



15 May 2017

MARINE FARMING PERMIT DECISIONS REPORT — TE AUPOURI DEVELOPMENT COMPANY LIMITED (COASTAL PERMIT AUT.007326.02.01¹) AND NGATI KURI TRUST BOARD (COASTAL PERMIT AUT.007439.02.01²), HOUHORA BAY, NORTHLAND

PURPOSE

1 This report sets out my decisions (as the relevant decision maker)³ on two applications under section 67J of the Fisheries Act 1983 for marine farming permits.

SUMMARY

2 I am satisfied the aquaculture activities proposed within the areas of coastal permits AUT.007326.02.01 and AUT.007439.02.01 will not have an undue adverse effect on:

- recreational fishing — for the reasons set out in this report and summarised in paragraph 47;
- customary fishing — for the reasons set out in this report and summarised in paragraph 69;
- commercial fishing — for the reasons set out in this report and summarised in paragraph 98.

MARINE FARMING PERMIT APPLICATION DETAILS – AUT.007326.02.01

Regional Council:	Northland Regional Council (NRC)
Applicant:	Te Aupouri Commercial Development Company Limited
Date application received:	02 August 2016
Location of application site:	Houhora Bay, Houhora, Northland
Size of farm:	11 hectares (ha) of new space
Species to be farmed:	Green-lipped mussels (<i>Perna canaliculus</i>), scallops (<i>Pecten novaezelandiae</i>)
Farm structures:	Standard marine farm longlines and anchors with droppers

¹ Previously numbered as CON20010732602

² Previously numbered as CON20010743902

³ 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*.

MARINE FARMING PERMIT APPLICATION DETAILS – AUT.007439.02.01

Regional Council:	Northland Regional Council (NRC)
Applicant:	Ngati Kuri Trust Board
Date application received:	16 September 2016
Location of application site:	Houhora Bay, Houhora, Northland
Size of farm:	8 hectares (ha) of new space.
Species to be farmed:	Green-lipped mussels (<i>Perna canaliculus</i>), scallops (<i>Pecten novaezelandiae</i>)
Farm structures:	Standard marine farm longlines and anchors with droppers

Location

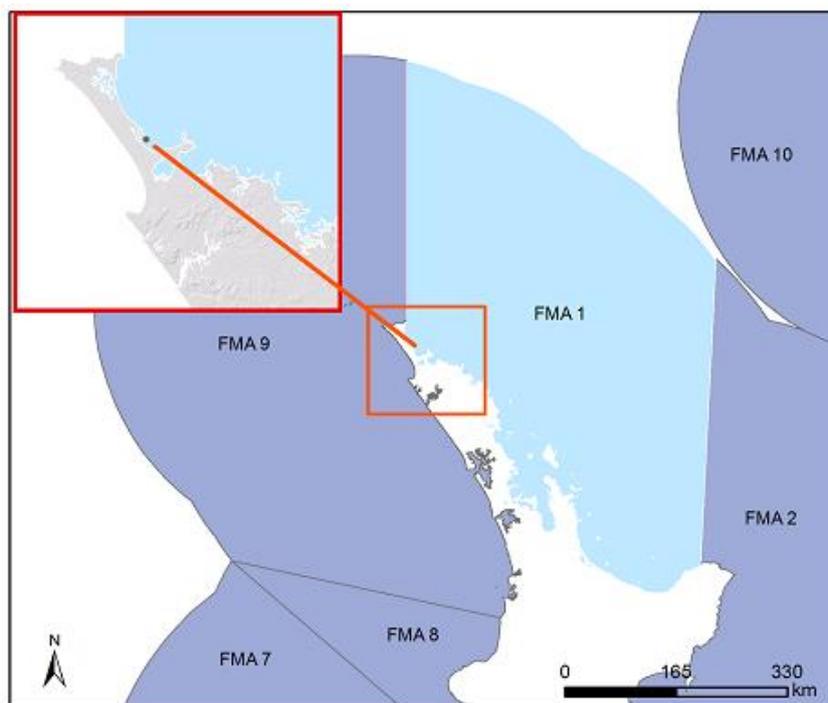
3 The application sites are located in the southern part of Houhora Bay, directly adjacent to each other, with AUT.007439.02.01 being south of AUT.007326.02.01. Houhora Bay is an embayment between Farmer and Stanley points in Rangaunu Bay (Map 1) and within Fisheries Management Area 1 (**FMA1**) (Map 2). There is one existing farm in Houhora Bay, approximately 100 metres (**m**) to the north of AUT007326.02.01, which is made up of a contiguous block of six marine farm authorisations.⁴

⁴ Marine farm licence 398 (**Li 398**), marine farm licence 302 (**Li 302**), marine farm permit 76 (**MF 76**), marine farm permit 118 (**MF 118**), marine farm permit 913 (**MF913**) and coastal permit CON20123105001.



Map 1⁵: Location of the areas authorised by coastal permits AUT.007326.02.01 (previously numbered as (CON20010732602) and AUT. 007439.02.01 (previously numbered as CON20010743902) at Houhora Bay, Northland (MPI, 2017).

⁵ Disclaimer: Maps 1-8 and all information accompanying them are intended to be used as guides only, in conjunction with other data sources and methods, and should only be used for the purpose for which they were developed. The information shown in the maps is based on a summary of data obtained from various sources. While all reasonable measures have been taken to ensure the accuracy of the maps, MPI: (a) gives no warranty or representation in relation to the accuracy, completeness, reliability or fitness for purpose of the maps; and (b) accepts no liability whatsoever in relation to any loss, damage or other costs relating to any person's use of the maps, including but not limited to any compilations, derivative works or modifications of the maps. The maps are subject to Crown copyright administered by Ministry for Primary Industries (MPI), and are licensed for general use under the Creative Commons Attribution 3.0 New Zealand licence (<http://creativecommons.org/licenses/by/3.0/nz/>). Crown copyright ©. NZ topo data. Sourced from Land Information New Zealand under CC-By. <http://creativecommons.org/licenses/by/3.0/nz/>



Map 2: Approximate location of the areas of coastal permits AUT.007326.02.01 and AUT.007439.02.01 (red circle) within FMA1.

4 The areas of coastal permits AUT.007326.02.01 and AUT.007439.02.01 are around 150m from shore at the closest points and both range from approximately 10-18m deep.

5 Houhora Bay has been the subject of many surveys including diving and dredge sampling, for consent and monitoring purposes⁶. From these and personal communication with NRC staff, the areas of coastal permits AUT.007326.02.01 and AUT.007439.02.01 are confirmed to be uniformly sandy, with no notable topographical features.

6 A benthic survey by Poynter (2013), showed the substrate underneath the existing farm in Houhora Bay to be sand with mussel clumps and a small amount of mussel shell. Dredge sampling and observations from this survey suggest that while the seabed community in the existing farmed areas may reflect influences from the overlying mussel farms, such influences are not ecologically negative and any effects are less than minor.

7 Poynter (2005), found Houhora Bay (including the areas of the current applications) to comprise a clean, sandy, unpolluted seabed that contains a healthy biota of common marine animals dominated by suspension feeders. The principal species recorded in the benthic community indicate it is not a rare community type.

8 The areas of coastal permits AUT.007326.02.01 and AUT.007439.02.01 receive some protection from the south east due to the Karikari Peninsula, though Houhora Bay and the coastal permit areas are open in a hydrodynamic sense and well flushed.

⁶ Boffa Miskell, 2000; Unpublished field survey: Northland Underwater Technical Services, 2001; Evidence of Mark Poynter ENV A 0277/04 Te Taumata Kaumata O Ngati Kuri Research Unit and further Resource Management Consent applications as individually referenced.

Structures

9 The area of coastal permit AUT.007326.02.01 will contain 24 longlines and the area of coastal permit AUT.007439.02.01 will contain 18 longlines. Longlines from both sites will be a maximum of 200m long and spaced about 18.5 m apart (Figure 1). Longlines will be orientated parallel to tidal flows, in a northeast-southwest direction.

