



12 April 2019

## **AQUACULTURE DECISION REPORT — WESTERN FIRTH MARINE FARMING CONSORTIUM, COASTAL PERMIT CST60082314, FIRTH OF THAMES**

### **PURPOSE**

1 This report sets out my aquaculture decision (as the relevant decision maker<sup>1</sup>) for an aquaculture decision request made under section 114(4)(c)(ii) of the *Resource Management Act 1991* (**RMA**). The aquaculture decision request is described below. My aquaculture decision is made under section 186E of the *Fisheries Act 1996* (**Fisheries Act**).

### **SUMMARY**

2 I am satisfied the aquaculture activities proposed within the area of coastal permit CST60082314 will not have an undue adverse effect on the following fishing sectors:

- *recreational* - for the reasons set out in this report and summarised in paragraph 16;
- *customary* - for the reasons set out in this report and summarised in paragraph 42;
- *commercial* - for the reasons set out in this report and summarised in paragraph 64.

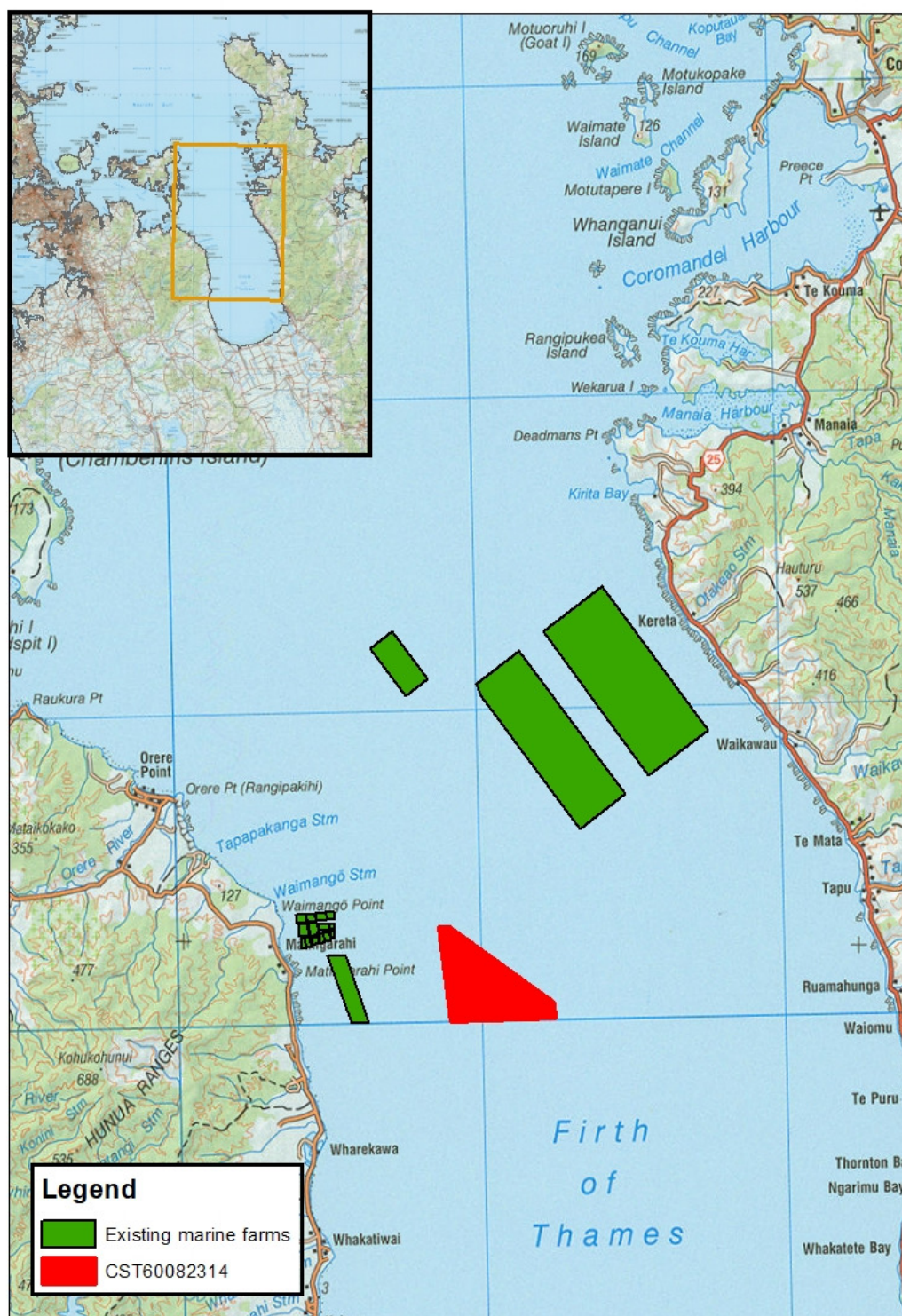
### **AQUACULTURE DECISION REQUEST DETAILS**

Coastal Permit:	CST60082314
Regional Council:	Auckland Council (AC)
Date of Request:	20 November 2018
Coastal Permit Applicant:	Western Firth Marine Farming Consortium
Location of Marine Farm Site:	Western Firth of Thames
Size of Farm:	664.0 hectares ( <b>ha</b> ) of new space.
Species to be Farmed:	Green-lipped mussel ( <i>Perna canaliculus</i> ).
Farm Structures:	Standard marine farm longlines and anchors with droppers or suspended frames.

### **LOCATION AND STRUCTURES**

3 Coastal permit CST60082314 applies to a 664 ha area in the middle of the Firth of Thames (Figure 1). The proposed site is approximately 5 km from Matingarahi on the western Firth of Thames coastline and 11 km from Tapu on the Coromandel Peninsula. The nearest other marine farming areas are a group of farms towards the western Firth coastline about 3 km to the west.

<sup>1</sup> Acting under authority delegated to me by the Director-General of the Ministry for Primary Industries (**MPI**) in accordance with section 41 of the *State Sector Act 1988*.



**Map 12: Location of the area authorised by coastal permit CST60082314, western Firth of Thames. Layout and structures diagrams are in Appendix A.**

<sup>2</sup> MPI (2019). Data Attribution: This map uses data sourced from LINZ under CC-BY. <http://creativecommons.org/licenses/by/3.0/nz/>

Disclaimer: Maps and all accompanying information in this document (the “Maps”) are intended to be used as a guide only, with other data sources and methods, and should only be used for the purpose for which it was developed. The information shown in the Maps is based on a summary of data obtained from various sources.

4 The area of coastal permit CST60082314 is located in water that is 13-20 m in depth. The substrate is mud-dominated, with some gravels in the Southeast corner (Sim-Smith *et al.*, 2017).

## INPUT FROM STAKEHOLDERS

5 Fisheries New Zealand publicised the application for coastal permit CST60082314 on its website on 17 January 2019. This gave persons and organisations potentially affected by the proposed aquaculture activities an opportunity to provide information on their fishing activities at the coastal permit area. The closing date for submissions was 15 February 2019.

6 Fisheries New Zealand also engaged with tangata whenua and consulted with targeted recreational and commercial stakeholders (a full list of tangata whenua and stakeholders consulted with by Fisheries New Zealand can be found in Appendix B). Tangata whenua and stakeholders had until 15 February 2019 to provide submissions. One Iwi requested and was granted an extension until 1 March 2019.

7 Fisheries New Zealand received one submission from a commercial stakeholder. The submission stated that commercial set netting in the Firth of Thames was adversely affected by the existing marine farms to a much greater extent than presumed by MPI and applicants. The existing marine farms in the eastern Firth of Thames produced detritus which spreads with currents and prevents set net fishing within many kilometres of the farms. This submission is considered in my assessment of the effects on commercial fishing detailed below.

## STATUTORY CONTEXT

8 Section 186E(1) of the Fisheries Act requires me to, within 20 working days after receiving a request for an aquaculture decision from a regional council, make a determination or reservation (or one or more of them in relation to different parts of the area to which the request relates).

9 A ‘*determination*’ is a decision that I am satisfied that the aquaculture activities authorised by the coastal permit will not have an undue adverse effect on customary, recreational, or commercial fishing<sup>3</sup>. A ‘*reservation*’ is a decision that I am not satisfied that the aquaculture activities authorised by the coastal permit will not have an undue adverse effect on fishing.

10 If I make a reservation, I am required to specify whether the reservation relates to customary, recreational or commercial fishing or a combination of them. If the reservation relates to commercial fishing, I must specify the stocks and area concerned (section 186H(4)).

11 Section 186GB(1) of the Fisheries Act specifies the only matters I must have regard to when making an aquaculture decision. These matters are as follows:

- (a) the location of the area that the coastal permit relates to in relation to areas in which fishing is carried out;

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<sup>3</sup> Section 186C of the Fisheries Act defines “adverse effect,” in relation to fishing, as restricting access for fishing or displacing fishing. An “undue adverse effect” is not defined. However, the ordinary meaning of “undue” is an effect that is unjustified or unwarranted in the circumstances. For the purpose of my decision under section 186E, an undue adverse effect will mean the significance of the effect on restricting access for fishing, displacing fishing or increasing the cost of fishing is unjustified or unwarranted in the circumstances.

