MARLBOROUGH
DISTRICT COUNCIL

RESOURCE CONSENT APPLICATION

U180922

Sanford Limited

Mataka Point, Marlborough Sounds

Submissions Close

5.00 pm Thursday 7 March 2019

Bea Gregory-5252

From: MDC
Sent: Wednesday, 31 October 2018 5:00 p.m.
To: RCInbox
Subject: FW: Electronic lodgement of resource consent applications - Sanford Ltd - 8058 & 8060
Attachments: 02 MDC cov ltr 31 10 18.pdf; 01 Master AEE Document for 8058 and 8060 Final.pdf

From: Sharon Aitchison [mailto:sharon.aitchison@mitchelldaysh.co.nz]
Sent: Wednesday, 31 October 2018 4:37 p.m.
To: MDC
Cc: Adrian Low
Subject: Electronic lodgement of resource consent applications - Sanford Ltd - 8058 & 8060

Attention: Planning Department

Please find attached, by way of electronic lodgement, resource consent applications with respect to the above, filed on behalf of Sanford Ltd.

We will arrange for the deposit of $1,960.00 to be paid to the Marlborough District Council bank account by electronic bank transfer, with the reference "Sanford – 8058 and 8060".

Please acknowledge receipt of this application in due course, and forward a GST tax invoice/receipt for the deposit fee to my e-mail address: (sharon.aitchison@mitchelldaysh.co.nz).

Please do not hesitate to contact Adrian Low (adrian.low@mitchelldaysh.co.nz) should you require any further information.

Sharon (on behalf of Adrian Low)

Sharon Aitchison
Administrator

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www.mitchelldaysh.co.nz

PO Box 489, Dunedin 9054
New Zealand
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Reference: 000619

31 October 2018

Marlborough District Council
15 Seymour Street
BLENHEIM 7240

Attention: Planning Department

Dear Sir/Madam

RE: RESOURCE CONSENT APPLICATION – SANFORD LTD – MATAKA POINT (8058) AND BLOWHOLE POINT (8060) MARINE FARMS

Please find attached resource consent applications with respect to the above, filed electronically today on behalf of Sanford Ltd.

We will arrange for the deposit of the filing fee of $1,960.00 to the Council's bank account, with reference "Sanford – 8058 and 8060", with respect to these applications. We would be grateful if you could acknowledge receipt of this payment in due course, and forward a copy of the GST tax receipt.

Please advise if the Council requires a hard copy of this application, and we will forward a copy.

Yours sincerely,

Adrian Low
Mitchell Daysh Ltd
adrian.low@mitchelldaysh.co.nz

Enc

SANFORD LIMITED

MATAKA POINT (8058) & BLOWHOLE POINT (8060) MARINE FARMS

Resource Consent Applications and Assessment of Environmental Effects

31 October 2018

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LIST OF APPENDICES

PART A

Resource Consent Application

FORM 9

APPLICATION FOR RESOURCE CONSENT

Sections 88 and 145, Resource Management Act 1991

To **Marlborough District Council**

1. **Sanford Limited, applies for the following type(s) of resource consent:**

   Coastal Permit to authorise conventional longline marine farming in the coastal marine area.

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

   Conventional longline marine farming of Greenshell™ mussels (perna canaliculus) at an existing 4.2-hectare marine farm known as marine farm site 8058, including spat collection.

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

   The activity will occur at an existing 4.2-hectare marine farm known as marine farm site 8058. It is located immediately south of Mataka Point in the outer Waitata Reach of Pelorus Sound and open to the Cook Strait. The bay itself is approximately 55.0 kilometres (by sea) from Havelock, south east of the Chetwode Islands.

   It is bounded by the following grid references (New Zealand Map Grid):

North	***East***
6030511.5	*2595626.3*
6030368.3	*2595670.9*
6030264..2	*2595336.7*
6030407.4	*2595292.1*

4. **The full name and address of each owner or occupier (other than the applicant) of the site to which the application relates are as follows:**

   The Crown

5. **The other activities that are part of the proposal to which the application relates are as follows:**

The harvesting of marine farm 8058 will be undertaken in accordance with permitted activity Rule 35.1 of the Marlborough Sounds Resource Management Plan.

6. **No additional resource consents are needed for the proposal to which this application relates**.

7. **I attach an assessment of the proposed activity's effect on the environment that—**

   (a) includes the information required by clause 6 of Schedule 4 of the Resource Management Act 1991; and

   (b) addresses the matters specified in clause 7 of Schedule 4 of the Resource Management Act 1991; and

   (c) includes such detail as corresponds with the scale and significance of the effects that the activity may have on the environment.

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

9. **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 that Act.**

10. **The value of the investment of the existing consent holder is $573,000.00**.

11. **I attach all information required to be included in this application by the Marlborough Sounds Resource Management Plan, the, the Resource Management Act 1991, or any regulations made under that Act:**

Date: 31 October 2018

Signature: 

Adrian Low, Mitchell Daysh Limited, on behalf of Sanford Limited.

Address for Service: Sanford Limited
c/- Mitchell Daysh Limited
PO Box 489
Dunedin 9054

Contact person: Adrian Low

Telephone: 021 456 696
Email: adrian.low@mitchelldaysh.co.nz

B

PART B

Assessment of Environmental Effects

1. INTRODUCTION

1.1 BACKGROUND

Sanford Limited ("**Sanford**") operates two marine farms between Mataka Point and Blowhole Point near the entrance to Pelorus Sound known as:

- Mataka Point South (8058) – a 4.2 ha farm authorised by MPE 893 and U950399; and
- Blowhole Point North (8060) – a 3.25 ha farm authorised by MPE400 and U950398;

Copies of the existing resource consents which apply to each farm are included as Appendices 1 and 2 to this AEE. The existing coastal permits which authorise these farms expire on 3 May 2019 (8058) and 2 May 2019 (8060) respectively, and this Assessment of Environmental Effects ("**AEE"**) has been prepared in support of resource consent applications under the Resource Management Act 1991 ("**RMA"**) to the Marlborough District Council ("**Council"**) to 're-consent' these activities.

The locations of marine farms 8058 and 8060 is shown on Figure 1 below.

Figure 1 also shows marine farm 8059, a 5.225 ha marine farm owned and operated by Talleys Group Limited which sits between farms 8058 and 8060. Resource consent was recently granted to expand 8059 to its current size, and it is authorised to operate in this location until 1 August 2033.

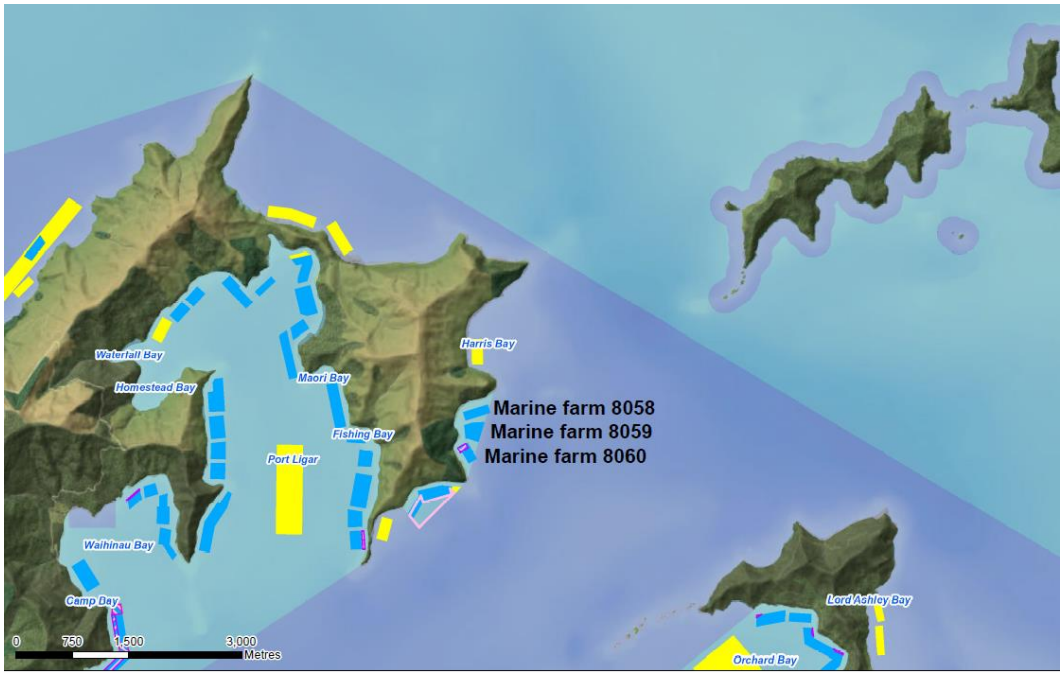


Figure 1: Location of the Blowhole Point North and Mataka Point Farms[1].

[1] Figure sourced from Marlborough District Council Smartmaps.

Sanford seeks a consent term for these replacement consents which aligns with the expiry date of adjacent marine farm 8059, as this will allow for the effects of all three farms in this location to be considered in an integrated manner in 2033.

Sanford commissioned Davidson Environmental to complete a comprehensive benthic survey and assessment of the biological effects of marine farms 8058 and 8060 to support these resource consent applications. The Davidson Environmental reports are included as Appendices 3 and 4 to this AEE.

1.2 THE APPLICANT – SANFORD LIMITED

Sanford is a long-standing participant in the New Zealand seafood industry. Its operations include catching / farming, contracting, farm services (floats making), processing, packaging and exporting seafood products. Sanford has well established markets domestically and internationally and strives to develop and promote New Zealand seafood products at every opportunity.

Sanford has substantial interest in marine farming and the associated processing of:

- Greenshell™ mussels in Tasman Bay, Golden Bay, Marlborough Sounds, Canterbury, Stewart Island, Coromandel, and Auckland; and
- Salmon in Big Glory Bay (Stewart Island).

Sanford has a Greenshell mussel selective breeding hatchery in Nelson (SpatNZ), two mussel processing plants (Havelock and Tauranga), and a mussel biotechnical company (ENZAQ) located in Blenheim.

Sanford marine farms are geographically spread across New Zealand in order to achieve a consistent supply (volume, quantity and nutraceutical properties) to run the three plants year round on full time, permanent staff. In the financial year 2017/18 there were 314 FTE paid working for Sanford across the Marlborough region paid some $19 million in wages and salaries.

In 2017 Sanford was awarded the Cawthron Marlborough Environment Award – Marine Farming for its contribution to the region.

Sanford as a company strives to be a good neighbour and is actively involved in a number of local community initiatives including Kiwi Can, wasp collection, rural fire and beach clean-ups.

1.3 REPORT STRUCTURE

This AEE is set out in 8 sections as follows:

Section 1: Is this introduction.

Section 2: Is a description of marine farms 8058 and 8060.

Section 3: Describes the existing environment.

Section 4: Identifies the consent requirements for the continued operation of marine farms 8058 and 8060, and the controlled activity status regime which applies, meaning the Council must grant the consents sought, but may impose conditions on various matters over which it has reserved control.

Section 5: Assesses the matters over which the Council has reserved control.

Section 6: Is an assessment of the statutory matters which apply to these applications under the RMA, including the objectives and policies of the Marlborough Sounds Resource Management Plan ("**MSRMP"**) and Part 2 of the RMA.

Section 7: Sets out why Sanford considers these applications should be processed on a non-notified basis.

Section 8: Is a concluding comment.

2. DESCRIPTION OF THE MARINE FARMS

2.1 THE SITES & FARM LAYOUTS

2.1.1 Mataka Point - 8058

The existing layout of marine farm 8058 is described in the existing resource consent for that farm. It is included as Appendix 1 to this AEE.

2.1.2 Blowhole Point – 8060

The existing layout of marine farm 8060 is described in the existing resource consent for that farm. It is included as Appendix 2 to this AEE.

2.2 NAVIGATIONAL MARKINGS

The approved Navigational Safety System Plans for marine farms 8058 and 8060 are set out in the existing resource consent which apply to each farm. They are included as Appendices 1 and 2 to this AEE.

2.3 MARINE FARM OPERATIONS

All mussel farming and spat catching operations at the marine farms will be undertaken in general accordance with the mussel farming code of practice document titled "*Greenshell™ Mussel Industry Environmental Code of Practice*", Revised June 2007, and any subsequent update to that document.

An indicative description of the various farming activities is set out below.

Mussel Farming

The key activities undertaken on each farm will be as follows:

- **Attachment of spat** - Juvenile mussels, known as spat, are grown in sheltered nursery farms. Once the spat has grown to a sufficient size it is transferred to grower farms and seeded onto grower ropes. A cotton sleeve is used to attach spat to the ropes. This biodegrades over time, once the organisms have attached themselves to the lines.
- **Spat growth to seed mussel stage** - It takes six to 12 months for spat to grow to the seed mussel stage.
- **Attachment of seed mussels to growing rope** - The seed mussels are removed and re-attached to a growing rope, again using a cotton biodegradable sleeve.
- **Growth Phase** - The mussels are left to grow for a 12 to 18-month period in order to reach a harvestable size of typically 90 mm – 120 mm. Mussel growth depends on the availability of an adequate supply of phytoplankton, (a short-lived animal at the bottom

of the food chain). Common farming practices produce a totally organic product in the form of live mussels.

- **Harvesting** - Harvesting is carried out using specialised machinery which lifts the longline and strips the mussels, cleans them and places them into storage sacks or vessels ready for processing.

The site may also be used for intermediate seed holding. This would be seeded onto the ropes at 20-30 mm and on grown to 40-50 mm. The size of the freshly seeded rope at the intermediate seed holding stage would be approximately 40 mm (16 mm diameter rope, with seed and stocking attached).

Spat Catching

The spat catching operation will be undertaken as per other sites in Marlborough Sounds. It will require long lines – including anchors, warps, bridles, and backbones, with orange end-floats and sufficient intermediate floats to keep the backbone line suspended at the appropriate level.

Sanford's intention is to remove the spat lines from the water (complete with spat) as soon as it is determined, either by visual checking or by the results of microscopic inspection, that there is a significant spatfall on the dropper lines.

3. THE EXISTING ENVIRONMENT

3.1 ENVIRONMENTAL SETTING

Marine farms 8058 and 8060 are in a small bay between Mataka Point and Blow Hole Point in the outer Waitata Reach of Pelorus Sound and are open to the Cook Strait. The bay itself is approximately 55.0 kilometres (by sea) from Havelock, south east of the Chetwode Islands. The Waitata Reach is some 15 km long and contains a relatively deep channel (50 – 60m) with steep sloping edges. The reach is swept by regular and often strong tidal currents on both incoming and outgoing tides.

3.2 BIOLOGICAL ENVIRONMENT

A detailed description of the biological environment is contained in the attached Davidson Environmental reports (see Appendices 3 and 4) including a description of:

- The benthic environment;
- Significant biological sites;
- The fishery;
- Marine mammals; and
- King shags and other seabirds;

3.3 LANDSCAPE AND NATURAL CHARACTER VALUES

The coastline of this area has been extensively modified by historical marine farming activities, starting as early as 1995. There are three existing marine farms (including the two application sites) between Mataka Point and Blow Hole Point. However, existing marine farms form an almost continuous ribbon along the coastline from Paparoa to Yellow Cliffs in Waitata Bay.

The land immediately adjacent to marine farms is principally in private ownership and comprises a mixture of wilding pines, scrub and regenerating native vegetation, commercial forestry and pasture.

The Proposed Marlborough Environment Plan ("**Proposed Plan**") identifies the bay in which the Marine Farms are located as containing 'high' but not 'very high' or 'outstanding' natural character.

The marine farm sites are not attributed any particular landscape value in the Operative Plan (see Figure 2). The Proposed Plan identifies marine farm 8058 and 8060 as being within an Outstanding Natural Feature or Landscape ("**ONFL**') alongside much of the outer Marlborough Sounds, however this classification has yet to be confirmed through the Schedule 1 process, and Sanford has made a submission challenging its coverage of 8058 and 8060.

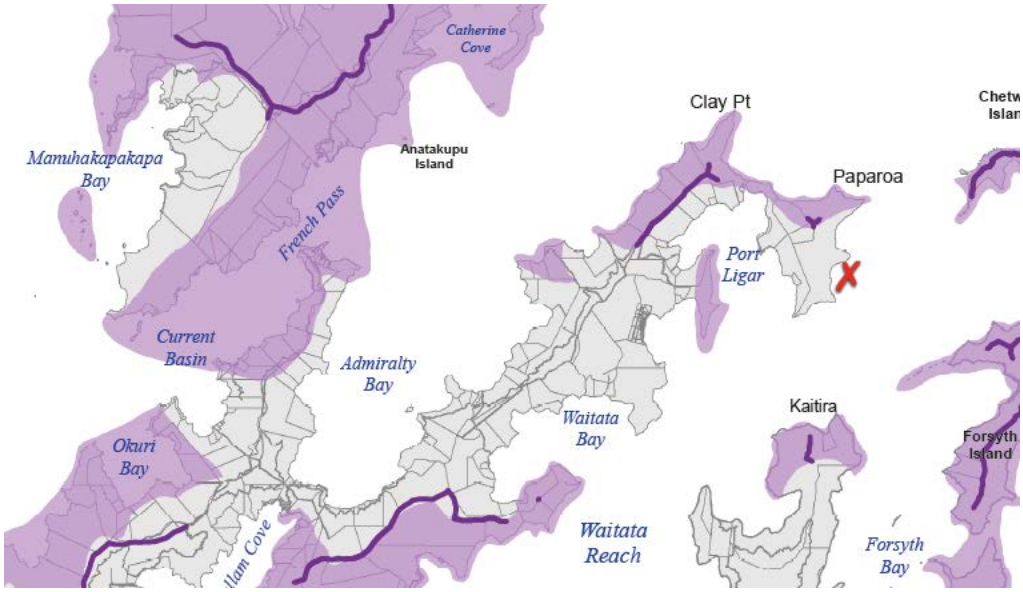


Figure 2: **Operative Plan landscape map (ONFL shown in purple with bay containing the Marine Farms marked with red cross).**

Much of each farm is in Coastal Marine Area One. However, the easterly corner of each farm appears to be in Coastal Marine Area Two (see the dark blue shaded area in Figure 3).

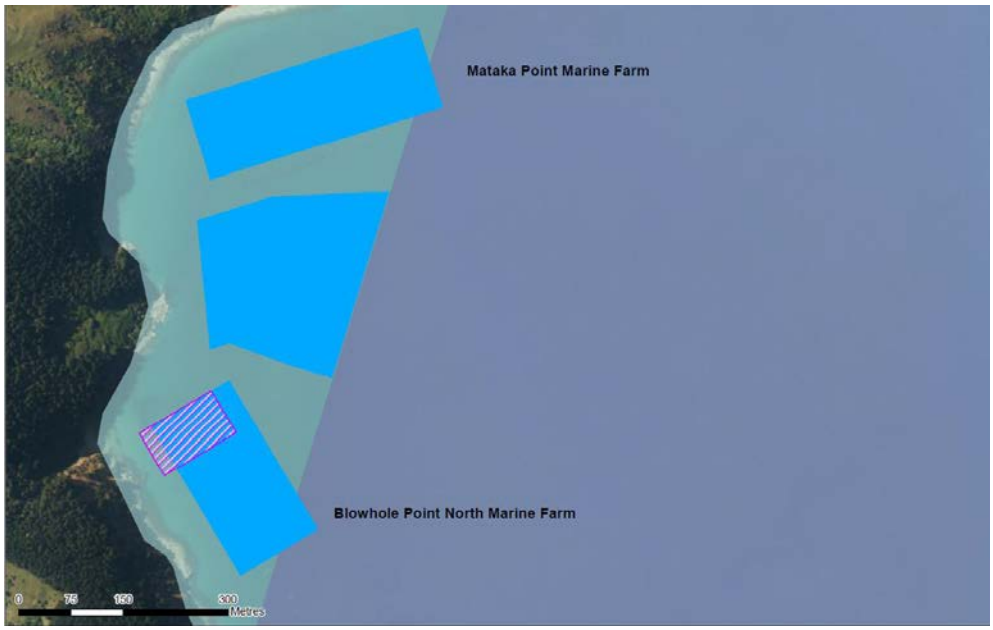


Figure 3: **Mataka Point and Blowhole Point North Marine Farm's relative to the Coastal Marine Area One and Two boundary (source: Marlborough District Council Smart Maps).**

4. RESOURCE CONSENT REQUIREMENTS

4.1 INTRODUCTION

This section describes the consenting history for marine farm sites 8058 and 8060 and the resource consents required to continue marine farming at those sites.

4.2 CONSENT HISTORY

The consenting history for these sites can be summarised as follows:

- On 12 May 1995 applications were made to the Council to undertake surface long line culture and spat catching of Greenshell mussel *Perna canaliculus* at the Blowhole Point North and Mataka Point sites.
- In May 1999 resource consents U950398 (Blowhole Point North) and U950399 (Mataka Point South) were granted by a consent order from the Environment Court.
- In July 2007 the associated marine farming permits MPE400 (Blowhole Point North) and MPE893 (Mataka Point South) were issued under the Fisheries Act 1983.
- In August 2007 a review of the conditions of U950398 and U950399 was initiated by the Council pursuant to s128 of the RMA, and the updated consents were issued on 18 September 2007.
- Both farms have been established and operate in accordance with the resource consent conditions.

4.3 MARINE FARMING

The MSRMP includes a controlled activity Rule 35.2.5 that applies to marine farms authorised by a current Coastal Permit or Marine Farm Lease or Licence provided that the respective application was made prior to 1 August 1996.

The current Coastal Permits which authorise the Blowhole Point North and Mataka Point South Marine Farms were applied for in May 1995 and are therefore subject to Rule 35.2.5.