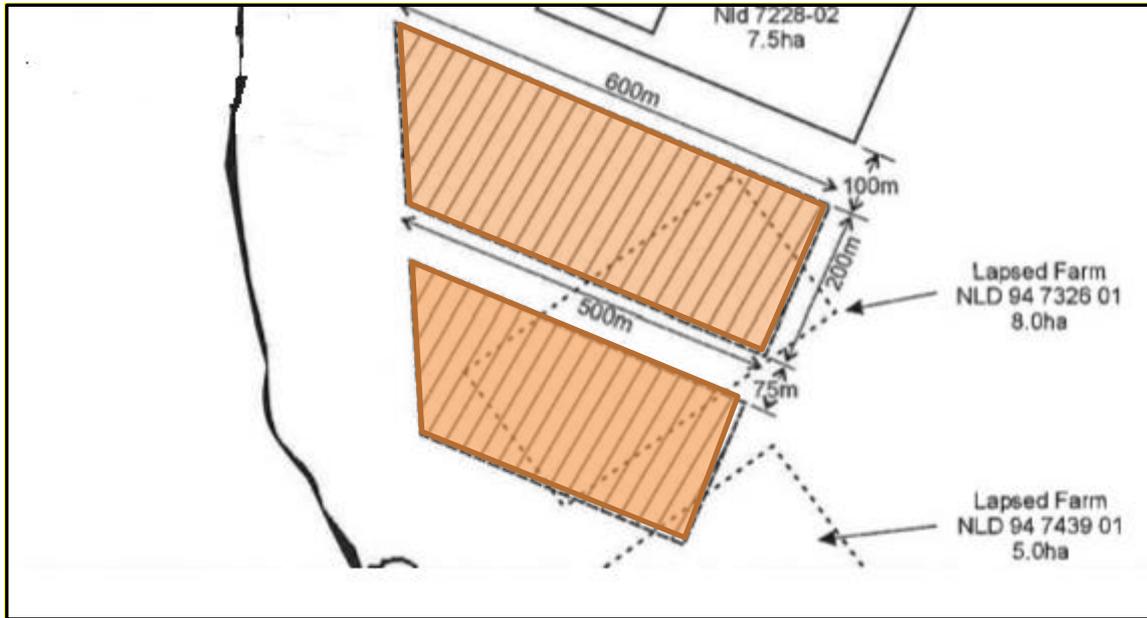


Figure 1: Structures diagram for coastal permits AUT.007439.02.01 (bottom) and AUT.007326.02.01 (top).⁷ The area shaded orange is new area proposed.

Input from stakeholders

10 The Ministry for Primary Industries (MPI) publicised the marine farming applications for coastal permits AUT.007326.02.01 and AUT.007439.02.01 on its website on 16 September 2016. 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 areas.

11 The closing date for submissions was 10 October 2016. One submission, from the fishstock CRA1 Rock Lobster Industry Association (**CRAMAC 1**), was received.

12 **CRAMAC 1** state that these applications will not have a direct effect on commercial rock or packhorse lobster fishing. However, **CRAMAC 1** submitted that the natural cyclical patterns of larval settlement may be disrupted, and requested that a condition be included on the marine farming permits requiring the permit holders to monitor and record any lobster pueruli settling on the marine farms. There is no legislative instrument to impose such a conditions on a marine

⁷ Sourced from the NRCs coastal permit application.

farming permit and the assessment below finds no effect on current rock and packhorse lobster fishing in the marine farm permit areas.

13 The applicants will be made aware of the interest of CRAMAC1 in monitoring puerulis.

STATUTORY CONTEXT

14 The Aquaculture Reform (Repeals and Transitional Provisions) Act 2004 (**Transitional Act**) requires marine farming permit applications under section 67J of the Fisheries Act 1983 to continue to be processed subject to provisions of the Transitional Act.

15 Sections 26A and 26B of the Transitional Act contain matters relevant to decisions on an application under section 67J of the Fisheries Act 1983. Under section 26A of the Transitional Act I must:

- (a) Grant the application if satisfied that the activities contemplated by the application would not have an undue adverse effect on fishing;
- (b) Decline the application if not satisfied that activities contemplated by the application would not have an undue adverse effect on fishing;
- (c) Defer making a decision if satisfied that the activities contemplated by the application would not have an undue adverse effect on fishing other than commercial fishing but I am not satisfied that the activities contemplated by the application would not have an undue adverse effect on commercial fishing. Deferring the decision gives the applicant time to lodge an aquaculture agreement or compensation declaration.

16 Section 26B(1) of the Transitional Act requires me, in making a decision on the application, to have regard to any:

- (a) Information held by the Ministry of Fisheries; and
- (b) Information supplied by the applicant; and
- (c) Information supplied by the fishers or other persons that information has been sought from (see the section Input from Stakeholders above); and
- (d) Other information requested and obtained from any other source.

17 Section 26B(2) of the Transitional Act specifies the only matters I must have regard to in determining whether granting the application will have an undue adverse effect on fishing. These matters are as follows:

- (a) The location of the area that the marine farming permit relates to in relation to areas in which fishing is carried out;
- (b) The likely effect of the aquaculture activities in the area that the marine farming 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 marine farming permit relates to will lead to the exclusion of fishing;
- (d) The extent to which fishing for a species in the area that the marine farming 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 marine farming 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.

18 Section 186C of the Fisheries Act 1996 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 67J of the Transitional Act, 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.

19 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.

20 The Kaimoana Regulations and regulations 50 and 51 of the *Fisheries (Amateur Fishing) Regulations* (**the Amateur Regulations**) 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.

ASSESSMENT

21 For the purpose of making my marine farming permit application decisions under section 67J of the Fisheries Act 1983, I have considered all relevant information before me. The following sections of this paper provide an assessment of the effects of the proposed aquaculture activities on recreational, customary and commercial fishing against the matters set out above.

22 For the purpose of my assessment, customary fishing differs from recreational fishing if it is undertaken outside of the recreational limits provided in the Amateur Regulations and is instead authorised by a customary authorisation.

23 This assessment relates to the 11 ha of new marine farming space authorised by coastal permit AUT.007326.02.01 and 8 ha of new marine farming space authorised by coastal permit AUT.007439.02.01.

Recreational fishing

Location of the coastal permit areas relative to fishing areas

24 I consider the areas of coastal permits AUT.007326.02.01 and AUT.007439.02.01 are located where there is a relatively large amount of recreational fishing predominantly by stationary and mobile rod/line methods, set netting, diving and longlining. I consider that snapper, trevally, terakihi, kahawai, and kingfish are the main species targeted and/or caught.

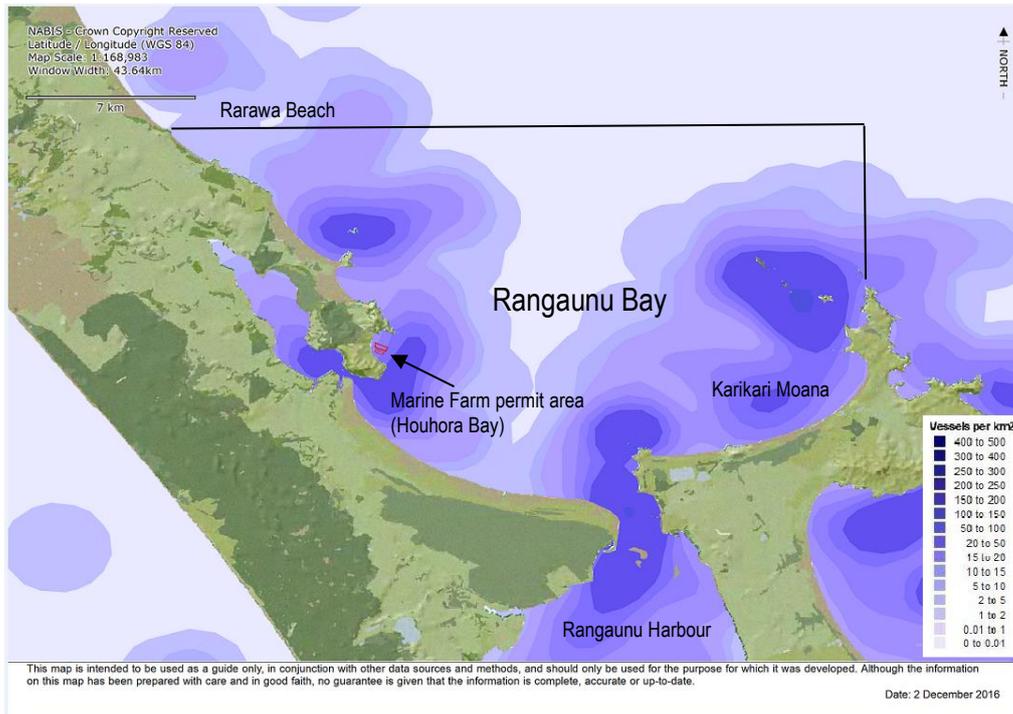
25 Available information on recreational fishing activity in Houhora Bay comprises:

- information provided in submissions, if any;
- information provided in the coastal permit applications for these sites and nearby farms;
- fishing surveys; and
- MPI information (eg, institutional knowledge).

