



# Resource

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

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

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

You may apply for more than one consent that is needed to cover several aspects of the activity on this form.

## For Office Use

ISO 9001:2008  
Document Number:  
RAF0002-CI1579

Lodgement Fee Paid \$

Receipt No.

Consent No.

Case Officer:

**Date Received:**

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

Name:

*(full legal name)*

Jonathan Tester

Mailing Address:

*(including post code)*

Jonathan Tester  
c/o Landmark Lile, Lucas House, 51 Halifax Street, PO Box 343, Nelson

Email Address: jonotester@gmail.com

Phone: (Daytime) \_\_\_\_\_

Phone: (Mobile) \_\_\_\_\_

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

Name:

Jeremy Butler

Mailing Address:

*(including post code)*

Lucas House  
51 Halifax Street,  
PO Box 343, Nelson

Email Address: jeremy@landmarklile.co.nz

Phone: (Daytime) 03 539 0330

Phone: (Mobile) 027 244 3366

### 3. Type of Resource Consent Applied For

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

### 4. Brief Description of the Activity

To establish a marine farm in Clay Point including, undertake marine farming activity, construct and maintain marine farming structures, disturb the bed of the Coastal Marine Area and undertake harvesting activities.

To discharge contaminants to the coastal environment area including faeces and pseudofaeces from marine farm organisms, organic and biodegradable waste particularly during harvest.

### 5. Supplementary Information Provided?

☒ Yes      ☐ No

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

### 6. Property Details

The location to which the application relates is (address): Clay Point, Tory Channel

Legal description (i.e. Lot 1 DP 1234): Grid Reference = 1703802.99 5434251.44

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

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

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

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

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

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

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

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

## 8. Other Information

Are additional resource consents required in relation to this proposal? If so, please list and indicate if they have been obtained or applied for.

Costal Permit and discharge permit are both being sought.

I attach any other information required to be included in the application by the relevant Resource Management Plan, Act or regulations.

☒ Yes

☐ No

## 9. Fees

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

## 10. Declaration

I (please print name) Jeremy Butler

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

Signature of applicant or authorised agent:

Date: 22/11/2016

### Privacy Information

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

Reset Form

## Bea Gregory-5252

---

**From:** MDC  
**Sent:** Monday, 21 November 2016 4:36 p.m.  
**To:** RCInbox  
**Subject:** FW: Resource Consent Application  
**Attachments:** Clay Point - Tory Channel RCA.pdf; Attachement B.pdf; Attachment B -- Tester.pdf; Attachment B - Tester.pdf; Attachment C.pdf

Hi,

This was received in the MDC inbox for your attention, thanks

*Sonia*  
*Customer Service Officer*

---

**From:** Catherine Bryant [<mailto:catherine@landmarklife.co.nz>]  
**Sent:** Monday, 21 November 2016 4:26 p.m.  
**To:** MDC  
**Subject:** Resource Consent Application

To whom it may concern,

Please find attached to this email a resource consent application to be lodged and for the attention of the consents team.

The deposit has been transferred electronically under the name Jonathan Tester.

If you have any questions in regards to accessing the documents attached please do not hesitate to contact me. Otherwise I will await formal correspondence from the consent team.

Kind Regards,  
Catherine.

Catherine Bryant  
**Landmark Life Limited**  
*Resource Management Consultancy*

**Telephone:** 03 539-0330  
**Mobile:** 027 244 3333





## **Application for Resource Consent**

### **to the Marlborough District Council**

Under Section 88 of the Resource Management Act 1991

**APPLICANT:** Jonathan Tester

**LOCATION:** Clay Point, Tory Channel

**CONSENTS SOUGHT** Coastal Permit

**AND DESCRIPTION OF**

**ACTIVITIES**

To establish a marine farm in Clay Point including the following activities:

- Undertake marine farming activity;
- Construct and maintain marine farming structures;
- Disturb the bed of the CMA; and
- Undertake harvesting activities.

#### **Discharge Permit**

To discharge contaminants to the coastal environment area, including:

- Faeces and pseudofaeces from marine farm organisms;
- Organic and biodegradable waste particularly during harvest.

(A detailed description of this activity is contained within Attachment A – *Assessment of Environmental Effects*).

**ASSESSMENT OF**  
**EFFECTS**

Attached is an assessment of the environmental effects that the proposed activity may have on the environment in accordance with Section 88 and the Fourth Schedule of the Resource Management Act 1991. Consideration has been given to the Marlborough Sounds Resource Management Plan.

Signed for and on behalf of Jonathan Tester on 21 November 2016

Jeremy Butler  
**Landmark Lile Limited**  
*Resource Management Consultancy*

Deposit: The deposit will be paid by direct credit.

**ATTACHMENT A.****ASSESSMENT OF ENVIRONMENTAL EFFECTS**

Prepared in accordance with Section 88 and the Fourth Schedule  
of the Resource Management Act 1991

<b>Table of Contents</b>		<b>Page</b>
<b>1.0</b>	<b>Introduction.....</b>	<b>4</b>
	1.1 The purpose of this report.....	4
<b>2.0</b>	<b>Description of Activity.....</b>	<b>4</b>
	2.1 Background and Subject Site.....	4
	2.2 The Marlborough Sounds Resource Management Plan.....	7
	2.3 The Proposal.....	9
<b>3.0</b>	<b>Status of Application .....</b>	<b>11</b>
	3.1 The Marlborough Sounds Resource Management Plan .....	11
	3.2 Summary.....	11
<b>4.0</b>	<b>Statutory Framework and Considerations.....</b>	<b>12</b>
<b>5.0</b>	<b>Actual or Potential Effects on the Environment.....</b>	<b>13</b>
	5.1 Benthic Ecology.....	13
	5.2 Natural Character.....	14
	5.3 Landscapes, Seascapes and Natural Features.....	16
	5.4 Public Access and Navigation.....	16
	5.5 Amenity Values.....	16
	5.6 Cumulative Effects.....	17
	5.7 Cultural Heritage Values.....	17
<b>6.0</b>	<b>Provisions of the Sounds Plan.....</b>	<b>17</b>
	6.1 Support for Marine Farming where Appropriate.....	17
	6.2 Natural Character and Landscape.....	19
	6.3 Effects on Ecological Values.....	19
	6.4 Public Access and Recreation.....	19
	6.5 Precautionary Approach.....	20
<b>7.0</b>	<b>The Proposed Marlborough Environment Plan.....</b>	<b>20</b>

<b>8.0</b>	<b>Part 2 RMA Analysis.....</b>	<b>21</b>
<b>9.0</b>	<b>Term.....</b>	<b>22</b>
<b>10.0</b>	<b>Overall Assessment.....</b>	<b>22</b>

**ATTACHMENTS:**

- A. **Assessment of Environmental Effects** (Landmark Lile Ltd)
- B. **Location and layout plans** (Draughting Plus Ltd)
- C. **Benthic Site Assessment** (National Institute of Water & Atmospheric Research Ltd)



## 1.0 Introduction

### 1.1. The purpose of this report

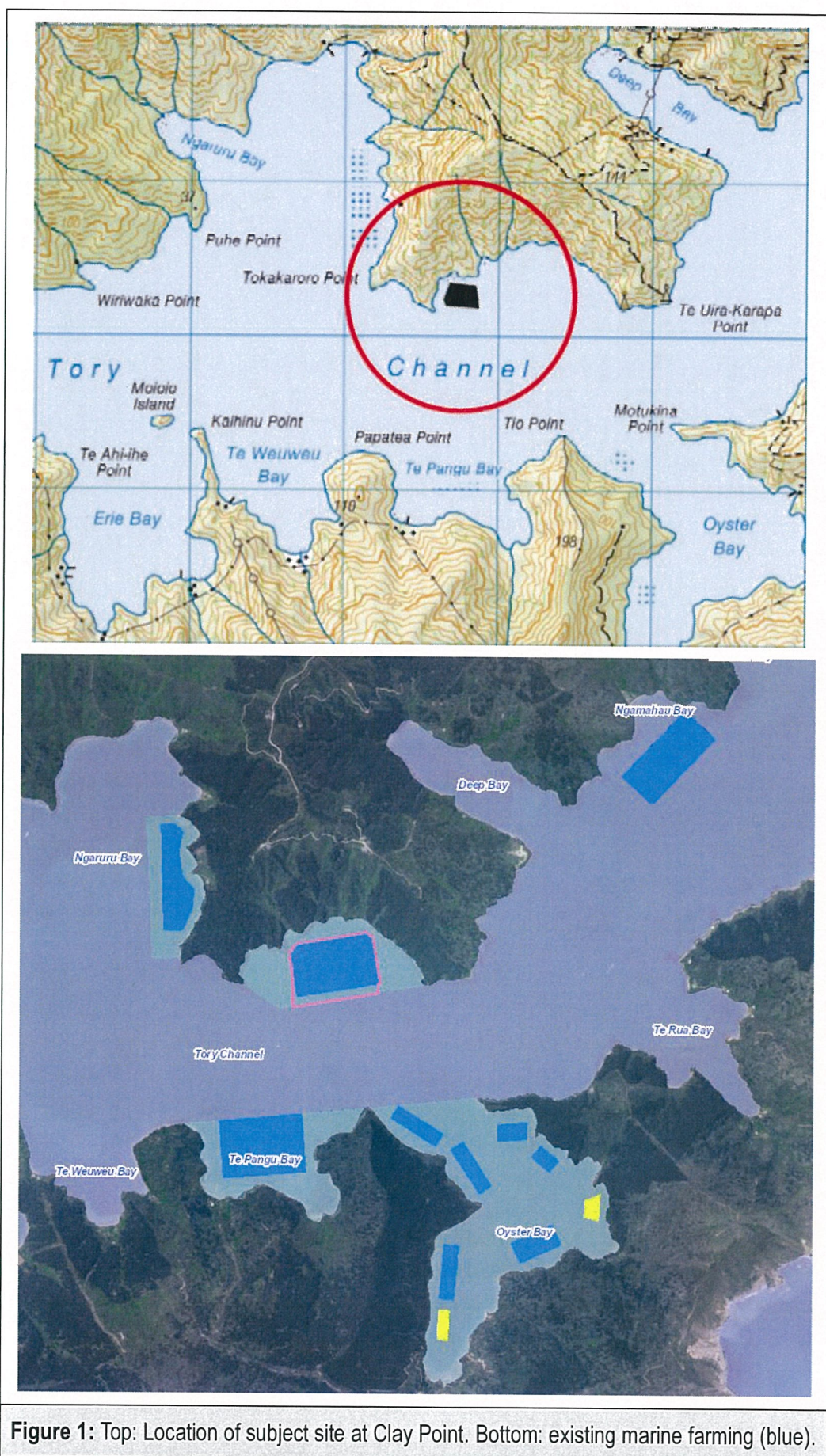
The purpose of this report is to provide a description of the proposed development and an analysis of the adverse effects on the environment from the granting of this consent. This report has been prepared in accordance with Section 88 and the Fourth Schedule of the Resource Management Act 1991 and forms an integral part of this resource consent application for a coastal permit and discharge permit.

## 2.0 Description of Activity

### 2.1. Background and Subject Site

- 2.1.1. The applicant and their family have been involved in aquaculture within Marlborough since the early 1980's. The following proposal would enhance their aquaculture operations in the Marlborough Sounds.
- 2.1.2. Clay Point is a small embayment on the northern side of the Tory Channel. A location map is provided in **Attachment B** and an excerpt of the location map is shown in Figure 1 below.
- 2.1.3. Tory Channel is a long channel running east west and is accessed by sea from Picton.
- 2.1.4. Topographically, Tory Channel is the main commercial route in and out of Picton to the Cook Strait. Daily ferries use this channel to reach Picton and Wellington. It is accessed only from the east and west direction and is highly used from a boating perspective.
- 2.1.5. The landward backdrop of Clay Point is currently in exotic forestry land use.
- 2.1.6. There are a number of developed Marine farms in this area of Tory Channel. The extent of this marine farming development in the area is evident from the plans and drawings provided in **Attachment B**.
- 2.1.7. The aquaculture located on both sides of the Channel can also be seen in Figure 1 (bottom) which is reproduced from the Council's marine farm mapping system. It is clear that there is a strong pattern of concentration of marine farms within the CMZ2 zone.