The Council must grant consent to activities which meet the terms and conditions of controlled activity Rule 35.2.5 but may impose conditions in relation to matters over which it has reserved control.

Rule 35.2.5 and its standards and terms state:

> ***35.2.5 Marine Farms Within Specifically Identified Areas and Beyond 50 metres From MLWM and Listed in Appendix D***
>
> *Marine farms authorised by a current Coastal Permit (pursuant to the Resource Management Act 1991) or current Marine Farm Lease or Licence (pursuant to the Marine Farming Act 1971) applied for prior to 1 August 1996; or authorised by a new Coastal Permit, the application for which constituted a renewal of a Coastal Permit, Marine Farm*

Lease or Licence specified above which was current at the date of the application being made for the new consent, are Controlled Activities provided that the activity conforms to the following standards, and provided further this rule shall not apply to the marine farms shown on Appendix D2. NB: 'Current' means a Coastal Permit, Marine Farm Licence or Marine Farm Lease in force and operative in accordance with its terms as at the date of application.

35.2.5.1 Standards

a) The structures and anchoring systems established on the marine farm shall be those authorised by the current Coastal Permit, Marine Farm Licence or Marine Farm Lease applied for prior to 1 August 1996, except that in the case of marine farms listed in Appendix D, as controlled activities, this standard shall not apply to the replacement of surface structures with sub-surface structures.

b) The marine farm shall occupy only that area and only for the purposes and for the species authorised by the current Coastal Permit, Marine Farm Licence or Marine Farm Lease applied for prior to 1 August 1996.

c) The species to be farmed on any marine farm shall be only those authorised by the current Coastal Permit, Marine Farm Licence or Marine Farm Lease applied for prior to 1 August 1996.

d) The lighting system utilised on the marine farm shall at all times comply with the conditions of the current Coastal Permit, Marine Farm Licence or Marine Farm Lease applied for prior to 1 August 1996, or in the absence of any such conditions the beaconage and buoyage standard required by 'The system of Buoyage and Beaconage for New Zealand, Ministry of Transport: Nov 1991', and 'Maritime Safety Authority Marine Farm Lighting Marking and Structures Criteria 2' and standards or substitutions in replace thereof.

35.2.5.2 Terms

All resource consents shall be subject to the following conditions:

a) The period of occupancy of the coastal marine area authorised by the Coastal Permit shall not exceed 20 years;

b) Where not already provided, the consent holder shall lodged with the Council a survey plan fixing the location of the marine farm prior to exercise of the consent;

- *In accordance with the provisions of sections 128 and 129 of the Resource Management Act (or any provision in substitution therefore) the Council may on any anniversary of the grant of consent to any marine farm, review the conditions of consent over which it has reserved control, to deal with any adverse effect on the environment which may arise from the exercise of the consent and which cannot be adequately avoided, remedied or mitigated by any term or condition incorporated*

within the consent. This condition is imposed pursuant to the provisions of section 128(1)(a)(iii) of the Act.

The continued operation of marine farms 8058 and 8060 in the manner proposed by Sanford in these applications satisfy these standards and terms for the reasons set out in Table 1 below.

Table 1: Assessment of the Blowhole Point North and Mataka Point marine farms against the standards and terms of controlled activity Rule 35.2.5.

Standard / Term	Analysis - Blowhole Point North	Analysis - Mataka Point South
35.2.5.1 Standards		
a) The structures and anchoring systems established on the marine farm shall be those authorised by the current Coastal Permit, Marine Farm Licence or Marine Farm Lease applied for prior to 1 August 1996, except that in the case of marine farms listed in Appendix D, as controlled activities, this standard shall not apply to the replacement of surface structures with sub-surface structures.	The existing structures and anchoring system are established in accordance with the conditions of U950398, and Sanford proposes those existing conditions be retained.	The existing structures and anchoring system are established in accordance with the conditions of U950399, and Sanford proposes those existing conditions be retained.
b) The marine farm shall occupy only that area and only for the purposes and for the species authorised by the current Coastal Permit, Marine Farm Licence or Marine Farm Lease applied for prior to 1 August 1996.	The marine farm will occupy only that area authorised by U950398. No changes are proposed. However, the current layout of longlines within the authorised area may be refined to make most efficient use of the site No changes are proposed to the purpose of the marine farming undertaken on site.	The marine farm will occupy only that area authorised by U950399. No changes are proposed. However, the current layout of longlines within the authorised area may be refined to make most efficient use of the site. No changes are proposed to the purpose of the marine farming undertaken on site.
c) The species to be farmed on any marine farm shall be only those authorised by the current Coastal Permit,	As above. Only greenshell mussels will be farmed.	As above. Only greenshell mussels will be farmed.

Standard / Term	Analysis - Blowhole Point North	Analysis - Mataka Point South
Marine Farm Licence or Marine Farm Lease applied for prior to 1 August 1996.		
d) The lighting system utilised on the marine farm shall at all times comply with the conditions of the current Coastal Permit, Marine Farm Licence or Marine Farm Lease applied for prior to 1 August 1996, or in the absence of any such conditions the beaconage and buoyage standard required by '*The system of Buoyage and Beaconage for New Zealand, Ministry of Transport: Nov 1991*', and '*Maritime Safety Authority Marine Farm Lighting Marking and Structures Criteria 2*' and standards or substitutions in replace thereof.	The lighting condition and approved lighting plan for U950398 was amended during Council's 2007 s128 review of conditions. The lighting system used at the Blowhole Point North marine farm will continue to comply with those conditions.	The lighting condition and approved lighting plan for U950399 was amended during Council's 2007 s128 review of conditions. The lighting system used at the Mataka Point South marine farm will continue to comply with those conditions
35.2.5.2 Terms		
All resource consents shall be subject to the following conditions:		
a) The period of occupancy of the coastal marine area authorised by the Coastal Permit shall not exceed 20 years;	Sanford seeks a term expiring 1 August 2033. This does not exceed 20 years.	Sanford seeks a term expiring 1 August 2033. This does not exceed 20 years.
b) Where not already provided, the consent holder shall lodge with the Council a survey plan fixing the location of the marine farm prior to exercise of the consent;	Sanford proposes this condition be included on its resource consent. It also notes a survey plan for this marine farm has	Sanford proposes this condition be included on its resource consent. It also notes a survey plan for this marine farm has

Standard / Term	Analysis - Blowhole Point North	Analysis - Mataka Point South
	already been lodged with Council.	already been lodged with Council.
• In accordance with the provisions of sections 128 and 129 of the Resource Management Act (or any provision in substitution therefore) the Council may on any anniversary of the grant of consent to any marine farm, review the conditions of consent over which it has reserved control, to deal with any adverse effect on the environment which may arise from the exercise of the consent and which cannot be adequately avoided, remedied or mitigated by any term or condition incorporated within the consent. This condition is imposed pursuant to the provisions of section 128(1)(a)(iii) of the Act.	Sanford proposes this condition be included on its resource consent.	Sanford proposes this condition be included on its resource consent.

4.4 HARVESTING

As set out in Section 4.2 each site is authorised by a current Coastal Permit applied for prior to 1 August 1996. Therefore, the harvesting of marine farming produce from those farms will be a permitted activity under Rule 35.1 which states:

> *The following activities shall be permitted without a resource consent where together with any relevant definition they conform to the conditions for Permitted Activities as well as the general rules:*
>
> *...*
>
> - *Harvesting of marine farming produce from marine farms previously authorised by a current Coastal Permit (pursuant to the Resource Management Act 1991) or current Marine Farm Lease or Licence (pursuant to the Marine Farming Act 1971) applied for prior to 1 August 1996, including the taking and discharging of coastal water and discharge of biodegradable and organic waste matter.*

The harvesting will comply with the relevant conditions for permitted activities in Rule 35.1.1, noting the following:

- Adequate provision will be made to ensure that harvesting activities do not compromise public safety (Rule 35.1.1.2).
- Other than lighting required for navigational purposes, all exterior lighting associated with harvesting activities at the marine farms will be directed away from adjacent activities, legal roads and navigational channels, so as to avoid the spill of light or glare that creates any of the following:
  - Detriment to the amenity of residential or other users;
  - A hazard to traffic safety on streets outside the coastal marine area; or
  - A hazard to navigation in the coastal marine area (Rule 35.1.1.3).
- The noise limits specified in Rule 35.1.1.4 do not apply to noise ordinarily generated by commercial fishing activities including marine farm servicing and harvesting ships in Coastal Marine Areas One, Two and Three.

5. MATTERS OF CONTROL

5.1 INTRODUCTION

The following section provides an assessment against the matters over which the Council has reserved control under Rule 35.2.5 of the MSRMP. They include:

- The duration of the consent (subject to the maximum 20-year period specified in Rule 35.2.5.2);
- Information and monitoring requirements;
- The provision of warning devices and signs;
- The layout and positioning of the marine farm structures to ensure public access (including recreational and forestry access) through the area and the preservation of navigational safety both within the marine farms and within the vicinity of the marine farms;
- The extent and nature of disturbance to the foreshore and seabed;
- Administrative charges payable;
- The adverse effects of any marine farming related structures on navigation or on visual amenities;
- The adverse ecological effects of the activities;
- Adverse effects of marine farming activities and structures previously addressed by way of conditions in earlier Coastal Permits, Marine Farm Licences and Leases pertaining to any particular marine farm site.

Each of these is addressed below.

5.2 THE DURATION OF THE CONSENT

The Blowhole Point and Mataka Point farms are bisected by marine farm 8059 which was recently granted consent to undertake marine farming of greenshell mussels until 1 August 2033.

This application seeks an expiry date of 1 August 2033 which aligns with marine farm 8059 such that the effects of all three farms can be considered in an integrated manner at that time.

5.3 INFORMATION AND MONITORING REQUIREMENTS

No effects have been identified which suggest different information and monitoring requirements to those which are contained on the existing consents for Mataka Point and Blowhole Point are needed.

In this regard, attention is drawn to the recommendations of the Davidson Environmental report for each farm, which note the habitats and species associated with the sites are typical of and outer Sounds Bays and as such no monitoring is considered necessary.

5.4 THE PROVISION OF WARNING DEVICES AND SIGNS

No effects have been identified which suggest any additional warning devices or signs are required at marine farm site 8058 and 8060.

In turn, Sanford proposes that the existing conditions contained on the consents for farms 8058 and 8060 be retained.

5.5 THE LAYOUT AND POSITIONING OF THE MARINE FARM STRUCTURES TO ENSURE PUBLIC ACCESS AND THE PRESERVATION OF NAVIGATIONAL SAFETY

There have been no identified issues with the current layout of farms8058 or 8060 in respect of public access or navigational safety. Therefore, there is no reason the layout and positioning of the marine farm structures need be changed for these reasons.

5.6 THE EXTENT AND NATURE OF DISTURBANCE TO THE FORESHORE AND SEABED

The Davidson Environmental reports for farms 8058 and 8060 (see Appendices 1 and 2 to this AEE) identified no matters of concern in respect of how the marine farms affect the foreshore or seabed. Therefore, no additional restrictions on the current operation of those marine farms need to be imposed.

However, the Davison Report for Blowhole Point has identified that the exclusion area for marine farm structures at farm 8060 is overly conservative following more detailed analysis of the benthic habitat using new sonar technology.

The Davidson Report has recommended a change to the exclusion area in that respect. This is shown in Figure 4. Further the Davidson Report has suggested that the exclusion area be restricted to production lines only, because warps and anchors have little or no impact on the habitats present in this area.

Figure 4: Proposed new exclusion zone and existing location of marine farm 8060.

Note: Consent (grey), surface structures (pink) and suggested production exclusion areas (red hatched). Existing exclusion zone shown with red line. Drop camera stations with soft substratum are open triangles, wile closed circles are rocky substrate.

5.7 ADMINISTRATIVE CHARGES

Sanford accepts that Council's standard administrative charging policy should apply to these two marine farms.

5.8 THE ADVERSE EFFECTS OF ANY MARINE FARMING RELATED STRUCTURES ON NAVIGATION OR ON VISUAL AMENITY

There have been no identified issues with the current layout of farms 8058 or 8060 in respect of navigational safety. Therefore, there is no reason why the layout and positioning of the marine farm structures needs to be changed.

With respect to visual amenity, the existing layout, design and colour of the marine farm structures at farms 8058 and 8060 are typical of marine farms in Pelorus Sound, and similar to those used at marine farm 8059 which has resource consent that remains in force until 2033. There is no visual amenity reason why an alternative design should be required at farms 8058 or 8060.

5.9 THE ADVERSE ECOLOGICAL EFFECTS OF THE ACTIVITY

The Davidson Environmental reports for 8058 and 8060 (see Appendices 1 and 2 to this AEE) identified no matters of concern regarding ecological values. Therefore, no additional conditions to address these matters are required.

5.10 OTHER PREVIOUSLY ADDRESSED ADVERSE EFFECTS

No other previously addressed adverse effects have been identified and, hence, no additional conditions are required.

6. STATUTORY MATTERS

6.1 MARLBOROUGH SOUNDS RESOURCE MANAGEMENT PLAN

Marine farming applications such as these are subject to the MSRMP. Its provisions are addressed below.

Whilst the New Zealand Coastal Policy Statement 2010 ("**NZCPS"**) and Marlborough Regional Policy Statement ("**RPS"**) contain provisions which are also relevant to this type of activity, they are given effect to by the MSRMP, which contains complete coverage of the key issues at hand.

Also, the Proposed Marlborough Environment Plan ("**Proposed Plan"**) should be attributed limited weight given that marine farming provisions have been deliberately excluded from it.

The MSRMP provisions that are relevant to these applications are contained in:

- Chapter 2 Natural Character;
- Chapter 4 Habitats of Indigenous Fauna; and
- Chapter 9 Coastal Marine.

Each is addressed below.

6.1.1 Chapter 2 Natural Character

The objectives and policies most relevant to marine farming at sites 8058 and 8060 state:

Objective 1

The preservation of the natural character of the coastal environment, wetlands, lakes and rivers and their margins and the protection of them from inappropriate subdivision, use and development.

Policy 1.2

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.

Policy 1.3

To consider the effects on those qualities, elements and features which contribute to natural character, including:

a) Coastal and freshwater landforms;

b) Indigenous flora and fauna, and their habitats;

c) Water and water quality;

d) Scenic or landscape values;

e) Cultural heritage values, including historic places, sites of early settlement and sites of significance to iwi; and

f) Habitat of trout.

Policy 1.5

Promote an integrated approach to the preservation of the natural character of the coastal and freshwater environments of the Marlborough Sounds.

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.

Granting renewal consents for farms 8058 and 8060 on the terms sought by Sanford would sit comfortably with these provisions noting that:

- The marine farms are well established and their effects on natural character are existing and known;
- Farms 8058 and 8060 are in a bay which is already modified by marine farming and the adjacent coastline is a mixture of wilding pines, scrub and regenerating native vegetation, commercial forestry and pasture. In turn it has compromised natural character;
- No changes are proposed to the activities at farms 8058 and 8060 so the effects of those activities on natural character will not change; and
- In the context of Policy 1.6, marine farm activities are not permanent alterations to the CMA.

6.1.2 Chapter 4 Habitats of Indigenous Fauna

Chapter 4 of the MSRMP addresses 'Indigenous Vegetation and Habitats of Indigenous Fauna'.

Objective 4.3.1 relates to the protection of significant indigenous flora and fauna and their habitats from the adverse effects of use and development. This objective and related policies are relevant to the consideration of the King Shag and its habitat areas - particularly Policy 4.3.1 .2 which refers to avoiding, remedying or mitigating the adverse effects of water use on areas of significant ecological value.

The renewal of the resource consents for farms 8058 and 8060 sits comfortably with these provisions, noting the conclusion of the Davidson Reports that any effects of the marine farms on King Shag will not change as there is no proposal to change the layout or size of the farms.

6.1.3 Chapter 9 Coastal Marine Area

Chapter 9 contains provisions which address:

- The occupation of coastal space; and
- Effects on the foreshore and seabed.

Each is addressed below.

Occupation of Space

The provisions which address the occupation of coastal space state:

> ***Objective 1***
> *The accommodation of appropriate activities in the coastal marine area whilst avoiding, remedying or mitigating the adverse effects of those activities.*
>
> ***Policy 1.1***
> *Avoid, remedy and mitigate the adverse effects of use and development of resources in the coastal marine area on any of the following:*
>
> *a) Conservation and ecological values;*
>
> *b) Cultural and iwi values;*
>
> *c) Heritage and amenity values;*
>
> *d) Landscape, seascape and aesthetic values;*
>
> *e) Marine habitats and sustainability;*
>
> *f) Natural character of the coastal environment;*
>
> *g) Navigational safety;*
>
> *h) Other activities, including those on land;*
>
> *i) Public access to and along the coast;*
>
> *j) Public health and safety;*
>
> *k) Recreation values; and*
>
> *l) Water quality.*
>
> ***Policy 1.2***
>
> *Adverse effects of subdivision, use or development in the coastal environment should as far as practicable be avoided. Where complete avoidance is not practicable, the adverse effects should be mitigated and provision made for remedying those effects to the extent practicable.*
>
> ***Policy 1.14***
>
> *To enable a range of activities in appropriate places in the waters of the Sounds including marine farming, tourism and recreation and cultural uses.*
>
> ***Policy 1.15***
>
> *Enable the renewal as controlled activities of marine farms authorised by applications made prior to 1 August 1996 as controlled activities, apart from exceptions in Appendix D2 in the Plan.*

The continued operation of coastal space by farms 8058 and 8060 sits comfortably with these provisions, noting that:

- These provisions seek to accommodate appropriate activities in the CMA, including marine farming;

- These provisions explicitly direct that the renewal of marine farms, such as farms 8058 and 8060, be enabled; and
- No concerns have been raised about the effects of farms 8058 or 8060 on the matters listed in Policy 1.1. As such, there is no reason why the current approach to managing effects should be altered.

Effects on the Foreshore or Seabed

The provisions which address effects on the foreshore and seabed state:

> ***Objective 1***
>
> *Protection of the coastal environment by avoiding, remedying or mitigating any adverse effects of activities that alter the foreshore or seabed.*
>
> ***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:*
>
> *a) Conservation and ecological values;*
>
> *b) Cultural and iwi values;*
>
> *c) Heritage and amenity values;*
>
> *d) Landscape, seascape and aesthetic values;*
>
> *e) Marine habitats and sustainability;*
>
> *f) Natural character of the coastal environment;*
>
> *g) Navigational safety;*
>
> *h) Other activities, including those on land;*
>
> *i) Public access to and along the coast;*
>
> *j) Public health and safety;*
>
> *k) Recreation values; and*
>
> *l) Water quality.*
>
> ***Policy 1.7***
>
> *Recognising (by way of controlled activity status) the importance of renewing the majority of existing marine farms authorised by applications made before 1 August 1996 while mitigating adverse effects on the environment by way of conditions.*
>
> ***Policy 1.8***
>
> *Providing for minor adjustments to boundaries of resource consent areas for existing farms without increasing their size so as where necessary to reduce adverse effects or to recognise existing locations of farms.*
>
> ***Policy 1.9***
>
> *Enable the adverse visual or ecological effects of particular farms to be addressed when the rules expressly provide for that*

The continued operation of coastal space by farms 8058 and 8060 sits comfortably with these provisions, noting that:

- These provisions explicitly direct that the renewal of marine farms, such as farms 8058 and 8060, be enabled.
- No concerns have been raised about the effects of farms 8058 or 8060 on the benthic environment. As such, there is no reason why the current approach to managing effects should be altered.

6.1.4 Summary

The continued use of farms 8058 and 8060 for marine farming in the manner proposed sits comfortably with the objectives and policies of the MSRMP.

6.2 PART 2

By way of summary it is concluded that the proposed activities would promote the sustainable management of natural and physical resources in the context of Part 2 of the RMA, noting that:

- The ongoing operation of farms 8058 and 8060 will enable Sanford to continue to provide for the social, economic and cultural wellbeing of people and communities through the jobs this will create, and the revenue generated in the community;
- The effects of the ongoing operation of farms 8058 and 8060 will not change, and will be avoided, remedied or mitigated in accordance with the expectations of the MSRMP and sections 6, 7 and 8 of the RMA.

7. NOTIFICATION

7.1 SECTION 95A – PUBLIC NOTIFICATION

Whether the applications should be notified or not is to be assessed under section 95A of the RMA.

Because the applications are for controlled activities, and because there are no special circumstances that warrant public notification including changes to the existing use of the site, Sanford considers that public notification is not required.

7.2 SECTION 95B - LIMITED NOTIFICATION

Section 95B(1) requires a consent authority to determine whether to give limited notification of a resource consent application if an application is not publicly notified under Section 95A.

Because the applications:

- Do not affect customary rights groups or customary marine title group;
- Do not change local hapu and iwi relationships
- Are not adjacent to, or may affect, land that is the subject of a statutory acknowledgement made in accordance with an Act specified in Schedule 11;
- Are not boundary activities and are not a prescribed activity; and
- Will not adversely affect any persons as stipulated in section 95E, as discussed below;

Limited notification is not required.

7.3 ASSESSMENT OF EFFECTS ON PERSONS (S95E)

According to Section 95E of the RMA, a person is an affected person if the activity's adverse effects on the person are minor or more than minor (but are not less than minor).

Section 95E(2)(b) states that in assessing the activity's adverse effects on a person for the purpose of this section the consent authority must, if the activity is a controlled activity, disregard an adverse effect of the activity on the person if the effect does not relate to a matter for which a rule or a national environmental standard reserves control.

It is not considered that any person will be adversely affected to a minor extent by the continued marine farming at sites 8058 and 8060 in respect of any of the matters over which Rule 35.2.5 reserves control.