26 No submissions on the areas of coastal permits AUT.007326.02.01 and AUT.007439.02.01 were received from recreational fishers. However, Amateur-fishing Charter Vessel (ACV) data shows that the coastal permit areas may be important for recreational fishing.

27 Results from the most recent recreational aerial fishing survey of New Zealand in 2004-05 (Hartill et al, 2007), also suggest there is a moderate amount of recreational fishing occurs at the area of coastal permits AUT.007326.02.01 and AUT.007439.02.01. The coastal permit areas cover an area where 10-20 vessels per square kilometer (km²) were recorded.

28 Diary and boat ramp surveys have also been completed specifically for fishers in the north region, as well as nationally (Bradford, 1996 and Hartill et al 1998, 2000). These give details on location, method of fishing, species targeted, and species caught.



29 **Map 4. Aerial survey results from 2006 of recreational fishing intensity (Hartill et al 2007). Location of areas of coastal permits AUT.007326.02.01 and AUT.007439.02.01 marked in red.⁸**

30 Table 1 below summarises my assessment of the main methods used and species caught and targeted in the areas of coastal permits AUT.007326.02.01 and AUT.007439.02.01. The Hartill, et. al.(2007) recreational fishing survey identifies methods used, and species targeted and caught within regions of East Northland. Other information is taken from MPI data obtained from contracted research, data from ACV reporting, monitoring of nearby marine farms, and information provided in the coastal permit application for these, and nearby sites.

31 ACV data was sorted to include fish caught and kept from the wider Rangaunu Bay, including Karikari Moana, Rangaunu Harbour and Rarawa Beach (square border in Map 4).

⁸ Map sourced from NABIS (MPI, 2017).

Table 1: Recreational fishing methods used and species caught and targeted at the areas of coastal permits AUT.007326.02.01 and AUT.007439.02.01 based on the available information.

	Hartill et al. (2007) results for survey zone encompassing Houhora Bay. ACV data.	Other information	My assessment
Methods used (in order of most common reported)	Rod & reel or handline drifting (charter), rod & reel or handline anchored (charter), rod & reel other (charter), bait fishing (private), trolling with lure (private), vessel (private), diving (charter) trolling big game (charter)	<p>The sand and shell hash in the coastal permit area is suitable for most of the methods identified as occurring in Houhora Bay (Poynter 2012, 2013)</p> <p>Depths at the site are greater than those used for drag netting/beach seining, hand gathering and flatfish spearing</p> <p>No species that are typically taken by dredging were observed at the coastal permit area by Poynter or by NRC staff</p>	<p>Stationary and mobile rod/line methods are the most commonly used methods at the sites</p> <p>Longlining, drift fishing, may also occur</p>
Species caught (in order of most common reported)	Snapper, kahawai, gurnard, kingfish, terakihi, trevally.	No scallops, oysters or kina were observed by Poynter (2012, 2013)	Snapper, kahawai, trevally, terakihi, and kingfish, skipjack tuna and barracouta are the main species caught at the coastal permit area
ACV	Snapper, kahawai, kingfish, trevally, terakihi, skipjack tuna, barracouta, john dory		
Species targeted (in order of most common reported)	Snapper, kahawai, mullet, kingfish, general species and mix of species targeted	No scallops or kina were observed by Poynter (2012, 2013)	Snapper, kahawai, terakihi, trevally, and kingfish are likely to be the most commonly targeted species at the coastal permit area
ACV	Snapper, terakihi		

Exclusion of fishing

32 I consider the aquaculture activities proposed for the areas of coastal permits AUT.007326.02.01 and AUT.007439.02.01 will exclude some of the recreational fishing methods that may be used in the area. However, I note these exclusion effects on recreational fishing are likely to be limited to the 8 and 11 ha spaces the new farms respectively comprise.

33 Of the recreational fishing likely to occur in the areas of coastal permits AUT.007326.02.01 and AUT.007439.02.01 it is likely that trolling, drift fishing, set netting and longlining would be excluded. Anecdotal information from recreational fishers⁹ suggests that spaces between longlines of mussel farms in the Marlborough Sounds are too narrow for set netting, and trolling without risk of entanglement. The proposed spacing of longlines in the areas of coastal permits AUT.007326.02.01 and AUT.007439.02.01 is likely to be similar to mussel farms in the Marlborough Sounds and I consider there will be a similar risk of entanglement. I also consider that drift fishing is unlikely to occur within marine farms because of risk of entanglement.

34 However, it is common for fishers to fish by rod/line within mussel farms so it is possible anchored fishing could continue between the proposed structures. I do not consider that diving would be excluded from the site.

Availability of other fishing areas

35 I consider there are other areas available for recreational fishing in Hohoura Bay, Rangaunu and the wider Northland east coast region.

36 The Northland east coast region is subject to area closures and various species and method restrictions, particularly for set netting.¹⁰ These restrictions limit the availability of alternative recreational fishing areas outside of Houhora Bay. However, I consider alternative areas in Rangaunu Bay and elsewhere in the Northland east coast region could absorb fishing by most fishers who fish the areas of coastal permits AUT.007326.02.01 and AUT.007439.02.01 because:

- the sandy substrate beneath the sites is widespread in the Northland east coast region and no information suggests the sites offer fishing opportunities (eg, habitat, species, methods) specific to them;
- the same methods as those used at the sites could be used elsewhere in Rangaunu Bay and elsewhere in the Northland east coast region; and
- there are sufficient alternative areas, particularly for rod/line fishing which can occur amongst mussel farms.

Increased cost of fishing

37 I consider the aquaculture activities proposed for the areas of coastal permits AUT.007326.02.01 and AUT.007439.02.01 will result in a minimal, if any, increase in the cost of recreational fishing.

⁹ FMA7 Recreational Fishing Forum, 27 May 2013.

¹⁰ The Amateur Regulations, *Marine Reserves Act 1971* and the *Submarine Cables and Pipelines Protection Act 1996*.

38 Based on the available information, I consider there is a high likelihood that any recreational fishing excluded from the sites could be carried out nearby with minimal additional cost, or that most species targeted at the site can be taken using alternative fishing methods.

Likely effect on fishing

39 I consider the likely effect on recreational fishing from the aquaculture activities proposed in the areas of coastal permits AUT.007326.02.01 and AUT.007439.02.01 will be small.

40 There is little quantitative data available on recreational catch taken from the coastal permit areas, Rangaunu Bay, or elsewhere in the Northland east coast region. Recreational fishers are not required to report catch or fishing locations. MPI 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, MPI can only make an assessment of the effect of the proposed aquaculture activities on recreational fishing based on qualitative information.

41 ACV data suggests no charter fishing will be affected as no charter fishing is recorded directly within Houhora Bay, but rather in the wider Rangaunu Bay.

42 Overall, 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 sites; and
- alternative areas within Hohoura Bay, Rangaunu Bay and elsewhere in the Northland east coast region could absorb the recreational fishing displaced from the sites.

Cumulative effects

43 I consider effects from the aquaculture activities proposed for the areas of coastal permits AUT.007326.02.01AUT and AUT.007439.02.01AUT, added to the effects of existing aquaculture in the Northland east coast region, will not have an undue adverse effect on recreational fishing.

44 There is no quantitative catch data available to assess the cumulative effects of authorised aquaculture on recreational fishing catch. As noted, recreational fishers are not required to report catch or fishing locations. MPI can therefore only make an assessment about cumulative effects on recreational fishing based on the amount of aquaculture already authorised in the relevant recreational fishery and the likely importance of the coastal permit areas for fishing.

45 I acknowledge there is already approximately 200ha of permitted aquaculture space in the Northland east coast region, with approximately 80 ha of this space currently permitted in Houhora Inlet and Bay. However, overall I consider the authorised space has not had an undue adverse effect on recreational fishing. This is because some fishing (eg, anchored rod and line fishing) can occur within the existing farms and not all the authorised aquaculture space is located in popular fishing areas.

46 As noted, I consider the adverse effects of the areas of coastal permits AUT.007326.02.01 and AUT.007439.02.01 on recreational fishing will be small. Subsequently, taking into account

the effects of the existing authorised aquaculture areas, I consider the additional effects from the coastal permit areas will not cause the cumulative effect on recreational fishing to become undue.

