



FOR CONSULTATION:
**PROPOSED
MARINE PROTECTED
AREAS
FOR NEW ZEALAND'S
SOUTH ISLAND
SOUTH-EAST COAST**

PUBLIC CONSULTATION DOCUMENT 2016

VOLUME I



**SOUTH-EAST
MARINE PROTECTION
FORUM**
ROOPU MANAAKI
KI TE TOKA

Cover: Tunnel Beach, Otago Peninsula.
Photo: John Barkla

FOR CONSULTATION:

PROPOSED MARINE PROTECTED AREAS FOR NEW ZEALAND'S SOUTH ISLAND SOUTH-EAST COAST

PUBLIC CONSULTATION DOCUMENT 2016

The South-East Marine Protection Forum's Consultation Document has been published in one volume with supporting background information published in a second volume.

Volume I

Volume I is the Consultation Document. It provides an overview of the process, the background to the Marine Protected Areas (MPA) Policy, and the proposed sites for your consideration.

It also provides a Submission Form located in the inside back cover pocket.

Submissions must be received by 5.00pm on Tuesday 20 December 2016.

Volume II

Volume II provides background information on the South-East Marine Protection Forum and on the Forum region's social and natural environment. It also includes all appendices, many of which are referenced in Volume I.

Both Volume I and Volume II are also available online at www.south-eastmarine.org.nz

Te Reo Māori

In the Public Consultation Document it is important to note the use of 'ng' for iwi in general and the 'k' for southern Māori in particular. In the south of the South Island the local Māori dialect use a 'k' interchangeably with 'ng'. The preference is to use a 'k', so southern Māori are known as Kāi Tahu, rather than 'Ngāi Tahu'.

VOLUME I



Akatore Coast.
Photo: Fergus Sutherland

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Ahakoā kia pā te upoko o Te Moana-Tapokopoko-a-Tawhaki ki ngā takutai o Te Waka-o-Aoraki, engari, i tākekeā te kupenga a Tahu kia oioi i roto i te nekeneke tai

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Although the shores of Te Waipounamu may be buffeted by the turbulent currents of the great waves of the Southern Ocean, the fishing net of Tahu has been made flexible so as to move at one with the tides

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FOREWORD FROM THE CHAIR

When the South-East Marine Protection Forum / Roopu Manaaki ki te Toka was formed in the middle of 2014, with support from the Department of Conservation and the Ministry for Primary Industries, it was asked to recommend to government what sites, from Timaru down to Waipapa Point in Southland, are deserving of marine protection and what type of marine protection the sites need.

As the newly appointed Chair of the Forum, it was the beginning of a voyage of discovery of the tāoka that we are endowed with on the south-east coast. On this voyage with me is a diverse group of people who I have come to admire for their commitment of time, and energy and their ability to respect each other's points of view. I refer of course to the Forum members who have tirelessly represented their communities' perspectives on what values are important to them.

Collectively the Forum agreed that it was imperative that we provide opportunities for people to have their say so that our public consultation document and then final recommendations could be informed by the values held by the people who live by, work in and enjoy their coastal environment.

Along the way I have been privileged to witness the passion that many people have for the south-east coast and the many ways in which they interact with our marine environment. There's the historical connection that customary fishers have to the coast and their life long tradition of food gathering from the foreshore and the seabed, and who share with recreational fishers the joy of the catch and the simple pleasure of bringing home a feed for the family. There are the livelihoods of commercial fishers who may dive for pāua or weather storms to land a catch of blue cod or pots of lobster. There's regional pride in the marine mammals and seabirds that make their home here and which draw tourists from around the globe to admire. And then there are simply people who just love their coastal aspect, walking on the beach, fossicking, watching waves crash onto rocks or wash over the sand. The south-east coast is many things to many people.

This broad public appreciation is reflected in the abundant biodiversity of the south-east coast's marine environment. We are spoilt with giant kelp forests that provide habitat for many fish species and can boast deep water bryozoan thickets, rare in the world, that provide protection from predators for juvenile species.

It is not all just happenstance – it is about certain elements of nature that have fortuitously converged on our coast; subantarctic waters coming up and mixing with subtropical waters; deep offshore canyons in relatively close proximity to our shoreline; and inshore reefs and estuaries and, along with other natural phenomena, have all conspired to produce a unique ecosystem that supports a nutrient rich feeding ground for a diverse number of marine species.

People who have lived by and worked in the sea for decades have told us of the changes they have observed in the health and abundance of the biodiversity in the Forum region. The scientific community have been generous with their time to explain to us what they know about what is causing these changes, and threats to the resilience of the ecosystems in the future.

The Forum has been charged to plan for the posterity and protection of the region's marine biodiversity.

This public consultation document is the next step in that plan.

We would not have reached this point if it hadn't been for those in the community taking the time to tell us what they think. To each and every one I say thank you for your contributions. We launch this public consultation document confident that this spirit of community engagement will continue, and that the public submissions we receive will further shape the final recommendations that the Forum will present to government in order to best protect the biodiversity of our south-east coast.



Maree Baker-Galloway
South-East Marine Protection Forum Chair



Boulder Beach, Otago Peninsula.
Photo: John Barkla

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OVERVIEW

1. In 2014, the South-East Marine Protection Forum (Te Roopu Manaaki ki te Toka) was appointed by the Ministers of Conservation and Primary Industries to make recommendations for a network of marine protected areas for the south-east coast of the South Island, from Timaru to Waipapa Point (Figure 1). The Forum region is part of the Southern Coastal Biogeographic Region.
2. The Forum's work is part of New Zealand's international commitment to protecting biodiversity in order to help safeguard the long term viability of habitats and ecosystems. The Government objective that we have tried to meet is protection of each marine habitat type in the south-east region and our work has been informed by the Marine Protected Areas (MPA) Policy and Implementation Plan (Volume II, Appendix 1) and the Marine Protected Areas (MPA) Classification, Protection Standard and Implementation Guidelines (Volume II, Appendix 2).
3. Using a habitat classification system, 34 habitat types were mapped based on the habitat classification, and three biogenic habitats (kelp forest, bryozoan bed and seagrass).
4. The MPA Policy requires a network which will protect representative examples of the full range of marine habitats and ecosystems in the region and also outstanding, rare, distinctive or internationally or nationally important marine habitats and ecosystems. One example of each habitat type is to be fully protected in a marine reserve, as well as replicated in another MPA. The MPA Policy is underpinned by a commitment to minimise the adverse impacts of marine protection on existing users of the marine environment and on Treaty settlement obligations.
5. The Government appointed Forum is made up of 16 people who between them are representatives of manawhenua, commercial and recreational fishers, the environmental sector, science, tourism, and the wider community, as well as an independent chair. Most of us live in the south-east of the South Island, and we all have interests in and strong connections to the coastal marine environment.

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6. Since 2014, the Forum has worked hard on engaging with the community to find out peoples' aspirations for their coastline. We have held public meetings throughout the region, from Timaru down to Bluff. Forum members have each sought the views of their respective sectors to better understand sector views and ensure each sector has a voice at the table. At the same time, the Forum has developed a heightened awareness of the biodiversity values of the area.
 7. Using the information we have gathered from the community, from scientists, and from literature, along with our own knowledge and experience, Forum members have now developed 20 sites for potential protection from Timaru to Waipapa Point, in respect of which we must now formally consult, to get further information. Within some of the proposed sites we have also created options to be consulted on as alternatives.
 8. Each proposed site is either labelled Type 1 or Type 2. Type 1 sites are proposed as marine reserves or 'no take' areas. Type 2 sites are proposed as marine protected areas with restrictions specific to what is being targeted for protection; 'a fit-for-purpose' set of restrictions. Type 2 marine protected areas still allow some fishing and harvesting, but restrict specific fishing methods and other activities (e.g. mining) in the interests of biodiversity protection, particularly those that cause sea bed disturbance as outlined in Part 1 of this document.
 9. In our deliberations to date we have had to make some difficult choices about options for biodiversity protection. In particular, the Forum has had to carefully consider the impacts of potential marine protected areas on manawhenua and existing users.
 10. We have taken on board the views expressed to us by each sector, and we are presenting sites and options that are intended to accommodate people's concerns and where possible minimise impacts on people where there is a choice of sites.
 11. We are now extending an invitation to you to tell us what you think about the sites and options we have come up with. Your views and any information you choose to share will be crucial to the Forum when we shape our final recommendations to the Ministers of Conservation and Primary Industries.
 12. A submission form is included in the back of this document or you can use our online submission form at <http://bit.ly/OurSeaYourSayConsultation>
 13. The online SeaSketch form is the easiest way for you to make your submission, it allows flexibility for you to make comments about the areas up for consultation. Or, download a submission form at <http://south-eastmarine.org.nz>

Submissions must be received by 5.00pm on Tuesday 20 December 2016.

