was no direction given in the plan that the marine farms should be removed for the area to be assessed as having ONFL.
Policy 7.2.1 – Control activities that have the potential to degrade those values contributing to outstanding natural features and landscapes by requiring activities and structures to be subject to a comprehensive assessment of effects on landscape values through the resource consent process. [R, C, D]	See above and sections 9
Policy 7.2.3 – Control activities that have the potential to degrade the amenity values that contribute to those areas of the Marlborough Sounds Coastal Landscape not identified as being an outstanding natural feature and landscape by: (a) using a non-regulatory approach as the means of maintaining and enhancing landscape values in areas of this landscape zoned as Coastal Living; (b) setting standards/conditions that are consistent with the existing landscape values and that will require greater assessment where proposed activities and structures exceed those standards; and… [C, D]	Policy 7.2.3(b) does not apply to the proposed site, because aquaculture rules have yet to be included in the MEP. As a result, the application must be assessed against the rules applying under the operative MSRMP. This has been done in a separate policy analysis table, at Appendix B.
Policy 7.2.4 – Where resource consent is required to undertake an activity within an outstanding natural feature and landscape or a landscape with high amenity value, regard will be had to the potential adverse effects of the proposal on the values that contribute to the landscape. [R, C, D]	See above.
Policy 7.2.5 – Avoid adverse effects on the values that contribute to outstanding natural features and landscapes in the first instance. Where adverse effects cannot be avoided and the activity is not proposed to take place in the coastal environment, ensure that the adverse effects are remedied. [R, C, D]	See above.

MEP Provision	Evaluation
Policy 7.2.7 – Protect the values of outstanding natural features and landscapes and the high amenity values of the Wairau Dry Hills and the Marlborough Sounds Coastal Landscapes by: (a) In respect of structures: (i) avoiding visual intrusion on skylines, particularly when viewed from public places; (ii) avoiding new dwellings in close proximity to the foreshore; (iii) using reflectivity levels and building materials that complement the colours in the surrounding landscape; (iv) limiting the scale, height and placement of structures to minimise intrusion of built form into the landscape; (v) recognising that existing structures may contribute to the landscape character of an area and additional structures may complement this contribution; (vi) making use of existing vegetation as a background and utilising new vegetation as a screen to reduce the visual impact of built form on the surrounding landscape, providing that the vegetation used is also in keeping with the surrounding landscape character; and (vii) encouraging utilities to be co-located wherever possible… [R, C, D]	The applicant will minimise the scale, height and placement of structures to minimise intrusion of built form into the landscape. Buoys are low profile and predominantly black, save for orange navigation buoys required for navigational safety. The remainder of policy 7.2.7 does not apply to marine farming structures.
Policy 7.2.8 – Recognise that some outstanding natural features and landscapes and landscapes with high amenity value will fall within areas in which primary production activities currently occur. [C, D]	Existing farming and aquaculture already occurs within the embayment and general area. The proposal is consistent with this primary production character.
Policy 7.2.9 – When considering resource consent applications for activities in close proximity to outstanding natural features and landscapes, regard may be had to the matters in Policy 7.2.7. [R, C, D]	See above.
Policy 8.3.1 – Manage the effects of subdivision, use or development in the coastal environment by: (a) avoiding adverse effects where the areas, habitats or ecosystems are those set out in Policy 11(a) of the New Zealand Coastal Policy Statement 2010; (b) avoiding adverse effects where the areas, habitats or ecosystems are mapped as significant wetlands or ecologically significant marine sites in the Marlborough Environment Plan; or (c) avoiding significant adverse effects and avoiding, remedying or mitigating other adverse effects where the areas, habitats or ecosystems are those set out in Policy 11(b) of the New Zealand Coastal	There are no areas of ecological significance in the MEP. The effect of the marine farm on the adjacent area will not have an effect on the flora and fauna of this area.

MEP Provision	Evaluation
Policy Statement 2010 or are not identified as significant in terms of Policy 8.1.1 of the Marlborough Environment Plan.	
Policy 8.3.2 – Where subdivision, use or development requires resource consent, the adverse effects on areas, habitats or ecosystems with indigenous biodiversity value shall be: (a) avoided where it is a significant site in the context of Policy 8.1.1; and (b) avoided, remedied or mitigated where indigenous biodiversity values have not been assessed as being significant in terms of Policy 8.1.1	According to the Robertson Environmental report, the proposed farm is consistent with policy 8.3.2(b).
Policy 8.3.5 – In the context of Policy 8.3.1 and Policy 8.3.2, adverse effects to be avoided or otherwise remedied or mitigated may include: [(a) – (t)]	See AEE and Robertson Environmental report.
Policy 8.3.8 – With the exception of areas with significant indigenous biodiversity value, where indigenous biodiversity values will be adversely affected through land use or other activities, a biodiversity offset can be considered to mitigate residual adverse effects. Where a biodiversity offset is proposed, the following criteria will apply: (a) the offset will only compensate for residual adverse effects that cannot otherwise be avoided, remedied or mitigated; (b) the residual adverse effects on biodiversity are capable of being offset and will be fully compensated by the offset to ensure no net loss of biodiversity; (c) where the area to be offset is identified as a national priority for protection under Objective 8.1, the offset must deliver a net gain for biodiversity; (d) there is a strong likelihood that the offsets will be achieved in perpetuity; (e) where the offset involves the ongoing protection of a separate site, it will deliver no net loss and preferably a net gain for indigenous biodiversity protection; and (f) offsets should re-establish or protect the same type of ecosystem or habitat that is adversely affected, unless an alternative ecosystem or habitat will provide a net gain for indigenous biodiversity.	Biodiversity offsetting is not justified in this case.
Objective 9.1 – The public are able to enjoy the amenity and recreational opportunities of Marlborough's coastal environment, rivers, lakes, high country and areas of historic interest. [RPS, R, C, D]	See sections 8, 9, 11, 13, 14 and 18 of the AEE.

MEP Provision	Evaluation
Policy 9.1.1 – The following areas are identified as having a high degree of importance for public access and the Marlborough District Council will as a priority focus on enhancing access to and within these areas: (a) high priority waterbodies for public access on the Wairau Plain and in close proximity to Picton, Waikawa, Havelock, Renwick, Seddon, Ward and Okiwi Bay; (b) coastal marine area, particularly in and near Picton, Waikawa and Havelock, Kaiuma Bay, Queen Charlotte Sound (including Tory Channel), Port Underwood, Pelorus Sound, Mahau Sound, Mahikipawa Arm and Croiselles Harbour, Rarangi to the Wairau River mouth, Wairau Lagoons, Marfells Beach and Ward Beach… [RPS]	N/A
Policy 9.1.2 – In addition to the specified areas in Policy 9.1.1, the need for public access to be enhanced to and along the coastal marine area, lakes and rivers will be considered at the time of subdivision or development, in accordance with the following criteria: (a) there is existing public recreational use of the area in question, or improving access would promote outdoor recreation; (b) connections between existing public areas would be provided; (c) physical access for people with disabilities would be desirable; and (d) providing access to areas or sites of cultural or historic significance is important. [RPS, C, D]	See above. The farm will not prevent access to areas or sites of cultural and historic significance in the area.
Policy 9.1.5 – Acknowledge the importance New Zealander's place on the ability to have free and generally unrestricted access to the coast. [RPS, C, D]	The applicant acknowledges the importance to New Zealanders of having unrestricted access to the coast. The site design ensures that the public will continue to have access through the site and along the shore.
Policy 9.1.7 – Recognise there is an existing network of marinas at Picton, Waikawa and Havelock, publicly owned community jetties, landing areas and launching ramps that make a significant contribution in providing access for the public to Marlborough's coastal areas. [RPS, C]	The proposed farm will be able to be accessed from the existing facilities of a contractor or lessee.

MEP Provision	Evaluation
Policy 9.1.8 – Enable public use of jetties for the purposes of access to the Sounds Foreshore Reserve and legal road along the coast. [RPS, C]	There are no jetties in the vicinity of the site.
Policy 9.1.13 – When considering resource consent applications for activities, subdivision or structures in or adjacent to the coastal marine area, lakes or rivers, the impact on public access shall be assessed against the following: (a) whether the application is in an area identified as having a high degree of importance for public access, as set out in Policy 9.1.1; (b) the need for the activity/structure to be located in the coastal marine area and why it cannot be located elsewhere; … (d) the extent to which the activity/subdivision/structure would benefit or adversely affect public access, customary access and recreational use, irrespective of its intended purpose; (e) in the coastal marine area, whether exclusive rights of occupation are being sought as part of the application; (f) for the Marlborough Sounds, whether there is practical road access to the site of the application; (g) how public access around or over any structure sought as part of an application is to be provided for; (h) whether the impact on public access is temporary or permanent and whether there is any alternative public access available; and (i) whether public access is able to be restricted in accordance with Policies 9.2.1 and 9.2.2. [C, D]	The structures have a functional need to be located in the coastal marine area. The public will have access through and around the site. Access to the site is by boat. Any impact on public access would be temporary, being reversible upon removal of the farm. Any restrictions on public access will be consistent with the purpose of a resource consent to farm mussels, in line with policy 9.2.1. The effects on public access will be no more than minor, in accordance with policy 9.2.2.
Policy 9.3.2 – Seek diversity in the type and size of open spaces and recreational facilities to meet local, district, regional and nationwide needs, by: … (d) recognising and protecting the value of open space in the coastal marine area, high country environments and river beds. [RPS, C, D]	The applicant recognises the value of open space and has designed the site layout with this in mind.
Objective 10.1 – Retain and protect heritage resources that contribute to the character of Marlborough. [RPS]	See section 12 AEE.

MEP Provision	Evaluation
Policy 10.1.3 – Identify and provide appropriate protection to Marlborough's heritage resources, including: (a) historic buildings (or parts of buildings), places and sites; (b) heritage trees; (c) places of significance to Marlborough's tangata whenua iwi; (d) archaeological sites; and (e) monuments and plaques. [RPS, C, D]	See above
Chapter 13 objectives and policies.	N/A – Chapter 13 expressly states that it "does not contain provisions managing marine farming."
Objective 15.1a – Maintain and where necessary enhance water quality in Marlborough's rivers, lakes, wetlands, aquifers and coastal waters, so that: (a) the mauri of wai is protected; (b) water quality at beaches is suitable for contact recreation; (c) people can use the coast, rivers, lakes and wetlands for food gathering, cultural, commercial and other purposes; … (f) coastal waters support healthy ecosystems. [RPS, R, C]	Mussel farming will not have an adverse effect on water quality and may even enhance water quality.
Policy 15.1.1 – As a minimum, the quality of freshwater and coastal waters will be managed so that they are suitable for the following purposes: (a) Coastal waters: protection of marine ecosystems; potential for contact recreation and food gathering/marine farming; and for cultural and aesthetic purposes; … [RPS, R, C]	Aquaculture requires excellent water quality. The proposed farm will not have an adverse effect on water quality.

MEP Provision	Evaluation
Policy 15.1.9 – Enable point source discharge of contaminants or water to water where the discharge will not result: (a) in any of the following adverse effects beyond the zone of reasonable mixing: (i) the production of conspicuous oil or grease films, scums, foams or floatable or suspended materials; (ii) any conspicuous change in the colour or significant decrease in the clarity of the receiving waters; (iii) the rendering of freshwater unsuitable for consumption by farm animals; (iv) any significant adverse effect on the growth, reproduction or movement of aquatic life; or (c) in the flooding of or damage to another person's property. [R, C]	Discharge from harvesting will not result in any of the specified adverse effects.
15.1.10 – Require any applicant applying for a discharge permit that proposes the discharge of contaminants to water to consider all potential receiving environments and adopt the best practicable option, having regard to: (a) the nature of the contaminants; (b) the relative sensitivity of the receiving environment; (c) the financial implications and effects on the environment of each option when compared with the other options; and (d) the current state of technical knowledge and the likelihood that each option can be successfully applied. [RPS, R, C]	See Robertson Environmental report. Discharge occurs during harvesting, and the effects are momentary and insignificant. Contaminants are materials that are already in the water column, such as sediments and organic materials trapped by lines and structures.
15.1.11 – When considering any discharge permit application for the discharge of contaminants to water, regard will be had to: (a) the potential adverse effects of the discharge on spiritual and cultural values of Marlborough's tangata whenua iwi; (b) the extent to which contaminants present in the discharge have been removed or reduced through treatment; and (c) whether the discharge is of a temporary or short term nature and/or whether the discharge is associated with necessary maintenance work for any regionally significant infrastructure. [RPS, R, C]	See above Discharge during harvest is temporary in nature and sedimentation soon reverts to background levels, consistent with policy 15.1.11(c).

MEP Provision	Evaluation
15.1.12 – After considering Policies 15.1.10 and 15.1.11, approve discharge permit applications to discharge contaminants into water where: (a) the discharge complies with the water quality classification standards set for the waterbody, after reasonable mixing; or (b) in the case of non-compliance with the water quality classification standards set for the waterbody: (i) the consent holder for an existing discharge can demonstrate a reduction in the concentration of contaminants and a commitment to a staged approach for achieving the water quality classification standards within a period of no longer than five years from the date the consent is granted; and (ii) the degree of non-compliance will not give rise to significant adverse effects. [RPS, R, C]	Water discharged during harvesting will comply with SG standards in Appendix 5.
Policy 15.1.16 – The duration of any new discharge permit will be either: (a) Up to a maximum of 15 years for discharges into waterbodies or coastal waters where the discharge will comply with water quality classification standards for the waterbody or coastal waters; … (c) no more than five years where the existing discharge will not comply with water quality classification standards for the waterbody or coastal waters. With the exception of regionally significant infrastructure, no discharge permit will be granted subsequent to the one granted under (c), if the discharge still does not meet the water quality classification standards for the waterbody or coastal waters. [R, C]	This policy is inconsistent with s 123A of the Resource Management Act, which provides for a minimum 20-year term for coastal permits authorising aquaculture activities, unless a shorter period is required to ensure that adverse effects on the environment are adequately managed. This high threshold is not met in these circumstances. It is illogical to allow for a marine farming permit for 20 years and restrict a discharge permit for harvesting to 15 years. The applicant is seeking 20-year resource consent. The AEE suggests that this term in appropriate in these circumstances.

Foot Notes

[1] These areas are identified in accordance with the specific criteria set out in Appendix 1, Volume 1 of the MSRMP.

[2] Boffa Miskell/Marlborough District Council *Marlborough Landscape Study* (August 2015).

[3] *Environmental Defence Society Inc v New Zealand King Salmon Company Ltd* [2014] NZSC 38 at [101] and [105]; *Man O'War Farm Limited v Auckland Council* [2017] NZCA 24 (24 February 2017) at [65]; and *Western Bay of Plenty District Council v Bay of Plenty Regional Council* [2017] NZEnvC 147 at [165] – [167].

[4] Davidson, R.J.; Richards L.A. 2014. Recovery of a mussel farm in Otanerau Bay, East Bay, Marlborough Sounds: 2002-2013. Prepared by Davidson Environmental Limited for Marlborough District Council. Survey and Monitoring Report No. 788.

[5] These maps are informed by: Marlborough District Council *Natural Character of the Marlborough Coast* (June 2014).

[6] MEP Volume 3, Appendix 2, map on p 2-27.