Conclusion on effects on recreational fishing

47 I am satisfied the aquaculture activities proposed within the areas of coastal permits AUT.007326.02.01 and AUT.007439.02.01 will not have an undue adverse effect on recreational fishing because:

- anchored rod/line fishing and diving could still occur in the coastal permit areas;
- there are other recreational fishing areas available elsewhere in Rangaunu Bay and elsewhere in the Northland east coast region ;
- occupation of the coastal permit areas will result in a minimal, if any, increase in the cost of recreational fishing; and
- the additional adverse effect of the coastal permit areas on recreational fishing is only small and will not cause the cumulative effect on recreational fishing to become undue.

Customary fishing

The location of the coastal permit areas relative to fishing areas

48 I consider the areas of coastal permits AUT.007326.02.01 and AUT.007439.02.01 are located where there could be customary fishing for snapper, kahawai, smooth skate and gurnard. I consider customary fishers are most likely to catch these species by line fishing, and perhaps some set netting and diving.

49 Available information on customary fishing is primarily qualitative information from submissions, institutional knowledge and quantitative catch information from customary authorisations.¹¹ However, there is limited information on customary catch at the scale of small marine farms. Fishing locations for customary authorisations only need to be reported at the FMA or QMA scale, although more specific sites are sometimes identified. Fishing methods are not reported.

50 From January 2009 to September 2016, one customary authorisation was issued for kina at Houhora Bay. Customary authorisations were also issued for Rangaunu Bay, the large bay just south of Houhora, also for kina. Nearby Tokerau Bay, Doubtless Bay and Mangonui Harbour had customary authorisations issued for cockles, paua, oysters, tuatara, pipi and mussels. I consider that the kina collected from Houhora Bay would not have come from the sandy bottom areas of coastal permits AUT.007326.02.01 and AUT.007439.02.01. Rather they are likely to have come from the small patches of rocky substrate at the inshore perimeter of Houhora Bay.

51 There are no existing customary management areas (eg taiapure-local fishery or mātaītai reserves) in the Rangu Bay area, nor have any iwi in the region notified their area/rohe moana. Additionally, MPI did not receive any submissions on customary fishing methods or species taken in relation to the coastal permits. However, a submission received by NRC for coastal

¹¹ Effects on customary fishers who fish within the recreational limits under the Amateur Regulations are considered in the assessment of effects on recreational fishing.

permit application APP.031050.01.01, the site directly north of the proposed coastal permit areas, in 2013, from Nga Taonga o Ngai Takoto (Awarua, 2013), stated that they along with Te Aupouri and Ngati Kuri share customary mana moana over Houhora Bay and I consider these three iwi could have customary fishing interests in Houhora Bay.

52 The submission received by NRC on coastal permit APP.031050.01.01 did not state the customary fishing methods used or species targeted in that area. However, in support of its submission to NRC, Nga Taonga o Ngai Takoto (Awarau, 2013) stated that the area of Houhora Bay between Stanley Point and Perpendicular Point (Ruakoura)¹² is a traditional source of paua.

53 Table 2 below summarises my assessment of the main methods used and species caught and targeted by customary fishers in the areas of coastal permits AUT.007326.02.01 and AUT.007439.02.01. The information is based on submissions, customary authorisations, and the benthic survey (Poynter 2012, 2013) of the site and other information. As shown, I consider it likely that set netting and diving are the main methods used and that snapper, kahawai, smooth skate and gurnard are the main species targeted or caught.

¹² This area is to the south of the coastal permit area, as shown in Map 1.

Table 2: Customary fishing methods used and species caught or targeted at the area of coastal permits AUT.007326.02.01 and AUT.007439.02.01 based on submissions, customary authorisations, the benthic survey of the site and other information.

	Source of information		
	Customary authorisations	Submissions, Benthic survey (Poynter, 2013) and Other information	My assessment
Methods used	Set/gill netting, diving, and possibly dredging.	Recreational fishers commonly use stationary and mobile rod/line methods and longlining so customary fishers may also use these methods.	Set netting and diving are likely to be the most commonly used methods at the coastal permit areas. Some stationary and mobile rod/line fishing and longlining may also occur.
Species caught or targeted	Scallops, oysters, paua, snapper, kahawai, rock lobster, kina, pipi, hapuku, smooth skate, green-lipped mussel, tuatua, gurnard and yellow-eyed mullet.	It is unlikely that paua, oysters, rock lobster or kina are found over the reef and algae-free substrate at the coastal permit areas (MPI, 2012) Tuatua and pipi are caught or targeted in beach environments.	Snapper, kahawai, gurnard, and smooth skate are likely to be the most commonly caught species at the coastal permit areas.

Exclusion of fishing

54 I consider the aquaculture activities proposed for the areas of coastal permits AUT.007326.02.01 and AUT.007439.02.01 will exclude some of the customary fishing methods that may be used in the area.

55 Of the customary fishing methods likely to occur in the coastal permit areas it is likely that set netting, longlining, trolling and drift fishing would be excluded. As noted, anecdotal information from recreational fishers suggests that spaces between longlines of mussel farms in the Marlborough Sounds are too narrow for set netting, longlining and trolling without risk of entanglement. As noted also, the proposed spacing of longlines in the areas of coastal permits AUT.007326.02.01 and AUT.007439.02.01 is likely to be similar to mussel farms in the Marlborough Sounds. I therefore consider use of these methods by customary fishers would also be prevented. As noted, I also consider that drift fishing is unlikely to occur within marine farms because of risk of entanglement.

56 However, it is common for fishers to fish by rod/line within mussel farms so it is possible anchored fishing could continue between the proposed structures. I also do not consider that diving would be excluded from the site.

Availability of other fishing areas

57 I consider there are alternative areas for customary fishing in Houhora Bay, Rangaunu Bay and elsewhere in the Northland east coast region.

58 Apart from the Huaraki Gulf Marine Park, all of Northland is available for customary fishing under regulations 50 and 51 of the Amateur Regulations.¹³ A large number of alternative areas are therefore available for customary fishing that may be displaced from the areas of coastal permits AUT.007439.02.01 and AUT.007326.02.01.

59 I also consider there are alternative areas in Houhora Bay, Rangaunu Bay and the wider Northland east coast region for customary fishers because:

- the sandy substrate beneath the sites is widespread in the wider Rangaunu Bay and Northland east coast region and no information suggests the sites offer fishing opportunities (eg, habitat, species, methods) specific to them;
- the same methods as those used at the sites could be used elsewhere in wider Rangaunu Bay and some other parts of the Northland east coast; and
- there are likely to be sufficient alternative areas, particularly for rod/line fishing which can occur amongst mussel farms.

Increased cost of fishing

60 I consider the aquaculture activities proposed for the areas of coastal permits AUT.007326.02.01 and AUT.007439.02.01 will result in a minimal, if any, increase in the cost of customary fishing.

¹³ *Hauraki Gulf Marine Park Act 2000 and the Submarine Cables and Pipelines Protection Act 1996.*

61 Based on the available information, I consider that any customary fishing displaced from the coastal permit areas can be carried out nearby with minimal if any additional cost, or that most species targeted in the coastal permit areas can be taken using alternative fishing methods.

Likely effect on fishing

62 I consider the likely effect on customary fishing from the aquaculture activities proposed in the areas of coastal permits AUT.007326.02.01 and AUT.007439.02.01 will be relatively small.

63 As noted, there is little available quantitative data on customary catch taken from the coastal permit areas. MPI is therefore unable to estimate an average annual customary catch or proportion of customary catch likely to be affected by the proposed aquaculture activities. Rather, MPI can only make an assessment of the effect of the proposed aquaculture activities on customary fishing based on qualitative information.

64 Overall, I consider the effect on customary fishing from the proposed aquaculture activities will be relatively small because:

- not all customary fishing methods would be excluded from the site; and
- alternative areas within Houhora Bay, Rangaunu Bay and the wider Northland east coast region could absorb any customary fishing displaced from the site.

Cumulative effects

65 I consider the effects from the aquaculture activities proposed for the areas of coastal permits AUT.007326.02.01 and AUT.007439.02.01, added to the effects of existing aquaculture in the Northland region, will not have an undue adverse effect on customary fishing.

