

## **RESOURCE CONSENT APPLICATION**

**U200578**

# **Talleys Group Limited**

Beatrix Bay, Pelorus Sound/Te Hoiere

**Submissions Close**

**5.00 pm Friday 28 August 2020**

## Emma Hunter-8735

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**From:** PALMS LTD <palmsltd@xtra.co.nz>  
**Sent:** Thursday, 9 July 2020 10:25 AM  
**To:** RCInbox  
**Subject:** FW: Resource Consent Renewal Application for marine farm Site 8254 In Beatrix Bay Pelorus Sound. - Talleys Group Ltd.  
**Attachments:** MDC Resource Consent or Fast Track Resource Consent Application Form - MF 8254.doc; 8254 Renewal Locality Map\_.pdf; 8254 Renewal Site Plan.pdf; 8254 Realignment Layout Plan.pdf; Assessment of Environmental Effects Renewal MF 8254.docx; MEP Policy Analysis - Marine Farm 8254 Beatrix Bay.docx; 8254 Beatrix (Talley's Group).pdf

Kia ora,

Please find attached a proposed Resource Consent Application to renew marine farm site 8254 in Beatrix bay on behalf of Talley's Group Ltd.

[The application fee has been forwarded through electronic banking.](#)

Kind regards

Nga mihi

*Ron Sutherland*

Director

Property & Land Management Services Ltd

15 Purkiss Street, Blenheim, 7201

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+64-27-220-7299 (mob)

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This e-mail message has been scanned by **SEG Cloud**

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# Application for Resource Consent or Fast Track Resource Consent



This application is made under Section 88 or 87AAC of the Resource Management Act 1991

Please read and complete this form thoroughly and provide all details relevant to your proposal. Feel free to discuss any aspect of your proposal, the words used in this form or the application process with Council staff, who are here to help.

This application will be checked before formal acceptance. If further information is required, you will be notified accordingly. When this information is supplied, the application will be formally received and processed further.

You may apply for more than one consent that is needed for the same activity on the same form.

For Office Use	
	ISO 9001 Document Number: RAF0002-CI1913
Lodgement Fee Paid \$	
Receipt No.	
Consent No.	
Case Officer:	
Date Received:	

## 1. Applicant details *(If a trust, list full names of all trustees.)*

Name:  
*(full legal name)*

Talleys Group Limited  
Attention: Greg Kingston

Company/Trust Number:  
*(if applicable)*

168346

Electronic Address for Service: greg.kingston@nn.talleys.co.nz

Mailing address:  
*(including post code)*

PO Box 7064  
Nelson Mail Centre  
NELSON 7042

Phone: (Daytime) 03 546 3519

Phone: (Mobile) 021 117 0887

## 2. Agent Details *(If your agent is dealing with the application, all communication regarding the application will be sent to the agent.)*

Name: R D Sutherland

Electronic Address for Service: palmsltd@xtra.co.nz

Mailing address:

Property and Land Management Services Ltd  
C/- 15 Purkiss Street  
BLENHEIM 7201

Phone: (Daytime) (03) 578 1733

Phone: (Mobile) 027 220 7299

### 3. Type of Resource Consent Applied For

☒ Coastal Permit    ☐ Discharge Permit    ☐ Land Use    ☐ Subdivision    ☐ Water Permit

☐ **Fast Track Application:**

- ☐ I **opt out** of the fast track consent process  
☒ I **do not opt** out of the fast track consent process

### 4. Brief Description of the Activity

It is proposed to renew MFL 134 / U080728, being marine farm site 8254 in Beatrix Bay, Pelorus Sound. To enable the continuing cultivation of Green Shell mussels (*Perna canaliculus*), Blue Shell mussels (*Mytilus edulis*), Dredge Oysters (*Tiostrea chilensis*), Scallops (*Pecten novaezelandiae*) and Pacific Oysters (*Crassostrea gigas*). The farm encompasses 4.5 hectares with 10 longlines in one block.

Consent is also sought to disturb the seabed with anchoring devices and to harvest marine farming produce including taking and discharge of coastal seawater and discharge biodegradable and organic waste matter during harvest. Length of term requested is 20 years to 2040. Existing consents will be surrendered on confirmation of consent being issued.

### 5. Supplementary Information Provided?

☒ Yes    ☐ No

*Council has supplementary forms for some activities, such as moorings, water permits, domestic wastewater, discharge permits, to assist applicants with providing the required information.*

### 6. Site Details

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

Location (address): Marine farm site 8123, Forsyth Bay, Outer Pelorus Sound

Legal description (i.e. Lot 1 DP 1234): \_\_\_\_\_

*(Attach a sketch of the locality and activity points. Describe the location in a manner which will allow it to be readily identified e.g. house number and street address, Grid Reference, the name of any relevant stream, river, or other water body to which application may relate, proximity to any well known landmark, DP number, Valuation Number, Property Number.)*

**Please attach a copy of the Certificate of Title that is less than 3 months old (except for coastal or water permits.)**

**Owners/Occupiers of the Site**

The names and addresses of the owner and occupier of the land (other than the applicant):

N/A

### Affected Persons

**Please attach the written approval of affected parties/adjoining property owners and occupiers.**

*Note: As a matter of good practice and courtesy you should consult your neighbours about your proposal. If you have not consulted your neighbours, please give brief reasons on a separate sheet why you have not.*



7. **Assessment of Effects on the Environment (AEE)** *(Attach separate sheet detailing AEE.)*

I attach, in accordance with the Schedule Four of the Resource Management Act 1991, an assessment of environmental effects in a level of detail that corresponds with the scale and significance of the effects that the proposed activity may have on the environment. Applications also have to include consideration of the provisions of the Resource Management Act 1991 and other relevant planning documents.

**Note: Failure to submit an AEE will result in return of this application.**

8. **Part 2 of the Resource Management Act 1991**

I attach an assessment proposed activity against the matters set out in Part 2 of the Resource Management Act 1991.

9. **Section 104 of the Resource Management Act 1991**

I attach 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 the Resource Management Act 1991

10. **Other Information**

Are there other activities which are part of the proposal to which the activity relates, for example permitted activities, or building consents, etc?

Permitted activities:

N/A

Non Resource Management Act 1991  
Activities relating to this application:

N/A

Additional consents that need to be  
Applied for, or have been applied for:

N/A

**Section 124 or 165ZH(1)(c)**

If the application is affected by Section 124 or 165ZH(1)(c) of the Resource Management Act 1991 (which relate to existing consents), the value of the investment of the existing consent to the consent holder. *(This assessment should include more than stating a monetary value.)*

Further information is included in body of the report - Assessment of Environmental Effects.

## 11. Fees

1. The applicable lodgement (base) fee is to be paid at the time of lodging this application. If payment is made into Council's bank account 02-0600-0202861-02, please put Applicant Name and either U-number, property number or consent type as a reference. If you require a GST receipt for a bank payment, please tick ☐
2. The final cost of processing the application will be based on actual time and costs in accordance with Council's charging policy. If actual costs exceed the lodgement fee an invoice will be issued (if actual costs are less, a refund will be made). Invoices are due for payment on the 20<sup>th</sup> of the month following invoice date. Council may stop processing an application until an overdue invoice is paid in full. Council charges interest on overdue invoices at 15% per annum from the date of issue to the date of payment. In the event of non-payment, legal and other costs of recovery will also be charged.
3. Please make invoice out to: ☐ Applicant ☒ Agent  
(if neither is ticked the invoice will be made out to Applicant)

## 12. Declaration

I (please print name) R.D. Sutherland

Confirm that the information provided in this application and the attachments to it are accurate.

Signature of applicant or authorised agent:

R.D. Sutherland

Date

9-July 2020

### Notes to Applicant

You may apply for two or more resource consents that are needed for the same activity on the same form.  
You must pay the charge payable to the consent authority for the resource consent application under the Resource Management Act 1991 (if any).

### Privacy Information

The information you have provided on this 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.

### Environmental Protection Authority

If you lodge the application with the Environmental Protection Authority, you must also lodge a notice in form 16A at the same time.

If your application is to the Environmental 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).

### Fast Track Applications (relates to a land use consent for a controlled activity)

An electronic address for service must be provided if you are applying for a Fast Track consent. Under the Fast Track resource consent process, notice of the decision must be given within 10 working days after the date the application was first lodged with the council, unless the applicant opts out of that process at the time of lodgement. A Fast Track application may cease to be a Fast Track application under Section 87AAC(2) of the Resource Management Act 1991

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

**APPLICATION BY TALLEYS GROUP LIMITED,  
FOR RENEWAL OF MARINE FARM SITE 8254 BEING U080728 / MFL 134,  
IN BEATRIX BAY, PELORUS SOUND**

**1.0 INTRODUCTION & SITE HISTORY**

Talleys Group Limited has been involved in the aquaculture industry for many years. Their interests are based throughout the Marlborough Sounds.

The original licence was applied for and granted to AR & MC North covering an area of 3 hectares and the farm was approved in 1981.

In 2004 the site was assigned to Laverique Marine Farm Ltd who managed the farm until November 2002 when Abel Tasman Seafoods acquired the site.

Talleys Group acquired the site in December 2010.

In November 2001 a 1.5 hectare extension was granted (U000561) creating a 4.5 hectare site. In 2008 a renewal application was made (U080728) and expiry was expected to be on 31<sup>st</sup> December 2024.

An extension to the site was granted in 2001 while a revalidation proposal was undertaken January 2009 and a site renewal occurred in 2009 under U090255.

The site is due for renewal by 31 December 2024.

**2.0 THE PROPOSAL**

It is proposed to renew U080728 & MFL 134 totalling 4.5 hectare marine farm.

There will be 10 longlines ranging in length from 112 m to 187 m. Total backbone length will be 1471 m. Warps are 50 m in length. Screw and block anchors are used.

The site is licenced to farm and harvest the following species:

- (i) Green Shell mussels (*Perna canaliculus*)
- (ii) Blue Shell mussels (*Mytilus edulis*),
- (iii) Scallops (*Pecten novaezelandiae*)
- (iv) Dredge Oysters (*Tiostrea chilensis*) and
- (v) Pacific Oysters (*Crassostrea gigas*)

Using conventional longline methods.

Consent is also sought to continue to disturb the seabed with anchoring devices and to harvest marine farm produce including the taking and discharge of coastal seawater and discharge of biodegradable organic matter will occur at harvest. Term of consent sought is for twenty years to 2040. Existing consents will be relinquished on confirmation of consent being issued.

This is an application by existing permit holders for the site and activities permitted by existing consent and as such must be processed under Section 165ZH. Further matters outlined in Section 165AJI also come into play in that the applicants have:

- a) Complied with the relevant Regional Coastal Plan, and
- b) Complied with resource consent conditions for the current aquaculture activities undertaken by the applicants.

#### 2.1. Existing Permitted Activities

Species to be farmed, anchoring devices in place, and harvesting of produce which includes taking and discharge of coastal seawater and discharge of biodegradable and organic waste, and activities that are designed to maintain the structure, lines and floats that are a comprehensive management package for the site.

The movement of vessels in a Permitted Activity S27 Marine and Coastal Area (Takatai Moana) Act 2011 and includes anything reasonably incidental to vessel movement (S27(2)).

### 3.0 STATUS OF THE APPLICATION

The site is located within the Coastal Marine Zone 2 (CMZ2) in the Marlborough Sounds Resource Management Plan (the Plan).

The site lies beyond 200 m of Mean Low Water Springs and as a result, the proposal must be considered as a Non-complying Activity in the Marlborough Sounds Resource Management Plan.

Existing consents MFL 134, & U080728 will be surrendered on confirmation of consent being received for this renewal application. Length of term requested is 20 years to 2040.

### 4.0 LOCATION

#### 4.1. The Site

The site lies at the centre end of a zone of marine farms along the south shore of Beatrix Bay. To the south lies marine farm site 8255 and marine farm site 8253 lies to the north

#### 4.2. Site Dimensions

The site dimensions are as per the layout plans attached. The western boundary is 279.75 m long, northern boundary 198.45 m, eastern boundary 202.0 m and the southern boundary 235.11 m. The depth of the water inshore ranges from 17.8– 23.4 m and 24.0 m – 30.3 m on the outside boundary.

#### 4.3. Site Layout

The site layout is depicted as per the layout plan attached. The site includes one set of longlines totalling 10 longlines in all, ranging in length from 112 m to 187 m in length and totalling 1471 m. Longlines are 20.0 m apart. The warp lengths 50 m. (See line layout diagram for individual longline length). Block and/or screw anchors are used.

### 5.0 THE PRESENT ENVIRONMENT

#### 5.1. Historical Reports

There has been one previous report in the marine environment undertaken for this site:

Brennan 2000 undertook an assessment for the extension to the parent farm.

*"Mud of uniform composition was encountered throughout both transects. The proportion of shell litter decreased only marginally with movement away from the existing marine farm. Concentrations of green lipped and blue mussel shell were still found in patches at considerable distance seaward of MFL134 and, in the case of transect two, beyond the proposed extension's seaward boundary also."*

*Those benthic species/communities occurring at the site are all well represented and/or common in the wider Marlborough Sounds area. Marine farming effects arising from the proposed marine farm operation will not smother any significant and/or rare benthic community. This report recommends no alteration to the layout and position of structures as proposed by the application."*

## 5.2. The Marine Environment

The present report undertaken by Davidson & Richards & Rayes report was aimed to provide a biological description of the benthos under and adjacent to the proposed marine farm and to identify any potential threats to any conservation values posed by the proposed activity.

They concluded that:

### *"6.1 Benthic habitats and substratum"*

*Substratum and habitat distribution relative to the proposed re-consent area was based on drop camera stations and sonar imaging of the benthos under the existing consent. The existing consent area was located over soft benthos of silt and clay. In places, the soft silt included a small component of natural shell. No rocky substrata was identified within or near the existing consent.*

*The benthos inshore of the existing consent supported silt, fine sand and natural shell.*

*Mud (i.e. silt and clay) is the most common subtidal habitat in sheltered areas of the Marlborough Sounds (McKnight and Grange, 1991) and has been traditionally targeted for marine farming activities. This substratum type is suitable for consideration for marine farming activities in the Marlborough Sounds.*

*Unlike mud, rocky substrate is not traditionally considered suitable for marine farming activities as it can be smothered by silt and shell debris and may no longer function as hard substratum habitat.*

### *6.2 Species and communities*

*Species abundance and diversity from the proposed re-consent area was lower than high current locations in the Sounds. Soft substratum habitats traditionally have a reduced epibenthic species diversity and abundance compared to hard substrata. The conspicuous species observed include spotty, sea cucumber, cushion star, and 11 arm seastar. The number of species recorded on the soft seafloor at this site is low.*

*No species, habitats or communities likely to be regarded as ecologically significant (see Davidson et al., 2011 for criteria) were observed during the present study."*

### *6.3 Seabirds*

*The mussel industries Environmental Management System (EMS), formally known as the Environmental Code of Practice seeks to minimise risks to wildlife, and they are likely to be minimal on well-maintained farms (Keeley et al., 2009)." (Davidson Report Page 30)*

### 5.3. Seabirds

*"Four species were observed including one little shag, one black backed gull, one red billed gull, 2 variable oyster catchers" (Davidson report Page 20)*

The report considers recent study on King Shag especially by Bell and McClellum. Davidson concludes that:

#### *"Beatrix Bay Farm*

*Contrary to previous reports, recent research confirms king shag forage in depths < 10 m and forage over a wider area of the Sounds than first described (Bell, 2019; 2019a). Recent studies have shown that some birds forage outside marine farms while some forage within marine farms (Bell, 2019a; McClellan et al., 2020). King shag are known to forage in Beatrix Bay. Further, a breeding colony is located nearby on the western promontory of Kauauroa Bay. No king shag were observed at this marine farm at the time of the survey but they will likely use the area to forage for food.*

*This present survey for the re-consent of farm 8254 identified the consent is positioned over soft substrata from 18 m to 30 m depth. With no proposed changes to the consent area, any change to the existing level of impact on king shag is unlikely." (Davidson report Page 34)*

### 5.4. Marine Mammals – Whales & Dolphins

The Davidson report also canvasses marine mammals that frequent Beatrix Bay and concluded that:

#### *"Beatrix Bay Farm*

*For dusky and common dolphins, the existing farm could represent an area lost as foraging habitat, however, these species are not regularly seen from the area (Authors, pers. obs). It is therefore likely any loss of foraging habitat is a low threat for dusky and common dolphins.*

*Based on the location of this farm in Beatrix Bay and known whale migratory patterns and behaviour, it is unlikely this farm represents a threat.*

*The present marine farm utilises standard mussel farming structures that are under tension and therefore present a low risk of entanglement to marine mammals. The present proposal is applying for no additional water space" (Davidson Report Pages 36-37)*

The report also discusses productivity and biosecurity matters (Davidson Report Pages 37-38).

The report concluded that no boundary adjustment were required.

The Davidson Environmental Ltd report (2020) is attached and is an integral part of this application.

### 5.5. The Land Environment

The land adjacent encompasses a cobble, rocky beach zone rising to moderately steep hill country that is regenerating farmland. Indigenous species predominate in the regeneration of forest. Although there are occasional wilding pines present. A property access track traverses the slopes beyond the initial coastal margin.

There are no dwellings in the vicinity.

## 6.0 NAVIGATION MATTERS

The right to navigate to and from the farm, and to anchor, moor and load crop is preserved by s27 of the Marine and Coastal Area (Takutai Moana) Act 2011.

### 6.1. The Shoreline

The distance from the shoreline holds with the conventions established in the Marlborough Sounds Resource Management Plan. That is, the inshore boundary of the farm is beyond 50 m from the mean low water mark, some 72 m from mean low water mark in the north and 99 m in the south. The outer boundary is in excess of 200 m and is therefore a Non-complying Activity in the Marlborough Sounds Resource Management Plan.

### 6.2. Headlands

There are no headlands in the area.

### 6.3. Navigational Routes

The area lies inside of the navigational route along the east side of Beatrix Bay. Vessels can navigate between the site and the shore, through the farm and on the outside of the site. As indicated above there is a larger inshore gap between the structures and mean low water mark than normal.

### 6.4. Anchorages or Mooring Areas

There are no moorings in the vicinity and the area is not known as a formal anchorage.

### 6.5. Water Ski Lanes

There are no water ski lanes in the vicinity.

### 6.6. Sub-Aqueous Cables

There are no sub-aqueous cables in the vicinity.

## 7.0 LANDSCAPE AND NATURAL CHARACTER

There are no residences on the land near the site.

### 7.1. Effects on Landscape

The site is not within or adjacent to an Area of Outstanding Landscape Value (AOLV) in the Marlborough Sounds Resource Management Plan. The proposed Marlborough Environment Plan (MEP) does not identify the waters of Beatrix Bay as an outstanding natural feature and landscape (ONFL). The area does form part of the high amenity value Marlborough Sounds Coastal Landscape, which includes all of the Marlborough Sounds.<sup>1</sup>

The waters of Beatrix Bay were not mapped as ONFL in the 2009 Boffa Miskell Marlborough Landscape Study.

The site lies within the “working” environment of Beatrix Bay where marine farming and farming have been practiced in the past, and continue to this day.

The site lies adjacent to other marine farms to the north and south of the site. The effect of the farm, is consistent with the scenic values of this part of the Beatrix Bay, given its present use.

The site will not have an effect on the Marlborough Sounds Coastal Landscape, which is vast compared to this very small area in Beatrix Bay.

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<sup>1</sup> Based on the 2015 Boffa Miskell Marlborough Landscape Study.

## 7.2. Effects on Natural Character – Marlborough Environment Plan

The area is not considered to have a high coastal natural character rating. The 2014 Boffa Miskell study *Natural Character of the Marlborough Coast*, which is reflected in the natural character maps in the MEP, does not map the waters of Beatrix Bay as having outstanding, very high or high natural character. The land immediately adjoining the site is also not mapped as having natural character rating that should be protected. The area is mapped as Marlborough Sounds Coastal Landscape.

According to Rob Davidson, the marine farm will have limited effect on the marine environment at the site. This limited effect, combined with the productive nature of the bay, means that the farm will not have a significant effect on the natural character values at that location.

## 8.0 AMENITY VALUES

Visual and noise effects are considered to be minor. Vessels visit the area to service the farm on an irregular basis. Because this is a remote location, vessels working this and the other farms work on a number of sites while they are present.

Given the presence of other marine farms in Beatrix Bay, the buoys associated with renewal of the existing site would have only a minor additional impact on visual amenity. In a visual sense the farm will be enclosed by existing marine farming in the bay. Visual amenity will remain essentially the same for residents or the boating public.

## 9.0 RECREATIONAL VALUE

In terms of recreational use, there is boat access only to the area. The area is zoned for aquaculture which is already established.