- (b) the likely effect of the aquaculture activities in the area that the coastal permit relates to on fishing of any fishery, including the proportion of any fishery likely to become affected;
- (c) the degree to which the aquaculture activities in the area that the coastal permit relates to will lead to the exclusion of fishing;
- (d) the extent to which fishing for a species in the area that the coastal permit relates to can be carried out in other areas;
- (e) the extent to which the occupation of the coastal marine area authorised by the coastal permit will increase the cost of fishing; and
- (f) the cumulative effect on fishing of any authorised aquaculture activities, including any structures authorised before the introduction of any relevant stock to the quota management system.

12 For the purpose of my assessment, customary fishing differs from recreational fishing if it is undertaken outside of the recreational limits provided in the *Fisheries (Amateur Fishing) Regulations 2013* (**Amateur Regulations**) and is instead authorised by a customary authorisation.

13 Appendix C has further information on statutory context.

## **ASSESSMENT**

14 The following is an assessment, within the statutory context, of the effects of the proposed aquaculture activities on recreational, customary and commercial fishing. It is based on all the relevant information available to me.

15 This assessment relates to the 664 ha of marine farming space authorised by coastal permit CST60082314.

### ***Recreational fishing***

16 I am satisfied the aquaculture activities that may operate within the proposed marine farm will not have an undue adverse effect on recreational fishing because:

- anchored rod/line fishing could still occur within the proposed marine farm;
- recreational fishing surveys and anecdotal information suggest existing mussel farms in the Firth of Thames are popular recreational fishing locations;
- there are other recreational fishing areas available in the Firth of Thames;
- occupation of the proposed marine farm is unlikely to increase the cost of recreational fishing;
- the likely adverse effect of occupation of the proposed sites on recreational fishing, if any, is only small; and
- this small effect added to existing effects of approved aquaculture space will not cause the cumulative effect on recreational fishing to become undue.

17 The above conclusions were reached following the more detailed assessment below.



### *Location of the coastal permit areas relative to fishing areas*

18 I consider the area of the proposed marine farm is not particularly important for recreational fishing but located nearby to where there is a moderate to high amount of fishing.

19 The Firth of Thames is a very popular area for recreational fishing because it offers a large stretch of coastline, sheltered bays (particularly on the eastern side) and productive fishing grounds, all close to a major city. The proposed site can only be visited by boat so is not the location of recreational fishing from shore.

20 Anecdotal evidence from charter boat websites indicates that existing marine farms in the Firth of Thames are a popular recreational boat fishing location, particularly rod and line fishing for snapper.<sup>4</sup> The popularity of the existing marine farms<sup>5</sup> suggests that they may enhance recreational fishing for snapper and perhaps other schooling species like kahawai and kingfish.

21 Amateur Charter Vessel<sup>6</sup> (ACV) fishing must be reported to MPI and reports include location of fishing and catches. ACV fishing around the location of the proposed marine farm targets snapper by rod and line, usually at anchor. Catches of snapper, gurnard, kahawai, kingfish and trevally are also reported.

22 MPI data on the location of amateur charter fishing activity and aerial surveys of fishing boats show a large number of amateur charter vessels and private boats fish in the Firth (see Map 2). As shown in Map 2, fishing intensity in the Firth of Thames is greatest around existing marine farms and areas of rocky coastline. The density of vessels recorded within the proposed marine farm site is relatively low by comparison.

23 Observations and records of boat fishing provide strong evidence of the occasional use of the proposed marine farm site for fishing from boats (may include rod and line at anchor or drifting, diving, trolling, or dredging). These data also show this site has had relatively sparse use compared to other nearby areas, and suggests fishing at the site would increase if the marine farm was installed.

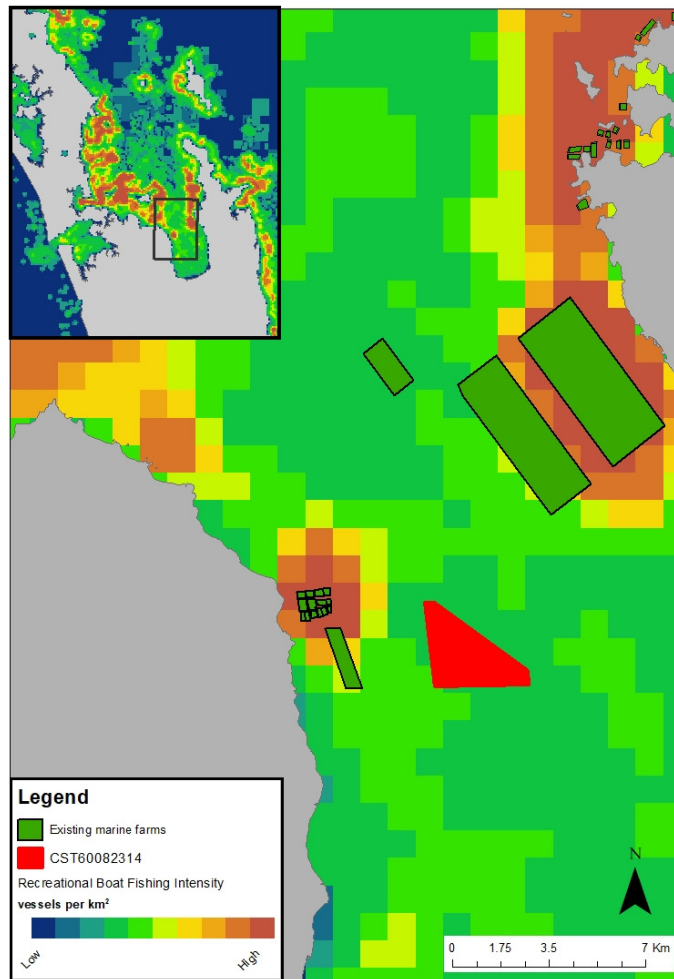
24 The aerial surveys summarised in Map 2 involve many flights over the course of 12 months but each flight is a snapshot. They are more likely to record fishing locations of anchored or slow moving boats than the locations of fishing gear set in the water and left for a period of time. Boat fishing that does not stay in one location for much time, such as longlining or set netting, may not be well described by the data shown in Map 2. These fishing methods may be less likely to occur near marine farm structures due to the risk of snagging.

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<sup>4</sup>[www.thamescharters.co.nz](http://www.thamescharters.co.nz); [www.musselbargesafaris.co.nz](http://www.musselbargesafaris.co.nz); [www.coromandelfishingcharters2013.co.nz](http://www.coromandelfishingcharters2013.co.nz); [www.snapperexpress.co.nz](http://www.snapperexpress.co.nz); [www.thecoromandel.co.nz](http://www.thecoromandel.co.nz).

<sup>5</sup> Based on the Hartill *et al.*, (2007) survey, ACV data and charter boat websites.

<sup>6</sup> ACV data is reported through Activity Catch Returns and includes fishing positions, target and caught species numbers, and methods used.



**Map 2. Intensity of recreational fishing activities from boats. Averaged estimates from two 12-month periods of recreational fishing surveys in 2005/06 and 2011/12 in the Firth of Thames (Hartill *et al*, 2007; 2013). Proposed marine farm shown in red.**

25 Table 1 summarises my assessment of the main methods used and species likely to be caught by recreational fishers at the proposed marine farm based on recreational fishing surveys, ACV data, the assessments of environmental effects (Sim-Smith *et al.*, 2017) and other sources.

**Table 1: Recreational fishing methods used and species likely to be caught and targeted near and around the area of coastal permit CST60082314, based on the available information.**

	ACV data for Firth of Thames	Other information	My assessment
<b>Methods used</b>	Hand line <sup>7</sup> on anchor and a small amount of hand line drifting.	<p>The benthic habitats recorded in Sim-Smith et al (2017) support line and net finfish fishing methods.</p> <p>Dredging is unlikely to be used as scallop dredging is prohibited and there are no suitable shellfish found at the proposed site.</p> <p>Diving is unlikely to occur due to the absence of shellfish beds and the mud substrate at the proposed site.</p>	Stationary and mobile rod/line, set netting and long lining methods may be used at the site.
<b>Species targeted and caught</b>	Targeted - snapper, Caught – snapper, gurnard, kahawai, kingfish, and trevally.	<p>Charter boat websites (footnote 7) suggest snapper is the main species targeted and caught in the Firth of Thames, predominately around existing marine farms. Kingfish are also caught, along with gurnard, kahawai, trevally, John dory and Jack mackerel</p> <p>Very few large benthic epifauna and no fished invertebrates were present in ecological surveys of the site.</p>	<p>Snapper are the main species caught in the areas of the proposed marine farm. Gurnard, kahawai and kingfish and trevally also commonly caught species.</p> <p>The absence of hard substrates beneath the proposed marine farm makes it unlikely rock lobster and blue cod are targeted or caught in the area of the proposed marine farm.</p> <p>This area of the Firth of Thames is not known to hold scallops and no suitable shellfish species were found at the site</p>

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<sup>7</sup> Including rod and line fishing.

### *Exclusion of fishing*

26 I consider that, of the recreational fishing occurring in the area of the proposed marine farm, longlining, drift fishing and set netting would be excluded because of the risk of entanglement.

27 Anecdotal information from recreational fishers suggests that spaces between longlines of mussel farms in the Marlborough Sounds are too narrow for longlining, set netting and trolling without risk of entanglement. I also consider that drift fishing is unlikely to occur within marine farms because of risk of entanglement. The spacing between longlines in the proposed marine farm is 20m, which is similar to mussel farms in the Marlborough Sounds. Therefore I consider these methods are likely to be excluded from the proposed marine farm also.

