

South East Marine Protection Forum Proposals 2020

DRAFT Summary prepared for the NZSFC

July 2020

The South East Marine Protection Forum have worked to develop a proposed network of marine protected areas, these sites were chosen due to their ecological significance by a government appointed multi stakeholder group. A representative area of each of the habitat types identified to exist in the region was included in proposals. a summary of these proposals is below.

Notable points

- While this information is important context, biodiversity protection is the purpose of this process. The fact that there is an adverse economic or social impact is not a reason to exclude a habitat in the MPA network. But differences in economic and social impacts may help us decide between options that would protect similar habitats or ecosystems. Economic benefits are also relevant under the MPA Guidelines, as they may help in deciding between options that have similar impacts on existing users.
- At present, there is no reliable means of calculating recreational fishers catch in any given area. Marine reserves (Type 1 MPA) are mostly considered unpopular with recreational fishers, and comments made to the Forum indicate two major concerns are spatial displacement and safety.
- Multiple reserves, or replication, reduce the risk that entire populations or all examples of a protected habitat are destroyed by a catastrophe. Connectivity is important as it allows populations in different parts of a species range.
- An ecologically representative network of protected areas should, by definition: capture the full range of ecological variability; ensure functioning ecosystems by encompassing the temporal and spatial scales at which ecological systems operate and provide for effective management of large-scale processes and patterns.
- A marine protected areas network is more than just several MPAs that operate independently. Within a network the benefits of the individual MPA parts combine to create greater benefits overall.
- The 2020 proposed network of marine protected areas included a more detailed cost benefit analysis but involved mainly costs to commercial fisheries and does not fully address the impacts on recreational fishers.
- The development of the SEMPA network proposal did not include mandated appointees representing the interests of recreational fishers. It did not directly involve the Fisheries NZ Southern Recreation Forum FMA3 and FMA5, instead it relied on an ad hoc process with government appointees that provided little opportunity include and represent the wider concerns of recreational fishers.
- The complex nature of the SEMPA proposal and short submission period for the 2020 consultation process has not given recreational fishers enough time to make informed decisions.

Background

The New Zealand Government appointed the South-East Marine Protection Forum (hereby referred to as “The Forum”) in 2014 to consider and recommend marine protection options for the southeast region. The Forum’s terms of reference included recommending levels of marine protection for the southeast region that were consistent with the MPA policy and guidelines. The appointed Forum members represented Kāi Tahu, commercial and some recreational fishing interests, conservation advocates, tourism interests, and local communities. The Forum was assisted and advised by DOC and Fisheries New Zealand. The recreational fishing appointments to the Forum were Nelson Cross (who was removed and replaced with Steven Bennet of the Green Island Fishing Club) and Tim Richie (Paua to the People).

In October 2016, The Forum released the Proposed Marine Protected Area for New Zealand’s South-East Coast consultation document which detailed 20 proposed sites with marine protection measures and received 2803 submissions including one from the New Zealand Sport Fishing Council and one from the Tautauka Fishing Club.

The Forum was subsequently unable to reach a consensus, and as a result they proposed two alternative networks in their recommendations to the Minister of Conservation and the Minister of Fisheries (Figure 1).

- Network 1, which would cover 14.2% (1267 km²) of the region included six marine reserves, five Type 2 MPAs and one kelp protection area. Network 1 was supported by the environment, tourism, community and science appointees, and one recreational fishing appointee.
- Network 2, which would cover 4.1% (366 km²) of the region included three marine reserves and two Type 2 MPAs. Network 2 was supported by the commercial fishing and one recreational fishing appointees.

Marine Protected Areas (MPAs) are established under the Marine Reserves Act 1971 to give the highest possible level of protection for the purpose of preserving marine life for scientific study. They are no-take areas that prohibit all forms of fishing. Type 2 MPAs incorporate various management tools usually established under the Fisheries Act 1996. They prohibit mobile bottom-impacting fishing methods but generally allow most recreational fishing to occur, as well as some commercial fishing depending on the fishing method.

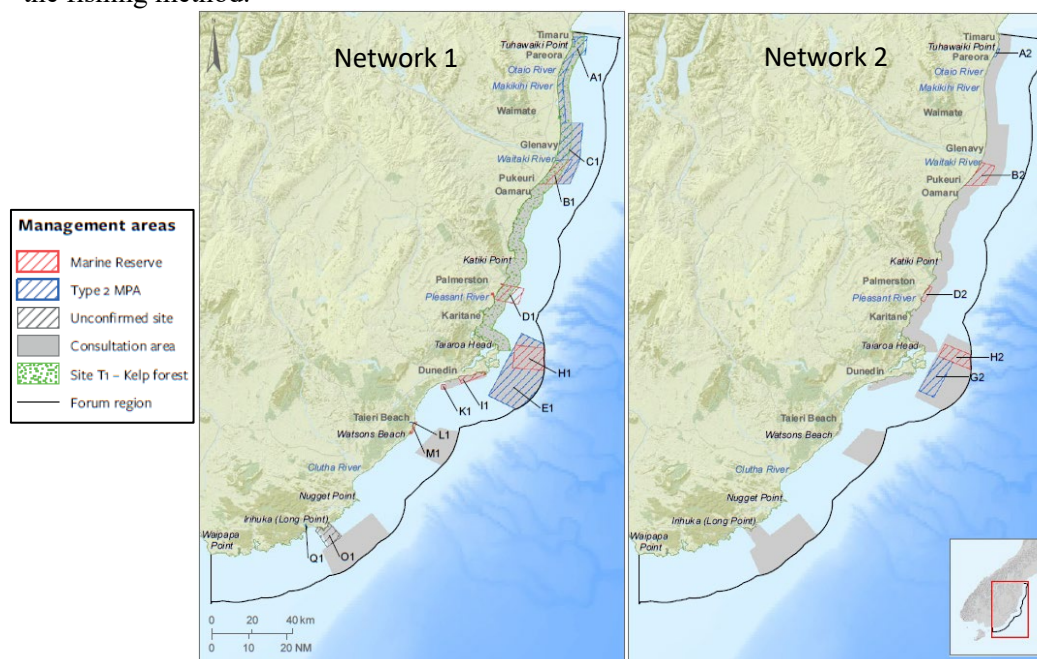


Figure 1. Proposed two alternative networks

The Ministers of Conservation and Fisheries and their agencies considered that network 1 (Figure 2) better met the objectives of the MPA policy, but as Site O1 was opposed by Kāi Tahu it was not included in the 2020 proposed SEMPA network consultation document (Figure 3).

In a joint agency advice to the Minister of Conservation and the Minister of Fisheries (18 October 2018), Fisheries New Zealand also recommended some boundary modifications to the proposed Network 1 to minimise impacts on existing users (Table 1 - 2a) and noted a “high potential impact on recreational fishers” for all Type 1 Marine Reserves, and a lack of evidence to prohibit some fishing methods under the Fisheries Act (Table 1 - 3b). However, these recommendations were not incorporated into the consultation document (Figure 3).

Figure 2. The twelve proposed sites with recommend marine protection options considered for Network 1.



Table 1: Network 1 summary of MPA size, habitats included, and commercial fisheries displacement

MPA	Site	Tool	Area		Habitat types	Catch		Export value	
			Area	% Area		Catch (kg)	% Catch	Export value (\$NZ)	% Forum value ²¹
A1	Type 2		157.5	1.8	4 coastal habitats	109,880	2.6	462,597	1.4
B1	MR		101.3	1.1	3 coastal habitats	4,766	0.1	21,491	0.1
C1	Type 2		254.1	2.9	5 coastal habitats	34,492	0.8	148,145	0.4
D1	MR		96.0	1.1	7 coastal habitats, two estuaries, kelp forest & seagrass	40,526	0.9	1,992,476	5.8
E1	Type 2		449.8	5.0	3 coastal habitats, bryozoan	17,764	0.4	77,445	0.2
H1	MR		167.4	1.9	3 coastal habitats, bryozoan	20,959	0.5	122,241	0.4
I1	MR		28.8	0.3	6 coastal habitats	2,584	0.1	27,303	0.1
K1	MR		5.0	0.1	4 coastal habitats	689	0.0	19,111	0.1
L1	Type1		0.3	0.0	Estuarine habitats incl. saltmarsh and mudflats	no data	—	no data	—
M1	MR		5.9	0.1	3 coastal habitats	6,858	0.2	239,303	0.7
Q1	Type 2		0.7	0.0	Estuarine habitats incl. saltmarsh and mudflats	no data	—	no data	—
Total			1,266.7	14.2		238,518	5.6	3,110,112	9.1

Table 1. Tables 1, 2a and 3b from joint DoC and Fish NZ advice to the Ministers of Conservation and Fisheries (18 October 2018)

Table 2a Fisheries New Zealand's assessment of boundary modifications to proposed Network 1 MPAs necessary to minimise impacts on existing users.