The visual impact of the marine farm will not cause any significant alteration to the physical environment in what is essentially already a commercial marine farming area. Marine farming is consistent with the productive character of this part of Pelorus Sound.

### 9.1. 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 both reef fish, and other fish species such as cod and snapper. Access to the coast for recreationalists is maintained.

Recreational fishing does take place along the coastline utilising the small reefs and rubble shore which is inhabited by fish targeted by recreational fishers. The marine farm itself is located offshore and will encourage the presence of fish species over time. In the long run, as with other marine farms in the bay, fish are drawn to marine farm sites. Recreational fishing is an activity encouraged by the applicant.

## 10.0 HISTORICAL OR CULTURAL VALUES

The New Zealand Historical Places Trust Inventory and Archsite records has been consulted to identify any sites of significance in this location. None appear in published information.

From the applicant's knowledge no sites of historical or traditional value are present in the area. The 8 Marlborough iwi have been forwarded a copy of this application to comment on should that be necessary.



**11.0 COMMERCIAL FISHING**

Commercial fishing may occur in offshore parts of Pelorus. It is unlikely in Beatrix Bay due to the line of marine farms along the coast. This area is not subject to or affected by that activity.

**12.0 EFFECTS ON WATER QUALITY AND ECOLOGY**

The water quality of the area is generally high. The site relies on excellent water quality to enable the process of marine farming to flourish. It is a large area with good capacity for mixing of water with tidal current, wind and wave action.

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.

**13.0 EFFECTS OF PRODUCTIVITY**

Water quality is unlikely to be a problem to marine farming. The activity in itself is unlikely to create any significant detrimental effects on water quality. This renewal has no effect on the productivity of existing marine farms in the general vicinity, because of the separation distances between farms and large water area of this section of Pelorus Sound.

**14.0 ALIENATION OF PUBLIC SPACE**

The Beatrix Bay area has been utilised by marine farmers for many years. Recreation and commercial boat owners are aware of marine farms in this area and recreational fishermen have the opportunity to use the sites and transit through them. Given the wider than average spacing between longlines, there are further opportunities for access by vessels wanting to transit through the site.

From time to time, vessels utilise the longlines for mooring and over-nighting. This process as far as the applicant is concerned, will continue.

**15.0 ON SHORE FACILITIES**

The applicant does not require onshore marine farm facilities. The work is undertaken by the applicant and contactors.

**16.0 VALUE OF INVESTMENT**

As part of this application to renew site 8254 it is anticipated they would surrender the existing consents when the application is granted for a period of 20 years. As a result, this is an application to which s165ZH(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 s104(2A).

The site has been held by the applicants since the 2010. Equipment costs are estimated at \$15,000.00 per line and total investment of the existing site is \$150,000.

Approximately half the site will be harvested in any year with maintenance costs in the order of \$50,000.00 per year.

Harvest per line is variable and depending on the dropper length will be in the order of 30 tonne per line, a total of 150 tonne per year.

Returns to the grower can vary however the company advises the value to harvest their product is \$1,000/tonne which is consistent with other industry sources. Value is based on 245 tonne year, production value is \$150,000.00.

The company values this site due to the high productivity and short turnaround time.

## 17.0 **SOCIAL, EMPLOYMENT AND ECONOMIC BENEFITS**

This application will enable the continuation of production from the site contributing to the social and economic benefits of aquaculture to the local community. This farm is operated by Clearwater Mussels Limited and is part of the portfolio of sites managed and leased by Clearwater Mussels Limited all of which support 22 on-water staff based at Havelock, on-shore staff in Marlborough. Clearwater Mussels Limited also employs 7 on-water staff and 3 on-shore staff in Golden Bay.

Production from this site has played an important role in employment in those communities.

The product from the farm will go to Talleys Group Ltd (Talleys), MacLab New Zealand Ltd (MacLab) and Redwoods processing facilities. The product is sold year-round. In addition to seafood products, Clearwater Mussels supplies its mussels to MacLab as inputs for high value nutraceutical products ('Lyprinol™' and "SeaTone™").

The primary processor of stock of this farm is Talley's Group Limited (Talleys). Talleys employs 18 people at Havelock, and 342 people in Blenheim. During double shifting (during peak season) plus packers, when in full production (double shifting) the Moteuka branch employs 280 people as day and night workers plus packers, including staff undertaking marinades (40 people).

MacLab employs 65 people. In addition, the aquaculture industry provides business for many supply chain businesses. Clearwater Mussels operates four vessels out of its base at Havelock and two vessels out to Port Taranaki.

Clearwater Mussels aims to offer year-round employment, a positive work environment and opportunities to upskill to its employees. Its employees earn the median income for Marlborough and New Zealand. Clearwater Mussels have an investment reward scheme linked to consistent service and performances. Clearwater Mussels offers training opportunities, such as skipper, forklift operator and crane operator tickets, as well as the ability to be promoted within the company.

Clearwater Mussels is based out of Havelock, although some of its employees live in Golden Bay. The marine farming industry plays an important part in enabling small communities in the top of the South Island to survive. For example, Havelock has had a difficult economic industry. It has survived in recent times because of the growth of the marine farming industry. The industry has given the town a shared identity and a new income stream.

On the basis of an average of 30 tonnes of product per year and 5 longlines, with an average of \$1,000 per tonne, this farm contributes approximately \$150,000 per production cycle to the grower.

## 18.0 **PART II RESOURCE MANAGEMENT ACT ISSUES**

### 18.1. Section 5

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 production and in turn employment in the Sounds and in the Nelson/Marlborough regions.

In addition, export income for the nation is generated. Applications such as this enable sustainable use of the marine resources in a way that enables people and communities to provide for their economic and social wellbeing.

The site is in the CMZ2, an area zoned as appropriate for marine farms in the Plan however the site was approved in 1981. It is in the “working” environment of the Sounds. The site position and distances from other facilities are not detrimental to other uses of the area. Section 5 of the RMA is given effect through the New Zealand Coast Policy Statement 2010 (“NZCPS”), the Marlborough Regional Policy Statement and the Plan. The application is assessed against the relevant provisions of these documents below, and in Appendix A, B and C.

### 18.2. Section 6

Matters of national importance have been assessed under the requirements of the Plan.

The proposal recognises the:

- (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 NZCPS, which is considered later in this application. The adjacent vegetation is exotic forest. The existing farm do not effect that. The site has been positioned to allow access around the coast without impediment, and access between the shore and structures has been maintained. Section 6(a) is given effect through Policy 15 of New Zealand Coastal Policy Statement which is considered later in this application.

- (b) *The protection of outstanding natural features and landscapes from inappropriate subdivision, use, and development:*

The site does not lie in an area identified as “outstanding landscape”. This site is adjacent to other marine farms. The adjacent land is reverting farmland. The proposal will diversify and enhance the production opportunities for the applicant and assist in enhancing employment and services to the area. See section 7.2.

- (c) *The protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna:*

The vegetation is some grassland with pockets of indigenous shrub lands beginning to dominate the land cover.

- (d) *The maintenance and enhancement of public access to an 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 site is not known to be of importance to Maori. The applicants are unaware of any historical site on land nearby. The site has been positioned to avoid habitat that may be

important to Maori. This will be confirmed with the application sent to iwi for comment if necessary.

### 18.3. 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:*

A number of iwi are identified as having interests in the Pelorus Sound area. The proposal has been developed to avoid offending the guardianship and protection of resources valued by iwi. It is an existing long-established site. The notion of care and protection of the environment and resources is also an important concept in management of resources, which the applicant also holds as important in its day to day management of water space.

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

The proposal is confined and concentrated in a locality out of the way of normal public access and resource use. Being confined and sited together with another marine farm brings efficiencies in applying resources to manage the growing of mussels.

(c) *The maintenance and enhancement of amenity values:*

Amenity values will have no change with the renewal; however, the farm is an existing one near to other farms.

(d) *Intrinsic values of ecosystems:*

The values of the ecosystems have been identified in the report prepared, to detail the benthic environment. Importantly no significant resources have been identified on the site. The structures are situated over a mud benthos that is widespread in the Marlborough Sounds and is identified as the environment most suited to have aquaculture over it. Species are low in number and diversity.

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

There are no heritage sites, buildings or places in the near vicinity.

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

The quality of the environment will not be endangered by the proposal to grow mussels. The process needs high water quality and, as filter feeders, mussels will enhance water quality by the filtration process during feeding.

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

The proposal is to occupy a small part of the bay. Mussels are naturally occurring in the water column and filter feed off naturally occurring phytoplankton and zooplankton.

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

Section (h) is not relevant to this application.

#### 18.4. Treaty of Waitangi

Matters of potential concern in relation to the Treaty of Waitangi have also been considered earlier in the original proposals to the site. No matters of concern were raised at that time. See also section 19.1 below.

#### 19.0 NEW ZEALAND COASTAL POLICY STATEMENT 2010 (NZCPS)

The NZCPS 2010 is of general relevance to this application and all policies have been considered in the development of the proposal. The NZCPS policies of immediate relevance to the applications are policies 2, 6, 8, 11, 13, 15, 18, 22 and 23.

#### 19.1. 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 recognizes 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 acknowledgements in the area of the application site. Those acknowledgements have been considered during the preparation of this application, as outlined above.

The applicant has also reviewed the Iwi management plans of Ngāti Kōata, Te Ātiawa o Te Waka-a-Māui and Ngati Kuia. No areas of conflict have been identified.

There are no taiāpure or mahinga mātaihai in the area of the application. 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 if necessary.

#### 19.2. 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 consistent with the character of the existing built environment in Beatrix Bay. 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 the Policy 6 is particularly relevant. Mussel farming clearly has a functional need to be located in the coastal marine area. It 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.

#### 19.3. 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, recognizing that relevant consideration 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 an 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 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.

#### 19.4. Policy 11

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

The farm is located over mud habitat and avoids any reef areas or any other areas of significant biodiversity. Marine mammals are unaffected by the farm. There will be no adverse effects on indigenous biodiversity.

#### 19.5. 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 site lies within a coastline with substantial human modification and patterns that dominates the visual environment with farmlands, farm tracks and marine farms.

#### 19.6. Policy 15

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

This application is not within an area of outstanding landscape value under the Marlborough Sounds Resource Management Plan or proposed MEP. There will be no additional impact on the landscape compared with that 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.

#### 19.7. 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 activities and passive recreation.

There is no access by road. Most of the access to this area is by boat. Nevertheless, the visual impact of the marine farm will not change significantly. The area has a low viewing audience. Access to the coast for recreationalists is maintained.

No formal water ski lanes are present. Opportunities for recreational fishing may be enhanced by the presence of the marine farm.

#### 19.8. Policy 22

Policy 22 requires an assessment of sedimentation levels, and that use will not result in a significant increase in those levels. Davidson's biological report 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.

#### 19.9. 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.

#### 20.0 **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 Plan contains a number of provisions that are relevant to this application. An assessment of the application against the requirements of that 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.

#### 21.0 **PROPOSED MARLBOROUGH ENVIRONMENT PLAN**

Rules applying to marine farming have been specifically excluded from the proposed MEP at this stage, hence consideration of the proposal under the operative Plan. However, some recognition does need to be given to the relevant policies in the MEP. An analysis table assessing the proposal against the relevant provisions is included at Appendix C.

The site is located in the Overlay Marlborough Sounds Coastal Landscape. The terrestrial landscape has been classified and graded as not an outstanding natural feature or landscape.

MEP objectives and policies relevant to the proposal include:

- Chapter 4 – Natural & Physical Resources
- Chapter 5 – Allocation of Public Resources
- Chapter 6 – Natural Character
- Chapter 9 – Public Access and Open Space
- Chapter 15 – Resource Quality

Note that the provisions of chapter 13, Use of the Coastal Environment, specifically do not apply to marine farms.

All are considered to be relevant to such applications as this and have been generally outlined in this AEE. In my view the proposal provides for the needs of primary production and tourism.

Infrastructure is protected. The nature and character of the Sounds is protected. Access to coastal water is maintained and exclusive occupation of water space is minimized allowing access between lines and the shore.

Adverse effects in areas of outstanding natural character, outstanding natural landscapes, and outstanding natural features have been avoided, as has any effect on ecosystems and biodiversity.

Heritage values are recognised, and are unaffected, including Maori Culture and traditions. Structures and activities are “clustered” in Beatrix Bay and do not diminish amenity values.

The character of this part of Beatrix Bay is one of developed farmland, reverted farmland, limited housing and marine farming. Residential housing is present.

## 22.0 CONSULTATION

A copy of this application has been sent to all Iwi listed below identifying the site.

Name	Address	Phone
Ngati Koata Trust	pa@ngatikoata.com	(03) 548 1639
Te Runanga a Rangitane o Wairau	taiao@rangitane.org.nz	(03) 578 6180
Te Runanga O Ngati Kuia	tariwairau@ngatikuia.iwi.nz	(03) 579 4328
Ngāti Apa ki te Rā Tō	administrator@ngatiapakiterato.iwi.nz	(03) 578 9695
Te Atiawa Manawhenua Ki Te Tau Ihu Trust	rc@teatiawatrust.co.nz	(03) 573 5170
Ngati Toarangatira Manawhenua Ki Te Tau Ihu Trust	naomi@ngatitoa.iwi.nz	(03) 577 8801
Ngati Rarua Trust	admin@ngatirarua.co.nz	(03) 577 8468
Ngati Tama ki Te Waipounamu Trust	pouwhina@ngati-tama.iwi.nz	(03) 548 1748

## 23.0 CONCLUSION

The applicant considers that the use of this area for aquaculture is appropriate, allowing the farming of mussels. The activity enables people and communities to provide for the social, economic and cultural wellbeing, while ensuring the principles of sustainable management are met.

RD Sutherland  
Property and Land Management Services Limited,  
On behalf of the Applicants



**APPENDIX A: MARLBOROUGH REGIONAL POLICY STATEMENT – POLICY ANALYSIS**

<b>Objective</b>	<b>Policy</b>	<b>Assessment</b>
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 therapeutants 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: <ul style="list-style-type: none"> <li>• Clustering activities with similar effects;</li> <li>• Ensuring activities reflect the character and facilities available in the communities in which they are located;</li> <li>• Promoting the creation and maintenance of buffer zones (such as stream banks or 'greenbelts');</li> <li>• Locating activities with noxious elements in areas where adverse environmental effects can be avoided, remedied or mitigated.</li> </ul>	The marine farm is consistent with the current Policy and the designated consented area is within Beatrix Bay as in a well-established for marine farming. Marine farms are clustered in the area.
	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 environment effects are avoided, remedied or mitigated.	This area has a primary production character, and is well suited to marine farming. This policy supports the proposed renewal. The life supporting capacity of the area will be safeguarded.

**APPENDIX A: MARLBOROUGH REGIONAL POLICY STATEMENT – POLICY ANALYSIS**

<b>Objective</b>	<b>Policy</b>	<b>Assessment</b>
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 well established for marine farming. The marine farms activity is biologically sustainable. The effects of mussel farms are generally well understood. The marine farm activity is biologically sustainable
	7.2.10(a) – (d)	Access and the ability for recreational use of the area and its surroundings will be retained. The farm provides for a public use/benefit, in terms of the contribution the farm will have to the industry/employment and the community as a whole. This farm is considered to be placed over a mud benthic environment.
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 per the Archsite database.
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.	The site is not within an area of outstanding natural landscape but will have no additional impact on landscape values. The farm is well managed and will comply with the Aquaculture New Zealand A+ Sustainable Management Framework for Mussels.
	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.

## APPENDIX A: MARLBOROUGH REGIONAL POLICY STATEMENT – POLICY ANALYSIS

Objective	Policy	Assessment
	8.1.6: Preserve the natural character of the coastal environment.	The site will have only minor effect on the already modified natural character of the coastal environment.

**APPENDIX B: MARLBOROUGH SOUNDS RESOURCE MANAGEMENT PLAN – POLICY ANALYSIS**

<b>Objective</b>	<b>Policy</b>	<b>Assessment</b>
Ch 2, 2.2, Obj 1: The preservation of the natural character of the coastal environment 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 of 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 dominated by other human modifications, including developed farm land, farm tracks and 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.	As above.
	Policy 1.3: To consider the effects on those qualities, elements and features which contribute to natural character, including: <ul style="list-style-type: none"> <li>a) Coastal and freshwater landforms;</li> <li>b) Indigenous flora and fauna, and their habitats;</li> <li>c) Water and water quality;</li> <li>d) Scenic or landscape values;</li> <li>e) Cultural heritage values, including historic places, sites of early settlement and sites of significance to Iwi; and</li> <li>f) Habitat of trout.</li> </ul>	These matters have been considered in the assessment of environmental effects in the Davidson Environmental Report.

**APPENDIX B: MARLBOROUGH SOUNDS RESOURCE MANAGEMENT PLAN – POLICY ANALYSIS**

Objective	Policy	Assessment
	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 assessment above in this application shows how the farm will not impact upon the key factors underpinning the natural character of this area. The existing area has seen development from human activities, such as through tracks, dwellings, etc.
	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.	Visual effects are immediately reversible upon the removal of the structures, and benthic effects reversible between 5 and 7 years on soft substratum, and longer over the reef area
	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 farm is not sited over any mapped area of significant ecological value. The site has been modified to avoid habitat of significance inshore.
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 application site is not within an area of outstanding landscape value identified in the Plan. The farm will not impact on the values of the area, as per the assessment in the AEE above.

**APPENDIX B: MARLBOROUGH SOUNDS RESOURCE MANAGEMENT PLAN – POLICY ANALYSIS**

<b>Objective</b>	<b>Policy</b>	<b>Assessment</b>
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 applicants have had regard to the Statutory Acknowledgements and have reviewed the statements of association for each Iwi. No areas of conflict have been identified by the applicants. Iwi have been sent a copy of the application. The applicants understand there are no known wahi tapu, taiapure, mataitai or other areas of significance to Maori in the vicinity of the application.
Ch 8, 8.3, Obj 1: That public access <i>to and along</i> 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 should be mitigated and provision made for remedying those effects, to the extent practicable.	There are no additional adverse effects on public access caused by the existing marine farm. Access inshore and between lines is maintained.
	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.

**APPENDIX B: MARLBOROUGH SOUNDS RESOURCE MANAGEMENT PLAN – POLICY ANALYSIS**

<b>Objective</b>	<b>Policy</b>	<b>Assessment</b>
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.	<b>Policy 1.1:</b> Avoid, remedy and mitigate adverse effects of use and development of resources in the coastal marine area on any of the following: <ul style="list-style-type: none"> <li>a) Conservation and ecological values;</li> <li>b) Cultural and Iwi values;</li> <li>c) Heritage and amenity values;</li> <li>d) Landscape, seascape and aesthetic values;</li> <li>e) Marine habitats and sustainability;</li> <li>f) Natural character of the coastal environment;</li> <li>g) Navigational safety;</li> <li>h) Other activities, including those on land;</li> <li>i) Public access to and along the coast;</li> <li>j) Public health and safety;</li> <li>k) Recreation values; and</li> <li>l) Water quality.</li> </ul>	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, and the effects have been considered above in the AEE.
	<b>Policy 1.2:</b> 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.	Adverse effects from the proposal will be minor and will be mitigated to the extent practicable.
	<b>Policy 1.3:</b> 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.

**APPENDIX B: MARLBOROUGH SOUNDS RESOURCE MANAGEMENT PLAN – POLICY ANALYSIS**

Objective	Policy	Assessment
	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 recognized casual mooring areas.	Exclusive occupation of the consent area is not sought. The farm will not impede access to the nearby mooring or jetties. There is no change to the existing environment.
	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. Sites 8254 is consented for marine farming and this area has been consented for marine farming since 1981. Overall, the application is consistent with this policy.
	Policy 1.13: Enable the renewal as controlled activities of marine farms authorized by applications made prior to 1 August 1996 as controlled activities, apart from exceptions in Appendix D2 in the Plan.	This existing farm is a Non-complying Activity.
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).	Policy 1.1 to 1.11:	This application is not anticipated to have any impact on shellfish quality. The activity of marine farming requires high water quality.



**APPENDIX B: MARLBOROUGH SOUNDS RESOURCE MANAGEMENT PLAN – POLICY ANALYSIS**

<b>Objective</b>	<b>Policy</b>	<b>Assessment</b>
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 and/or seabed on any of the following: [criteria specified in Plan].	There will be no additional disturbances of the seabed. The owners of the farm in Beatrix Bay have regular beach clean ups in which the greater percentage of rubbish is from recreational users of the Sounds.
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 environment.	There have been no reported navigational incidences in the bay. There will be no changes to the existing consent conditions regarding the navigational aids placed on the farm. The navigational lighting requirements will provide better navigational aids within the Bay.
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 or mitigate community disturbance, disruption or interference by noise within coastal, rural and urban areas.	There are no residences in the area. The contractors servicing vessel is estimated to spend approximately 80-90 hours maintaining and harvesting the lines per year. The applicants comply with the 'Code of Practice' to avoid, remedy or mitigate noise from marine farming activities in the Marlborough Sounds on other users and residents.