28 However, I consider that stationary rod and line fishing could continue between the proposed structures, as anecdotal information suggests fishers commonly fish by rod/line within mussel farms.

### *Availability of other areas*

29 I consider there are other areas available in the Firth of Thames for any recreational fishing excluded from the area of the proposed marine farm.

30 The Firth of Thames and wider Hauraki Gulf region is subject to area closures and various species and method restrictions.<sup>8</sup> These restrictions limit the availability of alternative recreational fishing areas outside of the area of the proposed marine farm. However, I consider alternative areas in the Firth of Thames could absorb most recreational fishing excluded from the proposed marine farm because:

- the substrate beneath the proposed marine farm, dominated by soft mud, is representative of the wider Firth of Thames region.<sup>9</sup> There is no evidence of anything rare or special about fishing at this site.
- the same methods as those used at the area of the proposed marine farm could be used elsewhere in the Firth of Thames;
- there are sufficient alternative areas for the methods that are excluded from within mussel farms; and
- the popularity of mussel farms for recreational fishers suggests that fishers may also be able to use alternative methods within mussel farms for methods that are excluded from the proposed marine farm.

31 All of the Firth of Thames is available for recreational fishing under the Amateur Regulations. And, all of the wider Hauraki Gulf is available for recreational fishing apart from four areas closed under the *Submarine Cables and Pipelines Protection Act 1996*<sup>10</sup> and four small marine reserves<sup>11</sup> (outside of the Firth of Thames). Many alternative areas are therefore available for recreational fishers.

32 Areas of authorised aquaculture space have reduced the availability of recreational and customary fishing areas over time. The cumulative effects of existing aquaculture are further considered below.

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<sup>8</sup> The Amateur Regulations, the *Marine Reserves Act 1971* and the *Submarine Cables and Pipelines Protection Act 1996*.

<sup>9</sup> Sim-Smith et al. (2017).

<sup>10</sup> West of Kawau Island, east of Great Barrier Island, east of the Whangaparoa Peninsula and the Hauraki Gulf shipping lane

<sup>11</sup> Long Bay-Okura, Cape Rodney-Okakari Point, Te Matktu and Tawharanui marine reserves.



### *Increased cost of fishing*

33 I consider that the aquaculture activities at the proposed marine farm would result in a minimal, if any, increase in the cost of recreational fishing.

34 I consider that any recreational fishing excluded from the proposed marine farm could be carried out nearby with minimal additional cost, as a result of a marginal increase in fuel cost or change in method. I also consider that most species targeted at the area of the proposed marine farm could still be taken, using current or alternative fishing methods.

### *Likely effect on fishing*

35 I consider the likely effect on recreational fishing from the aquaculture activities proposed in the area of the application site would be small.

36 There is little quantitative data available on recreational catch taken from the area of the proposed marine farm or the Firth of Thames generally. Recreational fishers are not required to report catch or fishing locations and there is limited information available from ACV data. Fisheries New Zealand is therefore unable to estimate an average annual recreational catch or proportion of recreational catch likely to be affected by the proposed aquaculture activities. Rather, Fisheries New Zealand can only assess the effect of the proposed aquaculture activities on recreational fishing based on qualitative information.

37 I consider the effect on recreational fishing from the proposed aquaculture activities will be small because:

- not all recreational fishing methods would be excluded from the proposed marine farm;
- anecdotal information suggests existing mussel farms are popular fishing locations, particularly rod and line fishing for snapper. Fisheries New Zealand has no information to suggest recreational fishers will not use the proposed marine farm in a similar way;
- the area of the proposed marine farm is small compared to the available area in the Firth of Thames and is unlikely to be of particular importance to recreational fishers; and
- alternative areas within the Firth of Thames could absorb the recreational fishing displaced from the proposed marine farm.

### *Cumulative effects*

38 I consider effects from the aquaculture activities at the proposed marine farm, added to the effects of existing aquaculture in the Firth of Thames, would not have an undue adverse effect on recreational fishing in the Firth of Thames.

39 I acknowledge existing aquaculture in the Firth of Thames has affected the area available for recreational fishing. There is 3,084 ha of existing aquaculture in the Firth of Thames, predominately in the outer half of the Firth.

40 As noted, there is limited quantitative data available to assess the cumulative effects of authorised aquaculture on recreational fishing. Therefore, Fisheries New Zealand can only assess cumulative effects on recreational fishing based on the amount of aquaculture already authorised in the relevant recreational fishery and the likely importance of the area of the proposed marine farm for fishing.

- 41 However, I consider the cumulative effects on recreational fishing will not be undue because:
- some recreational fishing, particularly anchored rod and line fishing can still occur within marine farms. Anchored rod and line fishing is a popular method of recreational fishing in the Firth of Thames;
  - anecdotal evidence suggests that mussel farms are a popular location for recreational rod and line fishing, particularly for snapper;
  - not all existing farms are located in popular recreational fishing areas; and
  - as noted, I consider the adverse effects on recreational fishing of the proposed marine farm is small. And, taking into account effects of existing marine farms I am satisfied the effect on recreational fishing will not be undue.

### ***Customary fishing***

42 I am satisfied the aquaculture activities that may operate within the proposed marine farm will not have an undue adverse effect on customary fishing because:

- only a moderate amount of customary fishing is likely to occur at the proposed marine farm ;
- recreational fishing surveys and anecdotal information suggest existing mussel farms in the Firth of Thames are popular recreational fishing locations. This is likely to be the case for customary fishing also;
- anchored rod/line fishing and diving could still occur at the proposed marine farm ;
- there are other customary fishing areas available in the Firth of Thames and wider Hauraki Gulf;
- occupation of the proposed marine farm is unlikely to increase in the cost of customary fishing;
- the likely effect of occupation of the proposed marine farm on customary fishing is only small; and
- this small effect added to existing effects of approved aquaculture space will not cause the cumulative effect on customary fishing to become undue.

43 The above conclusions were reached following the more detailed assessment below.

### ***Location of the coastal permit area relative to fishing areas***

44 I consider the proposed marine farm is located where there may be customary fishing. The main method likely to be used is stationary rod/line fishing from a boat with set netting, drift fishing and long lining also suitable methods. The main species caught would be snapper, gurnard, kahawai, kingfish, trevally and perhaps flatfish.

45 Fisheries New Zealand consulted with 13 iwi, who it considers may have customary fisheries interests in the area of the proposed marine farm.<sup>12</sup> There are no existing customary management areas (for example, taiapure-local fishery or mātaihai reserves) in the vicinity of the proposed marine farm.

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<sup>12</sup> Ngai Tai ki Tamaki, Ngati Maru, Ngati Hei, Ngati Paoa, Ngati Tamatera, Ngati Porou ki Harataunga, Ngati Hako, Ngati Pukenga, Patukirkiri, Ngati Whanaunga, Tara Tokanui, Rahiri-Tumutumu and Ngaitai.

46 There is little quantitative data available on customary catch taken from the area of the proposed marine farm. Fishing locations for customary authorisations are usually only reported by Fisheries Management Area (FMA) or Quota Management Area (QMA), although more specific sites are sometimes identified. Customary authorisations for the Firth of Thames are issued under regulations 50 and 51 of the Amateur Regulations and do not need to be routinely reported. Customary fishers are not required to report catch or fishing locations.

47 From April 1998 to March 2018, 460 customary authorisations for fishing from the Firth of Thames and Coromandel harbour were reported to Fisheries New Zealand. Of these, 274 were for areas in the Firth of Thames. However, it is not possible to say these were for customary fishing in the area of the proposed marine farm.

48 I have assessed likely customary fishing in the proposed site in Table 2 below, using the available information on customary fishing.

**Table 2: Customary fishing methods used and species caught or targeted at the area of the proposed marine farm**

	Source of information		
	Customary authorisations issued for the Firth of Thames	Other information	My assessment
<b>Methods used</b>	N/A	Recreational fishers commonly use stationary and mobile rod/line methods, longlining and set netting, so customary fishers may also use these methods.	Stationary rod/line fishing, longlining and set netting are the most common methods for recreational fishers and may also be used by customary fishers.
<b>Species caught or targeted</b>	<p>Cockles, crayfish, oysters, paua, pipi, scallops, kina and tuatua were all targeted in the Firth of Thames but would not be taken from the proposed site.</p> <p>Flatfish, kahawai, kingfish, mussels, snapper, and trevally were targeted and could have been taken from the proposed site.</p>	<p>Kina and crayfish are not typically found over the mud substrate at the proposed marine farm.</p> <p>The proposed marine farm is not located within a known oyster or scallop fishery area.</p> <p>The water depth at the proposed marine farm is too deep to be fished for paua, cockle, pipi or tuatua.</p>	<p>Flatfish, snapper, kahawai and kingfish are likely to be the most commonly caught species at the proposed marine farm.</p> <p>The substrate and depth make the catch of kina, crayfish, paua, cockle, pipi or tuatua unlikely.</p>

### *Exclusion of fishing*

49 I consider that, of the customary fishing occurring in the areas of the proposed marine farm, longlining, drift fishing and set netting would be excluded because of the risk of entanglement.