[7] Handley, S. et al. 2017. A 1,000 year history of seabed change in Pelorus Sound/Te Hoiere, Marlborough. Prepared for Marlborough District Council, Ministry of Primary Industries and the Marine Farming Association. 136 p. NIWA Client Report No: 2016119NE.A copy is available here: https://www.marlborough.govt.nz/repository/libraries/id:1w1mps0ir17q9sgxanf9/hierarchy/Documents/Environment/Coastal/Scientific%20Investigations%20List/A_1000_year_history_of_seabed_change_in_Pelorus_Sound_Te_Hoiere.pdf

[8] Handley, S. 2016. History of benthic change in Queen Charlotte Sound/Totaranui, Marlborough. Prepared for Marlborough District Council. NIWA client report No: NEL2015-018: https://www.marlborough.govt.nz/repository/libraries/id:1w1mps0ir17q9sgxanf9/hierarchy/Documents/Environment/Coastal/Scientific%20Investigations%20List/History_of_Benthic_Change_in_Queen_Charlotte_Sound_Totaranui_Marlborough.pdf; and Handley, S. 2015. The history of benthic change in Pelorus Sound (Te Horiere), Marlborough. Prepared by NIWA for Marlborough District Council. NIWA client report NEL2015-001, NIWA project ELF15202: https://www.marlborough.govt.nz/repository/libraries/id:1w1mps0ir17q9sgxanf9/hierarchy/Documents/Environment/Coastal/Scientific%20Investigations%20List/HistorySeabedChangePelorusSound.pdf.

[9] MacDiarmid, A.; McKenzie, A.; Sturman, J.; Beaumont, J.; Mikaloff-Fletcher, S.; Dunne, J. (2012). Assessment of Anthropogenic Threats to New Zealand Marine Habitats, New Zealand Aquatic Environment and Biodiversity Report No. 93, 2012; and Ministry for the Environment & Statistics New Zealand (2016) *New Zealand's Environmental Reporting Series: Our marine environment 2016* at 24. A copy is available here: http://www.mfe.govt.nz/sites/default/files/media/Environmental%20reporting/our-marine-environment.pdf

[10] Handley et al 2017 *History of seabed change* at p 25.

[11] For example Ministry for Primary Industries *Literature Review of Ecological Effects of Aquaculture – Cumulative Effects* (August 2013, Cawthron Institute/NIWA), at pp 12-3 to 12-4; Stewart, B. *Mussel Farming in Central Pelorus Sound* (Ryder Consulting, 3 December 2015, prepared for the Kenepuru and Central Sounds Residents Association) at [50]; and Further Submissions of the Marine Farming Association and Aquaculture New Zealand Limited on the proposed Marlborough Environment Plan (23 June 2017), at points 66, 73 and 78.

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ECOLOGICAL ASSESSMENT & REPORTING SERVICES

Marine Farm 8268, Squally Cove

Ecological Effects Assessment

For Biomex Trustees Limited & G.W. Rountree & P.A. Hale

November 2019

REPORT INFORMATION & QUALITY CONTROL

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Executive Summary

Biomex Trustees Limited & G.W. Rountree & P.A. Hale have applied to renew the existing resource consent for marine farm site 8268, Squally Cove, Croisilles Harbour, Marlborough Sounds. To understand and evaluate the ecological values present within the proposed site, Robertson Environmental Limited have undertaken an ecological assessment of the values and potential effects associated with the reconsent.

Desktop, database, and field survey identified two subtidal habitat types associated to the reconsent footprint. The deep subtidal habitat (Coastal Marine Zone 2, CMZ2, as per the operative Marlborough Sounds Resource Management Plan, MSRMP) to be covered by farming structures (presently as production mussel crops) is dominated by soft mud substratum and of low or limited ecological value. The area immediately shoreward of the proposed site identified with higher values includes nearshore subtidal habitat, but is not directly affected by the proposed reconsent. Key conclusions of the assessment were as follows:

- No rare species or communities were recorded within or directly adjacent to existing farming structures or wider surveyed area;
- The deep subtidal habitat (and inhabitant epibenthic macrofauna) directly affected is dominated by soft substratum (soft mud), relatively small in area, common among wider Squally Cove and adjacent coastal areas, and of relatively low value ecologically; and,
- The magnitude of the potential effects, both direct and indirect, are low or negligible and the resultant significance of the potential adverse effect is generally very low.

Generally, the proposal is relatively benign in terms of ecological impacts based on the farming activity, long history of shell fish farming at the site, and the existing values, and therefore the life-supporting capacity of associated coastal ecosystems will be maintained through the operation of the consent.

It is recommended that discharges (fine sediment and/or organic matter) to water in the coastal environment be minimised, although discharge effects of harvesting mussels are seen as transitory, and in most cases quickly become indistinguishable from background sedimentation.

All existing consent and farming structures are located over soft substratum >50 m offshore of Mean Low Water Mark (MLWM), therefore no boundary adjustments are suggested.

1 Introduction

Gathering information to inform the assessment of effects on the coastal environment is implicit in New Zealand's legislation for sustainable resource management. A key mechanism in this process is to undertake aquaculture ecological assessments, which are designed to consistently and transparently assess the magnitude of impacts of marine farms on local biological communities and habitats, to identify appropriate resource consent conditions, and guide management.

Resource consents for marine farms in the Marlborough Sounds require an assessment of effects, including ecological effects. The following report is an ecological effects assessment of the proposed reconsenting of marine farm 8268, Squally Cove, Croisilles Harbour. It was commissioned by Aquaculture Direct on behalf of the farm owner, Biomex Trustees Limited & G.W. Rountree & P.A. Hale.

1.1 Ecological Assessment Scope

With detailed methodology outlined in Section 2, and survey limitations in Sections 2.3 and 8, the purpose of this report is to:

- Identify and describe the ecological values of the area associated to the marine farm reconsent (Section 3);
- Describe the potential effects on local ecology arising from the reconsent (Section 4);
- Discuss and present an overall conclusion of the level of potential effects of the reconsent on local ecology (Section 5);
- Recommend measures as appropriate to avoid, remedy or mitigate potential effects (including any proposed conditions/management plan required) (Section 6).

1.2 Description of Proposed Reconsent

The location of the marine farm reconsent and existing surface structures within the survey area, along with point locations where benthic observations (via drop camera) were made is shown in Figure 1.1. Existing surface structures consist of one block of backbones covering a total area of approximately 2.91 ha. The backbones are on average approximately 195 m in length, and have been used for production mussel crops.

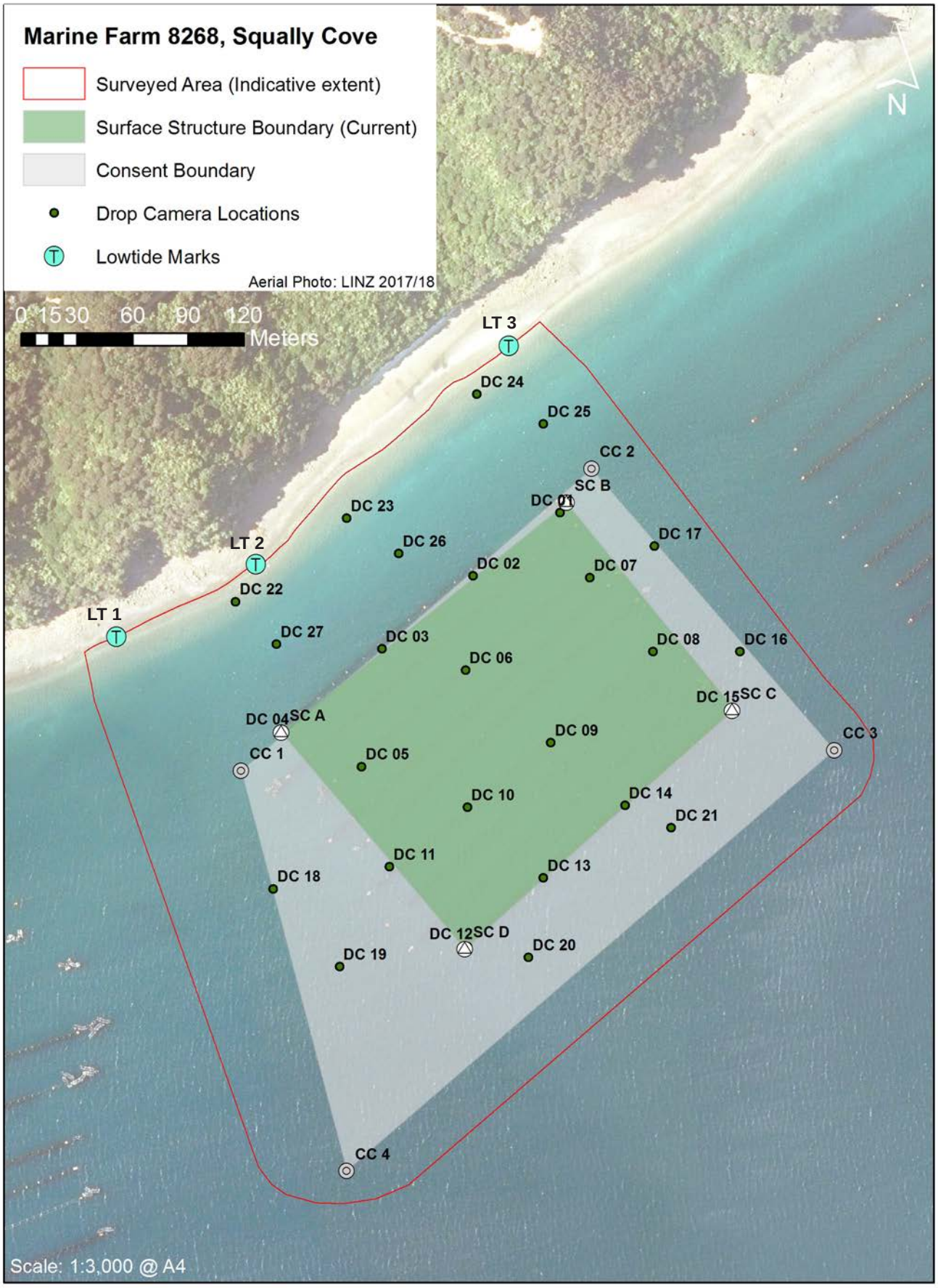

Figure 1.1. Marine farm 8268 survey area, Squally Cove, Croisilles Harbour, including existing surface structure and consent boundaries, surveyed area, and locations of benthic sampling stations (drop camera locations) assessed in the present study. Detailed field data is presented in Appendix A.

2 Assessment Methodology

The ecological assessment of the site has been undertaken using a combined desktop, database and field survey approach outlined below.

2.1 Desktop Analysis

Existing biological databases and all published information on habitat types and biological values within the study area were researched. This phase also included preparation of site maps and plans to direct the field survey, including plotting of consent corners. Both the consent corners and extent of potential differences in habitat type within the site were delineated on geographic information systems (GIS) using topographical maps and high resolution aerial photography (LINZ rectified ~0.3 m per pixel resolution flown in 2017/18 - https://data.linz.govt.nz/layer/98968-marlborough-03m-rural-aerial-photos-2017-2018/) prior to site visit. Information was derived from known datasets on landforms, marine farms (MDC's Smart Maps database), climate, and topography of the site. Preliminary biological communities and habitat types were identified and described through a combination of past reports (MDC database), the use of aerial photographs, and to a lesser extent the New Zealand Land Cover Database version four (LCDBv4).

The threat classification of important marine species was derived from the appropriate threat classification list for each taxa (Baker et al. 2019; Freeman et al. 2013; Robertson et al., 2016; International Union for Conservation of Nature, IUNC) and their regional status was derived from Marlborough District Council reports (Davidson et al. 2011) and the Conservation Management Strategy for the Nelson/Marlborough Conservancy (Department of Conservation, 1996-2006).

2.1.1 Marine Mammals

A list of mammal species in the area, as noted in Davidson et al. (2011), was collated (Appendix B).

2.1.2 Sea Birds

A list of bird species in the area, as noted in eBird (Grid BW58 June-Aug 2019) and Davidson et al. (2011), was collated (Appendix C). The species list obtained from the eBird atlas data served as a baseline of species previously recorded in the wider area and therefore potentially present at or near the site. Recent (preliminary) survey data on NZ King shag distributions in the Marlborough Sounds, as presented by Jonathan Large (MFA) at the AQNZ 2019 Conference, was also considered.

2.1.3 Biogenic Habitats and Macroinvertebrates

Local biogenic habitat and epibenthic macroinvertebrate lists (Appendix D) obtained from various sources (Morton and Miller 1973; Davidson et al. 2010, 2011, 2018; and Anderson et al. 2019) were examined to identify any rare or uncommon biogenic habitat in which to focus field surveys. This list also included macroalgal and seagrass habitat.

2.1.4 Fish

A list of fish species in the area, as noted in Davidson et al. (2011), was collated (Appendix E).

2.2 Field Survey

Habitat both within and immediately adjacent to the reconsent area, was assessed by field survey. The survey targeted an approximately 11.45 ha subtidal area based on the consent (including existing surface structures) (Figure 1.1). The survey was undertaken by boat (Vessel: Christina A, 12.1 m, MSA 129219) during calm (<5 knot winds) sea conditions on the 26th November 2019. On this day, the tide was low at 1613 (0.75 m) and high at 0956 (3.57 m), and during the survey relatively light currents appeared to be running in a northeast to southwest direction, with weather conditions fine. The corners of the existing marine farm surface structures were approximated by positioning the survey vessel immediately adjacent to the corner floats and the position plotted in real time via Garmin BlueChart™ G2. Low tide was determined at three locations inshore of the consent.

The survey vessel was positioned over the low water mark and the position plotted using the on-board GPS unit, while visual assessment of the transition between intertidal and subtidal species was used to determine low tide.

2.2.1 Benthic Habitat Classification

Broad ecological or habitat zones in the benthic survey area were identified, and with the aid of a Garmin GPSMAP 8410scx chart plotter unit (accuracy approx. ±3 m) linked to two GT51MTHP through-hull high-definition (500 kW) transducers, which provide traditional CHIRP sonar data, right and left SideVu™ imaging as well as DownVu™ imaging, broadly delineated. Each habitat was subjectively classified into one of several different qualitative habitat type descriptors according to unique features identified and listed in Table 3.1 (refer to Appendix F for further details). A stratified inspection of habitats was then undertaken using a Deep Blue HD (wide-angle 1080P) underwater splash camera fixed to a steel frame. The camera was lowered to the benthos and an oblique still photograph was collected where the frame landed to note key flora and fauna for each zone (outlined below). Drop camera stations were selected to obtain a representative range of habitats and depths within the consent, with additional photographs taken when any features of interest (e.g. mussel shell, reef structures, cobbles) were observed on the remote monitor on-board the survey vessel. Detailed field data, including precise locations and depths is presented in Appendix A and drop camera photographs in Appendix G.

Upon completion of field work the broad benthic habitat zones and drop camera positions where then imported into a georeferenced aerial photo of the area using Garmin HomePort (version 2.3.0) and ArcMap 10.5 GIS software. Using a combination of SideVu™ sonar imagery, drop camera photos and colour aerial photos, delineated habitat zones were adjusted accordingly, to more accurately reflect the likely tonal gradations in sonar images of respective habitats, and an indicative map of different benthic habitats was produced.

2.2.2 Marine Mammals

Field surveys for marine mammals were not conducted. Rather, we rely on the habitat type descriptions obtained from the field investigations (refer to Section 2.2.1) to identify areas of potential habitat for species likely to occur within the area, as well as published accounts of marine mammals present within nearby habitats. All incidental mammal observations were recorded while on site and observations of mammals within or adjacent to the site.