MPA Site	Type	Fisheries New Zealand	Fisheries New Zealand comments
A1	Type 2	Proceed with smaller area.	<ul style="list-style-type: none"> Southern extension (included after consultation) increases adverse impacts on fishers by 27% (29 t). Southern extension is not necessary to ensure the representation of the habitats. Fisheries New Zealand recommends eliminating this southern extension from the MPA proposal for Site A1 that is taken forward for further public consultation and your subsequent implementation decision.
B1	Marine reserve	✓	
C1	Type 2	✓	
D1	Marine reserve	Proceed with smaller area.	<ul style="list-style-type: none"> High level of potential impacts on commercial rock lobster fishers (20.7% (17.7 t) of CRA7 catch). Site D1 is significantly larger than the site consulted on (extended further from 6km to 10km offshore). Fisheries New Zealand recommends that you either: <ul style="list-style-type: none"> Progress the proposal for Site D1 in the form that the Forum originally consulted on it (i.e.: with a seaward boundary situated 6km offshore); OR; Direct officials to undertake further work to assess the options for re-configuring the boundaries of Site D1 to reduce the impacts on the rock lobster fishery, while also ensuring adequate habitat representation.
E1	Type 2	✓	
H1	Marine reserve	✓	
I1	Marine reserve	✓	
K1	Marine reserve	✓	
L1	Type 2	✓	
M1	Marine reserve	✓	
Q1	Type 2	✓	

Table 3b Fisheries New Zealand's assessment of modifications to recommended fisheries restrictions to ensure that they can be successfully implemented under the Fisheries Act 1996.

MPA Site	Type	Fisheries New Zealand	Fisheries New Zealand comments
B1	Marine reserve	✓ All fishing methods	* High potential impact on recreational fishers
D1	Marine reserve	✓ All fishing methods	
H1	Marine reserve	✓ All fishing methods	
I1*	Marine reserve	✓ All fishing methods	
K1	Marine reserve	✓ All fishing methods	
M1	Marine reserve	✓ All fishing methods	<ul style="list-style-type: none"> Rather than consider restricting set net use at the scale of individual MPAs, Fisheries New Zealand considers it would be more appropriate to consider restrictions at a regional scale that aligns with the range of protected species (like Hoiho (yellow-eyed penguin)) that are impacted by set net use.
A1	Type 2	BOTTOM IMPACTING METHODS: <ul style="list-style-type: none"> ✓ Bottom trawling ✓ Dredging ✓ Danish seining ▲ Set netting ✗ Commercial long lining ✗ Five hook limit for line fishing ✗ Mid-water trawling 	
C1	Type 2	BOTTOM IMPACTING METHODS: <ul style="list-style-type: none"> ✓ Bottom trawling ✓ Dredging ✓ Danish seining ▲ Set netting ✗ Mid-water trawling 	
E1	Type 2	BOTTOM IMPACTING METHODS: <ul style="list-style-type: none"> ✓ Dredging ✓ Bottom Trawling ✓ Danish seining ▲ Set netting ✗ Mid-water trawling ✗ Purse seining 	
L1	Type 2	BOTTOM IMPACTING METHODS: <ul style="list-style-type: none"> ✓ Dredging ▲ Set netting ✗ Commercial line fishing ✗ Mechanical harvesting (including spades for collecting shellfish) ✗ Fyke net fishing 	
Q1	Type 2	BOTTOM IMPACTING METHODS: <ul style="list-style-type: none"> ✓ Dredging ▲ Set netting ✗ Commercial line fishing ✗ Mechanical harvesting (including spades for collecting shellfish) ✗ Fyke net fishing 	

In June 2020, the forum released the [Proposed Southeast Marine Protected Areas consultation document](#) with the submission deadline 3 August 2020. The final twelve proposed sites with recommend marine protection options include (Figure 3):

- Six marine reserves: Waitaki (B1), Te Umu Koau (D1), Papanui (H1), Ōrau (I1), Okaihae (K1), and Hākinikini (M1).
- Five Type 2 MPAs: Tuhawaiki (A1), Moko-tere-a-torehu (C1), Kaimata (E1), Whakatorea (L1) and Tahakopa (Q1).
- One kelp protection area: Arai Te Uru (T1).

The Forum's recommendations also included restrictions on seismic surveying and bottom disturbance across the network, as well as fishing for whitebait in the Whakatorea (L1) and Tahakopa (Q1) Type 2 MPAs. These recommendations would be implemented under the legislation such as the Conservation Act 1987 and the Crown Minerals Act 1991 and will be considered at a later stage.

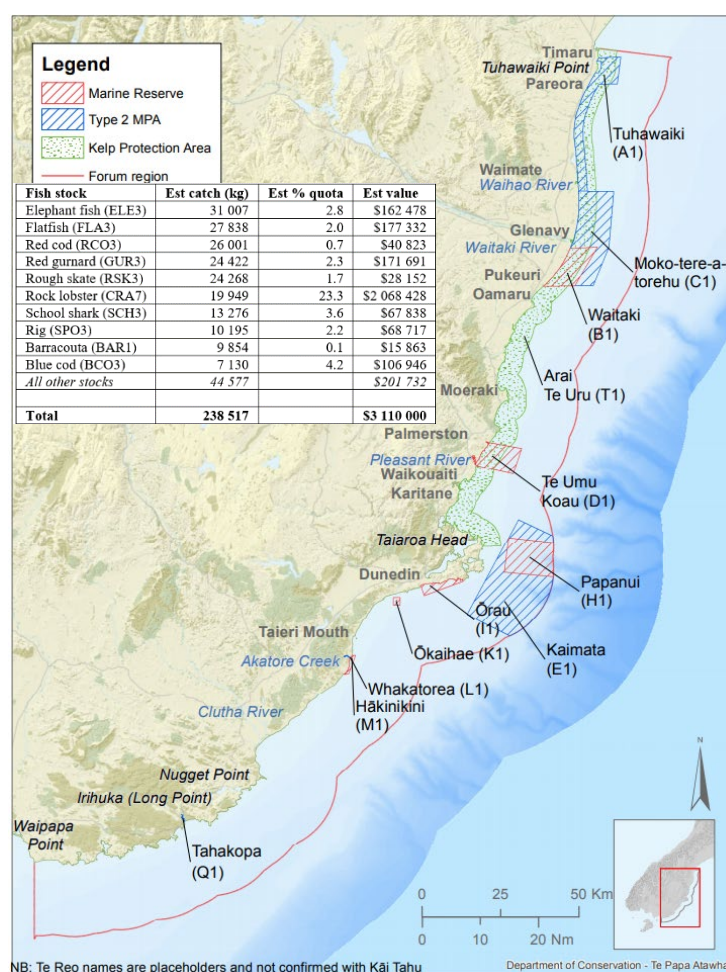


Figure 3. The twelve proposed sites with recommend marine protection options. The table shows the estimated commercial catch, percent quota and export value of fish taken each year from the proposed Southeast Marine Protected Areas.

The Proposed Southeast Marine Protected Areas Consultation document specifically asks the following questions for the areas proposed:

- Do you agree with the costs and benefits identified for this site? If not, why not?
- Are there other benefits or impacts that have not been described here?
- Please consider the stated costs and benefits described above. What changes to the site or activity restrictions would you like to see? Why?