50 As noted, anecdotal information from recreational fishers suggests that spaces between longlines of mussel farms in the Marlborough Sounds are too narrow for longlining, set netting and trolling without risk of entanglement. I also consider that drift fishing is unlikely to occur within marine farms because of risk of entanglement. I consider that customary fishing in the proposed marine farm is likely to be similarly excluded.

51 However, I consider that stationary rod and line fishing could continue between the proposed structures, as anecdotal information suggests fishers commonly fish by rod/line within mussel farms.

### *Availability of other areas*

52 I consider there are alternative areas available elsewhere in the Firth of Thames for any customary fishing displaced from the area of the proposed marine farm.

53 All of the Firth of Thames is available for customary fishing. And, all of the wider Hauraki Gulf is available for customary fishing apart from four areas closed under the *Submarine Cables and Pipelines Protection Act 1996*<sup>13</sup> and four small marine reserves<sup>14</sup> (outside of the Firth of Thames).

54 I consider alternative areas in the Firth of Thames could absorb customary fishing displaced from the proposed marine farm because:

- the substrate beneath the proposed marine farm, dominated by soft mud, is representative of the wider Firth of Thames region.<sup>15</sup> There is no evidence of anything rare or special about fishing at this site;
- the same methods as those used at the area of the proposed marine farm could be used elsewhere in the Firth of Thames;
- there are sufficient alternative areas for the methods that are excluded from within mussel farms; and
- the popularity of mussel farms for recreational fishers is likely to be the case for customary fishers also. This suggests that fishers may be able to use alternative methods within mussel farms in addition to using alternative areas for methods that are excluded from the proposed marine farm.

55 Areas of authorised aquaculture space have reduced the availability of customary fishing areas over time. The cumulative effects of existing aquaculture are further considered below.

### *Increased cost of fishing*

56 I consider that the aquaculture activities at the proposed marine farm would result in a minimal, if any, increase in the cost of customary fishing.

57 I consider that any customary fishing excluded from the proposed marine farm could be carried out nearby with minimal additional cost, as a result of a marginal increase in fuel cost

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<sup>13</sup> West of Kawau Island, east of Great Barrier Island, east of the Whangaparoa Peninsula and the Hauraki Gulf shipping lane

<sup>14</sup> Long Bay-Okura, Cape Rodney-Okakari Point, Te Matuku and Tawharanui marine reserves.

<sup>15</sup> Sim-Smith et al. (2017).

or change in method. I also consider that most species targeted at the area of the proposed marine farm could still be taken, using current or alternative fishing methods.

### *Likely effect on fishing*

58 I consider the likely effect on customary fishing from the aquaculture activities proposed in the area of the application site will be small.

59 There is little quantitative data available on customary catch taken from the area of the proposed marine farm or the Firth of Thames generally. Fisheries New Zealand is therefore unable to estimate an average annual customary catch or proportion of customary catch likely to be affected by the proposed aquaculture activities.

60 I consider the effect on customary fishing from the proposed aquaculture activities will be small because:

- not all customary fishing methods would be excluded from the proposed marine farm;
- anecdotal information suggests existing mussel farms are popular recreational fishing locations, particularly rod and line fishing for snapper. Fisheries New Zealand considers it is likely existing farms are popular customary fishing locations also. Fisheries New Zealand has no information to suggest the proposed marine farm will not be popular for customary fishers also;
- the area of the proposed marine farm is small compared to the available area in the Firth of Thames and is unlikely to be of particular importance to customary fishers; and
- alternative areas within the Firth of Thames could absorb the customary fishing displaced from the areas of proposed marine farm.

### *Cumulative effects*

61 I considers effects from the aquaculture activities at the proposed marine farm, added to the effects of existing aquaculture in the Firth of Thames, would not have an undue adverse effect on customary fishing in the Firth of Thames.

62 I acknowledge existing aquaculture in the Firth of Thames has affected customary fishing. There is 3,084 ha of existing aquaculture in the Firth of Thames, predominately in the outer half of the Firth.



63 However, I consider the cumulative effects on customary fishing will not be undue because:

- some customary fishing (eg, rod and line fishing) can still occur within marine farms. This is a popular method of customary fishing in the Firth of Thames;
- anecdotal evidence suggests that mussel farms are a popular location for recreational rod and line fishing, particularly for snapper. It is likely marine farms will be similarly popular for customary fishing also;
- not all existing farms are located in popular customary fishing areas; and
- as noted, I consider the adverse effects on customary fishing of the proposed marine farm is small. Taking into account effects of existing marine farms I am satisfied the effect on customary fishing will not be undue.

### ***Commercial fishing***

64 I am satisfied the aquaculture activities that may operate within the proposed marine farm will not have an undue adverse effect on commercial fishing because:

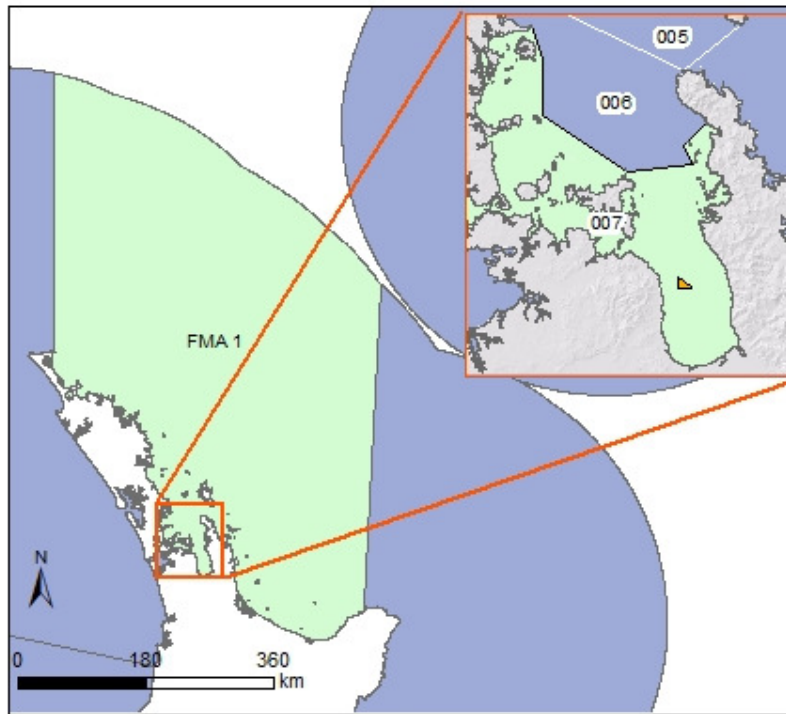
- only a small amount of snapper longlining and some snapper and rig set netting are likely to occur in the area;
- the area of the proposed farm is relatively insignificant for snapper longlining, but is relatively important for rig set netting. Also rig set netting may be effectively excluded from an area much larger than the proposed marine farm due to floating detritus from the farm. Despite this:
  - there are alternate fishing grounds in the Firth of Thames and the relevant QMAs or FMA1 for any fishing excluded from the proposed marine farm;
  - occupation of the proposed marine farm will result in a minimal, if any, increase in the cost of commercial fishing;
  - effects on commercial fishing catch will be small; and
  - the additional adverse effect on commercial fishing is only small and will not cause the cumulative effect on commercial fishing for any fish stock to become undue.

65 The above conclusions were reached following the more detailed assessment below and includes the information in the submission from a commercial fisher.

### ***Location of the coastal permit area relative to fishing areas***

66 I consider the proposed marine farm is located where there is commercial fishing. This is predominately by lining and set netting methods. A year round trawl and Danish seine closure exists in the area, and the take of scallops is prohibited.

67 The Firth of Thames is within Fisheries Management Area 1 (**FMA 1**) (Map 3). Historically, most commercial fishing has been reported by statistical area. The area of the proposed marine farm is in general statistical area 007 (**SA 007**) (Map 3). SA 007 covers the Hauraki Gulf and Firth of Thames from Takatu Point on Tawharanui Peninsula to Te Kawau Point on Coromandel Peninsula (259,486 ha). Further detail on fisheries management and statistical areas is available in Appendix D.



**Map 3. Fisheries Management Area 1 (FMA1). Insert shows location of the proposed marine farm within statistical area 007.**

68 Fisheries New Zealand has assessed the main fisheries, bathymetry and habitat known to occur in SA 007 and the relative amounts of fishing that reported by statistical area, or to specific coordinates within SA 007. Fisheries New Zealand has used this, along with institutional information to inform Table 3 and the commercial fishing assessment below.

69 Of all the fisheries given in Table 3 that could possibly occur within the proposed marine farm site, only snapper longlining, snapper set netting and rig set netting are assessed as likely to occur within or near to the proposed marine farm. A lot of the commercial set netting in SA 007 happens from small vessels and is reported by statistical area only. As a result, there is increased uncertainty as to where this type of fishing has occurred. However, Fisheries New Zealand has mapped the main locations of the different set net fisheries in consultation with the commercial fishers. The only set net fishing in the area of the proposed farm is likely to be targeting rig, although other species will also be caught including snapper and kahawai. Fisheries New Zealand is uncertain about where trevally and yellow-eyed mullet fishing occurs within SA 007 and can't rule out these fisheries being affected. Further detail on how Fisheries New Zealand analyses commercial fishing can be found in Appendix D.