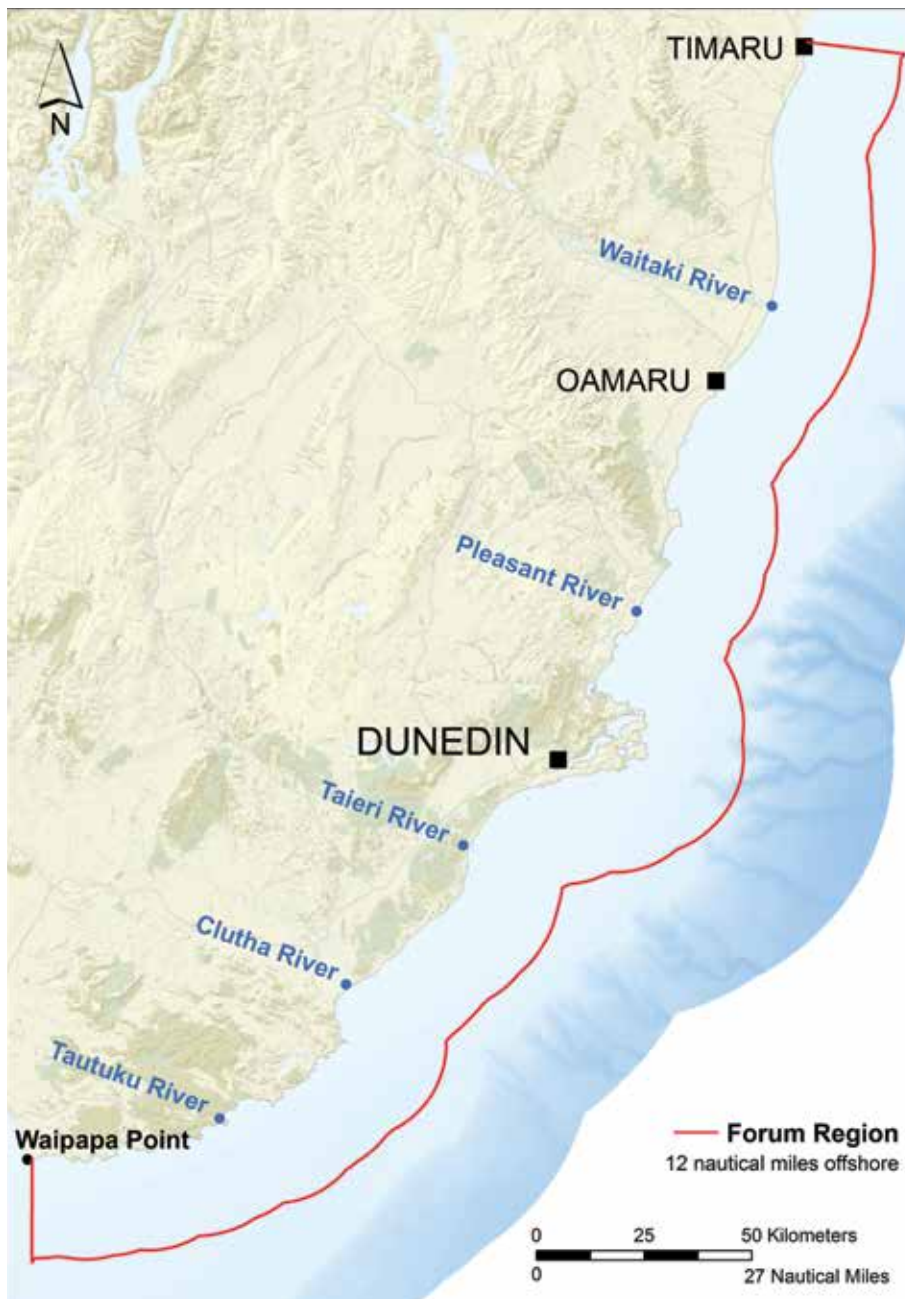


Figure 1: South-East Marine Protection Forum Region from Timaru to Waipapa Point

SOUTH-EAST MARINE PROTECTION FORUM PROCESS







Puketuroto/Hooper's Inlet, Otago Peninsula.
Photo: John Barkla

IMPLEMENTATION OF FORUM RECOMMENDATIONS

14. The Forum's final recommendations will be considered by Ministers. Any recommendations that Ministers accept will then go through their appropriate statutory processes.
15. Recommendations for marine reserves will be considered under the Marine Reserves Act 1971, fisheries restrictions considered under the Fisheries Act 1993 and other protection mechanisms under other relevant legislation or through special legislation.
16. Both the Marine Reserves Act and Fisheries Act have prescribed statutory public consultation requirements subsequent to the Forum's recommendations. After consultation, the final recommendation by the Minister of Conservation for a marine reserve requires concurrence with the Minister for Primary Industries and Minister of Transport. The marine reserve is established by Order in Council¹ made by the Governor General.
17. Fisheries restrictions also require public consultation with the final decision made by the Minister for Primary Industries. The Minister for Primary Industries then recommends to the Governor-General to enact the regulations by Order in Council. Regulatory changes are then notified by Gazette notice.
18. Special legislation has been used for some areas in New Zealand but to adopt this process requires a recommendation to Cabinet. This process requires justification as to why it needs to be enacted under special legislation. Such legislation is drafted specific to the area, requiring significant resourcing of both personnel and overall cost.
19. If the Ministers think special legislation is necessary to implement any of the Forum's recommendations instead of the Fisheries Act or Marine Reserves Act (or any other relevant legislation), they will advise Cabinet. The Government will then have to decide the priority to be given to that proposed special legislation, which has to go through the normal parliamentary processes before it can be implemented. Again, there are public consultation processes involved in developing new legislation.
20. For information about the proposed new marine protected area legislation, see *MPA Legislative Reform*, under Part 1 of this document.

¹ An Order in Council is "A type of legislative instrument that is made by the Executive Council presided over by the Governor-General." See <http://www.legislation.govt.nz/glossary.aspx>

TREATY OF WAITANGI LEGISLATION

21. The Crown has acknowledged Kāi Tahu rights, as manawhenua, under the Treaty of Waitangi through various legislation, and in the MPA Policy and MPA Guidelines. In addition, the Waitangi Tribunal has affirmed Kāi Tahu rights.
22. The nine tall trees (nine components) of the Kāi Tahu Treaty claim included mahika kai, which was a most significant aspect and formed an important basis of the claim. The Tribunal found Kāi Tahu had suffered considerable losses of mahika kai resources and practices. Not only did Kāi Tahu lose ownership and control over these important places, but the activities associated with settlement of the land and the development of pastoral farming, resulted in the wholesale destruction of the natural habitats which sustained these resources. Mahika kai was, and still is, a fundamental part of tribal life, and consequently was a significant part of the Ngāi Tahu claim.
23. The Conservation Act 1987, and legislation administered under it by the Department of Conservation, including the Marine Reserves Act 1971, must be *interpreted and administered as to give effect to the Treaty of Waitangi*.² Section 5 of the Fisheries Act requires that the Act be interpreted, and people exercising powers under it act in a manner consistent with the provisions of the Treaty of Waitangi (Fisheries Claims) Settlement Act 1992 (the Fisheries Settlement Act).
24. Prior to the Fisheries Settlement Act, New Zealand courts recognised customary fishing rights were not limited to those recognised in statute, but are also derived from the common law.³
25. The Fisheries Act also requires the Minister for Primary Industries to consult with Kāi Tahu and provide for their input and participation as tangata whenua (manawhenua) before doing certain things, such as closing an area for sustainability reasons, as well as to *have particular regard to kaitiakitanga*.
26. Part 9 of the Fisheries Act includes provision:
 - for the establishment and management of taiāpure local fisheries (ss 175-185)
 - for the making of regulations to recognise and provide for customary food gathering and the special relationship between Kāi Tahu, as tangata whenua (manawhenua), and places of importance for customary food gathering (s 186); and
 - for the temporary closure of any area to recognise or provide for use and management practices of Kāi Tahu, as tangata whenua (manawhenua), in the exercise of non-commercial fishing rights by improving the availability or size or both of a species of fish, aquatic life or seaweed or by recognising a customary fishing practice in an area.

² Section 4 of the Conservation Act 1987.

³ For example, see *Te Weehi v Regional Fisheries Officer (1986) 1 N.Z.L.R. 682*.

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27. In addition to the provisions of the Fisheries Act, Kāi Tahu customary fisheries are provided for through the Fisheries (South Island Customary Fishing) Regulations 1999 (the Regulations). Under the Regulations, Kāi Tahu may apply for mātaimai reserves and Tangata Tiaki / Kaitiaki may be appointed by the Minister for Primary Industries. Tangata Tiaki / Kaitiaki are able to issue customary authorisations for the take of species managed under the Fisheries Act. Tangata Tiaki / Kaitiaki for mātaimai reserves are able to make bylaws restricting or prohibiting fishing in the reserve for any purpose he / she considers necessary for the sustainable management of fisheries in the mātaimai reserve.
 28. Sections 255 to 268 of the Ngāi Tahu Claims Settlement Act 1998 (the Settlement Act) makes provision for nohoaka entitlements. Nohoaka are important as places where Kāi Tahu stay for the purpose of gathering fish and other natural resources. There are active nohoaka situated throughout the Forum region.
 29. Kāi Tahu consider all native species to be tāoka species.⁴
 30. Section 303 of the Settlement Act requires the Minister for Primary Industries to consult with Te Rūnanga o Ngāi Tahu (as an advisory committee) and to recognise and provide for the association of Kāi Tahu with tāoka species, whenever he or she makes policy decisions concerning the protection, management, use, or conservation of the tāoka species within the Ngāi Tahu claim area.⁵ Tāoka species acknowledged by the Crown are listed in Schedules 97 and 98⁶ to the Ngāi Tahu Settlement Act.
 31. Appendix 3 of the Settlement Act sets out statutorily acknowledged areas including some which occur in or border the Forum region. These statutory acknowledgements include text relating to Kāi Tahu fisheries in the areas, and other aspects of Kāi Tahu relationship with the areas.
 32. In the MPA Policy, planning principles 3, 4 and 5 provide recognition of the special status of manawhenua and Treaty rights in the marine protected areas planning process. These are:
 - Planning Principle 3: The special relationship between the Crown and Māori will be provided for, including kaitiakitanga, customary use and mātauranga Māori;
 - Planning Principle 4: MPA establishment will be undertaken in a transparent, participatory, and timely manner; and
 - Planning Principle 5: Adverse impacts on existing users of the marine environment should be minimised in establishing MPAs.

⁴ Refer to Volume II, Appendix 7: Tāonga Species NTCSA, Schedules 97 & 98.

⁵ Similar obligations fall on the Minister of Conservation under s 304 of the Settlement Act.

⁶ Part B lists shellfish species to which Ngāi Tahu are entitled to a right of first refusal to purchase quota (see s 307) if they are made subject to the Quota Management System. Schedule 97 lists other Tāonga Species – birds (such as titi and penguins), plants (including bull kelp) and marine mammals (such as New Zealand fur seals).

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33. The MPA Guidelines require the Forum to, *consider information on traditional use, values, current economic value and Treaty settlement obligations.*⁷ In addition, the MPA Guidelines require the Forum to *constructively involve and engage with tangata whenua...whose interest in marine areas may be affected by protected areas*⁸.
34. The planning principles and the MPA Guidelines appear consistent with the approach taken by the Waitangi Tribunal in regard to Treaty principles, including:
- the Tribunal's views as to how the Crown should balance its right to kāwantanga (right to govern) against its **duty of active protection**. For example, in a 2016 report (WAI 898)⁹, the Waitangi Tribunal made the following observation (at p 25):

In the end, the Tribunal's main recommendation in balancing kāwanatanga and active protection has been for the Crown to keep talking to its Treaty partner.
 - the Tribunal's views in regard to the **principle of partnership**. For example, in the WAI 898 report, the Tribunal said (at p 26):

The most common duties arising from this principle are that the partners must act with the utmost of good faith towards each other and be able to engage in meaningful consultation on matters that affect Māori.
35. There are many other Treaty principles that may also be relevant.