**RESOURCE CONSENT APPLICATION BY TALLEYS GROUP LIMITED**  
**APPENDIX C**  
**Analysis of Consistency with the Proposed Marlborough Environment Plan (Volume 1)**

MEP Provision	Evaluation
Objective 3.2 – A strong relationship between the Council and Marlborough’s tangata whenua iwi in the delivery of outcomes that enables iwi to exercise kaitiakitanga	The applicant has sought to consult with iwi on this application to assist Council in achieving this objective.
Objective 3.3 – Natural and physical resources are managed in a manner that has particular regard to the spiritual and cultural values of Marlborough’s tangata whenua iwi as kaitiaki and respects and accommodates tikanga Māori.  [RPS]	No particular customary activities have been identified for the site. Iwi have been provided with a letter outlining this application. Recognition is given to Māori culture and traditions and confirmation from Iwi will be sought to ensure the proposal does not affect these values. Access all around, including to the shore, will be retained.
Objective 3.4 – The cultural and traditional relationship of Marlborough’s tangata whenua iwi with their ancestral lands, water, air, coastal environment, wāhi tapu and other sites and taonga are recognised and provided for.  [RPS]	<p>The applicant has had regard to Kaitiakitanga and is seeking to consult with Iwi, recognising their relationship with the waters of Te Tau Ihu. Consultation on the matter will be with 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, recognising rohe under Statutory Acknowledgment protocols.</p> <p>The applicant has also reviewed the Iwi management plans of Ngāti Kōata and Te Ātiawa o Te Waka-a-Māui and Ngati Kuia. No areas of conflict have been identified.</p> <p>The applicant is aware of the importance of the waters of the Marlborough Sounds to Iwi.</p>
Objective 3.6 – Resource management decision making processes that give particular consideration to the cultural and spiritual values of Marlborough’s tangata whenua iwi and their relationship to lands, water, wāhi tapu and wāhi taonga.  [RPS]	The applicant has given particular consideration to the matters in objective 3.6, as discussed above and in the AEE.

MEP Provision	Evaluation
<p>Policy 3.1.1 – Management of natural and physical resources in Marlborough will be carried out in a manner that:</p> <p>(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.</p> <p>(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;</p> <p>(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;</p> <p>(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</p> <p>(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.</p> <p>[RPS]</p>	<p>See above.</p>
<p>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.</p> <p>[RPS]</p>	<p>A letter has been sent to iwi as identified in the AEE.</p>
<p>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:</p> <p>(a) the ability for tangata whenua to exercise kaitiakitanga is maintained;</p> <p>(b) mauri is maintained or improved where degraded, particularly in relation to fresh and coastal waters, land and air;</p> <p>(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;</p> <p>(d) for waterbodies, the elements of physical health to be assessed are:</p> <p>i. aesthetic and sensory qualities, e.g. clarity, colour, natural character, smell and sustenance for</p>	<p>The applicant has had regard to the matters in Policy 3.1.3, as set out above, and in the AEE. Ecological effects are also relevant to these considerations, and have been assessed by Rob Davidson in his report.</p>

MEP Provision	Evaluation
<p>indigenous flora and fauna;</p> <p>ii. life-supporting capacity, ecosystem robustness and habitat richness;</p> <p>iii. depth and velocity of flow (reflecting the life force of the river through its changing character, flows and fluctuations);</p> <p>iv. continuity of flow from the sources of a river to its mouth at the sea;</p> <p>v. wilderness and natural character;</p> <p>vi. productive capacity; and</p> <p>vii. fitness to support human use, including cultural uses.</p> <p>(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.</p> <p>[RPS]</p>	
<p>Policy 3.1.5 – Ensure iwi management plans are taken into account in resource management decision making processes.</p> <p>[RPS]</p>	<p>The applicant has reviewed the Iwi management plans of Ngāti Kōata and Te Ātiawa o Te Waka-a-Māui and Ngati Kuia, as the iwi within whose rohe the site is located. No areas of conflict have been identified.</p>
<p>Policy 3.1.8 – Enable customary harvest in accordance with tikanga.</p> <p>[RPS]</p>	<p>Exclusive occupation of the total consent area is not sought, and access for customary harvest would still be possible.</p>
<p>Objective 4.1 – Sustainable use and development of Marlborough’s natural resources supports Marlborough’s social, economic and cultural wellbeing.</p> <p>[RPS]</p>	<p>The effects of mussel farms are generally understood and are acceptable. They are also reversible. Within 5-7 years of removing the farms, any trace of their presence will dissipate, and visual effects are instantaneously reversible. Therefore, the proposal does not restrict the ability of future generations to decide how they wish to use these resources.</p> <p>The proposal has economic and employment benefits to the applicant and community</p>

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<p>Policy 4.1.2 – Enable sustainable use and development of natural resources in the Marlborough environment while managing any adverse environment effects, through the use of:</p> <ul style="list-style-type: none"> <li>(a) allocation framework;</li> <li>(b) permitted activity rules and standards where no more than minor adverse effects are anticipated; and</li> <li>(c) policies specific to various resources</li> </ul> <p>[RPS]</p>	<p>As above at Objective 4.1, this is a sustainable use of resources. In terms of allocation, as existing consent holder at this site, the applicant's application should be considered in accordance with s165ZH. The relevant policies have been considered in this AEE and supporting appendices.</p>
<p>Policy 4.1.3 – Maintain and enhance the quality of natural resources.</p> <p>[RPS]</p>	<p>The proposal will have less than minor effects on the quality of the natural resources at Beatrix Bay, and those effects are reversible upon removal of the farms.</p>
<p>Objective 4.3 – The maintenance and enhancement of the visual, ecological and physical qualities that contribute to the character of the Marlborough Sounds.</p> <p>[RPS]</p>	<p>The ecological character of the site will be maintained (see Davidson report. The application site is located over a muddy habitat, typical of sheltered muddy areas in the Sounds. The effects of mussel farming will be minor. The farm will be visible and therefore have some impact on amenity, but is not inconsistent with other human uses in Beatrix Bay. The applicant has sought to consult with iwi about potential effects on cultural values.</p>
<p>Policy 4.3.1 – Integrate management of the natural and physical resources within the Marlborough Sounds environment.</p> <p>[RPS]</p>	<p>Integrated management is arguably a matter for Council under Policy 4 of the NZCPS.</p>
<p>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.</p> <p>[RPS]</p>	<p>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.</p>
<p>Policy 4.3.3 – Provide direction on the appropriateness of resource use activities in the Marlborough Sounds environment.</p> <p>[RPS]</p>	<p>The aquaculture provisions of the MEP have yet to be notified so this farm has been assessed under the rules of the operative plan (MSRMP).</p>

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<p>Policy 4.3.4 – Encourage the enhancement of the qualities and values that contribute to the unique and iconic character of the Marlborough Sounds.</p> <p>[RPS]</p>	<p>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. Beatrix Bay has been developed by a number of activities</p>
<p>Policy 4.3.5 – Recognise that the Marlborough Sounds is a dynamic environment</p> <p>[RPS]</p>	<p>The applicant recognises that the Sounds is a dynamic environment. Beatrix Bay has been developed by various activities. The appropriateness of the farm can be re-assessed by future generations in the context of the future environment of the bay through the resource consenting process.</p>
<p>Objective 6.2 – Preserve and promote the restoration of the natural character of the coastal environment, and lakes and rivers and their margins, and protect them from inappropriate subdivision, use and development.</p> <p>[RPS, R, C, D]</p>	<p>The proposal is appropriate, fits with the existing context and will not adversely compromise the existing values of the area. As above in AEE.</p>
<p>Policy 6.2.1 – Avoid the adverse effects of subdivision, use or development the characteristics that contribute to areas of the coastal environment with outstanding natural character...</p> <p>[RPS, R, C, D]</p>	<p>N/A – the site is not mapped as having outstanding natural character.</p>
<p>Policy 6.2.2 – Avoid significant adverse effects of subdivision, use or development, and otherwise avoid, remedy or mitigate adverse effects on the characteristics that contribute to natural character, having regard to the significance criteria in Appendix 4 within:</p> <p>(a) all areas of the coastal environment outside of areas of outstanding natural character, and</p> <p>(b) lakes and rivers, and their margins of high and very high natural character</p> <p>[RPS, R, C, D]</p>	<p>Land in Beatrix Bay is not identified in the MEP as having very high natural character values. The AEE provides a thorough assessment of this application against the values of natural character at this site. The degree of modification is not high. The effects are reversible upon removal of the farm.</p>
<p>Policy 6.2.3 – Where resource consent is required to undertake an activity within coastal or freshwater environments with high, very high or outstanding natural character,</p> <p>(a) have regard to the potential adverse effects of the proposal on the elements, patterns, processes and experiential qualities that contribute to natural character;</p> <p>(b) in the case of the development of the National Grid, seek to avoid adverse effects on the characteristics that contribute to natural character;</p>	<p>The natural science (biophysical) values of the specific site are not high overall. Mr Davidson, in his report, notes that the application site is located over a mud habitat, typical of sheltered muddy areas in the Sounds. The epibiota and infaunal communities are typical of muddy sheltered areas in the Sounds. It is well established that mussel farming has a less than minor impact on the biophysical attributes of natural character.</p> <p>Biophysical effects are reversible within 5-7 years of the farm being</p>

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<p>(c) recognise that minor or transitory effects may not need to be avoided;</p> <p>(d) recognise the functional and operational requirements of regionally significant infrastructure.</p> <p>[RPS, R, C, D]</p>	<p>removed, and effects on experimental attributes are immediately reversible. These effects are minor, consistent with sub-policy (c).</p> <p>The site is of mixed character set within a wider working landscape. A thorough assessment of effects on natural character has been undertaken in the AEE.</p>
<p>Policy 6.2.4 – 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.</p> <p>[RPS, R, C, D]</p>	<p>The wider bay has reverting farmland. There are no dwellings nearby. The natural character values which underpin the high and very high natural character overlays are not present in this locality. The farm is not inconsistent with other human development in Beatrix Bay.</p>
<p>Policy 6.2.5 – 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.</p> <p>[RPS, R, C, D]</p>	<p>Effects are reversible, which is relevant to restoration.</p>
<p>Policy 6.2.6 – 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:</p> <p>(a) the effect of allowing more of the same or similar activity;</p> <p>(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</p> <p>(c) the combined effects from all activities in the coastal or freshwater environment in the locality.</p> <p>[RPS, R, C, D]</p>	<p>This is one of a large number of marine farms in Beatrix Bay. There are no significant adverse cumulative effects. Navigational lighting at night would be less intrusive than lighting associated with dwellings should there be any established. The site is like for like.</p>
<p>Policy 6.2.8 – Encourage and support Marlborough’s tangata whenua iwi, private landowners, community groups businesses, and others in their efforts to restore the natural character of the coastal environment, wetlands, lakes and rivers.</p> <p>[RPS, R, C, D]</p>	<p>N/A</p>

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Objective 7.2 – Protect outstanding natural features and landscapes from inappropriate subdivision, use and development and maintain and enhance landscapes with high amenity value.	Refer to the AEE – the farm is not inconsistent with the values that make the adjacent land outstanding.
<p>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.</p> <p>[R, C, D]</p>	The seascape of Beatrix Bay is not an ONFL. Effects on the values of the adjoining ONL, as described in Appendix 1 of Volume 3 of the MEP, as assessed in the AEE.
<p>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:</p> <ul style="list-style-type: none"> <li>(a) using a non-regulatory approach as the means of maintaining and enhancing landscape values in areas of this landscape zoned as Coastal Living;</li> <li>(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...</li> </ul> <p>[C, D]</p>	Policy 7.2.3(b) does not apply to the proposed site, because aquaculture rules have yet to be included in the MEP, and aquaculture cannot be authorised as a permitted activity in a plan (s 68A RMA). As a result, this application must be assessed against the rules applying under the operative MSRMP. This has been done in a separate policy analysis table.
<p>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,</p> <ul style="list-style-type: none"> <li>(a) have, regard will be had to the potential adverse effects of the proposal on the values that contribute to the landscape;</li> <li>(b) recognise that minor or transitory adverse effects may not need to be avoided;</li> <li>(c) have regard to any restoration and enhancement of the landscape proposed.</li> </ul> <p>[R, C, D]</p>	The land is not mapped as ONL. The proposal will not have an effect on the values that contribute to an ONL, as detailed in the AEE. Effects are minor and reversible on removal of the farm, consistent with sub-policy (b). Beatrix Bay is capable of absorbing the level of activity.
<p>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.</p> <p>[R, C, D]</p>	Effects on the adjoining ONL are avoided.



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<p>Policy 7.2.9 – Reduce the impact of wilding pines on the landscape by supporting initiatives to control existing wilding pines and limit their further spread.</p> <p>[D]</p>	N/A.
<p>Policy 7.2.12 In assessing the cumulative effects of activities on outstanding natural features and landscapes, and landscapes with high amenity values, consideration shall be given to:</p> <ul style="list-style-type: none"> <li>(a) the effect of allowing more of the same or similar activity;</li> <li>(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</li> <li>(c) the combined effects from all activities in the locality.</li> </ul>	<p>This is to be one of many marine farms in Beatrix Bay. There are no significant adverse cumulative effects. Navigational lighting at night would be less intrusive than lighting associated with dwelling. The farm is not inconsistent with other uses in the bay, in terms of development on land and in the coastal marine area.</p>
<p>Objective 8.1 – The intrinsic values of Marlborough’s remaining indigenous biodiversity in terrestrial, freshwater and coastal environments is protected.</p>	<p>The applicant has had regard to Objective 8.1 in preparing this application, as outlined in relation to the policies below.</p>
<p>Objective 8.2 – An increase in area/extent of Marlborough’s indigenous biodiversity and restoration or improvement in the condition of areas that have been degraded.</p>	<p>The proposal will not increase indigenous biodiversity. Effects of mussel farming are reversible upon removal of the farm.</p>
<p>Policy 8.1.1 – When assessing whether wetlands, marine or terrestrial ecosystems, habitats and areas have significant indigenous biodiversity value, the following criteria will be used:</p> <ul style="list-style-type: none"> <li>(a) representativeness;</li> <li>(b) rarity;</li> <li>(c) diversity and pattern;</li> <li>(d) distinctiveness;</li> <li>(e) size and shape;</li> <li>(f) connectivity/ecological context;</li> <li>(g) sustainability; and</li> </ul>	<p>The applicant has had regard to the significance criteria, and notes that these are based on the criteria in Davidson’s 2011 report <i>Ecologically Significant Marine Sites in Marlborough, New Zealand</i>. Davidson undertook a biological survey of the proposed site in 2020, Davidson has identified ecosystems or marine habitats of note in the area. The farm is not proposed to be installed over any EMS or buffer of such under the MEP. The application site is located over a mud habitat, typical of sheltered muddy areas in the Sounds. Mr Davidson concluded that the effects of low intensity farming are low.</p>

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<p>(h) adjacent catchment modifications.</p> <p>For a site to be considered significant, one of the first four criteria (representativeness, rarity, diversity and pattern or distinctiveness/special ecological characteristics) must rank medium or high.</p>	
Policy 8.1.2 – Sites in the coastal marine area and natural wetlands assessed as having significant indigenous biodiversity value will be specifically identified in the Marlborough Environment Plan.	The applicant has had regard to the ecologically significant marine sites mapped in volume 4 of the proposed MEP. These are discussed in Mr Davidson's report.
Policy 8.1.3 – Continue to gather information on the state of biodiversity in terrestrial, freshwater and coastal environments in Marlborough to enable decision makers to assess the impact on biodiversity values from various activities and uses.	The applicant notes that the Council will continue to undertake surveys to improve knowledge. A site specific assessment was undertaken by Rob Davidson for this proposal. His report will add to the general body of knowledge.
Policy 8.2.1 – A variety of means will be used to assist in the protection and enhancement of areas and habitats with indigenous biodiversity value.	The proposal is consistent with policy 8.2.1. It is prepared over habitat appropriate for marine farming.
Policy 8.2.3 – Priority for Council funding and partnership resources will be given to the protection, maintenance and restoration of habitats, ecosystems and areas that have significant indigenous biodiversity values, particularly those that are legally protected.	Talleys contributes funding to the King Shag Working Group (which includes Council, the MFA, DoC, and independent scientists) via its MFA levies.
Policy 8.2.8 – A strategic approach to the containment/eradication of undesirable animals and plants that impact on indigenous biodiversity values will be developed and maintained.	Biosecurity is being addressed on an industry wide basis via the proposed National Environment Standard for Marine Aquaculture.
Policy 8.2.9 – Where monitoring of ecosystems, habitats and areas with significant indigenous biodiversity value shows that there is a loss of or deterioration in condition of these sites, then the Marlborough District Council will review the approach to protection.	The applicant is aware of this policy, and acknowledges the Council's role in protecting biodiversity.
<p>Policy 8.2.10 – Maintain, enhance or restore ecosystems, habitats and areas of indigenous biodiversity even where these are not identified as significant in terms of the criteria in Policy 8.1.1, but are important for:</p> <p>(a) the continued functioning of ecological processes;</p>	<p>Marine farming in Beatrix Bay would not interfere with the continued functioning of ecological processes, biological and genetic diversity or water quality, levels and flows to any noticeable degree.</p> <p>The presence of surface buoys and harvest vessels would have some impact on amenity values, particularly for owners and users of nearby</p>

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<p>(b) providing connections within or corridors between habitats of indigenous flora and fauna;</p> <p>(c) cultural purposes;</p> <p>(d) providing buffers or filters between land uses and wetlands, lakes or rivers and the coastal marine area;</p> <p>(e) botanical, wildlife, fishery and amenity values;</p> <p>(f) biological and genetic diversity; and</p> <p>(g) water quality, levels and flows.</p>	<p>dwellings.</p> <p>The applicant recognises that resources are finite. Future generations could decide to remove the farm, and the effects will be reversible. In particular, amenity would be restored instantly upon removal of the farm.</p>
<p>Policy 8.2.11 – Promote to the general public and landowners the importance of protecting and maintaining indigenous biodiversity because of its intrinsic, conservation, social, economic, scientific, cultural, heritage and educational worth and for its contribution to natural character.</p>	<p>This is acknowledged. Ecological effects and effects on natural character has been considered in the AEE.</p>
<p>Policy 8.2.13 – Encourage and support private landowners, Marlborough’s tangata whenua iwi, community and industry groups, central government agencies and others in their efforts to protect, restore or re-establish areas of indigenous biodiversity.</p>	<p>N/A</p>
<p>Policy 8.3.1 – Manage the effects of subdivision, use or development in the coastal environment by:</p> <p>(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;</p> <p>(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</p> <p>(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 Policy Statement 2010.</p> <p>(d) creating a buffer to manage activities in proximity to an Ecologically Significant Marine Site in order to avoid adverse effects on the Ecologically Significant Marine Site</p>	<p>The farm is not proposed to be within a Marine Mammal Distribution Map area. The farm will be managed according to best practices. Effects are considered in the AEE.</p> <p>Adverse effects on ESMSs will be avoided. The farm is not within an ESMSs buffer.</p>
<p>Policy 8.3.4 – 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:</p> <p>(a) fragmentation of or a reduction in the size and extent of indigenous ecosystems and habitats;</p>	<p>The proposal avoids the adverse effects in Policy 8.3.4. In particular, although marine mammals have been sighted in the bay, Beatrix Bay is not a marine mammal sanctuary, migration route, breeding, feeding or haul out area.</p>

