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BEFORE THE ENVIRONMENT COURT  
HELD AT AUCKLAND

I MUA I TE KŌTI TAIAO O AOTEAROA  
TĀMAKI MAKĀURAU ROHE

ENV-2019-AKL-000117  
ENV-2019-AKL-000127

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IN THE MATTER OF                      the Resource Management Act 1991 (RMA)

AND IN THE MATTER OF              AN APPEAL PURSUANT TO CLAUSE 14,  
SCHEDULE 1 OF THE RMA IN  
RELATION TO A DECISION ON THE  
PROPOSED NORTHLAND REGIONAL  
PLAN

BETWEEN                                BAY OF ISLANDS MARITIME PARK  
INCORPORATED

Appellant

AND                                        THE ROYAL FOREST AND BIRD  
PROTECTION SOCIETY OF NEW  
ZEALAND INCORPORATED

Appellant

AND                                        NORTHLAND REGIONAL COUNCIL

Respondent

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**BRIEF OF EVIDENCE OF JACOB DYLAN HORE FOR THE MINISTER FOR  
OCEANS AND FISHERIES (s274 party) REGARDING FISHERIES ACTIVITIES**

**22 June ~~14 May~~ 2021**

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**KEY:**

~~Red strikethrough~~; deletion from 14 May 2021 Evidence in Chief arising out of changes to the proposed protection area.

Blue; addition to 14 May 2021 Evidence in Chief arising out of changes to the proposed protection area.

Green; new text/minor correction or update from 14 May 2021 Evidence in Chief.

**INTRODUCTION**

1. My full name is Jacob Dylan Hore. I am employed at Fisheries New Zealand (**FNZ**) within the Ministry for Primary Industries (**MPI**) as the Manager for Inshore Fisheries in the northern region (**Inshore Fisheries – North**). The Minister for Oceans and Fisheries (**Minister**) and MPI are responsible for administering the Fisheries Act 1996 (**Fisheries Act**) and associated legislative instruments. I have been authorised by MPI to provide this brief of evidence.
2. I have provided two briefs of evidence in this proceeding. My first brief of evidence considers the Fisheries Act regime and how it is implemented in the Bay of Islands and surrounding areas including: general fishing related zones; fisheries regulations; provision for customary management; Regional Iwi fisheries Fora; and compliance and enforcement.<sup>1</sup>
3. This brief addresses the current fisheries activities in the proposed Marine Protected Areas and the proposed measures of the appellants and s 274 party Te Uri o Hikihiki. My evidence has been split to make this fisheries activities brief containing commercially sensitive information a stand alone document.

**Qualifications and expertise**

4. I have held the role of Manager Inshore Fisheries - North for over 2 years. In this role I am responsible for overseeing and coordinating the operational delivery of New Zealand's fisheries management regime to support the sustainable use of New Zealand's fishing resources for the Northern region. This includes monitoring of fisheries information and responding to identified fisheries issues, such as sustainability concerns for particular stocks, delivering annual planning and service delivery functions such as

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<sup>1</sup> The brief of evidence of Ms McKinnon considers the specific regime of Fisheries Act regulation (as to method, location, limits) that applies to the areas and sub-areas identified by the appellants/Te Uri o Hikihiki, alongside their proposals, and considers issues that arise.

sustainability reviews for stocks and setting sustainable catch limits, as well as operationalising inshore fisheries policy and work programmes. The Northern region is comprised of Fisheries Management Areas 1 and 9, running from Cape Runaway on the East Cape, north to North Cape and down the west coast of the North Island to North Taranaki at Nukuhakari Bay.

5. Prior to this, I was the Regional Fisheries Compliance Manager for the Western North Island where I had oversight of, and responsibility for, planning and delivery of regional fisheries monitoring, control and surveillance activities, including land and water-based operations. I have also held a front-line fisheries enforcement role as a Fishery Officer, based in Auckland, and conducted fisheries monitoring and data gathering when working as Fisheries Observer, where I was posted aboard commercial fishing vessels around New Zealand. Overall, I have worked at FNZ for 14 years.
6. Before joining FNZ, I studied Marine Science at university. I hold a Bachelor of Science, with majors in Marine Science and Environmental Science, from the University of Auckland.
7. Through my roles at FNZ I have gained a thorough understanding of fisheries management, the fisheries regulatory framework and fishing activity in the Northland region and therefore have direct knowledge of the matters I discuss in this brief of evidence.

### **Code of conduct**

8. I have read the code of conduct for expert witnesses as contained in the Environment Court's Practice Note 2014, and I agree to comply with it. I confirm that the issues raised in this brief of evidence are within my area of expertise, except where I state that I am relying on the evidence of another person. I have not omitted to consider material facts known to me that might alter or detract from the opinions expressed.

### **Material considered**

9. In preparing my evidence, I have read and considered:
  - a) The appellants' clarified relief for Court from late December 2020;
  - b) The evidence of Ms Alicia McKinnon for the Minister;

- c) The evidence of Mr Enrique Pardo for the Minister of Conservation and Mr Murray Brass for the Minister of Conservation and the Minister;
  - d) The evidence of Mr Peter Raeburn (planning), Dr Vicky Froude (natural character and ecology), Dr Nicholas Shears (ecology), Dr Mark Morrison (ecology), and Dr Timothy Denne (economics) for the appellants, Mr Matutaera Te Nana Clendon, Mr Robert Sydney Willoughby and Mr George Frederick Riley on behalf of themselves and Ngāti Kuta, Dr Mark Bellingham (planning and ecology) and Ms Diane Lucas (landscape) for Te Uri o Hikihiki, and Mr James Griffin (planning) and Mr Philip Ross (ecology) for the Northland Regional Council.
10. I have reviewed the revised relief which amends sub-area C and deletes the buffer to sub-area A of the mapped Te Hā o Tangaroa Protection Area. The changes to my evidence from that filed on 14 May shown in red and blue are in response. I have not considered the revised objectives, policies and rules for the Te Mana o Tangaroa Protection Area circulated on 21 June 2021, or the planning Joint Witness Statement and the planning Agreed Statement of Facts received today (22 June 2021). In revising this statement, I have also taken the opportunity to update some paragraphs describing the maps of fishing activity included in my evidence and have provided some additional explanation regarding their compilation and interpretation (see paragraphs 20 – 24).

## OUTLINE SUMMARY

- 11. My evidence addresses “Topic 14” matters in relation to the Proposed Regional Plan for Northland. That is, the appellants and s 274 supporting parties’ proposals to introduce Marine Protected Areas for the Bay of Islands and the coast between Cape Brett and Mimiwhangata regulating fishing activities under the RMA.
- 12. Specifically, in this second brief of evidence, I describe what fishing activities currently occur in the relevant areas and how the proposed marine spatial protection measures may impact on customary, recreational and commercial fishing activities.
- 13. The Bay of Islands and the coastline south to Mimiwhangata support popular finfish and shellfish fisheries for tangata whenua, and recreational and commercial fishing interests. Snapper is an iconic species to catch in the proposed Protection Areas and is mostly caught by commercial fishers in the outer waters by bottom longlining and ~~to a lesser extent~~ bottom trawling (which is already prohibited in the inner Bay of Islands).

14. The proposed Protection Areas would close additional areas to all fishers and restrict fishing methods. Based on my experience, closing fishing areas and restricting fishing methods can have an impact on tangata whenua, and recreational and commercial fishing sectors.
15. The extent of this impact depends on the nature and scale of the proposals and how an individual might be able to adapt. Common impacts relate to displacing or restricting fishing activities, and potentially creating additional fishing pressure elsewhere.
16. A more complete assessment of these impacts will be possible once the evidence of the affected s 274 fishing interest parties has been received but also once the planning provisions sought by the appellants and s 274 parties are clarified.