2.2.3 Sea Birds

Again, field surveys for sea birds were not conducted. Rather, we rely on the habitat type descriptions obtained from the field investigations (refer to Section 2.2.1) to identify areas of potential habitat for species likely to occur within the area, as well as published accounts of birds present within nearby habitats. All incidental bird observations were recorded while on site and observations of birds within or adjacent to the site.

2.2.4 Biogenic Habitat and Macroinvertebrates

The presence of biogenic habitat and epibenthic macroinvertebrates was evaluated at discrete points across the 27 drop camera stations located below the farm (including alongside droppers and warps) and adjacent areas inside and offshore of the consent (Figure 1.1, Appendix A). At each station, the cover of benthic mussel shell from drop camera photographs were also ranked (None = no mussel shell, Low = 1-30%, Moderate = 31-50%, Moderate to High = 51-75%, and High = 76-100% cover).

2.2.5 Fish

Beyond those documented via drop camera, field surveys for fish were not conducted. Rather, we rely on the vegetation community (albeit limited) and habitat type descriptions obtained from the field investigations (refer to Section 2.2.1) to identify areas of potential habitat for species likely to occur within the area, as well as published accounts of fish present within nearby habitats.

2.3 Limitations of Field Survey

Assessment of the biota and habitat types at the site was based on the proposed reconsent area and existing surface structures. We note that the latter may move due to environmental variables such as tidal current and wind. The location of surface structures may vary from day to day and over the duration of tidal cycles, hence these data should not be relied upon as a precise measurement of the position of surface structures, but rather an approximate position.

We also note that potential seasonal variability is not assessed through one site visit. The composition of the avifauna, fish and mammal communities utilising the area could not be established as the survey was only conducted once in the late spring season.

2.4 Assessment of Effects Methodology

The location of the farm falls within the jurisdictional boundary of MDC and its operative Marlborough Sounds Resource Management Plan (MSRMP). The site lies within the boundary of the Coastal Marine Zone 2 (CMZ2), an area in which marine farming activity is a discretionary activity. All statutory planning documents relevant to the consenting and ecological assessment of the marine farming activity, and the New Zealand Coastal Policy Statement 2010 (NZCPS), were considered in the assessment. The assessment of ecological effects follows Ecological Impact Assessment guidelines (EcIA) produced by the Environment Institute of Australia and New Zealand (EIANZ, 2015). The EcIA approach follows the steps outlined below:

Step 1: Assessment of ecological values

Ecological values are assigned a level on a scale of Low, Moderate, High or Very High based on assessing the values of species, communities, and habitats identified against criteria set out in the EcIA guidelines (see Table 2.1).

Table 2.1 Assignment of values to species, vegetation and habitats within the potentially affected marine area (adapted from EIANZ, 2015).

Value	Species Value requirements	Habitat Value requirements
Very High	Important for Nationally Threatened species	Meets most of the ecological significance criterion as set out in relevant statutory policies and plans (MSRMP) including indigenous biological diversity criteria in Policy 11 of the NZCPS
High	Important for Nationally At Risk – species and may provide less suitable habitat for Nationally Threatened species	Meets some of the ecological significance criterion as set out in relevant statutory policies and plans (MSRMP), including indigenous biological diversity criteria in Policy 11 of the NZCPS
Moderate	No Nationally Threatened or At Risk species, but habitat for locally uncommon or rare species	Habitat type does not meet ecological significance criteria as set out in the relevant statutory policies and plans (MSRMP), or the NZCPS but does provide locally important ecosystem services (e.g. food resource, biogeochemical cycling, and seascape connectivity)
Low	No Nationally Threatened, At Risk or locally uncommon or rare species	Nationally or locally common habitat and supporting no Threatened or At Risk species, and does not provide locally important ecosystem services

Step 2: Magnitude of effect assessments

Step 2 of the EcIA guidelines requires an evaluation of the magnitude of effects on ecological values based on the extent of any area which is likely to be affected, intensity and duration of effect. The magnitude of the effect that the consent is expected to have on ecological values is evaluated

as being either No effect, Negligible, Low, Moderate, High or Very High, based on the proposed works (footprint size, intensity and duration; see Table 2.2).

Table 2.2 - Summary of the criteria for describing the magnitude of effect as outlined in EIANZ, 2015.

Magnitude of effect	Description
Very High	Total loss or major alteration of the existing baseline conditions; and/or Loss of high proportion of the known population or range
High	Major loss or alteration of existing baseline conditions; and/or Loss of high proportion of the known population or range
Moderate	Loss or alteration to existing baseline conditions; and/or Loss of a moderate proportion of the known population or range
Low	Minor shift away from existing baseline conditions; and/or Minor effect on the known population or range
Negligible	Very slight change from the existing baseline conditions; and/or Negligible effect on the known population or range

Step 3: Level of effects assessment in the absence of mitigation

Step 3 of the EcIA guidelines requires the overall level of effect to be determined using a matrix that is based on the ecological values and the magnitude of effects on these values in the absence of any efforts to avoid, remedy or mitigate for potential effects. Level of effect categories include No Ecological Effect, Very Low, Low, Moderate, Moderate/High, High and Very High. Table 2.3 shows the EcIA matrix outlining criteria to describe the overall level of ecological effects.

Table 2.3 - Summary of the criteria for describing the overall level of ecological effects as outlined in EIANZ, 2015.

Magnitude of effect	Ecological Value			
	Very High	High	Moderate	Low
Very High	Very high	Very high	High	Moderate
High	Very high	Very high	Moderate	Low
Moderate	Very high	High	Low	Very low
Low	Moderate	Low	Low	Very low
Negligible	Low	Very low	Very low	Very low
No Effect	No ecological effect	No ecological effect	No ecological effect	No ecological effect

Step 4: Establish if mitigation is required

The overall level of effect is used to determine if mitigation (e.g. boundary adjustments) is required. As discussed later in this report, the reconsent would have only negligible to low ecology effects (in terms of Step 3 of the EcIA guidelines), even without taking into account mitigation measures.

3 Ecological Description

3.1 Site Description

The proposed marine farm reconsent is located offshore of the northern shoreline of Squally Cove (Figure 3.1), approximately 700 m east-north-east of Matarau Point, Croisilles Harbour. Matarau Point is a cuspate foreland formed by coastal processes acting to deposit cobble, pebble and small boulder sized material forming a triangular shaped intertidal and subtidal feature. The headland is located on the outer northern shore of Squally Cove, the eastern arm of Croisilles Harbour. Matarau Point is roughly 8 km from the entrance to Croisilles Harbour and some 47 km by sea from the entrance to Port Nelson. The adjacent landscape features coastal hillslopes which rise from a relatively narrow band of rocky cobbled intertidal to ridges approximately 100-150 m in height. Predominantly landuse cover is a combination of commercial forestry (currently supporting maturing *Pinus radiata*) and regenerating native vegetation.

Figure 3.1. Marine Farm 8268 with one block of backbones occupying a subtidal area offshore from the northern shoreline, Squally Cove, Croisilles Harbour.

3.2 Ecological Context

Based on an initial desktop review of available information we have identified the following ecological habitats associated with the proposed reconsent (the study area).

3.3 Marine Environment (Based on Historical Information)

No information on the marine environment to be directly affected by the reconsent could be recovered from the literature. For this reason, relevant information was sought from previous benthic surveys of adjacent marine farm 8267 (Davidson and Richards 2009) located immediately west-south-west of the application site. Based on relevant aspects of this previous account, the wider marine study area is delineated by two primary subtidal regions, the relatively shallow nearshore (located inshore of consent) and deeper offshore zone where existing farm structures are situated.

At the time of the 2009 survey, the nearshore subtidal habitat was dominated by coarser fine sediment, whereas the deeper offshore benthos under the marine farm 8267 (and more than likely the application site) was dominated by soft substratum (i.e. silt and clay - referred to herein as 'soft mud'). Fauna residing in or utilising nearshore habitat in 2009 included sea cucumbers, cushion sea stars and saddle squirts mostly in association with mussel debris.

Mussel shell debris data from 75 quadrats collected along 5 transects indicated that mussel shell cover at that time ranged from 45-90% cover directly adjacent to the inshore backbone, but declined to <5% cover by 7 m distance from the backbone and was largely absent >10 m distance from the dropper. The high percentage cover of shell close to the backbone was thought to be related to the period of time this site had been farmed.

The wider Squally Cove and adjacent coastline also provides refuge for a variety of sea birds and mammals including nationally and internationally threatened species (further discussed below).

3.4 Existing Consent and Surface Structure Boundaries

The inshore corner depths of the consent area ranged from 9.8-10.7 m. Offshore boundary depth of the consent area ranged from 11.6-11.7 m (Appendix A). Existing surface structures consisted of one block of backbones covering approximately 2.91 ha (49%) of the 5.97 ha consent area. All lines were situated within the consent boundary. The distance between low tide and the consent boundary and surface structure boundary was measured at three positions along the adjacent shoreline. The distance from low tide positions to the inshore consent and surface structure boundary ranged from 80-99 m and 80-87 m, respectively.

3.5 Current Benthic Habitat

Based on an assessment of sonar and drop camera imagery, a total of two broad benthic habitat types were mapped (Table 3.1). An example, looking north across the consent, of how subtidal habitat margins were delineated is provided in Figure 3.2. A GIS-based habitat map of the benthic study area is provided in Figure 3.3.

3.5.1 Firm Muddy Sand (Nearshore subtidal - inshore of existing farm)

Inshore of the consent, from Mean Low Water Mark (MLWM) to 30-40 m offshore, lies coarse soft substratum, in this case firm muddy sand dominated habitat (e.g. refer Field Photos 'DC 22', Figure 1.1, Appendix G). This nearshore region of the surveyed area is on a similar gradient to the cobble dominated intertidal zone, and accounts for a relatively small proportion (8.9%) of the study area (Table 3.1, Figure 3.3). Mussel shell debris did not feature on the benthos in this part of the inshore surveyed area.

Table 3.1 Summary of broad benthic habitat types within the subtidal surveyed area, Marine Farm 8268, Squally Cove, Croisilles Harbour, November 2019.

Dominant Subtidal Feature		Surveyed Area (ha)	% of Surveyed Area	% of Proposed Reconsent*
1.	Firm muddy sand *Spanning the majority of the nearshore subtidal habitat inshore of the consent*	1.01 ha	8.9%	0%
2.	Soft mud *Under consent and surface structure boundary*	10.44 ha	91.1%	100%
	Total	**11.45 ha**	**100%**	**100%**

* Refers to footprint of both 'surface structure boundary' and 'consent boundary' (as per Figure 3.3).

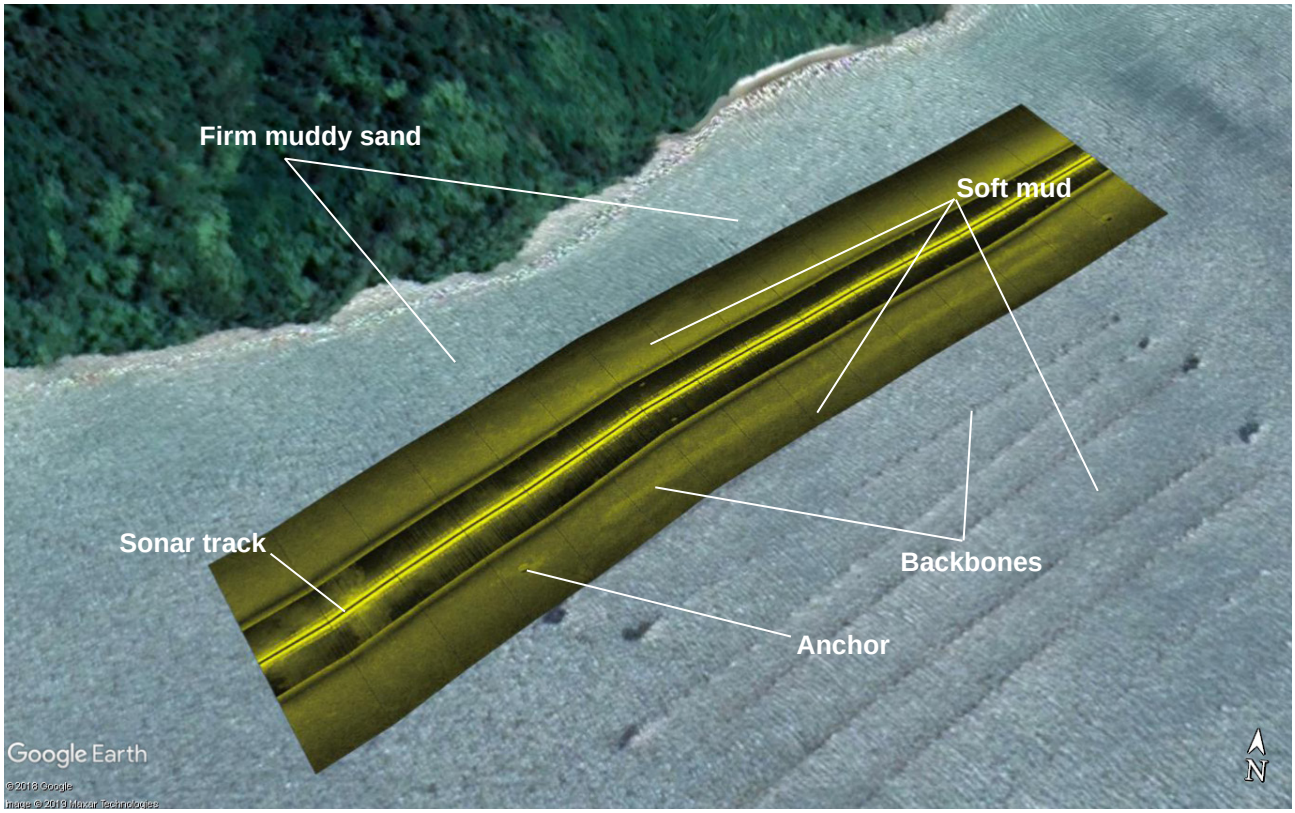

Figure 3.2. Example of the different habitats in the surveyed area and encountered via sonar during the field survey, Marine Farm 8268, Squally Cove, Croisilles Harbour, November 2019. Note representative drop camera photos and live HD video feed were used to corroborate habitat types captured in sonar runs.

Figure 3.3. Broad scale map of dominant benthic habitat assessed in the present study. Habitat boundaries are indicative only. Representative drop camera photos plus in situ HD video feed were used to corroborate habitat types captured in sonar runs. The vast majority of substratum below the existing surface farming structures is dominated by unvegetated soft mud.

3.5.2 Soft Mud (Deeper offshore subtidal habitat - under and adjacent to reconsent)

Down shore of the nearshore subtidal reef habitat is the soft mud (grainsize range <63 µm) habitat (e.g. refer Field Photos 'DC 10', Figure 1.1, Appendix G). It is this benthic habitat that falls within the footprint of all existing surface farming structures and reconsent area. Here, mussel shell debris was observed in 15 of 20 (75%) drop camera photos, ranging in percentage cover from 0% (none) to 55% (mod-high), but when present was usually <30% cover. Moderate-high (>31 % cover) values were occasionally recorded under or directly adjacent to backbones, with little to no mussel shell debris under warp structures or offshore of the surface structures. Although muddy, sediments in this part of the study area did not appear to be expressing symptoms of advanced eutrophication (i.e. oxygen depletion at the sediment surface) as can be the case under a scenario of excessive organic loading (Robertson 2018; Keeley et al. 2012).