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<p>(b) fragmentation or disruption of connections or buffer zones between and around ecosystems or habitats;</p> <p>(c) changes that result in increased threats from pests (both plant and animal) on indigenous biodiversity and ecosystems;</p> <p>(d) the loss of a rare or threatened species or its habitat;</p> <p>(e) loss or degradation of wetlands, dune systems or coastal forests;</p> <p>(f) loss of mauri or taonga species;</p> <p>(g) impacts on habitats important as breeding, nursery or feeding areas, including for birds;</p> <p>(h) impacts on habitats for fish spawning or the obstruction of the migration of fish species;</p> <p>(i) impacts on any marine mammal sanctuary, marine mammal migration route or breeding, feeding or haul out area;</p> <p>(j) a reduction in the abundance or natural diversity of indigenous vegetation and habitats of indigenous fauna;</p> <p>(k) loss of ecosystem services;</p> <p>(l) effects that contribute to a cumulative loss or degradation of habitats and ecosystems;</p> <p>(m) loss of or damage to ecological mosaics, sequences, processes or integrity;</p> <p>(n) effects on the functioning of estuaries, coastal wetlands and their margins;</p> <p>(o) downstream effects on significant wetlands, rivers, streams and lakes from hydrological changes higher up the catchment;</p> <p>(p) natural flows altered to such an extent that it affects the life supporting capacity of waterbodies;</p> <p>(q) a modification of the viability or value of indigenous vegetation and habitats of indigenous fauna as a result of the use or development of other land, freshwater or coastal resources;</p> <p>(r) a reduction in the value of the historical, cultural and spiritual association with significant indigenous biodiversity held by Marlborough's tangata whenua iwi;</p> <p>(s) a reduction in the value of the historical, cultural and spiritual association with significant indigenous</p>	<p>In terms of sub-policy (g), King Shag do forage in Beatrix Bay. The extent to which marine farms exclude King Shag from foraging is uncertain, though recent research shows that this species has been sighted feeding within farms in the Sounds (refer to assessment).</p> <p>Marine farms provide ecosystems services, as outlined in the following 2019 NIWA report:</p> <p><a href="https://www.marinefarming.co.nz/media/1662/stenton-dozey-broekhuizen-2019-mussel-farm-ecosystem-services_niwa-report_201920ch-8_03_19.pdf">https://www.marinefarming.co.nz/media/1662/stenton-dozey-broekhuizen-2019-mussel-farm-ecosystem-services_niwa-report_201920ch-8_03_19.pdf</a></p>

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<p>biodiversity held by the wider community; and</p> <p>(t) the destruction of or significant reduction in educational, scientific, amenity, historical, cultural, landscape or natural character values.</p>	
<p>Policy 8.3.5 – Take into account that king shag could feed in the coastal marine area within 25km of the breeding sites recorded as Ecologically Significant Marine Sites 1.6, 2.11, 2.14, 2.21, 3.3 and 7.9.</p>	<p>This has been taken into account in the AEE.</p>
<p>Policy 8.3.6 – 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:</p> <p>(a) Residual adverse effects: the offset will only compensate for residual adverse effects that cannot otherwise be avoided, remedied or mitigated;</p> <p>(b) Limits to offsetting: offsetting should not be applied to justify impacts on vulnerable or irreplaceable biodiversity;</p> <p>(c) No net loss: 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;</p> <p>(d) Like for like 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 in the same area;</p> <p>(e) Proximity: the proposal should be located close to the application site, where this will achieve the best ecological outcomes;</p> <p>(f) Timing: the delay between the loss of biodiversity through development and the gain of maturation of ecological outcomes is minimized;</p> <p>(g) Any offsetting proposal will include biodiversity management plans prepared in accordance with good practice.</p>	<p>N/A – no offset is proposed.</p>

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Policy 8.3.8 – Within an vulnerable ecologically significant marine sites, activities that disturb the seabed must be avoided.	The farm is not within any ESMs or its associated buffer
Policy 8.3.10 – Enable customary harvest in accordance with tikanga.	The applicant has sought to consult with iwi. Iwi will not be precluded from accessing the site.
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]	The proposal is a single marine farm. The public will still have access between longlines and inshore of the site. Opportunities for recreational fishing may be enhanced by the presence of the marine farm. Effects on recreation are considered in the AEE.
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:  <ul style="list-style-type: none"> <li>(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;</li> <li>(b) coastal marine area, particularly in and near Picton, Waikawa and Havelock, Kaiuma Bay, Queen Charlotte Sound (including Tory Channel), Port Underwood, Kenepuru Sound, Mahau Sound, Mahikipawa Arm and Croiselles Harbour, Rarangi to the Wairau River mouth, Wairau Lagoons, Marfells Beach and Ward Beach...</li> </ul> [RPS]	This part of Beatrix Bay is not frequented by high numbers of recreationalists and the general public to any significant degree due to its remote location. The public will not be excluded from the area of the proposed site.
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:  <ul style="list-style-type: none"> <li>(a) there is existing public recreational use of the area in question, or improving access would promote outdoor recreation;</li> <li>(b) connections between existing public areas would be provided;</li> <li>(c) physical access for people with disabilities would be desirable; and</li> <li>(d) providing access to areas or sites of cultural or historic significance is important.</li> </ul> [RPS, C, D]	See above. The farm will not prevent access to areas or sites of cultural and historic significance in the area.

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<p>Policy 9.1.5 – Acknowledge the importance New Zealander’s place on the ability to have free and generally unrestricted access to the coast.</p> <p>[RPS, C, D]</p>	<p>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.</p>
<p>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.</p> <p>[RPS, C]</p>	<p>The applicants will make use of this existing network of facilities. The proposed farm will not affect access.</p>
<p>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.</p> <p>[RPS, C]</p>	<p>There are no jetties in the vicinity.</p>
<p>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:</p> <p>(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;</p> <p>(b) the need for the activity/structure to be located in the coastal marine area and why it cannot be located elsewhere; ...</p> <p>(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;</p> <p>(e) in the coastal marine area, whether exclusive rights of occupation are being sought as part of the application;</p> <p>(f) for the Marlborough Sounds, whether there is practical road access to the site of the application;</p> <p>(g) how public access around or over any structure sought as part of an application is to be provided for;</p> <p>(h) whether the impact on public access is temporary or permanent and whether there is any alternative public access available; and</p> <p>(i) whether public access is able to be restricted in accordance with Policies 9.2.1 and 9.2.2. [C, D]</p>	<p>The structures have a functional need to be located in the coastal marine area. The public will have access through and around the site. Exclusive occupation is not sought, except for the physical space the structures will occupy. That is consistent with the purpose of a resource consent to farm, in line with policy 9.2.1. There is no road access. The proposed farm will not restrict boat access to this area.</p>

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Policy 9.2 –Public access to and along the coast and the margins of lakes and rivers will only be restricted where necessary for security, health and safety, conservation, cultural or other similar reasons.	Exclusive occupation is only sought to the extent necessary for the physical structures, and to allow the farm to be operated safely. Public access is not restricted beyond that.
<p>Policy 9.2.1 – Public access to and along the coastal marine area and the margins of lakes, rivers may be restricted to:</p> <p>(a) ensure a level of security consistent with the purpose of a resource consent or designation;</p> <p>(b) .....</p> <p>[RPS, C, D]</p>	The extent of exclusive occupation sought is consistent with the level of security needed for the purpose of farming greenshell mussels.
<p>Policy 9.2.2 – Aside from the circumstances in Policy 9.2.1 above, constraints on public access shall not be imposed unless:</p> <p>(a) There is no practical alternative; and</p> <p>(b) The effects on public access would be no more than minor.</p>	See above at 9.2.1.
Policy 9.3.2 – Seek diversity in the type and size of open spaces and recreational facilities to meet local, district, regional and nationwide need by: .....(d) recognising and protecting the value of open space in the coastal marine area, high country environments and river beds.	The applicant recognises the value of open space and has designed the site layout with this in mind.
<p>Objective 10.1 – Retain and protect heritage resources that contribute to the character of Marlborough.</p> <p>[RPS]</p>	The applicant has had regard to historic and cultural sites within the vicinity of the proposed farm. The application will not have an impact on heritage resources.
<p>Policy 10.1.3 – Identify and provide appropriate protection to Marlborough’s heritage resources, including:</p> <p>(a) historic buildings (or parts of buildings), places and sites;</p> <p>(b) heritage trees;</p> <p>(c) places of significance to Marlborough’s tangata whenua iwi;</p> <p>(d) archaeological sites; and</p> <p>(e) monuments and plaques.</p> <p>[RPS, C, D]</p>	<p>The Historic Places Inventory and Archsite have been consulted. No sites are recorded in the area.</p> <p>The applicant is aware of the importance of the waters of the Marlborough Sounds to Iwi. It recognises that there are Maori archaeological sites within the wider Sounds. Iwi have been sent a letter advising that the applicant was contemplating this application and seeking their views. The farm will not impact on any of the sites and places of significance to Marlborough’s tangata whenua iwi listed in the Appendix 13, volume 3 of the MEP.</p>



MEP Provision	Evaluation
Chapter 13 objectives and policies.	N/A – Chapter 13 expressly states that it “does not contain provisions managing marine farming.”
Objective 13.M – Equitable and sustainable allocation of public space within Marlborough’s coastal marine area. [RPS, RCD]	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 the public space.
Policy 13.19.4 – 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 right to occupy and use the coastal marine area, and requires a resource consent for the proposed activity.
Policy 13.19.5 – The ‘first in, first served’ method is the default mechanism to be used in the allocation of resources in the coastal marine area. Where competitions demand for coastal space becomes apparent, the Marlborough District Council may consider the option of introducing an alternative regime. [RPS, C]	The applicant considers the first in first served method for allocation is appropriate in respect of the proposed site in Beatrix Bay.
Policy 13.19.7 – Coastal occupancy charges will be imposed on the consent holders of coastal permits and the occupiers of permitted activity moorings in a Moorings Management Area where there is greater private than public benefit arising from occupation of the coastal marine area. [C]	The applicant would be comfortable paying coastal occupancy charges to reflect the private benefit from occupying space in Beatrix Bay. However, it is concerned that the level of these charges or at least the method of setting these, is not set out in the MEP.
Policy 13.19.8 – The Marlborough District Council will exempt the following from any requirement to pay coastal occupancy charges: .....(b) monitoring equipment [C]	In any monitoring equipment is required to be permanently installed at the site as a condition of consent, the applicant agrees that coastal occupancy charges for that equipment should be waived. However, Mr Davidson concluded that there were no biological reasons for site specific monitoring.
Policy 13.19.9 – 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]	The applicant does not request a waiver of coastal occupancy charges.

MEP Provision	Evaluation
<p>Policy 15.1.16 – The duration of any new discharge permit will be either:</p> <p>(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;</p> <p>... (c) no more than five years where the existing discharge will not comply with water quality classification standards for the waterbody or coastal waters.</p> <p>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.</p> <p>[R, C]</p>	<p>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. The applicants seek a 20 year term of consent.</p>
<p>Policy 19.1.3 – Enable primary industries to adapt to the effects of climate change.</p> <p>[R, C, D]</p>	<p>Each marine farm has a different characteristics, and enables Talleys to adapt and manage its resources to ensure a year round supply of product to processing factories, despite inter-annual and seasonal changes in climate. This farm is part of that picture.</p>



# Biological report for the re-consenting of marine farm 8254 in Beatrix Bay, Pelorus Sound

Survey and monitoring report number 1036

*A report prepared for:*  
*Talley's Group Limited*  
*C/o PALMS Ltd.*  
*15 Purkiss Street*  
*Blenheim*

June 2020

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June 2020

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## 1.0 Preface

The present report provides biological information for a proposed re-consent of an existing marine farm in Beatrix Bay, Pelorus Sound. The farm is owned by Talley's Group Ltd.

## 2.0 Background information

### 2.1 Beatrix Complex

The Beatrix Complex comprises a variety of bays including Beatrix, Kauauroa, Crail, Clova, Elie Bays and Wet Inlet (Figure 1). These bays are located at the eastern-most end of Tawhitinui Reach.

These bays are subjected to often strong winds from the north, north-west and south-east directions. Tidal currents are relatively mild, apart from small areas near headlands and promontories where current can be moderate. Offshore areas are relatively flat and dominated by mud and a small component of shell substratum. The edges of the bays are composed of mostly cobble and boulder shores with intermittent bedrock substrata usually located near or at headlands.



**Figure 1. Location of Beatrix Complex, Pelorus Sound, Marlborough Sounds.**

## 2.2 Marine farming

There are 99 marine farms in Beatrix Complex (Figure 2). Marine farms are predominantly used for production mussel farming. Spat catching/holding farms exist near Te Puraka Point and Clova Bay.

**Figure 2. Marine farms located in the Beatrix Complex.**



## 2.3 Catchments

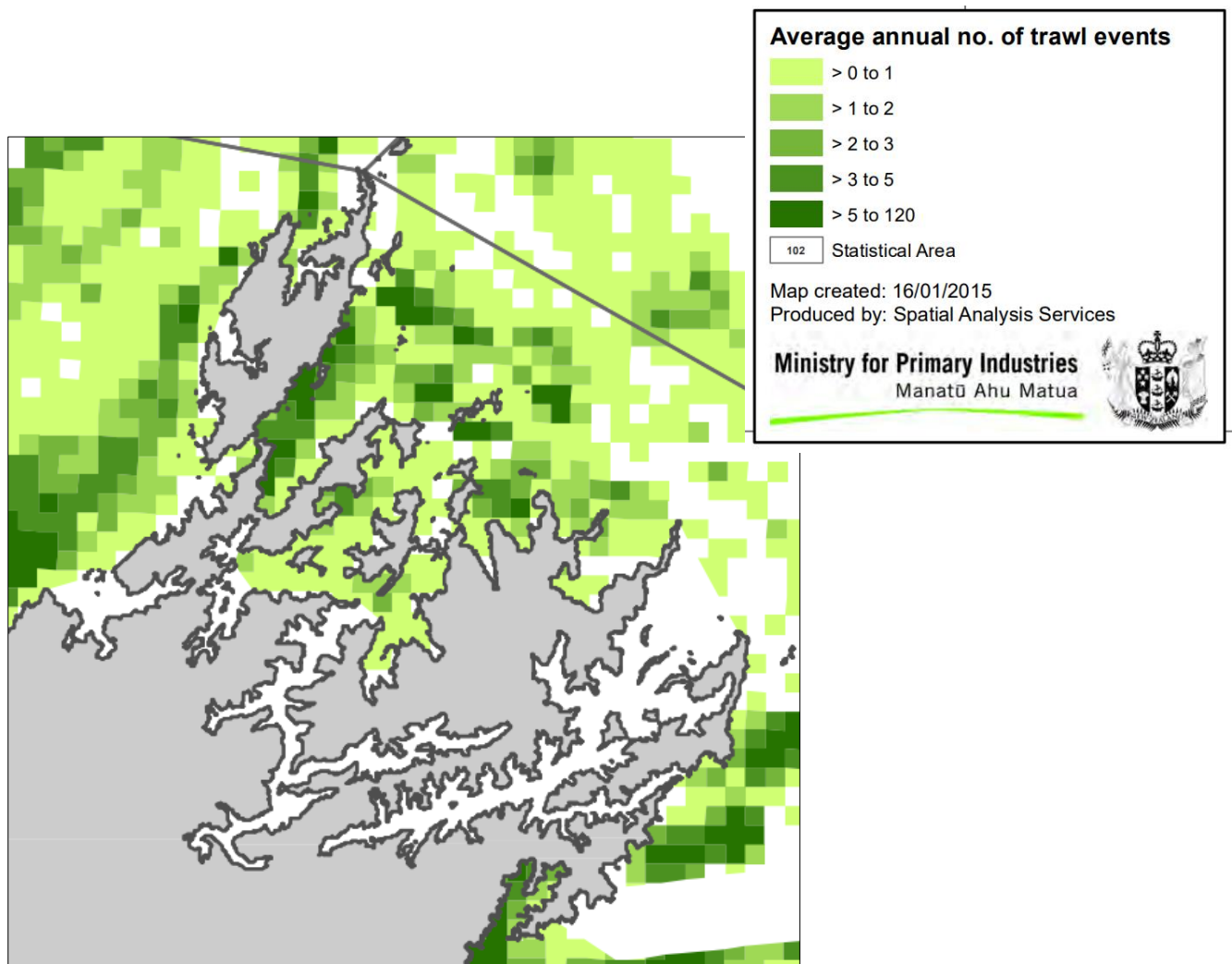
The adjacent land and catchments of the Beatrix Complex are mostly regenerating with mature native vegetation usually on the higher hillsides. Areas of pasture are in eastern Beatrix Bay and the heads of Clova, Elie, Hopai and Wet Inlets.

Reserves are located at Kenny Isle, Waimaru, Mt. Stokes, Elie Bay Kenepuru Sound Scenic Reserve and Bobs Knob. The remainder of the land is in private ownership. Forestry blocks are located on the hillsides above Clova, Elie Bays and Wet Inlet. Overall, the present vegetation cover in the area means sediment runoff into the marine environment will likely be at the low to moderate end of the range known from the Marlborough Sounds, however, sediment from the Pelorus River reaches this area after large flood events.

The land adjacent to the present marine farm sites is the Kenny Isle Scenic Reserve.

## 2.4 Fishing

Occasional trawling occurs inside Beatrix Complex and Kauauroa Bay (Figure 3a). Commercial scallop dredging historically occurred in these areas when the season was open (Figure 3b). Recreational fishing is less common than outer Pelorus and Kenepuru Sounds locations but occurs mostly around promontories during summer months (Figure 3c).



**Figure 3a. Trawl fishing events: annual number of trawl events shown for the position where each trawl event started, averaged for all events starting in each 1 nautical mile grid cell and for six fishing years 2007-13.**



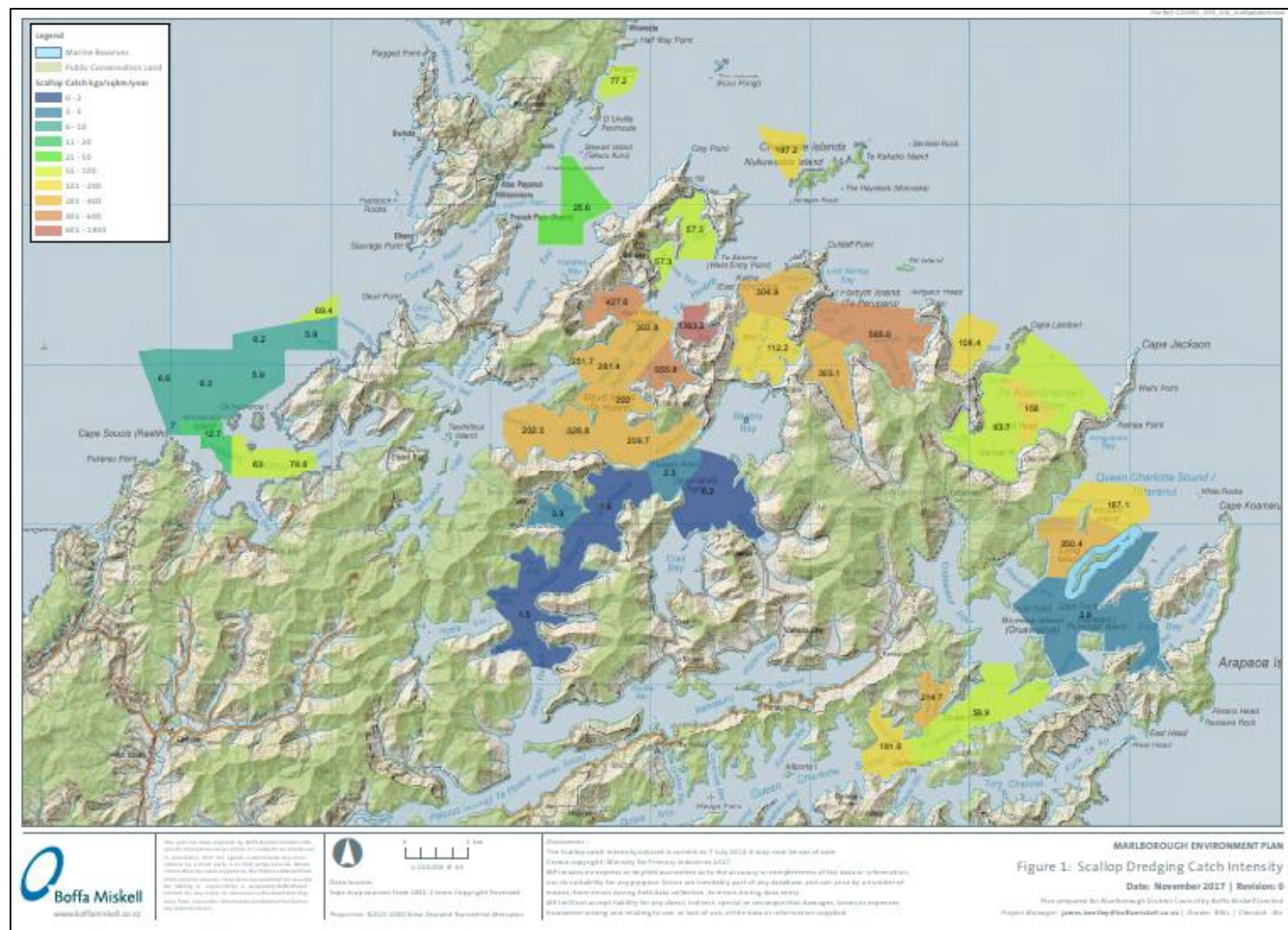
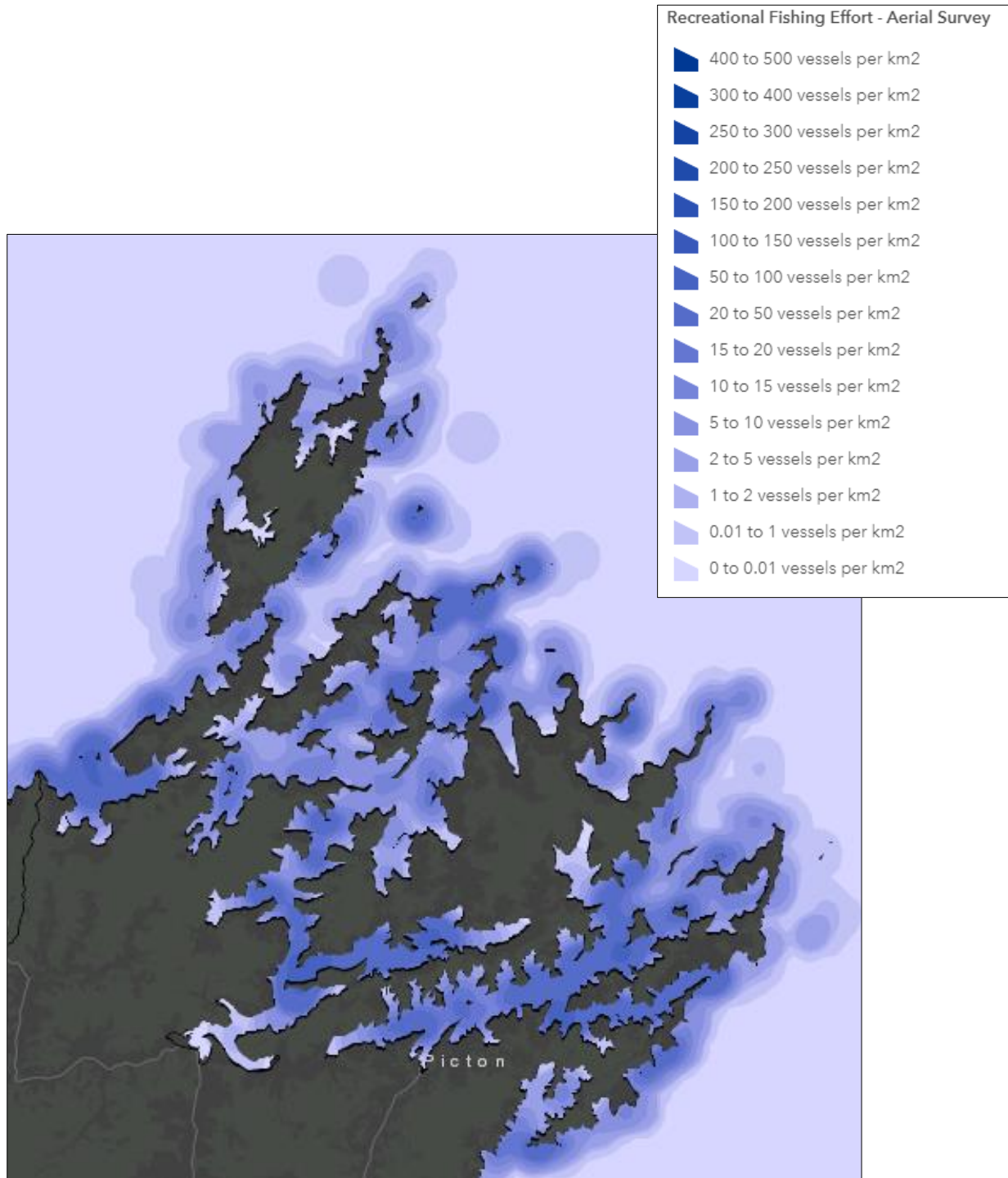