**Table 3: Fisheries reported in the statistical areas around the proposed marine farm site (fisheries with at least 10 days per year of fishing activity).**

Fishery segment (main fishstock and main fishing method)	Statistical area	% high spatial resolution	Average annual no. fishing days	% of main fishstock caught by this method and in this statistical area	Potentially affected by coastal permits?	Rationale for including / excluding fishery from proposed farm assessment
Snapper, Bottom Long Line	007	99%	599	6%	Yes	Reported in or near the proposed marine farm site.
Rig, Set Net (incl. Gill Net)	007	69%	260	10%	Yes	Reported in or near the proposed marine farm site.
Mixed species, Set Net (incl. Gill Net)	007	32%	215	-	Yes	Reported in or near the proposed marine farm site.
Snapper, Set Net (incl. Gill Net)	007	27%	202	1%	Yes	Reported in or near the proposed marine farm site.
Trevally, Set Net (incl. Gill Net)	007	55%	26	0%	Yes	Could overlap with proposed marine farm site.
Yellow-eyed Mullet, Set Net (incl. Gill Net)	007	0%	13	11%	Yes	Could overlap with proposed marine farm site.
Flatfish, Set Net (incl. Gill Net)	007	3%	2264	42%	No	Commercial fishers have indicated that flatfish set netting occurs closer to shore.
Rock lobster, Rock Lobster Pot	905	0%	998	27%	No	Rock lobsters inhabit areas of reef and hard substrate. This habitat type does not occur in the proposed marine farm site.
Kahawai, Set Net (incl. Gill Net)	007	3%	303	11%	No	Commercial fishers have indicated that kahawai netting occurs closer to shore.
Kahawai, Ring Net	007	0%	129	5%	No	
Grey Mullet, Ring Net	007	0%	180	4%	No	
Grey Mullet, Set Net (incl. Gill Net)	007	1%	130	5%	No	Commercial fishers have indicated that grey mullet netting occurs closer to shore.
Snapper, Hand Line	007	0%	121	0%	No	This type of fishing is likely to be recreational fishing reported from commercial fishing vessel.
Parore, Set Net (incl. Gill Net)	007	1%	71	11%	No	Parore are mainly associated with reef and seaweed habitats and are unlikely to be targeted in the proposed marine farm site.
Parore, Ring Net	007	0%	49	9%	No	
Other species, Hand gathering	007	0%	56	93%	No	
Packhorse Lobster, Rock Lobster Pot	905	0%	53	10%	No	Packhorse lobsters inhabit areas of reef and hard substrate. This habitat type does not occur in the proposed marine farm site.
Kina, Diving	007	0%	40	11%	No	Kina are found in rock and reef habitats. The proposed marine farm site does not include this habitat type.
Mixed Fishery, Hand Line	007	0%	27	-	No	This type of fishing is likely to be recreational fishing reported from commercial fishing vessel.
Sea Cucumber, Diving	007	0%	25	-	No	Diving is likely to occur only at shallower depths.
Snapper, Ring Net	007	0%	12	0%	No	Commercial fishers have indicated that ring netting generally occurs closer to shore.
Snapper, Danish Seine	007	83%	10	0%	No	This type of fishing is prohibited at the proposed marine farm site.

### *Exclusion of fishing*

70 I consider that some commercial long lining and set netting will be excluded from the proposed marine farm and surrounding area.

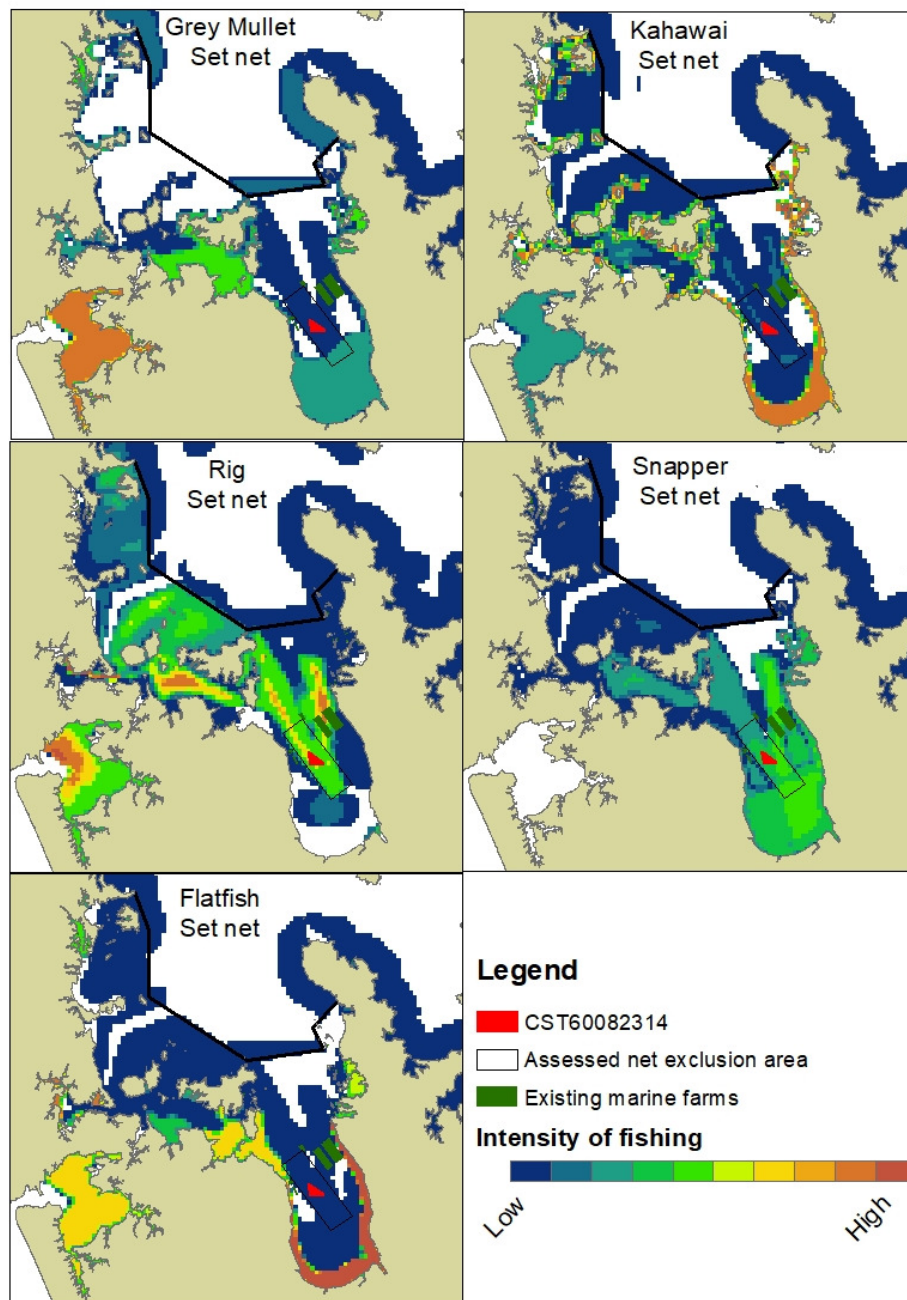
71 Snapper longlining can operate immediately adjacent to authorised aquaculture sites so this commercial fishing would only be displaced from the area of the proposed farm itself. Analysis of reported longlining positions show the area is only lightly used for longlining. An analysis of the amount of fishing that might be displaced is given below.

72 Commercial set net fishing is likely to be affected over a wider area than just the site of the proposed farm. A submitter explained that existing marine farms in eastern Firth of Thames produce detritus which spreads with currents and prevents set net fishing within many kilometres of the farms. Similar concerns have been submitted by commercial set netters on previous marine farm developments in the Firth of Thames.<sup>16</sup> In particular, detritus build up on the sea bed was thought to deter flatfish occupation of such areas (in this case, flatfish set netting is not thought to occur at the proposed farm site). Also, heavy fouling of set nets with detritus can require more frequent net maintenance. Fishers disagree on the spatial extent of the organic debris problem from a few hundred metres to 13 km away from the farm structures.

73 Fisheries New Zealand accepts that commercial set netting is affected by the existing marine farms to a much greater extent than previously presumed. The proposed marine farm might exclude rig set netting from a large area outside the proposed farm site, particularly in the direction of predominant tidal currents. A corridor of 20 km long and 6 km wide spanning the space between the other marine farms in the Firth of Thames and oriented with the direction of tidal flow was evaluated as the possible space that set netting could be excluded from in a worst-case scenario (Map 4). The average amount of fishing occurring within this corridor is presented below. Map 4 shows that the wider exclusion zone still mainly affects only rig and snapper set netting areas.

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<sup>16</sup> Wilson Bay Interim Aquaculture Management Areas (AMAs) Final Evaluation Report 2009. Ministry of Fisheries internal report downloaded on 4 March 2019 from <https://fs.fish.govt.nz/Doc/22083/FINAL%20EVALUATION%20REPORT%20for%20Wilson%20Bay%20Interim%20AMAs.pdf.ashx>



**Map 4. Intensity of commercial set net fishing by the dominant catch species in SA 007. Proposed marine farm shown in red. Also shown is the area assessed for potential effects on set netting due to tidal dispersal of detritus.**

#### *Availability of other fishing areas*

74 I am satisfied there are alternative areas in SA 007 and elsewhere in FMA1 that could absorb any commercial fishing displaced from the proposed marine farm site.