7.4 NOTIFICATION CONCLUSION

Given the assessment above the application should be processed on a non-notified basis.

8. CONCLUDING COMMENT

The ongoing operation of farms 8058 and 8060 will enable Sanford to continue to provide for the social, economic and cultural wellbeing of people and communities through the jobs this will create, and the revenue generated in the community;

The effects of the ongoing operation of farms 8058 and 8060 will not change, and will be avoided, remedied or mitigated in accordance with the expectations of the MSRMP.

Overall, it is considered that the continued operation of marine farming at farms 8058 and 8060 will promote the sustainable management of natural and physical resources and that the resource consents should be granted on a non-notified basis.

1

APPENDIX 1

Existing resource consents for marine farm site 8058

MARLBOROUGH
DISTRICT COUNCIL

ISO 9001:2000
Form Ref CI 687

Deemed Coastal Permit - Review of Conditions under Sections 20(3) or 21(3) of the Aquaculture Reform (Repeals and Transitional Provisions) Act 2004

In the Matter of an Application to Vary, Add or Delete Conditions of Coastal Permit

File Reference:	MPE893
Consent Holder:	Sanford Limited
MPE893 is a Deemed Coastal Permit to:	Undertake the activity of marine farming in the coastal marine area as defined under the Fisheries Act 1983.
Location:	Mataka Point (south), outer Pelorus Sound
Site No:	8058
Proposal:	To vary, add or delete conditions of deemed coastal permit No 893 for the purpose of farming green mussels (Perna canaliculus) in accordance with the provisions of the Act.

Decision on Application to Vary, Add or Delete Conditions of Coastal Permit

Pursuant to Sections 20(3) or 21(3) of the Aquaculture Reform (Repeals and Transitional Provisions) Act 2004 the following decision has been made by the Marlborough District Council:

Conditions now state:

Coastal Permit (Activity)

1. That this permit shall expire on 3 May 2019.

2. That without restricting the consent holder from reasonably undertaking the activities authorised by this resource consent, the consent holder shall not undertake the activities in such a way that would effectively exclude the public from the permit area.

3. That there shall be no feed artificially introduced into the marine farm unless a specific coastal permit for discharge is firstly obtained.

4. That the occupancy be limited to the 4.2 hectare area illustrated on the plan attached to this consent, and confined to the area specified within the schedule of New Zealand Map Grid co-ordinates.

EP
Initial

5. That the structures be limited to anchors, ropes, droppers, cages, racks, floats and lights associated with the farming of the approved species within the boundaries of the consent area. The number of lines shall be at the discretion of the consent holder, but shall not exceed the number shown on the attached plan, the separation distances between lines shall be no less than as shown, and lines shall be oriented as shown.

6. That no marine farming structures are placed within 100 metres of Mean Low Water on the inshore side of the site, as shown on the attached plan.

7. That the placement of marine farm lighting and marking shall be approved by the Harbourmaster under his Maritime Delegation from the Director of Maritime New Zealand pursuant to Sections 200, 444(2) and 444(4) of the Maritime Transport Act 1994. The approved lighting plan is attached.

8. That each end of the landwardmost and seawardmost longlines carry the name of the consent holder, and the site number issued by Marlborough District Council (#8058), displayed in bold clear letters in such a manner that they can be clearly read from a distance of 10 metres.

9. That the consent holder maintain all structures to ensure that they are restrained, secure and in working order at all times so as not to create a navigational hazard and take whatever steps are reasonably necessary to retrieve any non-biodegradable debris lost in or from the permit area.

10. That each buoy within the approved area be permanently branded so as to clearly identify its ownership.

11. Where there are more than two blocks of longlines an accessway of no less than 50 metres in width, free of surface structures, be provided between blocks.

12. That upon the expiration, determination, forfeiture or surrender of the coastal permit the consent holder shall remove all structures, rafts, buoys, longlines, blocks, and all associated equipment from the site, and restore the area as far as is practicable to its original condition, and to the reasonable satisfaction of Council. If the consent holder fails to comply with this clause Council may arrange compliance on their behalf and at the consent holder's expense.

13. That in accordance with section 128 of the Resource Management Act 1991, the Marlborough District Council may review the conditions of this consent at any time for the purpose of ensuring that any actual or potential effects on the environment arising from the exercise of this consent are avoided, remedied or mitigated.

14. That the consent holder notifies the Marlborough District Council and the Chief Hydrographer/Topographer of Land Information New Zealand of the establishment of marine farm structures within 3 months of their establishment.

Reasons for Decision

The grounds for approving these changes are that the majority of the existing conditions in the original permit are already provided for by the RMA (e.g. access), by the changes to Fisheries regulations (i.e. registration), or are no longer required (e.g. general provisions). The new conditions are consistent with the RMA and with those in current use.

As the review of conditions relates to existing structures and operations it will not adversely affect other users or values of the area, and will align all marine farms to consistent conditions and processes.

The proposal will not have any adverse effect on the environment.

Other Matters

1. Unless otherwise specified, this is the full text of the decision.

Appeal Information

2. If intending to object to this decision, the objection must be lodged with the Marlborough District Council within 15 working days of the receipt of this decision.

Authorised under the Marlborough District Council's Instrument of Delegation by:

E Davidson

.....

Marlborough District Council Commissioner

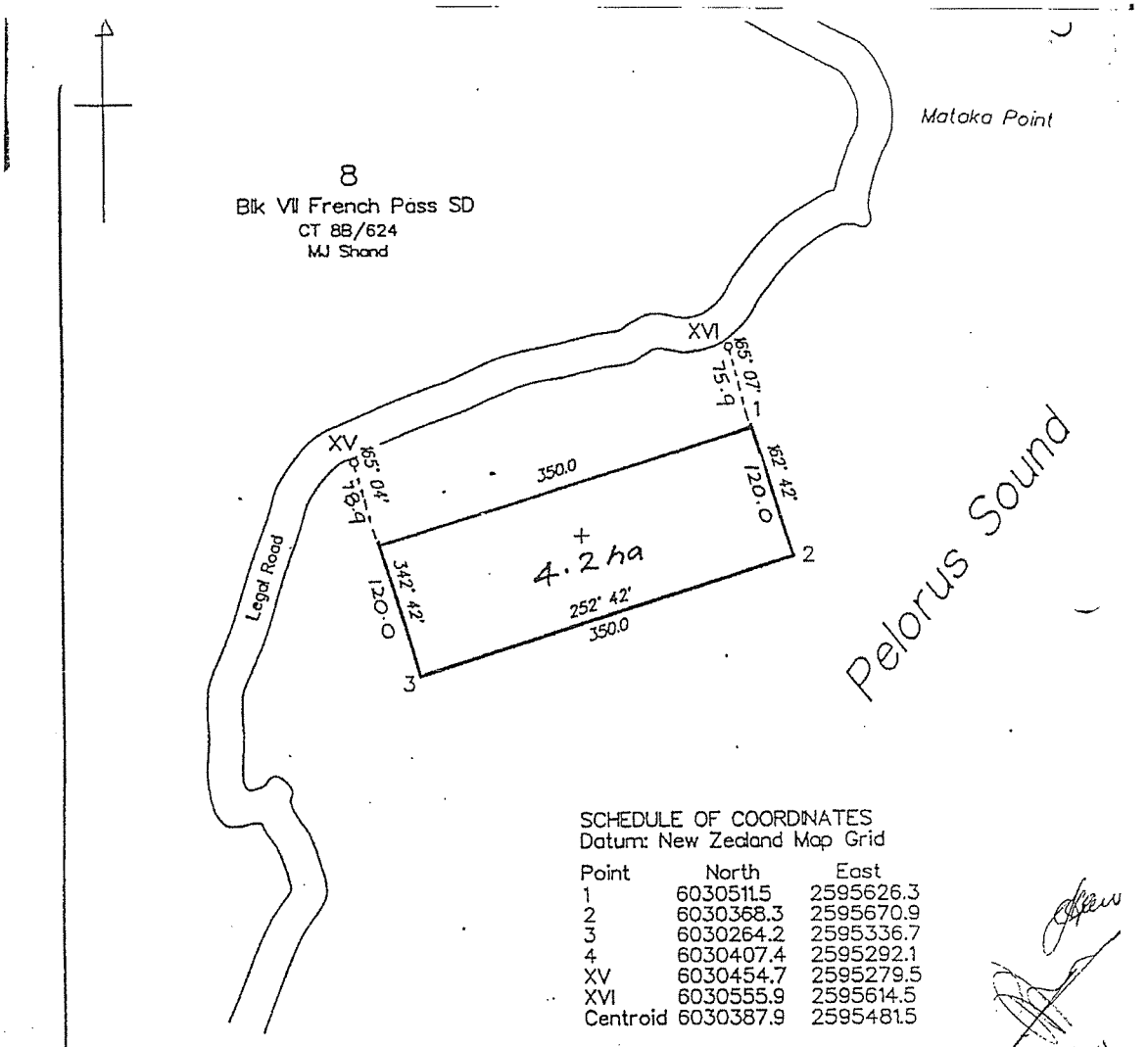
Dated this 18th **day of** September **2007**

Important Notes

1. This permit shall be void and of no effect if the relevant resource consent expires, is surrendered, or is otherwise terminated. The permit holders shall comply with the provisions of any such resource consent.

2. That this permit shall be subject to the same conditions as apply to resource consent U950399, and to any amendments and alterations thereto.

Location plan:



SCHEDULE OF COORDINATES
Datum: New Zealand Map Grid

Point	North	East
1	6030511.5	2595626.3
2	6030368.3	2595670.9
3	6030264.2	2595336.7
4	6030407.4	2595292.1
XV	6030454.7	2595279.5
XVI	6030555.9	2595614.5
Centroid	6030387.9	2595481.5

Plan of Proposed Coastal Permit

Sanford South Island Ltd

Survey marks adopted from SO 5684

Bearing variation Geodetic Datum 1949 to NZMG +1.

SCALE 1:5000

50 0 50 100 150 200 250 300 350 400 450 metres

LOCAL AUTHORITY: MARLBOROUGH DISTRICT	NELSON LAND DISTRICT
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Prep. By JB	Date 28/2/95	Job No 726649	File 6475/01/02	Reference P26/6.2

Departme
Survey &
Informa
Te Puna Tarm

ENVIRONMENT COURT NEW ZEALAND

Area where structures are prohibited:

Schedule A: Application C18-366 showing approximate area mitigated

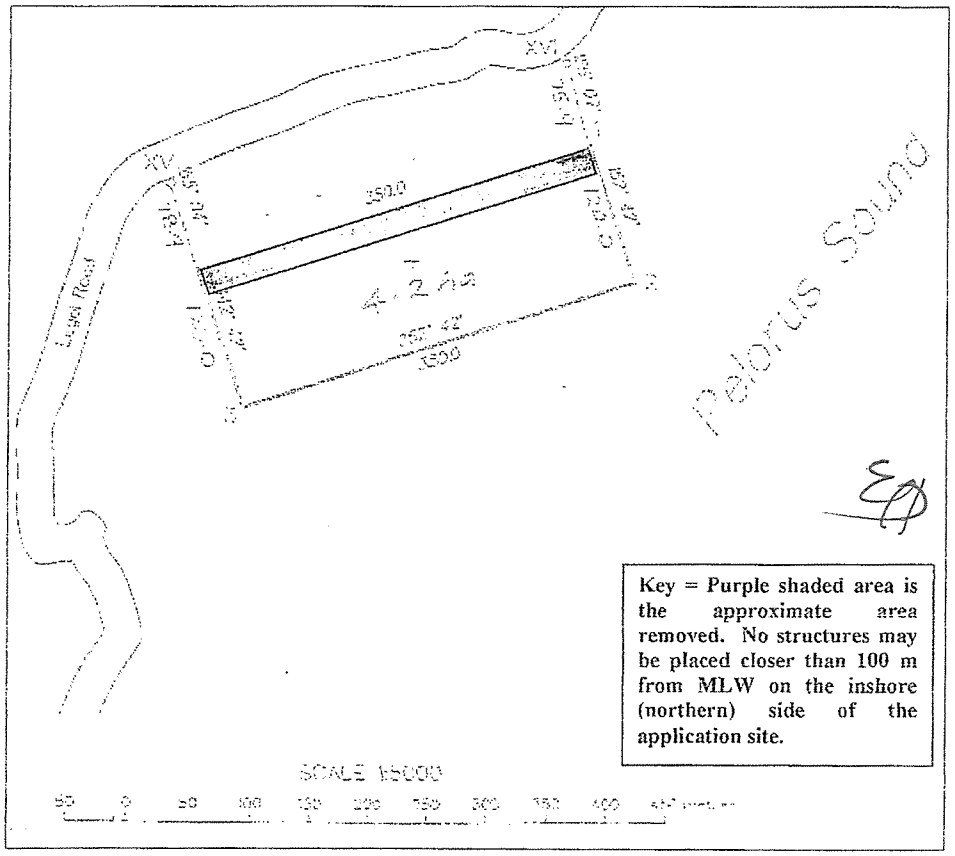
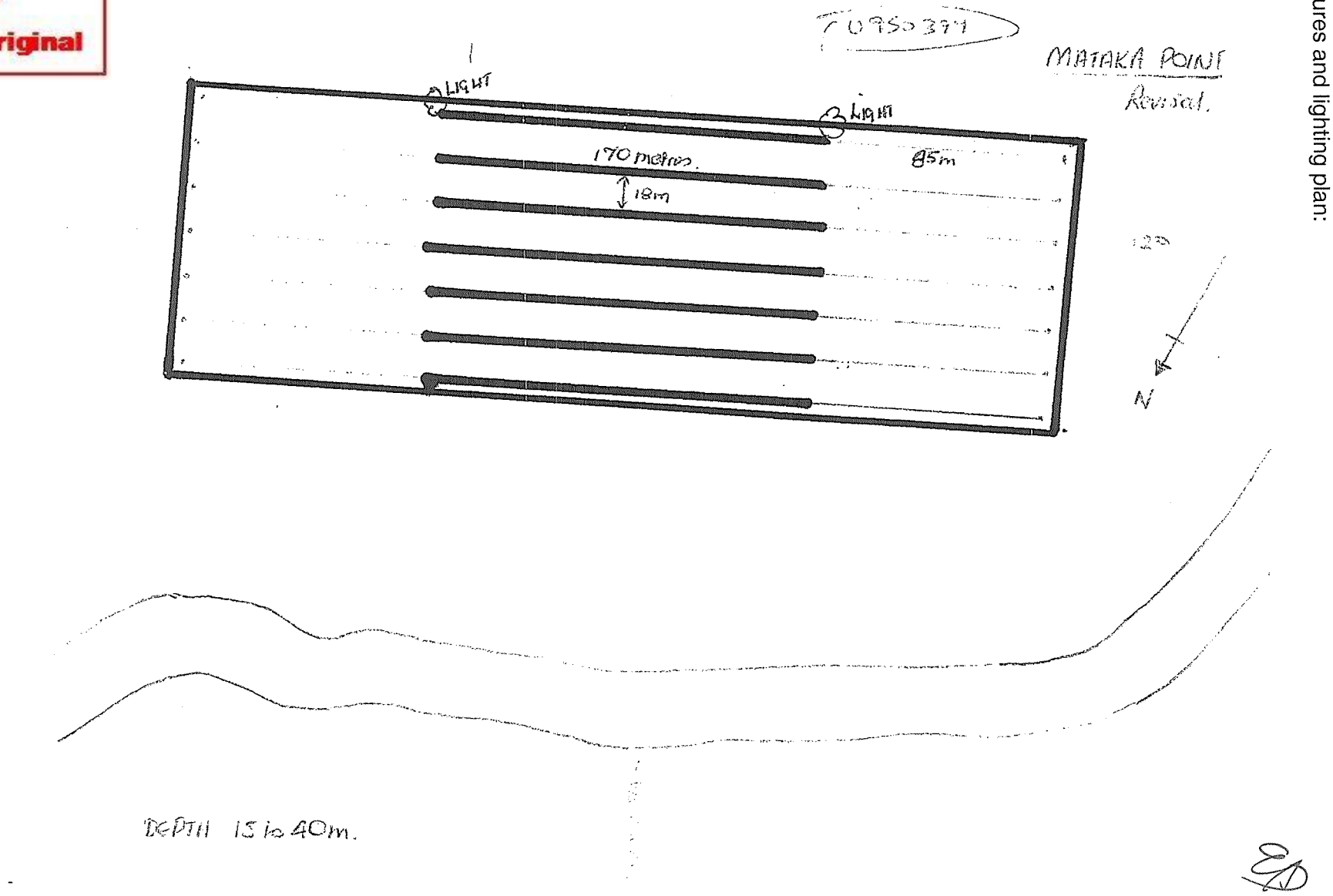


Image Quality
Due to
Quality of Original

Structures and lighting plan:



Marine Farm Lighting and Marking Plan – MPE893, U950399 (Site no. 8058)

MARLBOROUGH DISTRICT COUNCIL

I, Alexander van Wijngaarden, Harbourmaster of Marlborough District Council, hereby approve, under Maritime Delegation from the Director of Maritime New Zealand pursuant to Sections 200, 444(2) and 444(4) of the Maritime Transport Act 1994, the lighting and marking associated with coastal permit MPE893, U950399 (Site no. 8058), located in Mataka Point (south), outer Pelorus Sound as follows:

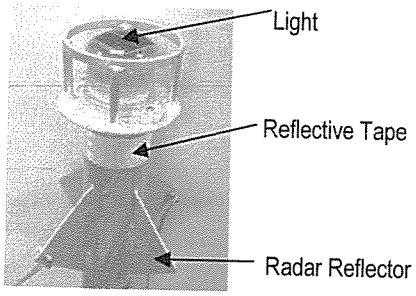
1. **That each end of each longline display an orange buoy, as shall the middle of each of the seawardmost and landwardmost longlines.**

2. **That a yellow light, radar reflector and a band of reflective tape 50 millimetres in width be displayed in the positions marked 'A' on the attached structures plan. The lights shall be solar powered and shall have the following characteristics:**

   Flash: Flashing (5) every 20 seconds. Length of flashes no less than 1 second. Interval between flashes, no less than 1 second.

   Range: At least 1 nautical mile.

   Height: Greater than 1.0 metre above the surface of the water.



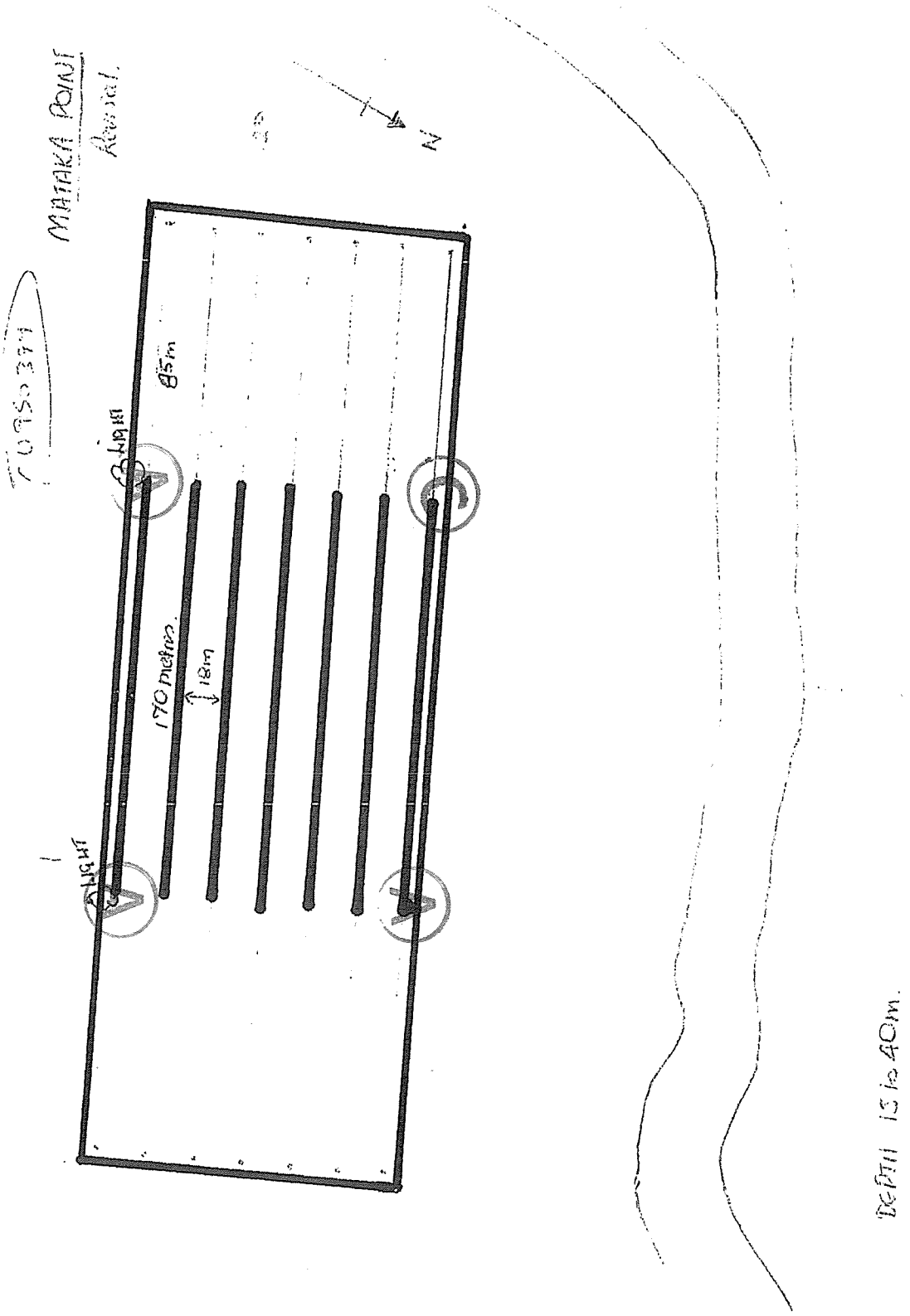
3. **That radar reflectors and a band of reflective tape 50 millimetres in width be displayed in the positions marked 'B' on the attached structures plan.**

4. **That a band of reflective tape 50 millimetres in width be displayed in the positions marked 'C' on the attached structures plan.**

Given under my hand this 10th day of SEPTEMBER 2007

ALEXANDER VAN WIJNGAARDEN

Structures and lighting plan:



10/9/07

Certified Copy

For Chief Executive
Ministry of Fisheries

MF/893

MARINE FARMING PERMIT

Pursuant to section 67J of the Fisheries Act 1983,

Sanford Limited

(hereinafter called "the permit holder/s") is/are hereby permitted to undertake the activity of marine farming (as defined under the Fisheries Act 1983) of the species listed in the attached Schedule A (referred to in this permit as "stock").