7 Refer to Volume II, Appendix 2: Marine Protected Areas: Classification, Protection Standard and Implementation Guidelines (page 22).

8 Refer to Volume II, Appendix 2: Marine Protected Areas: Classification, Protection Standard and Implementation Guidelines (page 16).

9 The Priority Report Concerning Maui's Dolphin, WAI 898, Waitangi Tribunal Report 2016.



**PART 1
BACKGROUND TO
MARINE PROTECTED
AREAS POLICY**

North Otago Coast.
Photo: John Barkla

WHY PROTECT MARINE BIODIVERSITY?

36. The term 'biodiversity' includes the living things in or on the sea such as seabirds, marine mammals, fish, shellfish, sponges, seaweed and micro-organisms, as well as the ecosystems within which they live and interact.
37. Marine biodiversity is important for a variety of reasons. Many of the species, habitats and ecosystems around the New Zealand coastline are unique and important. As well as their intrinsic value, they underpin our economy and society. People benefit directly and indirectly from biodiversity. Healthy ecosystems provide habitats for fish and shellfish, and help to regulate climate, among other functions.
38. Environment Aotearoa 2015¹⁰ notes the following pressures on the marine environment:
 - climate change
 - environmentally damaging fishing methods
 - overfishing
 - bycatch (the unintended capture of fish and other animals in fishing gear)
 - aquaculture
 - extraction of oil and minerals
 - waste
 - exotic species, and
 - run-off from urban and agricultural land.
39. Well designed marine protected areas can contribute to the long-term survival of habitats and ecosystems in a healthy and functioning state in the face of such pressures. They help habitats and ecosystems to adapt and recover in response to disturbance, both natural (such as storms) and human induced. Any reduction or loss of biodiversity, for example the extinction of a species, can detrimentally affect other species or even entire ecosystems.
40. Protected areas can provide a foundation for research and education that will provide benefits for our understanding of marine ecology, the impact of pressures on the marine environment, conservation efforts and biodiversity in general¹¹.
41. The purpose of the Marine Reserves Act 1971 is stated in section 3(1) of the Act:

It is hereby declared that the provisions of this Act shall have effect for the purpose of preserving, as marine reserves for the scientific study of marine life, areas of New Zealand that contain underwater scenery, natural features, or marine life, of such distinctive quality, or so typical, or beautiful, or unique, that their continued preservation is in the national interest.

¹⁰ Ministry for the Environment & Statistics New Zealand (2015). New Zealand's Environmental Reporting Series: Environment Aotearoa 2015. Available from mfe.govt.nz and stats.govt.nz

¹¹ For a summary of science relating to marine reserves, see Partnership for Interdisciplinary Studies of Coastal Oceans 2007. The Science of Marine Reserves (2nd Edition, International Version). www.piscoweb.org/files/images/pdf/SMR_Intl_LowRes.pdf

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42. New Zealand has made international commitments to protect marine biodiversity. Those commitments include conserving at least 10% of our coastal and marine area by 2020.¹²

MARINE PROTECTED AREAS PLANNING

43. Planning for the network is guided by two main documents: The Marine Protected Areas: Policy and Implementation Plan (the MPA Policy) and the Marine Protected Areas: Classification, Protection Standard and Implementation Guidelines (the MPA Guidelines)¹³.
44. Planning and establishment of the national network of marine protected areas is being approached on a regional, community basis. So far, planning and implementation has been undertaken for the West Coast of the South Island and for the Sub-Antarctic Islands.
45. Planning for the coastal network is being done at a regional level partly because there are variations in habitats on a broader scale. Divisions of the marine habitats at the broad scale are referred to as biogeographic regions or bioregions.¹⁴

Habitat Classification

46. Our knowledge of the marine environment is limited; we do not know exactly what lives in any particular place, because much of the ocean is hidden from our view and many places have not been studied to find out what is there. The science and commercial fishing sectors have been able to bring their first hand knowledge of habitats to the Forum as well as independent fisheries survey data, complemented by the depth of knowledge, including intergenerational, contributed by the other sectors represented on the Forum.
47. But, we understand that certain environmental factors influence where particular plants and animals can live; like the depth of the water, the type of substrate (rock or sand, for example) and how sheltered or exposed an area is. We have some information about these environmental factors, though our knowledge is still incomplete. That information has been used to develop a habitat classification system to reflect habitat types that approximate (or act as proxies for) biodiversity patterns and benthic features in some instances. The ultimate for spatial planning is to have all habitats mapped and confirmed by surveys but in the interim the proxies are used.

12 See Target 11 of the Aichi Biodiversity Targets. New Zealand is committed to this target as a signatory to the United Nations Convention on Biological Diversity 1992. The Aichi Biodiversity Targets were established in 2010 at the Conference of the Parties in Nagoya, Aichi Prefecture, Japan. New Zealand ratified the Convention on Biological Diversity in 1993.

13 Refer to Volume II, Appendices 1 and 2.

14 Planning for marine protected areas within New Zealand's 200 nautical mile exclusive economic zone outside the 12nm territorial sea is yet to be completed.

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48. This coastal classification system is used to help guide marine protected areas planning and includes 44 coastal habitats types¹⁵ based on five layers which categorise the physical environment. A separation of estuarine and marine environments is followed by further levels that include various combinations of depth, substrate and exposure.
 49. The Forum habitat map for the region (Figure 2) was completed using the process set out in the MPA Policy and MPA Guideline documents. Some habitat names in the guidelines were not used, or were modified in the final dataset for easier interpretation. The main difference between the guidelines and the habitat dataset is the use of 'Estuarine' as a prefix before any estuarine based habitat types; 'Estuarine' was included as a habitat type where no further substrate information was available for an estuarine area; and hard substrate features are simply called reefs (e.g. shallow exposed reef); deep water habitats were added as the planning area contained areas deeper than 200 m; areas of 'low' exposure are referred to as 'sheltered'.
 50. The Forum region includes 34 of those habitat types and three mapped biogenic habitats (kelp forest, bryozoan bed and seagrass).
 51. The MPA Policy directs that examples of each of the habitat types be protected in a marine reserve and replicated in another marine protected area to ensure that the full range of habitats and ecosystems is represented in the marine protected areas network, whilst minimising the adverse impact on the treaty partner and existing users, where there are alternatives.

¹⁵ Examples include: high exposure, intertidal and sandy beach. See Volume II, Appendix 2: Marine Protected Areas: Classification, Protection Standard and Implementation Guidelines (pages 36-37) for a list of the habitat types and further details of the categories used for substrate, depth and exposure.

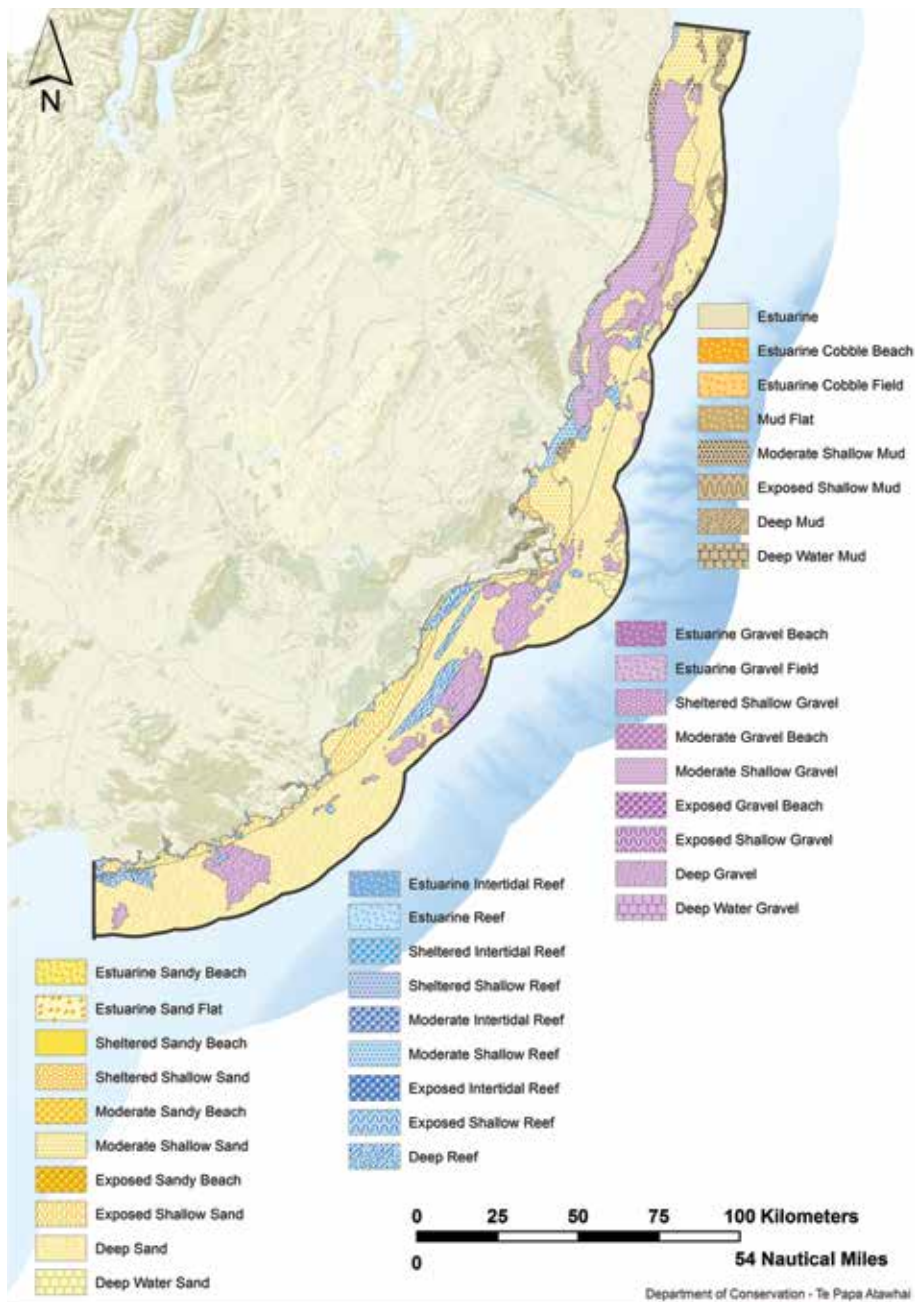


Figure 2: Map of MPA Policy Classified Habitats within the Forum Region

What is a marine protected areas network?