66 There is no quantitative catch data available to MPI to assess the cumulative effect of authorised aquaculture activities on customary fishing. As noted, site-specific fishing locations are not typically reported with customary authorisations. Therefore, MPI can only make an assessment of the cumulative effect of the proposed aquaculture activities on customary fishing based on the likely importance of the coastal permit areas for fishing and the amount of aquaculture activities already authorised in the relevant customary fishery.

67 As noted, there are approximately 200 ha of authorised aquaculture space in the Northland east coast region. A around 80 ha of this is in Houhora Inlet and Bay. I consider the authorised aquaculture space has had some effect on customary fishing. However, I do not consider that the effect is undue because some customary fishing (eg, anchored rod/line fishing) can still occur within marine farms and it is unlikely all the farms are located in popular customary fishing areas.

68 As noted, I consider the adverse effects of the areas of coastal permits AUT.007326.02.01 and AUT.007439.02.01 on customary fishing will be small. Subsequently, taking into account the effects of the existing authorised aquaculture areas, I consider the additional effects from the coastal permit areas will not cause the cumulative effect on customary fishing to become undue.

Conclusion on effects on customary fishing

69 I am satisfied the aquaculture activities proposed within the areas of coastal permits AUT.007326.02.01 and AUT.007439.02.01 will not have an undue adverse effect on customary fishing because:

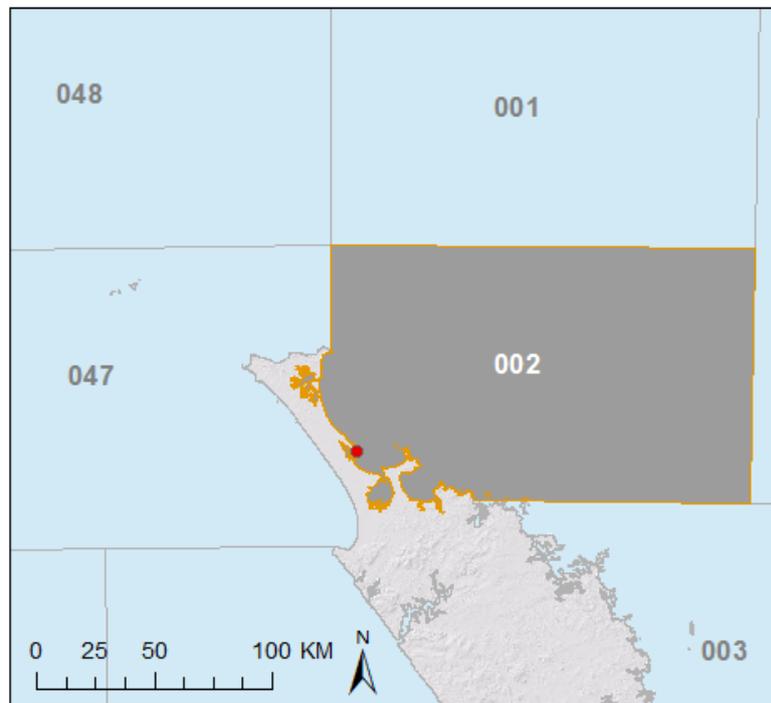
- anchored rod/line fishing and diving could still occur in the coastal permit areas;
- there are other customary fishing areas available in Hohoura Bay and elsewhere in Rangaunu Bay and the wider Northland region;
- occupation of the coastal permit areas will result in a minimal, if any, increase in the cost of customary fishing; and
- the additional adverse effect of the coastal permit areas on customary fishing is only small and will not cause the cumulative effect on customary fishing to become undue.

Commercial fishing

The location of the coastal permit areas relative to fishing areas

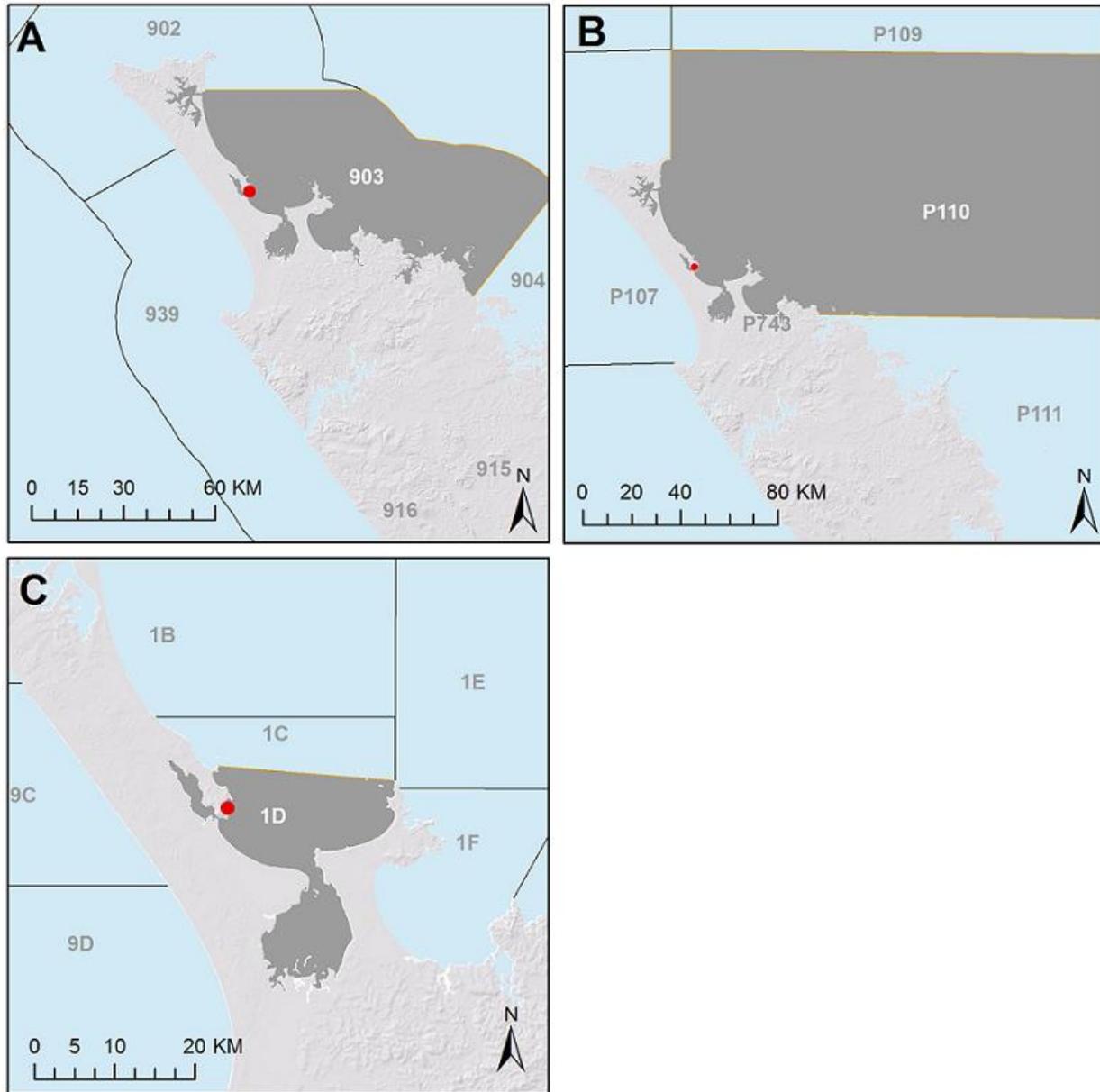
70 I consider the areas of coastal permits AUT.007326.02.01 and AUT.007439.02.01 are located where there is only a small amount of commercial fishing.

71 Historically, most commercial fishing has been reported by statistical area. The areas of coastal permits AUT.007326.02.01 and AUT.007439.02.01 are located in general statistical area 002 (SA002), which extends from North Cape, south to Taupo Bay (1,915,252ha) (Map 5).



Map 5: General statistical area SA002. The red circle marks the approximate location of coastal permit areas AUT.007326.02.01 and AUT.007439.02.01.

72 Scallop, oyster, rock lobster and paua are reported by species-specific statistical areas rather than by general statistical area. The area of coastal permits AUT.007326.02.01 and AUT.007439.02.01 falls within rock lobster statistical area 903, paua statistical area P110, scallop statistical area 1D (Maps 6A, 6B and 6C). The coastal permit areas are not located over an oyster statistical area because there is no oyster fishery in the area.