The marine farming is only to take place within the area described in the attached Schedule B (the permitted area) and located as shown on the site map annexed to Schedule B, and is subject to the following conditions:

1 **Duration of Permit**

This permit commences on the date of signature and expires on 3 May 2019, being the expiry date of resource consent U950399.

2 **Transfer of Stock**

The permit holder/s shall obtain prior written authorization before bringing any fish, aquatic life or seaweed onto the permitted area, if previously notified by the Chief Executive of such a requirement. Such authorizations may be general, or specific to one or more such transactions for each species that permit holder/s is/are permitted to farm. Any such authorization shall be deemed to be part of the permit.

Notwithstanding the Fisheries (Recordkeeping) Amendment Regulations 2005, and subject to any other regulations governing the transfer of any species, the permit holder/s shall not transfer any stock from the permitted area to any other waters without prior written authorization, if previously notified by the Chief Executive of such a requirement.

D.L

3 **Disease Prevention**

The Chief Executive may, by notice in writing to the permit holder/s:

a) Require the permit holder/s to carry out such action for the prevention of disease among the stock in the permitted area as is specified in the notice; and

b) Where the Chief Executive believes that any stock on the permitted area is diseased, require the permit holder/s to carry out such action for the treatment of the disease and the decontamination of any nets, buoys or structures as is required in the notice.

No compensation shall be payable in respect of any stock required to be destroyed pursuant to this condition.

4 **Record keeping**

The permit holder/s shall comply with the Fisheries (Recordkeeping) Amendment Regulations 2005.

5 **Compliance with other Schedules**

The permit holder/s shall comply with all conditions in the schedules A (Species permitted to be farmed), and B (definition of area) annexed to this permit.

Dated this 10th day of July 2007

Daniel Lees
Aquaculture Manager
Ministry of Fisheries

In exercise of powers delegated to me pursuant to the State Sector Act 1988

SCHEDULE A

SPECIES PERMITTED TO BE FARMED

Greenshell™ mussel (*Perna canaliculus*)

SCHEDULE B

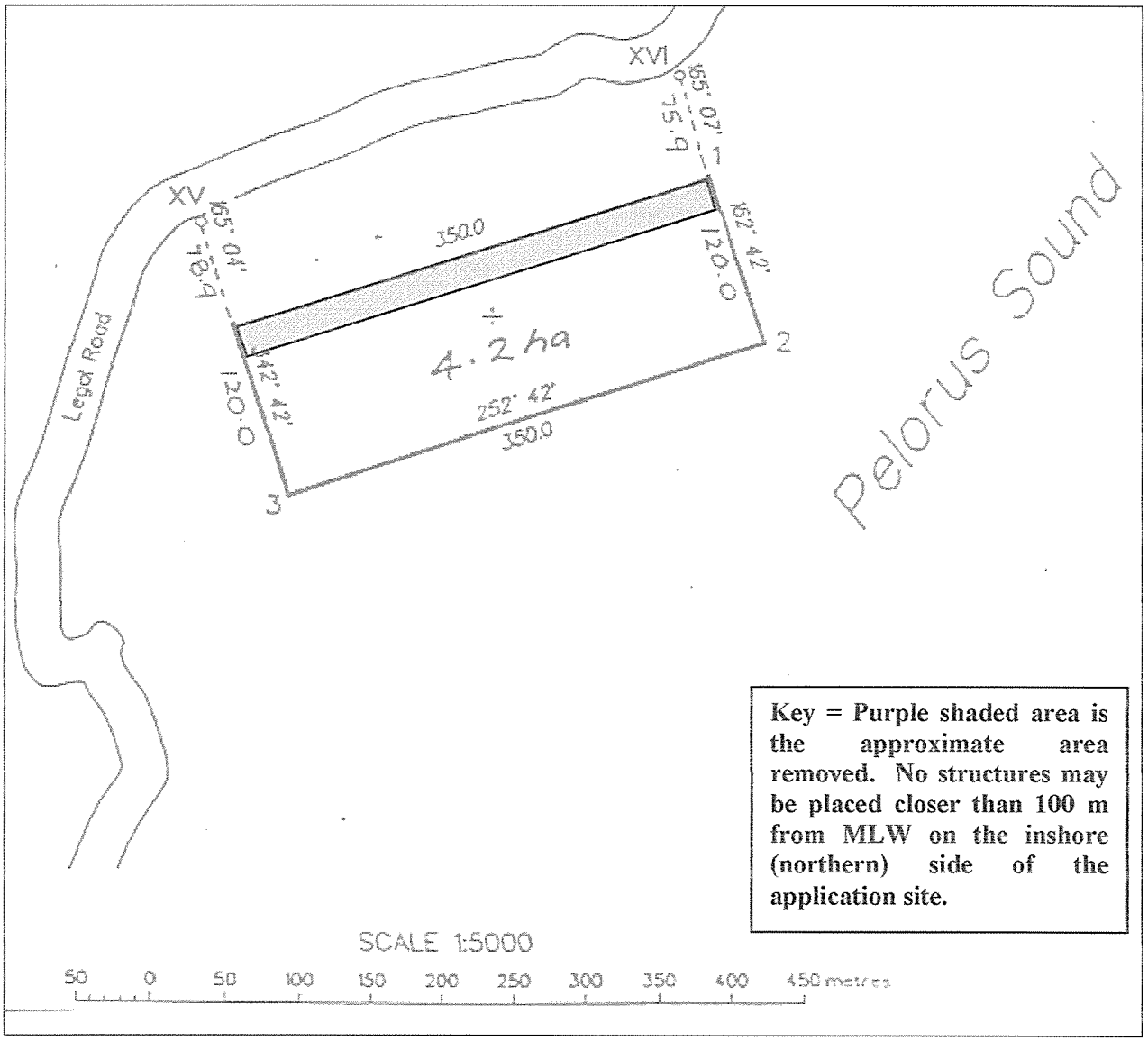
DEFINITION OF AREA AND SITE PLAN

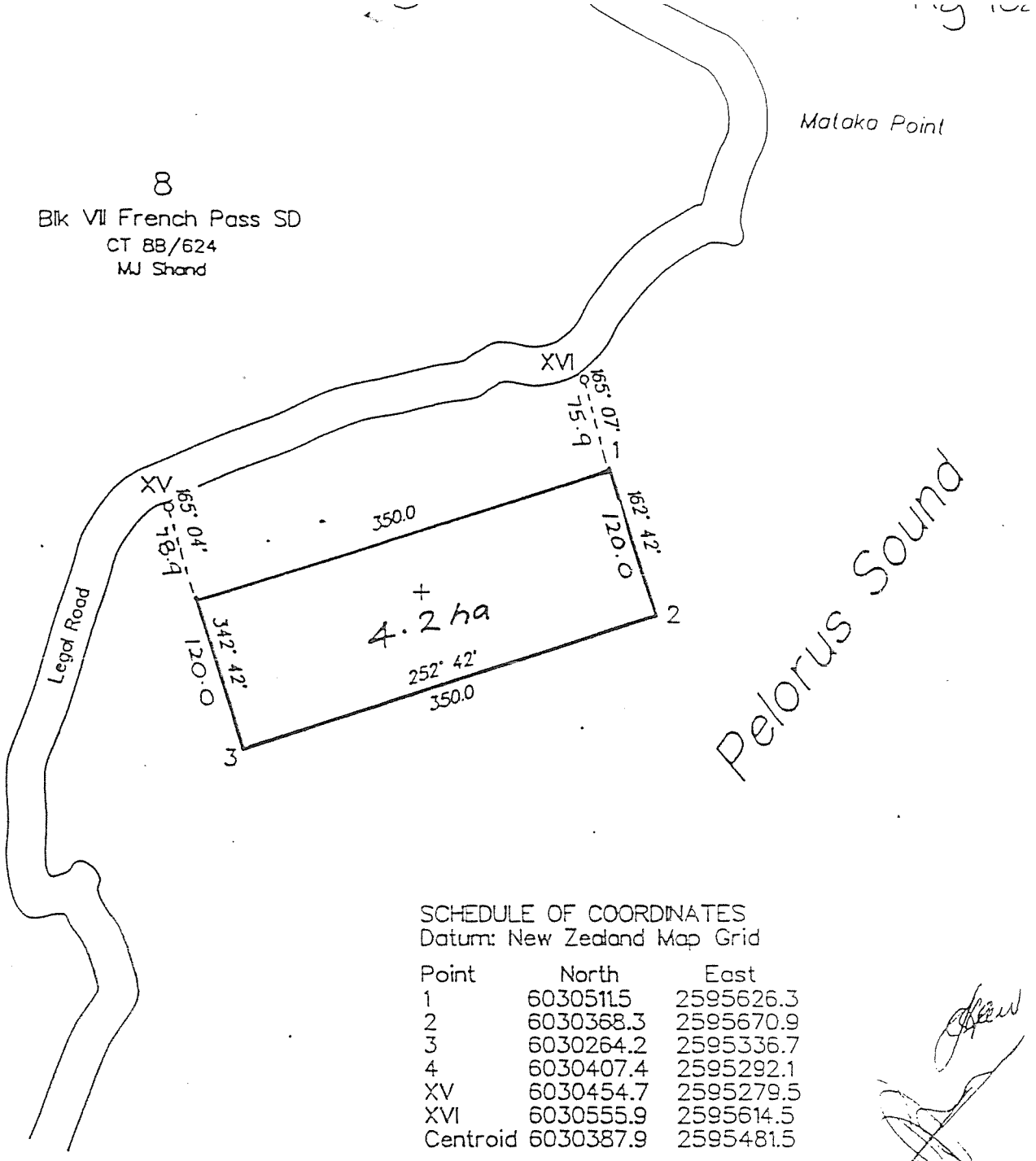
Description

This permit applies to an area of 4.2 hectares situated Mataka Point, North of West Entry Point, Pelorus Sound authorised for marine farming pursuant to Resource Consent Number U950399, provided that no marine farming structures are placed within 100 m of MLW on the inshore (northern) side of the site as shown on the attached diagram.

Site plan/map attached.

Schedule A: Application C18-366 showing approximate area mitigated





SCHEDULE OF COORDINATES
Datum: New Zealand Map Grid

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4	6030407.4	2595292.1
XV	6030454.7	2595279.5
XVI	6030555.9	2595614.5
Centroid	6030387.9	2595481.5

Plan of Proposed Coastal Permit

Sanford South Island Ltd

Survey marks adopted from SO 5684

Bearing variation Geodetic Datum 1949 to NZMG +12

SCALE 1:5000

50 0 50 100 150 200 250 300 350 400 450 metres

LOCAL AUTHORITY: MARLBOROUGH DISTRICT	NELSON LAND DISTRICT
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Prep. By JB	Date 28/2/95	Job No 726649	File 6475/01/02	Reference P26/6.2

Department of Survey & Land Information

2

APPENDIX 2

Existing resource consents for marine farm site 8060

MARLBOROUGH
DISTRICT COUNCIL

ISO 9001:2000
Form Ref CI 687

Deemed Coastal Permit - Review of Conditions under Sections 20(3) or 21(3) of the Aquaculture Reform (Repeals and Transitional Provisions) Act 2004

In the Matter of an Application to Vary, Add or Delete Conditions of Coastal Permit

File Reference:	MPE400
Consent Holder:	Sanford Limited
MPE400 is a Deemed Coastal Permit to:	Undertake the activity of marine farming in the coastal marine area as defined under the Fisheries Act 1983.
Location:	Blowhole Point North, outer Pelorus
Site No:	8060
Proposal:	To vary, add or delete conditions of deemed Coastal Permit No 400 for the purpose of farming green mussels (Perna canaliculus) in accordance with the provisions of the Act.

Decision on Application to Vary, Add or Delete Conditions of Coastal Permit

Pursuant to Sections 20(3) or 21(3) of the Aquaculture Reform (Repeals and Transitional Provisions) Act 2004 the following decision has been made by the Marlborough District Council:

Conditions now state:

Coastal Permit (Activity)

1. That this permit shall expire on 2 May 2019, being the expiry date of resource consent U950398.

2. That without restricting the consent holder from reasonably undertaking the activities authorised by this resource consent, the consent holder shall not undertake the activities in such a way that would effectively exclude the public from the permit area.

3. That there shall be no feed artificially introduced into the marine farm unless a specific coastal permit for discharge is firstly obtained.

EJD
Initial

4. That within 90 days of the issue of this consent the consent holder shall supply to Marlborough District Council a new location plan and a new structures diagram. The location plan shall include a schedule of New Zealand Map Grid co-ordinates listing the corners of the 3.25ha site, plus at least one mark ashore. The structures diagram shall include showing the area where structures are prohibited on the northern side.

5. That the occupancy be limited to the area illustrated on the plan attached to this consent, and confined to the area specified within the schedule of New Zealand Map Grid co-ordinates.

6. That the structure be limited to anchors, ropes, droppers, cages, racks, floats and lights associated with the farming of the approved species within the boundaries of the consent area, as modified by condition 15, below. The number of lines shall be at the discretion of the consent holder, but shall not exceed the number shown on the attached plan, the separation distances between lines shall be no less than as shown, and lines shall be oriented as shown.

7. That the placement of marine farm lighting and marking shall be approved by the Harbourmaster under his Maritime Delegation from the Director of Maritime New Zealand pursuant to Sections 200, 444(2) and 444(4) of the Maritime Transport Act 1994. The approved lighting plan is attached.

8. That each end of the landwardmost and seawardmost longlines carry the name of the consent holder, and the site number issued by Marlborough District Council (#8060), displayed in bold clear letters in such a manner that they can be clearly read from a distance of 10 metres.

9. That the consent holder maintain all structures to ensure that they are restrained, secure and in working order at all times so as not to create a navigational hazard and take whatever steps are reasonably necessary to retrieve any non-biodegradable debris lost in or from the permit area.

10. That each buoy within the approved area be permanently branded so as to clearly identify its ownership.

11. Where there are more than two blocks of longlines an accessway of no less than 50 metres in width, free of surface structures, be provided between blocks.

12. That upon the expiration, determination, forfeiture or surrender of the coastal permit the consent holder shall remove all structures, rafts, buoys, longlines, blocks, and all associated equipment from the site, and restore the area as far as is practicable to its original condition, and to the reasonable satisfaction of Council. If the consent holder fails to comply with this clause Council may arrange compliance on their behalf and at the consent holder's expense.

13. That in accordance with section 128 of the Resource Management Act 1991, the Marlborough District Council may review the conditions of this consent at any time for the purpose of ensuring that any actual or potential effects on the environment arising from the exercise of this consent are avoided, remedied or mitigated.

14. That no marine farming structures are placed closer than 170 metres from mean low water (MLW) along the northern most 70 metres of the site, as shown on the attached structures and location diagrams.

EJD
Initial

Reasons for Decision

The grounds for approving these changes are that the majority of the existing conditions in the original permit are already provided for by the RMA (e.g. access), by the changes to Fisheries regulations (i.e. registration), or are no longer required (e.g. general provisions). The new conditions are consistent with the RMA and with those in current use.

As the review of conditions relates to existing structures and operations it will not adversely affect other users or values of the area, and will align all marine farms to consistent conditions and processes.

The proposal will not have any adverse effect on the environment.

Other Matters

1. Unless otherwise specified, this is the full text of the decision.

Appeal Information

2. If intending to object to this decision, the objection must be lodged with the Marlborough District Council within 15 working days of the receipt of this decision.

Authorised under the Marlborough District Council's Instrument of Delegation by:

E J Davidson

.....

Marlborough District Council Commissioner

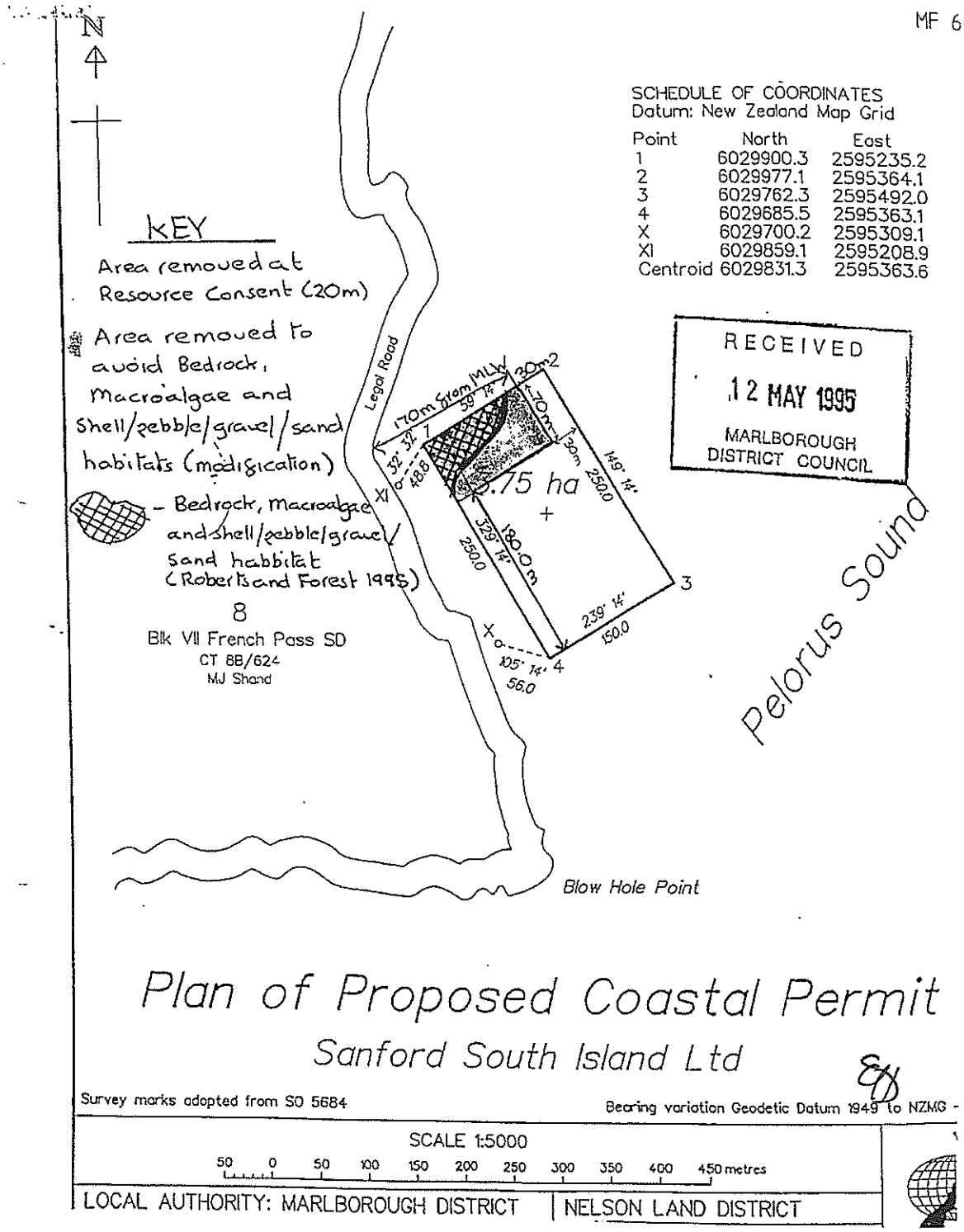
Dated this 2nd **day of** May **2007**

Important Notes

1. This permit shall be void and of no effect if the relevant resource consent expires, is surrendered, or is otherwise terminated. The permit holders shall comply with the provisions of any such resource consent.

2. That this permit shall be subject to the same conditions as apply to resource consent U950398, and to any amendments and alterations thereto.