## CURRENT FISHING ACTIVITIES

### Commercial fishing in the wider Bay of Islands area

17. Snapper is an iconic species in the wider Bay of Islands area and is targeted by a variety of commercial fishing methods, including bottom long line, bottom trawl and Danish Seine. **Appendix 1** provides a description and explanation of the main fishing methods.
18. Commercial vessels also commonly target tarakihi with bottom line, john dory, tarakihi and trevally with bottom trawl, and gurnard and john dory with Danish Seine along the eastern coastline. English mackerel, Skipjack tuna, jack mackerel and pilchards are targeted by Purse Seine, but this method predominately occurs in deeper water outside the proposed Protection Areas.
19. Other commercial fisheries that occur in the wider Bay of Islands area including within the proposed protection areas include, rock lobster potting, netting for grey mullet, kahawai and flatfish, diving for sea urchin (kina), and potting for paddle crabs.
20. The following figures show the commercial fishing intensity within and close to the proposed Protection Areas.<sup>2</sup> These figures are based off information commercial fishers are required to provide to MPI regularly on their catch, effort and landings for each fishing trip. **All commercial fishers must now report their catch and position electronically, with positional information linked to a geospatial tracking system. Trawlers over 28 metres began reporting electronically in 2017. Electronic reporting was**

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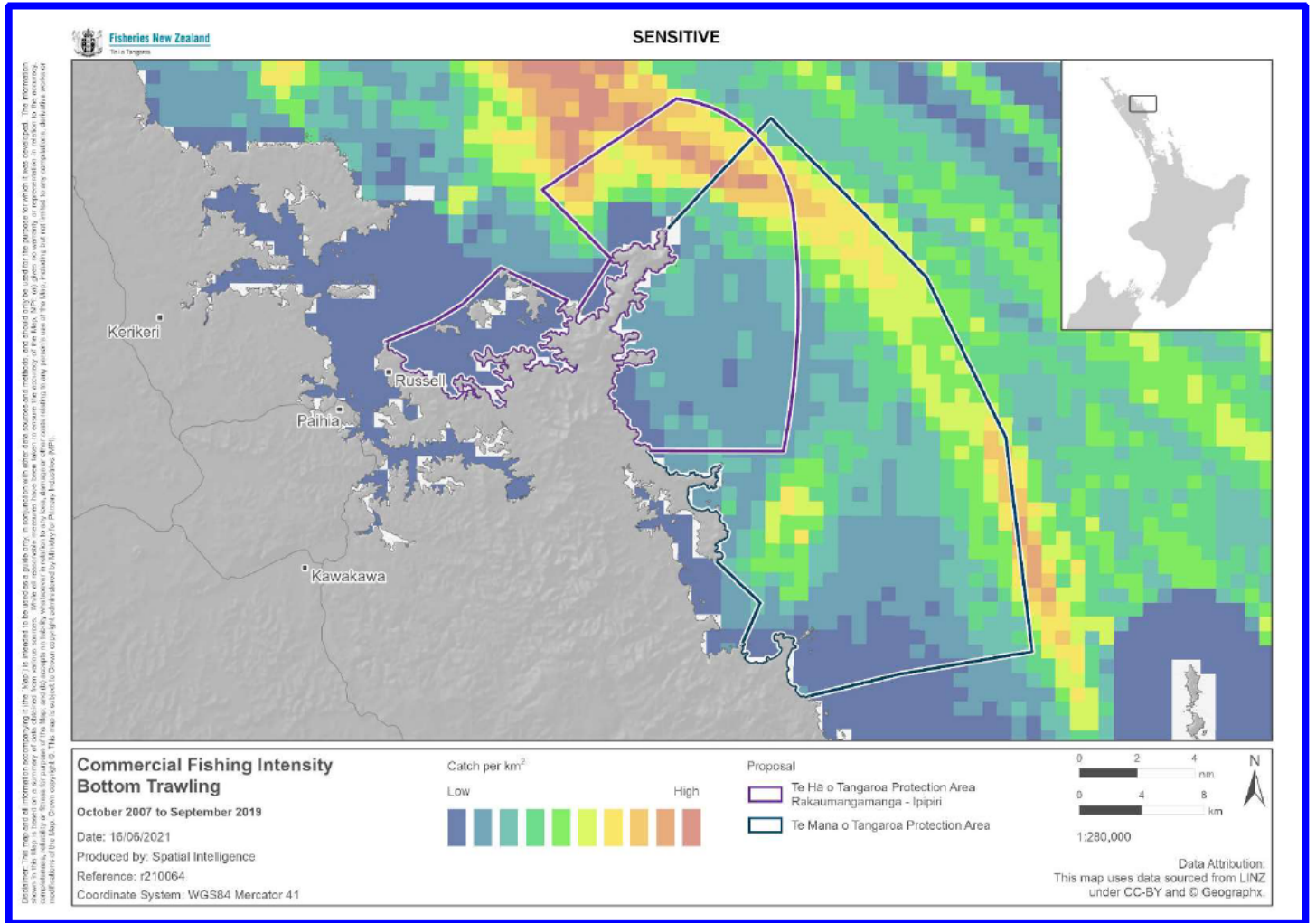
<sup>2</sup> Noting obvious outliers in the reported commercial catch information have been removed.

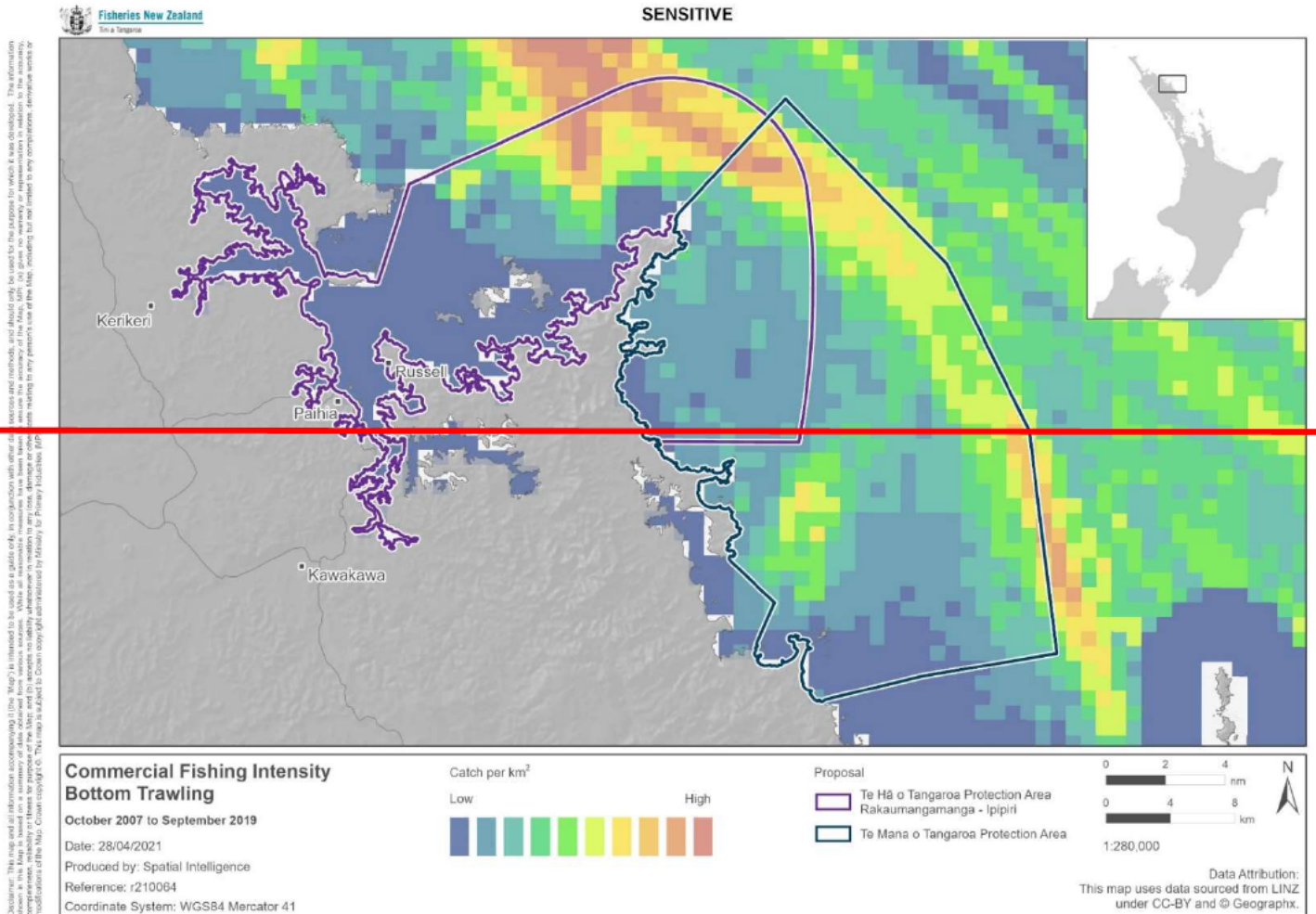
rolled out in stages across all remaining commercial fisheries during 2019. This electronic information provides finer scale and more timely information about each fishery. Prior to 2019, paper-based reports were provided to MPI and required inshore commercial fishers (with vessels under 28 metres in overall length), for methods such as bottom trawling and bottom longlining, to only provide fishing start positions (not end positions as required now). ~~Since 2019, all commercial fishers must report their catch and start and finish positions electronically, with positional information linked to a geospatial tracking system.~~ Commercial fishers also provide weight estimates for their catch, which are then confirmed when the fish are landed to a licensed fish receiver.