52. 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.
53. 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.
54. 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 to be connected by movement of eggs, larvae, juveniles or adults.¹⁶

Creating a Network

55. A single marine protected area within the region that would be large enough to protect all habitats, as required by the MPA Policy, is impractical because of the geography and potential impacts on existing users. For example, to meet the MPA Policy requirements in a single marine reserve may require it to reach from Karitāne to the Catlins. Clearly this is not going to be an acceptable solution and would impact many different existing users of the coastal environment. Instead, establishing a network of smaller marine protected areas may be a viable alternative in meeting biodiversity objectives while reducing the negative impacts of a single large reserve.
56. The MPA Guidelines include guidance¹⁷ on selecting areas for inclusion in the network, that includes:
 - Where possible, *protect the full range of marine habitats and ecosystems*: In addition to the habitat types identified in the MPA Guidelines, rare, distinctive or internationally or nationally important habitats and ecosystems should be included. This helps ensure that the network is fully representative.¹⁸
 - *Protect whole habitats and ecosystems*: It is desirable to protect whole habitats and ecosystems, particularly where these are small in scale such as an individual reef.
 - Four of the key considerations when designing a network of Marine Protected Areas, included in the Guidelines are: size, connectivity, replication and minimizing adverse impacts.

¹⁶ Refer to Network Design: Ecological Concepts at <https://south-eastmarine.org.nz/about/marine-protected-areas/>

¹⁷ See Volume II, Appendix 2: Marine Protected Areas: Classification, Protection Standard and Implementation Guidelines, Section 3.5 Design Guidelines Used to Identify and Select Potential Marine Protected Areas, in the MPA Guidelines for more detail.

¹⁸ Marine Areas selected for inclusion in reserves should reasonably reflect the biotic diversity of the marine ecosystems from which they derive. See Volume II, Appendix 1: Marine Protected Areas: Policy and Implementation Plan (page 16), Network Design Principle 1.

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57. The MPA Policy directs that a network of MPAs be established. An MPA network is most effective when each type of habitat is represented in more than one marine protected area, and when individual marine protected areas are big enough and close enough to each other to protect a large range of different species across all their life-stages. MPA networks can provide insurance against catastrophe; if one example of a habitat in a network is badly damaged, the habitat is still protected elsewhere (and may contribute to the recovery at the first site). In addition, because an MPA network is better able to take into account existing users, it will likely have less negative impacts compared to a single large marine protected area.
 58. A well designed MPA network is more than just several marine protected areas that operate independently; it is one where the individual marine protected areas complement each other and the combined benefits are greater than the sum of the individual MPAs.
 59. Concepts around creating an ecologically viable network can be found on the South-East Marine Protection website¹⁹.

Marine Protected Areas Tools

60. Various management tools²⁰ are available to protect marine areas, depending on the assessment of threats to biodiversity at a site. Selecting the appropriate tools requires thinking about the whole ecosystem, including the relationship between habitat types, as well as the effects of different activities on habitats, both marine and land-based (e.g. sedimentation, fishing, mining, tourism and pollution).

Meeting the Protection Standard

61. To be a formal 'marine protected area', the management tool or combination of tools used must be sufficient to meet the protection standard. The MPA Policy states that, to meet the protection standard, the tool(s) used to manage marine protected areas must:

...enable the maintenance or recovery of the site's biological diversity at the habitat and ecosystem level to a healthy functioning state. In particular, the management regime must provide for the maintenance and recovery at the site of:

- a. *the physical features of the site and the biogenic structures that support biodiversity*
- b. *ecological systems, natural species composition (including all life-history stages) and trophic (the position an organism occupies in a food chain) linkages*
- c. *potential for the biodiversity to adapt and recover in response to perturbation (changes in the normal state or regular movement of something).*²¹

¹⁹ Network Design: Ecological Concepts at

<https://south-eastmarine.org.nz/about/marine-protected-areas/>

²⁰ For Tool Selection Guidelines, see Volume II, Appendix 2: Marine Protected Areas: Classification, Protection Standard and Implementation Guidelines (pages 22-23)

²¹ See Volume II, Appendix 1: Marine Protected Areas: Policy and Implementation Plan, Planning Principle 2, page 18. For more detail on the Protection Standard, see Volume II, Appendix 2, Marine Protected Areas: Classification, Protection Standard and Implementation Guidelines, section two of the MPA Guidelines.

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62. The MPA Policy also requires, where there are alternatives, that the impacts on existing users of the marine environment should be minimised when selecting new protected areas.²²

Marine Reserves (Type 1 MPAs)

63. Marine Reserves (which we sometimes refer to as Type 1 MPAs) are statutory tools that are established under the Marine Reserves Act 1971 for the purpose of preserving marine life for scientific study. These are essentially no take areas. Fishing, discharges, disturbance of the sea floor and most other extractive uses are not allowed. Under the MPA Policy, the Forum is to ensure that *a marine reserve (is) established to protect at least one sample of each habitat and ecosystem type in the network*²³. A marine reserve will likely include examples of more than one habitat and ecosystem type.

Other Marine Protected Areas (Type 2 MPAs)

64. Other marine protected areas (which we sometimes refer to as Type 2 MPAs) can be established using a range of management tools from various pieces of legislation, including fisheries management tools (Fisheries Act), marine mammal sanctuaries (Marine Mammals Protection Act), cable protection zones (Submarine Cables and Pipelines Protection Act) and Resource Management Act 1991 tools. At a minimum, dredging, bottom trawling and Danish seining are not allowed in marine protected areas because they would not allow maintenance and recovery of physical features and biogenic structures due to disturbance of the sea bed habitat.
65. Other methods that will *probably not be permitted*²⁴ within an MPA include purse seining, midwater trawling, midwater gillnetting and benthic netting. Additional restrictions may also be needed, depending on the values the marine protected area is designed to protect and allow maintenance and recovery of ecological systems, natural species composition and trophic linkages.

Other Marine Protection Tools

66. Other tools may provide some biodiversity protection. But only tools or combinations of tools that meet the protection standard are considered to be marine protected areas and count formally towards the network.

22 See Volume II, Appendix 1, Planning Principle 5, page 18.

23 Refer to Volume II, Appendix 2: Marine Protected Areas: Classification, Protection Standard and Implementation Guidelines section 3.3, page 19.

24 Refer to Volume II, Appendix 2: Marine Protected Areas: Classification, Protection Standard and Implementation Guidelines, section 2.6, page 12.

MPA Legislative Reform

67. Government agencies have been consulting on proposed reforms of marine protected areas legislation. A new marine protected areas Bill may be introduced to Parliament.
68. Until new legislation is passed, the Forum process will continue under the existing legislation, including the Marine Reserve Act 1971 and a variety of other tools that are listed in the MPA Policy. This means it is not open to the Forum to recommend new tools such as recreational fishing parks, or seabed reserves which are proposed to be included in the new Bill.
69. If the new legislation is passed before the Forum recommendations are made to Ministers, the recommendations will need to meet the requirements of the new legislation before they could be implemented.
70. The Forum considered delaying this MPA process until after the new legislation was enacted, however were asked to continue and the Forum agreed.



Blackhead, Dunedin.
Photo: Chris Hepburn

PART 2 PROPOSED MARINE PROTECTED AREAS FOR CONSULTATION

Harakeke Point, Otago Peninsula.
Photo: John Barkla

OVERVIEW

71. The Forum's task is to recommend a marine protected area network (MPA network) for the area from Timaru to Waipapa Point. In developing its recommendations, the Forum must determine what sites, taken together, could form part of an ecologically viable MPA network for the Forum region.

Using SeaSketch to make a network



The full list of proposed areas for consultation include options from which the Forum will recommend to Ministers after your feedback and input.

SeaSketch can help you to understand how different options and combinations of options may contribute (or not) to the MPA Policy objective of creating a representative New Zealand MPA network. All the areas being consulted on are available in SeaSketch, so you can create your own network, and test it against the MPA Policy requirements.

You can use this to inform your submission.

Instructions on where to find the areas, and how to use SeaSketch to form a network can be found at <http://bit.ly/SeaSketchConsultation>

The areas being consulted on

72. For the last two and a half years the Forum has been consulting with stakeholders on where marine protected areas could go. Out of this process the Forum has narrowed down areas for consultation.
73. It is not a given that all the areas identified are going to be put forward as part of the final network recommendations in the final report, or that boundaries and protection tools are 'fixed'. In some cases, options are provided where one or the other is expected to go forward, not both.
74. The Forum is open minded and is seeking public input in the form of submissions before making its final decisions on recommending the full network.
75. The proposed areas represent the different habitats from the MPA Guidelines habitat classification²⁵, while also considering other habitat information and local knowledge about the marine environment.

²⁵ Refer to Volume II, Appendix 2: Marine Protected Areas: Classification, Protection Standard and Implementation Guidelines, page 5.