3.6 Marine Mammals

Based on the habitat preference and recorded distributions of marine mammal species (refer to Appendix B for details), there are several species of mammal with the potential to inhabit the wider area of the proposed reconsent (Davidson et al. 2011) including:

- Bottlenose dolphin (*Tursiops truncatus*) - Nationally Endangered;
- Dusky dolphin (*Lagenorhynchus obscurus*) - Not Threatened;
- Hector's dolphin (*Cephalorhynchus hectori hectori*) - Nationally Vulnerable;
- Humpback whale (*Megaptera novaeangliae*) - Non-Resident Native (Migrant);
- Killer whale, orca (*Orcinus orca*) - Nationally Critical;
- Short-beaked common dolphin (*Delphinus delphis*) - Not Threatened; and,
- Southern right whale (*Eubalaena australis*) - At Risk - Recovering.

The ecological value of marine mammal populations in the coastal environment of the reconsent is very high given the likelihood for mammal species to utilise the wider area and which may include Nationally Endangered/At Risk species; however, these species are not restricted to these habitats within the proposed reconsent and likely utilise habitat in adjacent bays and other coastal habitat throughout the Marlborough Sounds.

3.7 Sea Birds

Recent shorebird and seabird sightings (refer to Appendix C for details) at Squally Cove and adjacent area included (eBird June-Sept 2019, and Davidson et al. 2011):

- Fluttering shearwater (*Puffinus gavia*) – At Risk (Relict);
- White-fronted tern (*Sterna striata striata*) – At Risk (Declining);
- Southern black-backed gull (*Larus dominicanus dominicanus*) - Not Threatened;
- Variable oystercatcher (*Haematopus unicolor*) – At Risk (Recovering);
- Silver gull (*Larus novaehollandiae scopulinus*) – At Risk (Declining);
- Spotted shag (*Stictocarbo punctatus*) – Not Threatened; and,
- Australasian Gannet (*Morus serrator*) – Not Threatened.

Again, the ecological value of shorebird and seabird populations in the coastal receiving environment of the reconsent is very high given the recent sightings in the Squally Cove area and known inhabitants of the open coast which include At Risk bird species; however, these species are not restricted to these habitats within the proposed reconsent and likely utilise available habitat within Squally Cove and adjacent bays and other coastal habitat throughout the Marlborough Sounds.

3.8 Biogenic Habitat and Macroinvertebrates

3.8.1 Firm Muddy Sand (Nearshore subtidal - inshore of existing farm)

Epibenthic macrofauna, in this case a single starfish, was noted on the firm muddy sand habitat (refer Field Photo 'DC 24', Figure 1.1, Appendix G). Biogenic habitat appeared to be absent from this coarser-grained habitat inshore of the reconsent.

3.8.2 Soft Mud (Deeper offshore subtidal habitat - under and immediately adjacent to reconsent)

The overall abundance of biogenic habitat is expected to be very low given the generally depauperate nature of soft mud habitat beneath shellfish farms throughout the Marlborough Sounds (Davidson et al. 2011). Indeed no such habitat was observed at the relevant drop camera sampling stations below or adjacent to the existing farm (Figure 3.4). The only epibenthic macrofaunal species present at low densities were brittle star (*Ophiopsammus maculata*), gastropod snail and sea cucumber (*Stichopus mollis*).

The overall ecological value of the site in terms of macrofaunal communities is considered to be low given the low diversity, species richness and abundance, and large absence of Nationally Threatened, At Risk or locally uncommon or rare species.

3.9 Fish

Based on the habitat preference and recorded distributions of fish species (refer to Appendix E for details), there are several species of fish with the potential to inhabit the wider area of the proposed reconsent (Davidson et al. 2011) including:

- Blue Cod (*Parapercis colias*) - Threatened - Least Concern (Decreasing);
- Elephant Fish (*Callorhinchus milii*) - Threatened - Least Concern (Stable);
- Rough Skate (*Zearaja natuta*) - Threatened - Least Concern (Stable);
- Snapper (*Pagrus auratus*) - Threatened - Least Concern (Decreasing); and,
- Spotty (*Notolabrus celidotus*) - Threatened - Least Concern.

The ecological value of fish populations in the coastal environment of the reconsent is moderate given the likelihood for species to utilise the wider area, which may include Nationally Threatened species; however, these species are not restricted to these habitats within the proposed reconsent and likely utilise available habitat within Squally Cove and adjacent bays and other coastal habitat throughout the Marlborough Sounds.

No bony fish species were observed below or immediately adjacent to the application site during the present survey.

4 Assessment of Effects on Ecological Values

In the absence of efforts to avoid, remedy or mitigate adverse ecological effects, the potential effects on coastal ecological values come primarily from localised effects at approximately the farm scale.

Local effects, in the case of aquaculture of green-lipped mussels (*Perna canaliculus*) (i.e. the current activity at the site), can be expressed within both water column (e.g. phytoplankton depletion and changes in planktonic community composition, dissolved nutrient and particulate release, and effects from biofouling communities) and benthic (e.g. localised organic enrichment, smothering of organisms by biodeposits, biofouling drop-off and debris altering the composition of the benthos, and shading of benthos by structures thereby affecting localised productivity) environments. In addition, Matarau Point is situated nearby to the site of the reconsent and is recordered as being 'one of four cuspate forelands in the Marlborough Sounds' (1/03, Map 71, MSRMP), with a level of significance of 2 ascribed reflecting a site of national significance with regard to 'Coastal and Marine (Intertidal and Subtidal)' ecological attributes (Appendix B, MSRMP). However, the likelihood for adverse affects associated with continued shellfish farming in both shallow nearshore habitat, including the rocky habitats associated with nearby Matarau Point, and soft mud habitat (directly below and immediately adjacent to the reconsent) is low. This is based on the distance of the former habitat from the reconsent coupled with the site's long history of mussel farming (and therefore lessened likelihood for adverse alteration to the latter habitat) and relatively well flushed nature driven by shallow depths, tidal flow and periodic wind and wave action (Davidson and Richards 2014; Davidson 2015).

The likelihood (or risk) and magnitude of these effects occurring and the potential level of effects on coastal environments relevant to the reconsent are discussed as follows.

4.1 Coastal Ecology Values Assessment

Step 1 of the EcIA guidelines requires ecological values to be assessed and ranked. As defined by Table 4.1 below, coastal ecology values associated with the reconsent range from 'low' for soft mud habitat and macrofauna and biogenic communities inhabiting surveyed subtidal habitat, to 'very high' for nearshore subtidal habitat and sea birds and mammals that may interact with the site.

Table 4.1 Assignment of values within the relevant coastal environment to habitats and species (adapted from EIANZ, 2015).

Habitat/Species	Value	Comments
Firm Muddy Sand (near-shore subtidal - inshore of existing farm) Habitat	Very High	The wider subtidal habitat inshore of the proposed reconsent (and surface farm structures) is CMZ2 (MSRMP), and may support Nationally Threatened, At Risk or locally uncommon or rare species; however, these species are not restricted to the proposed site and likely occupy similar habitat along the wider inshore reef system. The nearby inshore reef associated with Matarau Point is considered to be nationally significant as one of four cuspate forelands in the Marlborough Sounds' (1/03, Map 71, Significance 2, MSRMP).

Habitat/Species	Value	Comments
Soft Mud (deeper offshore subtidal habitat - under and immediately adjacent to existing farm) Habitat	Low	The area of the proposed reconsent also falls within CMZ2 (MSRMP) mapped overlays, does not feature as a site of regional or national significance (Map 71, Appendix B, MSRMP), and is unlikely to support Nationally Threatened, At Risk or locally uncommon or rare species. We note this habitat type is considered suitable for consideration for marine farming activities in the Marlborough Sounds.
Biogenic Habitat & Macroinvertebrates	Low	Observed epibenthic macroinvertebrate communities and biogenic habitat inhabiting the proposed site have low diversity, species richness and abundance, but may include species known to be locally uncommon.
Fish	Moderate	Known inhabitants of Squally Cove and the wider Marlborough Sounds include Nationally Threatened and regionally significant fish species; however, these species are not restricted to these habitats within the proposed reconsent and likely utilise habitat in nearby reef, adjacent bays and other subtidal area throughout the Marlborough Sounds.
Marine Mammals	Very High	Known inhabitants of the wider Marlborough Sounds include Nationally Endangered/At Risk mammal species; however, these species are not restricted to these habitats within the proposed reconsent and likely utilise available habitat within Squally Cove and adjacent bays and other coastal area throughout the Marlborough Sounds.
Sea Birds	Very High	Known inhabitants of Squally Cove and the wider Marlborough Sounds include Nationally Endangered/At Risk bird species; however, these species are not restricted to these habitats within the proposed reconsent and likely utilise available habitat within Squally Cove and adjacent bays and other coastal area throughout the Marlborough Sounds.

4.2 Magnitude of Effects Assessment

Having identified the ecological value of the habitat and fauna, Step 2 of the EcIA guidelines requires an evaluation of the magnitude of effects on ecological values based on consent size, intensity and duration (Table 4.2).

Table 4.2 Magnitude of effects on habitat and fauna potentially impacted (adapted from EIANZ, 2015).

Habitat/Species	Magnitude	Reasons
Firm Muddy Sand (near-shore subtidal - inshore of existing farm) Habitat	Negligible	No direct impacts, but perhaps some indirect ones related to potential discharges and noise / activity disturbance of fauna. However, as evidenced in the present study, the likelihood for the deposition of farm-derived biodeposits and mussel shell derbis in nearshore subtidal (or indeed intertidal) habitats is low given the distance of this habitat from the proposed reconsent coupled with moderate-high flushing potential due to the site's shallow nature and periodic exposure to strong winds and wave action.
Soft Mud (deeper offshore subtidal habitat - under and immediately adjacent to existing farm) Habitat	Low	Given the low value of this habitat with regard to inhabitant epibenthic macrofauna, and long-term history of marine farming at the site, any impacts associated to the reconsent on this soft mud-dominated habitat are expected to be within the low impact range known for mussel farms in the Marlborough Sounds. It is highly unlikely that biogeochemical conditions within the benthic environment (e.g. biotic community structure, surface sediment grainsize distribution and oxygenation/redox conditions) will be further altered by the proposed activity.
Biogenic Habitat & Macroinvertebrates	Negligible	Given the relatively depauperate macrofaunal/biogenic community present at the proposed site, any impacts on them are expected to be negligible.
Fish	Negligible	Because shellfish farms can enhance wild fish abundances by creating a habitat for fish to aggregate (providing food resources and refuge), effects on fish would potentially arise due to fish populations becoming displaced from other habitats or more vulnerable to recreational fishing pressure. However, in general, any effects of the reconsent on wild fish populations are likely to be very minor, or indeed ecologically neutral.

Habitat/Species	Magnitude	Reasons
Marine Mammals	Negligible	Effects on mammals may arise through direct (e.g. vessel strike, increased underwater sound production and possibly the risk of entanglement) and indirect (i.e. degradation of feeding habitat values or diminished food resources) impacts. While the former has the greatest potential consequences (i.e. injury or death of a marine mammal), any such effects are expected to be either short-term, or avoidable through species utilising available feeding habitat throughout the wider Squally Cove and adjacent coastal region. Therefore, the magnitude of effect on marine mammals would be negligible.
Sea Birds	Negligible	Effects on birds would potentially arise due to degradation of feeding habitat values, diminished food resources, or through direct entanglement. However, farming structure may in fact provide alternative roost sites closer to foraging areas as well as promote aggregation of prey fish, and mobile bird species could avoid the latter effects by utilising available feeding habitat throughout the wider Squally Cove and adjacent coastal region. Therefore, the magnitude of effect on birds would be negligible, or indeed ecologically neutral.

4.3 Summary of Effects Assessment

An estimate of habitat change resulting from the proposed reconsent can be undertaken by importing the proposed design into a GIS environment. This allows a semi-quantitative estimate to be made of the benthic habitat likely to be impacted. The areal footprint of the reconsent area and existing surface farming structures overlaid on a map of benthic habitat types is shown above in Figure 3.3. Reconsent of the proposed site would not likely alter the soft mud-dominated habitat. It is unlikely that those remaining habitats adjacent to the reconsent would be appreciably altered by the proposal. Given that the size of the survey area was selected based on the scale of proposed reconsent, these calculations suggest that approximately 57% of the soft mud habitat, and 0% of the nearshore coarser-grained habitat in the study area will be situated beneath the proposed reconsent (i.e. existing farming structures) (Table 3.1).

Although the proposed reconsent would be situated above a high proportion of the soft mud habitat in the surveyed area, the relatively depauperate biological nature of the habitat, in this case dominated by highly mobile fauna (sea cucumber) commonly found beneath established shellfish farms in the Marlborough Sounds, means that it is unlikely that significant changes to ecology will occur. Indirectly, ecology in more distant habitats from the proposed reconsent (e.g. nearshore subtidal habitats inshore of existing farming structures) are also unlikely to be affected by the reconsent given their distance from the farming structures, relatively large extent, shallow depth and high flushing potential driven by periodic wind and wave action.

Table 4.3 summarises ecological value (Step 1), magnitude of effects (Step 2), and level of effects (Step 3) for each of the coastal ecological values identified for the associated coastal environment of the reconsent.

Table 4.3 Ecological values, magnitude of effects and level of effects for the coastal environment of the application site.

Habitat/Species	Ecological Value	Magnitude of Effect	Level of Effect
Firm Muddy Sand (nearshore subtidal - inshore of existing farm) Habitat	Very High	Negligible	Low
Soft Mud (deeper offshore subtidal habitat - under and immediately adjacent to existing farm) Habitat	Low	Low	Very Low
Biogenic Habitat & Macroinvertebrates	Low	Negligible	Very Low
Fish	Moderate	Negligible	Very Low
Marine Mammals	Very High	Negligible	Low
Sea Birds	Very High	Negligible	Low

5 Discussion & Conclusions

Broad scale habitat classification and fine scale inspection (via drop camera) of coastal marine areas as described in this study provides a detail of ecologically meaningful units (habitat type and associated fauna), that can be used as a baseline to detect changes in spatial extent over time, or as a result of a proposed activity.

We note that, because the site of the proposed reconsent where existing surface farming structures are situated is confined to the relatively deep, soft muddy, subtidal area, the current assessment mainly focuses on classifying only habitat and inhabitant fauna physically associated with this zone of the reconsent.

In terms of the overall physical environment, the study area, including the reconsent, exhibits properties characteristic of a deep, subtidal dominated estuary (Robertson et al. 2016), with soft mud featuring as the dominant substratum bordered to the north by a smaller area of nearshore coarser-grained habitat. Mud (i.e. silt and clay), which is the most common subtidal habitat in the sheltered Marlborough Sounds (McKnight and Grange, 1991) and has been traditionally targeted for marine farming activities, typically habours low value biological communities made up of fewer taxa more tolerant of disturbed/muddy conditions (Pearson and Rosenberg 1978; Robertson et al. 2015). For this reason, mud substratum is considered suitable for consideration for marine farming activities in the Marlborough Sounds. Biologically, the results of the survey of this subtidal habitat confirm this theory, with very few epibenthic macrofauna present within the soft mud habitat, based on representative drop camera photos taken below and adjacent to the consent. Indeed, no species, including sea birds, fish and marine mammals, defined by DoC or MDC as having ecological significance were observed during this reconsent survey (DoC 1996-2006; Davidson et al. 2011).