Figure 3b. Scallop catch data to July 2014 (from Boffa Miskell maps produced for MDC Coastal Plan).

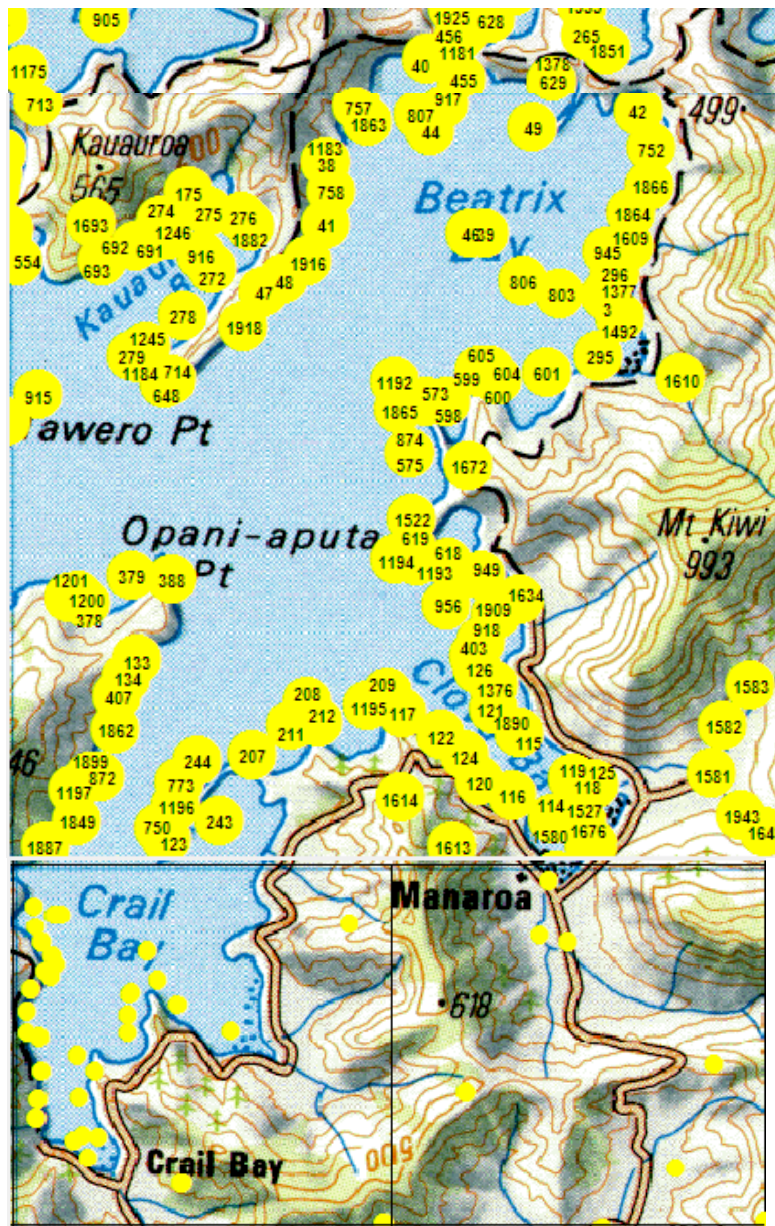


**Figure 3c. Aerial survey of recreational fishing effort. Map created by NIWA for MPI, October 2016.**



## 2.5 Existing biological studies and data

Many studies and investigations have occurred in the Beatrix Complex of bays (Figure 4). Most data points have been commissioned by the marine farm industry, particularly in relation to new farms and extension applications. There are also a small number of species, habitat or community-based studies.



**Figure 4. Summary of existing studies from Beatrix Complex.**

## 2.6 Significant sites

There are nine known significant sites located in the Beatrix Complex. Two sites (Sites 3.12 and 3.24) are located in Beatrix Bay proper (Figure 5).



**Figure 5. Known significant sites in Beatrix Complex (pink polygons).**

### Significant site 3.12

Piripaua is located at the northern end of Beatrix Bay (Figure 5). Davidson *et al.* (2011) stated this reef was one of the better examples of a reef system in central Pelorus Sound. The reef was surveyed by Davidson *et al.* (2018) and the authors confirmed the presence of the reef over

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a larger area than previously known. The authors stated the reef supports a range of species typical of low current reef systems in central Pelorus Sound from Tawero Point northwards (Stewart, 2014). A narrow and shallow fringe of sparse macroalgae (*C. flexuosum*, *C. maschalocarpum*) was present in low abundance near low water.

**Significant site 3.24**

A large reef is located on the eastern side of Tuhitarata Bay (Davidson and Richards, 2011). This reef is approximately 3.4 ha in size and is one of the largest single reef structures within Pelorus Sound. The reef is unusual in the respect that it is shallow and wide rather than thin and long, which is more typical of Sounds reef structures. Based on data collected from the reef by Davidson and Richards (2011), it supports a typical range of rock-dwelling species from central Pelorus Sound.

## **2.7 Marine mammals**

The Marlborough Sounds and wider Cook Strait region is an area of high diversity for marine mammals. Recent reviews (e.g. Douglas *et al.*, 2018, Clement & Elvines, 2019) of marine mammals have confirmed that at least 22 species of marine mammals have been reported (e.g. sightings, strandings, bycatch, etc) from the region. For the 22 species reported in the wider region, their presence varies from the resident (e.g. Hector's and bottlenose dolphins), semi-resident (e.g. dusky dolphins, common), regular visitor (e.g. orca), migratory (e.g. humpback whales) to vagrant (e.g. leopard seals), depending on their exact relationship with the region (see Slooten *et al.*, 2002; Markowitz *et al.*, 2004; Merriman *et al.*, 2009; Clement and Halliday, 2014; Cross, 2019). Low numbers of New Zealand fur seals (status = not threatened) can be observed year-round within Pelorus Sound, Queen Charlotte and Tory Channel.

Bottlenose dolphins (status = Nationally endangered: Baker *et al.*, 2019) is the species most consistently observed within the Marlborough Sounds (Authors, pers. obs.). An open, yet the semi-residential population of approximately 385 bottlenose dolphins ranges throughout the Marlborough Sounds (Merriman *et al.*, 2009), generally in groups of 30–40 animals (Cross, 2019). These animals use the entire Sounds region year-round, regularly and systematically moving from one end of the Sounds to another, while additional animals migrate in and out of the region at the same time (Merriman *et al.*, 2009). A long-term sighting database from Dolphin Watch Marlborough (now known as E-Ko Tours) starting in 1995 suggests that bottlenose dolphins have been frequently found within inner and mid-QCS and are commonly



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seen around the wider Picton Bays region (Slooten *et al.*, 2002; Cross, 2019). Recent research surveys found while sighting rates are fairly consistent across seasons, group sizes are slightly larger in autumn accounting for greater densities of bottlenose reported within QCS during these months (Cross, 2019).

Bottlenose dolphins within the Sounds represent one of three isolated subpopulations around New Zealand's coastline; the others are found along the northeast coast of the North Island and within Fiordland in the south-west of the South Island. This species nationally endangered status is due to their restricted ranges and the fact that the other two sub-populations have reported general population declines over the last decade. Such factors make this species potentially more vulnerable to disturbance or changes within their distribution range (D. Clement, pers. comm.). International studies investigating the interaction between bottlenose and marine farms have shown that this species can target aquaculture facilities where they forage for fish (Lopez, 2012; Diaz Lopez and Methion, 2017; Methion and Lopez, 2019).

Starting in 1998, Markowitz *et al.* (2004) studied dusky dolphin (status – not threatened) presence within the Marlborough Sounds, and in particular Admiralty Bay. The authors found that the number of dusky dolphins increased significantly over the winter months and are periodically throughout the outer Sounds east of D'Urville to Rarangi. While no studies have focused specifically on the presence of common dolphins (status = not threatened) in Pelorus Sound.

Clement and Halliday (2014) suggest that outer Sounds bays, such as Admiralty, may serve as important habitat for at least a proportion of the common dolphin population found around New Zealand. Common dolphins appear most abundant in the outer Sounds bays during mid-to late winter and early spring, often coinciding with dusky dolphins while in the region (Clement and Halliday, 2014). Seasonal trends and the high re-sighting rates of identified individuals within the area over consecutive seasons and years indicates that common dolphins are either seasonally migrating to this region (i.e. like dusky dolphins) or use it as part of a large home range, like bottlenose dolphins (D. Clement, pers. comm.).

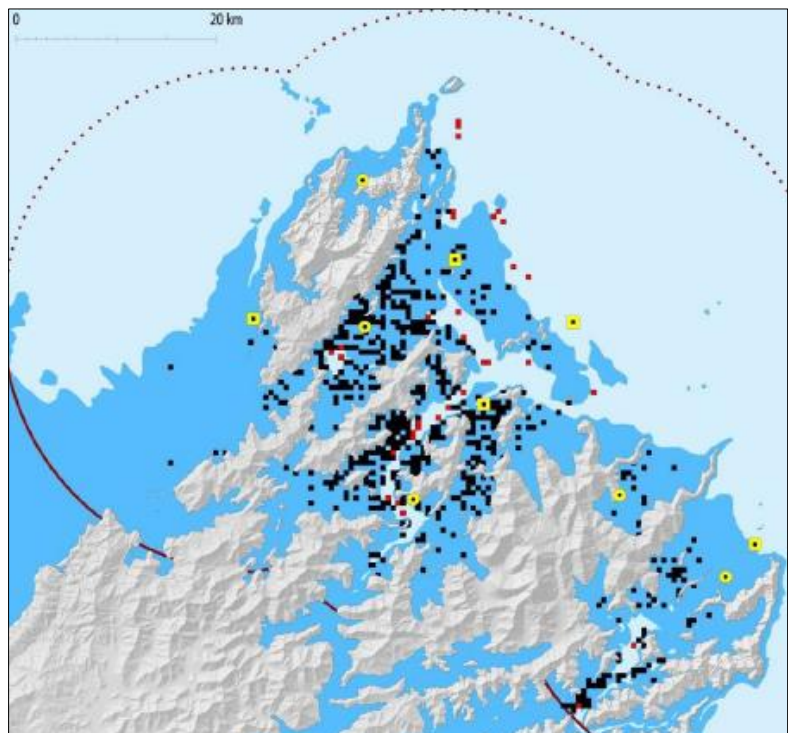
Several studies have aimed at investigating marine mammal interactions with aquaculture (Markowitz *et al.*, 2004; Vaughn *et al.*, 2007; Pearson *et al.*, 2012; Díaz López, 2012; Diaz Lopez and Methion, 2017; Methion *et al.*, 2019), Department of Conservation (e.g. B. Lloyd, unpubl. data; Merriman, 2007) and aquaculture-funded research (Clement and Halliday, 2014).

The Beatrix Complex has not been ranked as a significant site for marine mammals. Bottlenose, common and dusky dolphins and orca are occasionally observed in this area.

## 2.8 King shag

King shag (*Leucocarbo carunculatus*) is one of the world's rarest seabird species. The species is endemic to the Marlborough Sounds and is seldom observed outside of this region. The species nests at a small number of colonies, usually on rock stacks that are separate from the mainland, however, there are two mainland colonies presently used by birds (Hunia and Tawhitinui Bay). Historical counts have usually been undertaken by boats; however, most recent surveys have been aerially surveyed and photographed during the breeding seasons of 2016 (2 surveys), 2017 and 2018 (Schuckard *et al.*, 2015; 2018). The latter count showed a 24% decline in the number of adult birds (Schuckard, 2018). The total number of nests range from 187 in 2015 to 89 (June 2016), 117 (July 2016), 153 nests June 2017 (Schuckard, 2018) and 274 active nests in 2019 (Bell, 2019). Roost counts also showed a decline in 2018 (633 birds) compared to 834 (2015), 789 (2019) and 815 birds in the most recent survey by Bell *et al.* (2020).

Diet studies have shown king shags feed on a variety of fish at a wide variety of locations in the Marlborough Sounds (Figure 6). Lalas and Brown (1998) recorded 683 prey items, of which flatfish accounted for 90% of items.



**Figure 6. Distribution of foraging by king shags in Marlborough Sounds. Figure from Schuckard (unpublished evidence, 2017).**

## 2.9 Benthic

Duffy *et al.* (in prep) qualitatively described the biota from 360 sites around the Marlborough Sounds. Tidal currents are light and the biota are typical of sheltered areas of central Pelorus Sound. Where tidal current is present, offshore soft bottom areas support some shell. Coarse soft substratum is also present at the foot of the cobble bank around much of this complex. Mud is widespread in most offshore areas. Macroalgae is uncommon and when present is restricted to a narrow band around low tide.

The Beatrix Complex was grouped into rocky and soft groups 1.

### Rocky Site Group 1

This was the largest of the 11 sub-groups. Sites in this group were representative of much of the sheltered inner Sounds. They were located in Queen Charlotte (34 sites) and Pelorus (31) Sounds, Port Hardy (2), Admiralty Bay (8), Cherry Bay at D'Urville Island (1), Squally Cove in Croisilles Harbour (1), Catherine Cove (2), Guards Bay (2), Anakoha Bay (2) and Forsyth Bay/Island (5).

Distance to open water was high and fetch is low. It was the deepest of the inner sounds site groups and contained a high proportion of rocky outcrops when compared with the other inner sounds site groups. The most common habitat type was cobble banks. Although it had few indicator species, it was the most species-rich of the inner sounds site groups (average 31 species per site). The best indicator species were *Maoricolpus roseus*, *Galeolaria hystrix* and *Forsterygion lapillum*. *G. hystrix* and *F. lapillum* also occurred in over half of the non-group 1 sites. All three indicator species were from species group 2.

### Soft Site Group 1

Sites in this group were located in Port Underwood (6 sites), Queen Charlotte Sound (32), and the outer sounds including D'Urville Island (13). It had the second highest mean species richness (19 species per site) of the soft sediment site groups. Most sites covered a large depth range. The best indicator species for this group were the turret shell (*Maoricolpus roseus*), saddle sea squirt (*Cnemidocarpa bicornuata*) and the sea cucumber *Stichopus mollis*.



### 3.0 Marine farm 8254

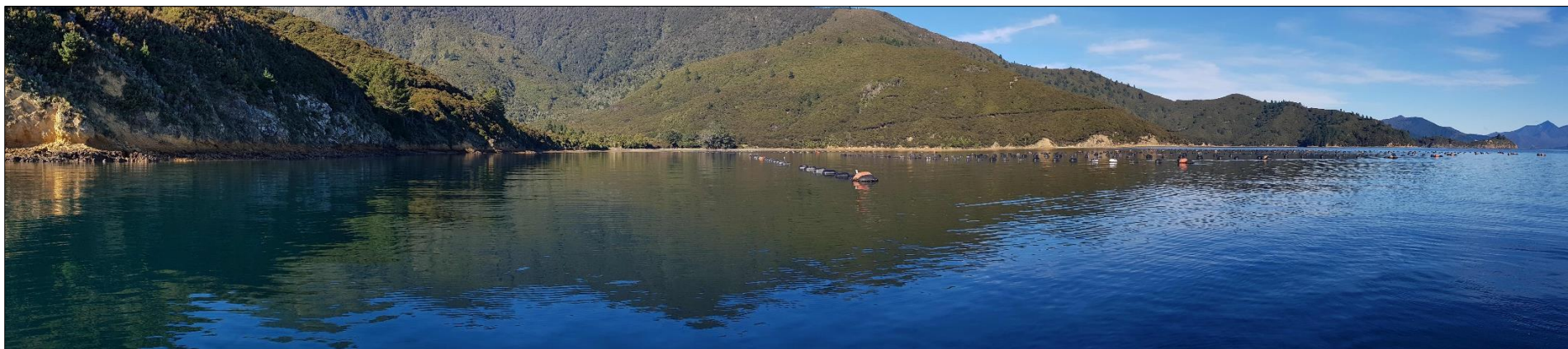
The present report provides biological information for the proposed re-consenting of marine farm 8254 located at the northern end of Laverique Bay in Beatrix Bay (Figure 7, Plate 1). The adjacent shoreline is retired pastures now clad in regenerating native vegetation.

**Figure 7. Proposed marine farm re-consent site in Beatrix Bay (red circle) and all other marine farms in the area.**



### 3.1 Summary

<b>Marine farm number:</b>	8254
<b>Owner:</b>	Talley's Group Limited
<b>Location:</b>	Beatrix Bay, Pelorus Sound
<b>Consented size:</b>	4.5 ha
<b>Proposed size:</b>	4.5 ha
<b>Recommendations:</b>	Part of the offshore backbone may drift outside the consent on occasion. It is within the normal range of backbone movement.



**Plate 1. Looking south into Laverique Bay through the consent and backbone lines of farm 8254. The photo was taken from a position north of the inshore farm backbone.**

### **3.2 Historical reports**

A previous ecological report was found regarding the proposed extension to the parent farm (Brennan, 2000). Brennan conducted two dive transects to survey the benthic values of the proposed extension area.