75 Any displaced snapper long lining can be done elsewhere in the Firth of Thames or other parts of SA 007<sup>17</sup> or snapper quota management area SNA1. Fisheries New Zealand estimates

<sup>17</sup> Few closures or restrictions in SA007 limit alternative areas in the Firth of Thames for set netting or longlining. Numerous small closures elsewhere in FMA1 limit alternative available areas, particularly for set netting, although not to a large extent.

that 6% of SNA1 catch is caught by long lining in SA 007. Of the snapper long lining that occurs in SA 007 about 2% of the catch might be displaced by the proposed marine farm.

76 Less than 1% of SNA1 catch is caught by set netting in SA 007. Targeting snapper with set nets is uncommon in SA 007. Mostly snapper is caught as a bycatch when targeting other species with set nets. Fisheries New Zealand estimates that about 9% of the set net catch of snapper in SA 007 might be displaced if the whole area shown in Map 4 is removed from the fishery. The overall effect of displacing both long lining and set netting for snapper is approximately 0.2% of the SNA1 fishery.

77 Any displaced rig set netting can be done elsewhere in the Firth of Thames or other parts of SA 007 or rig quota management area SPO1. Fisheries New Zealand estimates that 10% of SPO1 catch is caught by set netting in SA 007. Of the rig set netting that occurs in SA 007 about 5% of the catch might be displaced if the whole area shown in Map 4 is removed from the fishery. So overall the effect of the proposed marine farm on the SPO1 fishery is to displace no more than 0.5% of the catch for SPO1.

78 Areas of authorised aquaculture space have reduced the availability of commercial fishing areas over time. The cumulative effects of the existing aquaculture is considered further below.

### *Increased cost of fishing*

79 I consider that the aquaculture activities at the proposed marine farm will have a negligible effect, if any, on the cost of commercial fishing.

80 While the proposed marine farm is located within a region used for commercial fishing, I consider that using alternative commercial fishing grounds would not result in an increase in the cost of commercial fishing. This is because the proposed marine farm will only exclude a relatively small area from commercial fishing compared to the area of similar fishing habitat that is available. Fisheries New Zealand has no information to suggest these fishing grounds available nearby are any less productive.

### *Likely effect on fishing*

81 I consider the aquaculture activities at the proposed marine farm will have a small overall adverse effect on commercial fishing.

82 Fisheries New Zealand estimates that approximately 10 tonne of annual average catch of all species would be displaced by the aquaculture activities authorised by coastal permit CST60082314. Fisheries New Zealand used CatchMapper, a tool for analysing commercial fishing data,<sup>18</sup> to calculate the above estimates of affected catch.

83 SNA1 is the fish stock with the most catch potentially affected, making up approximately five of the ten tonne of the catch estimated to be potentially displaced. This is about 0.1% of the total allowable commercial catch (TACC) for SNA1. The effect on set netting for rig (SPO1) is approximately 1.9 tonne of catch per year displaced (about 0.3% of the TACC for SPO1). This is based on a high impact scenario for the area possibly affected by the proposed farm (see Exclusion of fishing above).

84 Given the relatively small catch of all species likely to be affected by the proposed aquaculture activities, Fisheries New Zealand has not attempted to determine the likely changes in catch rates for the displaced fishing in order to estimate the net effect on commercial fishing.

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<sup>18</sup> Osborne, TA 2018 Forecasting quantity of displaced fishing Part 2: CatchMapper - Mapping EEZ catch and effort New Zealand Aquatic Environment and Biodiversity Report No. 200. Downloaded on 4 March 2019 from <https://fs.fish.govt.nz/Page.aspx?pk=113&dk=24611> See Appendix E for more information.



This assessment is based on the worst-case scenario that all of the catch displaced by the proposed aquaculture activities would be lost from the affected fisheries and no replacement catch would be available from other areas.

### *Cumulative effects*

85 I consider existing aquaculture in the Firth of Thames has affected commercial fishing. However, I consider the cumulative effects on commercial fishing, including the aquaculture activities at the proposed marine farm, will not be undue.

There are around 3,150 ha of authorised aquaculture space in the Firth of Thames. There is also approximately 3,600 ha of marine farms in SA 007 that make up about 28% of the 11,950 ha of aquaculture in FMA 1.

86 Fisheries New Zealand acknowledges that aquaculture development in the Firth of Thames has occurred in areas important to commercial fishing, particularly for snapper and inshore set netting. This aquaculture development has had a cumulative effect on commercial fishing in the Firth of Thames.

87 The cumulative effect of the proposed marine farm and all previous authorised marine farming has been assessed for all fishstocks. The largest cumulative effects to date amounts to less than 2% of any fishery, and is not considered to be undue.

88 Fisheries New Zealand's assessment of cumulative effects is based on the assumption that all of the catch displaced from areas of authorised aquaculture would be lost from the affected fisheries. However, finfish in particular are mobile and, though they will likely pass through marine farms, can be caught outside of the farms. As a result, Fisheries New Zealand considers the actual levels of cumulative effects are likely to be less than assessed.

## AQUACULTURE DECISION

89 I am satisfied – based on all relevant information available to me – the activities proposed for coastal permit area CST60082314 will not have an undue adverse effect on:

- a) recreational fishing, and
- b) customary fishing, and
- c) commercial fishing.

90 Accordingly, my decision is a determination for coastal permit CST60082314 with regard to:

- a) recreational fishing, and
- b) customary fishing, and
- c) commercial fishing.

91 The area of the determination on recreational, customary and commercial fishing is 664 ha comprising an area with the following coordinates (NZTM2000):

<u>Point</u>	<u>Easting</u>	<u>Northing</u>
1	1808996.94	5900020.76
2	1808692.52	5903056.72
3	1809044.17	5903057.72
4	1812437.09	5900542.10
5	1812488.38	5900030.63

92 The reason for my decision is set out in the conclusions for recreational, customary and commercial fishing in this report.



**David Scranney**

Manager Customary Fisheries and Spatial Allocations  
Fisheries New Zealand – Tini a Tangaroa  
Ministry for Primary Industries – Manatū Ahu Matua

**Dated** 12 April 2019

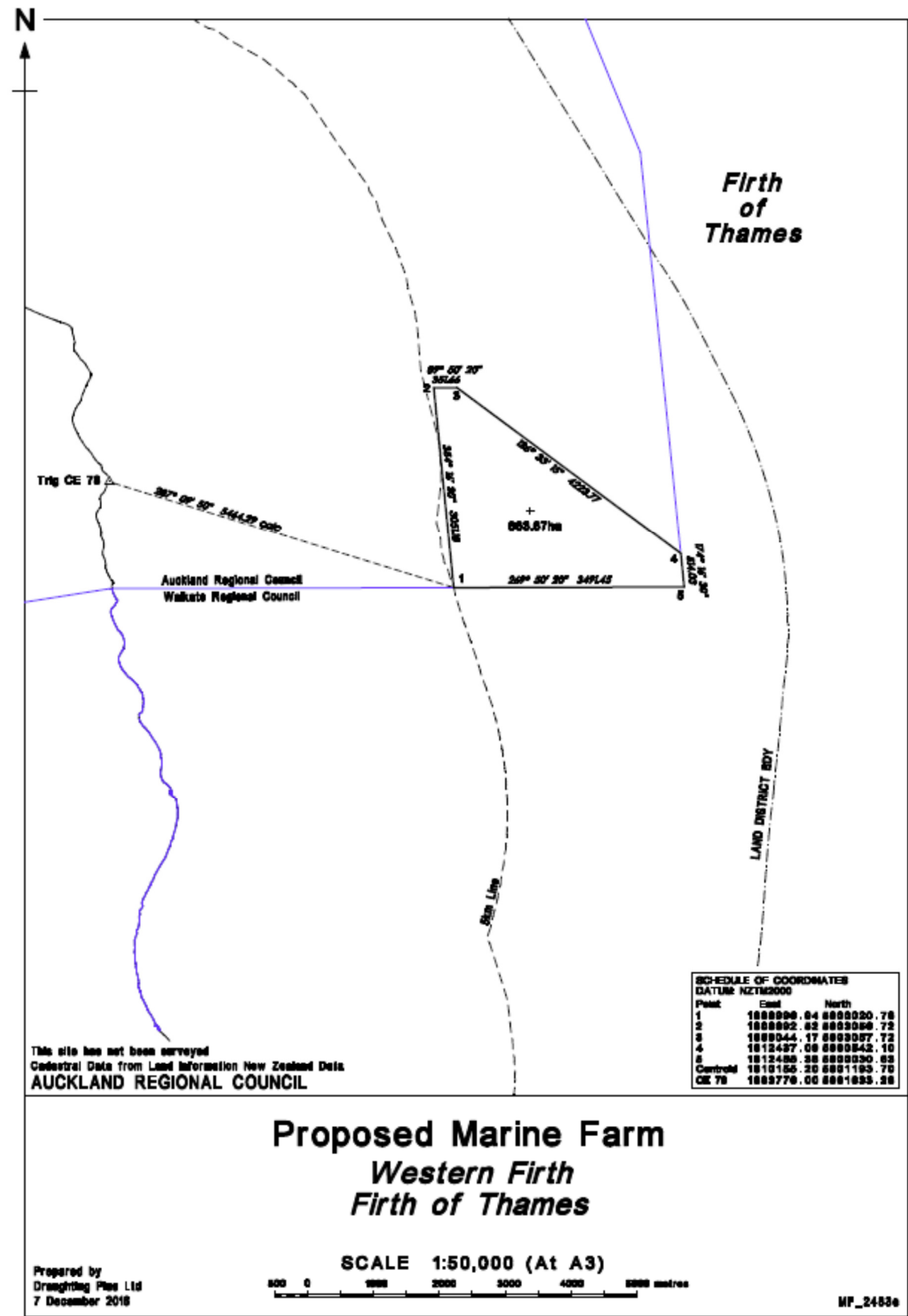
## References

Hartill, B.; Bian, R.; Armiger, H.; Vaughan, M.; Rush, N. 2007. Recreational marine harvest estimates of snapper kahawai and kingfish in QMA1 in 2004-05. New Zealand Fisheries Assessment Report 2007/26. 44p.