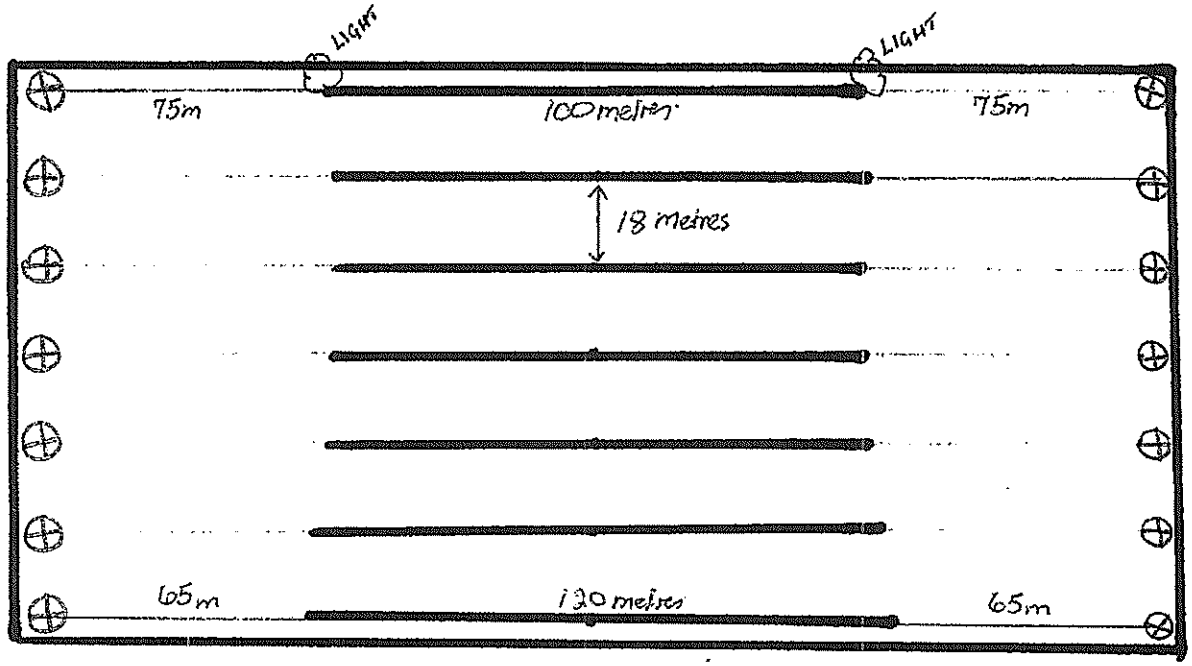
Location plan:

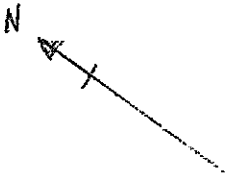


Appendix 3: Survey map showing the required modification to the proposed marine farm

Structures and lighting plan:

BLOWHOLE PT Revised





DEPTH 10 to 40 metres.

MARLBOROUGH
DISTRICT COUNCIL

Marine Farm Lighting and Marking Plan – MPE400, U950398 (Site no.8060)

I, Alexander van Wijngaarden, Harbourmaster of Marlborough District Council, hereby approve, under Maritime Delegation from the Director of Maritime New Zealand pursuant to Sections 200, 444(2) and 444(4) of the Maritime Transport Act 1994, the lighting and marking associated with coastal permit MPE400, U950398 (Site no.8060), located in Blowhole Point North , Outer Pelorus as follows:

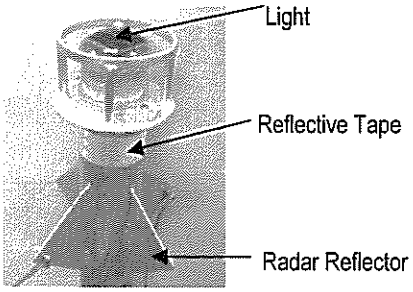
1. **That each end of each longline display an orange buoy, as shall the middle of each of the seawardmost and landwardmost longlines.**

2. **That a yellow light, radar reflector and a band of reflective tape 50 millimetres in width be displayed in the positions marked 'A' on the attached structures plan. The lights shall be solar powered and shall have the following characteristics:**

   Flash: Flashing (5) every 20 seconds. Length of flashes no less than 1 second. Interval between flashes, no less than 1 second.

   Range: At least 1 nautical mile.

   Height: Greater than 1.0 metre above the surface of the water.



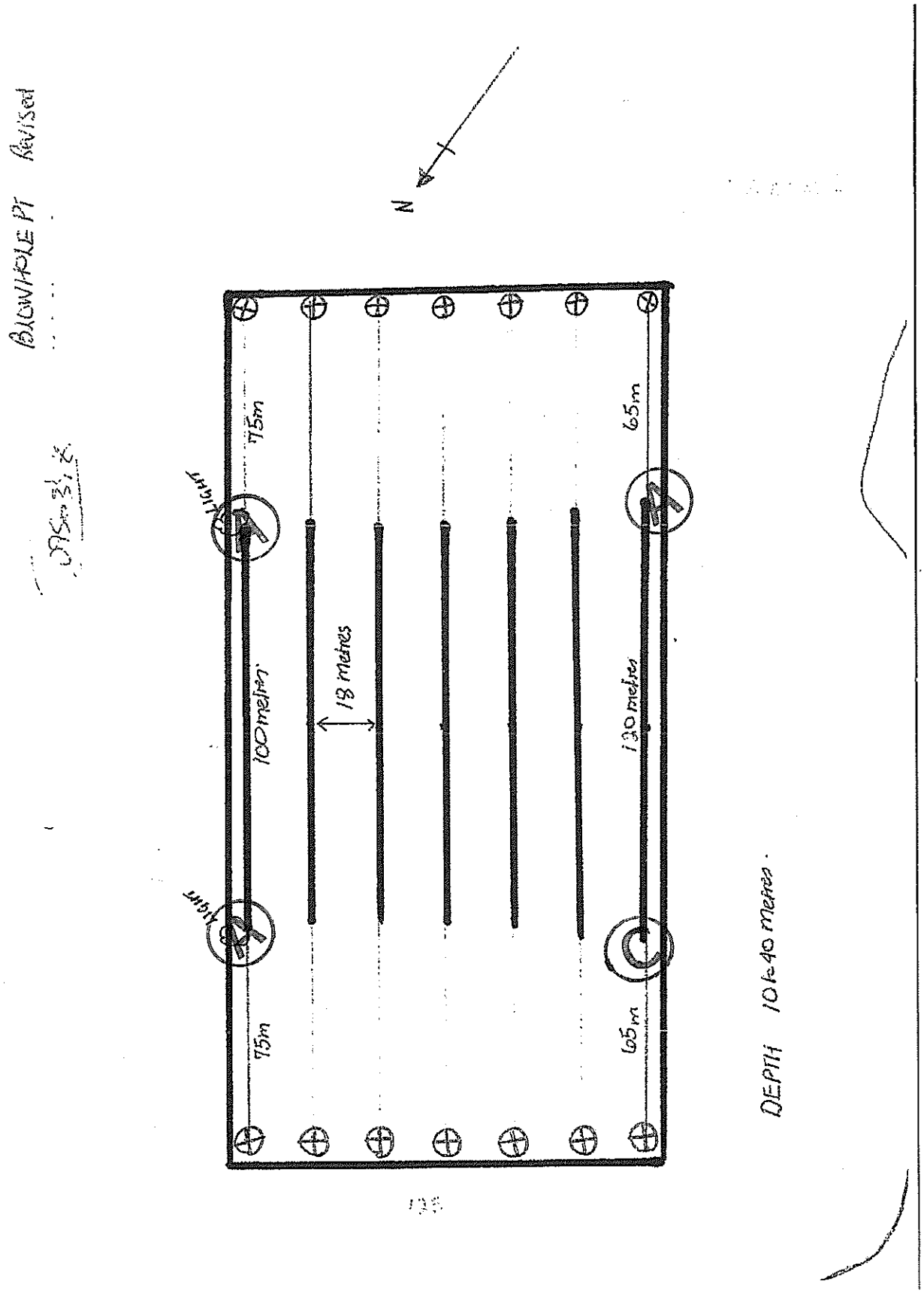
3. **That radar reflectors and a band of reflective tape 50 millimetres in width be displayed in the positions marked 'B' on the attached structures plan.**

4. **That a band of reflective tape 50 millimetres in width be displayed in the positions marked 'C' on the attached structures plan.**

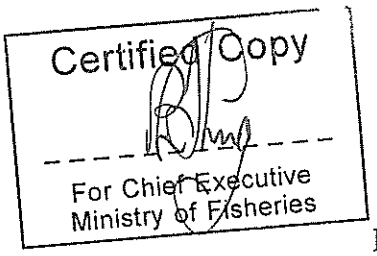
Given under my hand this 25th day of April 2007

ALEXANDER VAN WIJNGAARDEN

Structures and lighting plan:



26/04/03



Marine Farming Permit MF 400

Permit granted to Sanford (South Island) Limited on 22 March 2000.

Change of name by certificate of amalgamation to Sanford Limited registered on 23 September 2003

For Chief Executive

Marine Farm Permit Number MF 400

MARINE FARMING PERMIT

Pursuant to section 67J of the *Fisheries Act 1983*,

SANFORD (SOUTH ISLAND) LIMITED

(hereinafter called "the permit holder") is hereby permitted to undertake the activity of marine farming (as defined under the *Fisheries Act 1983*) of GREEN MUSSEL (*Perna canaliculus*), within the area defined in clause 2 of this permit subject to the following conditions:

1 **Period of Use**

This permit commences on the date of signature and expires on the 2ND day of MAY 2019, being the duration of Resource Consent Number U950398. This permit shall be void and of no effect if the relevant Resource consent or Certificate of Compliance expires, is surrendered or is otherwise howsoever terminated.

The permit holder shall keep in full force and effect any Resource Consent or Certificate of Compliance, required by any enactment, for the activity of marine farming in the area defined in clause 2. The permit holder shall comply with the provisions of any such Resource Consent or Certificate of Compliance.

2 **Definition of Area**

This permit applies to an area of 3.25 HECTARES situated NORTH OF BLOW HOLE POINT, PELORUS SOUND authorised for marine farming pursuant to Resource Consent Number U950398, (hereafter referred to as "the area") providing that no marine farming structures are placed closer than 170 metres from mean low water (MLW) along the northern most 70 metres of the site, as identified in coastal permit U950398 (refer Map Schedule B)

3 **Temporary Movement to Emergency Area**

The permit authorises the permit holder to temporarily transfer the marine farm to a site other than the area specified in this permit, if:

(i) Such transfer is permitted by a rule in a regional coastal plan or a resource consent; and

(ii) Where serious damage is caused or is likely to be caused to the marine farm or the wellbeing of the stock* is likely to be threatened; and

(iii) Where the transfer will not increase adverse effects on fishing or the sustainability of any fisheries resource.

Any resource consents required for the transfer of the marine farm to another site must be obtained and kept in full force and effect.

4 **Transfer of Stock**

Notwithstanding clause 3 above but subject to any other regulations governing the transfer of any species, the permit holder shall not transfer any stock from the permitted area to any other waters without prior written approval from the Chief Executive, if previously notified by the Ministry of such a requirement.

5 **Disease Prevention**

The Chief Executive, may from time to time, by notice in writing to the permit holder:

(i) Require the permit holder to carry out such action for the prevention of disease among the stock on the farm as is specified in the notice;

(ii) Require the permit holder to carry out such action for the treatment of the disease and the decontamination of any nets, buoys or structures as is required in the notice, where the Chief Executive believes on reasonable grounds that any stock on the marine farm is diseased.

6 No compensation shall be payable in respect of any stock required to be destroyed pursuant to condition 5 of this permit.

[* For the purpose of this permit "stock" is the fish, aquatic life, or seaweed being farmed in terms of marine farming as defined under the section 2(1) of the Fisheries Act 1983.]

7 **Licensed Fish Receiver Operations**

The permit holder shall not undertake, or allow anyone else to undertake, the operation of licensed fish receiving on the permitted area.

8 **Compliance with other Acts and Regulations**

The permit holder must comply with all other Acts and regulations governing the activity.

9 **Compliance with Schedule**

(a) For the farming of GREEN MUSSEL (*Perna canaliculus*)the permit holder shall comply with conditions contained within Schedule A.

10. **Conditions Subject to Review**

The conditions on this permit may be reviewed by the Chief Executive at 12-monthly intervals from the date of the permit coming into effect, but does not preclude any necessary amendment that may from time to time arise.

Dated this 2nd day of March 2000

P R Todd
Policy Manager
Ministry of Fisheries

In exercise of powers delegated to me pursuant to the State Sector Act 1988

SCHEDULE A

MARINE FARMING PERMIT - RECORDKEEPING REQUIREMENTS

1. Manner and form in which records kept:

   (a) Be kept in such manner and format that they can be readily retrieved and made available for examination

   (b) Be held at either

      (i) The place of business of the permit holder, or

      (ii) Any other premises that are appropriate having regard to where the records are initially prepared

   (c) Be retained for a period of not less than 7 years after completion of the transactions or period to which they relate.

2. Retention of Records:

   All records produced and/or available to the permit holder that contribute to the audit trail of species farmed shall be retained.

3. Failure to keep Records:

   Where the Chief Executive considers that the permit holder is or has not been completing or retaining the records in an appropriate manner -

   (a) The Chief Executive may, by notice in writing, direct the permit holder as to the manner in which the records are to be completed or retained; and

   (b) The permit holder shall thereafter ensure that records completed or retained comply with that direction

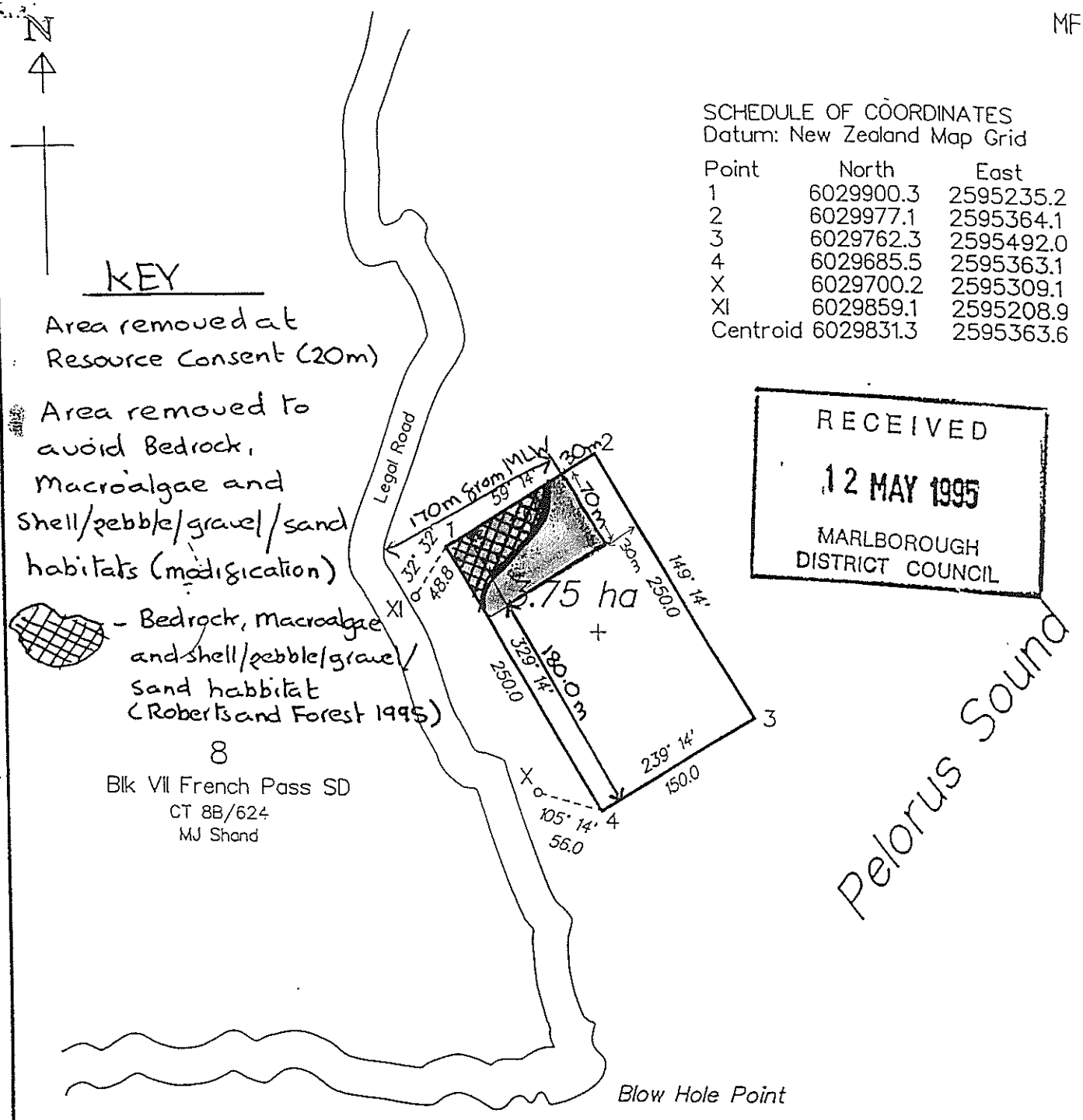
   Failure to comply with such direction may be treated as a wilful breach of conditions of permit.

4. Inspection of Records:

Any person who is required to keep or who has control of any records required to be kept shall, on request at any reasonable time by the Chief Executive, forthwith (and without charge) produce the records requested and make them available for inspection.

5. Additional Requirements:

Where the Chief Executive considers it necessary, and after consultation with the permit holder, the Chief Executive may require the permit holder to keep such additional records as are appropriate.



SCHEDULE OF COORDINATES
Datum: New Zealand Map Grid

Point	North	East
1	6029900.3	2595235.2
2	6029977.1	2595364.1
3	6029762.3	2595492.0
4	6029685.5	2595363.1
X	6029700.2	2595309.1
XI	6029859.1	2595208.9
Centroid	6029831.3	2595363.6

Plan of Proposed Coastal Permit

Sanford South Island Ltd

Survey marks adopted from SO 5684

Bearing variation Geodetic Datum 1949 to NZMG -

SCALE 1:5000

50 0 50 100 150 200 250 300 350 400 450 metres

LOCAL AUTHORITY: MARLBOROUGH DISTRICT | NELSON LAND DISTRICT

Appendix 3: Survey map showing the required modification to the proposed marine farm.

3

APPENDIX 3

Davidson Environmental Report for marine farm site 8058

Davidson Environmental Limited

Biological report for the reconsenting of marine farm 8058 at Mataka Point, Waitata Reach, Pelorus Sound

Research, survey and monitoring report number 915

A report prepared for:
Sanford Ltd
Havelock

October 2018

Bibliographic reference:

Davidson, R.J.; Scott-Simmonds, T. 2018. Biological report for the reconsenting of marine farm 8058 at Mataka Point, Waitata Reach, Pelorus Sound. Prepared by Davidson Environmental Ltd. for Sanford Ltd. Survey and monitoring report no. 915.

Prepared by:

Davidson Environmental Limited
6 Ngapua Place, Nelson 7010
Phone 03 545 2600
Mobile 027 445 3352
e-mail davidson@xtra.co.nz
davidsonenvironmental@gmail.com

October 2018

Contents

1.0 Preface

The present report provides biological information for a proposed reconsent of an existing marine farm at Mataka Point in outer Waitata Reach, Pelorus Sound. The farm is owned by Sanford Ltd.

2.0 Background information

2.1 Waitata Reach

Waitata Reach is 15 km long and extends from Maud Island in the south to Paparoa Point (east of Long Beach) in the north (Figure 1). Waitata Reach is relatively deep channel (50-60 m) that feeds the main body of Pelorus Sound. The Reach has steep sloping edges immediately adjacent to land. The Reach is swept by regular and often strong tidal currents on both incoming and outgoing tides. Offshore areas are relatively flat, deep and dominated by mud and shell substratum.

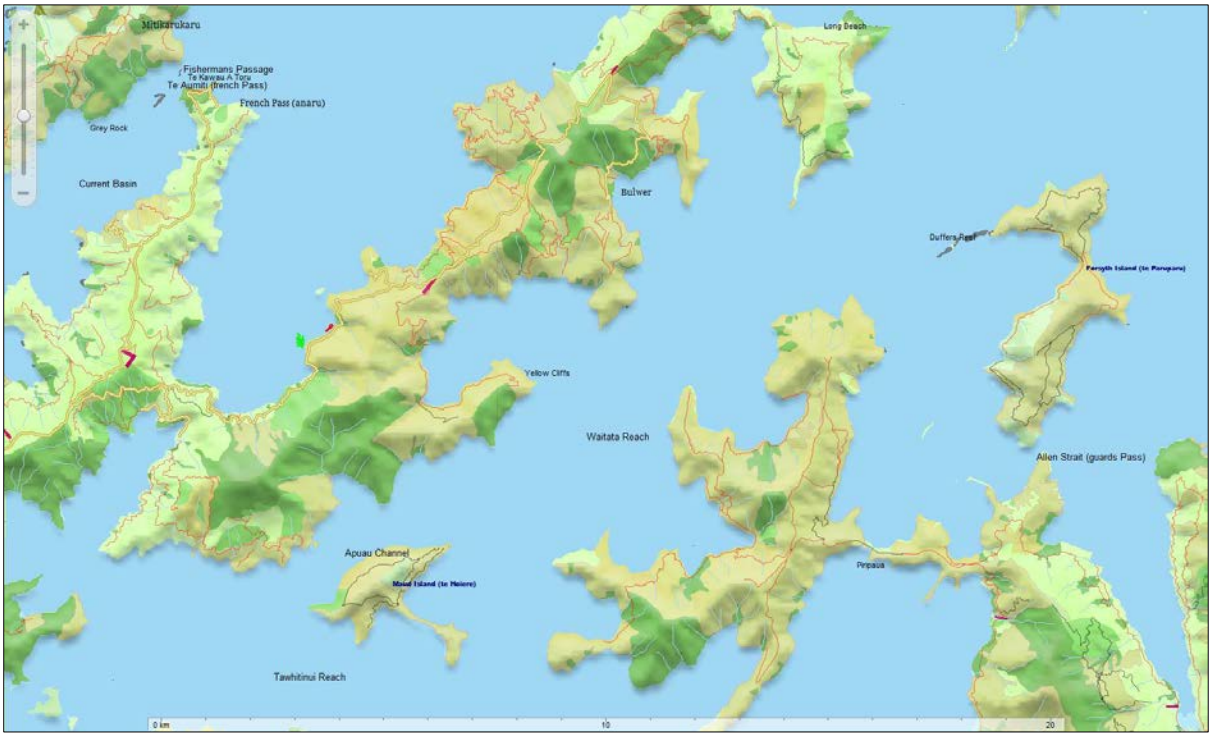


Figure 1. Location of Waitata Reach, outer Pelorus Sound.