21. **Figure 1** shows commercial fishing intensity for bottom trawling over 12 years, from October 2007 to September 2019, expressed in how much fish was caught per km<sup>2</sup>. There is a high intensity of bottom trawling in the outer waters of the proposed protection areas (red shading), with low intensity in the inner **Bay of Islands** waters (blue shading). This reflects the evidence of Mr Ross where he discusses a 2020 report by John Booth to the Bay of Islands Maritime Park Inc, which showed within the inner Bay of Islands, for the 2007/08 to 2012/13 fishing years, there was on average fewer than a dozen individual trawl events each year. Booth concluded that bottom trawling has never been particularly intensive within the Bay of Islands - and certainly not for at least the past 30 years - meaning that much of the soft-bottom seafloor may be little modified from its pristine condition.<sup>3</sup> ~~Near Mimiwhangata there is medium intensity of bottom trawling (yellow/green shading).~~

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<sup>3</sup> Subtidal soft-bottom biodiversity of the Bay of Islands and its vulnerability to the physical impacts of fishing. A report prepared for Bay of Islands Maritime Park Inc. John Booth 8 March 2020.





**Figure 1: Commercial fishing intensity for bottom trawling from October 2007 to September 2019, averaged over 12 years (expressed in catch per km<sup>2</sup>).<sup>4</sup>**

22. **Appendix 2** provides a further map of commercial fishing intensity for bottom trawling from October 2009 to March 2021, expressed in terms of the number of fishing events (or trawl shots) and based on the number of fishing events reported to have started in each of the grids (approximately 1.8 km<sup>2</sup>). This map shows a similar pattern to **Figure 1** above, with a higher intensity of trawl fishing events starting in the outer waters and a lower intensity starting in the inner waters of the proposed protection areas, except for near Mimiwhangata where there is medium intensity.
23. The fishing intensity maps provided in **Appendix 2** and in **Figures 2 and 3** below have used fishing start positions only within grids of approximately 1.8 km<sup>2</sup>, because this is the common dominator between the old paper-based reports that provided start positions only and the new electronic-based reports that provide start and end positions. These


<sup>4</sup> Larger figures are attached to the back of my evidence.




figures provide a relative indication of where fishing starts in the proposed protection areas. They do not show the full extent of the areas fished, which will extend to a certain degree beyond the shaded grids. As more electronic position information is collected from commercial fishers, MPI's ability to precisely map the distribution of fishing will improve.

24. For a shorter period, from October 2017 to September 2020, **Figure 2** shows commercial fishing intensity for bottom trawling (expressed in catch per degree minute), and **Figure 3** shows commercial fishing intensity for bottom longlining (expressed in catch per degree minute). These figures are based on fishing event start positions reported by commercial fishers for these methods and so provide a relative indication of where fishing occurs in the proposed protection areas.
25. **Figure 2** indicates low levels of catch from bottom trawl events starting in the inner waters of the proposed protection areas (white or light orange shading), with pockets of higher levels of catch in the outer waters (dark orange shading).

Sensitive



Sensitive




**Figure 2: Commercial fishing intensity for bottom trawling from October 2017 to September 2020, summed over three years (expressed in catch per degree minute).**

26. **Figure 3** indicates low to moderate levels of catch from bottom long line in the inner waters of the proposed Protection Areas (light to medium orange shading), with pockets of higher levels of catch [outside the proposed protection areas](#) between Cape Wiwiki and Whale Rock (darker orange shading).

Sensitive



Sensitive



**Figure 3: Commercial fishing intensity for bottom longlining from October 2017 to September 2020, summed over three years (expressed in catch per degree minute).**

### **Commercial fishing in the proposed Marine Protection Areas**

27. The following sub-sections provide a summary of commercial fishing events that are recorded as having started in each of the proposed Protection Areas over the past three fishing years. This is based on fishing event start positions reported by fishers to MPI.
28. In some cases, we have been unable to determine whether a particular fishing event occurred within or outside a sub-area proposed by the appellants/s<sup>274</sup> parties if it occurred close to the boundary of an area. This relates to the scale of the geo-positional information provided by fishers, with greater uncertainty in the information prior to 2019 when paper-based records were provided. Since 2019, commercial fishers have been required to electronically report fine-scale fishing positions for all fishing methods.

## Te Hā o Tangaroa Marine Protection Area – Bay of Islands

29. From October 2017 to March 2021, very little commercial fishing activity is estimated to have occurred in:<sup>5</sup>

- Sub-Area A – Maunganui Bay-Oke Bay Rāhui Tapu; and,
- ~~Sub-Area A buffer – Maunganui Bay-Oke Bay Rāhui Tapu buffer area; and,~~
- Sub-Area B – Ipipiri Moana Mara Tipu Rohe ~~benthic protection area.~~

30. **Table 1** provides a summary of the fishing activity in these proposed protection areas, including the number of fishing events, the number of vessels involved in those events, and the fishing methods used.

**Table 1: Summary of fishing activity in Sub-Area A, ~~Sub-Area A buffer~~ and Sub-Area B (including boundary information) from October 2017 to March 2021.**

Proposed protection areas	Number of fishing events <sup>6</sup>	Number of vessels	Fishing methods used
Sub-Area A & <del>Sub-Area A buffer</del> (combined)	7 <del>8</del>	3 <del>4</del>	<del>Bottom longlining, d</del> Diving, rock lobster potting
Sub-Area B	7	3	Diving, rock lobster potting
<del>Boundary of Sub-Area A or Sub-Area A buffer &amp; Sub-Area C (Ipipiri Rakaumangamanga)</del>	<del>8</del>	<del>3</del>	<del>Bottom longlining, bottom trawling</del>
<del>Boundary of Sub-Area B &amp; Sub-Area C</del>	<del>2</del>	<del>2</del>	<del>Bottom longlining</del>

31. The proposed Sub-Area C – ~~Ipipiri~~Rakaumangamanga Moana Mara Tipu Rohe ~~protection area~~ has the most reported commercial fishing activity within the Te Hā o Tangaroa Protection Area (**Table 2**). The top ~~two~~ ~~three~~ fishing methods estimated to commence in Sub-Area C from October 2017 to March 2021 were bottom longlining; ~~set netting~~, and bottom trawling (excluding the overlapping area between Sub-Area C and Sub-Area ~~C B~~ – Te Au o Morunga protection area from the Te Mana o Tangaroa Protection Area). ~~One~~ No Danish seining, purse seining or dredging events were ~~was~~ reported during the period, ~~with no purse seining or dredging.~~

<sup>5</sup> For a map of the proposed protection areas, see Figure 1 of Ms McKinnon's evidence.

<sup>6</sup> An individual fishing event varies for different fishing methods for example, for trawl a single event is a single trawl shot whereas, in the case of rock lobster potting, an event includes all pots lifted within 10 nautical miles from the first pot lifted.

**Table 2: Summary of fishing activity in Sub-Area C – ~~Ipipiri~~ Rakaumangamanga Moana Mara Tipu Rohe from October 2017 to March 2021<sup>7</sup>.**

Fishing method	Number of fishing events	Number of vessels
Bottom longlining	45 <del>364</del>	9 <del>14</del>
<del>Set netting</del>	479	23
Bottom trawling	15 <del>64</del>	8 <del>34</del>

32. A breakdown of the top inshore species caught by bottom longlining ~~and~~, bottom trawling ~~and set netting~~ in Sub-Area C over the past three complete October fishing years (October 2017 to September 2020) is shown in **Table 3**. Snapper was by far the most frequently caught species providing the highest estimated value to the catching sector alone (based on port price<sup>8</sup>). The amount of snapper catch coming from bottom longline is far greater than that from bottom trawl, with the catches from both methods making up a small proportion of the Total Allowable Commercial Catch<sup>9</sup> for snapper in Fisheries Management Area 1 (North Cape to Cape Runaway).
33. The majority of snapper caught in Fisheries Management Area 1 is exported, but there is also a strong domestic market both in terms of sales to the general public and into premium markets such as restaurants. Typically, long line caught snapper yields a higher price than bottom trawling. The export value for all snapper exported from New Zealand in the 2020 calendar year was \$31 million. The average unit export value was \$10,800 per tonne for snapper.