Mussel farming is expected to enhance rates of sedimentation of organic-rich, fine-grained particles (biodeposits of faeces and pseudofaeces), and the deposition and accumulation of live shellfish, shell litter onto the seabed (Keeley et al. 2009; Stenton-Dozey and Broekhuizen 2019). In this respect, the survey results showed benthic shell debris levels and apparent oxygenation of surface sediments, the latter a screening-level indicator of organic enrichment, to be predominantly within the low impact range known for mussel farms in the Marlborough Sounds. While it is likely that continued shellfish farming at this site will result in the deposition of more shell and fine-grained particles under and near droppers, it is highly unlikely that biogeochemical conditions within the benthic environment (e.g. biotic community structure, surface sediment grainsize distribution and oxygenation/redox conditions) will be further altered by the activity.

In terms of potential water column effects, it is important to consider whether mussel farming at the site may impact productivity in adjacent marine area by way of phytoplankton depletion (i.e. extraction of phytoplankton and organic particulates by the farmed shellfish). The effects of phytoplankton depletion through shellfish consumption are generally only detectable at approximately the farm scale, and are of short duration (Morrisey et al. 2006). The significance of associated effects depends on a variety of factors, including the carrying capacity of the environment, prevailing water currents, weather patterns, and catchment-derived nutrient inputs, with effects more pronounced if farms are located in physically constrained shallow areas with slow currents, compared to deep sites with strong flow and good flushing (Zeldis et al. 2008, 2013; Plew 2011; Broekhuizen et al. 2015). The application site is located nearby to the confluence between the entrance to the Croisilles Harbour and Squally Cove, and hence tidal/wind circulation (driven by tides and wind) and lower residence times than more quiescent sites located further into the Cove (Davidson and Richards 2014; Davidson 2015). On this basis, and given that no data has been presented to show the ecological carrying capacity of the Sounds has been reached, the effect of phytoplankton depletion outside the boundaries of the consent by feeding mussels will be less pronounced than sites further into the Harbour.

Overall, the proposal is considered relatively benign in terms of ecological impacts based on the farming activity, long history of farming at the site, and the existing values, and therefore the life-supporting capacity of associated coastal ecosystems will be maintained through the operation of the consent.

6 Recommendations

6.1 Recommendations for avoiding or minimising potential adverse effects

Given the limited loss of coastal diversity as detailed above, as well as the already established farming infrastructure at the site, mitigation measures are recommended only during the operation phase of the proposed activity as follows:

- Minimise discharges (fine sediment and/or organic matter) to water in the coastal environment, although discharge effects of harvesting mussels are seen as transitory, and in most cases quickly become indistinguishable from background sedimentation.

6.2 Recommendations for addressing adverse residual effects that cannot be avoided or minimised

Monitoring of the associated coastal environment is not proposed given that the reconsent is expected to have less than minor effects on associated ecological values.

6.3 Recommendations for boundary adjustments

All existing consent and farming structures are located over soft substratum >50 m offshore of Mean Low Water Mark (MLWM) (refer Figure 3.3), therefore no boundary adjustments are suggested.

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8 Limitations

As with all one-off field ecological assessments, seasonal or temporal variation in the presence of mobile fauna means that the presence or absence of such fauna cannot be ascertained with great accuracy. The condition of habitat becomes the surrogate for the presence or absence of fauna rather than observed condition on the day of the survey. This assessment has been carried out in line with the project brief received by Robertson Environmental Limited on the 12th of November 2019. This is assumed in this assessment to be reconsent being sought by this application.

Robertson Environmental's professional opinions are based on its professional judgement, experience, and training. These opinions are also based upon data derived from the field survey and analysis described in this document, with the support of relevant national guidelines (EIANZ, 2015). It is possible that additional testing and analyses might produce different results and/or different opinions. Should additional information become available, this report should be updated accordingly. Robertson Environmental Limited has relied upon information provided by the Client to inform parts of this document, some of which has not been fully verified by Robertson Environmental Limited. This document may be transmitted, reproduced or disseminated only in its entirety.

Appendix A:

Detailed Field Data

Summary information for Marine Farm 8268 including low tide, consent corner and surface structure locations, November 2019.				
Station Type	Station Code[1]	Depth (m)[2]	Location	
			NZTM E	NZTM N
Consent Corner	CC 1	10.7	1659385	5455096
Consent Corner	CC 2	9.8	1659574	5455259
Consent Corner	CC 3	11.6	1659705	5455107
Consent Corner	CC 4	11.7	1659442	5454880
Surface structure corner	SC A	10.4	1659407	5455117
Surface structure corner	SC B	9.5	1659560	5455241
Surface structure corner	SC C	11.0	1659650	5455128
Surface structure corner	SC D	11.1	1659506	5455000
Low tide	LT 1	NA	1659317	5455167
Low tide	LT 2	NA	1659393	5455205
Low tide	LT 3	NA	1659529	5455323

[1] As presented in Figure 1.1.
[2] Depth adjusted to datum (-1.0 m).

Summary of drop camera locations, substratum type, mussel shell debris and species present, Marine Farm 8268, November 2019.								
Drop Camera Station[1]	Depth (m)[2]	NZTM E	NZTM N	Location	Substratum	Mussel Shell Debris	% shell debris	Species Present
DC 22	9.6	1659382	5455187	Inshore of consent, no surface structure	Firm muddy sand	None	0	
DC 23	9.6	1659442	5455232	Inshore of consent, no surface structure	Firm muddy sand, whole natural shell	None	0	
DC 24	10.0	1659512	5455299	Inshore of consent, no surface structure	Firm muddy sand	None	0	Starfish
DC 25	10.4	1659548	5455283	Inshore of consent, no surface structure	Soft mud, silt, shell hash	None	0	Whelk
DC 26	10.3	1659470	5455213	Inshore of consent, no surface structure	Soft mud, silt, shell hash	None	0	
DC 27	10.2	1659404	5455164	Inshore of consent, no surface structure	Soft mud, silt, shell hash	None	0	
DC 4	10.0	1659407	5455117	Inshore of consent, under backbones	Soft mud, silt, mussel debris	Low	25	
DC 20	10.6	1659540	5454995	Inside consent, no surface structure	Soft mud, silt	None	0	Whelk
DC 21	10.9	1659617	5455065	Inside consent, no surface structure	Soft mud, silt, mussel debris	Low	5	
DC 16	10.8	1659654	5455160	Inside consent, under anchor warp	Soft mud, silt	None	0	
DC 17	10.9	1659608	5455217	Inside consent, under anchor warp	Soft mud, silt	None	0	
DC 18	11.1	1659401	5455032	Inside consent, under anchor warp	Soft mud, silt	None	0	
DC 19	11.2	1659438	5454990	Inside consent, under anchor warp	Soft mud, silt	None	0	
DC 1	11.1	1659557	5455235	Inside consent, under backbones	Soft mud, silt, shell hash, mussel debris	Low	8	
DC 2	11.0	1659510	5455201	Inside consent, under backbones	Soft mud, silt, shell hash, mussel debris	Low	25	
DC 3	10.9	1659460	5455162	Inside consent, under backbones	Soft mud, silt, shell hash, mussel debris	Low	3	
DC 5	10.3	1659450	5455098	Inside consent, under backbones	Soft mud, silt, mussel debris	Moderate	35	
DC 6	11.0	1659506	5455150	Inside consent, under backbones	Soft mud, silt, mussel debris	Low	8	Sea cucumber
DC 7	11.2	1659573	5455200	Inside consent, under backbones	Soft mud, silt, mussel debris	Low	15	
DC 8	11.4	1659607	5455160	Inside consent, under backbones	Soft mud, silt, whole natural shell, mussel debris	Low	20	
DC 9	11.2	1659552	5455111	Inside consent, under backbones	Soft mud, silt, shell hash, mussel debris	Low	5	
DC 10	1.3	1659507	5455076	Inside consent, under backbones	Soft mud, silt, shell hash, mussel debris	Moderate	35	

[1] As presented in Figure 1.1.

[2] Depth adjusted to datum (-1.0 m).

Summary of drop camera locations, substratum type, mussel shell debris and species present, Marine Farm 8268, November 2019.								
Drop Camera Station[1]	Depth (m)[2]	NZTM E	NZTM N	Location	Substratum	Mussel Shell Debris	% shell debris	Species Present
DC 11	1.2	1659465	5455044	Inside consent, under backbones	Soft mud, silt, shell hash, mussel debris	Moderate	40	
DC 12	1.0	1659507	5455001	Inside consent, under backbones	Soft mud, silt, shell hash, mussel debris	Low	5	Whelk
DC 13	6.8	1659548	5455038	Inside consent, under backbones	Soft mud, silt, shell hash, whole natural shell, mussel debris	Mod-High	55	Brittle star (*Ophiopsammus maculata*), sea cucumber
DC 14	8.6	1659592	5455077	Inside consent, under backbones	Soft mud, silt, shell hash, mussel debris	Low	6	Whelk
DC 15	8.4	1659651	5455129	Inside consent, under backbones	Soft mud, silt, mussel debris	Moderate	35	

[1] As presented in Figure 1.1.

[2] Depth adjusted to datum (-1.0 m).

Appendix B:

Potential Marine Mammal Species

Summary the threat classification, habitat preferences and distribution of mammal species known to occur within the Marlborough Sounds area.						
Species	**Common name**	**Threat classification (DOC) (2019) [1]**	**Threat classification (IUCN) [2]**	**Date last assessed (IUCN)**	**Significant Species Marlborough (MDC) [3]**	**Distribution [3]**
Tursiops truncatus	Bottlenose Dolphin	Threatened - Nationally endangered	Threatened - Least Concern	2018	Significant Species - Conservation grounds	New Zealand is at the southern most point of their range. Limits to the range of this species appear to be temperature related. Around 450 individuals live in the North Island area, ranging from Doubtless Bay in Northland to Tauranga. There are currently 31 individual dolphins visiting the Bay of Islands area (from 2017-2019 data). Around 63 live in Doubtful Sound, Fiordland (as at 1998). Another group range from the Marlborough Sounds to Westport. The only known population estimate for the Marlborough Sounds is 211 semi-resident animals.
Lagenorhynchus obscurus	Dusky Dolphin	Not Threatened	Threatened - Least Concern	2018	Significant Species	They are widely distributed around the South island and southern North Island but are rarely seen north of Hawke's Bay. They have been observed throughout much of the Marlborough Sounds, including Admiralty Bay, Queen Charlotte Sound and Tory Channel, Marlborough Sounds and Croisilles Harbour. Admiralty Bay is now recognised as an important feeding area for some over- wintering dolphins that are found off Kaikoura during the summer. Feeding in Admiralty Bay occurs during daylight hours, with primary targets being small schooling fishes e.g. pilchards. The Admiralty Bay winter population represents a significant portion of the New Zealand dusky dolphin population. This population has been the focus of continued scientific interest regarding the relationship between aquaculture activities and dolphins.
Cephalorhynchus hectori hectori	Hector's Dolphin	Threatened - Nationally Vulnerable	Threatened - Endangered (Decreasing)	2008	Significant Species - Conservation grounds	Two sub-species of Hector's dolphins exist: Maui's dolphin is only found off the west coast of the north island; Hector's dolphin is found around the South island of new Zealand except Fiordland. In Marlborough the Hector's Dolphin is known to inhabit an area in the central Queen Charlotte Sound and a second area in Cloudy and Clifford Bays.

1. Baker et al. (2019).
2. Listed as 'Threatened' by the International Union for Conservation of Nature (IUNC). https://www.iucnredlist.org/species.
3. Davidson et al. (2011).

Species	Common name	Threat classification (DOC) (2019) [1]	Threat classification (IUCN) [2]	Date last assessed (IUCN)	Significant Species Marlborough (MDC) [3]	Distribution [3]
Megaptera novaeangliae	Humpback Whale	Non-Resident Native - Migrant	Threatened - Least Concern (Increasing)	2018	Significant Species - Scientific and conservation and grounds	In Marlborough humpback whales migrate northward from late May to early August, travelling up the east coast of the South island before dividing into two groups: one moving through Cook Strait and up the west coast of the north island; the other continuing up the east coast of the north island. South bound humpbacks mostly pass along the west coasts of both islands, between mid November and early December.
Orcinus orca	Killer Whale, Orca	Threatened - Nationally Critical	Threatened - Data Deficient	2017	Significant Species - Conservation grounds	They are the most cosmopolitan of all marine mammals, being found in all waters from tropics to polar regions. Within new Zealand there appear to be three main populations: (1) north island, (2) South island and (3) a population that appears to move between the both islands. Killer whales have been recorded from throughout much of Marlborough and may be encountered at any time of the year.
Delphinus delphis	Short-beaked Common Dolphin	Not Threatened	Threatened - Least Concern	2008	Significant Species	The New Zealand distribution is not well documented, however common dolphins are known from as far south as Fiordland, through to Kaikoura, the eastern coast of the north island and the Hauraki Gulf. Common dolphin are also present off the west coast of the North Island, from Northland through to the South Taranaki Bight and Cook Strait. In Marlborough common dolphin are known from Queen Charlotte Sound and Cook Strait; French Pass and Admiralty Bay area and also Cloudy and Clifford Bays.
Eubalaena australis	Southern Right Whale	At Risk - Recovering	Threatened - Least Concern	2017	Significant Species - Conservation grounds	They have a circumpolar distribution between 20 and 55 degrees south. Southern right whales are occasionally seen in the Marlborough region during winter and spring. Sightings are primarily in Cloudy and Clifford Bay, Tory Channel and Queen Charlotte Sound, however sightings have occurred in other areas and seasons. Historically, New Zealand was considered to have two of the seven recognised southern right whale breeding grounds in the South Pacific to indian ocean Basin: (1) mainland New Zealand; and (2) Auckland Islands.

1. Baker et al. (2019).
2. Listed as 'Threatened' by the International Union for Conservation of Nature (IUNC). https://www.iucnredlist.org/species.
3. Davidson et al. (2011).

Species	Common name	Threat classification (DOC) (2019) [1]	Threat classification (IUCN) [2]	Date last assessed (IUCN)	Significant Species Marlborough (MDC) [3]	Distribution [3]
Arctocephalus forsteri	New Zealand Fur Seal	Not Threatened	Threatened - Least Concern (Increasing)	2014	Significant Species - Scientific and conservation and grounds	They are widely distributed around mainland New Zealand as well as offshore islands and sub-Antarctic islands and can be found as far north as Three Kings islands. They are widely distributed in the Marlborough Sounds and east coast region. In Marlborough breeding colonies exist at Stephens Island and Trio islands. There are numerous haul outs throughout the Marlborough Sounds region. In at least some parts of the region (e.g. Admiralty Bay, French Pass, Current Basin), the haulout sites can vary through-out the year. Fur seals are regularly seen near salmon farms. Fur seals frequently feed on pelagic schooling fishes such as hoki, jack mackerel, and barracouta, as well as arrow squid. They also occasionally feed on penguins and shearwaters. Adult females tend to forage at night, in depths ranging from 15 m to 163 m.

1. Baker et al. (2019).
2. Listed as 'Threatened' by the International Union for Conservation of Nature (IUNC). https://www.iucnredlist.org/species.
3. Davidson et al. (2011).

Appendix C:

Potential Shore & Sea Bird Species

Species	Common name	Threat classification (DOC) (2016) [1]	Significant Species Marlborough (MDC) [2]	Location	Date	Distribution [2,3]	Habitat [2]
Haematopus unicolor	Variable Oystercatcher	At Risk (Recovering)	N/A	-41.0527,173.7764	1-Aug-19		
Larus dominicanus dominicanus	Kelp Gull (Southern black-backed gull)	Not Threatened	N/A	-41.0527,173.7764	1-Aug-19		
Morus serrator	Australasian Gannet	Not Threatened	Significant Species - Relatively few breeding areas	-41.0544,173.8140	1-Aug-19	Australasian gannets nest in dense breeding colonies on the New Zealand mainland and coastal rocks and islands. The largest mainland gannetry is at Cape Kidnappers, other mainland breeding sites include Muriwai, Farewell Spit Pelorus Sound, Waimaru Bay, Waimaru, nuggets in Otago Peninsula and on Solander island, Foveaux Strait. Anatohia Bay on the western shores of Arapawa island.	Australasian gannets mostly feed on waters over the continental shelf. They prefer flat ground for nesting, rather than cliff ledges. Breeding colonies are mostly situated at sites that are completely or largely surrounded by the sea, i.e. on islands or headlands.