Hartill, B.; Bian, R.; Rush, N.; Armiger, H. 2013. Aerial-access recreational harvest estimates for snapper, kahawai, red gurnard, tarakihi and trevally in FMA 1 in 2011–12. New Zealand Fisheries Assessment Report 2013/70. 44 p.

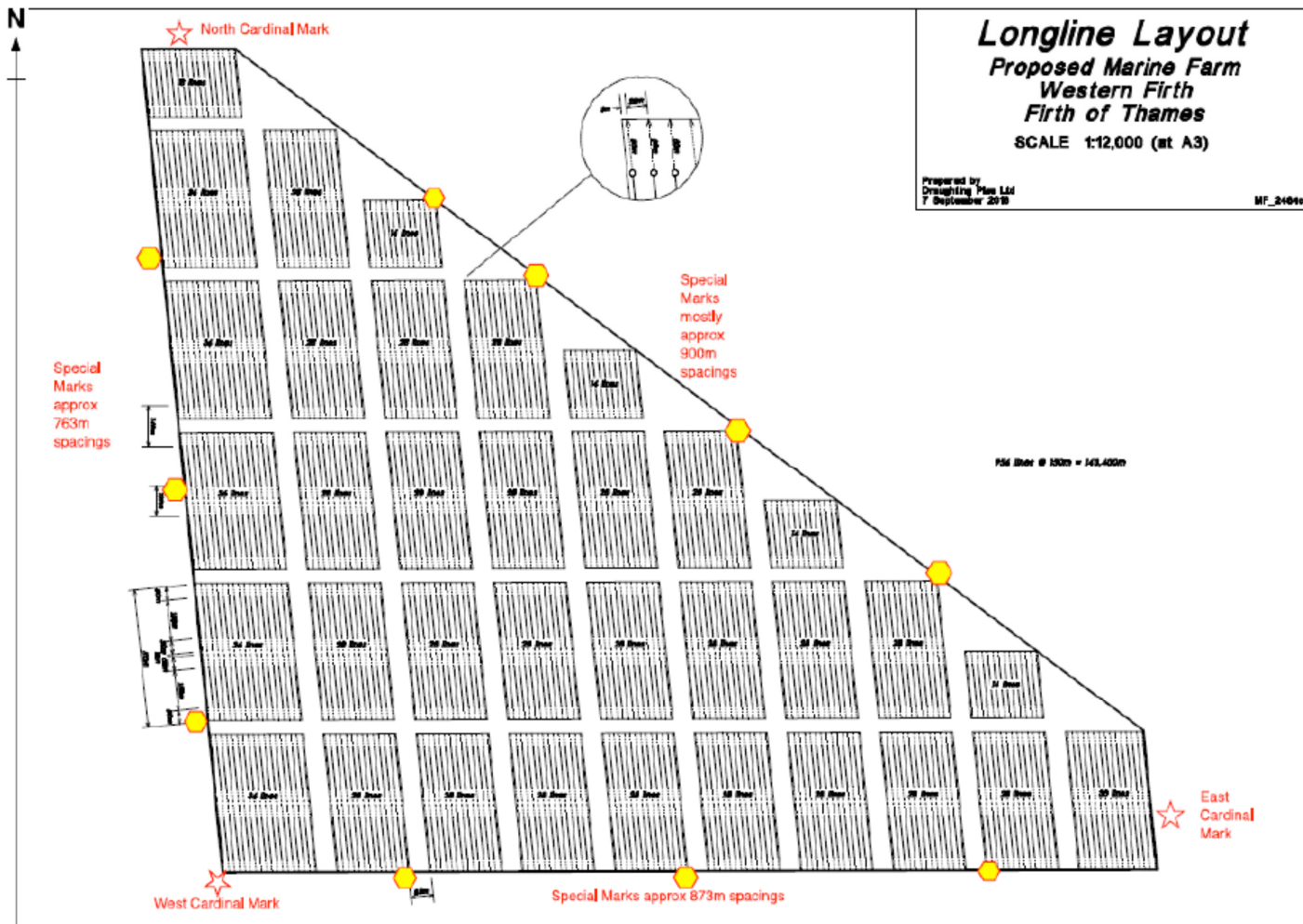
Sim-Smith, C; Kelly, S; Carbines G. 2017. Ecological assessment of a proposed mussel farm site in the western Firth of Thames. Client report for Aquatic Environmental Sciences 2017-11. 36p.

APPENDIX A: SITE AND STRUCTURES MAPS





## Proposed Bouyage and Lighting Configuration





## APPENDIX B: TANGATA WHENUA AND STAKEHOLDERS CONSULTED WITH BY FISHERIES NEW ZEALAND

<b>Tangata whenua</b>	<b>Recreational fishers</b>	<b>Commercial fishers</b>
Ngai Tai ki Tamaki	Recreational fishing Council-Keith Ingram	Te Ohu Kaimoana
Ngati Maru	The New Zealand Sports Fishing Council	Fisheries Inshore New Zealand
Ngati Hei	Spearfishing New Zealand	Whitianga and Coromandel Peninsula Fishermen's Association
Ngati Paoa	Tony Fox ( Mercury Bay Game Fish Council (MBGFC) & Thames Coromandel District Council)	Brian McMillen, P.A. & G.A. Thorburn (Piako Petes Ltd.)
Ngati Tamatera	Gordon McIvor ( MBGFC Committee)	Ngati Whatua Fisheries Ltd
Ngati Porou ki Harataunga	Mussel Barge Snapper Safaris	Southern Cross Fishing
Ngati Hako	Anglers Lodge Ltd	Leigh Fisheries
Ngati Pukenga	Russell John Chesnutt, Lorraine Margret Anderson	SNA 1 Commercial (C/- Alison Undorf-lay, Industry Liaison Manager)
Patukirkiri	Coromandel Fishing Adventures Limited	Brian McMillen
Ngati Whanaunga	Coromandel Fishing Charters 2013 Limited	Rob Billings
Tara Tokanui	Kiwisport Fishing Limited	Ted Howard
Rahiri-Tumutumu	Fishtits Charters Limited	Rex Smith
Ngaitai	GT Works LTD	
	MHG Enterprises Limited	
	Daniel John Finnerty	

## APPENDIX C: ADDITIONAL STATUTORY CONTEXT

1 Section 186E(3) of the Fisheries Act <sup>19</sup> requires me, in making an aquaculture decision, to have regard to any:

- (a) information held by the Ministry for Primary Industries; and
- (b) information supplied, or submissions made, to the Director-General under section 186D(1) or (3) by:
  - i. an applicant for or holder of the coastal permit;
  - ii. any fisher whose interests may be affected;
  - iii. persons or organisations that the Director-General considers represent the classes of persons who have customary, commercial or recreational fishing interests that may be affected by the granting of the coastal permit or change to, or cancellation of, the conditions of the coastal permit; and
- (c) information that is forwarded by the regional council; and
- (d) any other information that the Director-General has requested and obtained.

2 Section 186F of the Fisheries Act specifies an order of processing that must be followed in making aquaculture decisions. But section 186F(5) allows aquaculture decisions to be made in a different order from that specified if I am satisfied that in making an aquaculture decision out of order it will not have an adverse effect on any other aquaculture decision that has been requested. I am so satisfied in this case.

3 Section 186GB(2) of the Fisheries Act says that if a pre-request aquaculture agreement has been registered under section 186ZH in relation to the areas that the coastal permit relates to, I must not have regard to the undue adverse effects on commercial fishing in respect of any stocks covered by the pre-request aquaculture agreement when having regard to the matters specified in section 186GB(1). No pre-request aquaculture agreements have been registered in relation to coastal permit CST60082314.

4 Section 186GB(1)(b) requires an assessment of the likely effects of the aquaculture activities on fishing of any fishery including the proportion of any fishery likely to be affected. “Fishery” is not defined either in section 186 or elsewhere in the Fisheries Act. However, “stock” is defined in section 2 to mean any fish, aquatic life, or seaweed of one or more species that are treated as a unit for the purposes of fisheries management. Parts (3) and (4) of the Fisheries Act focus on “stocks” for the purpose of setting and allocating Total Allowable Catches and managing species within the quota management system (**QMS**). Sections 186GB(1)(f) and (2) also refer to “stock” with specific regard to adverse effects on commercial fishing. So for the purpose of my decision under section 186E, I consider a commercial fishery is a fish stock delineated by a fisheries management area (**FMA**) or quota management area (**QMA**).