Map 6: Species-specific statistical areas that encompass the areas of coastal permits AUT.007326.02.01 and AUT.007439.02.01 (approximate location as red circle). A – Rock lobster statistical area 903. B – Paua statistical area P110. C – Scallop statistical area 1D.¹⁴

¹⁴ Hillshade imagery produced by Geographx. Sourced from www.koordinates.com under CC-BY. <http://creativecommons.org/licenses/by/3.0/nz/>

73 Reporting fishing effort by statistical area only 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 methods¹⁵ have had to report 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 methods¹⁶ have had to report to within 2 nm.¹⁷ Using this fine scale position data, MPI has modelled and mapped fishing intensity for different segments of fishing, characterised by a type of fishing gear and the main species caught.

74 The location of fishing from vessels less than 6 m long within SA002 is unknown. However, based on information from fisheries officers and Maritime New Zealand MPI has mapped long lining, bottom trawling and set-netting from vessels less than 6 m as being within enclosed bays and within 3 nm of open coasts. The fishing from vessels less than 6 m is included in the maps of fine scale position data which is the best information available from fisheries statistics. Although, knowledge about species and information from commercial fishers can also help to determine whether specific types of fishing are likely to occur in an area.

75 Table 3 below lists the main fishery segments known to occur in SA002 and summarises my assessment of which fishery segments are likely to overlap the areas of coastal permits AUT.007326.02.01 and AUT.007439.02.01. Map 7 and 8 below show the annual average fishing effort per ha (for fishing years 2007/08–2011/12) for overlapping fishery segments with fishing reported by latitude and longitude and by statistical area.

76 Table 3 also gives the relative amounts of fishing that report by start position. The higher the proportion of vessels reporting by start position, the greater confidence in the location of fishing as depicted in Maps 7 and 8.

77 As noted in Table 3, bottom longlining, ring netting, fish potting and set netting for finfish, and dredging, diving, and hand gathering for non finfish species are the only commercial fishing methods permitted in Houhora Bay.¹⁸

78 I consider it unlikely that scallop fishing occurs in the coastal permit areas. Available information suggests Rangaunu Bay (see Map 1) has consistently been an important part of the Northland scallop fishery (SCA1A) (MPI 2012b). A 2007 biomass survey estimated approximately 50% of the harvestable biomass of the Northland scallop fishery was contained in Rangaunu Bay (MPI 2008).

79 However, Houhora Bay has not been included in the scallop biomass surveys¹⁹. I consider if scallops occur in Houhora Bay it is likely to be only at low density due to the Bay's shallow depth and exposure to easterly swells, compared to the more sheltered eastern Rangaunu Bay where the main densities of harvestable-sized scallops are found (J. R. Williams, personal communication, September 4, 2013).

80 Furthermore, I note that no scallops were observed in the benthic surveys carried out in Houhora Bay for the existing marine farms adjacent to the coastal permit areas (Poynter, 2012).

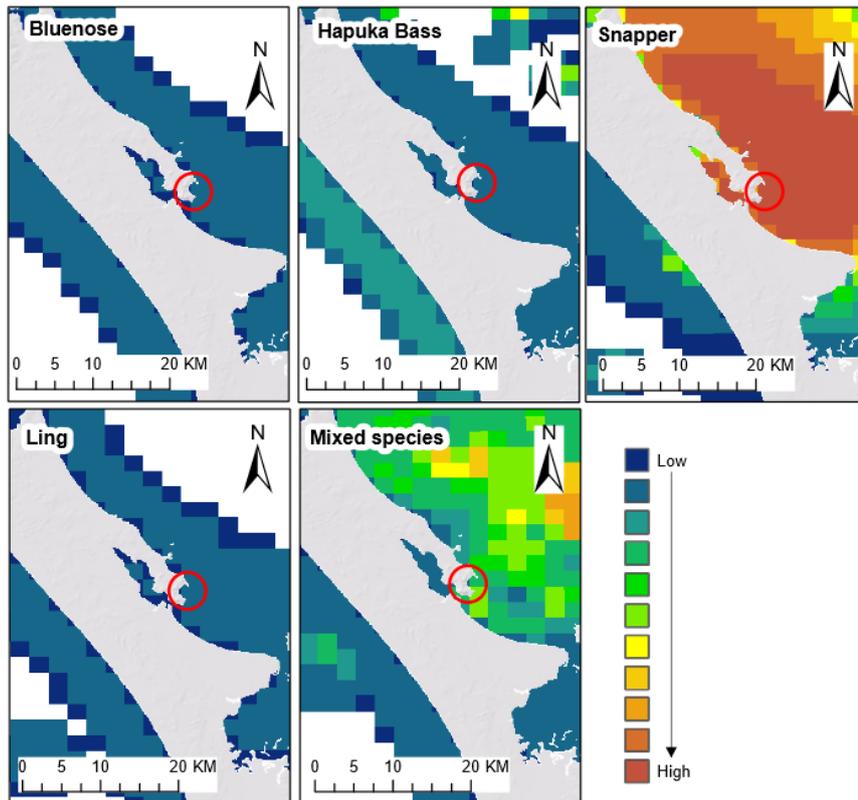
¹⁵ Bottom long lining, surface long lining or trot lines.

¹⁶ Set-netting or drift-netting.

¹⁷ *Fisheries (Reporting) Regulations 2001*.

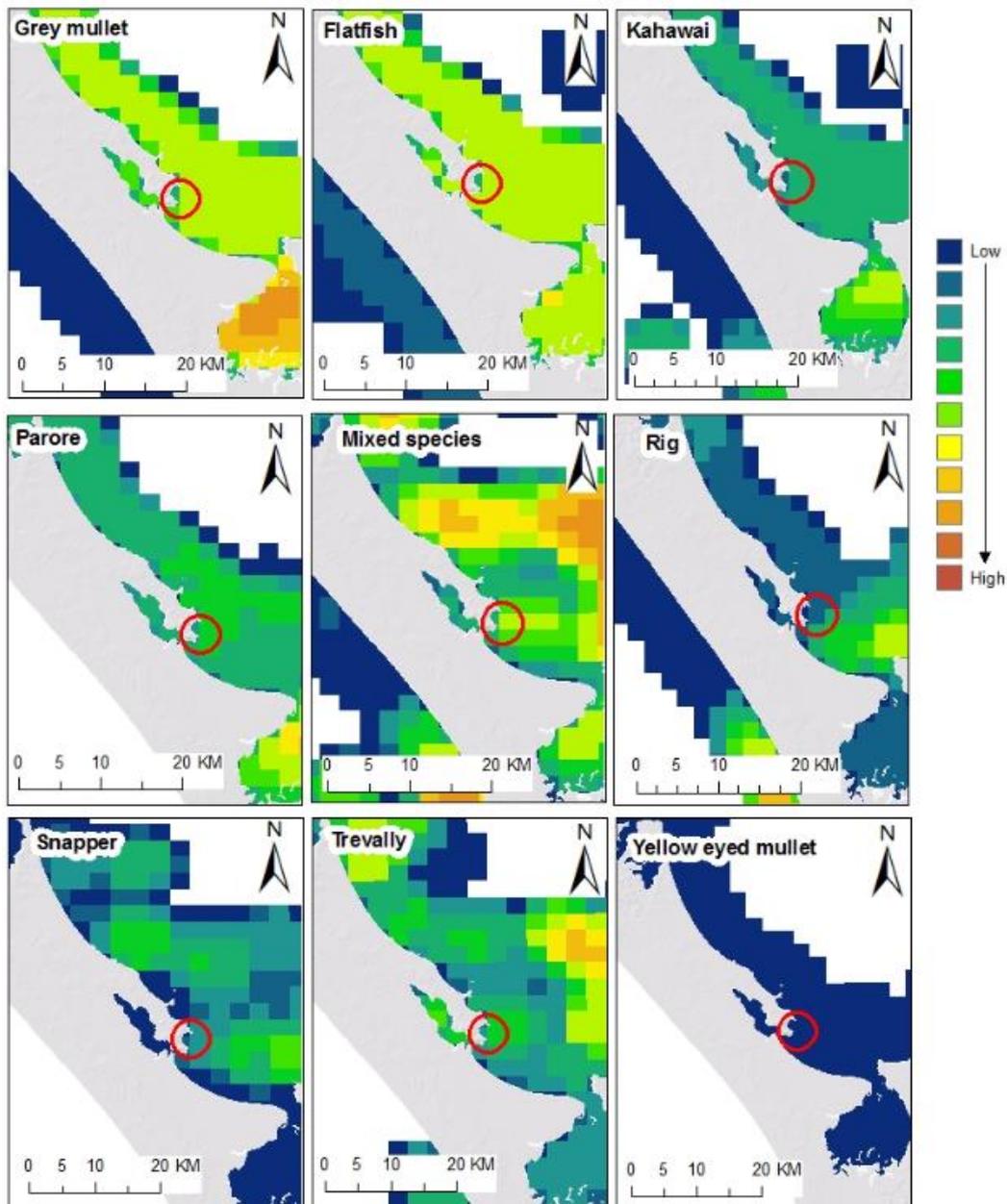
¹⁸ *Fisheries (Auckland and Kermadec Areas Commercial Fishing) Regulations 1986*.