1. Robertson et al. (2016). 2. Davidson et al. (2011). 3. http://nzbirdsonline.org.nz/species. 4. Species not observed directly at surveyed site but considered regionally significant (Davidson et al. (2011).

Species	Common name	Threat classification (DOC) (2016) [1]	Significant Species Marlborough (MDC) [2]	Location	Date	Distribution [2,3]	Habitat [2]
Stictocarbo punctatus punctatus	Spotted Shag	Not Threatened	Significant Species - Often encountered, being widespread and common	-41.0527,173.7764	1-Aug-19	Spotted shags occur mainly around the South Island in coastal waters out to 16 km. They are more localised on the west coast of the South Island, around Stewart Island, and parts of the North Island, including the Hauraki Gulf, West Auckland, Hawke's Bay and Wellington Harbour. The strongholds for spotted shags are the Marlborough Sounds, Banks Peninsula and Otago coast. In Marlborough colonies range from the Croisilles Harbour in the west throughout the Sounds to Port underwood in the east.	Breeding colonies restricted to eroded rocky outcrops on the coast, entering inlets and estuaries to feed and roost.
Puffinus gavia	Fluttering Shearwater	At Risk (Relict)	Significant Species - Abundance and contribution to the fertility of the island ecosystems where they breed.	-41.0544,173.8140	1-Aug-19	Fluttering shearwaters breed on many offshore islands throughout northern New Zealand, with large colonies on Three Kings, Moturoa, Motuharakeke (Cavalli), Bream, north-west Chickens, Mercury and Alderman Islands. In the Marlborough Sounds they are found on most rodent-free islands with the largest colonies on Trios and long island. In restoration projects, chicks have successfully been translocated to Maud Island (Marlborough Sounds) and Mana Island (Wellington).	Feeding range is restricted to coastal waters and the continental shelf. Found on most Rodent-free islands and nest in short burrows, under scrub or in forest.

1. Robertson et al. (2016). 2. Davidson et al. (2011). 3. http://nzbirdsonline.org.nz/species. 4. Species not observed directly at surveyed site but considered regionally significant (Davidson et al. (2011).

Species	Common name	Threat classification (DOC) (2016) [1]	Significant Species Marlborough (MDC) [2]	Location	Date	Distribution [2,3]	Habitat [2]
Sterna striata striata	White-fronted Tern	At Risk (Declining)	Significant Species	-41.0527,173.7764	1-Aug-19	Common all around New Zealand coasts. Breeding occurs mainly on the coast of New Zealand and its outlying islands, Stewart, Chatham, and Auckland Islands, and off northeast Tasmania at Flinders and Cape Barren Islands.	Occasionally forage up larger Canterbury rivers, but are seldom found far from the coast. Breeding usually occurs in large dense colonies on shingle river beds, sand dunes, stacks and cliffs.
Larus novaehollandiae scopulinus	Silver Gull (Red-Billed Gull)	At Risk (Declining)	Significant Species - Due to a recent decline in numbers	-41.0527,173.7764	1-Aug-19	This subspecies is endemic to New Zealand and is commonly seen in all coastal areas including the sub-Antarctic islands and the Chatham islands. It is only occasionally seen inland. There are two main breeding colonies in the Marlborough Sounds, one on Stephens island and the other on Bird island, Forsyth Bay.	On mainland New Zealand, breeding occurs in dense colonies, mainly restricted to the eastern coasts of the North and South Islands on stacks, cliffs, river mouths and sandy and rocky shores. Often seen scavenging in towns. Upwellings at places like McManaway Reef are popular with birds as the tidal rips and turbulent current bring food to the surface.
Phalacrocorax varius	Pied Cormorant	Threatened - Least Concern	N/A	-41.0527,173.7764	1-Aug-19		
Phalacrocorax sulcirostris	Little Black Cormorant	Threatened - Least Concern	N/A	Tennyson Inlet to Duncan Bay	25-Jun-19		

1. Robertson et al. (2016). 2. Davidson et al. (2011). 3. http://nzbirdsonline.org.nz/species. 4. Species not observed directly at surveyed site but considered regionally significant (Davidson et al. (2011).

Appendix D:

Potential Biogenic Habitat & Macroinvertebrates

Species	Common name	Threat classification (DOC) (2016) [1]	Significant Species Marlborough (MDC) [2]	Distribution [2,3]	Habitat [2]
Haliotis iris	Black Foot Paua	N/A	Significant Species - Iconic species in Marlborough as they highly regarded as a recreational and commercial catch.	Black-foot paua are endemic to New Zealand. In Marlborough they have been recorded throughout much of the Marlborough Sounds apart from inner Marlborough Sounds. They are most common from exposed outer Sounds locations and areas with macroalgal forest.	Lives in shallow coastal waters, usually in large groups on rocky reefs.
Galeopsis porcellanicus	Bryozoan Coral	N/A	Significant Species - In Marlborough as they provide biogenic habitat for a variety of species.	Endemic, throughout NZ from Three Kings Islands to Foveaux Strait and the Antipodes Islands.	Found on rock or shelly gravel in sublittoral fringe to 235 m. In Marlborough it is known from areas with relatively strong tidal currents.
Notoplax latalamina	Chiton	N/A	Significant Species - Endemic to the outer Marlborough Sounds being recorded nowhere else.	Endemic to the outer Marlborough Sounds being recorded nowhere else. The type locality of the species is 200 m depth off Stephen's island (Takaporewa). It has also been observed by divers from Croisilles Harbour to Sentinel Rock in the outer Marlborough Sounds. This species appears to be naturally rare, and is sparsely distributed in the outer north-west Marlborough Sounds and Cook Strait.	Found on rocky reefs between 6 to 200 m depth, associated with large sponges growing in areas of moderate to high current flow.
Neothyris lenticularis	Giant Lampshell	N/A	Significant Species - Scientific and conservation values.	This species and genus is endemic to New Zealand and sub Antarctic waters. They are known from 200 m depth at Stephens island and form large beds in Cook and Foveaux Straits. In Marlborough it is widespread in deep waters of Cook Strait, but has also been recorded from a variety of shallow locations in East Bay, Arapawa island and several locations in inner Queen Charlotte Sound.	Found on a variety of substrates from solid rock platforms and walls to coarse sandy rubble.
Atrina zelandica	Horse Mussel	N/A	Significant Species - Can form a biogenic habitat in high densities.	They are found in muddy to sandy soft-sediment habitats around the coast of New Zealand from extreme low water to 70 m depth. In the Marlborough Sounds they are often found in the soft sediments. Dense beds of greater than 10 per square metre have been recorded from particular areas such as Grove Arm, Wet inlet and Port Gore.	Inhabit soft sediments with most of the shell embedded in the sea floor and anchored to sediment by byssus threads. The exposed shells provide attachment for an array of algae and invertebrates such as sponges and sea squirts.

1. Freeman et al. (2013). 2. Nelson et al. (2019). 3. Davidson et al. (2011). 4. Page (2017).

Species	Common name	Threat classification (DOC) (2016) [1]	Significant Species Marlborough (MDC) [2]	Distribution [2,3]	Habitat [2]
Jasus edwardsii	Rock Lobster	N/A	Significant Species - Highly regarded as a recreational and commercial catch. Dominant or keystone predator.	They are found from Three Kings, north, South, Stewart and Chatham islands, south to Auckland islands. In Marlborough they have been recorded throughout the Sounds where suitable rock habitat exists, except central and inner Marlborough Sounds. Port underwood where large numbers of juveniles can be observed in the shallows.	Most common from outer Sounds locations and areas swept by moderate to strong tidal currents in rocky reef and on occasion, soft sediment habitats.
Pecten novaezelandiae	Scallop	N/A	Significant Species - Iconic species in Marlborough as they highly regarded as a recreational and commercial catch.	They are found throughout the Marlborough Sounds except inner Marlborough Sounds (including inner Kenepuru Sound) and Port underwood. They are particularly abundant in Croisilles Harbour entrance, the many bays in Queen Charlotte Sound and some outer Sound locations.	Found on a variety of soft substrata from mud to fine gravels, however adults appear to prefer coarse sediments (e.g. shell gravel and grit). They are usually most abundant in areas with some tidal flow.
Celleporaria agglutinans	Separation point coral	Not Threatened	Significant Species - Form dense beds that provide habitat for a variety of other species.	In New Zealand it is commonly known as Separation Point coral, Tasman Bay coral or 'hard coral' and occurs from the Three Kings islands to Foveaux Strait at about 3 to 220 m depth. In Marlborough particularly large concentrations of colonies are known from Current Basin, Chetwode and Titi islands.	Grows on rocky and soft sediment substrata, but only tends to form large, conspicuous colonies on soft sediments in high current areas.
Galeolaria hystrix	Tubeworm	N/A	Significant Species - Tubeworm mounds represent a significant biogenic habitat in Marlborough as they are utilised by a variety of species enhancing local biodiversity and potentially providing habitat for a variety of juvenile fishes.	Found on the rocky shores throughout Marlborough, however mounds are restricted only known to occur in the sheltered waters of the Marlborough Sounds and Port underwood. Particularly dense growths of these mounds are restricted to locations such The Knobbies and Perano Shoal. There are three major reefs in the region. One is in Queen Charlotte Sound and two are in Port Underwood at the Knobbies and Whataroa Bay.	Most abundant on rocky sheltered shores devoid of macroalgae but swept by tidal currents. Mounds are absent from areas exposed to ocean storms.

1. Freeman et al. (2013). 2. Nelson et al. (2019). 3. Davidson et al. (2011). 4. Page (2017).

Species	Common name	Threat classification (DOC) (2016) [1]	Significant Species Marlborough (MDC) [2]	Distribution [2,3]	Habitat [2]
Macrocystis pyrifera	Giant Kelp	At Risk (Declining)	Significant species - In Marlborough because in areas where it is dominant it can alter abiotic and biotic conditions by dampening water motion, altering sedimentation, shading the sea floor, scrubbing nutrients from the water column, stabilising substrata, and they can provide physical habitat for organisms both above and below the benthic boundary.	The giant kelp is found throughout New Zealand's marine environment. The range and extent of beds in the Marlborough Sounds has declined, with beds now absent from the eastern coast of D'urville island. Beds in the Marlborough Sounds are largely confined to sheltered eastern outer sound locations. Giant kelp beds are also located north and south of Cape Campbell.	Generally attaches to rock substrata, occasionally horse mussels, from low water to at least 18 m depth. The lower depth limit is determined by light and habitat availability. Note this species may also be a useful indicator of global warming as its distributional limit has been moving southward.
Adamsiella chauvinii	Red Alga	Not Threatened	Significant species - In Marlborough because where it forms dense beds it appears to provide habitat for a variety of species including bivalves, holothurians and fishes.	Endemic to New Zealand. In Marlborough it often forms dense beds in particular areas of Port Underwood, East Bay, and inner Queen Charlotte Sound (Houhou Point, Hauatehoro Point,Wedge Point, Ngakutu Point).	Found growing on a variety of substrata from rock to sand and mud.
Rhodymenia sp.	Red Algae	Data Deficient	Significant Species - In Marlborough because they provide an important food source for a variety of species, including urchins and some herbivorous fishes	New Zealand waters.	Occur on a variety of substrata including rock, tube worm colonies and horse mussel shells. They may also be intertidal but most beds are subtidal in harbours and inlets.
Lithothamnion sp.	Rhodoliths	Data Deficient	Significant Species - Play an important role in the global calcium carbonate budget.	In the Marlborough Soiunds rhodoliths are known from a small number of distinct locations including Picnic Bay in Marlborough Sounds, and Ponganui Bay and Catherine Cove, D'urville island.	Many species that form rhodoliths may also be found encrusting reefs and other hard substrata. Rhodoliths may form around small particles of rock, shell or coral, or may develop from fragments of coralline algae eroded from reefs.

1. Freeman et al. (2013). 2. Nelson et al. (2019). 3. Davidson et al. (2011). 4. Page (2017).

Appendix E:

Potential Fish Species

Species	Common name	Threat classification (IUNC) [1]	Date last assessed (IUCN)	Significant Species Marlborough (MDC) [2]	Distribution [2]	Habitat [2]
Paraper-cis colias	Blue Cod	Threatened - Least Concern (Decreasing)	2009	Significant Species - Iconic species, dominant or key-stone predator.	Blue cod are endemic to New Zealand and are found from the Three Kings islands in the north to the Snares islands in the south. They are a common reef fish in Marlborough, Kai-koura, Fiordland, Stewart island and the Chathams islands.	Found throughout Marlborough on rocky habitats and offshore biogenic soft bottom habitats. Small juveniles appear at about 5 cm length on sandy or shelly bottoms that provide some cover (e.g. dead whole shells or cob-bles).
Cal-lorhinchus milii	Elephant Fish	Threatened - Least Concern (Stable)	2015	Significant Spe-cies - Accessibility of the spawning areas makes them of importance to scientists	This chimaera resides on continental shelves of cool tem-perate areas to depths to at least 656 feet (200 m). It has also been reported to migrate into estuaries and inshore bays during the spring months to mate. They occur through-out New Zealand coastal waters but are most common around the South island. Spawning grounds have been identified at several locations in the Marlborough Sounds. Observations suggest that highest densities of egg cases occur in Garne Bay, Marlborough Sounds, but other impor-tant areas include Saville Bay, Kumutoto Bay and Grove Arm.	Adults are most often found on soft bottom habitats, from the surf zone to 227 m depth. Adults migrate into inshore waters, including harbours and estuaries to breed.
Zearaja natuta	Rough Skate	Threatened - Least Concern (Stable)	2017	"Significant Spe-cies - breeds in the sheltered bays of the Marlborough Sounds and its	Endemic to the outer Marlborough Sounds being recorded nowhere else. The type locality of the species is 200 m depth off Stephen's island (Takaporewa). It has also been observed by divers from Croisilles Harbour to Sentinel Rock in the outer Marlborough Sounds. This species appears to be naturally rare, and is sparsely distributed in the outer north-west Marlborough Sounds and Cook Strait.	Found on rocky reefs between 6 to 200 m depth, associated with large sponges growing in areas of moderate to high current flow.
Pagrus auratus	Snapper	Threatened - Least Concern (Decreasing)	2009	Significant Spe-cies - Significant Species - Iconic species, dominant or keystone preda-tor.	In New Zealand they are found mainly in warmer coastal waters from Three Kings islands south to Cook Strait on the east coast; and to Tasman Bay and Westport on the west. Occasional individuals have been recorded from Foveaux Strait and Chatham Islands. Snapper are present through-out Marlborough but are more common in the west.	Young fish school in shallow water and sheltered areas and move out to deeper water in winter.
Noto-labrus celidotus	Spotty	Threatened - Least Concern	2008	N/A	Endemic to the waters around New Zealand, including Stewart Island.	Found on reefs at depths from 22 to 145 m, though most com-mon in shallower parts of that range.

1. International Union for Conservation of Nature (IUNC) - https://www.iucnredlist.org/species.
2. Davidson et al. (2011).