THE PROPOSED MARINE PROTECTED AREAS FOR CONSULTATION AND HOW THEY ARE PRESENTED

76. Each area has a unique identifier (e.g. 'A' or 'F') to make it clear which one is being discussed. Please ensure that when you are submitting on an area that this unique letter is included.
77. For each area the following information is provided:
- a description of the site, its boundaries and the type of protection proposed;
 - the features of the environment;
 - why the area was chosen for consultation by the Forum;
 - a description of the habitat types included within the area;
 - a description of the site in relation to existing users; and
 - specific questions that will help the Forum in its final decisions on what areas and tools to recommend to Ministers to form an MPA network.
78. The individual areas for consultation are labelled from A to T. Proposed marine protected areas E, F, G and H are discussed together as various combinations of these four areas are proposed as alternatives to each other. The other areas are discussed individually. Note that in some cases, there are options to consider for a particular area, usually about where the boundary should be. The areas are:

PROPOSED MARINE PROTECTED AREAS
A Tuhawaiki to Pareora (Type 2)
B Waitaki Coastal (Type 1)
C Waitaki (Type 2)
D Pleasant River to Stony Creek (Type 1)
E Bryozoan Bed (Type 2) – option 1
F Saunders Canyon (Type 1) – option 1
G Bryozoan Bed (Type 2) – option 2
H Papanui Canyon (Type 1) – option 2
I Harakeke Point to White Island (Type 1)
J White Island to Waldronville (Type 2)
K Green Island (Type 1)
L Akatore Estuary (Type 2)
M Akatore Coastal (Type 1)
N Akatore Offshore (Type 2)
O Long Point (Type 1)
P Long Point Offshore (Type 2)
Q Tahakopa Estuary (Type 1)
R Tautuku Estuary (Type 2)
S Haldane Estuary (Type 2)
T Kelp Forest (Type – other)

79. Figure 3 gives an overview of the Forum region showing the location of all the areas that are being consulted on.

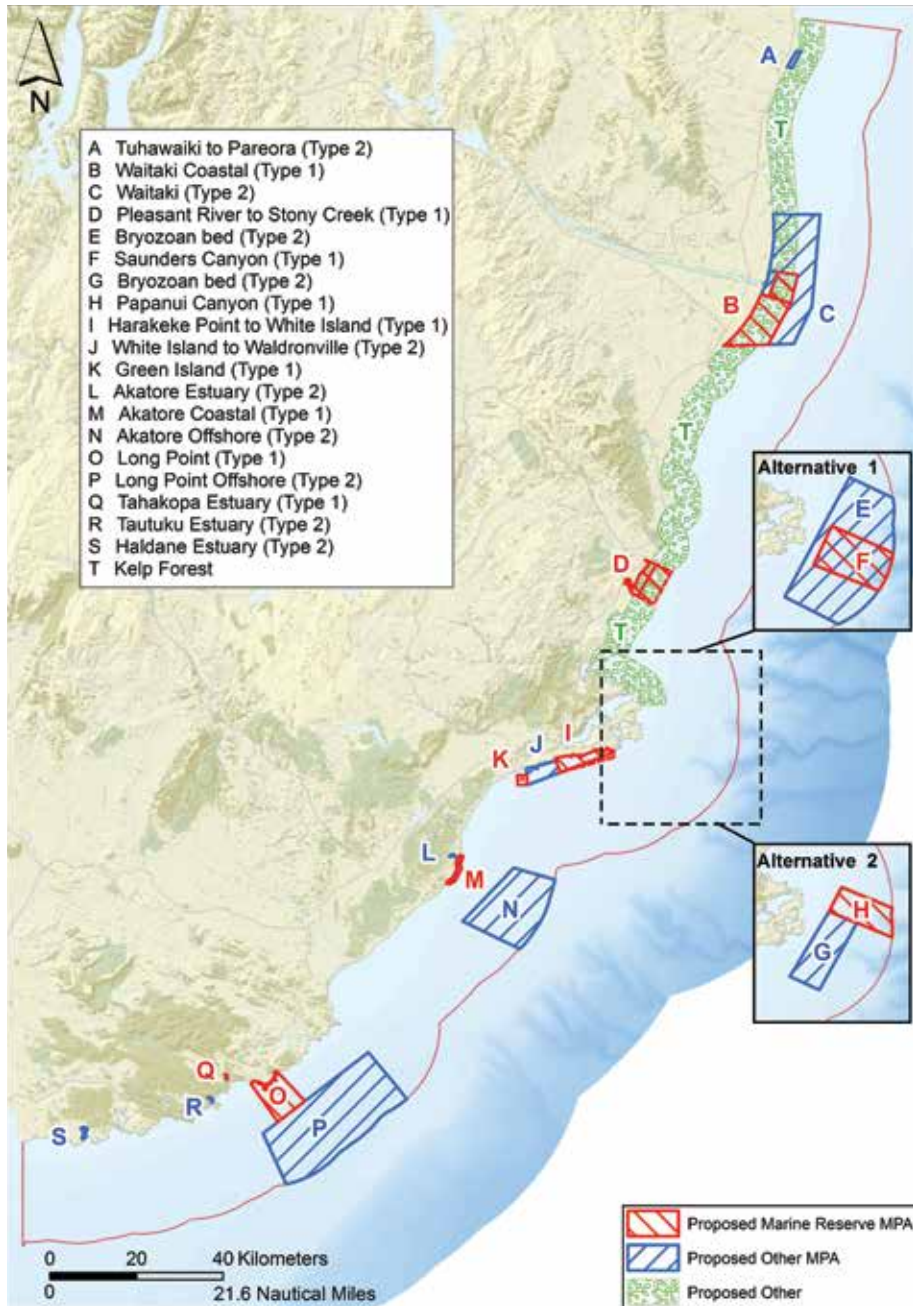


Figure 3: Sites that are being consulted on. Each site can be submitted on individually, as part of a network, or as part of general comments that you wish to make.

GENERAL STATEMENTS

Customary/Cultural

80. Kāi Tahu participated in the site selection process and respect the principle of marine protection subject to customary fishing rights being recognised and respected in the selection process.
81. Marine reserves in particular alienate Kāi Tahu customary rights from their traditional fisheries and mahika kai, and displace fishing effort when adjacent to mātaítai / taiāpure. This effect is compounded across future generations.
82. Kāi Tahu participation in the Forum process does not constitute universal Kāi Tahu or rūnaka support for the individual sites chosen for public consultation.

Commercial Fisheries

83. The commercial fishing displacement tables for each proposal show the estimated catch that might be taken from the area that is proposed as a marine protected area as a percentage of the total catch of that stock taken from the Forum region.
84. The industry has serious concerns, as existing users, on what the individual and cumulative impact on the commercial fishing industry will be. This information is not readily available or provided by SeaSketch. Please refer to Volume II, Appendix 4: *Fisheries Reporting* for more background information in this regard.
85. Reported fisheries catch information has been used in SeaSketch to estimate the potential impacts of proposed marine protected areas on commercial fishing. For fishing methods (other than for example potting, Danish seining, eel fyke net and pāua diving) catch is reported by fine-scale latitude and longitudes. For potting and Danish seining and the other methods, they essentially work within a small area and therefore, reporting by latitude and longitudes is commercially sensitive. Such methods report at a wider scale called a statistical area.²⁶
86. Catch reporting by the statistical area reporting method are assessed by the use of computer modelling and utilises default environmental information to improve our models for some species and methods. For example, pāua are not caught throughout a statistical area, but rather are only taken from rocky areas like reefs. Similarly, we know that blue cod potting is limited to areas shallower than 150 m; Danish seining on smooth sandy bottom and eels taken in specific estuaries.

²⁶ Vessels over six metres in length are required to report their trawl start positions for each fishing event by latitude and longitude to within one minute (equates to an accuracy of one nautical mile), and netting to within two nautical miles. The location of vessels less than six metres is only reported to the relevant statistical area. The Forum region encompasses part of statistical area 22 (SA022), all of SA024 and SA026 and part of SA025.

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87. For each area being consulted on, discussion of expected impacts on existing users is provided where possible. Reports on commercial fishing displacement, for some but not all fishing methods, were available to the Forum throughout the process via the use of SeaSketch, the Forum's online mapping tool. These same reports are available to the public during the consultation period by visiting the SeaSketch project at <http://southeastmarine.seasketch.org>. A brief tutorial on how to run the reports is provided on the Forum's website at <http://bit.ly/SeaSketchConsultation>.
 88. For a more detailed explanation on what the commercial fisheries reports in this document mean, how they were derived and their limitations, please refer to Volume II, Appendix 4: *Fisheries Reporting*.
 89. The Forum is seeking further information from commercial fishers and the Ministry for Primary Industries about the impacts they would expect for each of the proposed marine protected areas, that will assist us to build a more accurate picture of the actual effects the proposed marine protected areas may have on commercial fishing.
 90. Access to information collected by individual fishers to assess adverse impacts is commercially sensitive and not accessible to the public or other commercial sector representatives to obtain. The Ministry for Primary Industries and commercial representative organisations need to assist the commercial sector with assessing impacts. This information can be aggregated up, but the ability to identify individual fishers as part of the consultation phase is very restricted. The main existing users to be impacted by any marine spatial closure will be the commercial, customary and recreational fishers. The commercial industry has been instrumental in recommending MPA closures to the Forum and are therefore not averse to providing some spatial closures.
 91. There are multiple restrictions on fishing activity that are currently in place through regulations under the Fisheries Act. For information on where these restrictions occur within the Forum region, see Volume II, Appendix 6: *Existing Fisheries Restrictions*.
 92. Subsequent to the Forum decisions on what proposals to put out for public consultation, the Ministry for Primary Industries has undertaken some additional analysis of the expected impacts on commercial fishing, including economic impacts. The Ministry is continuing to refine this analysis. The Ministry is also in the process of providing updated fisheries information, to include the two most recent complete fishing years in SeaSketch. SeaSketch currently includes data to the end of the 2012-2013 fishing year. Data for the 2013-14 and 2014-15 fishing years will be added shortly. The Forum has not had this additional information and so has not been able to discuss it at the time of writing, and it is not provided in this document or the tables for fishery displacement. But, the Forum will consider it in its final deliberations along with information from submissions.

Recreational Fishers

93. 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.

Costs and benefits

94. The Forum notes that there are also expected to be economic and social benefits from establishing marine protected areas, for example from increased tourism. However, we have limited information as to the value of those benefits. We welcome any information you may have about any economic or social benefits you think would be achieved from establishing any of the proposed marine protected areas.
95. Similarly, we are interested in knowing the costs and impacts of spatial closures associated with the marine protected areas.
96. The information on economic and social impact is important to the decision making process for the Forum to make recommendations to Ministers.
97. 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.



Wharekakahu Island, Otago Peninsula.
Photo: John Barkla



North Otago.
Photo: Otago Daily Times

A. TUHAWAIKI TO PAREORA (TYPE 2)



Figure 4: Proposed Type 2 MPA.

Description

98. This proposed marine protected area is in the north of the Forum's region, near Timaru. It is south of, and abuts, the Tuhawaiki Mātaimitai Reserve. It extends 4.4 km (2.4 nm) along shore, and offshore to 1.1 km (0.59 nm), and encompasses approximately 4.4 km².

This MPA would include fisheries restrictions that would prohibit:

- all bottom trawling
- all dredging

99. The fisheries restrictions would not restrict potting or recreational fishing with the possible exception of recreational fishing with lines (including kontiki) of more than five hooks. Danish seining is already prohibited in this area.