<sup>7</sup> Excludes any fishing events falling on the offshore and outer boundary of Sub-Area C – ~~Ipipiri~~ Rakaumangamanga Moana Mara Tipu Rohe, ~~and those on the boundary between Sub Area C and Sub Area A, Sub Area A buffer and Sub Area B (included in Table 1).~~

<sup>8</sup> Port price is the surveyed average price paid by licensed fish receivers (LFRs) to independent fishers for fish landed to those LFRs. Several limitations are known about port prices: they do not differentiate harvest method – fish caught by one method over another may command a price premium; ownership structure can influence port price – port prices change depending on whether the LFR is catching and landing the fish themselves, using contract fishers or taking fish from an independent fisher; does not reflect price differential for different grades of fish – fishers receive different landed prices depending on the size of the fish caught based on the ‘port price’ a licensed fish receiver would pay to a commercial fisher.

<sup>9</sup> The Total Allowable Commercial Catch is an annual catch limit set for every stock managed under the Quota Management System, discussed further in my brief on impact of proposals on fisheries and fisheries resources.

Table 3: The top inshore species caught by each method and fishing year in the proposed Sub-Area C – ~~Ipipiri~~ Rakaumangamanga Moana Mara Tipu Rohe ~~protection area~~, compared to the overall Total Allowable Commercial Catch and with catch value estimates.

October fishing year	Species caught	Estimated catch (kg)	% of Total Allowable Commercial Catch caught	Total Allowable Commercial Catch in Fisheries Management Area 1 (kg)	Estimated value of catch (based on port price)	Port price (per kg)
<b>Bottom longlining</b>						
2017/18	Snapper	760 <del>27,903</del>	0.02% <del>0.62%</del>	4,500,000	\$ 3,091 <del>\$113,484</del>	4.0671
2018/19		4,195 <del>37,040</del>	0.09% <del>0.82%</del>		\$ 24,566 <del>\$ 216,906</del>	5.8560
2019/20		3,215 <del>58,110</del>	0.07% <del>1.29%</del>		\$ 19,721 <del>\$ 356,458</del>	6.1342
<b>Bottom trawling</b>						
2017/18	Snapper	1,625 <del>4,115</del>	0.0004% <del>0.00%</del>	4,500,000	\$ 6,609 <del>\$ 16,736</del>	4.0671
2018/19		2,904 <del>4,264</del>	0.0006% <del>0.00%</del>		\$ 17,006 <del>\$ 24,970</del>	5.8560
2019/20		308 <del>3,805</del>	0.0001% <del>0.00%</del>		\$ 1,889 <del>\$ 23,893</del>	6.1342
<b>Set-netting</b>						
2017/18	School shark	390	0.06%	689,000	\$ 358	0.9186
2018/19	Kahawai	160	0.01%	1,075,000	\$ 116	0.7226
2019/20		5,374	0.50%		\$ 7,979	1.4848

34. ~~The greater levels of set net catches reported in the 2019/20 fishing year (Table 3) is likely related to the requirement for smaller vessels to report fine scale catch information from 2019 (instead of at the scale of broader statistical areas, refer Figure 4 below).~~

35. A summary of the fishing activity within the overlapping area of Te Hā o Tangaroa Protection Area – Sub-Area C and Te Mana o Tangaroa Protection Area – Sub-Area ~~CB~~, between October 2017 and March 2021, is shown in Table 4.<sup>10</sup> No Danish seining, purse seining or dredging was reported.

<sup>10</sup> This excludes any fishing events falling on the boundary of Te Hā o Tangaroa Sub-Area C and Te Mana o Tangaroa Sub-Area ~~CB~~.



**Table 4: Summary of fishing activity in the overlapping protection areas from October 2017 to March 2021.<sup>11</sup>**

Fishing method	Number of fishing events	Number of vessels
Bottom longlining	82	15
Bottom trawling	26	15
Set netting	29	2

36. The predominant species caught in the overlapping area was snapper by bottom longlining (an average of approximately 5,800 kgs of snapper was caught over the past three complete October fishing years).

### **Te Mana o Tangaroa Marine Protection Area**

37. Little commercial fishing activity (approximately 30 events by eight vessels) was estimated to commence in Sub-Area A – Mimiwhangata Rāhui Tapu and Sub-Area A buffer between October 2017 and March 2021. This low level of activity is because commercial fishers are already prohibited from taking fish or seaweed by any fishing method from the Mimiwhangata Peninsula (comprising the area of water adjacent to Paparahi Point and Rimariki Island). An average of approximately 3,000 kgs of snapper was caught by bottom longlining in the area over the past three complete October fishing years.

38. The proposed Sub-Area **CB** – Te Au o Morunga protection area has the most reported commercial fishing activity within the Te Mana o Tangaroa Protection Area. The top two methods to start in Sub-Area **CB** (excluding the overlapping area between Te Hā o Tangaroa Protection Area – Sub-Area C and Sub-Area **CB** – Te Au o Morunga protection area), from October 2017 to March 2021, were bottom longlining (about 140 events) and bottom trawl (about 70 events).<sup>12</sup> Three Danish seining and eight purse seining events were reported, with no dredging.

39. Snapper was the top inshore species caught in proposed Sub-Area **CB** with much of the catch coming from bottom longlining. **Table 5** provides a summary of snapper bottom longlining and bottom trawling catches and their associated value over the past three

<sup>11</sup> Excludes any fishing events falling on the outer boundary of Sub-Area C – ~~Ipipiri~~ Rakaumangamanga Moana Mara Tipu Rohe.

<sup>12</sup> This excludes any fishing events falling on the outer boundary of Area B, on the boundary of Te Hā o Tangaroa Area C and Te Mana o Tangaroa Area **CB**, and on the boundary with Te Mana o Tangaroa Area A + buffer.

complete October fishing years (October 2017 to September 2020). A small proportion of the overall Total Allowable Commercial Catch for snapper was caught in the area.

**Table 5: Snapper caught by each method and fishing year in the proposed Sub-Area CB – Te Au o Morunga protection area, compared to the overall Total Allowable Commercial Catch and with catch value estimates.**

October fishing year	Species caught	Estimated catch (kg)	% of Total Allowable Commercial Catch caught	Total Allowable Commercial Catch in Fisheries Management Area 1	Estimated value of catch (based on port price)	Port price (per kg)
<b>Bottom longlining</b>						
2017/18	Snapper	22,804	0.51%	4,500,000	\$ 92,746	4.0671
2018/19		11,984	0.27%	4,500,000	\$ 70,178	5.8560
2019/20		9,850	0.22%	4,500,000	\$ 60,422	6.1342
<b>Bottom trawling</b>						
2017/18	Snapper	1,230	0.03%	4,500,000	\$ 5,003	4.0671
2018/19		6,300	0.14%	4,500,000	\$ 36,893	5.8560
2019/20		5,715	0.13%	4,500,000	\$ 35,057	6.1342

#### Commercial fishing in broader statistical areas

40. Information MPI holds on the specific location of commercial potting, diving and set netting in the wider Bay of Islands area is uncertain prior to 2019. This is because before the implementation of electronic reporting in 2019, commercial potters and divers were required to report their catch by statistical area, along with set net vessels under six metres.
41. Spiny red rock lobster and packhorse rock lobster catch for statistical area 904 (Takou Bay to Bream Bay, **Figure 4**) from April 2017 to March 2020 is shown in **Table 6**. Substantial quantities of rock lobster are caught in statistical area 904 providing significant value to the catching sector alone. It is uncertain how much of this catch came from the proposed Protection Areas because of the way commercial fishers reported prior to 2019.