¹⁹ The areas surveyed are drawn up in, conjunction with commercial scallop fishers, to encompass the main scallop beds commercially fished.



Map 7: Bottom long lining fishery segments reported by latitude and longitude, and statistical area that overlap the areas of coastal permits AUT.007326.02.01 and AUT.007439.02.01 (approximate location marked by red circle).²⁰

²⁰ Hillshade imagery produced by Geographx. Sourced from www.koordinates.com under CC-BY. <http://creativecommons.org/licenses/by/3.0/nz/>



Map 8: Set net fishery segments reported by latitude and longitude and statistical area that overlap the areas of coastal permits AUT.007326.02.01 and AUT.007439.02.01 (approximate location marked by red circle).²¹

²¹ Hillshade imagery produced by Geographx. Sourced from www.koordinates.com under CC-BY. <http://creativecommons.org/licenses/by/3.0/nz/>

Table 3: Summary of the main fishery segments, defined by fishing method and main fishstock caught or fishing depth range, in relevant statistical areas from 2007/2008 to 2011/2012. The table shows the fishery segments that have been included in this assessment.

Fishery segment (main fishstock or depth range and main fishing method) ^A	Statistical area	% of fine scale fishing events	Average annual no. fishing days ^B	% of main fishstock caught in statistical area	Potentially affected by coastal permit?	Rationale for excluding fishery from proposed farm assessment
Snapper, Bottom Long Line	002	100%	1056	31%	Yes	
Mixed, Set Net (incl. Gill Net)	002	82%	235	N/A	Yes	
Grey Mullet, Set Net (incl. Gill Net)	002	18%	221	33%	Yes	
Scallops, Dredge	1D	0%	219	Unknown	Yes	
Flatfish, Set Net (incl. Gill Net)	002	3%	181	2%	Yes	
Mixed, Bottom Long Line	002	92%	140	N/A	Yes	
Tarakihi, Bottom Long Line	002	100%	105	30%	Yes	
Grey Mullet, Ring Net (incl. Gill Net)	002	0%	102	33%	Yes	
Snapper, Hand Line	002	0%	86	31%	Yes	
Parore, Set Net (incl. Gill Net)	002	33%	81	67%	Yes	
Trevally, Bottom Long Line	002	99%	53	22%	Yes	
Trevally, Set, Net (incl. Gill Net)	002	68%	38	22%	Yes	
Mixed, Hand Line	002	0%	37	N/A	Yes	
Kahawai, Set, Net (incl. Gill Net)	002	16%	35	8%	Yes	
Snapper, Fish Pot	002	0%	32	31%	Yes	
Parore, Ring Net	002	0%	24	67%	Yes	
Kahawai, Ring Net	002	0%	22	8%	Yes	
Rig, Set Net (incl. Gill Net)	002	50%	20	6%	Yes	
Other, Pot	002	0%	16	N/A	Yes	
Snapper, Set Net (incl. Gill Net)	002	62%	14	31%	Yes	
Hag fish, Fish Pot	002	79%	13	11%	Yes	
Mixed, Ring Net	002	0%	5	N/A	Yes	

Table 1 continued:

Fishery segment (Main fishstock or depth range and main fishing method) ^A	Statistical area	% of fine scale fishing events	Average annual no. fishing days ^B	% of main fishstock caught in statistical area	Potentially affected by coastal permit?	Rationale for excluding fishery from proposed farm assessment
Rock lobster, Rock Lobster Pot	903	0%	222	10%	No	Rock lobsters concentrate in areas of rocky reef, although they may move across an open sandy bottom at certain times of the year. There is no rocky reef in the coastal permit area.
Bluenose, Bottom Long Line	002	78%	175	38%	No	This type of fishing does not occur near the coastal permit area as this type of fishing generally occurs in deep water.
Tuna, Surface Long Line	002	100%	165	0%	No	This type of fishing does not occur near the coastal permit area as this type of fishing is generally occurs in deep water.
Hapuku & Bass, Bottom Long Line	002	61%	96	25%	No	This type of fishing does not occur near the coastal permit area as this type of fishing is generally occurs in deep water.
Snapper, Bottom trawl	002	99%	79	31%	No	This type of fishing is prohibited in the coastal permit area.
Seaweed, Hand gathering	002	0%	72	N/A	No	This type of fishing does not occur near the coastal permit area as there are no large seaweed beds on the sandy bottom of Houhora Bay.
Inshore mix, Bottom trawl	002	98%	63	N/A	No	This type of fishing is prohibited in the coastal permit area.
Ling, Bottom Long Line	002	95%	57	6%	No	This type of fishing does not occur near the coastal permit area as this type of fishing generally occurs in deep water.
Albacore, Troll	002	0%	27	2%	No	This type of fishing does not occur near the coastal permit area as it generally occurs in offshore areas.
Orange Roughy, Bottom Trawl	002	100%	25	18%	No	This type of fishing is prohibited in the coastal permit area.
Kina, Diving	002	0%	14	0%	No	This type of fishing is highly unlikely to be affected. Kina are found on rock substrate. There is no rock substrate in the coastal permit area.
Snapper, Danish Seine	002	0%	10	31%	No	This type of fishing is prohibited in the coastal permit area.
Midwater mixed, Trawl	002	100%	9	N/A	No	This type of fishing is prohibited in the coastal permit area.
Trevally, Seine	002	21%	9	22%	No	This type of fishing is excluded by existing marine farms.
Baracoutta, Trawl	002	98%	8	1%	No	This type of fishing is prohibited in the coastal permit area.
Skipjack, Purse Seine	002	0%	6	0%	No	This type of fishing is excluded by existing marine farms.
Other, Seine	002	8%	6	N/A	No	This type of fishing is excluded by existing marine farms.
Jack Mackerel, Purse Seine	002	0%	6	0%	No	This type of fishing is excluded by existing marine farms.

^A Main fishstock refers to the species most often caught by the relevant method; it does not include all species taken by that method.

^B Excludes segments with less than five days fishing per year.

Exclusion of fishing

81 I consider the aquaculture activities proposed in the areas of coastal permits AUT.007326.02.01 and AUT.007439.02.01 will exclude only a small amount of commercial fishing.

82 For the purpose of assessing commercial fishing methods, the exclusion zones for fishing methods included in this assessment are deemed to be the areas of coastal permit AUT.007326.02.01 and AUT.007439.02.01 (ie, 11 ha and 8 ha respectively). I consider commercial fishing for the methods included in this assessment could occur immediately adjacent to but not within the areas of coastal permits AUT.007326.02.01 and AUT.007439.02.01.

83 I consider that only a small amount of commercial fishing will be excluded from the coastal permit areas, given the location of the coastal permit areas in a relatively small embayment and its small size in comparison to FMA1.

Availability of other fishing areas

84 I consider that any commercial fishing displaced from the areas of coastal permits AUT.007326.02.01 and AUT.007439.02.01 could occur in other commercial fishing areas.

85 Commercial fishing closures or restrictions in parts of SA002 and the relevant QMA or FMA1 limit the availability for alternative areas for commercial fishing.²² Few closures or restrictions in SA002 limit alternative areas for methods permitted in Houhora Bay (ie, set netting for taking finfish and dredging, diving and other methods for taking non-finish species) but closures elsewhere in FMA1 limit areas available for set netting in particular. Regardless, I consider alternative areas in nearby Rangaunu Bay, and other parts of SA002 and FMA 1 could absorb any commercial fishing displaced from the areas of coastal permits AUT.007326.02.01 and AUT.007439.02.01 because:

- the same methods as those possibly used at the coastal permit areas could be used elsewhere in nearby bays or other parts of SA002 and in the relevant QMAs or FMA1;
- the species potentially targeted by commercial fishers within the areas of coastal permits AUT.007326.02.01 and AUT.007439.02.01 are typically found over sandy substrate which is common throughout the embayment's of SA002, and elsewhere in the Northland east coast region and in the relevant QMAs or FMA1; and
- the areas excluded to commercial fishing would be relatively small compared to the available area.