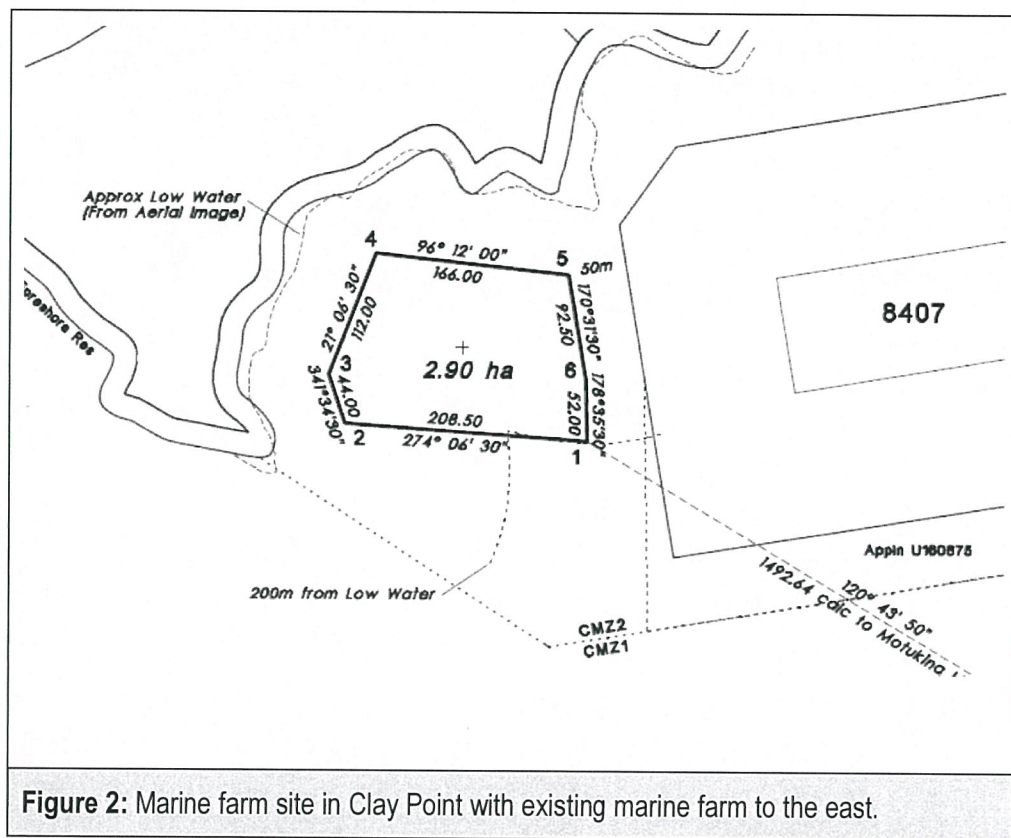




**Figure 1:** Top: Location of subject site at Clay Point. Bottom: existing marine farming (blue).



2.1.8. The subject site is bound by marine farm to the east (8407) as shown in Figure 2.



- 2.1.9. Farm 8407 to the east is owned by New Zealand King Salmon Company Ltd. This neighbouring farm was granted consent for the renewal of existing consents for the existing salmon farm and activities ancillary to the farm's operation (U160657).
- 2.1.10. According to the application for this neighbouring farm, NZ King Salmon has consent for the rearing and harvest of chinook salmon, including the discharge of 4500 tonnes of salmon feed per annum. The farm occupies an area of 19.65ha with a maximum area of net pen surface structures of 2ha (located within a 3.15ha pen area boundary). Such structures include a barge for the storage and handling of feed and storage of farming equipment. According to the application, a salmon farm has been located within this location since approximately 1994.

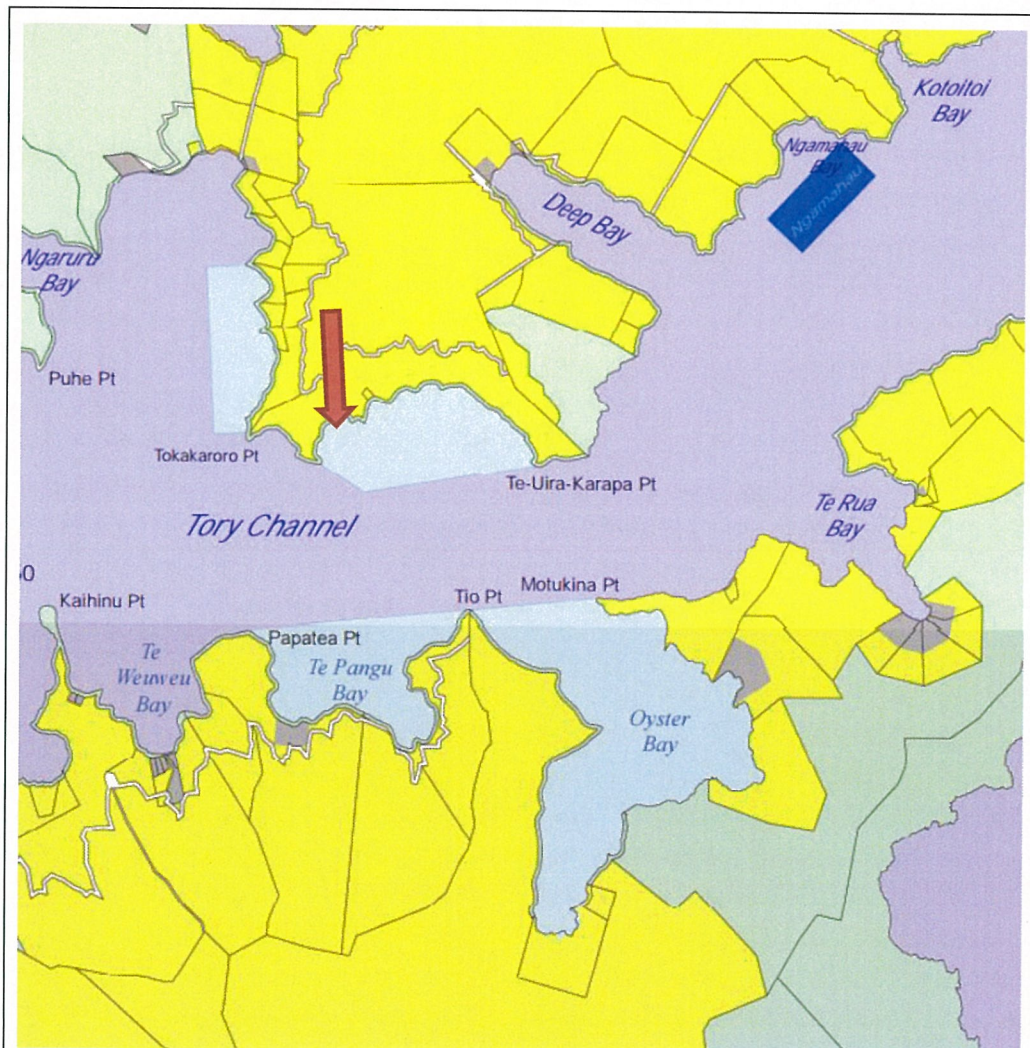


## 2.2. The Marlborough Sounds Resource Management Plan

2.2.1. The application site falls within the jurisdiction of the Marlborough Sounds Resource Management Plan ("the Sounds Plan"). Volume 3 of the Sounds Plan identifies two coastal marine zones:

- Coastal Marine Zone 1 (CMZ1) is shown in a purple colour on the planning maps and identifies a zone where most existing marine farms are provided for but new marine farm developments are prohibited; and
- Coastal Marine Zone 2 (CMZ2) where new marine farms are provided for subject to compliance with the relevant rules and performance criteria.

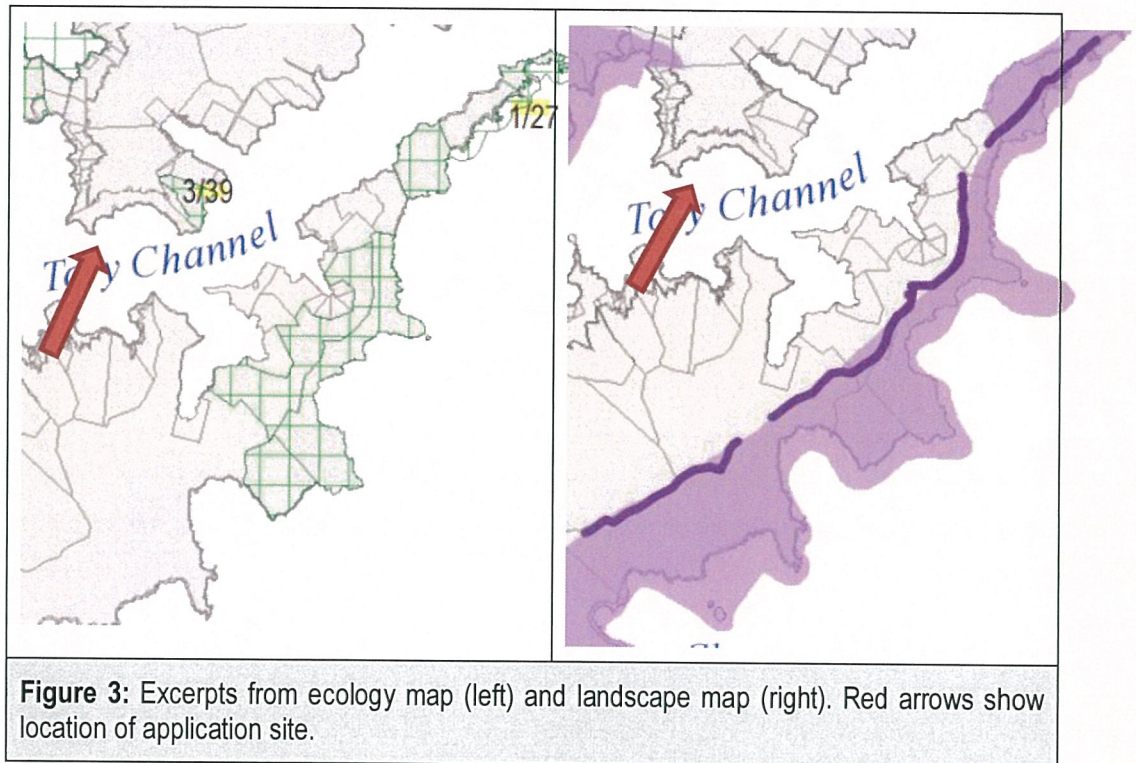
2.2.2. Figure 2 shows an excerpt from Maps 42 and 65 of the Sounds Plan. The subject location in Clay Point is shown as being within CMZ2 along with the neighbouring Te Pangu Bay, Oyster Bay and a portion of Ngaruru Bay.



**Figure 2:** Excerpt of zoning maps from Sounds Plan. Purple and blue colours indicate CMZ1 and CMZ2, respectively. Red arrow shows application site.



- 2.2.3. Volume 3 of the Sounds Plan also contains maps that identify areas of ecological (Map 72 is relevant) and landscape (Map 78) value. The relevant excerpts from these maps are reproduced in Figure 3. It is clear from these excerpts that the subject site is not subject to either Ecological Areas or Areas of Outstanding Landscape Value (AOLV).
- 2.2.4. In terms of areas of ecological value there are two small locations that are referenced in Figure 3 as “3/39”. This corresponds to Arapawa Island Reserves. The second is “1/27” for which the ecological value is identified as being the Arapawa Outer Coast.