**Table 6: Summary of rock lobster catch by April fishing years for statistical area 904, compared to the overall Total Allowable Commercial Catch and with catch value estimates.**

April fishing year	Spiny red rock lobster estimated catch (kg)	% of Total Allowable Commercial Catch caught	Total Allowable Commercial Catch in CRA 1 (kg) <sup>13</sup>	Estimated catch value (based on port price)	Port price (per kg)
2017/18	11,807	8.5%	131,062	\$ 882,264	79.5800
2018/19	11,586	8.8%	131,062	\$ 994,496	85.8390
2019/20	8,548	6.5%	131,062	\$ 683,174	79.9268
April fishing year	Packhorse rock lobster estimated catch by (kg)	% of Total Allowable Commercial Catch caught	Total Allowable Commercial Catch in PHC 1 (kg) <sup>14</sup>	Estimated catch value (based on port price)	Port price (per kg)
2017/18	6,792	16.9%	40,300	\$ 267,693	39.4124
2018/19	5,719	14.2%	40,300	\$ 308,491	53.9414
2019/20	2,916	7.2%	40,300	\$ 154,530	52.9938

42. Kina catch for statistical area 003 (Whangaroa Bay to Bream Bay, **Figure 4**) from October 2017 to September 2020 is shown in **Table 7**. The majority of the Total Allowable Commercial Catch for kina in the upper eastern Northland Quota Management Area (**SUR 1A**) is estimated to come from statistical area 003.

**Table 7: Summary of kina catch by October fishing years for statistical area 003, compared to the overall Total Allowable Commercial Catch and with catch value estimates.**

October Fishing Year	Kina estimated catch (kg)	% of Total Allowable Commercial Catch caught	Total Allowable Commercial Catch in SUR 1A (kg)	Estimated catch value (based on port price)	Port price (per kg)
2017/18	45,870	115%	40,000	\$ 5,858	0.1277
2018/19	39,878	100%	40,000	\$ 5,092	0.1277
2019/20	44,068	110%	40,000	\$ 67,076	1.5221

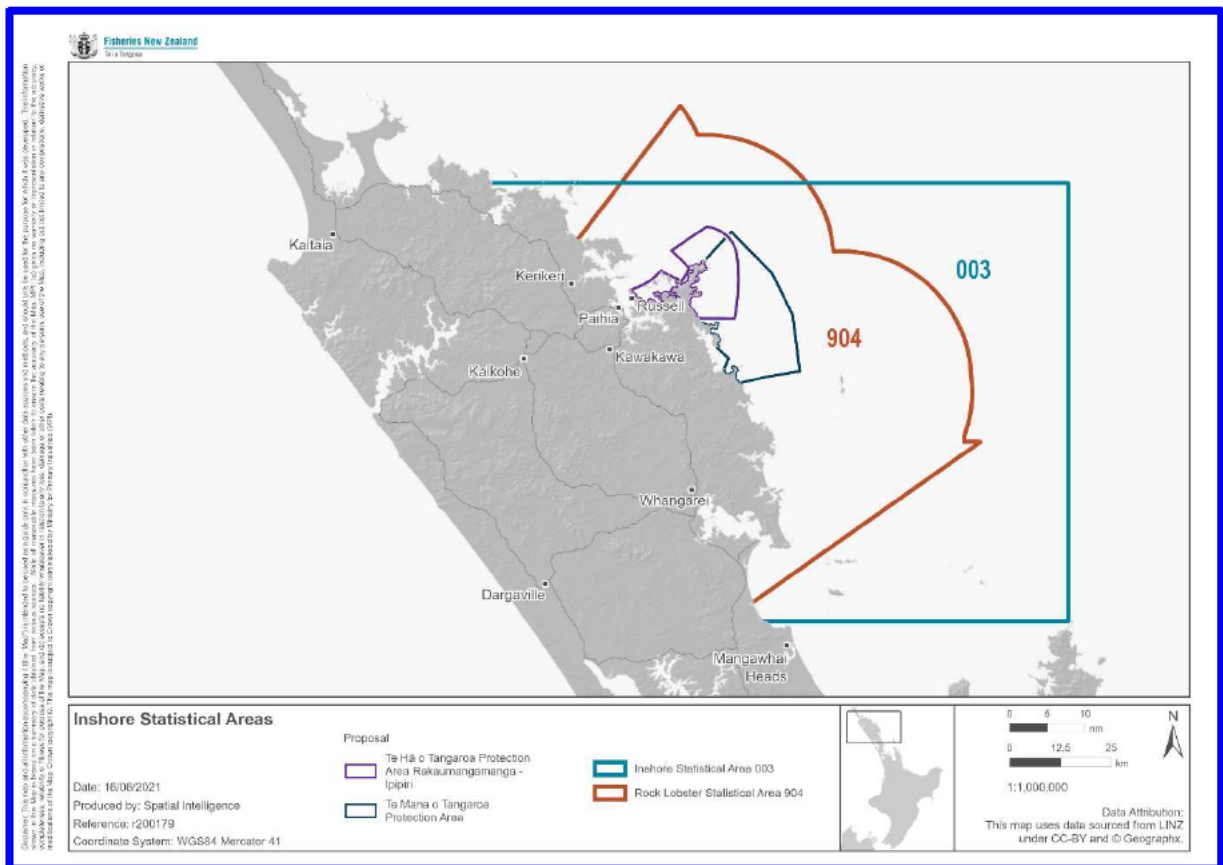
43. A breakdown of the top three inshore species caught by set netting in statistical area 003 Whangaroa Bay to Bream Bay, **Figure 4**) from October 2017 to September 2020 is shown in **Table 8**. Grey mullet, Kahawai and Parore were the most frequently caught species by set netting in this statistical area.

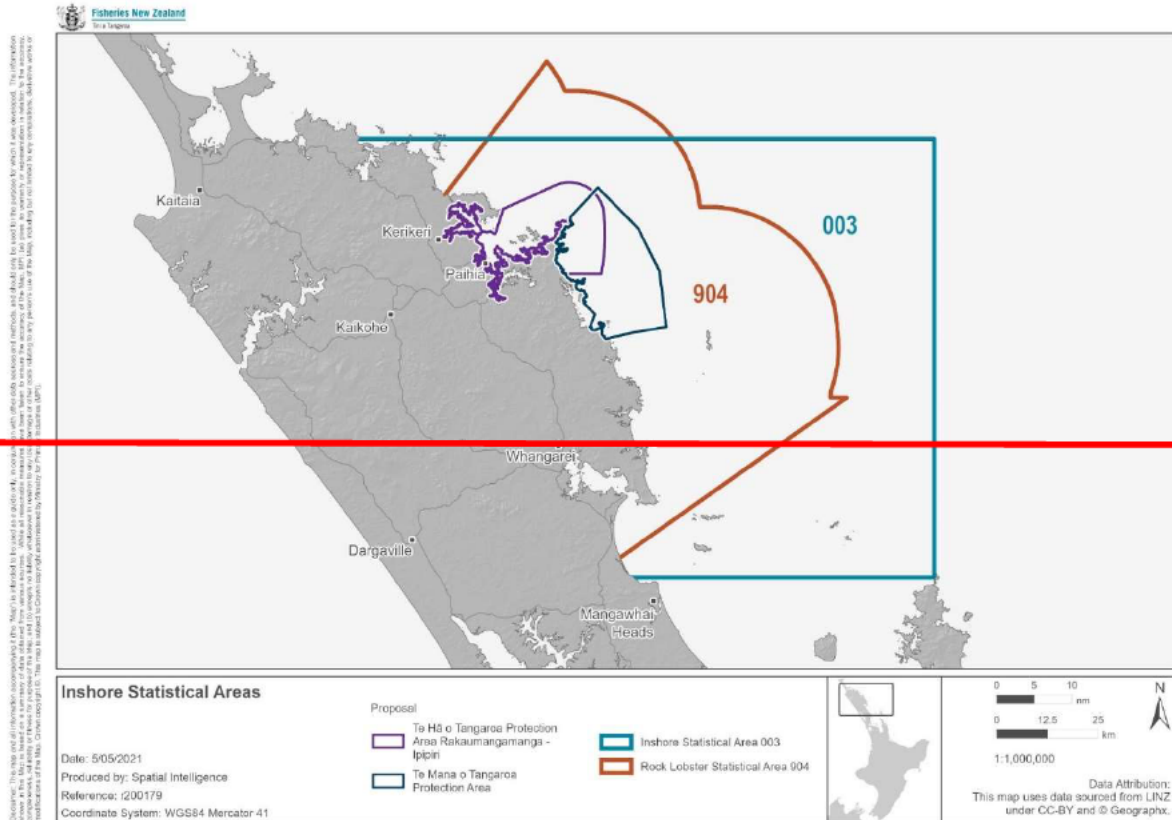
<sup>13</sup> "CRA 1" is the Quota Management Area for spiny red rock lobster covering the upper North Island.