Appendix F:

Broad Scale Habitat Classifications

Coastal vegetation was classified using an interpretation of the Atkinson (1985) system, whereby dominant plant species were coded by using the two first letters of their Latin genus and species names e.g. marram grass, *Ammophila arenaria*, was coded as Amar. An indication of dominance is provided by the use of ( ) to distinguish subdominant species e.g. Amar(Caed) indicates that marram grass was dominant over ice plant (*Carpobrotus edulis*). The use of ( ) is not always based on percentage cover, but the subjective observation of which vegetation is the dominant or subdominant species within the patch. A measure of vegetation height can be derived from its structural class (e.g. rushland, scrub, forest).

Vegetation (mapped separately to the substrata they overlie):

Seagrass meadows: Seagrasses are the sole marine representatives of the Angiospermae. They all belong to the order Helobiae, in two families: Potamogetonaceae and Hydrocharitaceae. Although they may occasionally be exposed to the air, they are predominantly submerged, and their flowers are usually pollinated underwater. A notable feature of all seagrass plants is the extensive underground root/rhizome system which anchors them to their substrata. Seagrasses are commonly found in shallow coastal marine locations, salt-marshes and estuaries and are mapped separately to the substrata they overlie.

Macroalgal bed: Algae are relatively simple plants that live in freshwater or saltwater environments. In the marine environment, they are often called seaweeds. Although they contain cholorophyll, they differ from many other plants by their lack of vascular tissues (roots, stems, and leaves). Many familiar algae fall into three major divisions: Chlorophyta (green algae), Rhodophyta (red algae), and Phaeophyta (brown algae). Macroalgae are algae observable without using a microscope. Macroalgal density, biomass and entrainment are classified and mapped separately to the substrata they overlie.

Substrata (physical and biogenic habitat):

Artificial structures: Introduced natural or man-made materials that modify the environment. Includes rip-rap, rock walls, wharf piles, bridge supports, walkways, boat ramps, sand replenishment, groynes, flood control banks, stop gates.

Cliff: A steep face of land which exceeds the area covered by any one class of plant growth-form. Cliffs are named from the dominant substrata type when unvegetated or the leading plant species when plant cover is ≥1%.

Rock field: Land in which the area of residual rock exceeds the area covered by any one class of plant growth-form. They are named from the leading plant species when plant cover is ≥1%.

Boulder field: Land in which the area of unconsolidated boulders (>200 mm diam.) exceeds the area covered by any one class of plant growth-form. Boulder fields are named from the leading plant species when plant cover is ≥1%.

Cobble field: Land in which the area of unconsolidated cobbles (20-200 mm diam.) exceeds the area covered by any one class of plant growth-form. Cobble fields are named from the leading plant species when plant cover is ≥1%.

Gravel field: Land in which the area of unconsolidated gravel (2-20 mm diameter) exceeds the area covered by any one class of plant growth-form. Gravel fields are named from the leading plant species when plant cover is ≥1%.

Mobile sand: Granular beach sand characterised by a rippled surface layer from strong tidal or wind-generated currents. Often forms bars and beaches.

Firm or soft sand: Sand flats may be mud-like in appearance but are granular when rubbed between the fingers and no conspicuous fines are evident when sediment is disturbed e.g. a mud content <1%. Classified as firm sand if an adult sinks <2 cm or soft sand if an adult sinks >2 cm.

Firm muddy sand: A sand/mud mixture dominated by sand with a moderate mud fraction (e.g. 1-10%), the mud fraction conspicuous only when sediment is mixed in water. The sediment appears brown, and may have a black anaerobic layer below. From a distance appears visually similar to firm sandy mud, firm or soft mud, and very soft mud. When walking you'll sink 0-2 cm. Granular when rubbed between the fingers.

Firm sandy mud: A sand/mud mixture dominated by sand with an elevated mud fraction (e.g. 10-25%), the mud fraction visually conspicuous when walking on it. The surface appears brown, and may have a black anaerobic layer below. From a distance appears visually similar to firm muddy sand, firm or soft mud, and very soft mud. When walking you'll sink 0-2 cm. Granular when rubbed between the fingers, but with a smoother consistency than firm muddy sand.

Firm or soft mud: A mixture of mud and sand where mud is a major component (e.g. >25% mud). Sediment rubbed between the fingers retains a granular component but is primarily smooth/silken. The surface appears grey or brown, and may have a black anaerobic layer below. From a distance appears visually similar to firm muddy sand, firm sandy mud, and very soft mud. Classified as firm mud if an adult sinks <5 cm (usually if sediments are dried out or another component e.g. gravel prevents sinking) or soft mud if an adult sinks >5 cm.

Very soft mud: A mixture of mud and sand where mud is the major component (e.g. >50% mud), the surface appears brown, and may have a black anaerobic layer below. When walking you'll sink >5 cm unless another component e.g. gravel prevents sinking. From a distance appears visually similar to firm muddy sand, firm sandy mud, and firm or soft mud. Sediment rubbed between the fingers may retain a slight granular component but is primarily smooth/silken.

Cockle bed/Mussel reef/Oyster reef: Area that is dominated by both live and dead cockle shells, or one or more mussel or oyster species respectively.

Tube worm (e.g. Sabellid) field: Area that is dominated by raised beds of sabellid polychaete tubes.

Shell bank: Area that is dominated by dead shells.

Appendix G:

Field Photographs

Marine Farm 8268 - Squally Cove, Croisilles Harbour

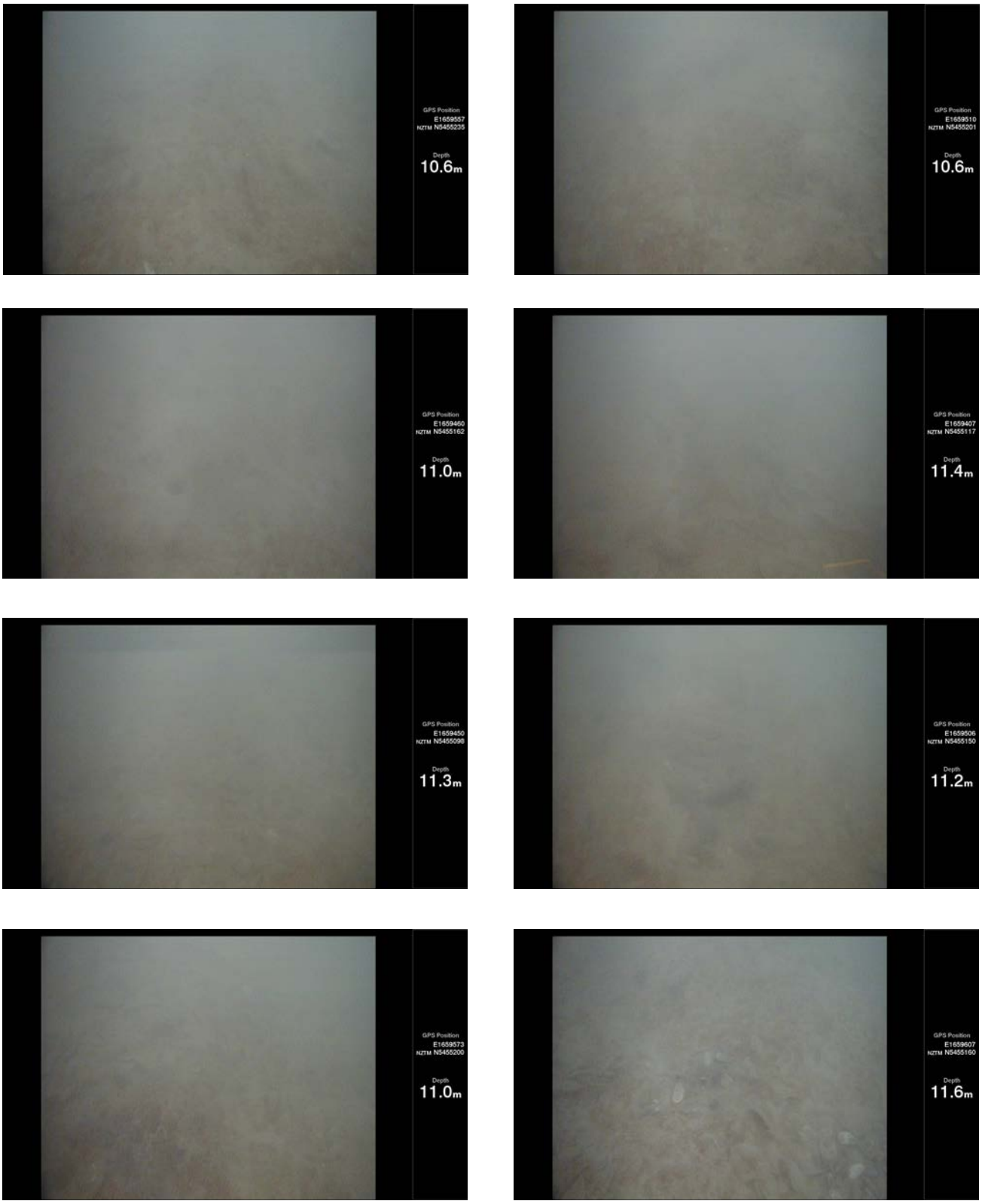

Photo 1-8 (Left to right, top to bottom): DC 1 - DC 8 (as listed in Appendix A). Note: the corresponding depths listed in Appendix A have been corrected (-1.0 m) to datum. Direct HD video output often provided a clearer image and was therefore used to confirm habitat and biota captured in drop camera photos whilst in the field.

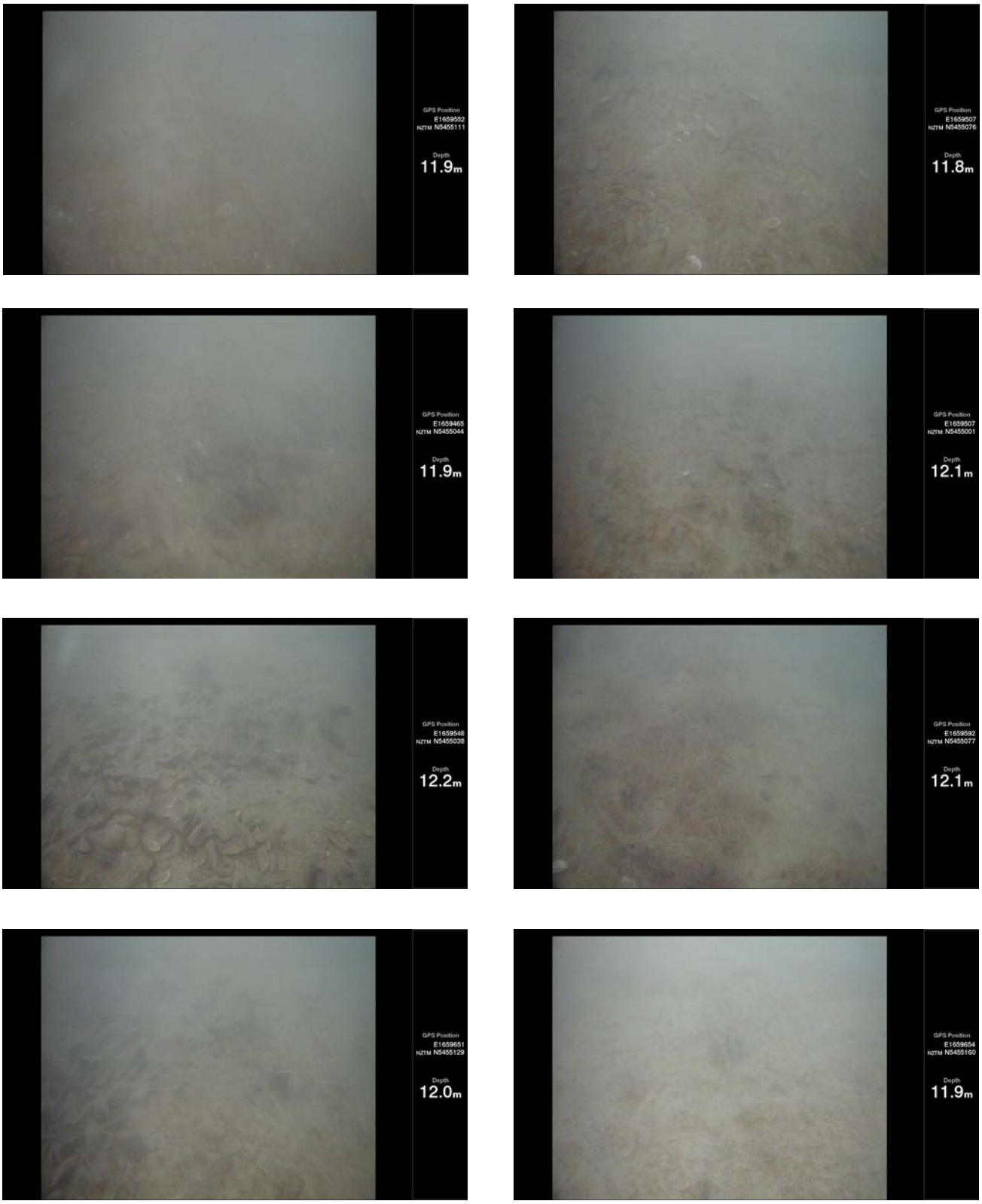

Photo 9-16 (Left to right, top to bottom): DC 9 - DC 16 (as listed in Appendix A). Note: the corresponding depths listed in Appendix A have been corrected (-1.0 m) to datum. Direct HD video output often provided a clearer image and was therefore used to confirm habitat and biota captured in drop camera photos whilst in the field.