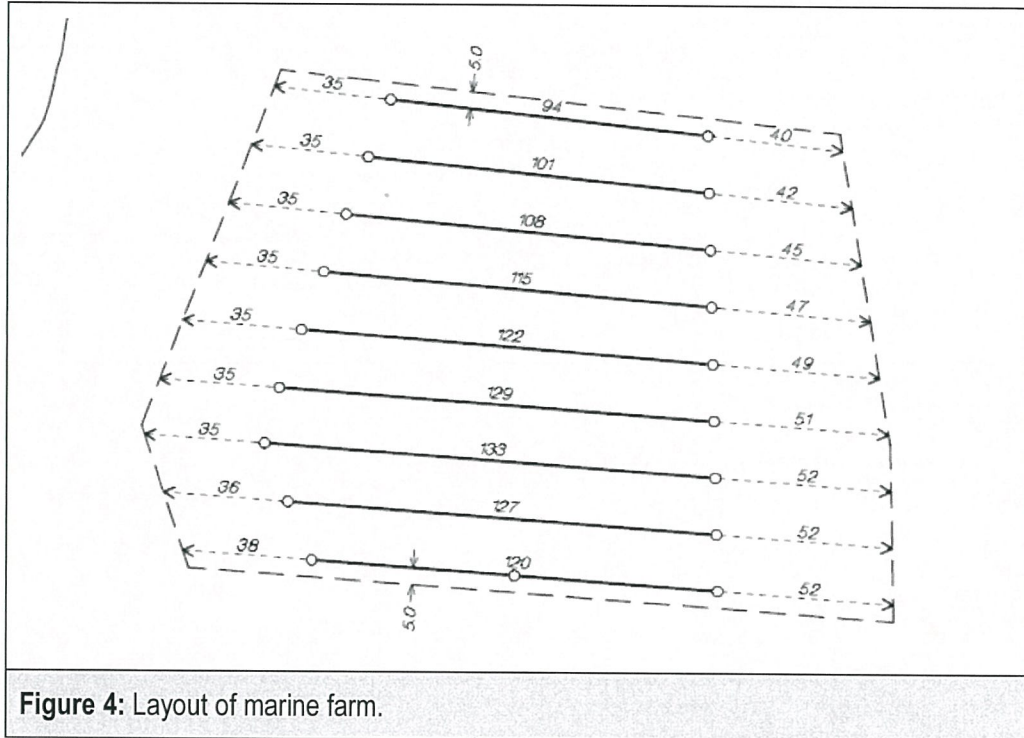


- 2.2.5. Regarding landscape values, Clay Point and the adjacent ridgeline is not identified as being a Prominent Ridge, nor an AOLV.
- 2.2.6. Appendix 2 of the Sounds Plan provides information about the Natural Character Areas of the sounds. The appendix identifies the known core biophysical and ecological components that make up the natural character of the Marlborough Sounds.
- 2.2.7. Map 106 of the Sounds Plan identifies the marine ecosystem as being “mainly sheltered” and as “G Marine – Tory Channel”. The relevant information in Appendix 2 provides the following collective characteristics:
- “Sheltered, turbid, shallow waters; extensive mud bottom with narrow cobble fringe; conspicuous marine life generally sparse; off-shore red algae beds; massive tube worm colonies” (Sounds Plan, page App Two – 65)*
- 2.2.8. In contrast to several of the other marine ecosystem areas identified in Appendix 2, the Sounds Plan does not provide any “Potential for Restoration” section for Tory Channel.

- 2.2.9. The Arapawa Island Reserves and Arapawa Outer Coast are clearly stated being of significance. The locations of these are well known and are not affected by proposed activity as described in section 2.3 below.

### 2.3. The Proposal

- 2.3.1. It is sought to establish a new marine farm site of 2.9 hectares in Clay Point, Tory Channel, as shown in Figure 4 and on the site plan in **Attachment B** and as described previously in this application.



- 2.3.2. The proposed site layout will involve establishment of one block of 9 longlines of variable length providing a total backbone length of 1049 metres.
- 2.3.3. It is proposed to farm and harvest the following species using conventional longline methods with variable length backbone to warps and anchors:
- Green Shell Mussels (*Perna canaliculus*)
  - Scallops (*Pecten novaezelandiae*)
  - Blue Shell Mussels (*Mytilus edulis*)
  - Flat Oysters (*Toistrea lutaria*)
  - Pacific Oysters (*Crassostrea gigas*)
- 2.3.4. The following algae are also likely to be propagated at the site:
- *Macracystis pyrifera*
  - *Ecklonia radiata*
  - *Gracilaria*
  - *Pterocladia lucida*



- 2.3.5. These species are all edible species for Paua (*Haliotis* spp.) and all grow in the Marlborough Sounds. The seaweeds are highly productive and provide for a wide range of organisms which feed on it, and can be farmed using current culture systems.
- 2.3.6. Consent is also sought to disturb the seabed with anchoring devices and to harvest marine farm produce from the site, including the taking and discharge of seawater and the discharge of biodegradable and organic waste matter during harvesting of produce in Clay Point, Tory Channel.
- 2.3.7. This will be a new marine farm licence for the site.

### 3.0 Status of Application

The following table identifies the relevant rules of the Sounds Plan for the purpose of determining the status of these two applications under the Resource Management Act 1991:

#### 3.1. The Marlborough Sounds Resource Management Plan

Rule	Rule Name	Activity Status	Reason
<b>Marine Farm Structures and Activities</b>			
35.4	Discretionary Activities	<b>Discretionary</b>	As the marine farm is not currently existing it falls to be considered under rule 35.4, subject to compliance with the standards specified in Rule 35.4.2.9.  The proposed marine farm complies with the standards identified in 35.4.2.9 (a) and (b) as the boundaries are both beyond 50 metres of mean low water mark and within 200 metres from the mean low water mark.
<b>Disturbance of the bed of the CMA and placement of structures</b>			
35.4	Discretionary Activities	<b>Discretionary</b>	The disturbance of the bed and the placement of structures as a component of the establishment of a marine farm is provided for by this rule as a discretionary activity.
<b>Harvesting marine farming produce</b>			
35.4	Discretionary Activities	<b>Discretionary</b>	The activity of harvesting marine farming produce is provided for by this rule as a discretionary activity.
<b>Discharges</b>			
35.4	Discretionary Activities	<b>Discretionary</b>	The discharge of faeces and pseudofaeces from the marine farm to the coastal marine area is provided for by this rule as a discretionary activity.
35.4	Discretionary Activities	<b>Discretionary</b>	The discharge of organic and biodegradable waste during harvest to the coastal marine area is provided for by this rule as a discretionary activity.

#### 3.2. Summary

These applications must be considered as a **Discretionary activity** within the Marlborough Sounds Resource Management Plan. The relevant assessment criteria are evaluated within Section 4.



## 4.0 Statutory Framework and Considerations

- 4.1.1. Section 104 of the RMA provides the basis for the decision making framework under which this application must be considered. The relevant considerations for the Council in making a decision on this application are:
- (a) any actual and potential effects on the environment of allowing the activity;
  - (b) the New Zealand Coastal Policy Statement (NZCPS);
  - (c) the Marlborough Regional Policy Statement (RPS);
  - (d) the Sounds Plan; and
  - (e) Any other matters that the consent authority considers relevant and reasonably necessary to determine the application.
- 4.1.2. These Section 104 matters will be assessed later in this application when the proposal is evaluated.
- 4.1.3. Section 105 must be considered in relation to the applications for discharge permits. As a result the consent authority must have regard to:
- (a) the nature of the discharge and the sensitivity of the receiving environment to adverse effects; and*
  - (b) the applicant's reasons for the proposed choice; and*
  - (c) any possible alternative methods of discharge, including discharge into any other receiving environment.*
- 4.1.4. Section 107 restricts the consent authority from granting discharge permits that may result in certain outcomes. The ability of the Council to grant the discharge permit applications under this section will be assessed later in this application.



## 5.0 Actual or Potential Effects on the Environment

The following assessment has been prepared after having regard to the scale and significance of the actual or potential effects (s88(2)(b)) and has been prepared in accordance with the Fourth Schedule to the Act. The 'actual or potential effects' have been identified from the relevant 'assessment criteria' of the Plan.

### 5.1. Benthic Ecology

- 5.1.1. The applicant has engaged NIWA to conduct a benthic survey to inform this AEE. The NIWA report is provided in **Attachment C**. By way of background the report states that the main environmental effects expected beneath a shellfish farm in a sheltered embayment such as Clay Point, are moderate levels of organic enrichment caused by deposition of mussel faeces and pseudofaeces; some accumulation on the seabed of shellfish such as mussels and other species growing on the farm structures, and some changes to the species assemblages living on and within the sediments.
- 5.1.2. As explained in the report a range of methods were carried out to investigate the biophysical benthic conditions.
- 5.1.3. While all ecosystems have a level of intrinsic value (a point identified in Section 7 RMA), the NIWA report points out that it is the commonness of the muddy substrate benthic environment which reduces the potential adverse effect for this site. There are no unusual or notable 3-dimensional features such as reef outcrops detected on the seabed.
- 5.1.4. The bed is reported as being well oxygenated and not excessively enriched with organic matter.
- 5.1.5. The report concludes:

*"Other than some increased shell drop below the farming structures, it is unlikely that significant effects will occur if a mussel farm is established. The strong tidal currents will mitigate any settlement of faeces and pseudofaeces, and will also mitigate any potential phytoplankton or seston depletion in the water column" (p4)*

*"Consequently, the presence of the salmon farm in the same embayment may indicate that the area has been subjected to some marine farming effects, such as nutrient release and faecal sedimentation, which may have altered the natural benthic communities. The monitoring reports, undertaken on behalf of NZ King Salmon, however, do not indicate significant effects beyond the existing salmon farm boundaries. This is possibly a reflection of the strong tidal currents at the site. The sediments and epifaunal species recorded at the potential mussel farming site in this survey do not indicate an altered benthic community or habitat. Other than some increased shell drop below the farming structures, it is unlikely that significant effects will occur if a mussel farm is established" (p 8).*



- 5.1.6. The report states that it is unlikely that significant environmental impacts will arise. From that conclusion it is therefore assessed that the effects on benthic ecology are likely to be less than minor.

## 5.2. Natural Character

- 5.2.1. As can be seen from the supporting maps the coastal marine zones within Tory Channel are spread throughout the channel. A big portion of the Tory Channel is zoned CMZ1 within which any new aquaculture is prohibited. Similarly the adjacent bay (Ngaruru Bay) has CMZ2 zoning which authorises marine farming.

- 5.2.2. Down the centre of the bay Tory Channel is zoned CMZ1. This zoning takes in all of the central waters and includes the long central headland or promontory that extends southwards from the head of Tory Channel.

- 5.2.3. Marine farming is more evident within this mid-section of Tory Channel than the north east or south west. The adjacent bay on the opposite side of the channel at Oyster Bay and Te Pangu Bay has a strong marine farm presence. The proposed marine farm is proposed to sit near an existing salmon farm and will not protrude or exhibit visibility beyond the effects of the existing marine farm, but will be visually well separated from the structures of that farm.

- 5.2.4. Chapter 2 of the Sounds Plan sets the context for the consideration of natural character:

*Natural character can generally be described as being those characteristics (qualities and features) of a particular environment. The particular environment in the case of the Plan, is the coastal environment, freshwater environments or wetlands, lakes, rivers and their margins.*

*The natural character of the coastal environment and freshwater bodies is comprised of a number of key elements which include:*

- *Coastal or freshwater landforms;*
- *Indigenous flora and fauna, and their habitats;*
- *Water and water quality, including marine and freshwater ecosystems;*
- *Scenic or landscape values;*
- *Cultural heritage values; and*
- *Habitat of trout.*

*All parts of the Marlborough Sounds coastal and freshwater environments have some or all of these qualities and to that extent, all have some degree of natural character. (MSRMP, p2-1)*

- 5.2.5. It should be noted that the above considerations were formulated under the older 1994 NZCPS and is therefore not necessarily consistent with the current NZCPS which in Policy 13 states: that natural character “*may include matters such as:*

- (a) *natural elements, processes and patterns;*
- (b) *biophysical, ecological, geological and geomorphological aspects;*



- (c) *natural landforms such as headlands, peninsulas, cliffs, dunes, wetlands, reefs, freshwater springs and surf breaks;*
- (d) *the natural movement of water and sediment;*
- (e) *the natural darkness of the night sky;*
- (f) *places or areas that are wild or scenic;*
- (g) *a range of natural character from pristine to modified; and*
- (h) *experiential attributes, including the sounds and smell of the sea; and their context or setting."*

5.2.6. Following the matters set out in these definitions, it is apparent that the preservation of natural character is intended to apply in the CMZ1 zones of Tory Channel.

5.2.7. Figure 5 below provides a photo of the site of the marine farm site. It is evident that the natural character values of the site are reduced by both the modification of the sea surface by a Salmon Farm to the east of the proposed site. The natural character values are also reduced by the exotic forestry that is the predominant land use of the land that forms the backdrop to the site. There are sporadic sections of regenerating vegetation around the lower slopes of the promontory and the greater bay that can be seen on the photo. These sections contain a mixture of exotic weedy species and native shrubs.



5.2.8. There are no dwellings or residents within Clay Point and it contains no notable attractions for recreation. The northern point of Clay Point is defined by rocky headland.

5.2.9. Overall, while the coastal marine area and coastal margin will always retain some inherent natural character, at this site it is considered that the reduction in natural character will be no more than minor. From the zoning and development pattern within Tory Channel it is clear that most marine farming is located within the mid-section of the greater channel and the north-east entrance into Tory Channel from the Strait is of principle importance for retaining the natural character of the sound.



### **5.3. Landscapes, Seascapes and Natural Features**

- 5.3.1. The land within this bay is not identified as an Area of Outstanding Landscape Value. The area which defines the northern extent of Clay Point would also not be considered an outstanding natural feature.
- 5.3.2. As stated previously both the landscape backdrop and the seascape around the site is modified by exotic forestry and marine farming, respectively.
- 5.3.3. The proposed marine farm will fill a small gap next to the larger existing marine farm but it is not considered that this gap is in a particularly prominent or strategic location. As a result the adverse effects on landscape and seascape values will be no more than minor.