<sup>14</sup> "PHC 1" is the Quota Management Area for packhorse rock lobster covering the whole of New Zealand.

**Table 8: Catch for the top three inshore species caught by set net in statistical area 003 by October fishing years, compared to the overall Total Allowable Commercial Catch and with catch value estimates.**

Species caught by October fishing year	Estimated catch (kg)	% of Total Allowable Commercial Catch caught	Total Allowable Commercial Catch in Fisheries Management Area 1 (kg)	Estimated catch value (based on port price)	Port price (per kg)
<b>2017/18</b>					
Grey mullet	21,442	2.3%	925,501	\$ 82,337	3.8400
Kahawai	17,854	1.7%	1,075,000	\$ 6,306	0.3532
Parore	17,036	27.9%	61,000	\$ 42,057	2.4687
<b>2018/19</b>					
Parore	19,599	32.1%	61,000	\$ 40,318	2.0571
Grey mullet	17,762	1.9%	925,501	\$ 84,586	4.7623
Kahawai	14,424	1.3%	1,075,000	\$ 10,423	0.7226
<b>2019/20</b>					
Parore	23,675	38.8%	61,000	\$ 57,581	2.4322
Grey mullet	18,308	2.0%	925,501	\$ 87,310	4.7691
Kahawai	11,378	1.1%	1,075,000	\$ 16,894	1.4848





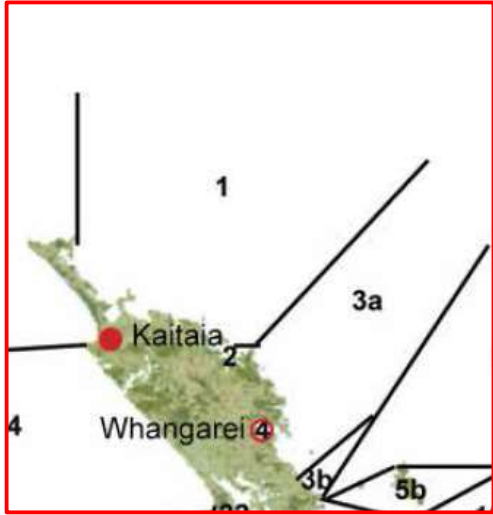
**Figure 4: Rock lobster statistical area 904 and inshore statistical area 003 shown in relation to the proposed marine protection areas.**

### Recreational fishing in the proposed Marine Protection Areas

44. Northland is one of the most significant areas for recreational fishing in New Zealand with an abundance of accessible sheltered rocky reefs and beaches and access to large sportfish such as kingfish, marlin and tuna. Recreational fishing pressure (including charter vessels) is high throughout the area from North Cape to Te Arai Point, including the Bay of Islands.
45. Based on the 2017/18 National Panel Survey of Marine Amateur fishers<sup>15</sup>, rod and line is by far the most common recreational fishing method (>80% of fishing trips) used on Northland's east coast. Other fishing methods used include long lining (set line, Contiki or Kite) and hand gathering by diving for shellfish such as kina, pāua, scallops and rock lobster.

<sup>15</sup> Wynne-Jones, J.; Gray, A.; Heinemann, A.; Hill, L.; Walton, L. (2019). National Panel Survey of Marine Recreational Fishers 2017–2018. New Zealand Fisheries Assessment Report 2019/24. 104 p.

46. The 2017/18 survey shows that snapper was the most sought after and most frequently caught finfish in the Bay of Islands and surrounding areas, followed by kahawai and kingfish (**Figure 5, Table 9**). Other finfish of interest include john dory, red gurnard, tarakihi, trevally and skipjack tuna.



**Figure 5: 2017/18 National Panel Survey areas, highlighting the areas within eastern Northland (Zones 1, 2 and 3a).**

**Table 9: Estimated annual catch (tonnes) for commonly caught finfish in eastern Northland’s recreational sector by survey region. Data sourced from the 2017/18 National Panel Survey of Marine Amateur fishers.**

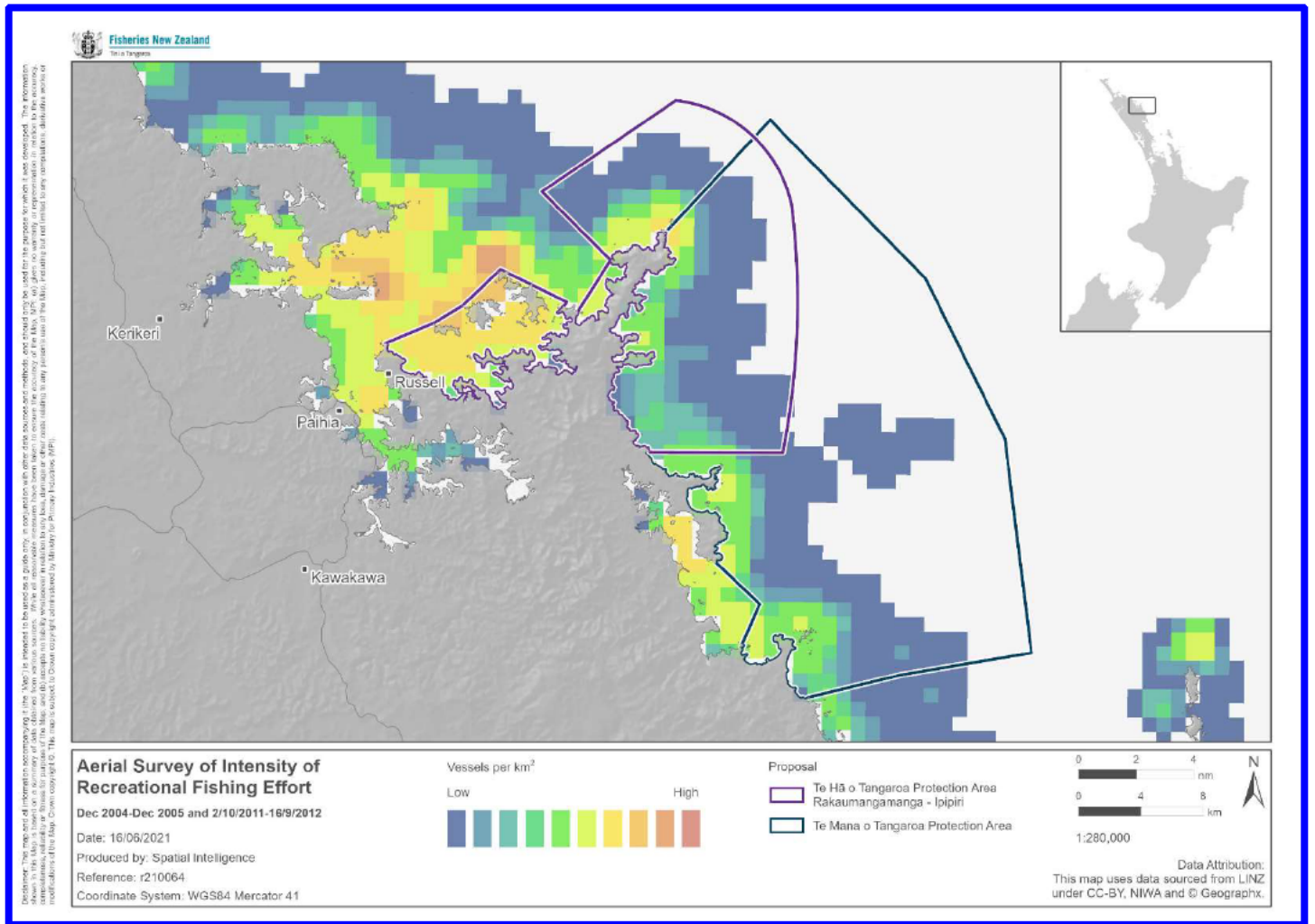
	North Cape to Cape Brett	Bay of Islands	Cape Brett to Te Aari Point
Species	Zone 1	Zone 2	Zone 3a
Snapper	206 t	133 t	229 t
Kahawai	71 t	46 t	63 t
Kingfish	51 t	33 t	26 t
Trevally	9 t	9 t	11 t

47. Non-fish commonly collected inside the Bay of Islands include mussels and oysters while kina and pipi are commonly targeted species throughout the east coast (**Table 10**). Tuatua, scallops, pāua, cockles, squid, crab and crayfish are also collected in these regions.