A1. Tuhawaiki (Type 2 MPA)

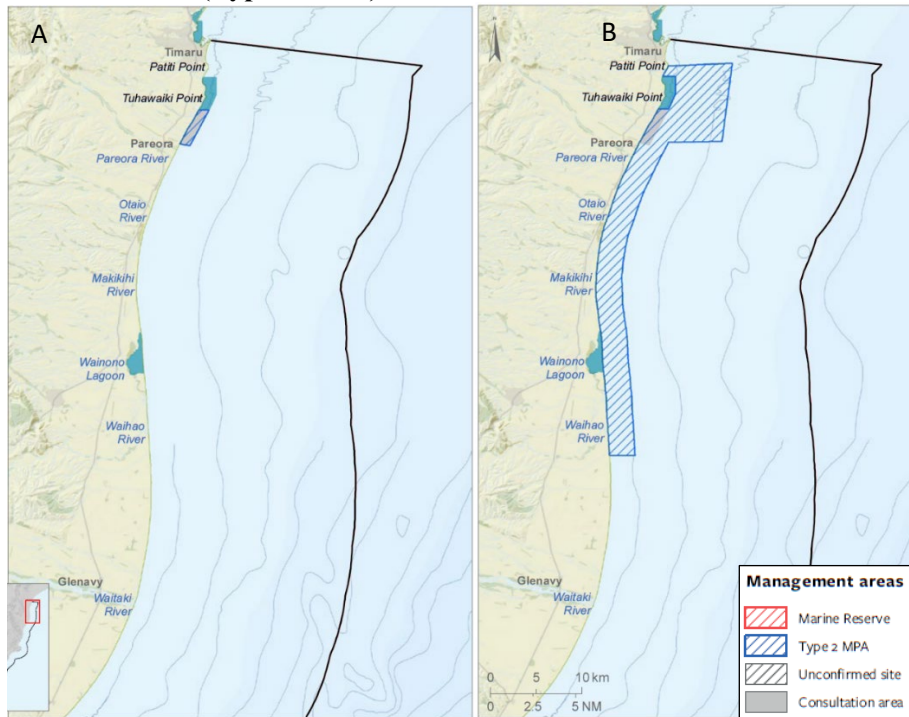


Figure 4. The Tuhawaiki Type 2 MPA proposed in 2016 (A) and 2020 (B).

- a) The Tuhawaiki Type 2 MPA is in the north of the Forum's region, near Timaru (Figure 4).
- b) The original area proposed in 2016 is south of, and abuts, the Tuhawaiki Mātaitai Reserve (Figure 4A - shaded green). It extended 4.4 km along shore, and offshore to 1.1 km (Figure 4A, 4.4 km²).
- c) The area from Tuhawaiki to Pareroa originally proposed in 2016 was supported by the NZSFC, recognising of the importance of the area as habitat for school shark pupping and elephant fish egg cases, and that it provided the mātaitai reserve with a buffer extension along the coast.
- d) Commercial fishing is already prohibited in the mātaitai reserve and in 2016 most submitters supported this area proposal. However, several science submitters called for an extension to the site which they saw as being too small, also supporting the prohibition of 'kontiki' rigs and lines with more than five hooks.
- e) The Tuhawaiki Type 2 MPA (157.5 km²) proposed in 2020 is now 36 times larger, extending 40 km south and up to approximately 7 km offshore at the northern extension (Figure 4B).
- f) The proponents consider that an extension to the Tuhawaiki Type 2 MPA is necessary because the small size of the original 2016 proposal (Figure 4A) is unviable in terms of meeting the required protection standard. However, this is a very dramatic increase in area that has been included outside of the original Forum's consultation area (Figure 4B).
- g) The proposed area in the Tuhawaiki Type 2 MPA now includes significant rocky areas between the Otaio and the Waihao Rivers (Figure 4 B), and raises the proportion of reef habitat (overall of the forum region, Figure 3) from 0.5% in the 2016 proposal to 2.3% in the 2020 proposal.
- h) The fisheries restrictions in the Tuhawaiki Type 2 MPA removes all net fishing and mobile bottom fishing gear (including recreational dredging), it also restricts recreational line fishing (including kontiki) to five hooks.
- i) Fisheries New Zealand estimates that establishment of this Type 2 MPA would displace an average of approximately 110 tonnes of catch per year (\$463 000 estimated export value per year), mainly from bottom trawling.
- j) In their advice to the Ministers of Fisheries and Conservation, Fisheries NZ noted that the southern extension the Tuhawaiki Type 2 MPA was included after consultation and that it significantly increased the impact on fishers (Table 1 - 2a). They also noted that the extension is not necessary to ensure representation of habitats and recommended that it be removed from the 2020 proposal for the SEMPA.

B1. Waitaki Marine Reserve

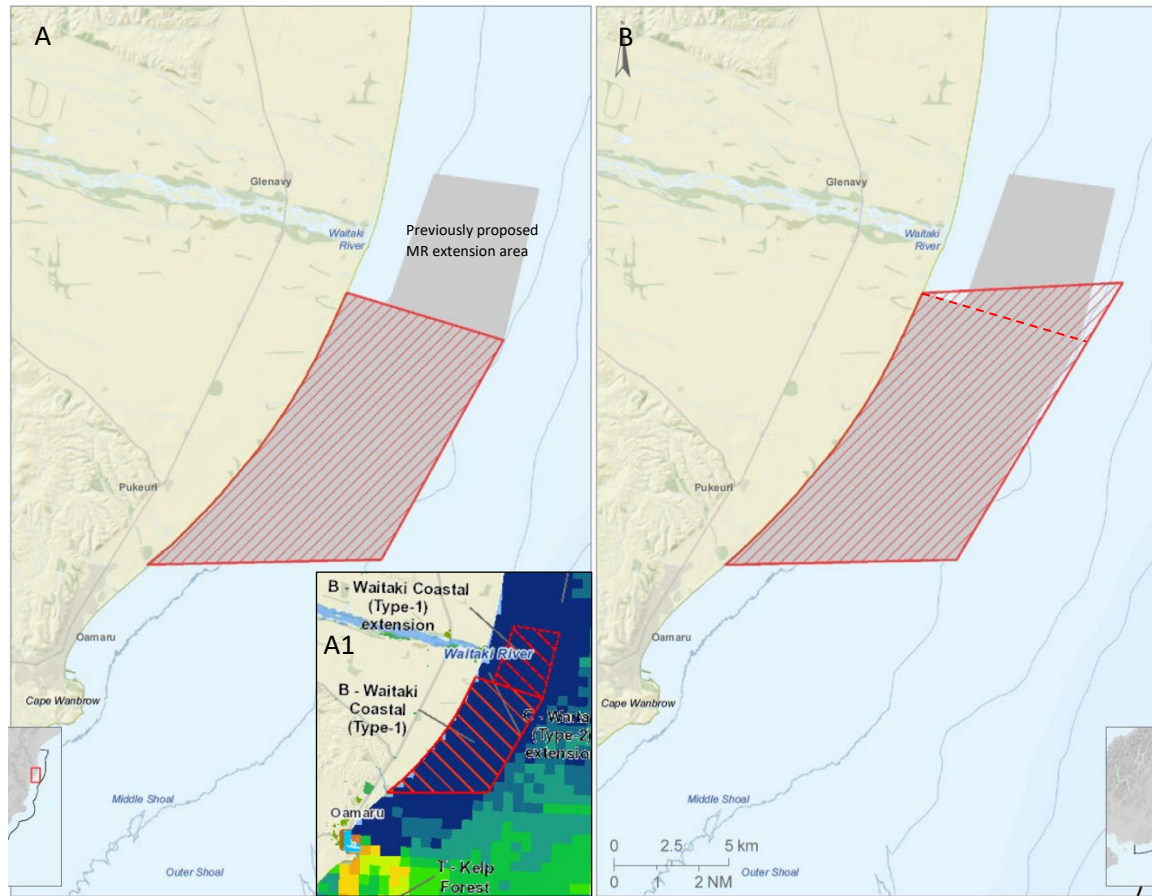


Figure 5. The Waitaki Coastal Marine Reserve proposed in 2016 (A, plus extension A1) and in 2020 (B).