-
100. The Forum is also considering whether to extend restrictions to include:
 - a. all net fishing
 - b. commercial long lining
 - c. mid water trawling
 101. This package of fishing restrictions is proposed to allow for the maintenance and recovery of the biodiversity of the area, by prohibiting bottom impacting methods and reducing fishing effects on the ecosystem, natural species composition and trophic linkages.
 102. There are wāhi tapu located on the coast and the recovery of koiwi and other cultural artifacts by Kāi Tahu shall not be impacted by this proposal.

Environment

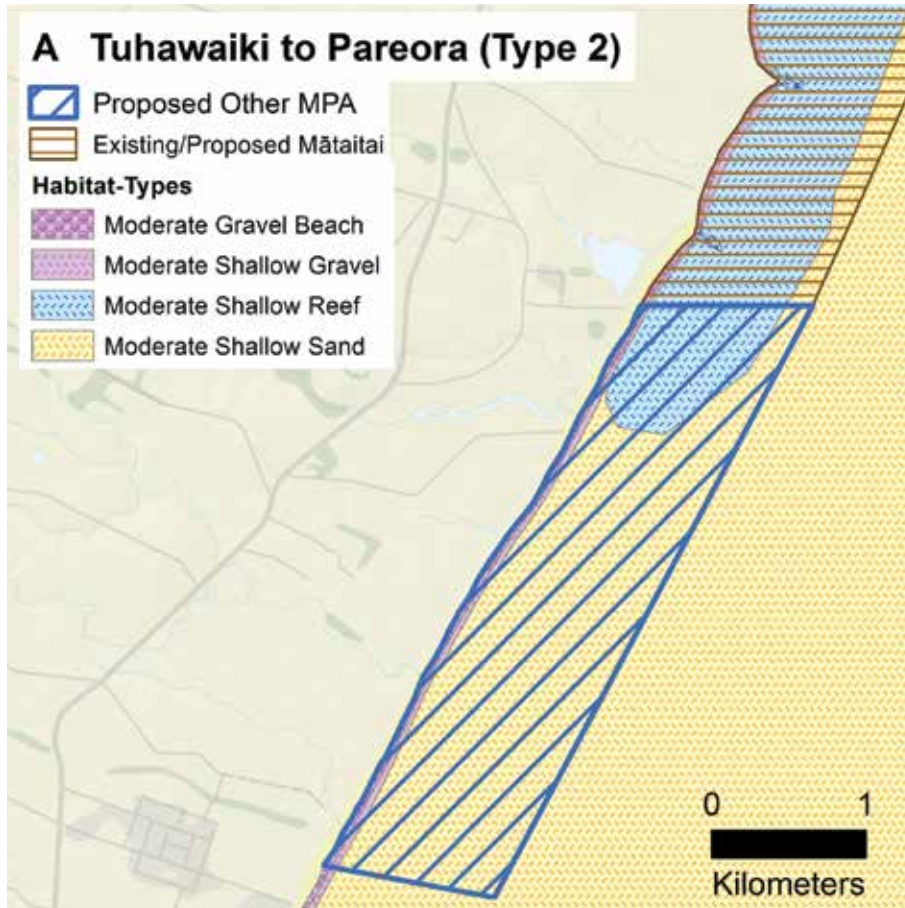
103. The site has been identified as being important for school shark pupping and elephant fish eggs cases. The site includes an area of shallow rocky reef to the north.

Why was this site chosen?

104. The site currently has a voluntary trawl ban, in recognition of the importance of the area as habitat for school shark and elephant fish. The proposed restrictions would provide regulatory protection for habitat supporting school shark pupping and elephant fish eggs. It would also complement the mātaítai reserve, within which commercial fishing is already prohibited.

HABITAT TYPES

106. The MPA would include 4 different habitat types, comprising gravel, sand and some shallow rocky reef to the north.
107. Figure 5 shows the distribution and extent of the habitat types for the proposed MPA.



Habitat types included within the proposed site

Area (km) is the area of that habitat type that is included within the site. Area (%) refers to how much of the habitat type within the entire Forum region is included within the site.

HABITAT	AREA (KM ²)	AREA (%)
Moderate Shallow Sand	3.5	0.5
Moderate Shallow Reef	0.6	0.6
Moderate Shallow Gravel	0.1	–
Moderate Gravel Beach	0.1	3.8

Figure 5: Habitat types within the proposed Tuhawaiki to Pareora MPA.

EXISTING USERS

Cultural and Customary

108. The general area is important as evidenced by the nearby Tuhawaiki Mātaitai. This 4.1 km² mātaitai was proposed by Te Rūnanga o Arowhenua and was gazetted on 21 July 2016. Te Rūnanga o Arowhenua's application to establish a mātaitai describes how the special relationship that Kāi Tahu has with the local fisheries at Timaru allowed it to *maintain ahi kaa* (permanent residence) and *exercise manawhenua and mana moana* (chiefly authority) over its tribal domain. The application explains that kai moana (seafood) was important to local Kāi Tahu for trade, which maintained kinship links and alliances and strengthened its ahi kaa and manawhenua status.
109. The application states the historic sites are a testament to the abundance and availability of kai (food) and notes some of the sites were formally gazetted as Māori reserves or Māori fishing reserves through Kemp's Deed of Purchase²⁷ in recognition of the importance of fisheries to the local whānau.

Commercial fishing

110. There is an existing commercial voluntary trawl ban in the area. This recognises the importance of the area for shark pupping and as an area where elephant fish eggs are deposited. Ratifying the voluntary agreements already in place may have benefits for commercial fishers.
111. Alternative options were considered, but proposed boundaries have taken into account existing users, including commercial fishing in adjacent areas. The proposal is not expected to have significant adverse effects on commercial fishing.
112. Commercial fishing in the area includes mixed trawling, with gurnard, flatfish and red cod the most important stocks caught. In addition, bottom long lining for ling and other species is carried out in the area.
113. There is no commercial dredging, and commercial set net and Danish seining are currently prohibited within the proposed marine protected area.²⁸
114. About 1% of the trawl catch for gurnard within the Forum region is in this proposed marine protected area. The economic impact is not expected to be high. Whether or not set netting is prohibited is not expected to make a significant difference to the impacts of the proposed marine protected area on commercial fishing, because it is not known to be used in the area.
115. It is important to note that there is uncertainty about the actual impacts (positive or negative). The information presented is based on the best estimates available. But, for many species, the spatial extent that catches are reported within means we cannot be sure how much catch is taken in a specific area or the extent of the displacement of fishing effort.

²⁷ Kemp's Deed of Purchase was an agreement in 1848 negotiated by Henry Tacy Kemp for the Crown's purchase of Kāi Tahu land.

²⁸ Danish seining is prohibited within 3 nm and set netting within 4 nm of the east coast South Island under Regulation 70 of the Fisheries (Commercial Fishing) Regulations 2001.

Commercial Fishing Intensity

The percentage of the regions fishery that would be displaced by the proposal is shown in the table. Displacement relates to the fishing that occurs within the Forum region, not at the Quota Management Area (QMA) Displacement does not directly relate to an impact on a fishery, but provides a relative indication of the potential impact restrictions may have.

HABITAT	FISHERY DISPLACEMENT (%)
Trawl – Gurnard	1
Line (bottom longline and dahn line)	0.4
Trawl – Red cod	0.4
Trawl – Flatfish	0.1
Trawl – Other	0.1

Figure 6: Commercial Fishing Intensity – Tuhawaiki to Pareora (Type 2)²⁹.

116. For more information to help you understand the table and the potential impacts of marine protected areas on commercial fishing please refer to Volume II, Appendix 4: Fisheries Reporting.

Recreational fishing

117. Most recreational fishing would be able to continue under the proposed management of the area. The Forum is however considering asking the Minister for Primary Industries to prohibit the use of lines with more than five hooks, and is requesting public feedback on this suggestion.

²⁹ This is modelled data so should be used with caution. It is derived from fisheries administration data provided to MPI whereby vessels over six metres in length are required to report their trawl start positions for each fishing event by latitude and longitude to within one minute (equates to an accuracy of one nautical mile), and netting to within two nautical miles. The location of vessels less than six metres is only reported to the relevant statistical area. The Forum area encompasses part of statistical area 22 (SA022), all of SA024 and SA026 and part of SA025. For more information about commercial fisheries information, please refer to Volume II, Appendix 4: Fisheries Reporting.

Summary

118. The proposed protections aim to minimise the impact of fishing generally on the biodiversity values. This area was identified as a potential marine protected area as it is already acknowledged as an important habitat for both school shark and elephant fish.
119. Based on the information available to date the Forum consider the proposal is unlikely to impact existing users to any great extent, particularly considering that there is an existing voluntary ban on commercial trawling.
120. The Forum is interested in people's views on whether the proposed package of protection mechanisms would be effective in protecting the area's biodiversity. In particular, whether restrictions on netting and line fishing are required, in addition to banning mobile, bottom impacting methods like dredging and trawling.

Making your submission

121. You are welcome to submit on any aspect of the proposal, either for or against, or suggest alterations. In particular, the Forum would like your feedback on the following for this site:
 - Does this area provide adequate protection for the habitats included?
 - How would this proposal affect your current or future use of the area? How would this proposal affect you?
 - Do you support this area going forward as a part of the south-east marine protected areas network? Why? Why not?
 - If you do not support it in its current form, are you able to suggest alternatives to the proposal that would make it more acceptable, such as changes to its location, size, boundaries and specific rules?
 - Do you agree that prohibiting recreational fishing with kontiki lines, or other lines with greater than five hooks would assist in protecting the area?
 - For the fishing methods noted above, how often are they used by you in this area, and how much of each species is taken by these methods?
 - Do you have any information that would help the Forum decide what restrictions if any to recommend?



Figure 7: Proposed MPA boundaries – Tuhawaiki to Pareora.



Moeraki, North Otago.
Photo: John Barkla

B. WAITAKI COASTAL (TYPE 1)



Figure 8: Proposed Type 1 MPA.