*“Mud of uniform composition was encountered throughout both transects. The proportion of shell litter decreased only marginally with movement away from the existing marine farm. Concentrations of green lipped and blue mussel shellw ere still found in patches at considerable distance seaward of MFL134 and, in the case of transect two, beyond the proposed extension’s seaward boundary also.*

*Those benthic species/communities occurring at the site are all well represented and/or common in the wider Marlborough Sounds area. Marine farming effects arising from the proposed marine farm operation will not smother any significant and/or rare benthic community. This report recommends no alteration to the layout and position of structures as proposed by the application.”*

### **4.0 Methods (present survey)**

The area was investigated on 2<sup>nd</sup> June 2020. Before fieldwork, the consent corners were plotted onto mapping software (TUMONZ Professional). The laptop running the mapping software was linked to a Lowrance HDS-12 Gen2 with an external Lowrance Point 1 high sensitivity GPS, allowing real-time plotting of the corners of marine farm surface structures and to pinpoint drop camera stations in the field. This GPS system has a maximum error of +/- 5 m.

The corners of the existing marine farm surface structures were surveyed by positioning the survey vessel immediately adjacent to the corner floats and the position plotted. It is noted that surface structures can move due to environmental variables such as tidal current and wind. The plot of surface structures is variable from day to day and throughout tidal cycles. These data should not, therefore, be regarded as a precise measurement of the position of surface structures, but rather an approximate position.

### **4.1 Sonar imaging**

Sonar investigations of the area were conducted using a Lowrance HDS-12 Gen 2 and HDS-8 Gen2 linked with a Lowrance StructureScan™ Sonar Imaging LSS-1 Module. These units provide



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right and left side imaging as well as DownScan Imaging™. The unit also allows real-time plotting of StructureMap™ overlays onto the installed Platinum underwater chart. A Lowrance HDS 10 Gen 1 unit fitted with a high definition 1kw Airmar transducer was used to collect traditional sonar data from the site.

Before the collection of underwater photographs, the boundaries of both the consent area and the marine farm surface structure area were investigated using the sonar. Any bottom abnormalities such as reefs, hard substrata or abrupt changes in depth were noted for inspection using the drop camera (see section 4.2).

#### **4.2 Drop camera stations, mussel debris and low tide**

A total of 17 drop camera photographs were collected from the farm (including alongside droppers and warps) and adjacent areas to the re-consent. At each drop camera station, a Sea Viewer underwater splash camera fixed to an aluminium frame was lowered to the benthos and an oblique still photograph was collected where the frame landed.

The cover of benthic mussel shell from drop camera photographs were ranked as: None = no mussel shell, Low = 1-30%, Moderate = 31-50%, Moderate to High = 51-75%, and High = 76-100% cover. Percentage cover of mussel shell was estimated by a trained observer viewing drop camera photographs.

The location of photograph stations was selected to obtain a representative range of habitats and depths within the consent. Additional photographs were taken when any features of interest (e.g. mussel shell, reef structures, cobbles) were observed on the remote monitor on-board the survey vessel. All photographs collected during the survey have been included in Appendix 1.

Low tide was determined at strategic locations inshore of the consent. The survey vessel was positioned over the low water mark and the position plotted using the mapping software. Low tide was visually determined using the transition between intertidal and subtidal species. This process was also guided by the known state of the tide at the time of the inspection.

## 5.0 Results

On the day of the survey, the tide was low at 11.55 am (0.7 m) and high at 6.15 pm (2.4 m). During fieldwork, the tide was low then incoming. A very light southward alongshore current was observed. In general, mean water currents at this site are low and approximately <0.09 m/sec (Broekhuizen *et al.*, 2015).

### 5.1 Consent corners and surface structures

The seafloor below the consent was gently sloping with featureless soft benthos. The inshore boundary was located in depths of 17.8 m to 23.4 m, while the offshore boundary ranged from 24 m to 30.3 m (Table 1, Figure 9).

The farm consisted of one backbone block of 9 lines, covering approximately 2.6 ha surface area of the existing 4.5 ha consent. Backbones were positioned within the existing consent except the offshore backbone and associated northern warp (Plate 2, Figure 9). The northern end of the inshore backbone is, however, within the GPS range of error and potential tidal movement.

The distance between low tide and the farm boundary was measured at three positions along the adjacent shoreline. The distance to the inshore boundary at the position of low tide 1 was 77 m, at low tide 2 was 82 m and at low tide 3 was 99 m (Plate 2, Figure 9).

**Table 1. Depths at the consent corners and existing surface structures. Depths adjusted to datum. Coordinates = NZTM (Northing/Easting).**

Type	No. & Depth	Coordinates
Consent corner	1, 24m	1687729.0,5455439.7
Consent corner	2, 30.3m	1687640.4,5455705.0
Consent corner	3, 23.4m	1687838.9,5455710.1
Consent corner	4, 17.8m	1687902.3,5455520.4
Consent corner	5, 22.1m	1687851.8,5455503.5
Structure corner	A, 19.4m	1687886.1,5455560.5
Structure corner	B, 25.1m	1687713.3,5455487.5
Structure corner	C, 24m	1687725.1,5455455.4
Structure corner	D, 28.8m	1687656.3,5455622.7
Structure corner	E, 21.2m	1687852.5,5455677.7
Low tide	Low tide 1	1687920.1,5455708.8
Low tide	Low tide 2	1687946.7,5455647.5
Low tide	Low tide 3	1687982.4,5455594.5





**Plate 2. Aerial view of three low tide GPS locations relative to the existing consent boundary (red polygon).**

## **5.2 Sonar imaging**

The sonar run identified soft substratum throughout the existing consent. No rocky substrate was recorded inshore of consent boundary or near the existing consent (Figure 10).

## **5.3 Seabird observations in the consent**

During this survey, 4 bird species were observed within the consent. Birds observed sitting on floats were: 1 black-backed gull, 1 little shag and 2 variable oystercatchers (also observed foraging on the backbone). One red-billed gull was seen on the water in between backbone lines. A total of 5 individual birds were observed in the consent. The abundance and number of bird species were low compared to other farms in the Sounds.

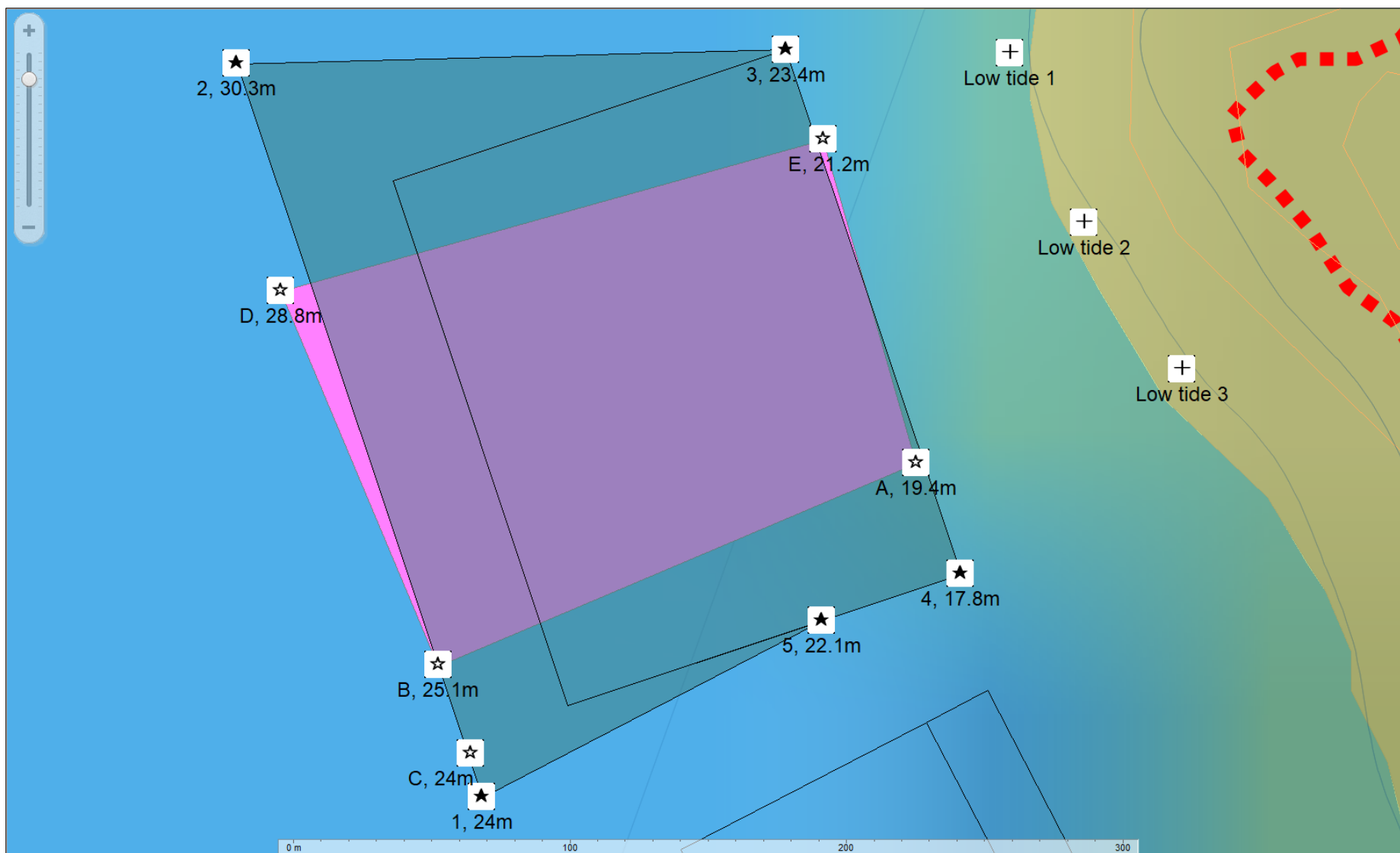


Figure 9. Depths of the existing consent area (teal) and existing marine farm surface structures (pink). Three low tide locations are also plotted (crosses).

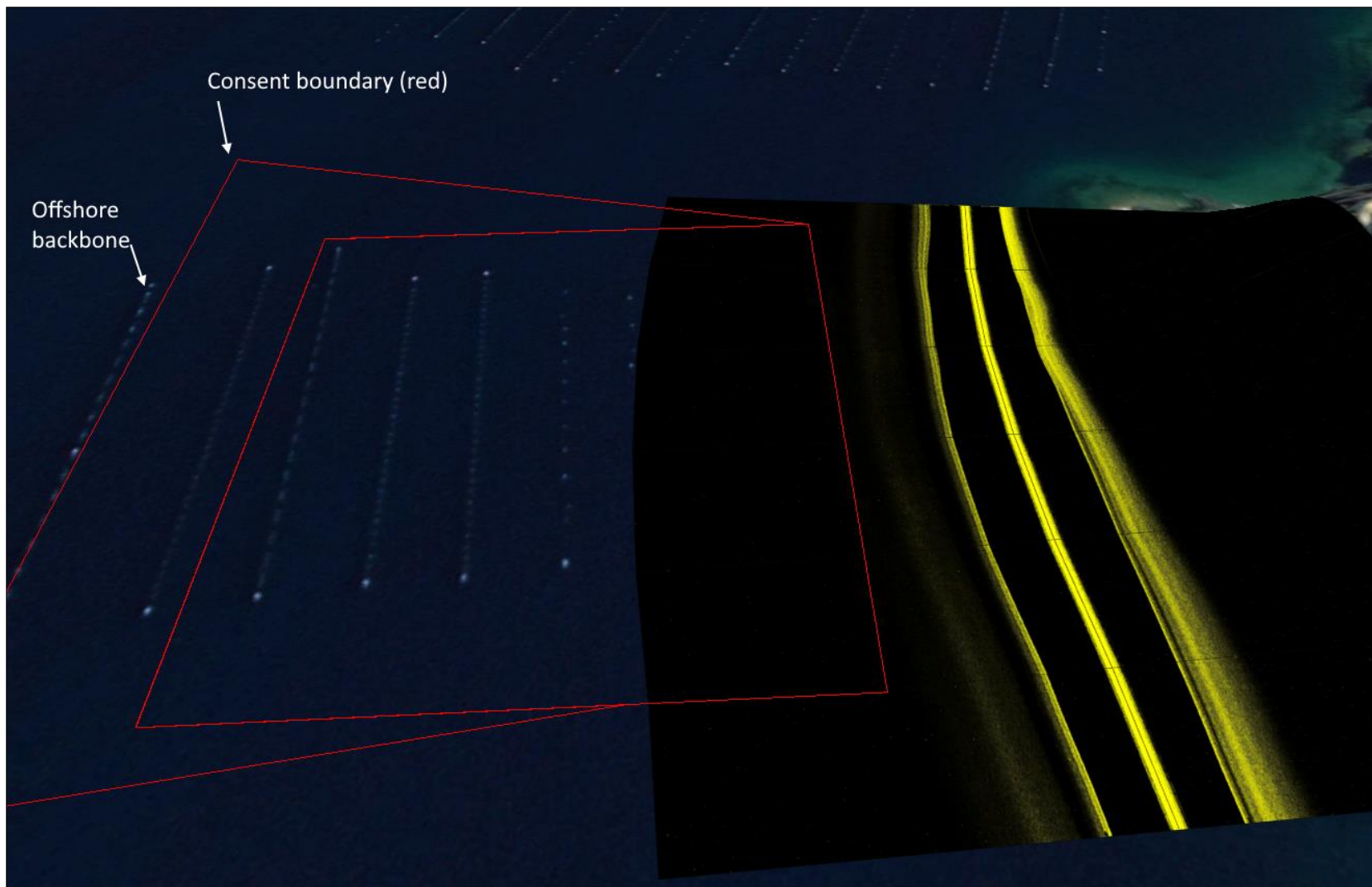


Figure 10. Sonar run at marine farm site 8254. Red polygon = consent boundary, yellow line = sonar track. The shoreline is on the right side of the image.



## **5.4 Drop camera images**

Drop camera photographs were taken throughout the consent as well as inshore and offshore of its boundaries (Table 2, Figures 11 & 12, Appendix 1). Photographs were used to describe benthic substrata, mussel shell debris cover and presence of biological characteristics.

### **Within the consent**

The seafloor in the consent was dominated by silt and clay, sometimes with a small natural shell component (Plates 3 and 4). Mussel shell was recorded within the consent.

Species observed on the benthos included spotty, sea cucumber, cushion star and 11 arm seastar.

### **Mussel shell**

Mussel shell was present in 5 of the 10 photos within the consent and 6 of the 7 photos taken outside the consent (Table 2). Level of mussel shell debris reached up to 40% cover under backbone structures (Plates 4 and 5), while mussel shell was absent under warps. Shell debris was present outside the consent at levels up to 15% cover near existing backbone structures (Figure 12). The smothering effect of silt over mussel debris was observed in most photos.

### **Outside the consent**

The benthos located inshore of the consent was soft substrate comprised of silt, fine sand and natural shell (Plate 6), whereas silt and clay substratum dominated offshore (Plate 7). Low cover of mussel shell was present at locations inshore and offshore of the consent.

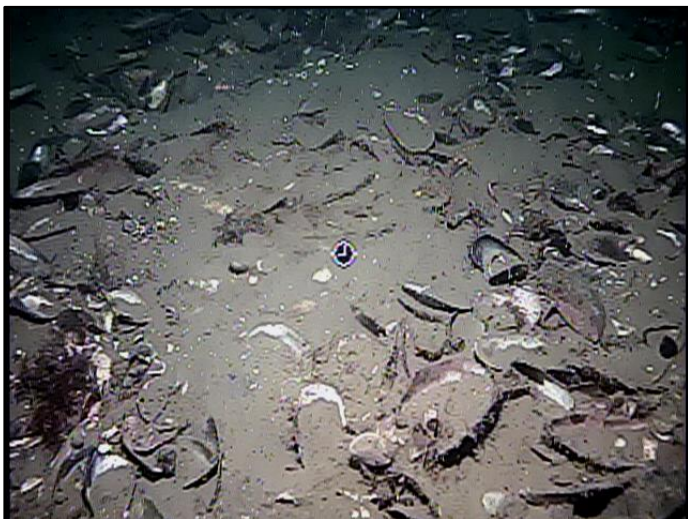
Cushion star was the only conspicuous species observed outside the consent.



**Plate 3. Silt, clay and natural shell under warps in the consent (photo 9, 23.8 m depth).**



**Plate 4. Silt, clay and mussel shell under backbones in the consent (photo 10, 26.2 m depth). Note: 10% cover of mussel debris.**



**Plate 5. Silt, clay and mussel shell under backbones in the consent (photo 8, 23 m depth). Note: 40% cover of mussel debris.**

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**Plate 6. Silt, fine sand, and natural shell with mussel shell inshore of the consent (photo 2, 19.4 m depth). Note: 2% cover of mussel debris.**



**Plate 7. Silt, clay and mussel shell offshore of the consent (photo 16, 26.5 m depth). Note: 10% cover of mussel debris.**

**Table 2. Coordinates of drop camera stations relative to the existing consent area. Colours are: grey = within consent area, pink = under backbones, blue = outside consent area. Depth, substratum, % cover of mussel shell debris are listed.**

No. & Depth	Coordinates	Substratum	Location	Features	Shell debris	% mussel shell
1, 18.2m	1687897.8,5455558.5	silt, fine sand, natural shell, mussel shell	Outside consent, no structures		low	2
2, 19.4m	1687888.1,5455590.5	silt, fine sand, natural shell, mussel shell	Outside consent, no structures	cushion	low	2
3, 19.7m	1687877.2,5455635.4	silt, fine sand, natural shell, mussel shell	Outside consent, no structures		low	1
4, 19.6m	1687864.4,5455669.7	silt, fine sand, natural shell, mussel shell	Outside consent, no structures		low	15
5, 19.4m	1687857.5,5455706.6	silt, fine sand, natural shell	Outside consent, no structures		low	1
6, 27m	1687801.0,5455673.7	silt, clay	In consent, warp area	cushion		0
7, 25.7m	1687827.1,5455613.9	silt, clay, mussel shell	In consent, under backbones	11arm	low	15
8, 23m	1687862.9,5455557.9	silt, clay, mussel shell	In consent, under backbones		moderate	40
9, 23.8m	1687804.8,5455506.0	silt, clay, natural shell	In consent, warp area			0
10, 26.2m	1687771.9,5455584.4	silt, clay, mussel shell	In consent, under backbones	spotty	low	10
11, 28.7m	1687732.0,5455682.7	silt, clay	In consent, warp area			0
12, 29.9m	1687662.8,5455666.4	silt, clay	In consent, warp area	cushion		0
13, 27.1m	1687697.1,5455572.1	silt, clay, mussel shell	In consent, under backbones	sea cuc	low	30
14, 25.2m	1687729.8,5455499.6	silt, clay, mussel shell	In consent, under backbones	cushion	low	20
15, 23.5m	1687746.5,5455453.4	silt, clay, natural shell	In consent, warp area			0
16, 26.5m	1687679.7,5455539.5	silt, clay, mussel shell	Outside consent, no structures	cushion	low	10
17, 28.6m	1687649.4,5455599.5	silt, clay	Outside consent, no structures	cushion		0



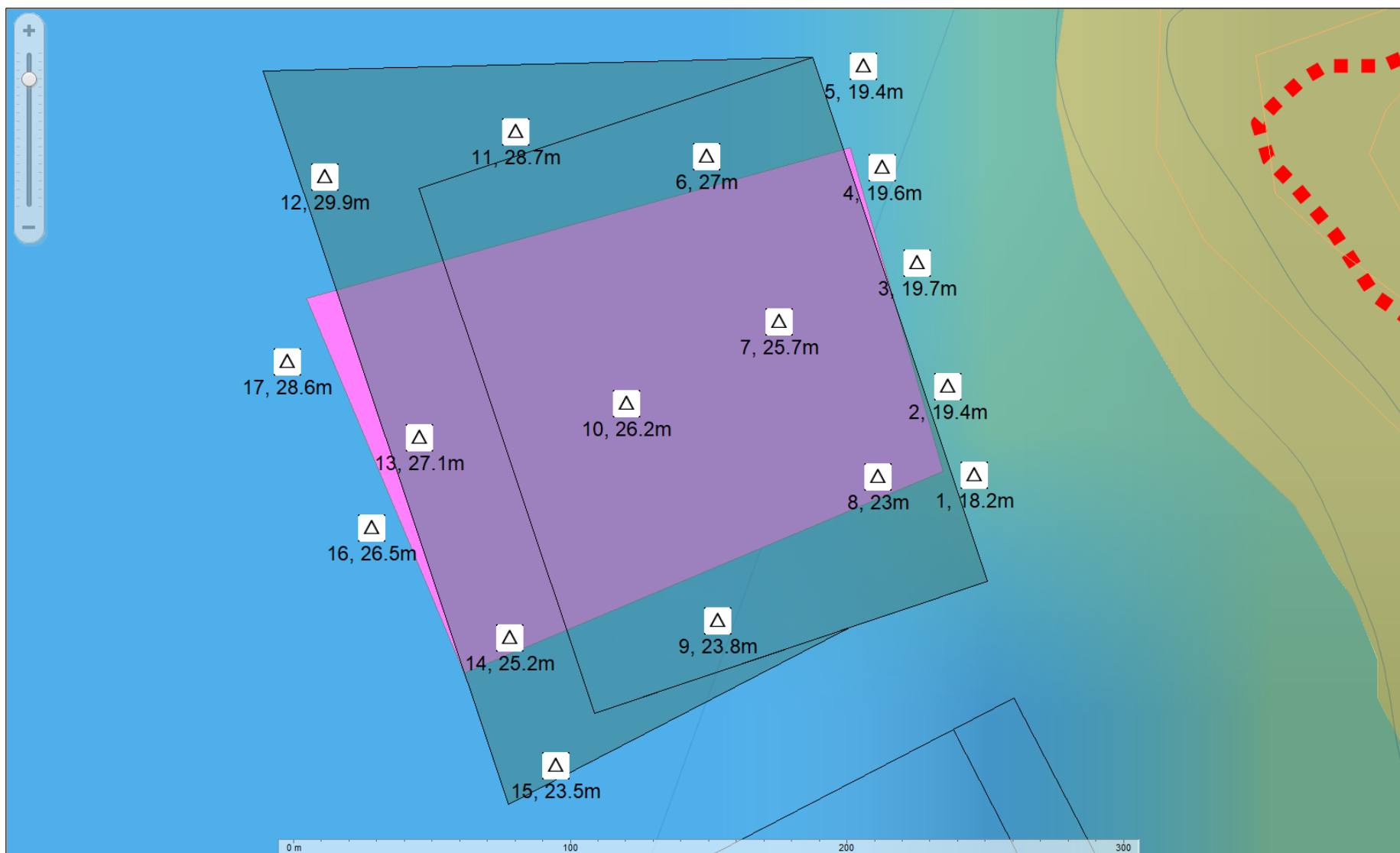


Figure 11. Drop camera stations from the existing consent area (teal), surface structures (pink). Open triangles = soft substrate, numbers are the photo number and water depth (m).