- In 2016 the NZSFC supported the Waitaki Coastal Marine Reserve proposal (88.4 km²) but opposed the extension (31.4 km²) off the mouth of the Waitaki River (Figure 5A1).
- In the 2020 proposal, the extension has been reduced to a wedge that extends the Waitaki Marine Reserve (101.3 km²) about 3 km north on the offshore boundary (Figure 5B).
- The remaining area of the previously proposed extension to the Waitaki Coastal Marine Reserve (Figure 5A1) has been succumbed into the Moto-tere-a-torehu Type 2 MPA (Figure 6).
- The Waitaki Marine Reserve is a Type 1 ‘No Take’ MPA.
- The Waitaki Marine Reserve does not include the Waitaki river mouth, although the wedge extension to the northern boundary would include some areas approximately 2 km off the mouth.
- Small amounts of commercial Danish seining, mixed trawling and set netting currently occur in the proposed Waitaki Marine Reserve area (\$21 500 estimated export value per year).
- The forum notes that most recreational fishing occurring in the area takes place at the river mouth for Kahawai and Salmon, which are not included in the proposed Waitaki Marine Reserve area.

C1. Moko-tere-a-torehu Type 2 MPA

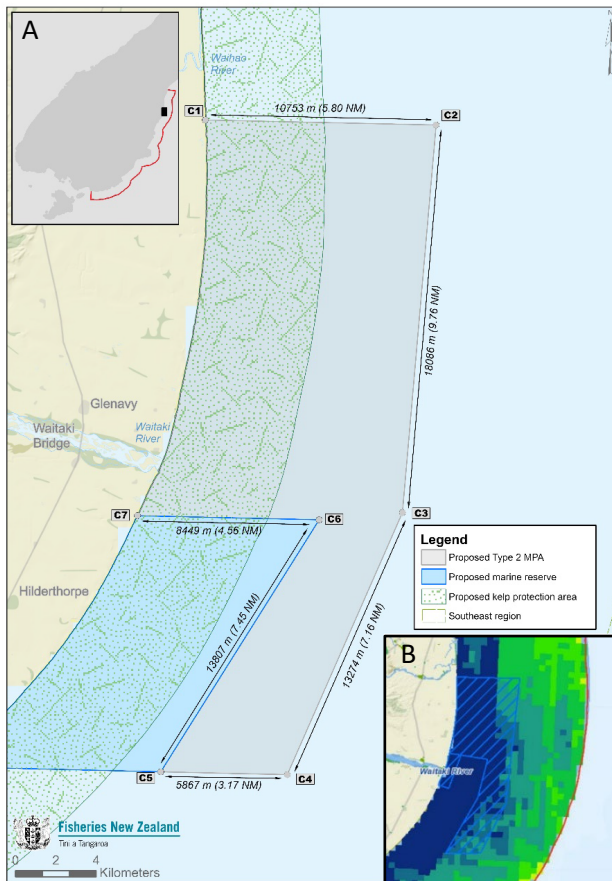


Figure 6. Locations of the 2020 proposed Moko-tere-a-torehu Type 2 MPA and the adjacent marine reserve and kelp protection area (A). The area proposed in 2016 (B).

- Formally known as the Waitaki Offshore Type 2 MPA (224 km²) and extension (10.5 km²) this site was opposed by the NZSFC in their 2016 submission (Figure 6B).
- The area proposed for the Moko-tere-a-torehu Type 2 MPA in 2020 is now 254 km² due to the inclusion of most of the extension previously proposed for the Waitaki Marine Reserve (Figures 5A1).
- Bottom trawling, dredging, Danish seining, set netting, and mid-water trawling would be prohibited for the Moko-tere-a-torehu Type 2 MPA.
- The Moko-tere-a-torehu Type 2 MPA is an extension of the Waitaki Marine Reserve (Figure 5) designed to protect the unique area around the river mouth which supports several biogenic habitats of high biodiversity value (e.g., kelp and rhodolith beds).
- The proposal to extend the Moko-tere-a-torehu Type 2 MPA to incorporate the area of the formally proposed Waitaki Marine Reserve (see Figure 5A1 – Waitaki Extension) will significantly reduce the impact on customary and recreational fishing associated with the river mouth, particularly salmon, trumpeter and whitebait fishing.
- The Waitaki river mouth said to deliver high level of nutrients which attracts many foraging species and has been identified as possible habitat important for juvenile fish species, Hector's dolphins, Little Blue Penguins and foraging seabirds.
- The Moko-tere-a-torehu Type 2 MPA is an important generally for foraging of seabirds, Blue Penguins and Hector's dolphins.
- The forum state there is no commercial dredging taking place in the proposed area currently and most of the fishing effort is by set netting and Danish seine (approximately 35 tonnes per year).
- The forum state there is little/no recreational dredging of set netting in the area, and there is little evidence that the proposed fishing restrictions of the Moko-tere-a-torehu Type 2 MPA would have a significant impact on recreational fishing interests.
- The Waitaki river mouth generates a unique environment found nowhere else and is the only habitat of its kind encompassed in the MPA proposals.

D1. Te Umu Koau Marine Reserve

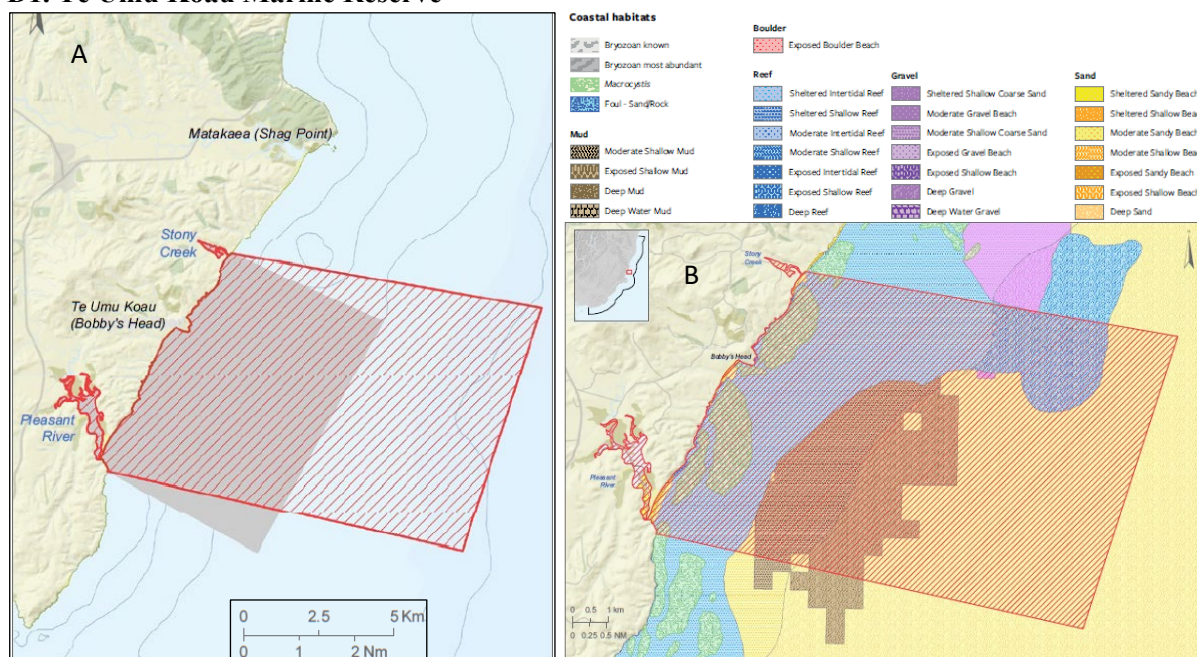


Figure 7. The 2016 proposed Pleasant River to Stony Creek Marine Reserve (Option 2) in grey and the 2020 proposed Te Umu Koau Marine Reserve in red (A). Habitat map of the Te Umu Koau Marine Reserve area (B).