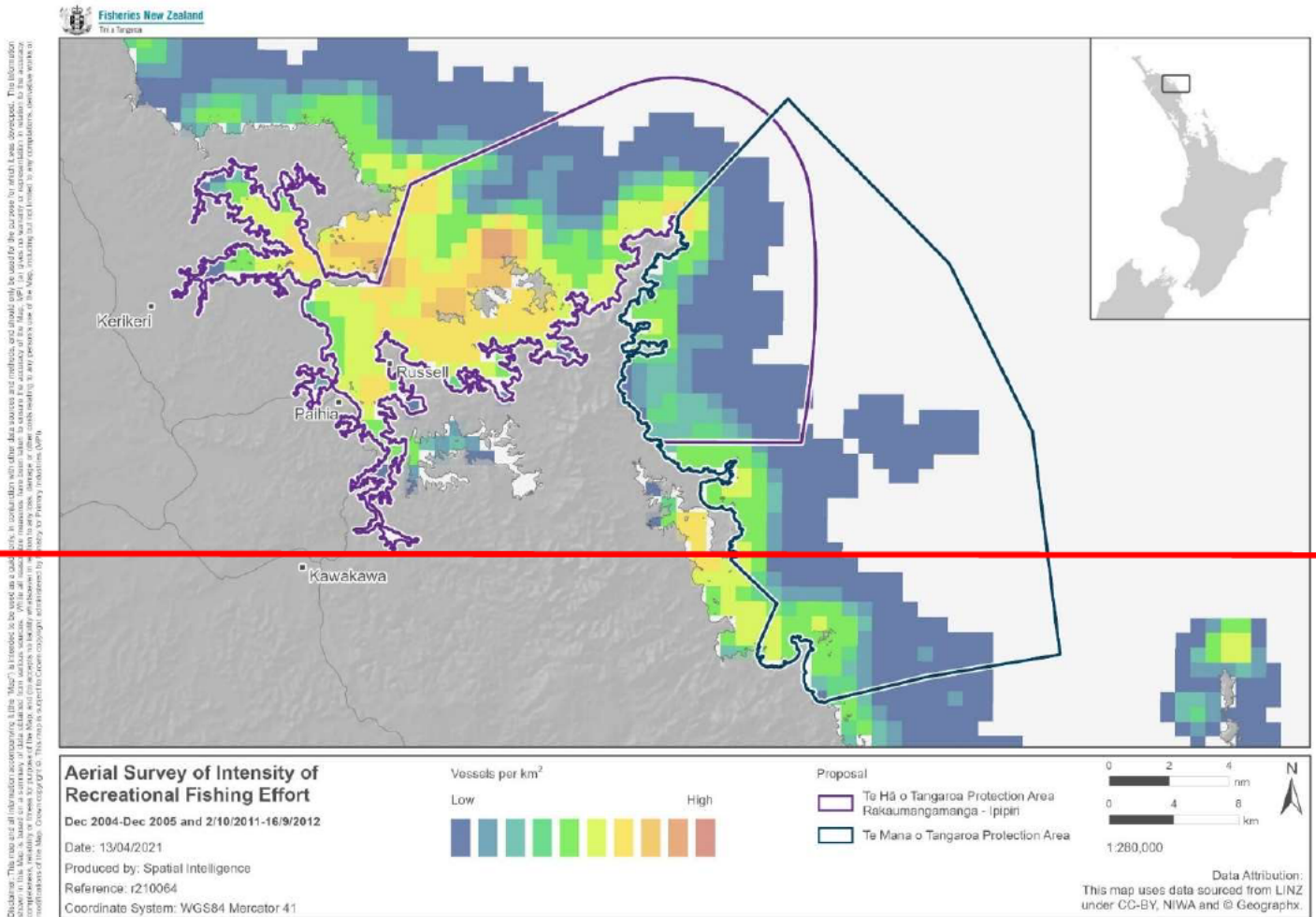
**Table 10: Estimated annual catch (total number) for some common non-fish caught in eastern Northland’s recreational sector by survey region. Data sourced from the 2017/18 National Panel Survey of Marine Amateur fishers.**

	North Cape to Cape Brett	Bay of Islands	Cape Brett to Te Aari Point
Species	Zone 1	Zone 2	Zone 3a
Kina	45,379	16,385	63,991
Pipi	20,382	10,242	7,876
Mussel	12,494	36,131	-
Oysters	-	19,995	-

48. Periodically, overflight surveys of recreational fishing numbers are conducted. These surveys allow representations like **Figure 6** to show indicative levels of recreational fishing activity in the Bay of Islands surrounds. The inner Bay of Islands has relatively high levels of recreational fishing effort.







**Figure 6: Intensity of recreational fishing effort in Bay of Islands and surrounds based on aerial surveys done in 2004/5 and 2011/12.<sup>16</sup>**

### Customary fishing in the proposed Marine Protection Areas<sup>17</sup>

49. There is one ~~are two~~ gazetted rohe moana in the proposed protection areas (~~Ngā Hapū o Taimai Ki Te Marangi and~~ Ngāti Kuta-Patukeha). Information on customary fishing in Northland is available under the Fisheries (Kaimoana Customary Fishing) Regulations 1998 (Kaimona Regulations) and regulation 50 of the Fisheries (Amateur Fishing) Regulations 2013 (Amateur Regulations). Information on customary take under the Amateur Regulations for the purposes of hui or tangi is not required to be reported, so this information is incomplete.

<sup>16</sup> Hartill, B.; Bian, R.; Armiger, H.; Vaughan, M.; Rush, N. (2007). Recreational marine harvest estimates of snapper, kahawai and kingfish in QMA 1 in 2004–05. New Zealand Fisheries Assessment Report 2007/26. 44 p.

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

<sup>17</sup> I discuss the customary fishing regime provided under the Fisheries Act in my Fisheries Management brief of evidence.

50. From 2014 to 2016, ~~202 332~~ authorisations were issued under the Kaimoana Regulations for 15 species with the highest take granted for kina (32,150 ~~46,675~~ individuals), mussels (26,100 ~~36,091~~), scallops (9,740 ~~10,940~~) and oysters (7,756 ~~10,805~~) for the ~~two~~ rohe moana of Ngāti Kuta-Patukeha in the Bay of Islands.
51. From 2016 to 2018, 49 authorisations were issued for 12 species under the Amateur Regulations in areas of Northland covered by the proposed protection areas. The most take was issued for kina (11,100 individuals), mussels (2,100), and scallops (1,300).

### Impact of proposals on current fishing activities

52. The proposed Protection Areas would close additional areas and restrict fishing methods in addition to those already closed or restricted under the Fisheries Act regulatory regime. For example, the proposed Sub-Area A closure in Te Hā o Tangaroa (Maunganui Bay to Oke Bay) would extend from 1.6 km<sup>2</sup> to 6.25 km<sup>2</sup> as currently only Maunganui Bay is closed; the Mimiwhangata Rāhui Tapu area in Te Mana o Tangaroa comprising the current Marine Park would be extended from 19 km<sup>2</sup> to 47 km<sup>2</sup> with the closure to apply to recreational fishing as well as the current commercial fishing. The proposed ~~Sub-Area new C - Te Au o Morunga protection area has areas with~~ proposed limitations on commercial fishing methods comprising ~~500 km<sup>2</sup> (Ipipiri Rakaumangmanga protection area) and 620 664.4 km<sup>2</sup> (Te Au o Morunga protection area).~~<sup>18</sup> I also understand that the amended Sub-Area C in the Te Hā o Tangaroa Protection Area has proposed limitations on commercial fishing methods comprising 288 km<sup>2</sup>.<sup>19</sup>
53. A more complete assessment will be possible once the evidence of the affected s 274 fishing interest parties has been received but also once the planning provisions sought by the appellants and s 274 parties are clarified.
54. But based on my fisheries experience, closing fishing areas and restricting fishing methods can have an impact on tangata whenua, and recreational and commercial fishing sectors.
55. The extent of this impact depends on the nature and scale of the proposals and how an individual might be able to adapt. Common impacts relate to displacing or restricting

<sup>18</sup> Area measurements as identified in Mr Denne's evidence. Note the Te Au o Morunga protection area is also described variously as Area B.