Description

122. This proposed marine reserve is one of two proposed marine protected areas in the vicinity of the Waitaki River mouth (see area C – Waitaki Offshore). The proposed marine reserve extends south of the river mouth for 14.8 km (8 nm) and offshore 8 km (4.3 nm).
123. The main area proposed includes 88.4 km², and the extension (in dashed lines) an additional 31.4 km². Combined the proposed marine reserve accounts for 1.3% of the area of the Forum region, and 1.9% of the coastline.
124. As part of this proposal, the Forum is seeking your views on whether the northern boundary of the proposed marine reserve should be extended (as per the dashed area marked on the map). The extension would exclude the coastal area, avoiding the river mouth, Te Awakokomuka (fishing easement) and Korotuaheka.
125. As a marine reserve, the area would be no-take and all fishing would be prohibited.

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126. Fishing vessels would be allowed to enter the area, so long as they had no gear used for the purpose of fishing in the water at the time. This is regardless as to whether they are carrying fish or not (and in accordance with existing fisheries regulations). No discharge to the MPA would be allowed, this includes (but not limited to) grey water, sewage and fish waste.
 127. There are wāhi tapu located on the coast and the recovery of koiwi and other cultural artifacts by Kāi Tahu shall not be impacted by this proposal.

Environment

128. The Waitaki River has a strong influence on the North Otago and South Canterbury coast, both in terms of freshwater input to the marine environment and the sediment that is transported to the sea from the land.
129. Reports from commercial fishers suggest this area has kelp beds on cobble habitats that are important for juvenile fish species, and regionally unique habitats, due in part to the influence of the Waitaki River Mouth.
130. It is an important foraging area for seabirds, including little blue penguins, and Hector's dolphin.
131. Rhodolith beds, hard calcified red algae, are likely to be associated with cobble habitat in this area. Rhodoliths are often associated with high biodiversity value.
132. Some of the densest areas of squat lobster *Munida gregaria* have historically been found around the Waitaki River mouth. *Munida* are an important food source for fish, marine mammals and birds.

Why was this site chosen?

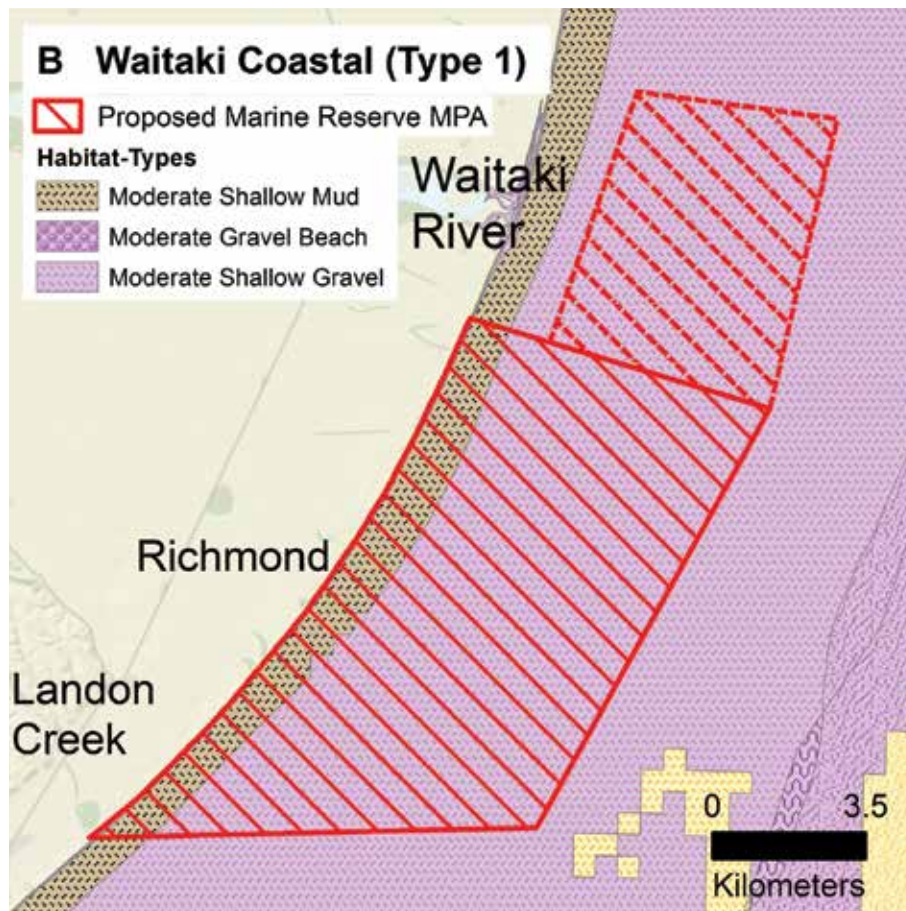
133. The marine reserve would represent gravel habitats of the North Otago/ South Canterbury region that is not otherwise represented in any other proposed marine reserve.
134. The unstudied macroalgal communities to the south of the river are likely unique in the region and this MPA has been proposed to afford protection to these important biogenic habitats.
135. The foraging range of the little blue penguin indicates that the area around the Waitaki River mouth is an important habitat (that is, the foraging behavior of the penguins is an indicator for habitat and biodiversity in general). This proposal includes an area of the habitats used by the little blue penguins.
136. The extension option extends the protection for Hector's dolphins and the area of the highest measured density for penguin foraging. It includes a greater area of nutrient rich northern flowing water from the Waitaki River.³⁰ The marine reserve would protect important habitat for these species, reduce the potential for incidental fisheries captures, and help maintain the rich diversity of large animals that utilise the area.

³⁰ The map showing the penguin foraging can be viewed at <http://seasket.ch/2wbl5J0hF2> or, Agnew P (2015) Demographic parameters, foraging and responses to environmental variation of little penguins (*Eudyptula minor*). Unpublished thesis (Doctor of Philosophy in Marine Science): University of Otago.

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137. It provides a link in the network of MPAs along the Forum region's coastline, and provides replication³¹ of some habitat types present in A – Tuhawaiki to Pareora (Type 2).

HABITAT TYPES

138. The proposed MPA, including the extension option, would cover three MPA Policy derived habitat types. It would also include the area considered to include kelp habitat, but as this is not mapped it cannot be reported on in the table.
139. Figure 9 shows the distribution of the habitat types defined in the MPA Policy for the proposed MPA.



³¹ Replication is fundamental to good network design, Refer to Network Design: Ecological Concepts at <https://south-eastmarine.org.nz/about/marine-protected-areas/>

Habitat types included within the proposed site

Area (km) is the area of that habitat type that is included within the site. Area (%) refers to how much of the habitat type within the entire Forum region is included within the site.

HABITAT	MAIN MPA		EXTENSION	
	AREA (KM ²)	AREA (%)	AREA (KM ²)	AREA (%)
Moderate Shallow Gravel	74.3	8.2	31.4	3.5
Moderate Shallow Mud	13.6	10.2	–	–
Moderate Gravel Beach	0.4	13.2	–	–

Figure 9: Habitat types within the proposed Waitaki Coastal MPA.

EXISTING USERS

Cultural and Customary

140. This coastal site is associated with the Statutory Acknowledgement area of Te Tai o Araiteuru, an ancestral name for the tidal area from the locality of the Mataau/Clutha north to the coastal area off South Canterbury region. The Waitaki River mouth is an important traditional Kāi Tahu fishery, mahika kai locality and site for migratory fish passage, and the exclusion of the river mouth from the reserve proposals is intended to ensure that traditional fishery can continue unaffected.
141. The old and historic settlement Korotuaheka, associated burial ground and archaeological values are located on the south side of the Waitaki River mouth. Retaining access and use rights of the traditional fisheries at the Waitaki River mouth is an important requirement.

Commercial fishing

142. Commercial fishing in the area includes Danish seining and mixed trawling, with tarakihi the most important stock caught. In addition, set netting for rig and school shark are thought to occur in the proposed area.
143. Danish seining is already prohibited in some of the proposed marine reserve.³² There is no commercial dredging, potting or pāua diving thought to occur in the area.

³² Danish seining is prohibited within 3 nm of the South Island coast under Regulation 70 of the Fisheries (Commercial Fishing) Regulations 2001.

Commercial Fishing Intensity

The percentage of the regions fishery that would be displaced by the proposal is shown in the table. Displacement relates to the fishing that occurs within the Forum region, not at the Quota Management level. Displacement does not directly relate to an impact on a fishery, but provides a relative indication of the potential impact restrictions may have.

FISHERY	FISHERY DISPLACEMENT (%)		
	MAIN MPA	EXTENSION	COMBINED
Danish seine	1.8	0.9	2.7
Dive – Other	0.7	0.1	0.8
Trawl – Tarakihi	0.4	<0.1	0.5
Net – Rig	<0.1	<0.1	0.1
Net – School Shark	0.1	–	0.1
Trawl – Other	0.1	–	0.1

Figure 10: Commercial Fishing Intensity – Waitaki Coastal Type 1.

144. Figure 10 indicates the estimated percentage of catch from the Forum region that can in theory be attributed to the area that would be closed to commercial fishing should the Waitaki Coastal site become a marine reserve MPA³³.
145. The economic impact of the proposed marine reserve is not expected to be high, with or without the extension. This is because catches for all stocks are thought to be in relatively low amounts in the proposed marine reserve and extension areas.
146. It is important to note that there is uncertainty about the actual impacts (positive or negative). The information presented is based on the best estimates available. But, for many species, the spatial extent that catches are reported within means we cannot be sure how much catch is taken in a specific area or the extent of the displacement of fishing effort.
147. For more information to help you understand the table and the potential impacts of marine protected areas on commercial fishing please refer to Volume II, Appendix 4: Fisheries Reporting.

³³ This is modelled data so should be used with caution. It is derived from fisheries administration data provided to MPI whereby vessels over six metres in length are required to report their trawl start positions for each fishing event by latitude and longitude to within one minute (equates to an accuracy of one nautical mile), and netting to within two nautical miles. The location of vessels less than six metres is only reported to the relevant statistical area. The Forum area encompasses part of statistical area 22 (SA022), all of SA024 and SA026 and part of SA025. For more information about commercial fisheries information, please refer to Volume II Appendix 4: Fisheries Reporting.

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148. Consultation with local commercial fishers to date indicates the effect of the main part of the reserve may be acceptable, but there are concerns about the option extending it to the north.

Recreational fishing

149. The majority of recreational fishing (particularly salmon, whitebaiting and kahawai) occurs directly around the mouth of the river, which is excluded from the reserve proposal. This proposed marine reserve is not known to be a high value recreational fishing area.
150. Salmon fishing could benefit from restricting trawling nearby, as part of this MPA and the associated MPA (C – Waitaki (Type 2)).