- The former Peasant River to Stony Creek Marine Reserve was supported by NZSFC in the 2016 proposal (Figure 7A, grey area).
- However the area proposed in the 2016 Pleasant River to Stony Creek Marine Reserve proposal (Option 2 - 51.3 km²) was considerably smaller than the area now proposed for the Te Umu Koau Marine Reserve (96 km²) in 2020, the eastern boundary has been extended approximately 5 km seaward (Figures 7A).
- The Te Umu Koau Marine Reserve is a Type 1 'No Take' MPA.
- The Te Umu Koau Marine Reserve covers kelp forests, exposed reef shelves, subtidal concretions (Moeraki boulders), estuarine areas, rare examples of volcanic rock reefs and sea caves (Figure 7B).
- The Forum acknowledges that the Te Umu Koau Marine Reserve will have a major impact on recreational and commercial paua and rock lobster fishing (\$2 million estimated export value per year). They state this effect of displacement will be lessened for rock lobsters as they are migratory and can still be caught when they leave the marine reserve.
- This zone is close to the local university marine laboratory and would be useful for research.
- Limited information is available on the use of this site for recreational fishing, but it is likely that the area is used for floundering, whitebaiting, trout fishing, collecting pāua, and targeting reef fishes and rock lobster.
- The forum states that the adverse effects on overall recreational opportunities would likely be low as alternative locations are available nearby. However, this will increase both commercial and recreational fishing pressure in the remaining local reef area.
- In advice to the Ministers of Fisheries and Conservation, Fisheries NZ noted that the Te Umu Koau Marine Reserve is considerably larger than the site consulted on and that this significantly increased the impact on fishers (Table 1 - 2a). They recommended that the Te Umu Koau Marine Reserve either be progressed in the form the Forum originally consulted on (Figure 7A – in grey), or alter the boundaries to reduce the impact on the rock lobster fishery (while ensuring adequate habitat representation) for the 2020 proposal and consultation (Table 1 - 2a).
- It is also likely that CRAMAC 7 will apply to the High Court for a judicial review over the Te Umu Koau Marine Reserve as 20.7% of the catch in CRA 7 is taken from the proposed area.

E1. Kaimata (Type 2 MPA)

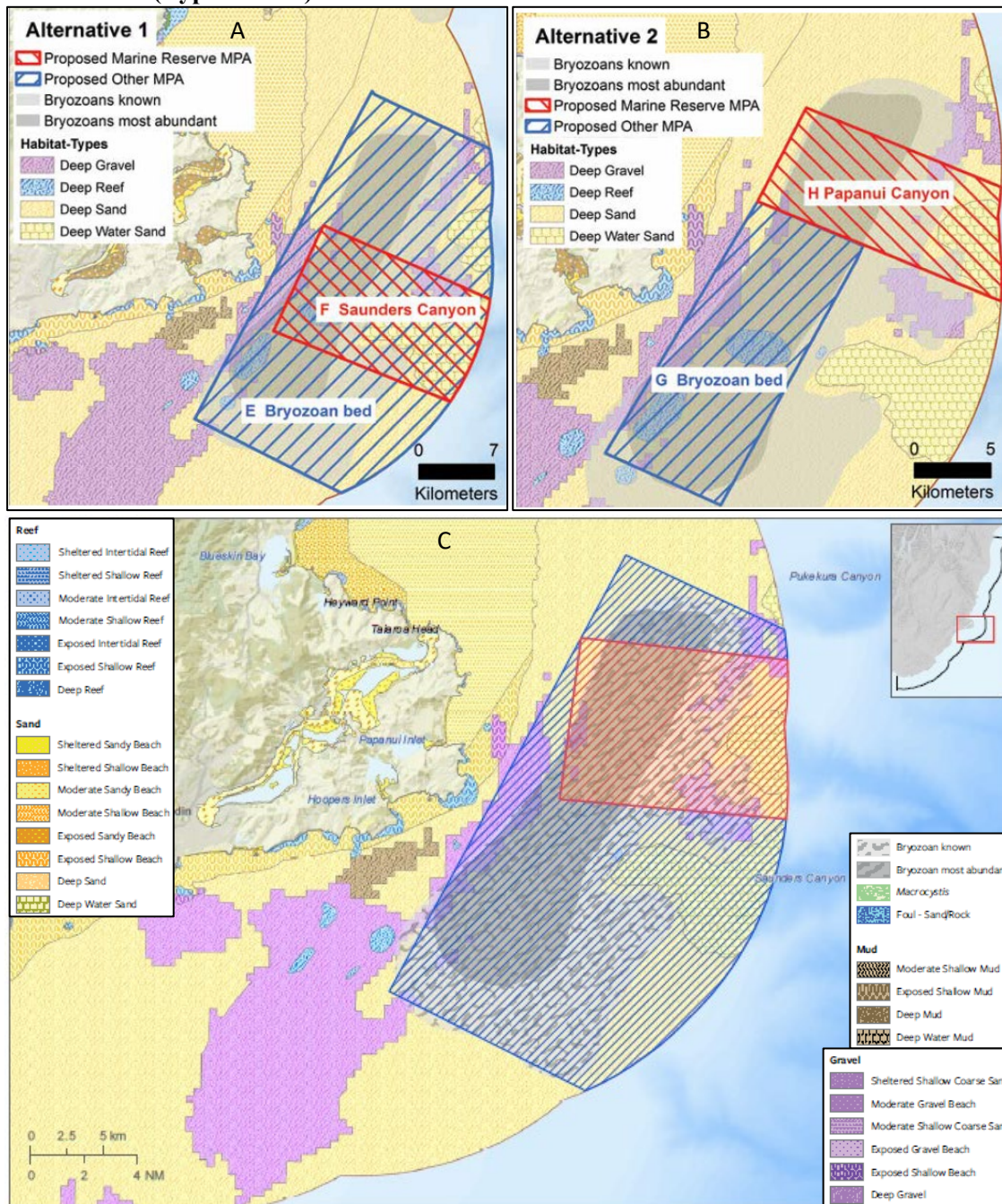


Figure 8. The protection areas proposed in 2016 for the Otago Shelf and Canyons (A-alternative 1, B-alternative 2). Location of the 2020 proposed Kaimata Type 2 MPA is shown in blue and the locations of the Papanui Marine Reserve is in red (C). The habitat map is also shown (C) – key given in Figure 7.

- In the 2016 proposal for the Otago Shelf and Canyons Type 2 MPA there were two alternatives offered and the NZSFC opposed alternative one (Figure 8A - 495 km²) and supported alternative two (Figure 8B – 138 km²).
- In the 2020 proposal, the Kaimata Type 2 MPA is 450 km² (Figure 8C) and is essentially the same as the alternative that the NZSFC opposed in their 2016 submission (Figure 8A).
- Bryozoan beds represent an important biogenic habitat in this area, supporting diverse invertebrate communities and juvenile fishes. The proximity of deeper waters due to the narrow shelf and the abundance of organisms using bryozoans as habitat also creates feeding grounds for larger animals such as New Zealand sea lions and yellow-eyed penguins (hoiho).
- This Type 2 MPA is designed to complement the proposed Papanui Marine Reserve and protect rare and nationally important bryozoan thickets around the Saunders and Papanui Canyons. It

protects approximately 65% of the known and potential extent of habitat-forming bryozoans off the Otago Peninsula.

- e) The Kaimata Type 2 MPA would prohibit dredging, all trawling, Danish seining, set netting and purse seining.
- f) Most of the commercial fishing in the proposed Kaimata Type 2 MPA is set netting and trawling (\$77 500 estimated export value per year).
- g) There is currently a voluntary trawl ban to protect the Bryozoan fields.
- h) The forum state that the establishment of this Type 2 MPA would have a low impact on recreational fishers.

H1 Papanui Marine Reserve (See Figure 8)

- a) In the 2016 proposal for the Otago Shelf and Canyons Marine Reserve there were also two alternatives and the NZSFC opposed alternative one around the Saunders Canyon (Figure 8A - 186 km²) where most recreational fishing occurs, and supported alternative two around the Papanui Canyon (Figure 8B – 106 km²).
- b) In the 2020 proposal the area of the Papanui Marine Reserve is 167 km² (Figure 8C) and is similar but 56% larger than the alternative supported by NZSFC in their 2016 submission (Figure 8B).
- c) The Papanui Marine Reserve is a Type 1 'No Take' MPA.
- d) The Papanui Marine Reserve covers the Papanui Canyon drop off and a large portion of the habitat considered by the forum to be ecologically significant and to hold unique ecosystems important to the region and nationally.
- e) This site contains three deep-water soft-sediment habitat types and one biogenic habitat (bryozoan thickets). It is approximately 15 × 11 km, which is considered a suitable size for allowing the maintenance and/or recovery of the biodiversity associated with these habitat types.
- f) This marine reserve would afford full protection to 30% of the known distribution of habitat-forming bryozoans off the Otago Peninsula.
- g) Only a modest amount of commercial fishing occurs in the Papanui Marine Reserve (potting, long lining, set netting, and some dredging, total \$122 000 estimated export value per year).
- h) Commercial dredging for Queen Scallops is carried out on the ridge between the Saunders and Papanui Canyons, and the proposed Papanui Marine Reserve would provide partial protection from the impacts of this destructive commercial fishing activity (Figure 8C).
- i) There is currently a voluntary trawl ban to protect the Bryozoan fields.
- j) The establishment of the Papanui Marine Reserve would have a relatively low impact on recreational fishers who fish mainly the Saunders Canyon (Figure 8).
- k) By protecting a range of representative habitats and unique features, this site would protect significant biodiversity, and provide an important representative area for research and scientific study.