**Figure 12. Estimated percentage cover of mussel shell at drop camera stations (open triangles = soft substrate), consent area (teal), surface structures (pink). Numbers are the estimated % cover of mussel shell.**

## **6.0 Conclusions**

### **6.1 Benthic habitats and substratum**

Substratum and habitat distribution relative to the proposed re-consent area was based on drop camera stations and sonar imaging of the benthos under the existing consent. The existing consent area was located over soft benthos of silt and clay. In places, the soft silt included a small component of natural shell. No rocky substrata was identified within or near the existing consent.

The benthos inshore of the existing consent supported silt, fine sand and natural shell.

Mud (i.e. silt and clay) is the most common subtidal habitat in sheltered areas of the Marlborough Sounds (McKnight and Grange, 1991) and has been traditionally targeted for marine farming activities. This substratum type is suitable for consideration for marine farming activities in the Marlborough Sounds.

Unlike mud, rocky substratum is not traditionally considered suitable for marine farming activities as it can be smothered by silt and shell debris and therefore may no longer function as hard substratum habitat.

### **6.2 Species and communities**

Species abundance and diversity from the proposed re-consent area was lower than high current locations in the Sounds. Soft substratum habitats traditionally have a reduced epibenthic species diversity and abundance compared to hard substrata. The conspicuous species observed include spotty, sea cucumber, cushion star, and 11 arm seastar. The number of species recorded on the soft seafloor at this site is low.

No species, habitats or communities likely to be regarded as ecologically significant (see Davidson *et al.*, 2011 for criteria) were observed during the present study.

### 6.3 Seabirds and marine farms

The mussel industry's Environmental Management System (EMS), formally known as the Environmental Code of Practice, seeks to minimise risks to wildlife and they are likely to be minimal on well-maintained farms (Keeley *et al.*, 2009).

Based on the few studies that have investigated the interactions between mussel farms and birds, mussel aquaculture can potentially affect seabirds by altering their food resources, cause physical disturbances (e.g. noise) and/or introduce possible entanglement risks. The structures associated with aquaculture may also provide benefits including additional perching and feeding opportunities.

Overall, New Zealand (Butler, 2003) and overseas studies (Ross *et al.*, 2001; Roycroft *et al.*, 2004; Kirk *et al.*, 2007) suggest that the general attraction of particular seabirds to mussel farms is likely due to increased foraging success on fish and biofouling, and even on the cultured stock itself. The consequences of this attraction will likely depend on the species' dietary preferences and response to both direct and indirect ecosystem changes induced by mussel cultivation.

Birds are potentially at risk from operational by-products of farms, including ties and plastics. Butler (2003) found young and adult Australasian gannets (*Morus serrator*) in the Marlborough Sounds entangled in discarded rope ties from mussel farms that had been incorporated into nests by parents. The closest gannet colony is at Waimaru Peninsula within Beatrix Complex. Little blue penguin and variety of shag and gull species are also present in the area and may potentially use ties as nesting material. It is therefore important that marine farmers minimise the introduction of ties into the marine environment.

McClellan *et al.* (2020) conducted a pilot study comparing seabird use at paired sites with and without mussel farms. Each of eight paired sites in Pelorus Sound were observed for two days (approximately 14 hours), except for one paired site, which was only observed for one day, as a harvesting vessel arrived on the morning of the second day. Counts were made of seabird species present in the farm and control sites at 15-minute intervals throughout each two-day period. General notes were made on the behaviours of those bird species at the sites, for example, foraging between backbone ropes, feeding on algae and other biota associated with backbone ropes, roosting on buoys, resting on the sea surface, etc. McClellan *et al.* (2020) found 11 species of birds used mussel farms (mean = 7.6 species per farm; standard error =



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0.4) compared to five species of birds that used the associated control sites (mean = 1.0 species per control; standard error = 0.5).

**Beatrix Bay farm**

During the present survey, 4 bird species were observed utilising the consent area including one bird foraging on backbones. The number of birds observed at this site (5 individuals) is low compared with many marine farms within the Sounds.

## **6.4 King shags and marine farms**

A variety of authors have also outlined human activities that may impact king shags including aquaculture (Schuckard, 2006; Bell, 2019a; McClellan *et al.*, 2020); commercial fishing (McClellan, 2017), colony disturbance (Butler, 2003; Davidson *et al.*, 2018), and hunting (Nelson, 1971). Apart from aquaculture, little research has occurred on these topics despite their potential importance on a high-status species.

Butler (2003) undertook the first review of the possible effects of marine farms on king shag. He described the potential effects in three categories: physical effects (structures of farms, lights, debris from farms, and shell waste); effects of activities (disturbance, noise and water pollution); and effects on marine ecology (hydrography, sediment and water column changes, creation of new habitat, exclusion of trawlers, unwanted organisms). Butler (2003) considered that most king shag feeding occurred in deeper water and that potential impacts resulting from mussel farms excluding king shag foraging may become apparent if deeper-water mussel farms were developed. Lloyd (2003) reviewed the effects of aquaculture on seabirds and cetaceans. He also appeared to believe the existing pattern of inshore mussel farms was less likely to affect king shag foraging compared to proposals for extensive mid-bay mussel farms in Admiralty Bay. Fisher and Boren (2012) undertook a rigorous study of king shag foraging distribution in Admiralty Bay and concluded that deep water marine farms posed a greater threat compared to inshore sites.

Sagar (2013) conducted a general review of the ecological effects of aquaculture and only specifically mentioned king shag in relation to disturbance but discussed the main effects of 'filter feeder species' farms on seabirds in general, and their significance. The author stated the eight key effects were: entanglement with farm structures, habitat exclusion, smothering of benthos, changed abundance of prey, provision of roosts, disturbance by farm activities,

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ingestion and entanglement with farm debris, and attraction to lights. Sagar (2013) considered that the potential effects of habitat exclusion and smothering of benthos were, in general, insignificant to seabirds given the small area occupied by filter feeder farms. However, he qualified this, noting that the significance of effects “will depend on the spatial scale of the aquaculture facility in relation to the distribution and abundance of prey species”, and concluded that effective management could be achieved by avoiding locating farms in key foraging areas of species with restricted habitat requirements (see Sagar, 2013). The review listed “home ranges or location of important feeding and breeding habitats for most populations of seabird species” as being a key information gap for every one of the eight key potential effects.

Most recent work on king shag has focused on a variety of aspects including foraging-related behaviour (Bell 2019, 2019a; McClellan *et al.*, 2020). These studies have been funded by the MFA, Seafoods Innovations Limited and MPI. In the first year of a three year study, Bell (2019a) attached GPS transmitters on birds from two Pelorus colonies located at Tawhitinui Bay and Duffers Reef. For the six tagged birds between 7 and 13 days of data were recorded. Birds conducted between 7 and 20 foraging bouts over this period. Bell analysed the 42 complete foraging data sets to assess foraging behaviour and reported the average foraging trip duration was 4.5 hours (range: 23 minutes to 9 hours and 28 minutes).

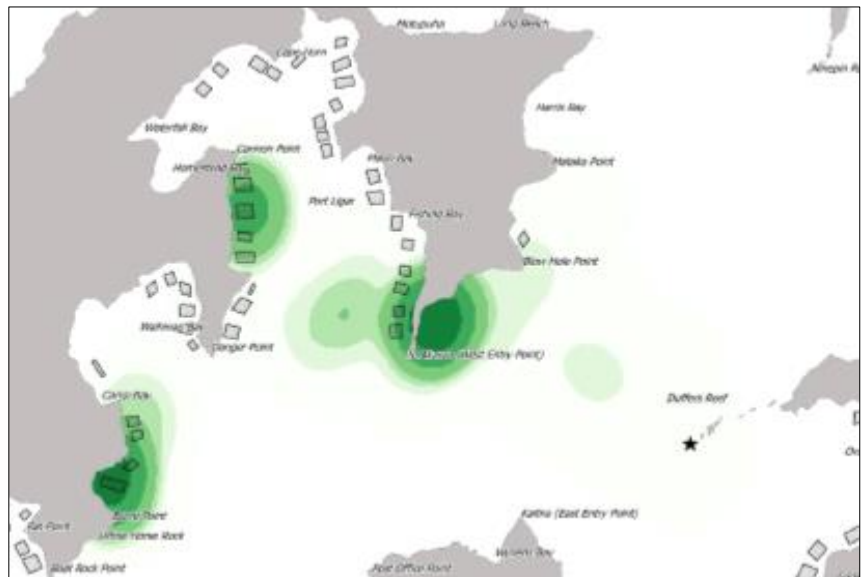
GPS data from the 42 complete datasets revealed birds spent on average 20 minutes flying to a foraging site. An average of 2 hours 59 minutes was spent foraging. Birds spent an average of 43 minutes resting or swimming on the water and 25 minute roosting on mussel floats outside foraging bouts. Overall, birds spent 20% of each trip not foraging. Bell (2019a) reported that all six birds spent some time roosting on mussel floats including one bird that overnighted on a float. None of the birds visited land while away from the colony. The author also reported that the average foraging distance from the colony was 6.2 km (range: 0.4 km to 16.2 km).

Bell (2019a) reported that birds appear to have favoured foraging areas, with birds returning to broadly similar areas. Some birds foraged outside marine farms while some foraged within marine farms (Figures 13 and 14). Bell reported one bird foraged almost exclusively within mussel farms.

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Bell also reported birds had preferences for diving depth, with one bird having a mean maximum depth of 12.6 m (i.e. shallow preference), while one bird preferred deep diving with a mean maximum depth of 26.9 m.

**Figure 13. Heat map of foraging locations of king shags from Duffers Reef colony (from Bell, 2019). Note marine farms are depicted as grey shapes and the king shag colony as a star.**



**Figure 14. Duffers Reef king shag individual who preferred to forage in marine farms.**



McClellan *et al.* (2020) conducted a pilot study comparing king shag use at paired sites with and without mussel farms. Each of eight paired sites in Pelorus Sound were observed for two days (approximately 14 hours), except for one paired site, which was only observed for one day, as a harvesting vessel arrived on the morning of the second day. Counts were made at

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the farm and control sites at 15-minute intervals throughout each two-day period. General notes were made on the behaviours at the sites, for example, foraging between backbone ropes, feeding on algae and other biota associated with backbone ropes, roosting on buoys, resting on the sea surface, etc. McClellan reported that king shags were present at five of the eight study farms and four of the control sites. Birds were not observed at two of the eight paired sites. King shag roosted (no foraging) at two farms and roosted and foraged at three farms. In evidence before the Waikato Regional Council, McClellan (2019) stated “it has long been thought that mussel farms may exclude king shag from feeding in and around the structures of mussel farms due to benthic habitat changes under the farms and/or the structures themselves. The results from both this pilot study and from Bell (2019a) which involved attaching GPS loggers to six breeding adult king shags for 6-12 days, indicate that king shags do forage in mussel farms, sometimes for long periods of time and sometimes exclusively over that period.”

**Beatrix Bay farm**

Contrary to previous reports, recent research confirms king shag forage in depths <10 m and forage over a wider area of the Sounds than first described (Bell, 2019; 2019a). Recent studies have shown that some birds forage outside marine farms while some forage within marine farms (Bell, 2019a; McClellan *et al.*, 2020). King shag are known to forage in Beatrix Bay. Further, a breeding colony is located nearby on the western promontory of Kauauroa Bay. No king shag were observed at this marine farm at the time of the survey but they will likely use the area to forage for food.

This present survey for the re-consent of farm 8254 identified the consent is positioned over soft substrata from 18 m to 30 m depth. With no proposed changes to the consent area, any change to the existing level of impact on king shag is unlikely.

## **6.5 Marine mammals and marine farms**

International research demonstrates that the nature and scale of any direct displacement or avoidance vary greatly between culture methods and marine mammal species (MPI, 2013). While particular species of whales or dolphins will be highly sensitive to disturbance, other species (such as bottlenose dolphins) and pinnipeds may actually be attracted to the structures (Lopez, 2012; Clement and Halliday, 2014; Davidson and Richards, 2017; Methion and Lopez, 2019).

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For mussel farming, occupied farm areas may be perceived by some marine mammals (particularly those that echolocate) as a physical, visual or acoustic obstruction within their habitat. Based on research to date in Admiralty Bay, dusky dolphins appear unable to cooperatively herd schooling fish when adjacent to or within mussel farm structures (see Pearson *et al.*, 2012). Clement and Halliday (2014) also noted the reluctance of common dolphins to enter or feed near farm structures within the Admiralty Bay region. Over the course of five consecutive winters between 1998 and 2002, Markowitz *et al.* (2004) found that dolphins spent significantly less time in areas occupied by mussel farms than other parts of the inner bay. Pearson *et al.* (2012) also reported similar findings from tracking dolphin groups both inside and outside of mussel farms across all of Admiralty Bay during the winters and springs of 2005-2006. To test specifically whether these results were due to the fact that dusky dolphins might not use habitats closer to shore in general, rather than avoiding the farm areas themselves, Markowitz's study looked at the amount of time groups spent near farms (<200 m) and Pearson's study looked at time spent within the nearshore zone (<400 m of the shoreline) around inner and all of Admiralty Bay, respectively. Both studies found dolphins frequented areas occupied by mussel farms significantly less often than similar areas near farms or within the general nearshore zone.

The significance of such 'disruptions' to their foraging and feeding success over time may range from minor, (i.e. they simply employ other foraging strategies or move to other sources) to major implications (i.e. the loss of a primary food source begins to have population-level effects, such as reduced reproduction rates). It is difficult to assess whether these foraging limitations are impacting on the survival and reproduction of these dolphins at the population level and research can take several decades to determine and population dynamics (e.g. closed versus open structure) can affect the efficiency with which data can be collected (D. Clement, pers. comm.).

## **Displacement**

Some species such as NZ fur seals may be attracted to mussel farms as hauling outs (Clement and Halliday, 2014; Davidson and Richards, 2017). Farm structures may also attract bottlenose dolphin and possibly killer whales, due to these species' curious natures and the associated aggregations of possible prey species under and near farms. Bottlenose dolphins have been frequently recorded 'sweeping' through mussel farms in the Sounds (D. Clement, pers. comm; Authors, pers. obs.).

## **Entanglement**

Globally, there have been 15 whales recorded as being entangled and/or damaging marine farms but only six of these have been in mussel farms with the remainder interacting with salmon farms (Clement & Elvines, 2019). There are two reported incidences of dolphin entanglement and death at a salmon farm in New Zealand, both from the Marlborough Sounds (M. Aviss, MDC). In one, an unidentified dolphin species became trapped while a predator net was being replaced, and in the other case, a Hector's dolphin became trapped under a predator net. Internationally, fatal entanglements of dolphins in predator nets on finfish farms have been reported from Australia (Gibbs and Kemper, 2000; Kemper and Gibbs, 2001; Kemper *et al.*, 2003) and Italy (Díaz López and Bernal Shirai, 2007). This may reflect the attraction of dolphins to a food source (Kemper and Gibbs, 2001) although such interactions between finfish farms and cetaceans have not been proven (Kemper *et al.*, 2003).

There is also one record of a marine mammal becoming trapped or tangled in a mussel farm (i.e. a Bryde's whale) (Wursig and Gailey, 2002). The low incidence of mussel farm entanglements is probably related warps and backbones being under tension thereby reducing the chance of entanglement. This is in stark contrast to lobster pots that have a single line to the surface. This line is usually under little or no tension. Whales migrating up the east coast of the South Island pass hundreds of lobster lines that present a serious entanglement threat. A humpback first spotted by DOC staff near Banks Peninsula with a cray pot buoy line tangled around its tailstock and flukes then became entangled in mussel floats when it swam alongside a farm in Tory Channel several days later. This animal was cut free from the cray pot lines by a mussel farmer (Scott Madsen) and was released alive.

Wursig and Gailey (2002) stated that entanglements by larger whales in aquaculture facilities are relatively rare events.

## **Beatrix Bay farm**

For dusky and common dolphins, the existing farm could represent an area lost as foraging habitat, however, these species are not regularly seen from the area (Authors, pers. obs.). It is therefore likely any loss of foraging habitat is a low threat for dusky and common dolphin.

Based on the location of this farm in Beatrix Bay and known whale migratory patterns and behaviour, it is unlikely this farm represents a threat.



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The present marine farm utilises standard mussel farming structures that are under tension and therefore present a low risk of entanglement to marine mammals. The present proposal is applying for no additional water space.

## **6.6 Biosecurity issues**

Most major marine farm contractors, harvesters and major companies are members of the A+ programme (<http://www.aplusaquaculture.nz/farmers-information>). The A+ programme promotes good environmental practices. In particular, the A+ programme has a major objective that “farming activities do not cause an unacceptable biosecurity risk”. All A+ members are also required to recognise the Biosecurity Act 1993, as well as the Hazardous Substances and New Organisms Act 1996.

## **6.7 Mussel farming impacts**

### **6.7.1 Benthic impacts**

Marine farm surface structures are mostly located within the existing consent. The most offshore backbone and it's associated warp at the northern end are located outside the existing consent.

Mussel shell debris was common at low levels on the seafloor under backbone structures. Shell debris was recorded up to 40% cover under backbone structures and up to 15% cover away from but close to backbones. This is consistent with data on the spread of mussel shell from droppers (Davidson and Richards, 2014). The seafloor under warps showed no mussel shell debris. No rocky substrate was located within or near the consent.

Shell debris impact at this site is low under droppers compared to other production farms in the Sounds. Silt and shell debris impacted soft substrata offshore and inshore of the consent at low levels.

Based on literature and assuming the present level of farming activity remains consistent, it is likely the redox layer will be shallower compared to sites away from the farm (Hartstein and Rowden, 2004; Keeley *et al.*, 2009).

Recovery of the benthos takes approximately 5-7 years on deep soft substratum as shell is often smothered by silt thereby reducing recovery times compared to inshore coarser

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substratum areas (Davidson and Richards, 2014). The smothering effect of silt over mussel shell debris was recorded in many benthic photographs during this survey.

#### **6.7.2 Productivity**

Mussel farms can influence adjacent farms by slowing water flow to farms located in downstream positions (Ogilvie, 2000). This is particularly pronounced in quiescent areas of the Sounds. However, published work by Zeldis *et al.* (2008, 2013) suggests that the major factors influencing productivity in the Marlborough Sounds relate to cyclical weather patterns in the summer (El Nino and La Nina) and river-derived nutrient inputs in winter. Slow crop cycles in some years are therefore a reflection of a weather cycle and much less about the number of farms.