### **5.4. Public Access and Navigation**

- 5.4.1. Clay Point is not recognised as a particular recreation destination. The main recreation and tourism activities in the vicinity are the daily Interislander and Bluebridge ferries, recreational boating and fishing. Clay point is not a major scenic cruise or charter destination for Picton based operators. The majority of space within Tory Channel is zoned CMZ1 consequently a large area will remain free of marine farming and allow ample fishing and landing opportunities elsewhere that will be significantly more attractive for recreation. The effects on public access are anticipated to be less than minor.
- 5.4.2. It is noted that from an aerial view there appears to be a small bay/inlet to the north east of the proposed location which may be a desirable fishing location. However there are no jetties in the embayment. In any event, the gaps between the proposed farm and the existing farm to the east will be sufficient to allow readily navigable access in and out of Clay Point. Furthermore, it is noted that the decision for New Zealand King Salmon (U160675) authorises net pen surface structures to be 2.0ha in area within an area of 3.15ha and defined as the Net Pen Area boundary. As such, the above waters will not be developed extensively and provide support that small crafts will be able to move around between the farms. In addition the proposed farm is located in an area where vessels are only permitted to travel at a maximum of 5 knots concluding that the effects on navigational safety will be less than minor due to the slow craft speeds and sufficient access between the farms. Given the proposed location and dimensions the new farm would have less than minor effect on the navigational route and safety of the daily ferries.

### **5.5. Amenity Values**

- 5.5.1. There are no dwellings on the land that forms the backdrop to the site. There are also no other sensitive land uses. As a result there are no adverse effects on the amenity of any dwelling or sensitive activity as a result of this activity.
- 5.5.2. Visual amenity effects may arise from people on the water. However, the proposed farm is small (in comparison to surrounding farms). The proposed farm will contribute to the existing cluster of marine farms around the centre section of Tory Channel.



## 5.6. Cumulative Effects

- 5.6.1. The proposed farm will cause a small increase in the density of marine farms in the CMZ2 zone on the northern side of the channel.
- 5.6.2. Cumulative effects will occur in relation to several of the spheres of effect discussed above including, benthic ecology, natural character, public access and amenity values. However, in all cases the magnitude of incremental adverse effect very small and assessed as less than minor.
- 5.6.3. As stated below, the Sounds Plan intends that the development of further marine farming should (all else being equal) be *“encouraged in areas where the natural character of the coastal environment has already been compromised ...”* (Policy 2.1.2.2)
- 5.6.4. Whilst, logically, it could be argued that this assessment of cumulative effects may result in unfettered growth of marine farming, this cannot occur in Tory Channel due to the extensive areas of CMZ1 zone which are free of marine farming. The CMZ1 and CMZ2 zones are a management tool for addressing the cumulative effects of marine farms within the sounds. The pocket of CMZ2 in the subject area, in which the farm is proposed, is of a size that still allows marine farm establishment, but also of a size that will not result in a large number of farms being created later. The use of this area, while still being minimal on the greater environment, is a sustainable and efficient use of the space without generating adverse cumulative effects. Therefore it is appropriate that farming be concentrated in existing developed areas.

## 5.7. Cultural Heritage Values

- 5.7.1. Statutory Acknowledgements are in place for all Te Tau Ihu Iwi for the Coastal Marine Area.
- 5.7.2. Te Tau Ihu Iwi have not been consulted for this application. However, based on experience it is not anticipated that this proposal will have adverse effects either on the interest of the Iwi, or on their cultural values.

## 6.0 Provisions of the Sounds Plan and NZ Coastal Policy Statement

### 6.1. Support for Marine Farming where Appropriate

- 6.1.1. The Sounds Plan and the NZCPS provide a level of support for marine farming in locations and ways that it is “appropriate”. Determining the appropriateness or otherwise of a given application is too be based on the outcome that the objective or policy is seeking to achieve.
- 6.1.2. Policy 8 of the NZCPS is to *“recognise the significant existing and potential contribution of aquaculture to the social, economic and cultural well-being of people and communities ...”* The policy notes the social and economic benefits of aquaculture.
- 6.1.3. In relation to natural character, Objective 2.2.1 of the MSRMP is as follows



*Objective 2.2.1: 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.*

- 6.1.4. This objective is consistent with the higher statutory documents: the NZCPS and Part 2 of the Act. Also consistent is its use of the term “inappropriate”. What is inappropriate in the context of the objective should be informed by analysis of the relevant supporting policies and what is to be achieved by the objective.

- 6.1.5. Policies 2.2.1.1 and 2.2.1.2 are as follows:

*Policy 2.2.1.1: Avoid the adverse effects of subdivision, use or development within those areas of the coastal environment and freshwater bodies which are predominantly in their natural state and have natural character which has not been compromised.*

*Policy 2.2.1.2: 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.*

- 6.1.6. Broadly, when read in concert these policies seek to avoid development where the coastal environment is predominantly in its natural state, and to encourage development in areas where the natural character of the coastal environment has already been compromised. This approach is supported by the zoning framework (CMZ1 and CMZ2) employed in the Sounds Plan.
- 6.1.7. In Tory Channel there are, as already described, a cluster of marine farms within the mid-section of the channel (around Te Pangu Bay, Oyster Bay and Ngaruru Bay), whereas the remaining area of the channel new marine farming is prohibited and marine farms are non-existent. This mid-section is reasonably developed but would not be considered intensively developed. Policy 2.2.1.2 supports this intensity and seeks that where additional farming is appropriate, that it be located within this central area. Logically, additional farming would be placed within the existing ribbon.
- 6.1.8. At a smaller scale, the pocket of CMZ2 at the site is already farmed by NZ King Salmon and the size of the pocket allows the establishment of the current proposal without generating a visually overdeveloped area. The development of the CMZ2 in the Sounds Plan were subjected to availability and community input. It was anticipated that area would be used as a marine farm site at some point. The subject proposal utilises this space without overdeveloping is bay.
- 6.1.9. Chapter 9.0 of the Sounds Plan provides an extensive suite of provisions to guide development in the CMA. Objective 9.2.1.1 makes it clear that appropriate activities may be accommodated in the coastal marine area.
- 6.1.10. Policy 9.2.1.1.14 is:



*“To enable a range of activities in appropriate places in the waters of the Sounds including marine farming, tourism and recreation and cultural uses”*

- 6.1.11. As such, marine farming is specifically identified as an activity that may be appropriate in the Sounds.
- 6.1.12. Overall, it is considered that there is support within the statutory documents for marine farming in appropriate locations.

## **6.2. Natural Character and Landscape**

- 6.2.1. Natural character values were considered previously in this application document. The site is relatively commonplace along a rocky coastline that is already fringed with existing marine farming.
- 6.2.2. In accordance with Policy 2.2.1.2, providing for additional development in amongst the existing farmed area is appropriate and will result in a less than minor reduction in natural character. Importantly, concentrating marine farming in the CMZ2 will help retain the natural character of other areas of Tory Channel such as the relatively undeveloped CMZ1 zone and areas such as the headland into the straight.
- 6.2.3. The site is not identified as an Area of Outstanding Landscape Value. Therefore the provisions of Chapter 5 do not apply. Furthermore, Policy 13 of the NZCPS recognises that the natural character is not the same as the natural features and landscapes. While the marine farm is not a natural feature, marine farms in general are naturally a part of the character of the Marlborough sounds and do not jeopardised the natural landforms of headlands and cliffs within these areas.

## **6.3. Effects on Ecological Values**

- 6.3.1. The Sounds Plan identifies areas of significant ecological value. The application site is not subject to, nor is it near enough to potentially affect any of these areas.
- 6.3.2. Policy 11 of the NZCPS also seeks to protect indigenous biological diversity in the coastal environment. Policy 11(a) does not apply as there are no species identified that meet the criteria set out therein. The NIWA report (**Attachment C**) does not identify any features, habitats or species that would qualify under Policy 11(b) and therefore it is considered that this provision, also, does not apply
- 6.3.3. The NIWA report concludes that there are unlikely to be any significant effects on the benthic environment.

## **6.4. Public Access and Recreation**

- 6.4.1. Objectives and Policies in Chapters 8 and 9 of the Sounds Plan emphasises that the recreational

activities and public access is a priority in the Sounds, particularly in certain locations.

- 6.4.2. The objective and policies under Section 8.3 seeks to avoid, remedy or mitigate adverse effects on public access caused by structures, works or activities.

- 6.4.3. Policy 8.3.1.3 states:

*To prevent the erection of structures and marine farms that restrict public access in the coastal marine area where it is subjected to high public usage.*

- 6.4.4. Clay Point is not subject to high public usage. Areas with CMZ1 within Tory Channel are considerably more attractive and accessible to fishing and other forms of informal recreation.

- 6.4.5. The outer boundaries of the farm will not protrude southwards beyond the line formed by the farm to the east and the point to the west, and as such will not pose a risk to east west navigation.

## **6.5. Precautionary approach**

- 6.5.1. Both the NZCPS and the Sounds Plan promote a precautionary appropriate be taken to decisions on resource consents where the effects on the coastal environment are uncertain, unknown, or little understood, but potentially significantly adverse.
- 6.5.2. In the case of this application the applicant has obtained a benthic survey.
- 6.5.3. As there are no areas of significant ecological value identified in the Sounds Plan, and with knowledge of the benthic environment and potential changes and effects that may occur, it is not considered likely that there are any unknown effects that would reach the threshold set out in Policy 3 of the NZCPS.

## **7.0 The Proposed Marlborough Environment Plan (PMEP)**

- 7.1.1. The PMEP was publicly notified on 9 June 2016 and submissions have been received; the council is now reviewing the submissions in preparation for a public hearing.
- 7.1.2. The PMEP does not include provisions managing marine farming, and is therefore of very limited relevance to this application. However, while specific marine farming provisions are beyond the scope of the PMEP, a range of relevant objectives and policies are included for which it is appropriate that a brief assessment is made. The PMEP is at an early stage of the Schedule 1 (RMA) process and therefore does not yet hold a high level of weight under the assessment of resource consents.
- 7.1.3. Volume 4 of the PMEP contains the maps. The following maps are relevant:



- Coastal Natural Character (Map 4)
- Landscapes (Map 5)
- Ecologically Significant Marine Sites (Map 14)

- 7.1.4. None of these maps identify the application site as being within the area of the values respectively identified on these maps. i.e. the site is not identified as having any status within the Coastal Natural Character Rating scale. Nor is the site within or adjacent to an Outstanding Natural Feature or Landscape. Nor have any ecologically significant marine sites been identified.
- 7.1.5. Chapter 6 of the PMEP contains policy guidance in relation to natural character. The Chapter 6 policy framework emphasises the retention of natural character in areas with high or better natural character. Proposed Policy 6.2.5 is to *“recognise that development in parts of the coastal environment ... that have already been modified by past and present resource use activities is less likely to result in adverse effects on natural character.”*
- 7.1.6. Overall, a broad general read of the PMEP does not indicate that the proposed is likely to be inconsistent with the direction of the PMEP.

## 8.0 Part 2 RMA Analysis

- 8.1. This application is to be primarily assessed under the provisions of the Sounds Plan and the NZCPS. These relevant statutory documents were both promulgated under the current Part 2 provisions and therefore give effect to those provisions. Nevertheless, Schedule 4 of the Act (under which this application is made) requires an assessment of the activity against the matters set out in Part 2.
- 8.2. Section 6 of the Act sets out the matters of national importance. The act requires that all persons shall recognise and provide for these matters. The matters that are relevant to this application are:
- (a) *the preservation of the natural character of the coastal environment (including the coastal marine area), wetlands, and lakes and rivers and their margins, and the protection of them from inappropriate subdivision, use, and development:*
  - (d) *the maintenance and enhancement of public access to and along the coastal marine area, lakes, and rivers:*
  - (e) *the relationship of Maori and their culture and traditions with their ancestral lands, water, sites, waahi tapu, and other taonga:*
- 8.3. With the protection of much of Tory Channel within the sounds CMZ1, the concentration of marine farming in the subject location will not adversely affect the overall natural character of Tory Channel.
- 8.4. Public access remains appropriately provided for in the areas of high public usage. Access to Clay Point remains practicable.
- 8.5. The marine farm will not compromise the values of Maori.

8.6. Section 7 of the Act sets out other matters to which particular regard must be had. The matters that are relevant to this application are:

- (a) *kaitiakitanga*;
- (b) *the efficient use and development of natural and physical resources*;
- (c) *the maintenance and enhancement of amenity values*;
- (d) *intrinsic values of ecosystems*;
- (f) *maintenance and enhancement of the quality of the environment*;

8.7. It is an efficient use of the available sea-space to allow additional marine farming in areas that are already compromised, and where adverse effects on the environment are no more than minor.