II Ōrau Marine Reserve

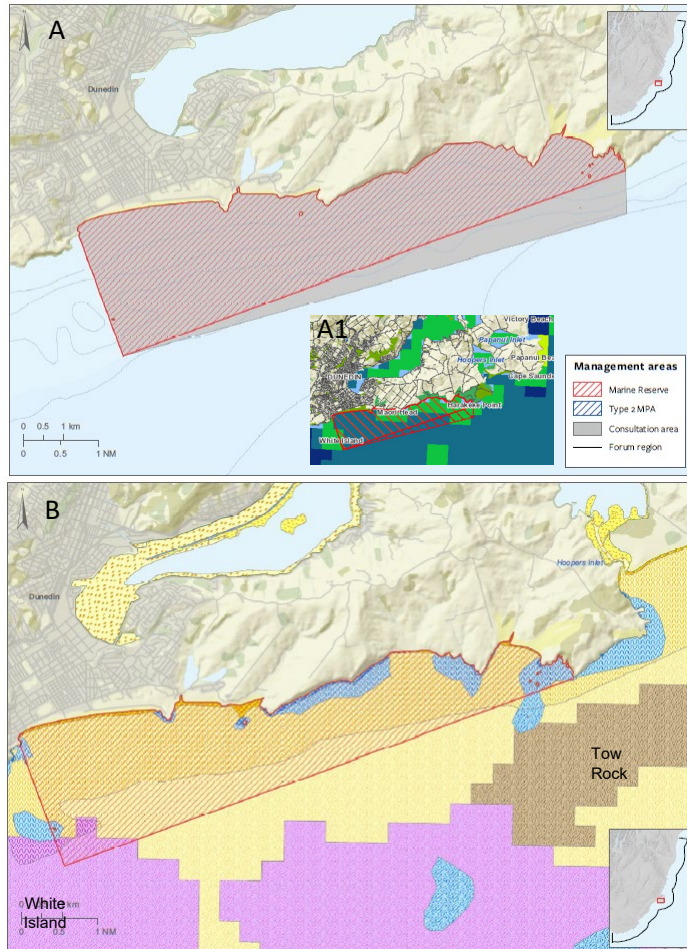


Figure 9. The Ōrau (Marine Reserve) area proposed in 2020 (A), 2016 (A1), and a habitat map (B). Habitat key given in Figure 7.

- a) The 2016 proposal for the Harakeke Point to White Island Marine Reserve had two alternatives (Figure 9A – grey versus red areas), both were opposed by the NZSFC in their submission.
- b) The Ōrau Marine Reserve proposed in the 2020 consultation is 28.8 km², the smaller of the two alternatives proposed previously (Figure 9A).
- c) The Ōrau Marine Reserve is a Type 1 ‘No Take’ MPA.
- d) This site has been proposed due to its high levels of biodiversity and a diverse range of habitats.
- e) Large populations of many seabird species in the area, including yellow-eyed penguins, little blue penguins, red billed gulls, fairy prions and terns. It is also a known area for seals and sea lions.
- f) There is limited commercial rock lobster fishing in the proposed Ōrau Marine Reserve area (\$27 300 estimated export value per year).
- g) Because it is near Dunedin City the proposed Ōrau Marine Reserve is a popular recreational fishing area, particularly for paua harvesting, spear fishing, and both shore and boat line fishing.
- h) White Island is an especially popular recreational fishing location, although most of this fishing takes place on the west of the island which is not covered by the MPA (Figure 9).
- i) The viability of the Ōrau Marine Reserve is questionable given its small size and the potential for high fishing pressure on the boundary. In addition to White Island’s accessibility, the proposed area now does not include Tow rock (Figure 9) which seriously limits the Marine Reserve’s ability to protect deeper rocky reefs. The Marine Reserve is likely to be too small to withstand significant fishing pressure at both ends of its reef systems.
- j) There has been a prohibition on commercial paua harvest on parts of the coast within this area for the last 30 years.

K1 Okaihae Marine Reserve

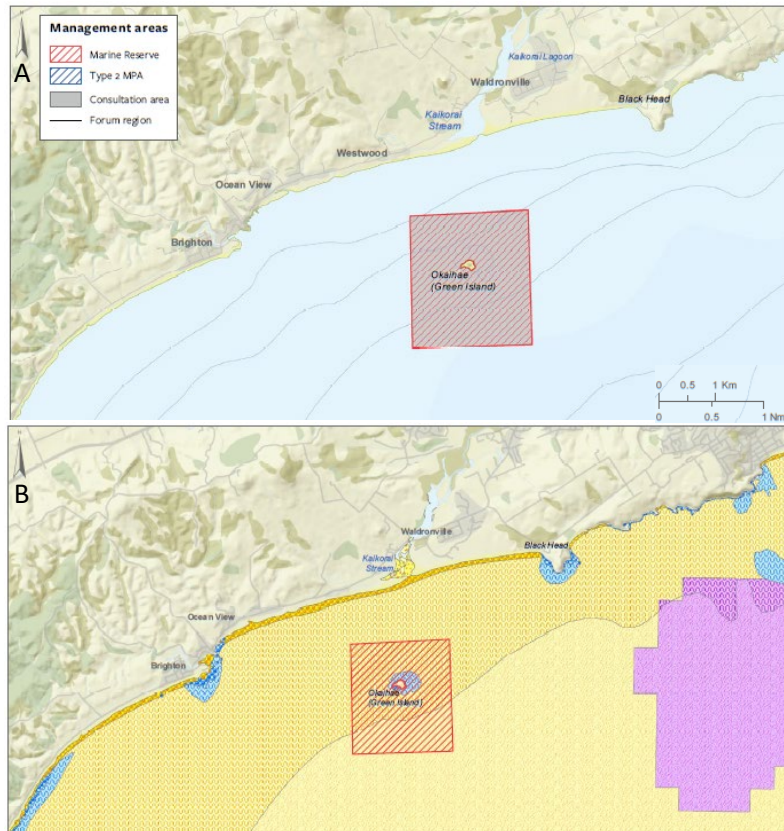


Figure 10. The Okaihae Marine Reserve area proposed in 2020 (A) and habitat map (B). Habitat key given in Figure 7.

- The 2020 proposal for the Okaihae Marine Reserve is the same as the 2016 proposal that was opposed by the NZSFC in their previous 2016 submission (Figure 10A).
- The Okaihae Marine Reserve protects intertidal and subtidal reefs, and subtidal deep and shallow sand habitats (Figure 10B).
- The Okaihae Marine Reserve is a Type 1 ‘No Take’ MPA.
- The Okaihae Marine Reserve (5 km²) is the smallest of the proposed MPAs, but it would encompass the entire reef system around Green Island (Okaihae).
- Although smaller than the Ōrau Marine Reserve (Figure 9B), the Okaihae Marine Reserve (Figure 10B) it is not compromised by accessibility to connected reef systems and is more viable for the maintenance and recovery of the biodiversity associated with its reef habitats.
- Green Island is a nature reserve and a permit is required to land. It is known for large number of seabirds, including sooty shearwater, little blue penguin, red-billed gull, fairy prion, yellow-eyed penguin, little cormorant and the Otago shag. It is also frequently visited by seals and sea lions and the forum (especially DoC) see a unique opportunity to create an “iconic place” with the existing nature reserve extending through to the marine reserve.
- The rocky reefs in the Okaihae Marine Reserve area include forests of bull kelp in the shallows with an understorey of other seaweed species beneath. This provides habitat for rock lobster and many reef fish species including moki, trumpeter and greenbone (butterfish). Hāpuku/grouper may once have been commonly found on the Green Island reefs.
- There is limited commercial rock lobster fishing in the proposed Okaihae Marine Reserve area (\$15 500 estimated export value per year).
- Because of its location near Dunedin City, the proposed Okaihae Marine Reserve Marine Reserve is a popular recreational fishing area for spear and line fishing off the west of the island.