2.2 Marine farming

There are 7 shellfish farms and two salmon farms in Waitata Reach (Figure 2). Numerous farms are in the bays located adjacent to the Reach. Shellfish marine farm consents are predominantly used for farming mussels.

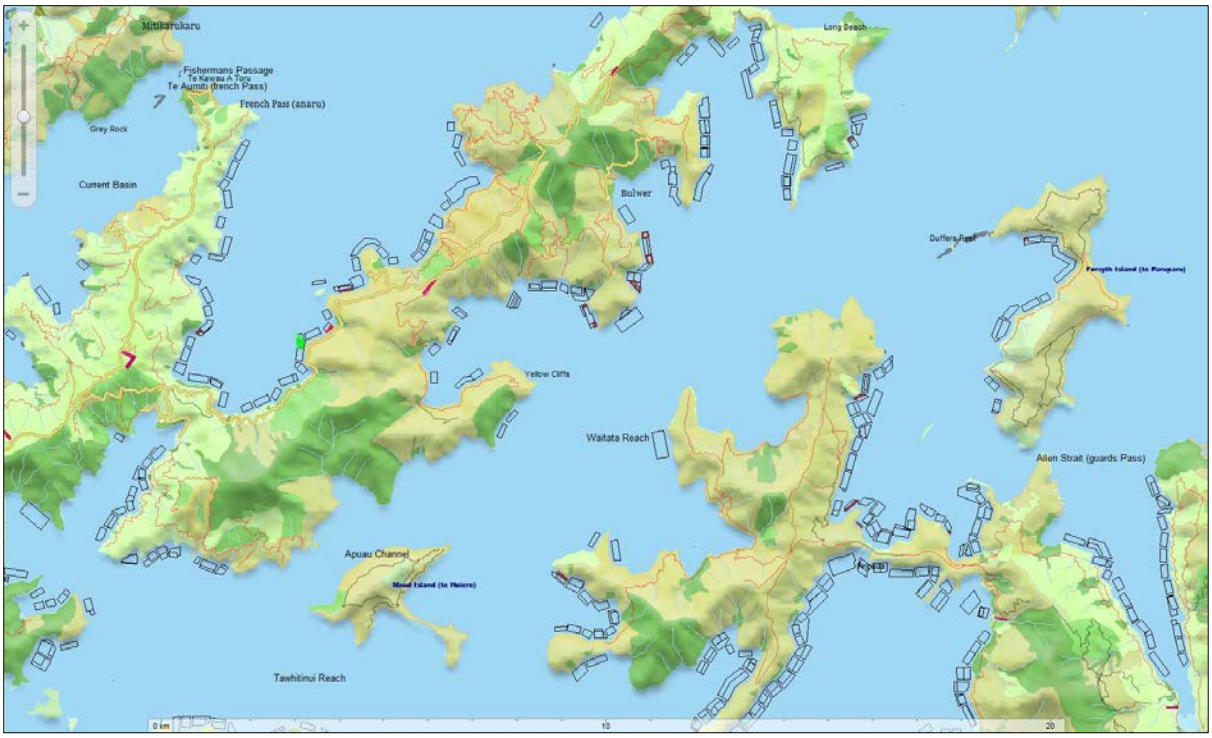


Figure 2. Marine farms located along Waitata Reach and the adjacent bays.

2.3 Catchments

The adjacent land and catchments are mostly regenerating native vegetation with isolated areas of pasture. One large reserve (Deep Bay Scenic Reserve) is located west of Maud Island and is managed by DOC, the remainder of land is in private ownership. A small forestry block is located north and south of Blowhole Point.

2.4 Fishing

Commercial fishing catch for the Waitata Reach is at the lower end of the range for New Zealand (Figure 3). Trawling and during the scallop season (dredging) regularly occurs

throughout much of the Reach. No data is available on recreational fishing, however, based on observations it is a regular occurrence.

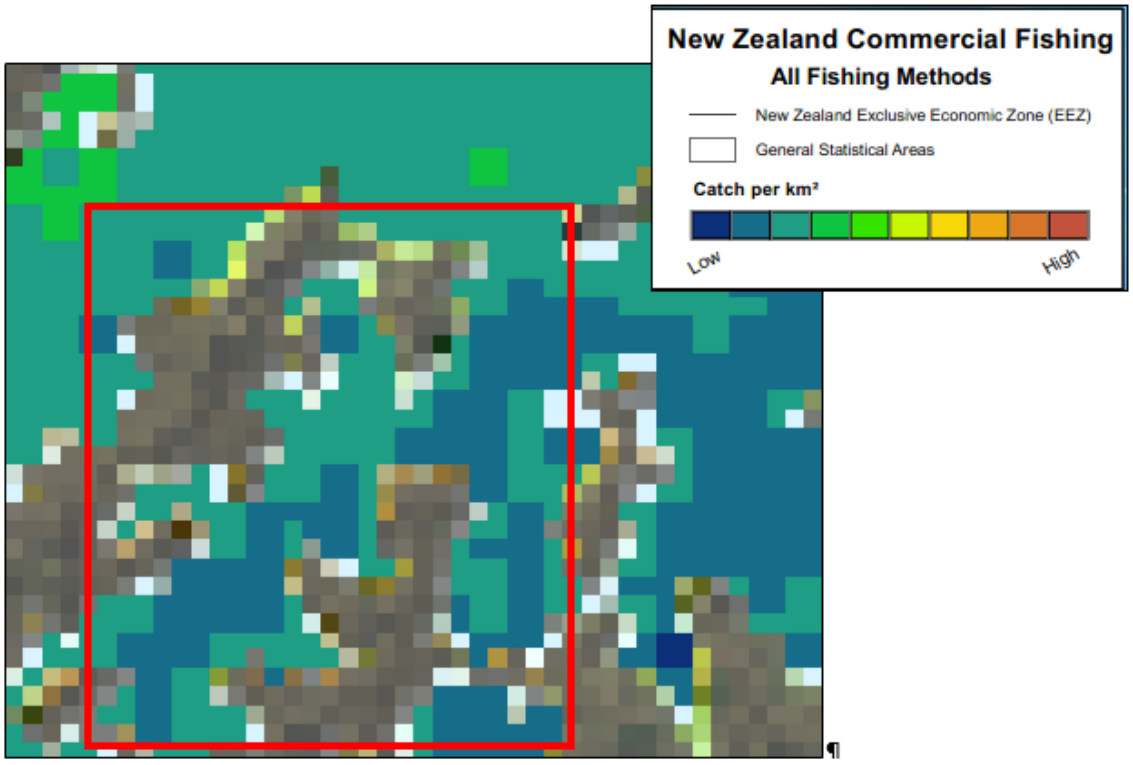


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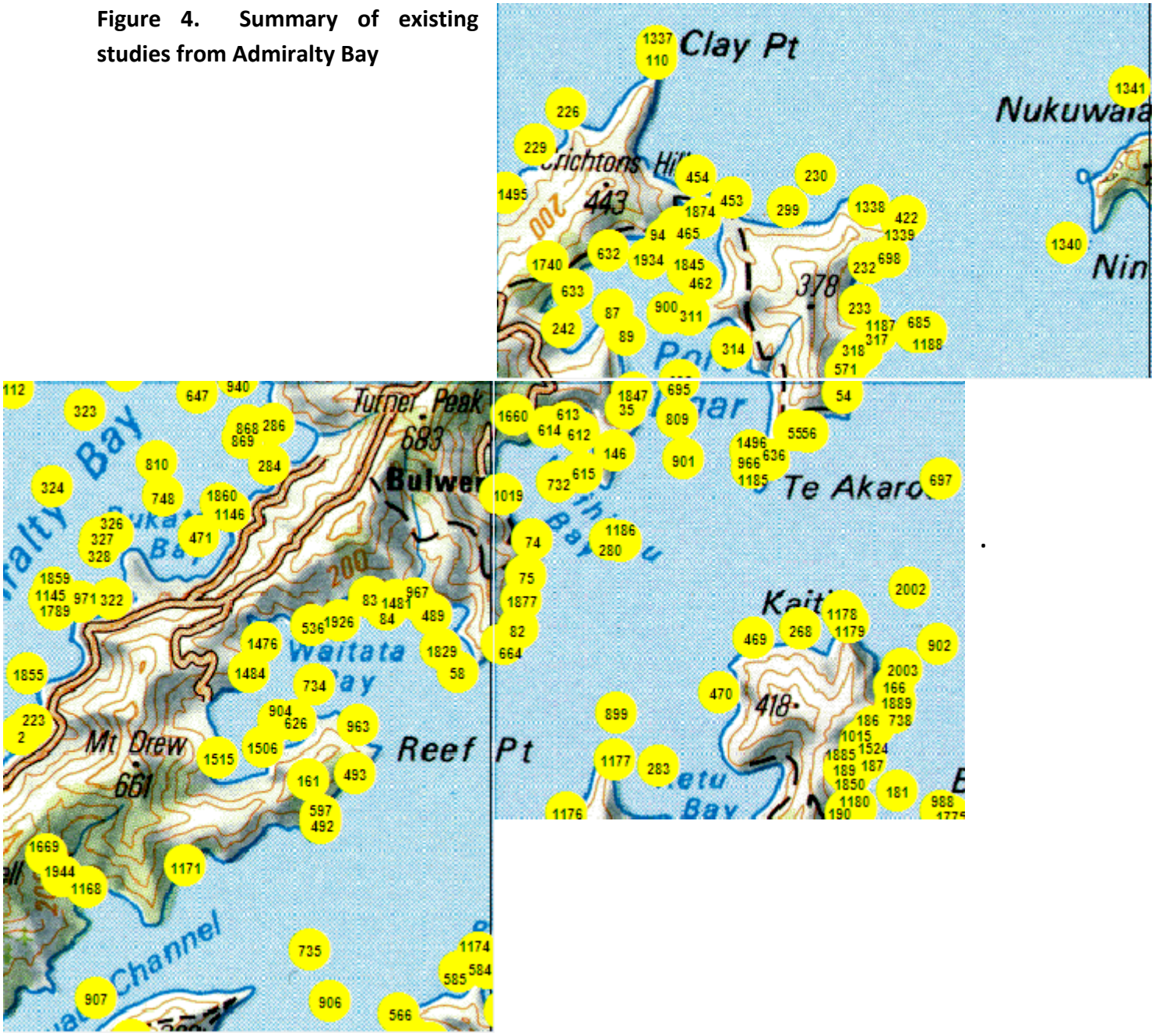
Figure 3. The distribution of total commercial catch shown here is estimated from most fishing events reported in statutory catch and effort returns for the period 1 October 2007 to 30 September 2013. A small number of shellfisheries have not yet been mapped by MPI and are not included in this map. The location of fishing events is reported by either coordinates or by statistical areas and for the latter, MPI estimates the part of the statistical area used for each type of fishery. Catch by some methods is attributed to the whole statistical area where no better information is available. The data is aggregated into grid squares of between 1 and 2500km² as required to give 6-year annual average of data from at least three permit holders. Red box = Waitata Reach.

2.5 Existing biological studies and data

Many studies and investigations have occurred in Waitata Reach and the adjacent 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. Despite the large number of data points in the area, there are only a small number of recognized significant biological sites.

Figure 4. Summary of existing studies from Admiralty Bay



2.6 Significant sites

There are four known significant sites located in northern Waitata Reach (Figure 5). All sites are localized and relatively small.

Significant site 2.17 (Paparoa current swept habitat)

Paparoa is a rocky headland defining the western entrance to Pelorus Sound. This area is swept by regular and relatively strong tidal currents, particularly on the outgoing tide. Davidson and Brown (1994) reported rock outcrops close to shore covered in biogenic habitat-forming species such as ascidians, hydroids, sponges, anemones and bryozoans. Davidson *et al*. (2011) reported Paparoa reef was one of a limited number of reef sites swept by regular and strong tidal currents in this biogeographic area. The authors also stated the regular tidal currents allow habitat forming species such as bryozoans, sponges and hydroids to establish on the rocky and soft coarse substrata. The site was resurveyed by Davidson and Richards (2016) confirming the site supported current swept communities.

Significant site 3.1 (Harris Bay red algae)

Harris Bay is on the western side of the entrance to Pelorus Sound, immediately south of Paparoa and 54 km by sea from Havelock. Harris Bay has 1.7 km of coastline and a sea area of 37.5 ha (Plate 18). The northern side is relatively shallow and supports a bed of red algae located in the 5-22 m depth range (Davidson *et al*., 2011). The site was resurveyed in 2017 where a decline in the cover and distribution of algae was reported (Davidson *et al*., 2017).

Significant site 3.2 (Oke Rock)

Oke Rock is located 0.7 km east of Mataka Point on the western side of the Pelorus Sound entrance. A small part of this pinnacle breaks the surface at low water and is easily located by the beacon. Subtidally the rock is steep sided and continuous with sand/shell banks that extend west. other rock outcrops occur west of Oke Rock but do not break the surface. Oke Rock is notable for having the highest known abundance of the burrowing anemone in the Marlborough Sounds (Davidson *et al*., 2011). This anemone lives on sand/broken shell banks at 12-28m depth. Oke Rock is also colonised by a good diversity of encrusting species including green-lipped mussels, sponges, bryozoans, hydroids and ascidians. Strong tidal currents bring plenty of food to these filter-feeders. Oke Rock is the only site in the Pelorus

biogeographic area where the Marlborough Sounds endemic chiton *Notolax latalamina* has been recorded.

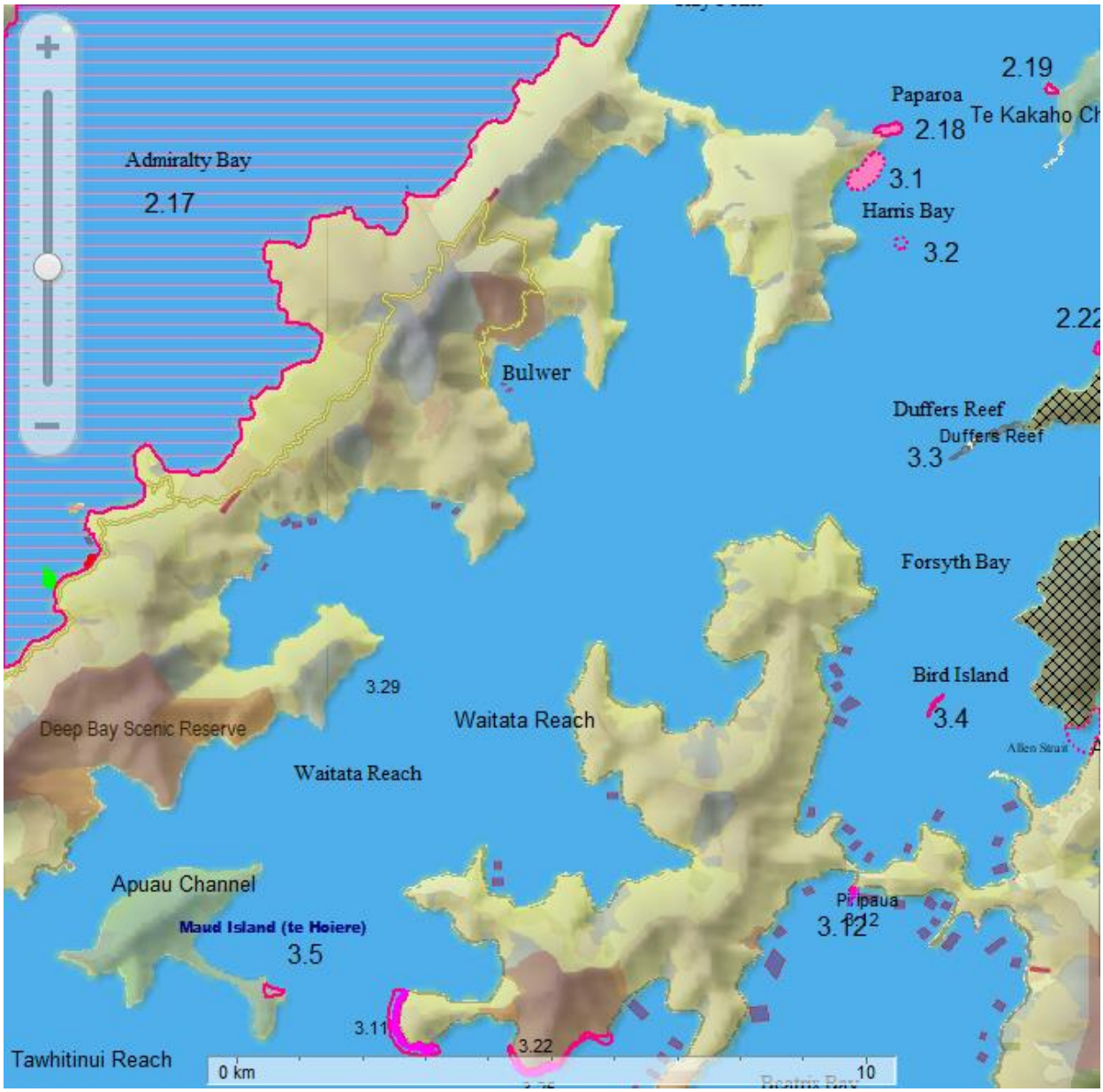


Figure 5. Known significant sites in Waitata Reach (red polygons).

2.7 Marine mammals

At least five marine mammal species regularly and/or seasonally transit through western regions of the Sounds (see Slooten *et al*. 2002, Markowitz *et al.* 2004, Merrimen *et al*. 2009, Clement and Halliday 2014), and several of these species concentrate seasonally in the Admiralty Bay region, west of the Pelorus Entrance area. These species include the New Zealand fur seal (*Arctocephalus forsteri*), bottlenose dolphin (*Tursiops truncatus*), dusky dolphin (*Lagenorhynchus obscurus*), common dolphin (*Delphinus delphis/capensis*) and orca (killer whales - *Orcinus orca*).

Several studies have occurred in the greater Admiralty Bay area aimed at investigating marine mammal use of the area and interactions with aquaculture (Markowitz *et al*., 2004; Vaughn *et al.,* 2007; Pearson *et al.,* 2012), Department of Conservation (e.g. B. Lloyd unpubl. data; Merriman, 2007) and aquaculture-funded research (Clement and Halliday, 2014).

New Zealand fur seals (status = not threatened) can be observed year-round within Admiralty Bay waters, suggesting that this may be the only species considered a true resident of the bay (Clement and Halliday, 2014). It is likely, given Admiralty Bay's proximity to several of the breeding colonies, young animals use this bay as a stepping stone as they slowly begin to explore and eventually move away from breeding colonies (D Clement, pers. comm.). Further, high numbers in May (see Clement & Halliday, 2014) might indicate that fur seals are taking advantage of plentiful prey resources or the cooperative feeding tactics of dusky dolphins, as these two species are observed feeding together cooperatively (Markowitz *et al.,* 2004, Vaughn *et al.,* 2007). Young fur seals have also been observed resting and swimming at mussel farms in Catherine Cove (Davidson and Richards, 2017).

Of all the cetacean species studied, bottlenose dolphins (status = Nationally endangered: Baker *et al*., 2010) is the species most consistently observed within Admiralty Bay waters (D. Clement, pers. comm.). A semi-residential population of animals is known to associate with the Marlborough Sounds region for most of the year, regularly and systematically moving from one end of the Sounds to another (Merriman *et al*., 2009). Clement and Halliday (2014) stated that re-sighting rates indicate that the majority of individual bottlenose dolphins show high and regular use of Admiralty Bay.

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.).

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 observed in Admiralty Bay increased significantly over the winter months. Estimating across the winters of 1998–2004, the dusky dolphin population within Admiralty Bay included 711 (95% CI: 608–844) individuals, with a mean population of 220 dolphins in the bay on any given week (Markowitz *et al*. 2004, 2010). Known individuals were found to re-visit Admiralty Bay in subsequent winters, as 55% of marked individuals photographed in the bay between 1998 and 2002 were identified during more than one winter (Markowitz *et al*., 2004). Admiralty Bay is now recognised as an important wintering and feeding area for dusky dolphins migrating from Kaikoura and other regions around New Zealand (Davidson *et al.,* 2011). Dusky dolphins are also seen periodically in Pelorus Sound.

While no studies have focused specifically on the presence of common dolphins (status = not threatened) in outer Pelorus, 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.).

2.8 King shag

King shag 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). Most historical counts have 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; in prep.). The most recent count has shown a 24% decline in the number of adult birds (Schuckard *et al*., in prep.). The total number of nests range from 187 in 2015 to 89 (June 2016), 117 (July 2016) and 153 nests June 2017 (Schuckard *et al*., 2018). No or very few nests have been recorded from the colony in Admiralty Bay at Stewart Island. Schuckard (1994) identified several concentrations of feeding activity in Waitata Reach (Figure 6).