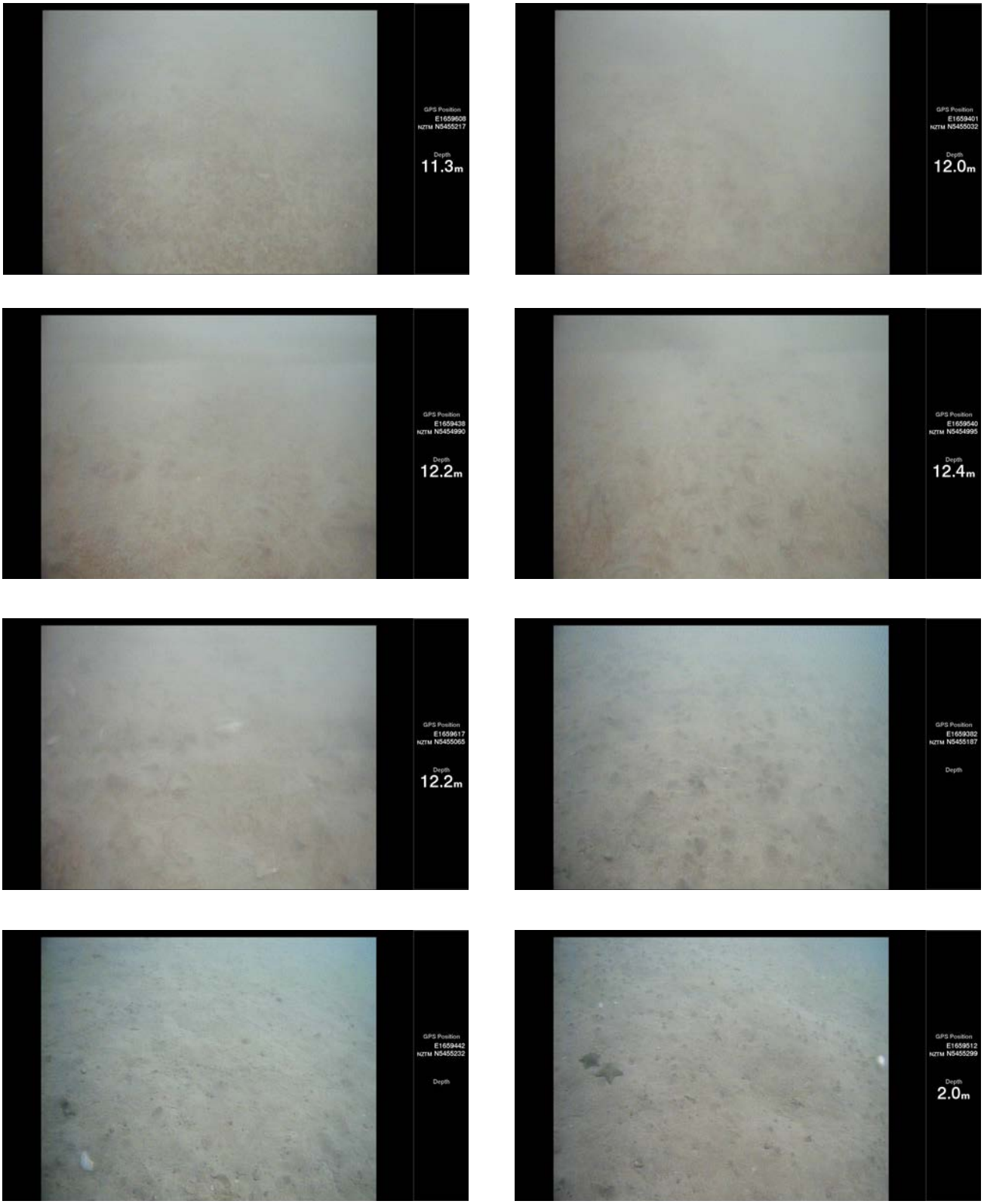

Photo 17 - 24 (Left to right, top to bottom): DC 17 - DC 24 (as listed in Appendix A). Note: the corresponding depths listed in Appendix A have been corrected (-1.0 m) to datum. Direct HD video output often provided a clearer image and was therefore used to confirm habitat and biota captured in drop camera photos whilst in the field.

Marine Farm 8268 - Squally Cove, Croisilles Harbour

Photo 25 - 27 (Left to right, top to bottom): DC 25 - DC 27 (as listed in Appendix A). Note: the corresponding depths listed in Appendix A have been corrected (-1.0 m) to datum. Direct HD video output often provided a clearer image and was therefore used to confirm habitat and biota captured in drop camera photos whilst in the field.

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Locality Map

Renewal of Marine Farm 8268 Squally Cove, Croisilles Harbour

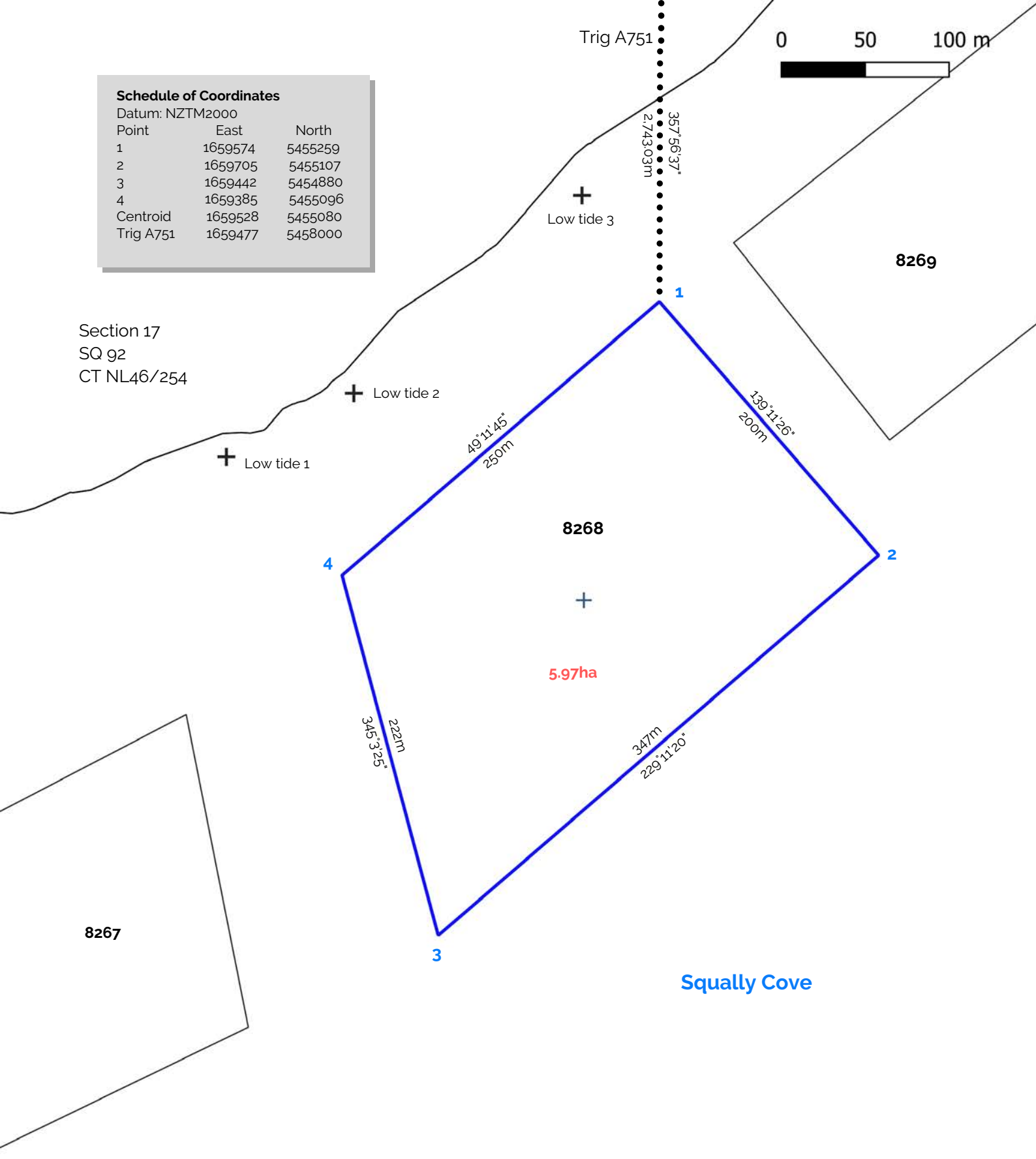
Applicant: Biomex Trustees Ltd, G.W. Rountree & P.A. Hale

Base Topographical Data sourced from Land Information New Zealand data service (www.data.linz.govt.nz) and licensed for re-use under Creative Commons Attribution 3.0 License.

Prepared by GeoInsight Ltd on 19 December 2019

aquaculturedirect

Topomap 50 Sheet: BP27
Scale 1 : 40,000



Site Plan

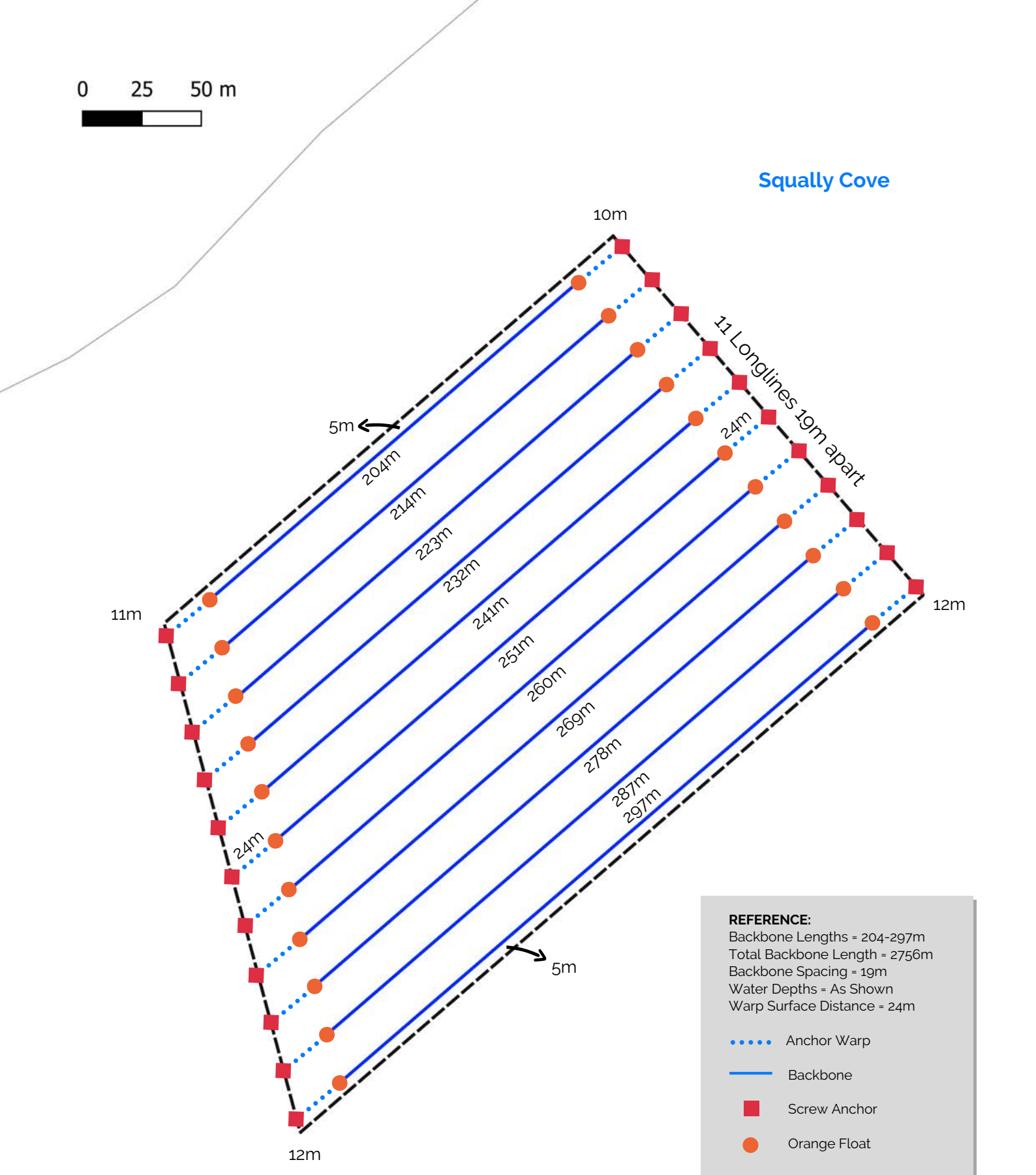
Renewal of Marine Farm 8268 Squally Cove

Applicant: Biomex Trustees Ltd, G.W. Rountree & P.A. Hale

Cadastral data sourced from Land Information New Zealand data service (www.data.linz.govt.nz) and Licensed for re-use under Creative Commons Attribution 3.0 License.
This site has not been surveyed. Prepared by GeoInsight Ltd on 19 December 2019

Scale
1 : 2,000

aquaculturedirect



Structure Layout

N

Renewal of Marine Farm 8268 Squally Cove

Applicant: Biomex Trustees Ltd, G.W. Rountree & P.A. Hale

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This site has not been surveyed. Prepared by GeoInsight Ltd on 19 December 2019

Scale
1 : 1,500

aquaculturedirect

To: Marlborough District Council
PO Box 443
Blenheim 7240

MARLBOROUGH DISTRICT COUNCIL

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RAF0010-CI1921

SUBMISSION ON APPLICATION FOR A RESOURCE CONSENT

1. Submitter Details

Name of Submitter(s) in full .....

Electronic Address for Service *(email address)* .....

Postal Address for Service *(or alternative method of service under section 352 of the Act)* .....

.....

.....

Primary Address for Service *(must tick one)*

Electronic Address *(email, as above)* ☐ or, Postal Address *(as above)* ☐

Telephone *(day)* ..... Mobile ..... Facsimile .....

Contact Person *(name and designation, if applicable)* .....

.....

2. Application Details

Application Number U.....

Name of Applicant *(state full name)* .....

Application Site Address .....

Description of Proposal .....

.....

.....

3. Submission Details *(please tick one)*

I/we support all or part of the application ☐

I/we oppose all or part of the application ☐

I/we are neutral to all or part of the application ☐

☐ I am a trade competitor for the purposes of section 308B of the Resource Management Act 1991

☐ I am directly affected by an effect of the subject matter of the submission that:

a) adversely affects the environment; and

b) does not to relate to trade competition or the effects of trade competition

☐ I am NOT directly affected by an effect of the subject matter of the submission that:

a) adversely affects the environment; and

b) does not to relate to trade competition or the effects of trade competition

☐ I am NOT a trade competitor for the purposes of section 308B of the Resource Management Act 1991

The specific parts of the application that my/our submission relates to are *(give details, using additional pages if required)*

The reasons for my/our submission are *(use additional pages if required)*

The decision I/we would like the Council to make is *(give details including, if relevant, the parts of the application you wish to have amended and the general nature of any conditions sought. Use additional pages if required)*

4. Heard in Support of Submission at the Hearing

I/we wish to speak in support of my/our submission ☐

I/we do not wish to speak in support of my/our submission ☐

OPTIONAL: Pursuant to section 100A of the Resource Management Act 1991 I/we request that the Council delegate its functions, powers, and duties required to hear and decide the application to one or more hearings commissioners who are not members of the Council. *(Please note that if you make such a request you may be liable to meet or contribute to the costs of commissioner(s). Requests can also be made separately in writing no later than 5 working days after the close of submissions.)* ☐

5. Signature

Signature ..... Date .....

Signature ..... Date .....

6. Important Information

- Council must receive this completed submission before the closing date and time for receiving submissions for this application. The completed submission may be emailed to mdc@marlborough.govt.nz.
- The closing date for serving submissions on the consent authority is the 20th working day after the date on which public or limited notification is given. If the application is subject to limited notification, the consent authority may adopt an earlier closing date for submissions once the consent authority receives responses from all affected persons.
- You must serve a copy of your submission on the applicant as soon as is reasonably practicable after you have served your submission on the consent authority.
- Only those submitters who indicate that they wish to speak at the hearing will be sent a copy of the section 42A hearing report.
- If you are making a submission to the Environmental Protection Authority, you should use form 16B.
- If you are a trade competitor, your right to make a submission may be limited by the trade competition provisions in Part 11A of the Resource Management Act 1991.
- If you make a request under section 100A of the Resource Management Act 1991, you must do so in writing no later than 5 working days after the close of submissions and you may be liable to meet or contribute to the costs of the hearings commissioner or commissioners. You may not make a request under section 100A of the Resource Management Act 1991 in relation to an application for a coastal permit to carry out on activity that a regional coastal plan describes as a restricted coastal activity.
- Please note that your submission (or part of your submission) may be struck out if the authority is satisfied that at least 1 of the following applies to the submission (or part of the submission):
  - it is frivolous or vexatious;
  - it discloses no reasonable or relevant case;
  - it would be an abuse of the hearing process to allow the submission (or the part) to be taken further;
  - it contains offensive language;
  - it is supported only by material that purports to be independent expert evidence, but has been prepared by a person who is not independent or who does not have sufficient specialised knowledge or skill to give expert advice on the matter.

7. Privacy Information

The information you have provided on this form is required so that your submission can be processed under the Resource Management Act 1991. The information will be stored on a public file held by Council. The details may also be available to the public on Council's website. If you wish to request access to, or correction of, your details, please contact Council.