L1 Whakatorea Type 2 MPA

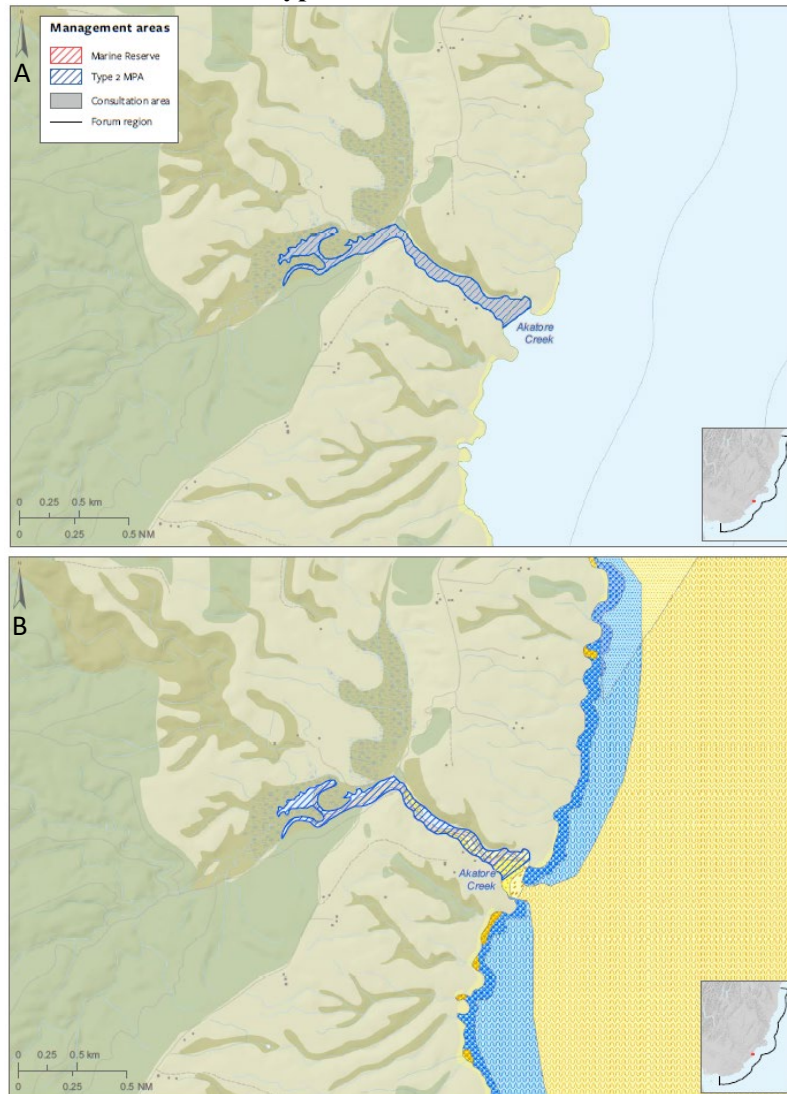


Figure 11. The Whakatorea Type 2 MPA area proposed in 2020 (A) and habitat map (B). Habitat key given in Figure 7.

- The 2020 proposal for the Whakatorea Type 2 MPA (0.3km²) is the same as the proposed Akatore estuary Type 2 MPA opposed by the NZSFC in their 2016 submission.
- The Whakatorea Type 2 MPA restrictions prohibit dredging, set net fishing, commercial line fishing, mechanical harvesting (including spades for digging shellfish), fyke nets, and whitebaiting.
- The estuary was chosen as it is bordered by protected land to the north, which gives this area a greater chance of recovery as opposed to the estuaries surrounded by farmland.
- The only commercial fishing is an estimated 1.75 tonnes of eels per year.
- Set netting for flounder and collection of cockles are the two main recreation harvests in the area. Set netting would no longer be allowed and cockles could only be collected by hand.
- Fisheries New Zealand considers that the potential impacts on recreational fishers would likely be low. The forum report noted that those who were opposed to this MPA considered that local recreational fishers would be adversely affected.

M1 Hākinikini Marine Reserve

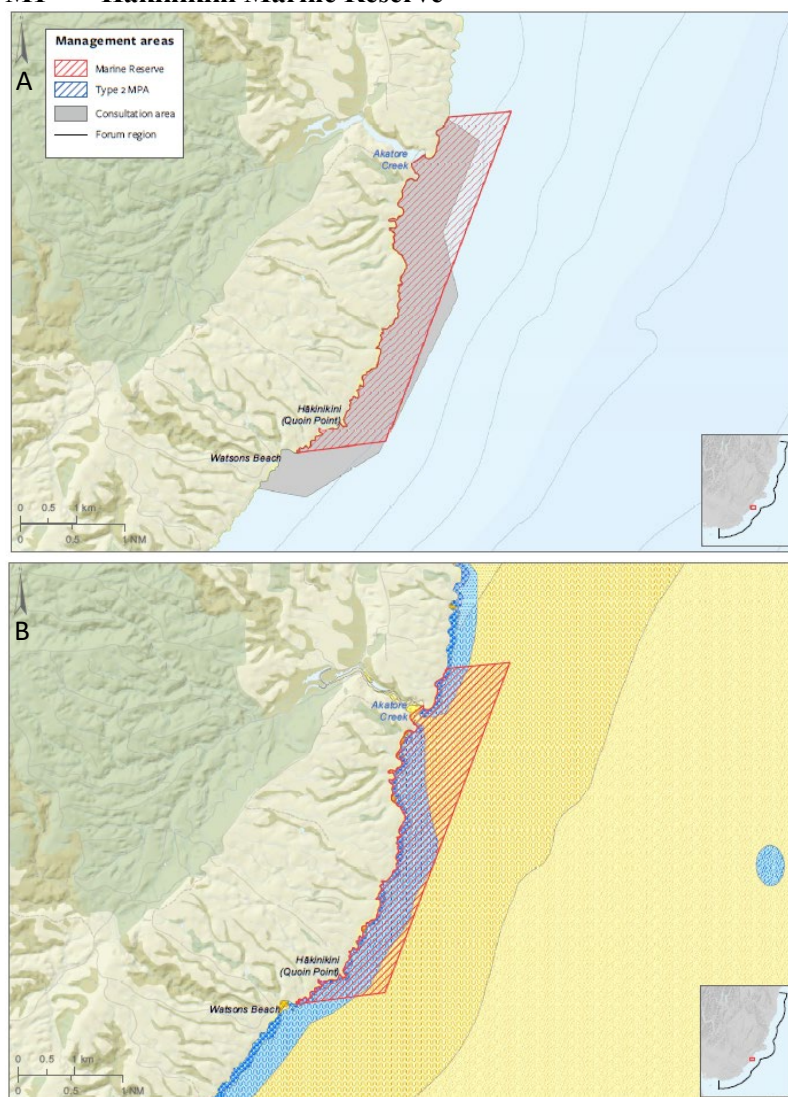


Figure 12. The Hākinikini Marine Reserve area proposed in 2020 (A) and habitat map (B). Habitat key given in Figure 7.

- The 2020 proposal for the Hākinikini Reserve (Figure 12A – 5.9 km² shown in red) is essentially the same as the 2016 Akatore Marine Reserve proposal (Figure 12A – 6.3 km² shown in grey) with some boundary changes. The NZSFC opposed this Marine Reserve site in their previous submission in 2016.
- The Hākinikini Marine Reserve area incorporates both reef and sandy beach habitats (Figure 12B) and provides connectivity with estuarine habitats in the adjacent Type 2 MPA in the Akatore estuary (Whakatorea – Figure 11).
- The Hākinikini Marine Reserve is a Type 1 ‘No Take’ MPA.
- The forum note that the Hākinikini Marine Reserve area contains a rare rock (schist) that creates different habitat than other kinds of rocks. This is supposed to be good habitat for intertidal and subtidal species.
- A small historical fishing town is found nearby at Taieri, the area further out from this reserve has been left unprotected for this community as they are only able to use small boats to get in and out of the Taieri river so cannot travel long distances.
- There is a considerable amount of rock lobster potting and flat fish trawling that would be displaced by the Hākinikini Marine Reserve (\$239 300 estimated export value per year).
- The forum notes that recreational fishing (particularly paua and shore-based fishing) is likely to be impacted from this reserve. The area is frequently used by the recreational fishers from local holiday homes and Taieri.