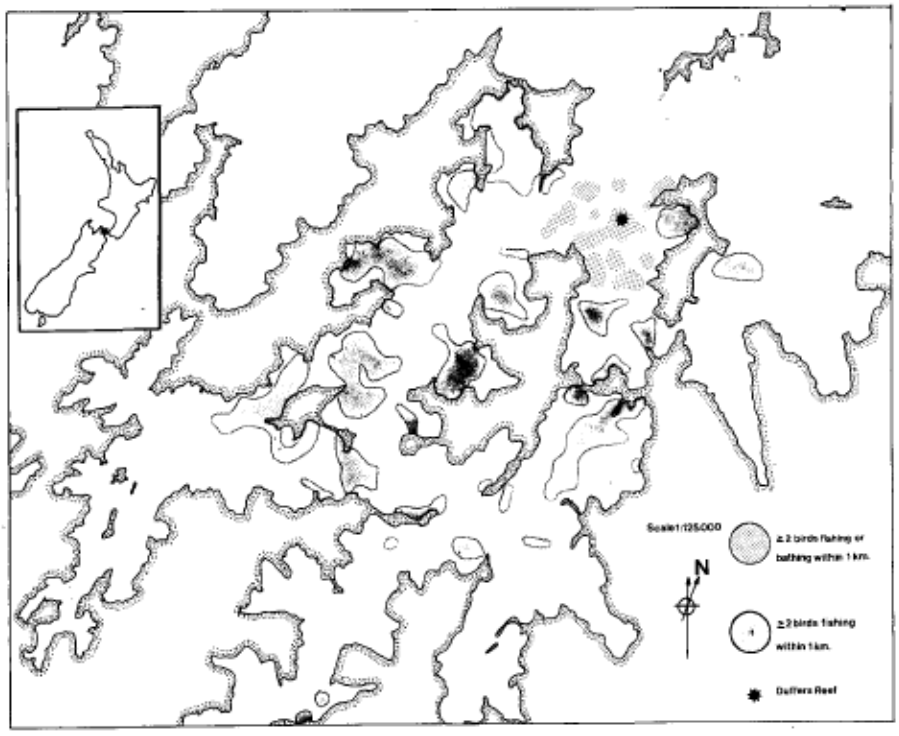


Figure 6. Concentrations of feeding activity by king shags in outer Pelorus Sound. Figure from Schuckard (1994).

Diet studies have shown that king shags feed on a variety of fish. Lalas and Brown (1998) recorded 683 prey items of which flatfish accounted for 90% of items.

2.9 Benthic

Most benthic studies that have occurred in Waitata Reach have been in relation to marine farms, however, there have been several other scientific studies.

Duffy *et al.* (in prep) qualitatively described the biota from 360 sites around the Marlborough Sounds including Waitata Reach. The edges of the Reach are swept by regular currents and often support filter feeding species such as hydroids, sponges, ascidians and in places bryozoans. Offshore soft bottom areas are often coarse due to the presence of currents. Mud and shell are widespread. Macroalgae is restricted to a narrow band around low tide.

Duffy *et al.* (in prep) found rocky reef sample sites were grouped with their Site Group 1. This was the largest group with 11 sub-groups including Queen Charlotte Sound (34 sites) Pelorus (31 sites), Port Hardy (2), Admiralty Bay (8), Cherry Bay at D'Urville Island (1), Squally Cove in Croisilles (1), Catherine Cove (2), Guards Bay (2), Anakoha Bay (2) and Forsyth Island (5). The most common rocky habitat type was cobble banks. Although the group had few indicator species, it was the most species-rich of the inner sounds site groups (average 31 species per site). Duffy *et al*. (in prep) stated the best indicator species were *Maoricolpus roseus*, *Galeolaria hystrix* and *Forsterygion lapillum*.

3.0 Marine farm 8058

The present report provides biological information in relation to marine farm 8058 located immediately south of Mataka Point, outer Pelorus Sound (Figure 7, Plate 1).

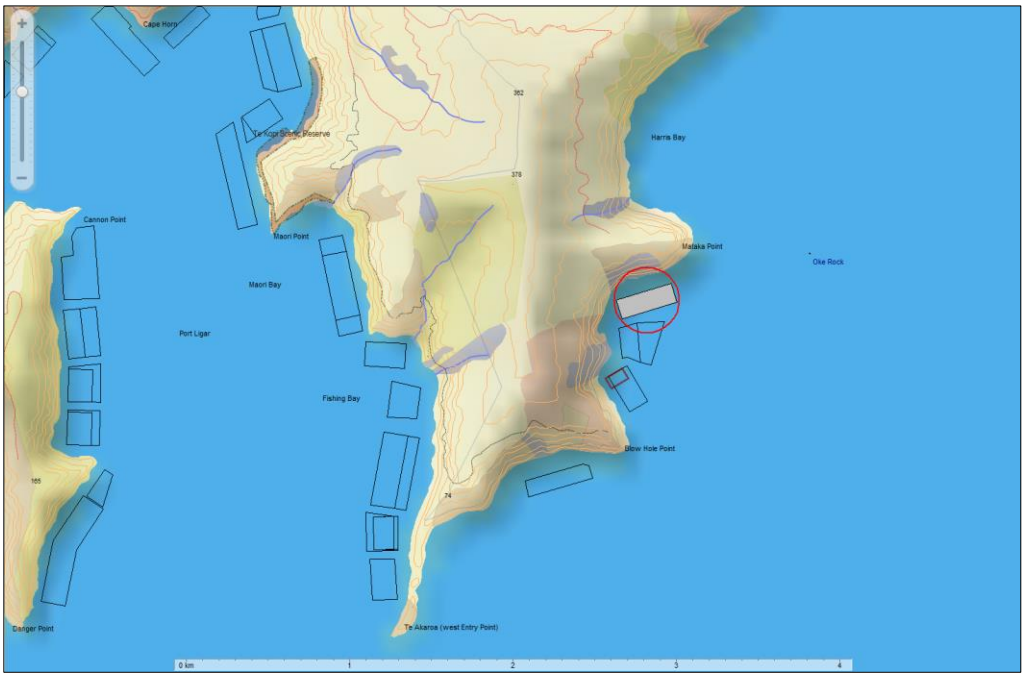


Figure 7. Proposed reconsenting marine farm site in outer Pelorus Sound (red circle) and all other marine farms in the bay.

3.1 Summary

Marine farm number:	8058
Owner:	Sanford Limited
Location:	Mataka Point, Pelorus Sound
MPI exclusion area present:	No
Consented size:	4.2 ha
Proposed size:	4.2 ha
Changes proposed:	None
Reason for proposed changes:	NA

Plate 1. Looking south-westwards through the existing backbone lines of farm 8058 with Blowhole Point in the background. Photo taken from a position north-east of the inshore backbone.

4.0 Historical reports

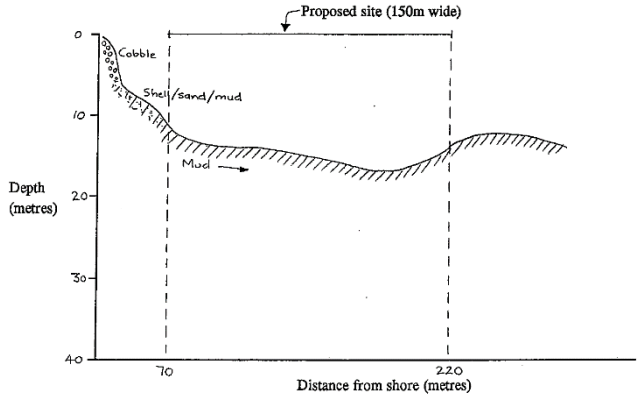
One historical biological report was found in relation to marine farm 8058.

Roberts and Forrest (1995) produced a report for the initial farm application.

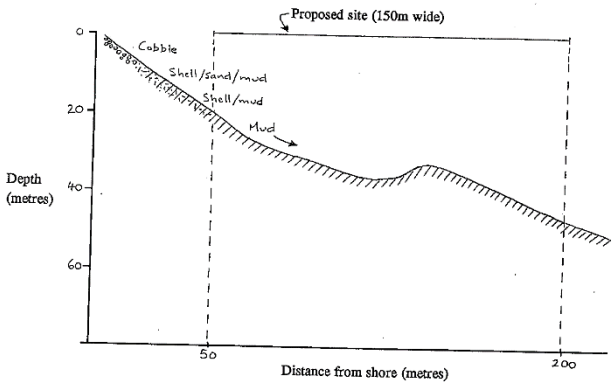
The authors stated:

> The shore profile of this site is quite unusual for the Sounds. From the depths recorded on the attached site plan, it can be seen that the site gets deeper in both a seaward and eastern direction (see attached site plan). The shore profile slopes gently (6-15m) at the west end of the site, is relatively flat (12-16m) at the centre (see profile A below), and has a steep slope (16-44m) at the east end (see profile B below). A low subtidal ridge (approx 2m high) exists along the entire outside edge of the site (see profiles below). A small rocky reef occurs at the east end of the site. The reef biota was not substantially different to that of the cobble zone which occurred along the rest of the shore. The reef drops off steeply to mud habitat and does not extend into the site.

Profile A: Seabed profile (perpendicular to shore) through centre of site in relation to position of proposed farm



Profile B: Seabed profile (perpendicular to shore) through east end of site in relation to position of proposed farm



The shallow cobble zone along the shore contained a dense forest of brown algae (*Carpophyllum flexuosum* and *C. maschalocarpum*) and moderate densities of kina (0.5/m^2). Paua were also common. A steep cobble zone extends to about 5-6m depth at the west end of the site and 8m depth at the east end. A sand/mud/shell substrate (with some cobbles) occurs at the base of this cobble zone but grades into predominantly firm mud by about 10m depth. In the 5-10m zone, snakestars and patches of red algae were the main surface biota seen. Deeper than 10m the substrate is soft grey mud lacking notable epifauna, although at the deeper east end, brachiopods were seen from 16-24m.

Hence, in the western one third of the site, the shoreward edge of the farm lies approximately over the sand/mud/shell habitat at the base of the cobble zone. The main surface biota in this area were snakestars and red algae, while horse mussels were uncommon (0.05-0.1/m^2). In the eastern two thirds, the shoreward edge of the farm covers predominantly mud habitat, and notable epifauna were absent.

Features of particular ecological interest:

A small area of reef habitat occurs in the shallows at about 30-40m from the east end of the site, but would be beyond the range of effects from a mussel farm. Horse mussels were uncommon (maximum density 0.1/m^2) and confined to the shoreward edge of the site at the west end.

Fishery resources:

Kina were restricted to the nearshore cobble zone. Scallops were patchy and uncommon overall (maximum density 0.1/m^2).

5.0 Methods (present survey)

The area was investigated on 14th October 2018. Prior to 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 over the duration of tidal

cycles. These data should not therefore be regarded as a precise measurement of the position of surface structures, but rather an approximate position.

5.1 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 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.

Prior to 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 5.2).

5.2 Drop camera stations, mussel debris and low tide

A total of 20 drop camera photographs were collected from the farm (including alongside droppers and warps) and adjacent areas inside and offshore of the 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 also 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.

6.0 Results

On the day of the survey, the tide was high at 12.50 pm (2.6 m) and low at 6.13 am (0.7 m). During fieldwork, the tide was outgoing. In general, mean water currents at this site are low and approximately 0.1 m/sec (Broekhuizen *et al.,* 2015). The tidal current at this marine farm increases towards the offshore side of the farm where it is closer to the main channel. This site is relatively exposed and subjected to considerable wind driven waves especially during southerly, easterly and northerly weather events. Because the marine farm is located directly adjacent to the main Reach it is likely that the site has very short water residence times.

During the present study no tidal flow was observed, however, a relatively large surface chop from the south was experienced.

6.1 Consent corners and surface structures

The inshore corner depths of the consent area ranged from 4.3 m to 23.5 m. Offshore boundaries of the consent area ranged from 12.8 m to 32.6 m depth (Table 1, Figure 9). Existing surface structures consisted of one block of backbones covering a total area of approximately 1.5 ha. Surface structures were located inside the consent.

The distance between low tide and the consent boundary was measured at three positions along the adjacent shoreline. The distance to the inshore boundary at the position of low tide 1 was 52 m, at low tide 2 was 98 m, and at low tide 3 was 86 m (Plate 2, Figure 9).

6.2 Sonar imaging

Sonar runs collected from the benthos under and adjacent to the consent revealed no rocky substrata within the consent (Figure 9). The areas scanned in the consent were characterised by a low feature terrain (i.e. soft substrata).

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

Type	No. & Depth (m)	Coordinates
Consent corner	1, 4.3m	1685290.2,5468664.4
Consent corner	2, 23.5m	1685624.4,5468768.8
Consent corner	3, 32.6m	1685660.1,5468654.1
Consent corner	4, 12.8m	1685325.8,5468549.9
Structure corner	A, 12.8m	1685364.9,5468567.5
Structure corner	B, 6.8m	1685331.8,5468656.6
Structure corner	C, 14.1m	1685505.1,5468708.3
Structure corner	D, 11.6m	1685495.7,5468611.2
Low tide	Low tide 1	1685241.4,5468681.8
Low tide	Low tide 2	1685421.2,5468807.8
Low tide	Low tide 3	1685550.7,5468835.6

Plate 2. Aerial view of three low tide GPS locations relative to the inshore farm boundary (red polygon).

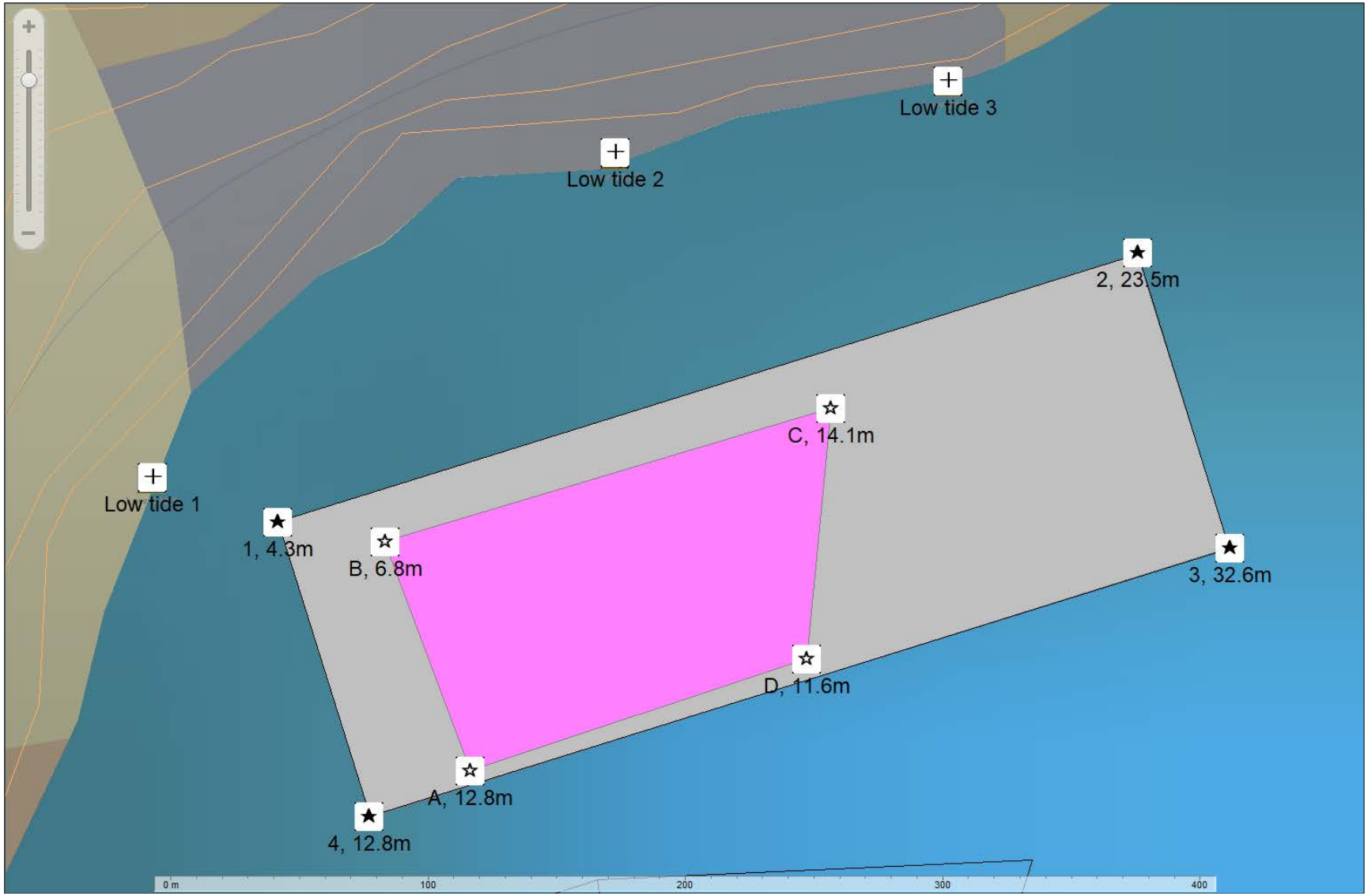


Figure 8. Depths of the proposed reconsent area (grey) and existing marine farm surface structures (pink). Three low tide locations are also plotted (crosses).

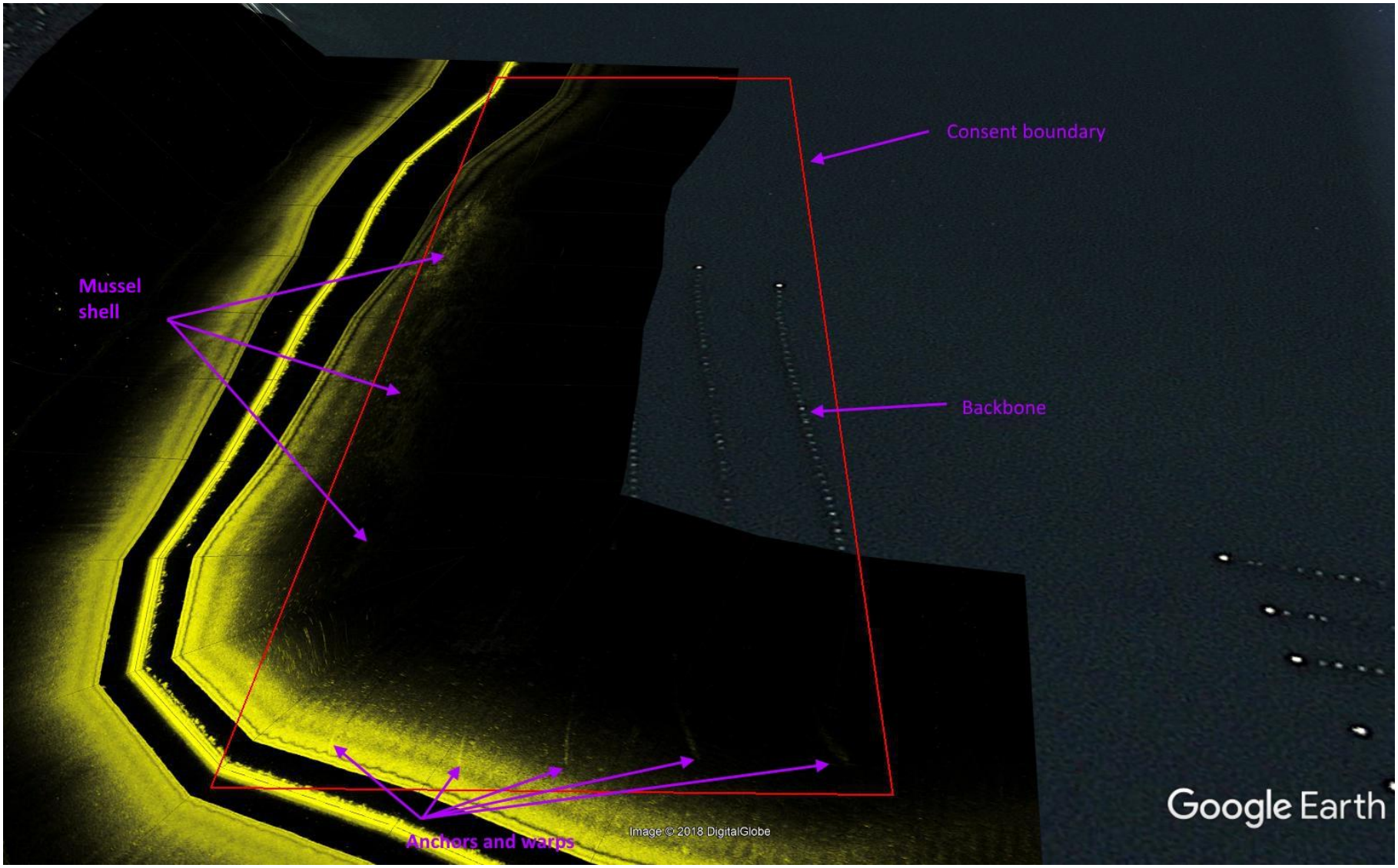


Figure 9. Sonar run at farm site 8058. Red polygon = consent boundary, yellow line = sonar track.

6.3 Drop camera images

Drop camera photographs were taken throughout the existing consent and offshore of the consent (Table 2, Figure 10, Appendix 1). Photographs were used to describe the benthic substratum, mussel shell debris cover and presence of biological characteristics.

Within the consent

The benthos within the consent was characterised by soft substratum. Deep parts of the consent were characterised by silt (mud) with a very small component of natural shell (Plate 3). Mussel shell was present in areas occupied by farm structures (Plate 4).

In shallow parts of the consent, silt dominated but a film of microalgae and diatoms was present on the sediment surface (Plate 5).

Plate 3. Silt and clay with a small component of natural shell from deep parts of the consent (photo 14, 23.1 m depth).

Plate 4. Silt and mussel shell from under backbones in the consent (photo 18, 9.2 m depth)

Plate 5. Silt and micro-algal and diatom mat located inside the consent (photo 11, 8.7 m depth).

Mussel shell

Mussel shell debris was observed from 3 of the 16 consent photos and from three photos collected offshore of the consent, but close to backbones (Figure 11). In the consent, mussel shell debris, when present, ranged from 10 to 95% cover under the backbones (Plate 6) (Table 2). Mussel shell debris was not recorded under warp structures (Figure 11).