8.8. Ecosystems and the overall quality of the environment will be maintained.

8.9. Section 8 of the Act states that:

*In achieving the purpose of this Act, all persons exercising functions and powers under it, in relation to managing the use, development, and protection of natural and physical resources, shall take into account the principles of the Treaty of Waitangi (Te Tiriti o Waitangi).*

8.10. While the Coastal Marine Area is significant to all Te Tau Ihu tribes, it is not anticipated that a small marine farm in this location will be of concern.

8.11. Section 5 sets out the purpose and principles of the Act.

8.12. This proposal will provide for the wellbeing of the applicant and the contractors undertaking the farming operations. It will also provide for the greater Marlborough community who also see flow down benefits from aquaculture farming within the region. There are no resources that will be consumed by this activity such that future generations cannot provide for their own wellbeing.

8.13. The life-supporting capacity of the environment will not be affected to anything more than a minor extent. The benthic habitat is not rare or unusual and is well represented in the Sounds, including in the CMZ1 zone for which marine farming is prohibited. The site is not one of significant ecological value.

8.14. Overall the proposal is consistent with the purpose of the Act.

## 9.0 Term

9.1. A term of 20 years is sought.

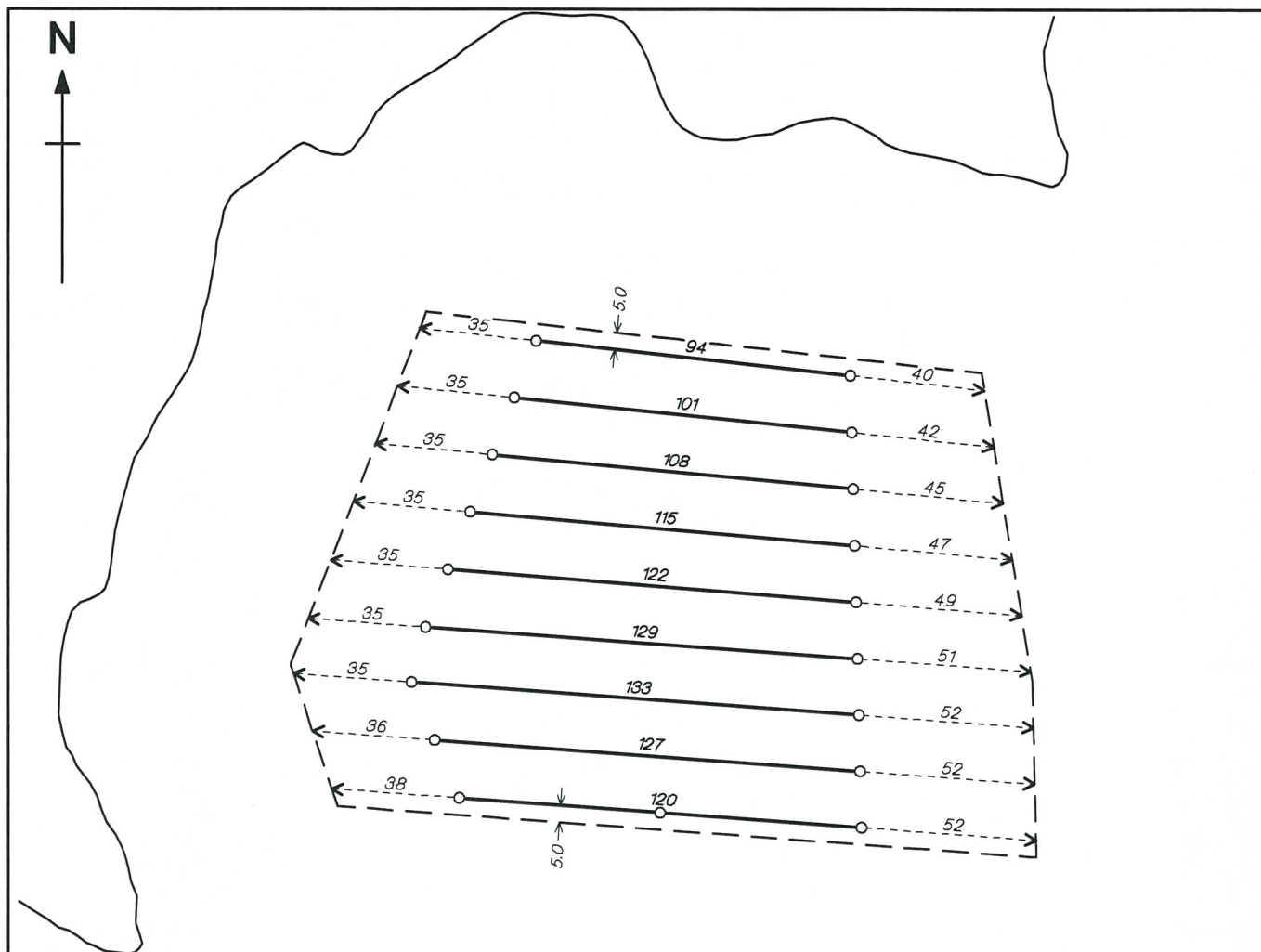
## 10.0 Overall Assessment

10.1. The location of this application is within the area of existing marine farming in Tory Channel. A small marine farm is sought to be established adjacent to a larger farm at Clay Point.

- 10.2. The benthic environment has been described as relatively uniform and with a substrate and community assemblage that is typical of a large area of the Sounds. The terrestrial backdrop to the site is modified and the predominant land use is exotic forestry.
- 10.3. The marine farm will extend seaward of the line that is 50 metres from MLWS and within the line that is 200 metres from MLWS. As a result the application is for a discretionary activity.
- 10.4. The application will have only minor or less than minor effects on natural character, landscape values, ecological values, public access and navigation.
- 10.5. The application is not inconsistent with the provisions of the Sounds Plan, the NZCPS and Part 2 of the Act. As such, it is appropriate that the application be granted under Sections 104 and 104B of the Act.

**Attachment B:**  
**Location and Layout Plans (Draughting Plus Ltd)**





## Tory Channel

REFERENCE  
 ○ Orange Float  
 < Anchor  
 — Backbone  
 ---- Anchor Warp

NOTE  
 Total Longlines = 9  
 Total Backbone Length = 1049m  
 Longline Spacing = 16.56m min  
 Warp Surface Loss = as shown  
 Warp Ratio = 2:1 approx

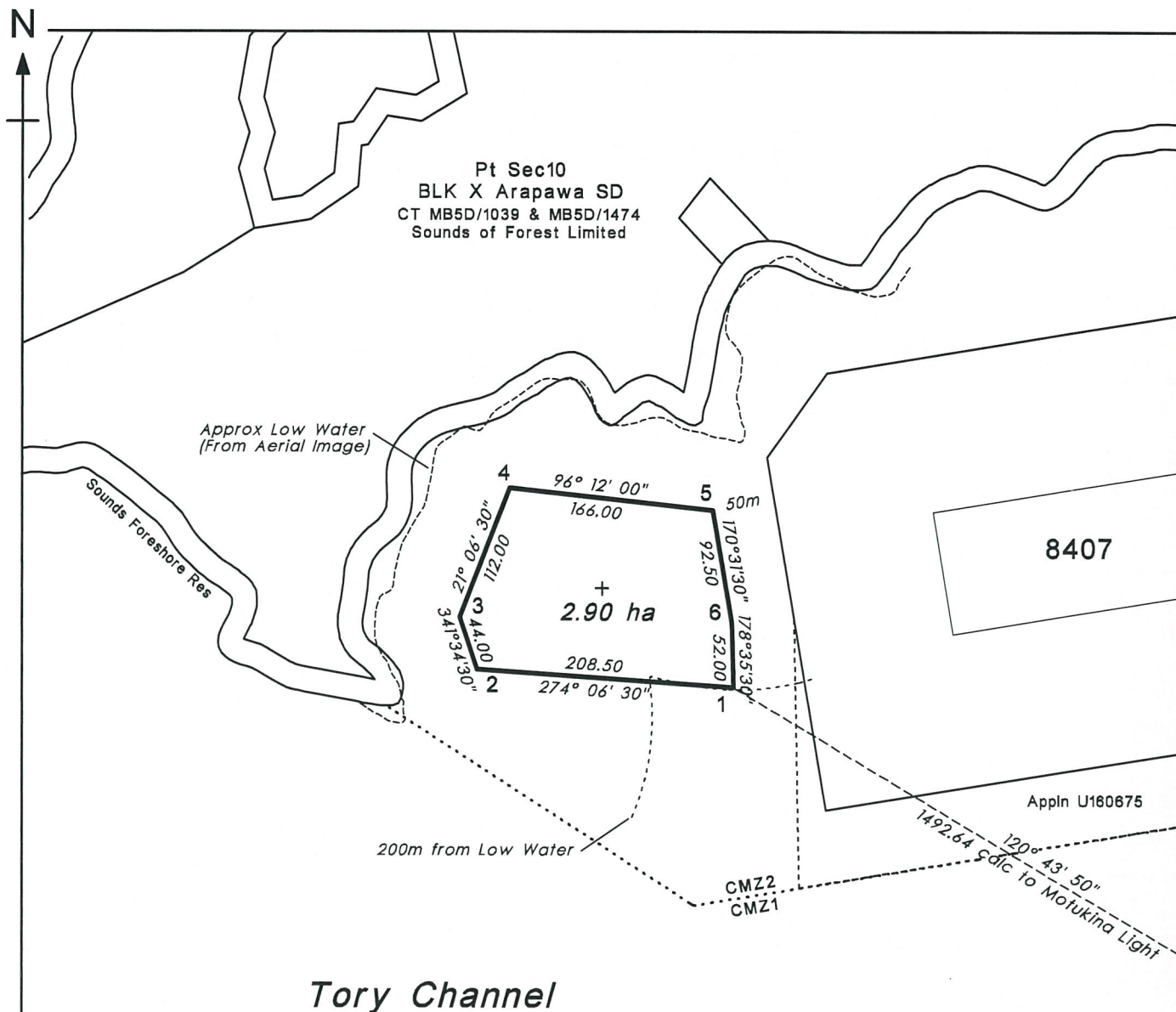
## Structure Layout Proposed Marine Farm Tory Channel

SCALE 1:2,000

25 0 50 100 150m

Prepared by  
 DRAUGHTING PLUS LTD  
 29 August 2016

MF\_2486



SCHEDULE OF COORDINATES		
DATUM: NZTM2000		
Point	East	North
1	1703867.04	5434185.14
2	1703659.07	5434200.07
3	1703645.17	5434241.82
4	1703685.50	5434346.30
5	1703850.53	5434328.36
6	1703865.76	5434237.12
Centroid	1703760.21	5434265.44
Motukina Light	1705150.08	5433422.41

MARLBOROUGH DISTRICT COUNCIL

Datum: NZTM2000

MHWM and Cadastral data from LINZ DCDB data.

NOTE: The position of this application has not been surveyed.

# Proposed Coastal Permit New Marine Farm Tory Channel

50 0 50 100 150 200 250 300 350 400 450 500m

SCALE 1:5,000

Prepared by  
DRAUGHTING PLUS LTD  
29 August 2016

MF\_2486





Topomap 50 Sheet: BQ29

Base Topographical Data sourced from Land Information New Zealand Data. Crown Copyright Reserved.

## Locality Map

Proposed Marine Farm  
Clay Point - Tory Channel



Prepared  
29 August 2016

Scale 1:50,000  
500 0 500 1000 1500 2000 2500 3000 3500 Meters

MF\_2486



**Attachment C:**  
**Benthic Site Assessment (NIWA)**



# Marine farm site assessment: Tory Channel

*Prepared for Jonathan Tester*

*November 2016*

Prepared by:

Ken Grange  
Stephen Brown  
Louis Olsen  
Anna Bradley

For any information regarding this report please contact:

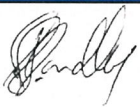


Ken Grange  
Regional Manager

+64-3-545 7730  
ken.grange@niwa.co.nz

National Institute of Water & Atmospheric Research Ltd  
PO Box 893  
Nelson 7040

Phone +64 3 548 1715

NIWA CLIENT REPORT No: 2016130NE  
Report date: November 2016  
NIWA Project: TES17401

Quality Assurance Statement		
Sean Handley	Reviewed by:	
Jenny McLean	Formatting checked by:	
Ken Grange	Approved for release by:	

---

© All rights reserved. This publication may not be reproduced or copied in any form without the permission of the copyright owner(s). Such permission is only to be given in accordance with the terms of the client's contract with NIWA. This copyright extends to all forms of copying and any storage of material in any kind of information retrieval system.