Q1 Tahakopa Type 2 MPA

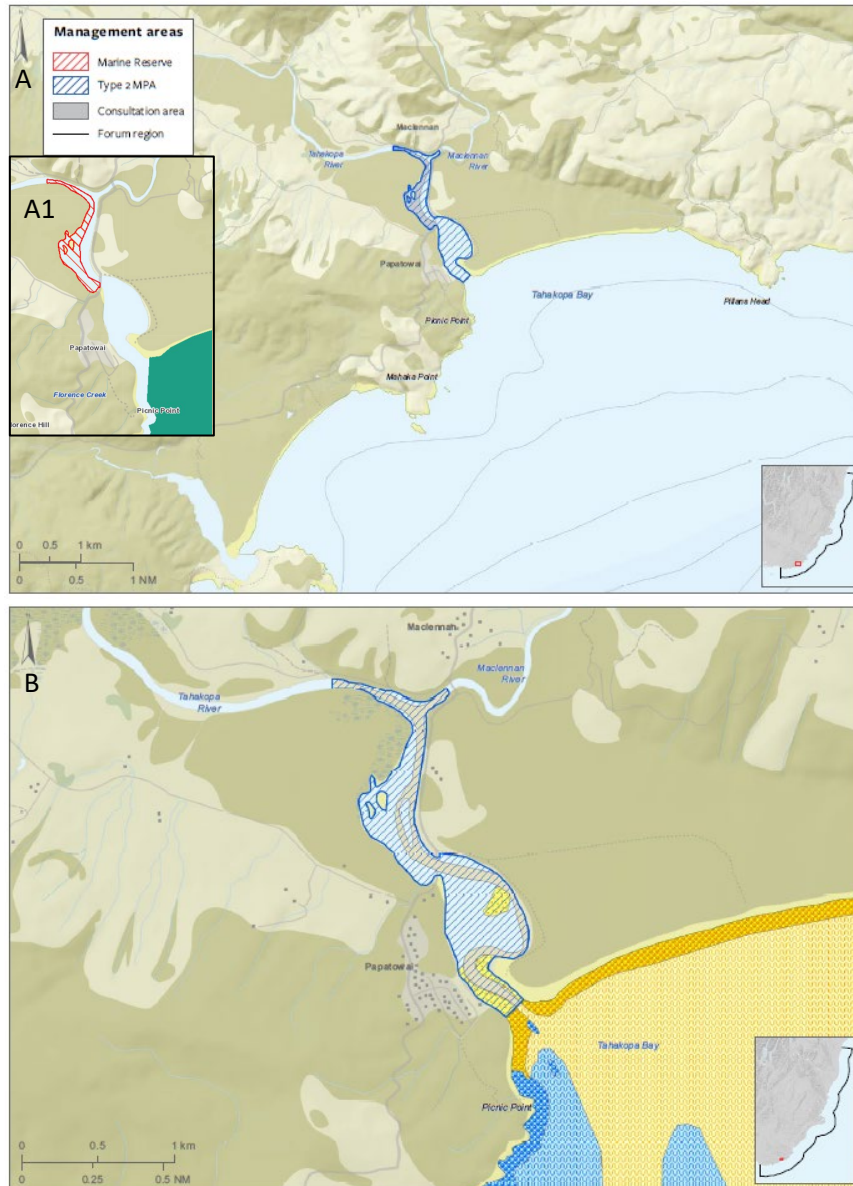


Figure 13. The Tahakopa Type 2 MPA proposed in 2020 (A) and habitat map (B). Habitat key given in Figure 7.

- The 2020 proposal for the Tahakopa Type 2 MPA (Figure 13A - 0.7 km²) extends and replaces the 2016 proposal for the Tahakopa estuary Type 1 Marine Reserve (Figure 13A1 - 0.3 km²) that the NZSFC opposed in their previous 2016 submission.
- The Tahakopa estuary is a tidal lagoon and comprises estuarine habitat that includes mud flats and sandy beach habitat (Figure 13 B).
- The western side of the Tahakopa estuary has unmodified mud flats with a small area of salt marsh turf and is of special significance for wading birds and whitebait spawning. Salt marsh has been removed from elsewhere in the estuary by human activities.
- This area was proposed as it is reasonably undeveloped in its surroundings, therefore it is less effected by runoff.
- The Tahakopa estuary Type 2 MPA would prohibit dredging, set netting, commercial line fishing, mechanical harvesting (including spades for collecting shellfish) and fyke net fishing.
- The only commercial fishing is an estimated 2.75 tonnes of eels per year.
- There is some recreational set netting of founder and collection of shellfish that would be impacted.

T1 Arai Te Uru kelp protection area

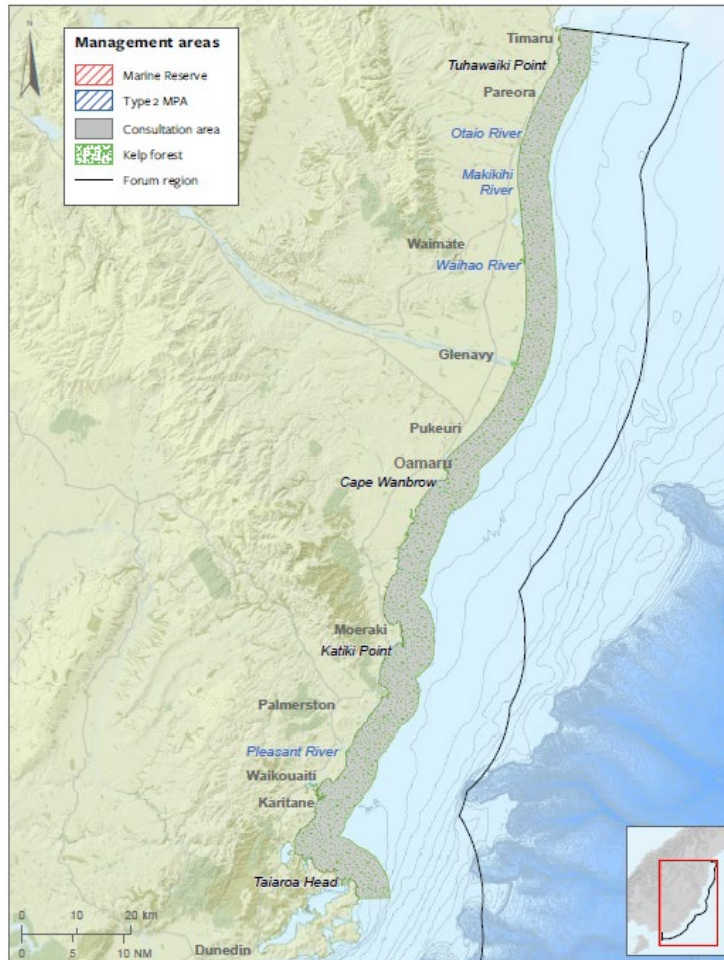


Figure 14. The Arai Te Uru kelp protection area proposed in 2020

- a) Bladder kelp forests are important biogenic habitats which support biodiversity and provide ecosystem services in the southeast region. They are important for carbon fixation (reducing atmospheric carbon), coastal erosion mitigation, and providing support to rock lobster (particularly the settling puerulus larvae), greenbone (butterfish) and many other coastal species.
- b) Decline in kelp forests can be linked to increased sedimentation from land and other stressors, and kelp harvesting adds an additional risk to the ecological value that it provides.
- c) Recreational fishing is not effected and the Arai Te Uru kelp protection area.
- d) This site was proposed to prevent kelp forests from being affected by commercial harvesting if harvesting operations are developed in the SEMPA.
- e) The Arai Te Uru kelp protection area is within quota management area KBB3G, which extends from Slope Point northwards to the mouth of the Clarence River. There are currently six KBB3G quota holders.
- f) Fisheries New Zealand estimates that only a small amount of attached bladder kelp is currently harvested from the proposed Arai Te Uru kelp protection area this area (the main harvest occurs around Banks Peninsula).
- g) It is expected that Rodger Beatie as a major quota holder will lodge for a judicial review.