Plate 6. Silt with a moderate level of mussel shell debris under backbones located in the consent (photo 7, 11.7 m depth).

Offshore of the consent

The benthos offshore of the consent area was characterised by silt with a small component of shell. Mussel shell was recorded in three offshore photos from areas close to farm droppers (Plate 7, Figure 11, Table 2).

Plate 8. Silt with mussel shell offshore of the consent (photo 3, 12.1 m depth).

Table 2. Coordinates of drop camera stations showing location relative to the marine farm consent area (NZTM). Colours are: grey = within consent, pink = under backbones, blue = outside consent. Depth, substratum, level of mussel shell debris are listed.

No. & Depth (m)	Coordinates	Location	Substratum & features	Shell debris	% mussel shell
1, 12.8m	1685570.9,5468627.3	In consent, no structures	Silt, microalgal mat	None	0
2, 12.5m	1685510.1,5468604.4	Offshore of consent, no structures	Silt, mussel shell, microalgal mat	Low	20
3, 12.1m	1685448.0,5468584.1	Offshore of consent, no structures	Silt, mussel shell, microalgal mat	High	80
4, 12.8m	1685388.7,5468560.6	Offshore of consent, no structures	Silt, mussel shell, microalgal mat	Low	10
5, 16.7m	1685516.3,5468658.9	In consent, under warps	Silt, microalgal mat		
6, 13.4m	1685457.9,5468633.9	In consent, under backbones	Silt, mussel shell, microalgal mat	Low	10
7, 11.7m	1685377.3,5468608.1	In consent, under backbones	Silt, mussel shell, microalgal mat	Moderate	40
8, 9.7m	1685333.3,5468596.6	In consent, under warps	Silt, microalgal mat	None	0
9, 6.9m	1685319.8,5468643.8	In consent, under warps	Silt, shell	None	0
10, 6.3m	1685317.2,5468667.5	In consent, no structures	Silt, shell	None	0
11, 8.7m	1685376.3,5468695.2	Inshore of consent, no structures	Silt, shell	None	0
12, 11.5m	1685457.5,5468717.2	In consent, no structures	Silt, microalgal mat	None	0
13,22.5m	1685531.2,5468739.0	In consent, no structures	Silt	None	0
14, 23.1m	1685605.1,5468762.4	In consent, no structures	Silt, shell	None	0
15, 18.3m	1685544.6,5468692.2	In consent, under warps	Silt, shell	None	0
16, 13.6m	1685498.2,5468690.7	In consent, under backbones	Silt, microalgal mat, shell, mussel shell	Low	15
17, 11.3m	1685439.0,5468675.6	In consent, under backbones	Silt, microalgal mat, shell, mussel shell	Low-moderate	35
18, 9.2m	1685369.4,5468656.4	In consent, under backbones	Silt, mussel shell	High	95
19, 8.4m	1685335.6,5468620.8	In consent, under warps	Silt, microalgal mat	None	0
20, 11.3m	1685420.5,5468649.9	In consent, under backbones	Silt, mussel shell, microalgal mat	High	95

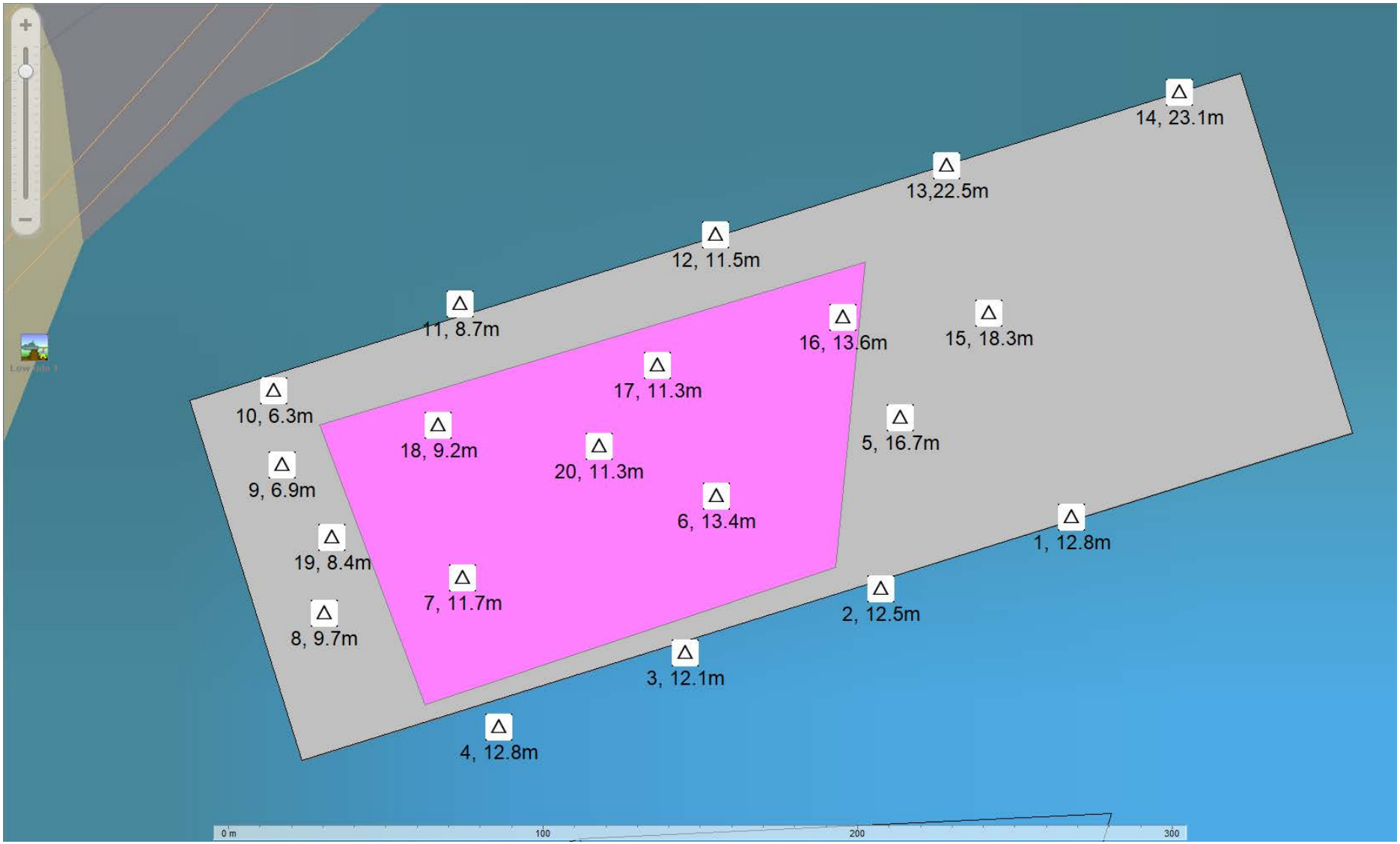


Figure 10. Drop camera stations of the reconsent area (open triangles = soft substrata), consent renewal area (grey) and surface structures (pink). Numbers are the photo number and water depth (m).

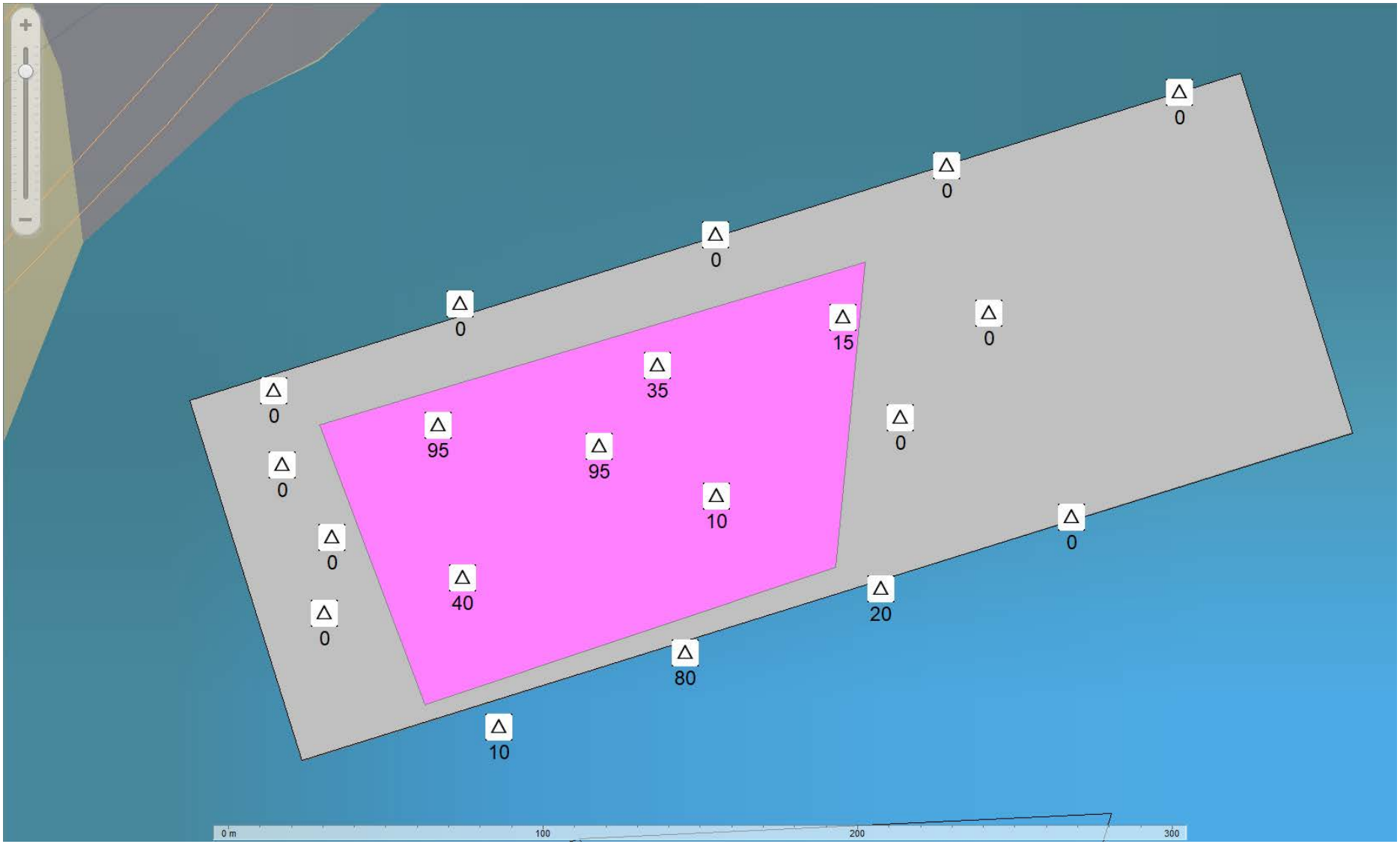


Figure 11. Estimated percentage cover of mussel shell from drop camera stations (open triangles = soft substrata), consent renewal area (grey) and surface structures (pink). Numbers are the estimated % cover of mussel shell.

7.0 Conclusions

7.1 Benthic habitats and substratum

Substratum and habitat distribution relative to the reconsent area was based on drop camera stations and sonar imaging of the benthos. The consent area was located over a relatively featureless benthos dominated by silt substratum with or without a very small component of natural shell. At the eastern end of the consent the benthos dropped towards the main Waitata Reach channel.

Mud (i.e. silt) 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 considered suitable for consideration for marine farming activities in the Marlborough Sounds.

Unlike mud and silt, rocky substratum is not traditionally considered suitable for marine farming activities as it is likely smothered by shell debris and may no longer functions as a hard substratum habitat. No rocky substrata were observed inside or close to the consent.

7.2 Species and communities

Species abundance and diversity from most of the consent was moderate compared to high current locations in the Sounds. Benthic observations within soft substratum dominated areas of the consent confirmed the area supported species typical of shallow silt substratum in the outer Pelorus Sound (e.g. snake star, horse mussel, microalgal mat, red algae, cushion sea star, wandering anemone, sea cucumber). No fish were observed from drop camera photos.

No scallops were observed during the present survey. No species, habitats or communities regarded as ecologically significant (see Davidson *et al*., 2011) were observed during the present study.

7.3 Sea birds

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 Australian gannets (*Sula 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 17 km at Waimaru Peninsula in Beatrix Bay and well within their flight range. A variety of shag species are also present in the area and may potentially use ties as nesting material. It is therefore important that marine farmers minimize the introduction of ties into the marine environment.

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

7.4 King shag

A variety of authors have also outlined human activities that may impact king shags including aquaculture (Schuckard, 2006); commercial fishing (McClellan, 2017), colony disturbance (Butler, 2003; Davidson *et al*., 2018), and predation (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; see Section 2.4) and concluded that deep water marine farms posed a greater threat compared to inshore sites.

The most recent general review of the ecological effects of aquaculture (Sagar, 2013) 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 authors 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, 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."

Of all the threats, most attention had been given to the potential effects of mussel farms on king shags, and the possibility that king shags are excluded from the area under and around a mussel farm due to physical structures inhibiting foraging, and/or changing the habitat causing decreases to key prey species (McClellan, pers comm.). Unfortunately, the extensive data that has been collected on the locations of foraging king shags has, however, not been able to answer this key question.

The present marine farm reconsenting site is mostly located over a shallow area of outer Pelorus Sound. King shags do not appear to utilize shallow areas of the Sounds preferring to hunt in depth > 20-30m depth. King shags, do however, forage in areas near this farm in the main Reach (Schuckard, 1995, author pers obs.). The applicant proposes that the present farm site size and consented structure number remains unchanged. This means any impact on king shags will also remain unchanged if the site is reconsented.

7.5 Marine mammals

International research demonstrates that the nature and scale of any direct displacement or avoidance varies 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 (Clement and Halliday, 2014; Davidson and Richards, 2017).

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

For dusky and common dolphins, the existing farm represents an area lost as foraging habitat. It is unknown if this loss is important to these species. The present proposal, however, is applying for no additional water space, therefore the present level of impact on these species will remains unchanged.

Based on migratory patterns and behavour it is unlikely these farms represent a threat to echolocating whales.

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 within the greater Admiralty Bay region (D. Clement, pers. comm).

Entanglement

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 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 tail stock 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.

The present marine farm utilizes standard mussel farming structures that are under tension and therefore present a low risk of entanglement to marine mammals.

7.6 Biosecurity issues

The applicant belongs to mussel industries Environmental Management System (EMS). As a member, the applicant and his contractors are bound by good environmental practices. As well as all aspects of farming such as establishment, seeding, and harvesting, the Code includes guidelines on the transfer of mussel seed and the NZ Mussel Industry Seed Transfer Code. All members of the ECOP are also bound by the Biosecurity Act 1983, as well as the Hazardous Substances and New Organisms Act 1996.

7.7 Mussel farming impacts

7.7.1 Benthic impacts

Mussel shell debris was recorded from 6 of the 16 consent area photos and three photos collected offshore, but closed to backbones. Mussel debris was most abundant under backbones and ranged from 10-95% cover. No mussel shell debris was recorded under warp structures.

Shell debris impact levels were within the range known for mussel farms in the Marlborough Sounds. This farm impact at this site is at the moderate end of the impact range compared to other farms in the Sounds. This is consistent with a study by Harstein and Rowden (2004) who investigated the impact of mussel farming at three sites in Pelorus Sound. The authors had one of their study farms located in this area of Pelorus. The authors stated impacts were relatively low in this area compared to farms located in more sheltered areas of the Sound.

It is probable that the impact of continued shellfish farming at this site will result in the deposition of more shell and fine sediment under and near droppers. Based on the literature and assuming the present level of farming activity remains consistent, it is very unlikely that the surface sediments would become anoxic, however, the redox layer is likely 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 thereby reducing recovery times compared to inshore coarser substratum areas (Davidson and Richards, 2014).

7.7.2 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).

Tidal flows in Waitata Reach are high (Broekhuizen, 2015). Winds are likely to also be a significant driver of water movement in this area, especially during the north, east and southerly events. The proximity of the farm to the main channel and Cook Strait means water turnover times are likely to be very short compared to bays well distant to main reaches in Pelorus Sound (e.g. Hallam Cove).

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. The present reconsenting application represent no change to the number of consented lines and therefore represents no change to phytoplankton predation and water flows in the bay.

7.8 Boundary adjustments, line adjustments and monitoring

No biological communities of particular interest were found during the present survey. Further, most of the consent is located over silt substratum with or without a component of natural shell. This substratum is the common and widespread habitat type in sheltered shores of the Marlborough Sounds. The impacts associated with mussel farming on muddy habitats characterised by silt are low compared to farm impacts in shallow habitats dominated by rocky or biogenic communities.

Warps are known to have little or no impact on benthic communities (Davidson and Richards, 2014). At this site the benthos under warps appeared relatively natural, with no mussel shell debris present.

Surface structures were located within the consent over a soft bottom. No rocky substrata were recorded in the consent.

Any effect on king shag and marine mammals would remain unchanged if the farm is reconsented.

No changes to the present consent boundaries are suggested on biological grounds. Habitats and species associated with the site are typical of and outer Sounds Bays and as such no monitoring is suggested.

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Appendix 1. Drop camera photographs

Photo 1 Silt, microalgal mat

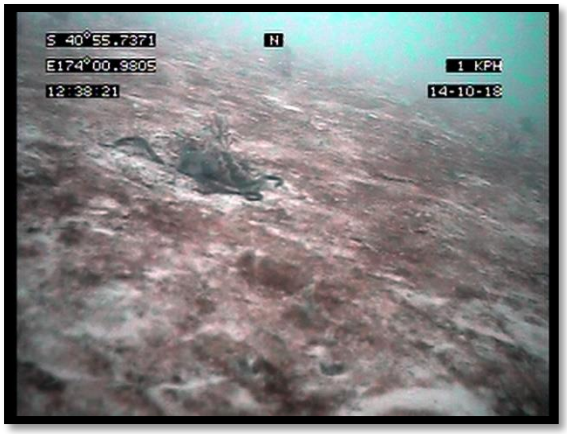

Photo 2 Silt, mussel shell, microalgal mat

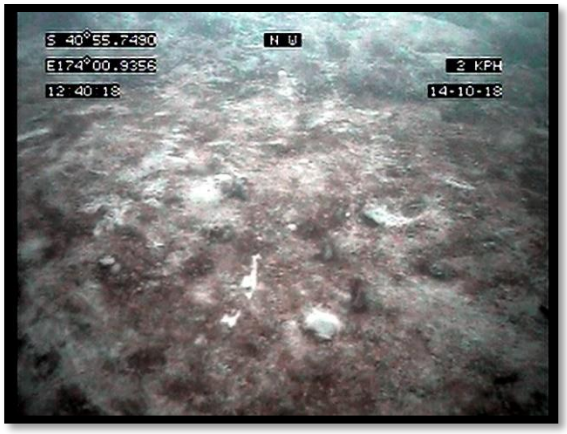

Photo 3 Silt, mussel shell, microalgal mat

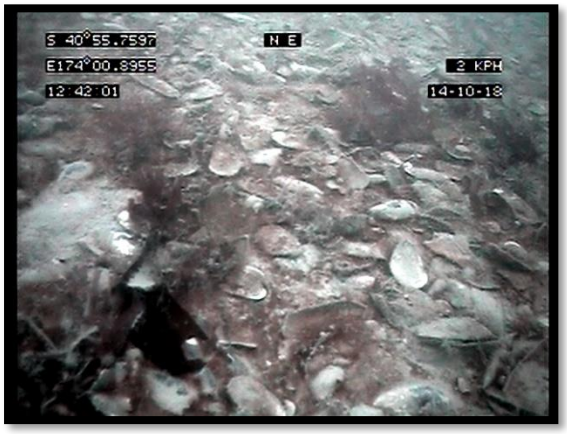

Photo 4 Silt, mussel shell, microalgal mat

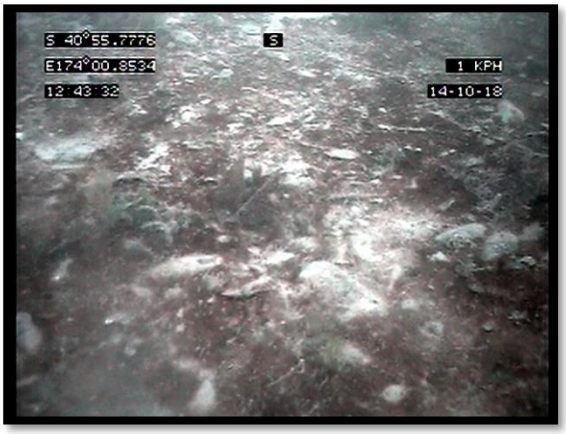

Photo 5 Silt, microalgal mat

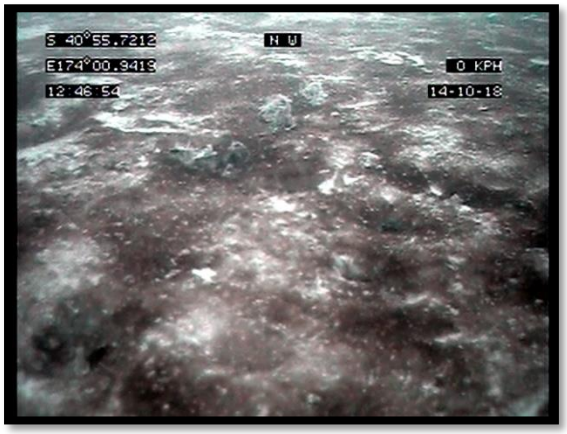

Photo 6 Silt, mussel shell, microalgal mat