Whilst NIWA has used all reasonable endeavours to ensure that the information contained in this document is accurate, NIWA does not give any express or implied warranty as to the completeness of the information contained herein, or that it will be suitable for any purpose(s) other than those specifically contemplated during the Project or agreed by NIWA and the Client.



## Contents

Executive summary .....	4
1 Introduction .....	5
2 Methods.....	5
3 Results .....	5
3.1 Side-scan sonar .....	5
3.2 Drop Camera (habitat and biota).....	6
4 Discussion .....	8
5 Acknowledgements .....	9
6 References.....	10
Appendix A          Drop camera stills showing seabed habitat. ....	11
Appendix B          Drop camera images depth, position, and epibiota identified. ....	15

### Figures

Figure 3-1:	Survey map showing farm location, side-scan swaths, drop cam positions and main substratum types identified from drop camera images.	6
Figure 3-2:	Examples of substratum types recorded in drop cam still images during the survey.	7

## Executive summary

A seabed survey was undertaken to help assess the potential of a 2.9 Ha site in Tory Channel for development as a marine shellfish farm. The survey used side-scan sonar and a remotely-operated video camera to establish whether there were benthic ecological features in the vicinity of the proposed farm site that would be considered sensitive, significant, or incompatible with marine shellfish farming.

Parts of Tory Channel are known to support sensitive benthic habitats (Davidson et al 2011), and although some seabed features of particular ecological significance were identified by this survey, they were not within the boundaries of the proposed marine farm at Clay Point. Most of the biota identified in the drop camera images are common and widespread in Tory Channel and the wider Marlborough Sounds (McKnight & Grange 1991; Morrissey et al. 2014; Brown 2016). Notable features identified in the survey, including bedrock reef, giant kelp (*Macrocystis pyrifera*), and thecate hydroids (*Solanderia* sp.) were located > 10 m outside the proposed farm boundaries.

The presence of the salmon farm in the same embayment may indicate that the area has been subjected to some marine farming effects, such as nutrient release and faecal sedimentation, which may have altered the natural benthic communities. The monitoring reports, undertaken on behalf of NZ King Salmon, however, do not indicate significant effects beyond the existing salmon farm boundaries. This is possibly a reflection of the strong tidal currents at the site. The sediments and epifaunal species recorded at the potential mussel farming site in this survey do not indicate an altered benthic community or habitat. Other than some increased shell drop below the farming structures, it is unlikely that significant effects will occur if a mussel farm is established. The strong tidal currents will mitigate any settlement of faeces and pseudofaeces, and will also mitigate any potential phytoplankton or seston depletion in the water column. The isolated patches of sediment within the site that contain small amounts of shell gravel and cobbles are, therefore, unlikely to be significantly affected.



## 1 Introduction

NIWA was engaged by Jonathan Tester to conduct a preliminary seabed survey to assess the potential of a 2.9 Ha site, near Clay Point in Tory Channel for development as a marine farm. The survey used side-scan sonar (to identify areas of potential hard substratum, biogenic clumps, and sand/mud) and a remotely-operated video camera (to ground-truth the side-scan sonar) to establish whether there were ecological features in the vicinity of the proposed farm site that would be considered sensitive or significant.

The area around Clay Point is relatively well-known ecologically. Davidson et al (2011) have identified the headlands on either side of Clay Point, specifically at Tokakaroro and Te Uira-Karapa Points, as having a steep seafloor of bedrock, boulder, cobble and shelly habitats, swept by strong and regular tidal currents, with the communities dominated by habitat forming bryozoan mounds, hydroids, sponges and ascidians. Large schools of butterfly perch and terakihi are associated with the biogenic habitats. Previous benthic site assessment and monitoring studies have also been undertaken by the New Zealand King Salmon Company Ltd and Cawthron Institute in relation to the existing salmon farm site, the boundaries of which are located 50 m to the east of the proposed marine farm (e.g. Keeley and Govier 2008, Taylor et al 2016).

## 2 Methods

The survey was conducted on 31 October 2016 by NIWA staff aboard the vessel RV *Tio*. All sample positions as shown in Figure 2-1 were located and recorded using a Garmin GPS unit.

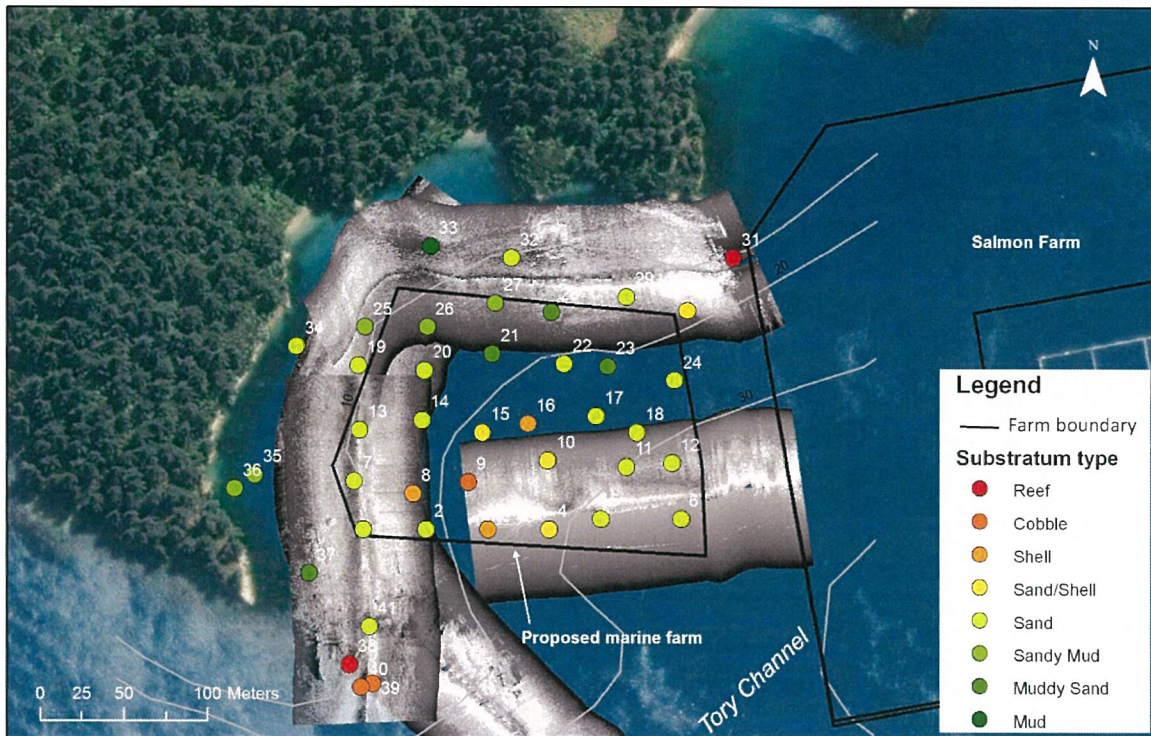
Four side-scan sonar swaths, each 100 m wide (50 m either side of the vessel) were made using a high-frequency (675 kHz) Triton towfish. The position of the side-scan sonar was automatically recorded every 2 seconds along each swath from a GPS and saved in real time to a laptop on board the vessel using SeaNet Pro software and post-processed with Triton Perspective software to produce geo-referenced images that could be opened in ArcMap v9 GIS or Google Earth, where locations of features of interest could be determined.

A high-definition camera system mounted in a frame (drop camera) was used to characterise seabed substratum and biological features. Video footage and still images were analysed to describe the ecological features recorded.

## 3 Results

### 3.1 Side-scan sonar

The side-scan images showed that there were no 3-dimensional features such as bedrock reef within the boundaries of the proposed site. There is some indication of 3-dimensional hard substratum such as boulder or bedrock reef approximately 10-20 m outside the northern boundary, and also 10-20 m inshore of the southwest corner of the proposed farm. Such habitats in Tory Channel could potentially support notable ecological species or communities (Clark et al. 2011; Davidson. et al. 2011; Brown et al 2016).



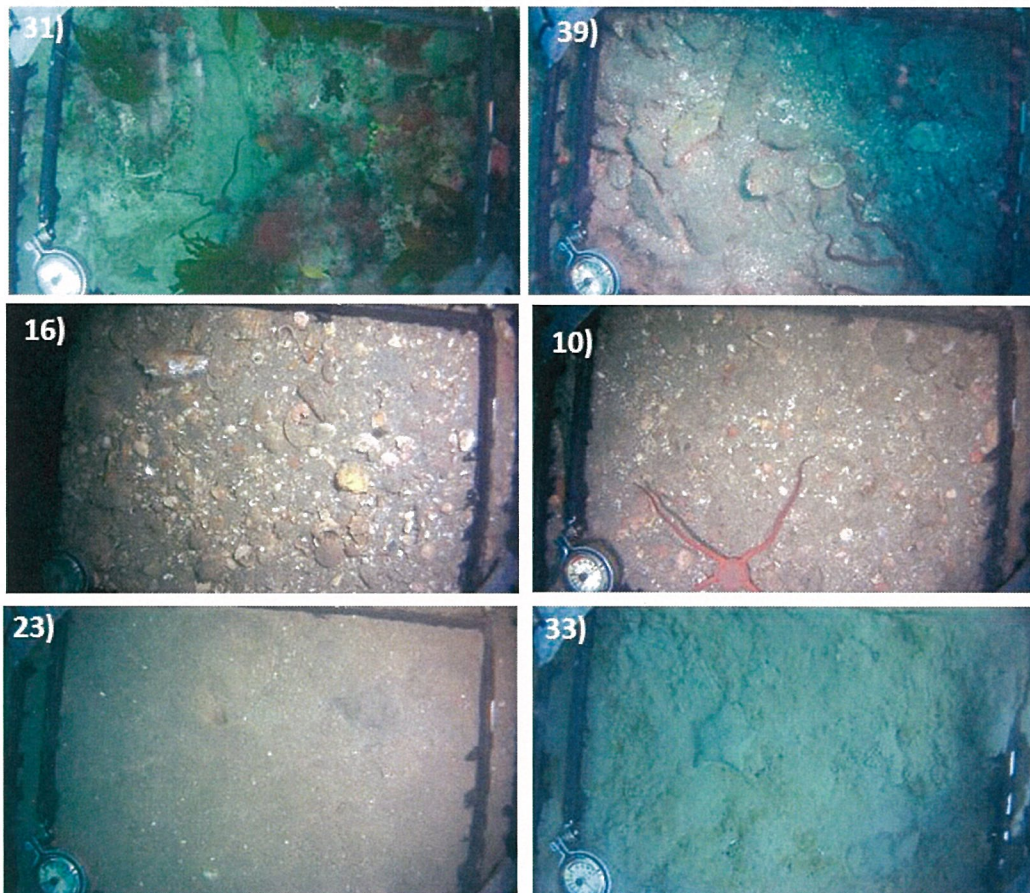
**Figure 3-1: Survey map showing farm location, side-scan swaths, drop cam positions and main substratum types identified from drop camera images.** Side-scan swaths are greyscale bands, coloured dots represent drop camera positions and are coded to indicate substratum type. Drop camera image numbers correspond to images shown in Appendix A.

### 3.2 Drop Camera (habitat and biota)

A total of 40 drop camera images showed a range of substratum types and habitats within the site and around the surrounding embayment. Visual analysis of the drop camera images showed that the majority of the proposed site is located over sand/mud with some small patches of shell and cobble. The drop camera was used to confirm the presence of bedrock reef habitat extending from the headlands at either end of the embayment where the side-scan images indicated such features were located. Examples are shown in Figure 3-1, and all still images corresponding to drop camera positions in Figure 2-1 are provided in Appendix A.

There were 21 different taxa noted from the drop camera images (Appendix A, Appendix B). The most commonly seen faunal taxa were the brittlestar (*Ophiopsammus maculata*), screw shells (*Maoricolpus roseus*), various hydroids, and red and green algae.





**Figure 3-2: Examples of substratum types recorded in drop cam still images during the survey.** Image numbers correspond to drop camera positions in Figure 2-1. (31) Reef habitat inshore and northeast of the site, (39) Cobble substratum to the south of the site, (16) Shell substratum within the site, (10) sand/shell within the site, (23) muddy sand within the site, (33) mud substratum inshore of the site.

### 3.2.1 Notable features

Examples of the thecate hydroid *Solanderia* sp. were noted in drop camera stills recorded from the reef extending from the southern headland (drop camera locations 39 and 40 in Figure 2-1). This species can form dense colonies in Tory Channel in aggregation with a range of other taxa, and those communities are considered to be a notable characteristic of the subtidal environment in Tory Channel that occurs nowhere else in Marlborough (Davidson et al 2011).