86 I recognise areas of authorised aquaculture space have reduced the availability of other commercial fishing areas over time. As noted, there are around 80 ha of authorised aquaculture space in Houhora Inlet and Bay. In SA002 there are approximately 200 ha of marine farms that make up approximately 2% of the 11,600 ha of aquaculture in FMA1. The cumulative effect of the existing aquaculture is considered further below.

Increased cost of fishing

87 I consider that the aquaculture activities proposed in the areas of coastal permits AUT.007326.02.01 and AUT.007439.02.01 will not increase the cost of commercial fishing.

²² The *Marine Reserves Act 1971*, *Fisheries (Auckland and Kermadec Areas Commercial Fishing) Regulations 1986* and *Fisheries (Commercial Fishing) Regulations 2001* contain closures and restrictions that affect various species, method, time period, fishing gear, or a combination of these criteria.

88 While the coastal permit areas may be 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 coastal permit areas will only exclude a small area (a total of 19 ha) from commercial fishing and there are equally productive fishing grounds available nearby.

Likely effect on fishing

89 I consider the aquaculture activities proposed in the areas of coastal permits AUT.007326.02.01 and AUT.007439.02.01 will only have a small adverse effect on commercial fishery, if any.

90 The amount of fishing effort estimated to be displaced by the activities proposed in the areas of coastal permits AUT.007326.02.01 and AUT.007439.02.01 is very small. The best available information suggests the effect from occupation of the 11ha and 8ha respectively of both coastal permits is estimated to equate to less than 0.003% of the catch of any fishery indicated as assessed in Table 3. The total amount of catch affected over all fishstocks by the proposed aquaculture activities of coastal permits is estimated to be approximately 100kg for AUT.007326.02.01 and 80kg for AUT.007439.02.01. This compares to a total of approximately 4,500 tonnes caught per year from SA002 and approximately 44,000 tonnes from FMA1²³. Approximately 80kg for AUT.007326.02.01 and 60kg for AUT.007439.02.01 of the total amount of catch over all affected fishstocks is from the snapper fishery in FMA1 (SNA1)²⁴. However, I note this is negligible when compared to the average annual snapper landing for SNA1 of approximately 4,400 tonnes. As the amount of catch estimated to be affected is predominantly made up of motile finfish, it is likely that some or all of this catch will not be lost from the fishery.

91 MPI estimated the average annual catch likely to be affected by the proposed aquaculture activities for the methods indicated in Table 3. 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 zones²⁵ of the coastal permit areas. 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.

92 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.

93 The amount of fishing was averaged over October fishing years 2007/08 to 2014/15. Eight 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.

²³ Fisheries Information Systems (FIS) data and Spatial Allocations resources using catch history

²⁴ Catchmapper outputs

²⁵ The “exclusion zone” used for the methods assessed was the areas of the coastal permits (i.e. 8 ha and 11 ha for AUT and AUT, respectively).

94 Given the small catch quantities likely to be affected by the proposed aquaculture activities, MPI 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. This assessment is based on the worst-case scenario that all of the catch displaced from the coastal permit areas would be lost from the affected fisheries and no new catch would be available from the vacated areas.

Cumulative effects

95 I consider the addition to the cumulative effect on commercial fishing from the aquaculture activities proposed in the areas of coastal permits AUT.007326.02.01 and AUT.007439.02.01 is small.

96 Around 11,600 ha of authorised aquaculture activities in FMA1 have previously been assessed for their cumulative effect on commercial fishing. For any fish stocks potentially affected by the areas of coastal permits AUT.007326.02.01 and AUT.007439.02.01, the cumulative effect has previously been assessed as a maximum of approximately 0.8% effect on any fishery and not undue.

97 As noted, the coastal permit areas would affect approximately 100 kg of average annual catch for AUT.007326.02.01 and 80kg of average annual catch for AUT.07439.02.01, for fishing indicated as assessed in Table 3. I consider this small increase will not cause the new level of cumulative effect on any fishery to become undue.

Conclusion on effects on commercial fishing

98 I am satisfied the aquaculture activities proposed within the areas of coastal permits AUT.007326.02.01 and AUT.007439.02.01 will not have an undue adverse effect on commercial fishing because:

- there are alternate fishing grounds in nearby bays, SA002, and the relevant QMAs or FMA1;
- occupation of the coastal permit areas will result in a minimal, if any, increase in the cost of commercial fishing;
- effects on commercial fishing catch will only be very small; and
- the additional adverse effect on commercial fishing for any fish stock is only very small and will not cause the cumulative effect on commercial fishing for any fish stock to become undue.

Decision on marine farming permit for Te Aupouri Commercial Development Company Limited (coastal permit AUT.007326.02.01), Houhora Bay

99 I am satisfied – based on all relevant information available to me – the proposed aquaculture activities will not have an undue adverse effect on:

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

100 Accordingly, my decision is to grant a marine farming permit.

101 The area approved under my decision is an 11ha area with the following coordinates (NZTM2000):

<u>Point</u>	<u>Easting</u>	<u>Northing</u>
1	1615696.84	6147915.54
2	1615607.54	6147736.61
3	1615160.13	6147959.80
4	1615159.94	6148183.48

102 The reasons for my decision are set out in the conclusions for recreational, customary and commercial fishing in this report.



David Scranney
Manager Customary Fisheries and Spatial Allocations
Ministry for Primary Industries

Dated this 15 May 2017

Decision on marine farming permit for Ngati Kuri Trust Board (coastal permit AUT.007439.02.01), Houhora Bay

103 I am satisfied – based on all relevant information available to me – the proposed aquaculture activities will not have an undue adverse effect on:

- c) recreational fishing, and
- d) customary fishing, and
- c) commercial fishing.

104 Accordingly, my decision is to grant a marine farming permit.

105 The area approved under my decision is an 8ha area with the following coordinates (NZTM2000):

<u>Point</u>	<u>Easting</u>	<u>Northing</u>
1	1615574.04	6147669.46
2	1615484.76	6147490.52
3	1615171.59	6147646.85
	1615171.40	6147870.41

106 The reasons for my decision are set out in the conclusions for recreational, customary and commercial fishing in this report.



David Scranney
Manager Customary Fisheries and Spatial Allocations
Ministry for Primary Industries

Dated this 15 May 2017

References

- Awarua, W. 2013. Submission to Northland Regional Council on behalf of Nga Taonga o Ngai Takoto on Westpac Mussels Application APP.031050.01.01. *Supplied by Northland Regional Council to Ministry for Primary Industries.*
- Bradford, E. Fisher, D. Bell, J. 1998: National marine recreational fishing survey 1996: Overview of catch and effort results. *NIWA Technical Report 18. 55 p.*
- Britton, R. 2012. Assessment of Effects on the Environment – Resource Consent Application. Westpac Mussels Limited, Houhora Bay
- Hartill, B; Bain, R; Armingier, 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*
- Ministry for Primary Industries. 2008. Biomass surveys and stock assessments for the Coromandel and Northland scallop fisheries, 2007. *New Zealand Fisheries Assessment Report 2008/35.*
- Ministry for Primary Industries 2012a. Report from Fisheries Assessment Plenary May 2012: stock assessments and yield estimates.
- Ministry for Primary Industries. 2012b. Fisheries Assessment Plenary November 2012: stock assessments and yield estimates. *Compiled by the Fisheries Science Group, Ministry for Primary Industries, Wellington, New Zealand. 531 p.*
- Northland Underwater Technical Services, 2001. Unpublished field survey: Northland Regional Council Hearing Agenda, Aupouri Fishing Company Resource Consent Application 79-91 pp.
- Poynter & Associates Environmental Ltd. 2013. Westpac Mussels Distributors Limited, Resource Consents CON 20090629701 and 20090722801. Mussel Farms. Houhora Bay, Northland. Seabed Photographic Monitoring Report.
- Poynter & Associates Environmental Ltd. 2012. Westpac Mussels Distributors Limited, Application for Resource Consent for Marine Farming Houhora Bay, Northland – Assessment of Ecological Effects. Prepared for Westpac Mussels Distributors Limited.
- Poynter, M. 2005. Evidence of Mark Poynter ENV A 0277/04 Te Taumata Kaumata O Ngati Kuri Research Unit