<sup>19</sup> Updated statistics from the JWS Ecology at [4].

fishing activities, and potentially creating additional fishing pressure elsewhere. This is reflected in the evidence of Mr Denne (Economics) where he suggests the effects of establishing the proposed Protection Areas may result in increased commercial effort to catch fish elsewhere or costs of using alternative fishing methods (where provided for), and for recreational fishers they might be displaced to less favoured sites or increase effort using alternative methods (where provided for).

56. FNZ is unable to specifically quantify the impacts of the proposals on tangata whenua and fishing interests. Under the Fisheries Act, we are required to consult with interested parties before any new or amended fisheries controls are implemented. This allows FNZ to assess the cultural, social and economic impacts of any proposal more fully.

### *Impacts on commercial fishers*

57. The impact on commercial fishers would be most significant if all the proposed marine spatial protection measures were implemented. This is likely to have the greatest impact on fishers using the bottom trawling method and who catch snapper in Sub-Area C – ~~Ipipiri~~-Rakaumangamanga Moana Mara Tipu Rohe ~~protection area~~ (Table 3), and ~~to a lesser extent~~ in the Sub-Area CB – Te Au o Morunga protection area (Table 5). ~~Greater Substantial~~ quantities of snapper are ~~generally~~ taken by bottom longline in comparison to bottom trawl in these sub-areas (as shown in Tables 3 and 5). However, this method is not proposed to be prohibited if approved seabird mitigation devices are used.
58. Fishers affected by a total closure or method restriction may be required to fish elsewhere to take their Annual Catch Entitlement (ACE).<sup>20</sup> ACE is spatially limited by Quota Management Area (QMA).<sup>21</sup> This means that commercial fishers cannot simply keep travelling until they find somewhere with available fish; their allocated entitlement is specific to a QMA and cannot be used anywhere else. Depending on the number of fishers that are displaced by the proposed measures, there could be more highly focussed fishing in the wider Northland region, making fishing more expensive and potentially increasing the number of commercial fishers unable to take their ACE for some species.<sup>22</sup>

<sup>20</sup> ACE is the annual amount of catch entitlement of the Total Allowable Commercial Catch, for each stock in each QMA, and is allocated to commercial fishers based on the proportion of the total quota they hold, for that stock, in that QMA.

<sup>21</sup> Stocks managed under the Quota Management System are separated by Quota Management Areas based on administrative and biological factors. For example, the snapper fishery is divided into six management areas.

<sup>22</sup> Mr Denne (at [19]) does not appear to appreciate that ACE relates to a particular QMA which in itself inhibits movement.

59. If fishers need to change to other fishing method types if excluded from an area, for example from a bottom trawling prohibition, this would add to capital costs of new gear and technology and requirement to purchase ACE for different species caught in any new fishery.
60. If commercial fishers are significantly affected by the proposals, flow-on effects could result, including impacts on jobs that support the fishing industry such as transport, provedores, engineering, and bait suppliers.

***Impacts on the Fisheries Settlement Act and Māori customary non-commercial fishers***

61. The Crown's obligations under the Treaty of Waitangi (Fisheries Claims) Settlement Act 1992 (**Fisheries Settlement Act**) and the customary fishing regime in the Fisheries Act are discussed in my Fisheries Management brief of evidence. I am aware that there may be potential implications for both these matters in the proposals for Protected Areas. However, this may be addressed in evidence by other parties which is being circulated simultaneously with this brief and accordingly I will review that evidence before forming a view.

***Impacts on recreational fishers***

62. The impact on recreational fishers would be most significant if the no take rules in the inner Bay of Islands (Sub-Area A – Maunganui Bay-Oke Bay Rāhui Tapu, ~~plus Sub-Area A buffer~~) and the Mimiwhangata Rāhui Tapu Area (Sub-Area A plus buffer) are implemented because these areas are intensively fished.
63. These proposed no take areas could displace recreational fishing from nearshore areas and add to fishing costs for recreational fishers (e.g. increased fuel costs, greater time on the water, and costs of any new fishing gear). This displaced effort could also result in significant changes to the recreational take in areas in and around the Northland region, potentially requiring adjustments to the various management controls, for popular species caught in the area such as rock lobster, mussels and oysters.
64. The proposals to prohibit dredging in Sub-Area B of Te Ha o Tangaroa and scallop dredging Sub-Area ~~CB~~ of Te Mana o Tangaroa (at least in the other overlapping area) will have an impact on recreational fishers. However, FNZ is aware of the ban on recreational scallop dredging proposed by the New Zealand Sport Fishing Council. FNZ

is actively exploring this for other regions in New Zealand, such as the Hauraki Gulf, and would be open to considering it in the Bay of Islands as proposed in the evidence of Mr Mark Morrison.

65. In summary, there is potential for significant impacts on fishers as a result of these proposals. I would expect the fishers' evidence to address this directly at which point I will be able to update this section of my evidence.

## Appendix 1 – Explanation of different fishing methods

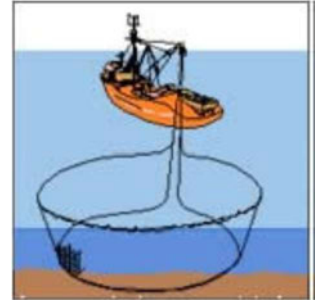
<https://fs.fish.govt.nz/Page.aspx?pk=63>

### ***Trawling***

Trawling is the most common commercial fishing method used in New Zealand waters. It is generally used for deep-water fisheries like orange roughy, hoki, ling, hake and squid. A fishing boat tows a large net behind it, sometimes in the middle of the water, and sometimes on the sea floor. Sometimes two fishing boats might tow a big net together.

### ***Seining***

Seining (pron: “sayning”) involves dropping a net to surround and trap a school of fish. There are two types of seining – Danish seining, which is used to catch fish near the bottom of the sea, and purse seining, which is used to catch fish near the surface.



### ***Dredging***

Dredging is used to gather scallops and oysters from shallow water. A fishing boat tows a steel net (dredge) along the sea floor, and the net scrapes up all the shellfish living there.

### ***Line fishing***

The most common line fishing methods are hand-lines and long-lines. Hand-lines are mainly used by recreational fishers. A hand-line is a single fishing line, usually attached to a rod, and held by hand.

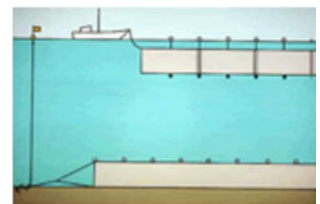
Long-lines have a main fishing line, with lots of shorter lines hanging off it. The shorter lines have bait and hooks attached to them. The main line is anchored at each end, and floats stop the line from sinking.

Line fishing doesn’t bruise or damage the fish as much as net fishing, but you can’t catch as many fish as quickly on a line as you can in a net.

### ***Netting***

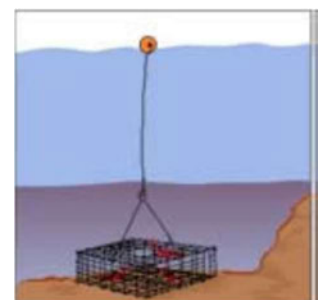
There are many kinds of fishing nets, but usually they are long, narrow and flat with weights at the bottom edge and floats at the top so that the net hangs down into the sea like a wall, and fish swim into it and get caught in its mesh.

The most common type of netting used by recreational fishers is set netting. Commercial fishers also use set netting to catch some types of fish, like flounder and butterfish. Set netting involves setting a net halfway down or near the bottom of the sea, and leaving it there for fish to swim into.



### ***Potting***

A pot-like trap that is attached to a long rope is baited with fish and dropped from a fishing boat. The rope is marked with floats so that the fisher can easily find the line when they want to haul up the pot again. Potting is used to catch rock lobster and blue cod.



Appendix 2: Commercial fishing intensity for bottom trawling from October 2009 to March 2021 (expressed in the number of fishing events, and showing the number of fishing events that started in each of the grids).

Sensitive



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