Stands of giant kelp (*Macrocystis pyrifera*) were noted in the vicinity of the two main headlands at either end of the embayment, and a small isolated stand was observed near the shoreline in the center of the embayment (Drop camera location 34 in Figure 2-1). This is considered to be an ecologically important species (Davidson et al 2011, Steneck et al 2002).

More extensive kelp stands dominated by *Carpophyllum* sp. were noted along the shallow subtidal zone inshore of the farm. These shoreline kelp communities are also considered to be of ecological value, although they are common and widespread throughout the Marlborough Sounds.

## 4 Discussion

Most of the biota identified in the drop camera images are common and widespread in Tory Channel and the wider Marlborough Sounds (e.g. McKnight & Grange 1991; Clark et al. 2011; Morrissey et al. 2014; Brown et al 2016). For example, the most frequently noted organism in the images, *Ophiopsammus maculata* (snake star) is abundant and widely distributed in Tory Channel. Other conspicuous epifauna seen in the images including the cushion star (*Patiriella* sp.) and the eleven-armed star (*Coscinasterias muricata*) are common and widespread in the Marlborough Sounds and around the New Zealand Coast.

Keeley and Govier (2008) in describing monitoring sites located on the reef extending from the northern headland of the embayment stated that: "Thecate hydroids are common in this area as are ascidians and sponges." Some of the sampling sites associated with studies monitoring the effects of the nearby salmon farm extend into areas covered by this survey. Those samples and described ecological features are very similar to those identified in the present survey. In particular, samples previously taken near the center of the proposed marine farm were identified as sand-dominated sediments, and long term annual monitoring surveys have described in detail the soft sediment taxonomic assemblage taken from those sites, and also reef communities extending from the northern headland of the embayment adjacent to the proposed farm (e.g. Dunmore et al 2010).

Notable features identified in the present survey (bedrock reef, giant kelp, thecate hydroids) were located > 10 m outside the farm boundaries. If the farm layout is taken into consideration, those identified notable features will be located ~30 m or more from the backbones that support the growing lines, so are likely to be beyond the direct influence of significant depositional effects from the growing lines. The present survey (and previous earlier surveys) did not identify significant benthic habitats within the boundaries of the proposed marine farm.

The presence of the salmon farm in the same embayment may indicate that the area has been subjected to some marine farming effects, such as nutrient release and faecal sedimentation, which may have altered the natural benthic communities. The monitoring reports, undertaken on behalf of NZ King Salmon, however, do not indicate significant effects beyond the existing salmon farm boundaries. This is possibly a reflection of the strong tidal currents at the site. The sediments and epifaunal species recorded at the potential mussel farming site in this survey do not indicate an altered benthic community or habitat. Other than some increased shell drop below the farming structures, it is unlikely that significant effects will occur if a mussel farm is established. The strong tidal currents will mitigate any settlement of faeces and pseudofaeces, and will also mitigate any potential phytoplankton or seston depletion in the water column. The isolated patches of sediment within the site that contain small amounts of shell gravel and cobbles are, therefore, unlikely to be significantly affected.



## 5 Acknowledgements

The authors thank Megan Carter for her efforts as part of the field team.

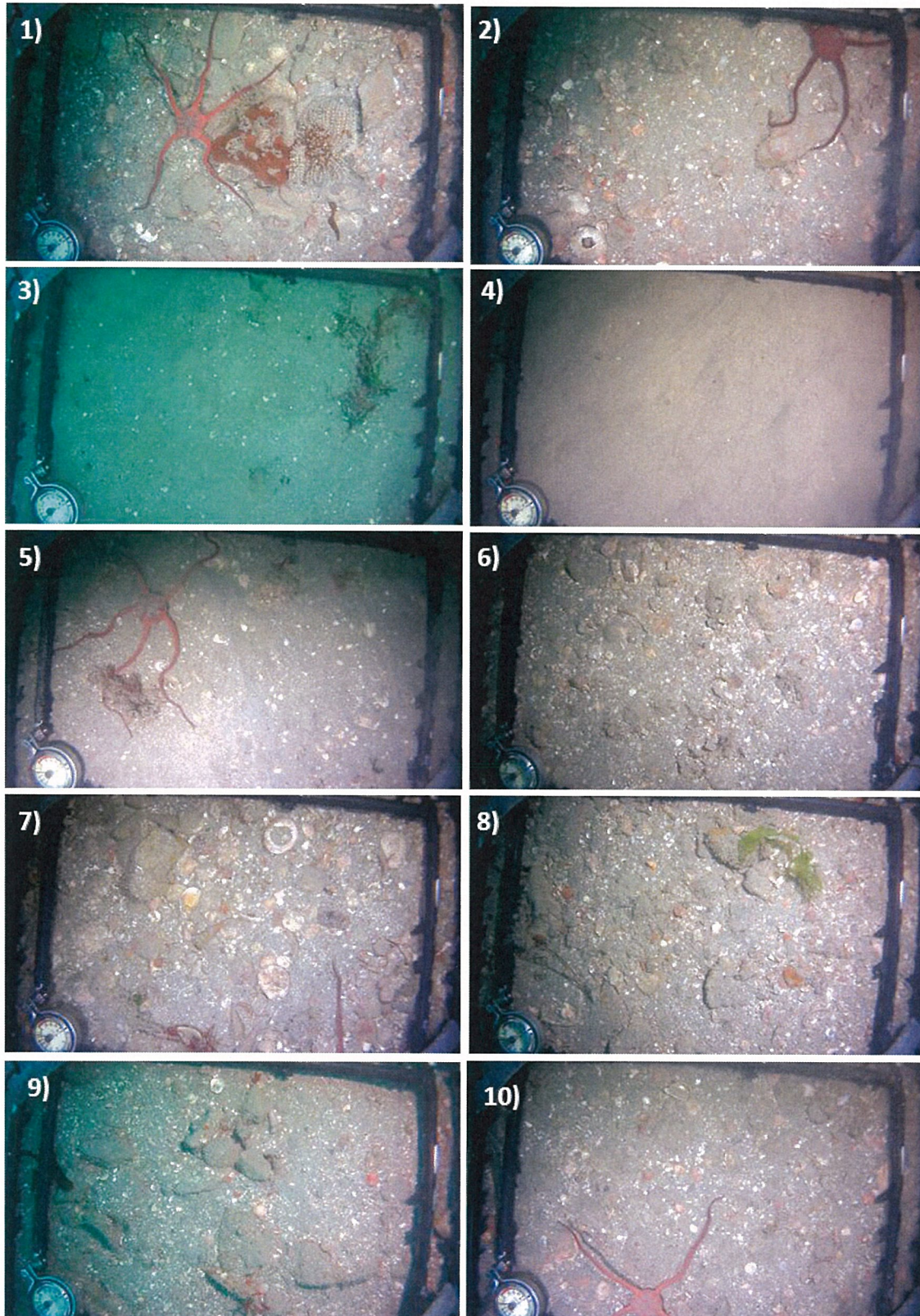
## 6 References

- Brown, S., Anderson T.J., Watts, A., Carter M., Olsen L., Bradley, A. 2016. Ecological benthic assessments for proposed salmon farm sites. Part 1: Benthic ecological characterisations. Draft report prepared for the Ministry for Primary Industries. NIWA client report NEL2016-003. 142 pp.
- Clark D, Taylor. D, Keely N, Dunmore R, Forrest R, Goodwin E 2011. Assessment of Effects of Farming Salmon at Ngamahau, Queen Charlotte Sound: Deposition and Benthic Effects. Prepared for The New Zealand King Salmon Company Ltd. Cawthron Report No. 1993. 52 pp.
- Davidson R, Duffy C, Gaze P, Baxter A, DuFresne S, Courtney S, Hamill P 2011. Ecologically significant marine sites in Marlborough, New Zealand. Co-ordinated by Davidson Environmental Limited for Marlborough District Council and Department of Conservation
- Dunmore R, Forrest R, Keeley N 2010. Seabed Impacts of the Clay Point Salmon Farm: Annual Monitoring 2009. Prepared for The New Zealand King Salmon Company Limited. Cawthron Report No. 1762. 38 p. plus appendices.
- Keeley N, Govier D 2008. Baseline Survey of the Clay Point salmon farm: monitoring 2007. Prepared for New Zealand King Salmon Company Limited. Cawthron Report No. 1416. 26 p.
- McKnight, D.G., Grange, K.R. 1991. Macrobenthos-sediment-depth relationships in Marlborough Sounds. DSIR Marine and Freshwater 19p.
- Morrissey D, Stenton-Dozey J, Broekhuizen N, Anderson TJ, Brown S, Plew D 2014. Baseline monitoring report for new salmon farms, Marlborough Sounds. New Zealand King Salmon NEL2014-020 247 p.
- Steneck R. S., Michael H. Graham, Bruce J. Bourque, Debbie Corbett, Jon M. Erlandson, James A. Estes and Mia J. Tegner 2002. Kelp forest ecosystems: biodiversity, stability, resilience and future. *Environmental Conservation*, , pp 436-459.  
doi:10.1017/S0376892902000322.
- Stenton-Dozey, J., Morrissey, D., Stevens, C., Grange, K. 2006. Fisheries resource impact assessment for marine farming applications in Crail, Clova, and Beatrix Bays, Marlborough Sounds. *NIWA Client Reports CHC2005-114.1 to CHC2005-114.15*.
- Taylor DI, Elvines D, Goodwin E 2016. Area extension and implementation of the BMP Benthic Guidelines at the Clay Point salmon farm: Benthic effects assessment. Prepared for New Zealand King Salmon Company Limited. Cawthron Report No. 2909. 18 p. plus appendix.



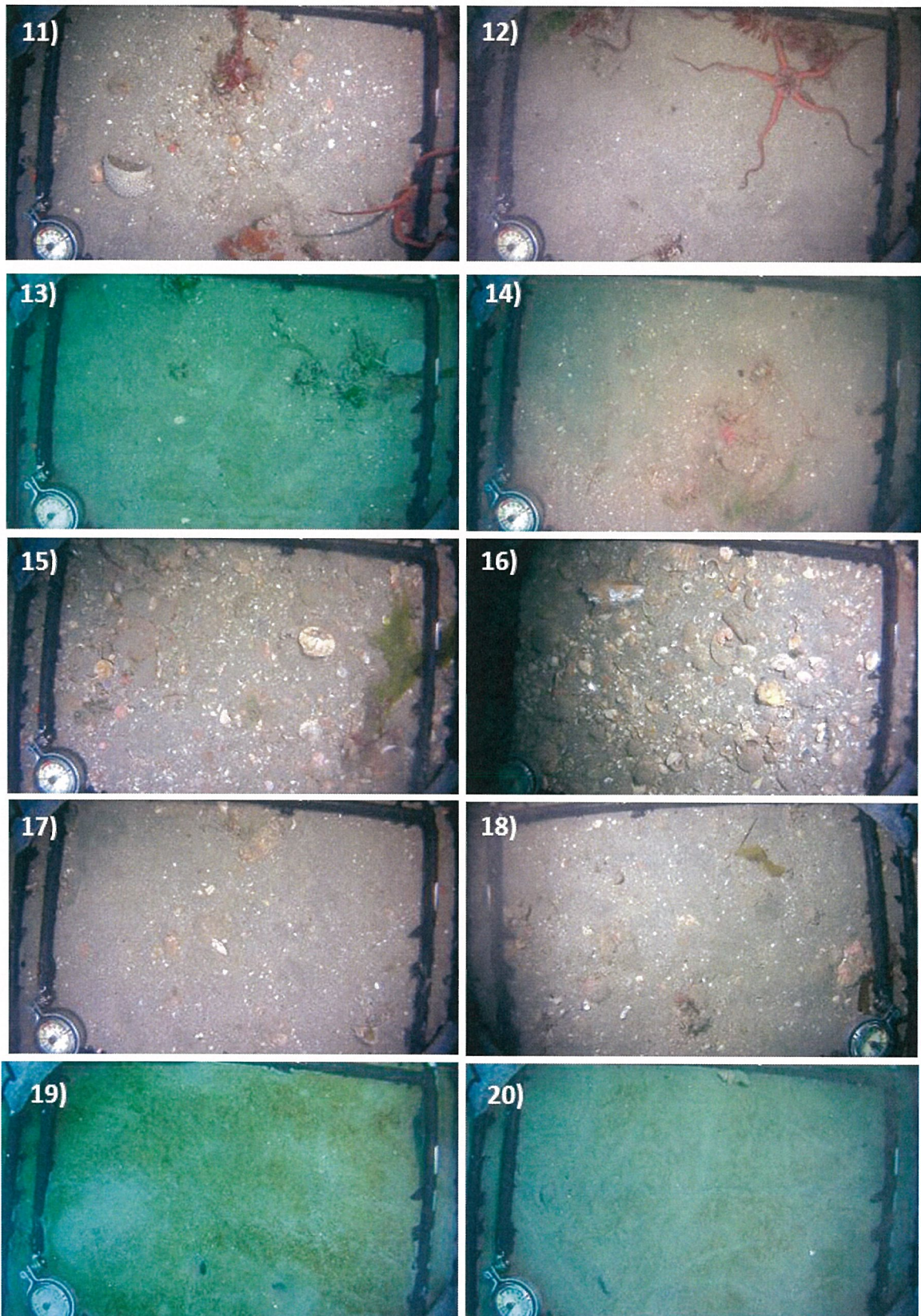
## Appendix A Drop camera stills showing seabed habitat.