5 I consider the relevant recreational and customary fishery are as I have described in the assessment above in “*Location of the coastal areas relative to fishing area.*”

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<sup>19</sup> Section 186E(3)(a) of the Fisheries Act refers to the ‘Ministry of Fisheries’ which is now the Ministry for Primary Industries. Section 186E(3)(b) and (d) refers to the ‘chief executive’ who is now the director-general.

6 Section 186C of the Fisheries Act does not define “cumulative effect” beyond what is provided in section 186GB(1)(f) that the effect includes any structures authorised before the introduction of any relevant stock to the QMS. For the purpose of my decision under section 186E, “cumulative effect” on commercial fishing includes the total effect of all authorised aquaculture activities within the relevant QMA or FMA. For recreational and customary fisheries, the relevant areas for considering “cumulative effects” are as I have described in the assessment above in my consideration of section 186GB(1)(a) and (f). Sections 186GB(1)(a) and (f) relate to location at proposed site in relation to where fishing occurs and the cumulative effect of aquaculture, respectively.

7 The *Fisheries (Kaimoana Customary Fishing) Regulations 1998* (**the Kaimoana Regulations**) define customary food gathering as the traditional rights confirmed by the Treaty of Waitangi and the *Treaty of Waitangi (Fisheries Claims) Settlement Act 1992*, being the taking of fish, aquatic life, or seaweed or managing of fisheries resources, for a purpose authorised by Tangata Kaitiaki/Tiaki, including koha, to the extent that such purpose is consistent with tikanga Māori and is neither commercial in any way nor for pecuniary gain or trade.

8 The Kaimoana Regulations and regulation 50 and 51 of the Amateur Regulations<sup>20</sup> provide for Tangata Kaitiaki/Tiaki to determine the customary purpose for which fish, aquatic life, or seaweed may be taken, methods used, seasons fished, size and quantity taken etc. The Kaimoana Regulations and regulations 50 and 51 do not contemplate restrictions under the Fisheries Act on the quantity of fish taken or the methods used to take fish. Should tangata whenua fish without customary authorisations, all the recreational limits under the Amateur Regulations apply.

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<sup>20</sup> Because rohe moana for iwi with an interest in the Firth of Thames have not been gazetted, customary authorisations for the Firth of Thames are issued under regulations 50 and 51 of the Amateur Regulations.

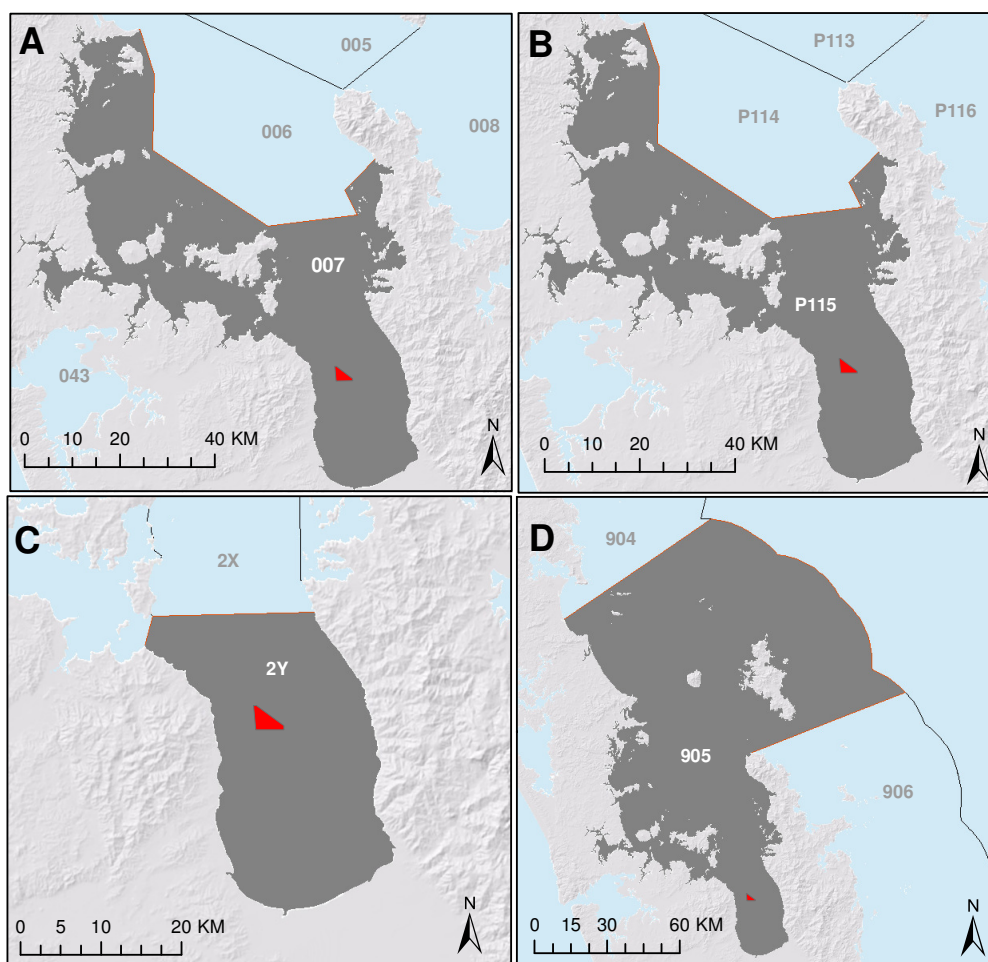
## APPENDIX D: COMMERCIAL FISHING

### *Fisheries boundaries*

1 A Fisheries Management Area (**FMA**) is one of the ten regions that the New Zealand 200nm Exclusive Economic Zone (**EEZ**) is divided into for fisheries management purposes. A Quota Management Area (**QMA**) is an area within which a designated fish stock is managed under the Quota Management System, and is generally based around FMAs. As noted, this application is in FMA 1.

2 Fisheries reporting historically occurred by general statistical area. There are 120 of these areas in New Zealand's EEZ and this provides for more fine scale data to be collected than at an FMA scale. As noted, this application is in general statistical area 007 (Map 1A).

3 Rock lobster, paua, scallops and oysters are reported by species-specific statistical areas rather than by general statistical area. The area of coastal permit CST60082314 falls within rock lobster statistical area 905, paua statistical area P115 and scallop statistical area 2Y (Maps 1B – 1D). The area of coastal permit CST60082314 does not fall within an oyster statistical area.



**Map 2: General and species-specific statistical areas that encompass the area of coastal permit CST60082314 (shown in red). A – General statistical area 007, B - Paua statistical area P115, C – Scallop Statistical Area 2Y, D - Rock lobster statistical area 905.**

## ***Commercial fishing reporting and analysis***

4 Reporting of commercial fishing by statistical area provides only coarse-scale information about where commercial fishing occurs. However, since 2007/08 vessels over 6 m long that have used trawl or line fishing methods have reported the start position of each fishing event by latitude and longitude to within 1 minute, which equates to around 1 nautical mile (nm). Since 2006/07, start positions for netting methods have reported to within 2 nm. Using this fine scale position data, Fisheries New Zealand has modelled and mapped fishing intensity for different segments of fishing, characterised by a type of fishing gear and the main species caught.<sup>1</sup> This detail can be commercially sensitive and cannot be publically released.

5 The location of fishing by vessels less than 6 m long within SA 007 is unknown. However, based on information from fisheries officers and Maritime New Zealand, Fisheries New Zealand has mapped long lining and set netting by vessels less than 6 m as being within enclosed bays and within 3 nm of open coasts. Knowledge about species and information from commercial fishers and fishing companies, and Fishery Officers can also help to determine whether specific types of fishing are likely to occur in an area.

6 Maps of fishing intensity (effort per ha) for each fishing sector were used to calculate the average annual amounts of fishing effort that is likely to be displaced from the exclusion zone/s of the coastal permit area.<sup>2</sup> Average landings per unit effort for all species caught in each fishery segment were then used to estimate the amount of fish likely to have been landed

7 Fishing effort that is only reported by statistical area was apportioned evenly across the area available for fishing although some areas are likely to include more productive habitats than others. The parts of the statistical area available for fishing for each type of fishing method are defined by using all available information (including regulated closures, bathymetry, seabed substrate, and consultation with fishers) about where the method is likely to be used. Where fishing is reported to the statistical area level, there is increased uncertainty as to where fishing events have taken place within the statistical area.

8 The amount of fishing was averaged over October fishing years 2007/08 to 2016/17. Ten years is long enough to take into account natural variation in the abundance and distribution of fish stocks and fishing effort so that likely average future fishing is fairly represented.

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<sup>1</sup> MPI developed the CatchMapper tool to model the estimated catch from landing data, and uses the best information available from fisheries statistics. This informs our assessment, and particularly, Table 3 of the decision.

<sup>2</sup> The “exclusion zone” used for commercial fishing methods assessed is the coastal permit area, with the exception (where applicable) of dredging, trawling and seining. In sheltered waters, buffers of 50m, 250m and 500m respectively are applied. In open water buffers of 75m, 500m and 500m respectively are applied.