There has been no data presented to show the ecological carrying capacity of the Sounds has been reached, however, this topic is not well researched. There is considerable evidence showing the major drivers of the Pelorus system, for example, naturally leads to large within and between year variability. Relative to this, the impact of mussel farms appears to be material but relatively small compared to major environmental drivers (Broekhuizen *et al.*, 2015).

#### **Beatrix Bay Farm**

Tidal flows along the eastern shores of Beatrix Bay are generally low (Broekhuizen *et al.*, 2015). Winds are likely to be a driver of water movement in this area, especially during northerly and northwesterly weather events. The proximity of Beatrix Bay to the main Pelorus Sound channel means water residence times are likely to be shorter than sites at a distance to Pelorus Sound Reaches.

Based on these considerations and the existing literature, it is probable the site will likely cause phytoplankton depletion inside its boundaries; however, these are expected to quickly return to background levels as water leaves the consent. This re-consent application proposes the same size of consented water space.

## **6.8 Boundary adjustments, line adjustments and monitoring**

No biological communities likely to be regarded as significant sites were found during the present survey. Silt and clay substrate was recorded throughout the consent area and this



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substrate is traditionally considered acceptable for marine farming activities. Silt is the most common and widespread habitat type in sheltered shores of the Marlborough Sounds. The impact associated with mussel farming on soft substratum dominated by silt is low compared to farm impacts in shallow habitats dominated by rocky or biogenic communities (Forrest, 1995).

Drop camera and sidescan sonar identified no rocky substratum within or adjacent to the existing consent. Mussel shell debris from the marine farm was recorded at low levels on soft substrate.

GPS positioning revealed the offshore backbone was located just outside the consent on the day of survey. The inshore consent boundary was well distant (greater than 50 m distance) from low tide and rocky substrate was absent from the consent.

Based on results from the present study, no ecological issues exist that would require monitoring.

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*Specialists in research, survey and monitoring*

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## Appendix 1. Drop camera photographs

Photo 1 silt, fine sand, natural & mussel shell

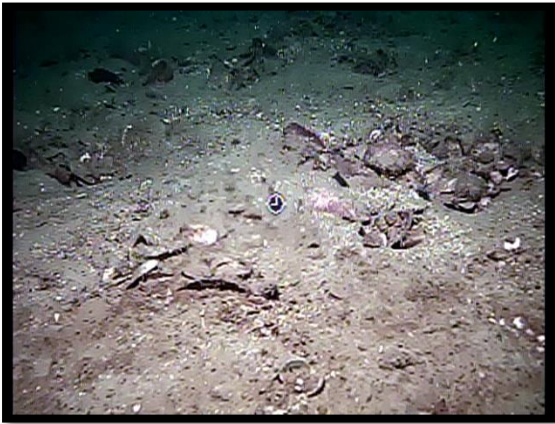


Photo 2 silt, fine sand, natural & mussel shell

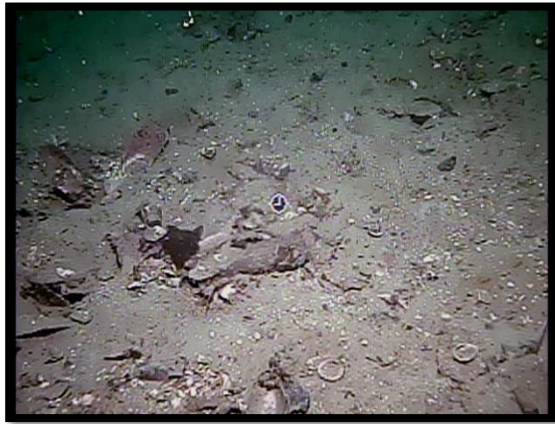


Photo 3 silt, fine sand, natural & mussel shell

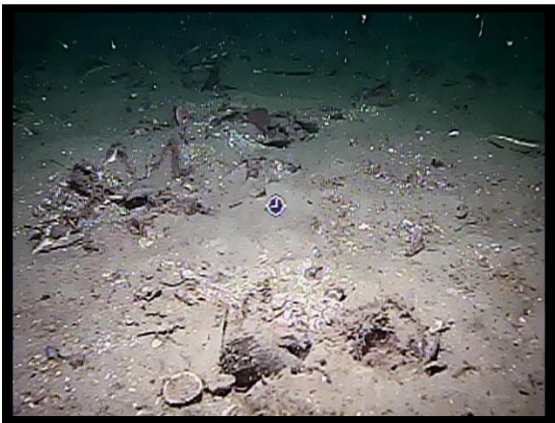


Photo 4 silt, fine sand, natural & mussel shell

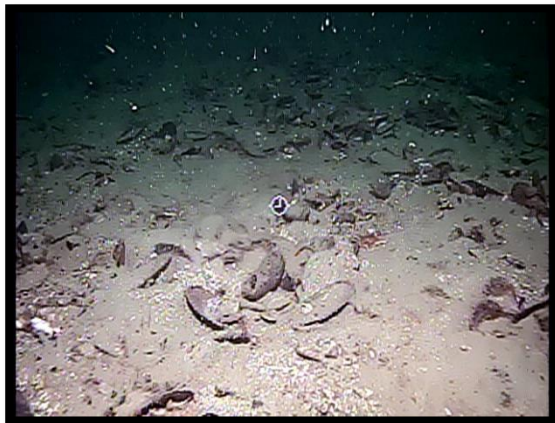


Photo 5 silt, fine sand, natural shell

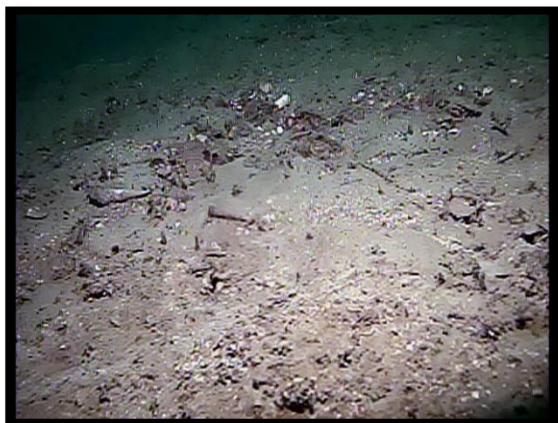


Photo 6 silt, clay

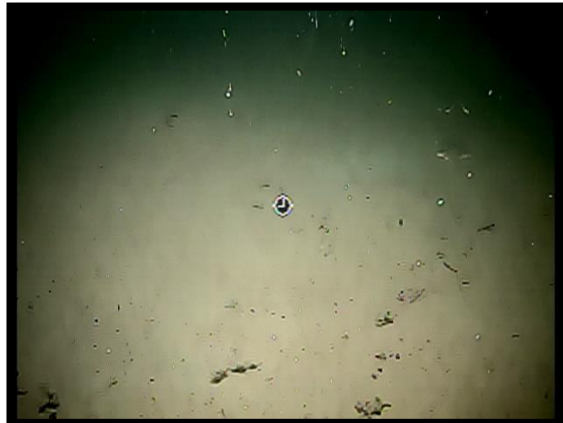


Photo 7 silt, clay, mussel shell



Photo 8 silt, clay, mussel shell

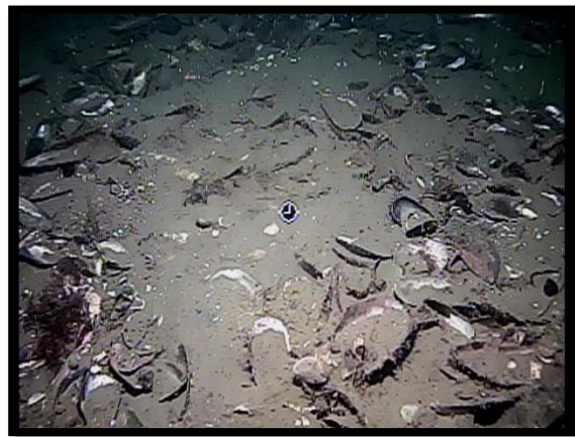


Photo 9 silt, clay, natural shell



Photo 10 silt, clay, mussel shell



Photo 11 silt, clay

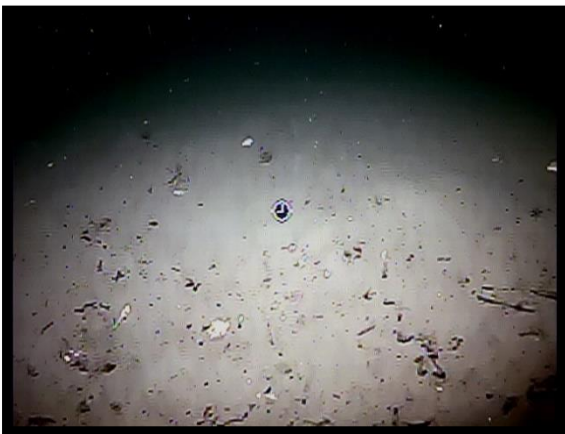


Photo 12 silt, clay

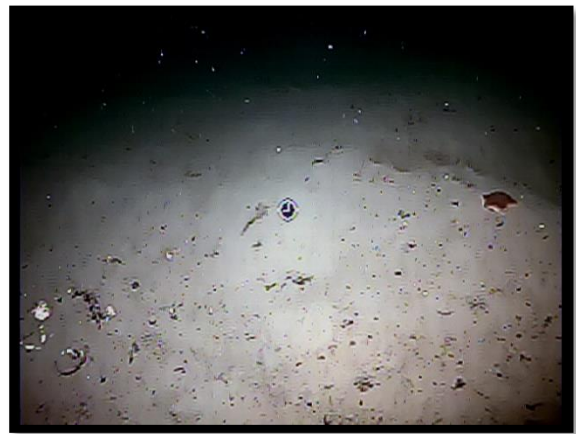




Photo 13 silt, clay, mussel shell



Photo 14 silt, clay, mussel shell



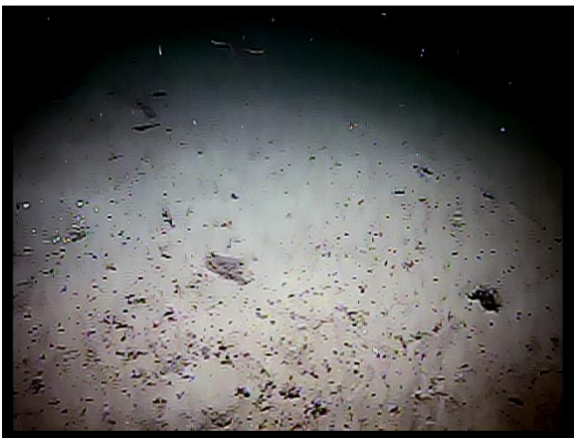
Photo 15 silt, clay, natural shell



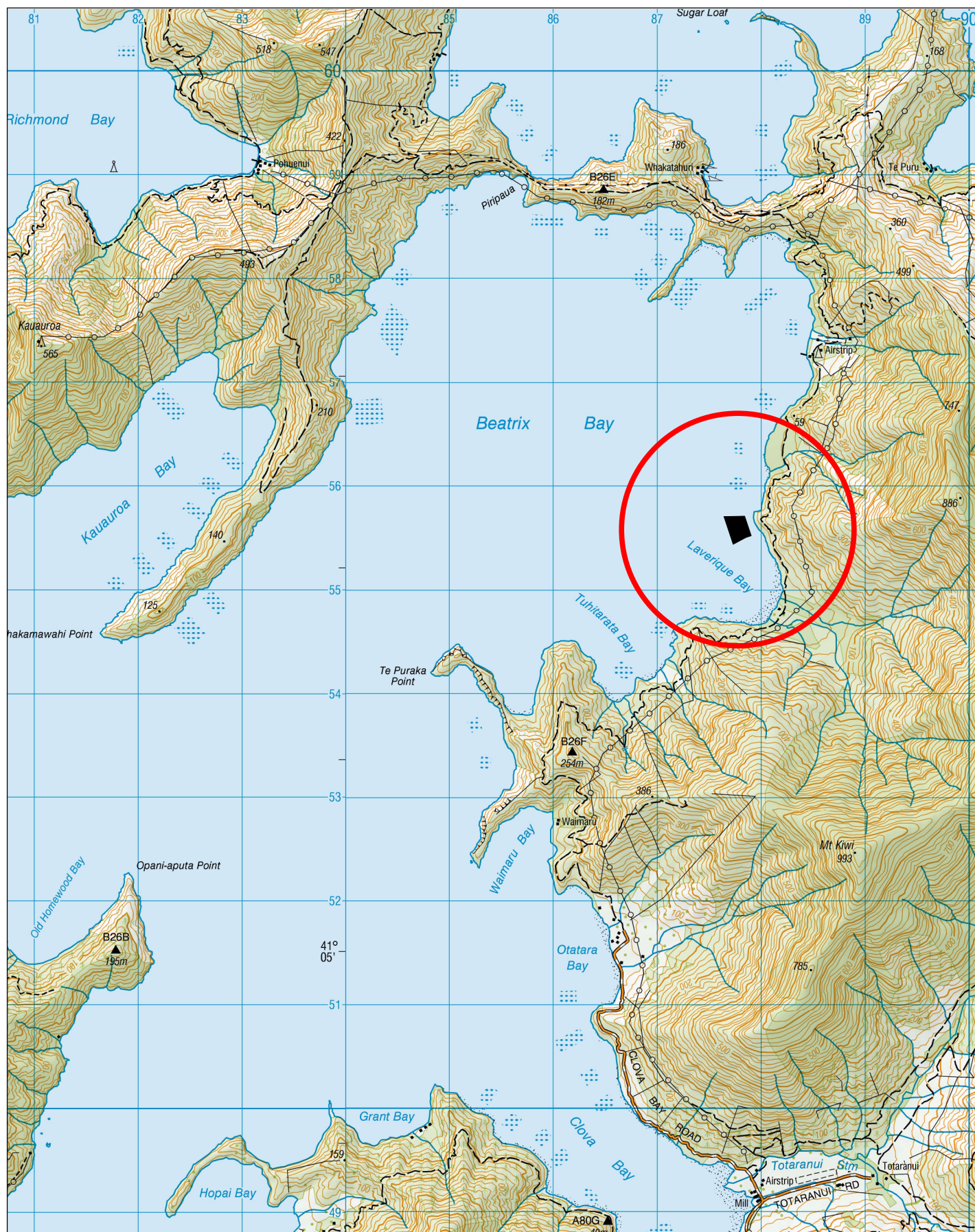
Photo 16 silt, clay, mussel shell



Photo 17 silt, clay







Topomap 50 Sheet: BP28

Base Topographical Data sourced from Land Information  
New Zealand data service ([www.data.linz.govt.nz](http://www.data.linz.govt.nz)) and Licenced  
for re-use under Creative Commons Attribution 3.0 New Zealand Licence.



Prepared: 7 July 2020

## Locality Map

Renewal of Marine Farm 8254  
Beatrix Bay, Pelorus Sound

Scale 1:50,000

500 0 500 1000 1500 2000 2500 3000 3500 Meters

N

MF\_2735

8252

8253

**Beatrix  
Bay**

Approx Low tide from  
Aerial photos

Low tide fix's  
Benthic Survey

Lot 11  
DP 8737  
CT MB5B/887  
AM Scholefield

Sounds  
Foreshore  
Reserve

8255

# SCHEDULE OF COORDINATES

DATUM: NZTM2000

Point	East	North
1	1687640.24	5455705.00
2	1687838.86	5455710.11
3	1687902.24	5455520.41
4	1687851.69	5455503.52
5	1687728.89	5455439.67
Centroid	1687776.94	5455595.81
Trig I	1686182.92	5453435.14

MARLBOROUGH DISTRICT COUNCIL

This site has not been surveyed

Cadastral Data from Land Information New Zealand Data



PALMS

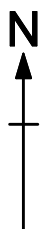
MF\_2735  
7 July 2020

## Proposed Coastal Permit Renewal of Marine Farm 8254 *Beatrix Bay, Pelorus Sound*

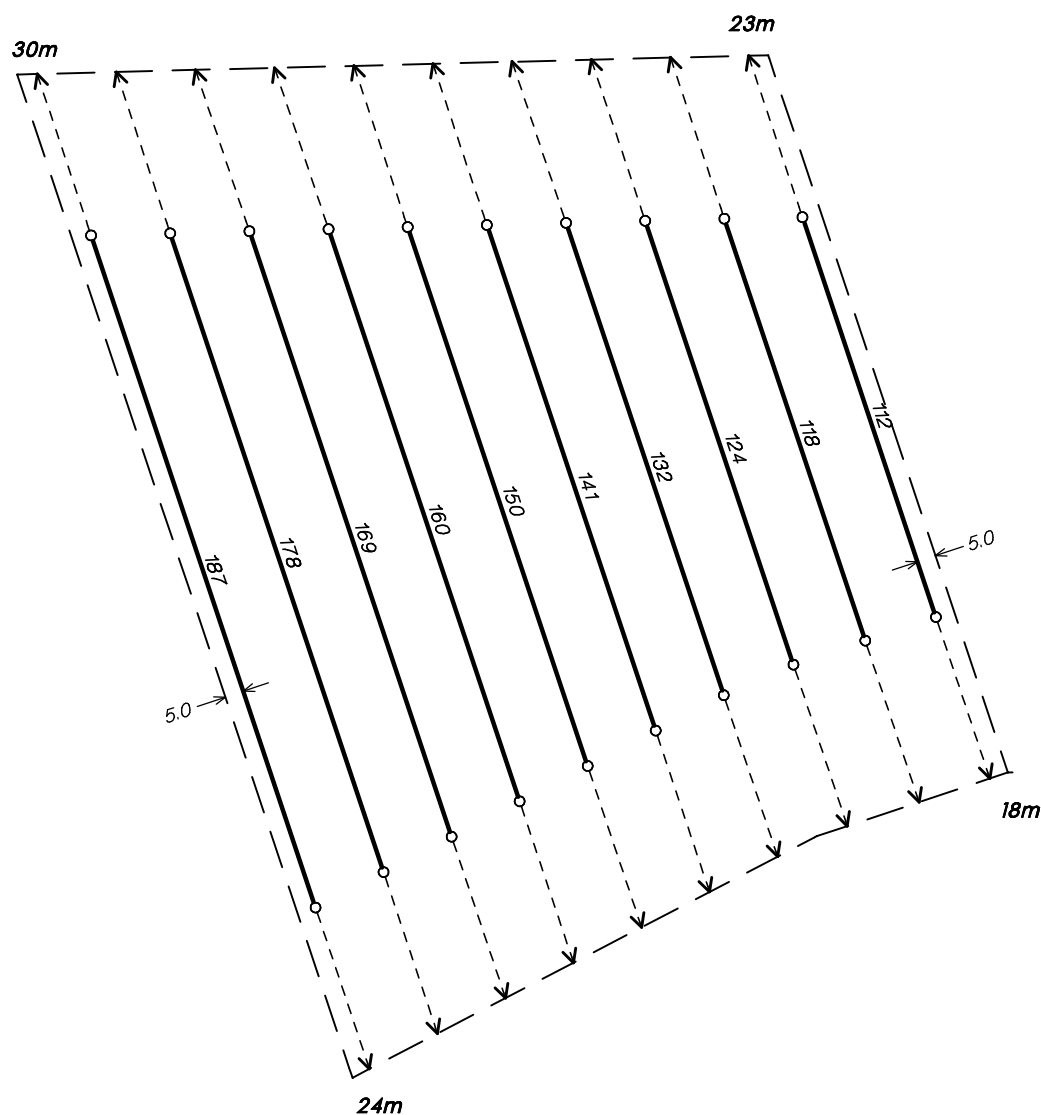
SCALE 1:5,000







**Beatrix  
Bay**



**REFERENCE**

- Orange Float
- < Anchors
- Anchor Warp
- Backbone

NOTE: Longline Spacing = 20m  
 Total Longlines = 10  
 Total Backbone Length = 1471m  
 Warp Surface Loss = 45m



**PALMS**

7 July 2020

# Structure Layout Renewal of Marine Farm 8254 Beatrix Bay, Pelorus Sound

SCALE 1:2000  
 50 0 50 100m

MF\_2735

To: Marlborough District Council  
PO Box 443  
Blenheim 7240



**MARLBOROUGH  
DISTRICT COUNCIL**

ISO 9001:2008  
Document Number:  
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 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 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)*

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

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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)*

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#### 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.)*

☐

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## 5. Signature

Signature \_\_\_\_\_ Date \_\_\_\_\_

Signature \_\_\_\_\_ Date \_\_\_\_\_

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## 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](mailto: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 an 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.

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## 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.