Numbers correspond to camera positions shown in Figure 2-1.



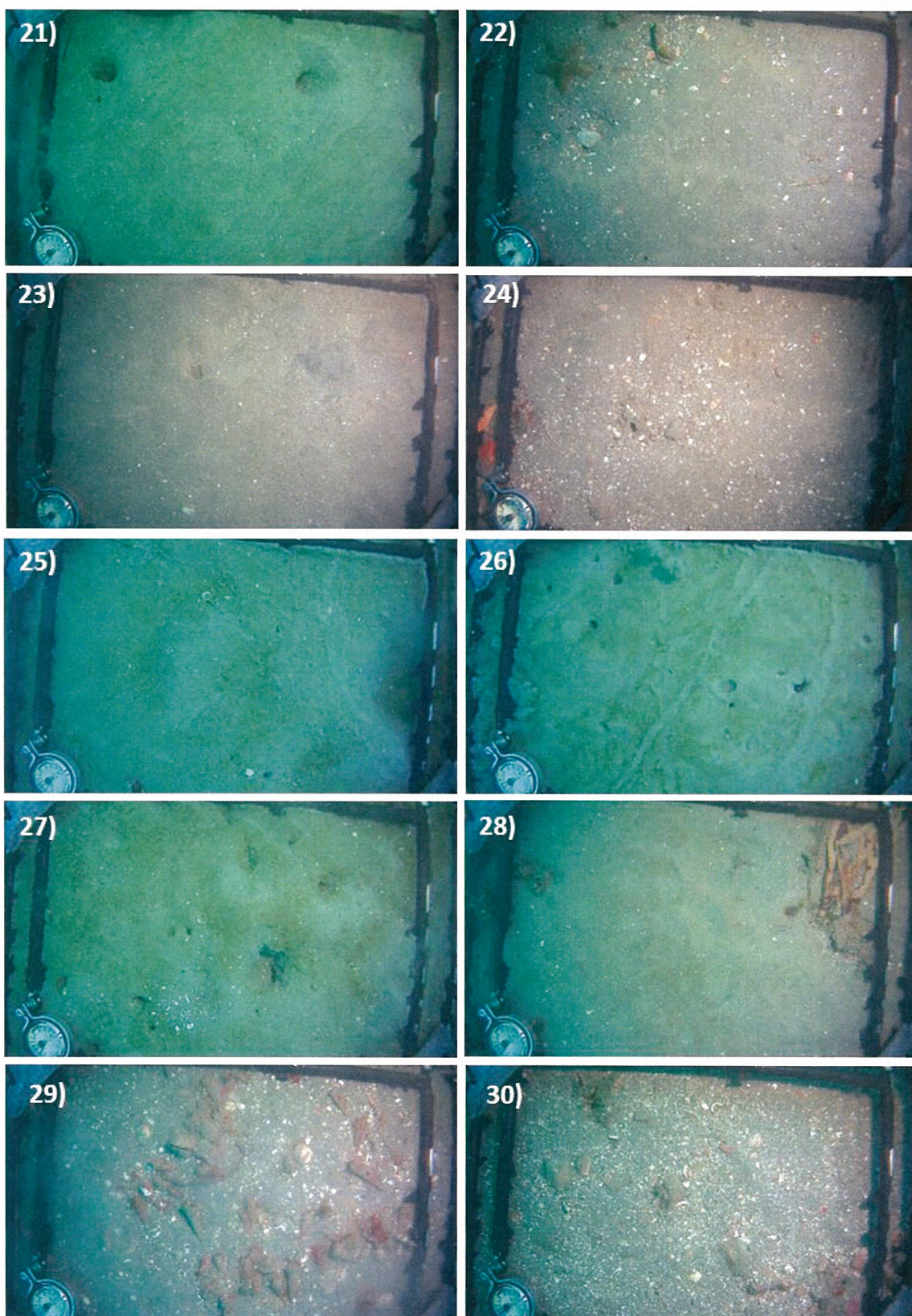


Appendix A continued....



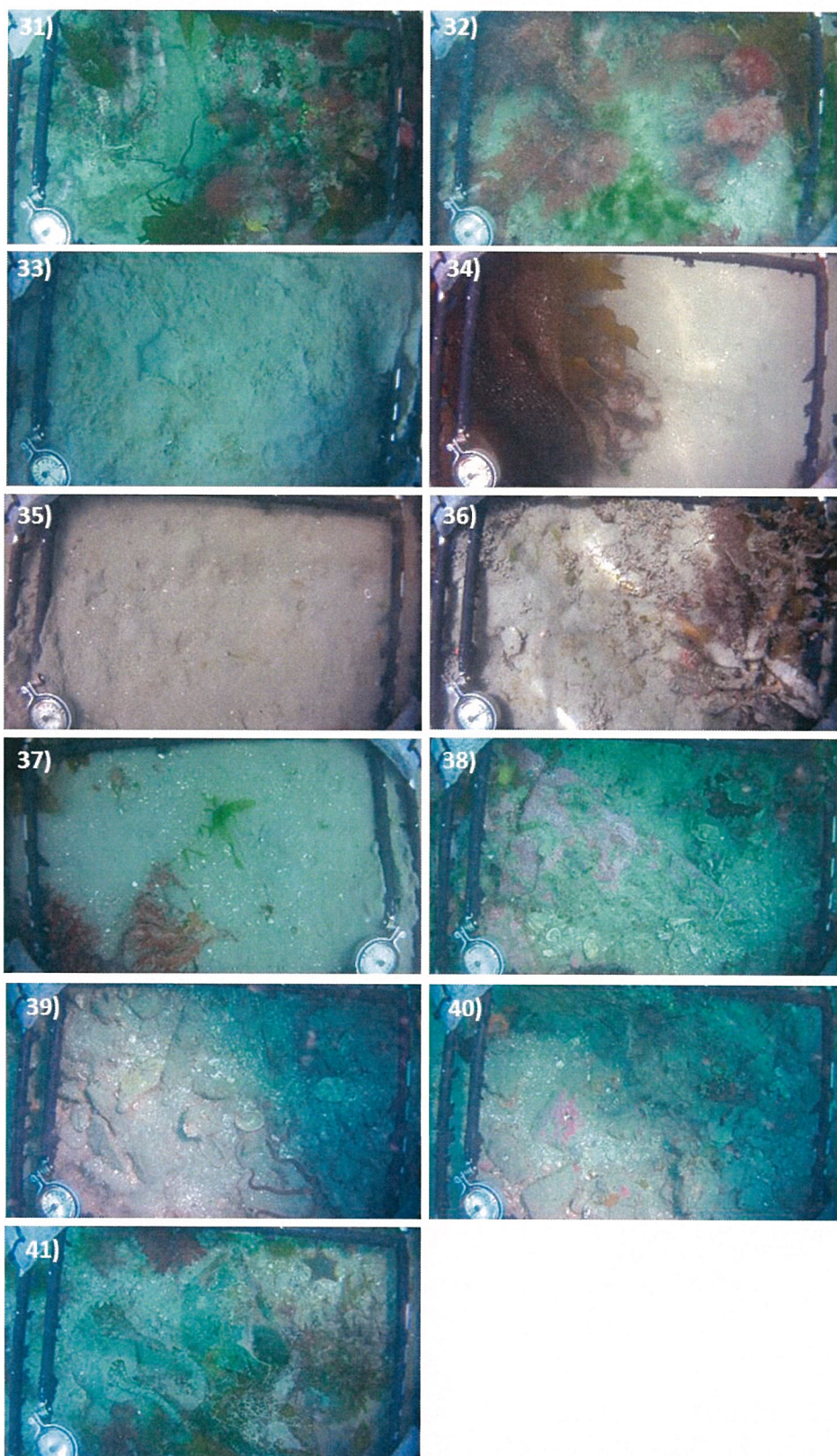


Appendix A continued...





Appendix A continued...





## Appendix B Drop camera images depth, position, and epibiota identified.

Site #	Depth (m)	Lat	Long	Epibiota
1	22.9	-41.23692	174.237023	<i>Maoricolpus roseus</i> , Red algae, Brachiopod (likely dead)
2	30.5	-41.23692	174.237466	Green algae, colonial ascidian, hydroids
3	33.8	-41.23692	174.237909	Green and red algae. <i>Ophiopsammus maculata</i>
4	33.7	-41.23692	174.238351	Hydroids
5	31.7	-41.23687	174.2387169	Red algae. <i>Ophiopsammus maculata</i>
6	29.4	-41.23687	174.2392848	
12	31.3	-41.23657	174.2392217	Red and green algae, <i>Ophiopsammus maculata</i>
17	31.8	-41.23632	174.2386809	
11	31.8	-41.23659	174.2388972	Red algae, <i>Ophiopsammus maculata</i> , Bryozoan
10	33	-41.23656	174.2383384	<i>Ophiopsammus maculata</i>
9	33.2	-41.23667	174.2377705	<i>Ophiopsammus maculata</i> , <i>Coscinasterias muricata</i> , Colonial ascidian
8	30.3	-41.23673	174.2373739	<i>Ophiopsammus maculata</i>
7	21	-41.23667	174.2369593	Red and green algae
13	20.1	-41.2364	174.2369954	Green algae, hydroids
14	25.8	-41.23634	174.237437	Green algae, hydroids, <i>Astraea heliotropium</i>
15	30.5	-41.23641	174.2378697	Red and green algae, hydroids
16	31	-41.23636	174.2381942	
18	31.8	-41.23641	174.2389693	Hydroids, red and green algae
24	26.4	-41.23613	174.2392397	<i>Coscinasterias muricata</i>
23	28.5	-41.23606	174.238762	Red algae, <i>Ophiopsammus maculata</i>
22	26.5	-41.23604	174.2384555	<i>Patiriella</i> sp., <i>Maoricolpus roseus</i>
21	24.1	-41.23599	174.2379418	holes
20	19.4	-41.23608	174.2374551	<i>Strutholaria</i> sp.
19	16.8	-41.23605	174.2369864	Diatom mat
25	10	-41.23585	174.2370314	
26	14.5	-41.23585	174.2374731	Diatom mat, holes
27	16.4	-41.23572	174.2379598	small clump unknown epifauna
28	19.5	-41.23577	174.2383654	Finger sponge, red and green algae, hydroids, solitary ascidian clump
29	19.9	-41.23568	174.2388972	Red algae, <i>Maoricolpus roseus</i> , Brachiopod (dead)
30	21.7	-41.23576	174.2393298	Red algae, hydroids
31	9.1	-41.23547	174.2396543	<i>Macrocystis pyrifera</i> , coralline algae, red algae, sponges, <i>O. maculata</i> , <i>Patiriella</i> sp.
32	9.5	-41.23547	174.238077	Red and green algae, <i>Ophiopsammus maculata</i>
33	6.8	-41.23541	174.2375001	<i>Patiriella</i> sp., diatom mat
34	3.7	-41.23595	174.2365447	<i>Macrocystis pyrifera</i> , green algae
35	5.1	-41.23663	174.2362473	
36	2.3	-41.23671	174.2361031	Red algae. <i>Carpophyllum</i> sp.
37	6.7	-41.23716	174.2366348	Red and green algae, <i>Macrocystis</i> , <i>Ophiopsammus maculata</i>
38	15.5	-41.23765	174.2369233	Coralline algae, colonial ascidian, hydroids, red algae
39	20.5	-41.23775	174.2370855	<i>Ophiopsammus maculata</i> , hydroids (incl <i>Solanderia</i> sp.)
40	20.4	-41.23777	174.2370044	<i>Evechinus chloroticus</i> , hydroids (incl <i>Solanderia</i> sp.), coralline algae, ascidians, <i>O. maculata</i>
41	11.5	-41.23745	174.2370675	Red and green algae, <i>Macrocystis pyrifera</i> , <i>Patiriella</i> sp.