Scientific value

151. Kelp is an important habitat and could provide future scientific interest. Currently there has been little scientific study of the area but observations of juvenile fish in the area and undescribed kelp habitats would provide obvious opportunities for research.

Summary

152. This area has been proposed to protect kelp habitat that is likely unique to the area.
153. And the use of the area by seabirds indicates that there are likely to be important biodiversity values. Though we don't know a lot about what is there, we do know that it is important habitat, at least for some species. Neither the proposed marine reserve nor the extension option are expected to have significant adverse impacts on existing users.

Making your submission

154. You are welcome to submit on any aspect of the proposal, either for or against, or suggest alterations. In particular, the Forum would like your feedback on the following for this site:
- Does this area provide adequate protection for the habitats included?
 - Do you support this area going forward as a part of the south-east marine protected areas network? Why? Why not?
 - Would it be preferable to include the extension to the north of the proposed marine reserve in the MPA network? Why? Why not?
 - How would this proposal affect your current or future use of the area? How would this proposal affect you?
 - If you do not support it in its current form, are you able to suggest alternatives to the proposal that would make it more acceptable, such as changes to its location, size, boundaries and specific rules?

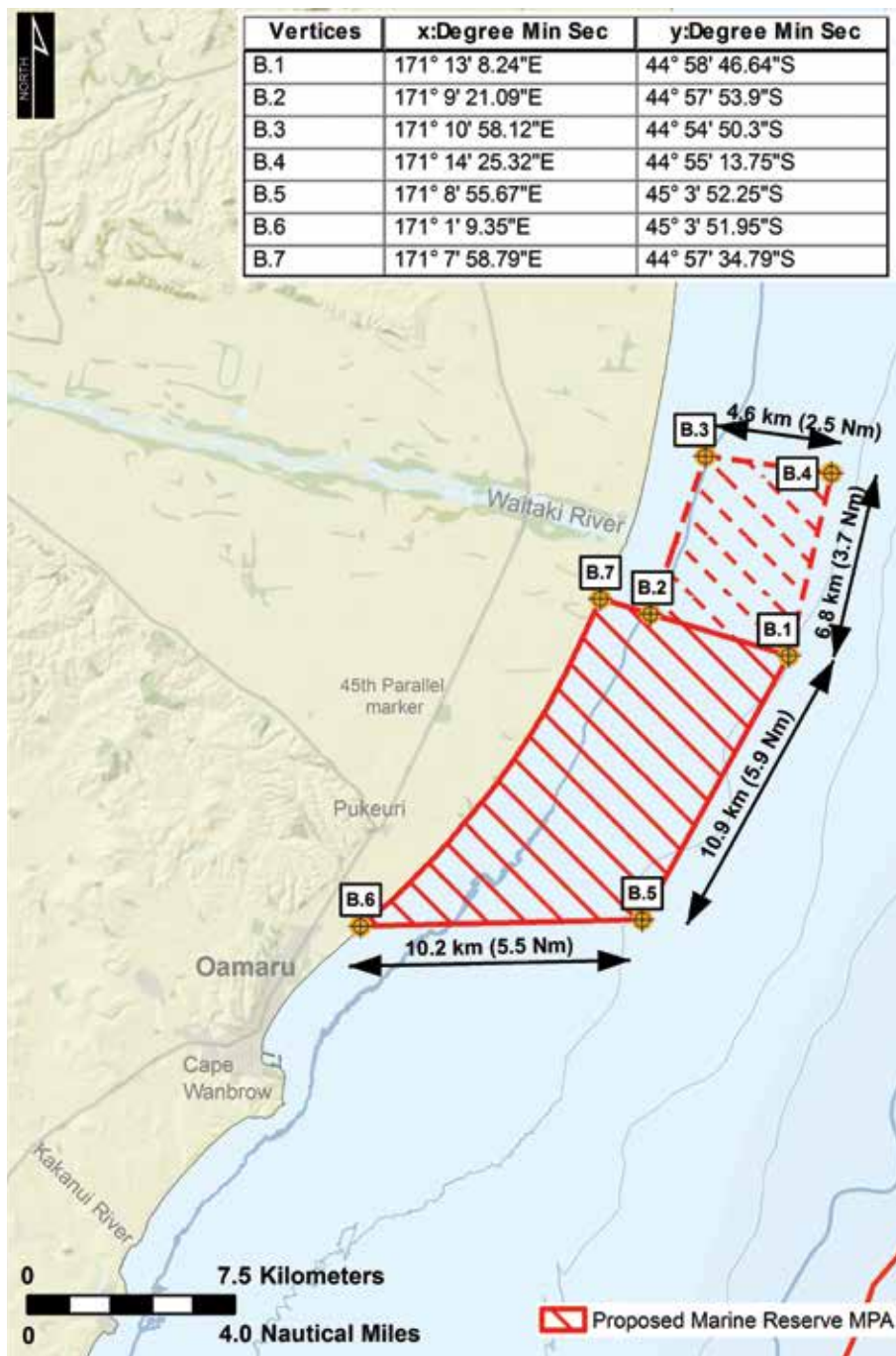


Figure 11: Proposed boundaries for Waitaki Coastal Type 1.



Tavora, North Otago.
Photo: John Barkla

C. WAITAKI OFFSHORE (TYPE 2)



Figure 12: Proposed Type 2 MPA.

Description

155. This proposed marine protected area is one of two proposed near the Waitaki River mouth and offshore from it (see area B – Waitaki Coastal). The proposed marine protected area extends from 2 km (1.1 nm) south of the river mouth and north for approximately 15 km (8.1). It extends offshore approximately 10 km (5.4 nm).
156. The proposed marine protected area is separated into a main area and a small extension over the river mouth. The main area proposed covers 224 km², and the extension (shown by dashed lines) an additional 10.5 km². Combined, the proposed marine protected area accounts for 2.6% of the Forum region, and 2.5% of the Forum region coastline.
157. The area is proposed to be protected by various fisheries restrictions, banning:
 - all trawling
 - Danish seining
 - all dredging
 - all set netting
158. Other forms of commercial fishing would be permitted. The proposal would not restrict recreational fishing, such as whitebaiting and line fishing for salmon.

-
159. This package of fishing restrictions is proposed to allow for the maintenance and recovery of the biodiversity of the area, by prohibiting bottom impacting methods and reducing fishing effects on the ecosystem, natural species composition and trophic linkages.
 160. There are wāhi tapu located on the coast and the recovery of koiwi and other cultural artifacts by Kāi Tahu shall not be impacted by this proposal.

Environment

161. The Waitaki River has a strong influence on the North Otago and South Canterbury coasts, both in terms of freshwater input to the marine environment, and the sediment that is transported to the sea from the land.
162. It is an important foraging area for seabirds, including little blue penguins.
163. Rhodolith beds (hard calcified red algae) have been reported from inshore in this area, and are often associated with high biodiversity value.

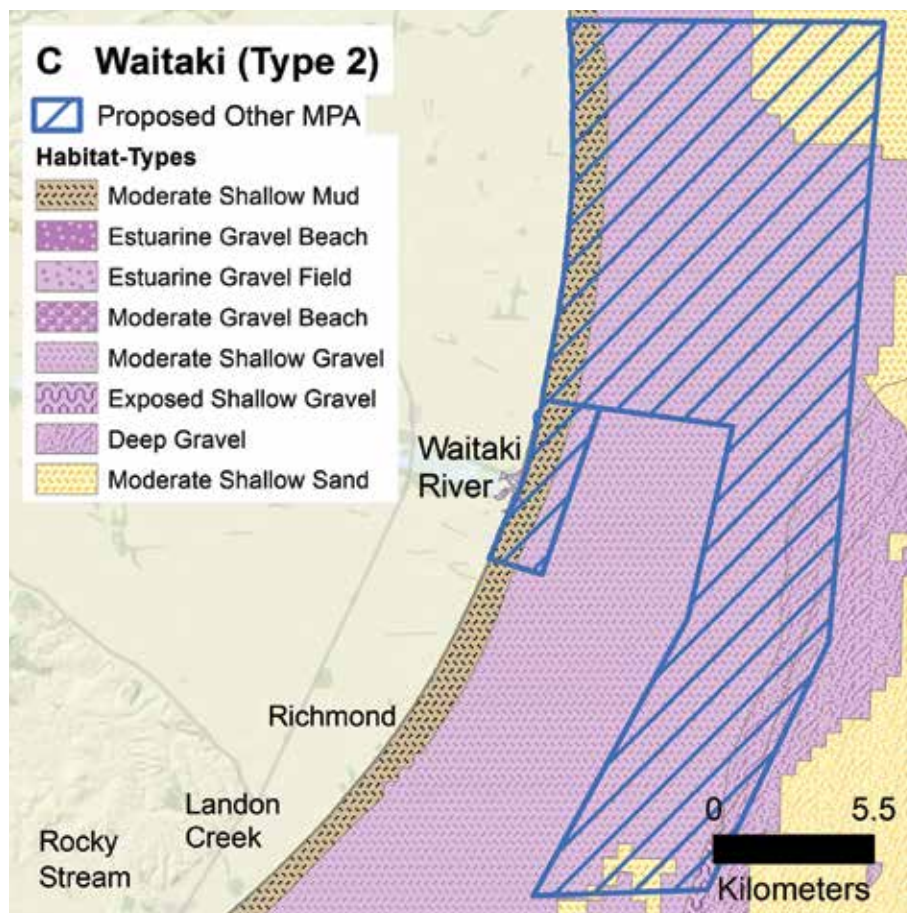
Why was this site chosen?

164. This site complements the protection afforded by site B without requiring a full no-take marine reserve. The proposed restrictions would allow both protection to physical features and ecological systems consistent with the MPA Policy Protection Standard.
165. The site covers an area that is known to be important for little blue penguins and Hector's dolphins; the known foraging range of the little blue penguin from the Oamaru colony includes the area around the Waitaki River mouth and to the north of the mouth. The presence of Hector's dolphins, penguins and other seabirds suggests that there are prey species and important habitats in the area. The restrictions would protect important habitat for these species, reduce the potential for incidental fisheries captures, and help maintain the rich diversity of large animals that utilise the area.
166. There are mitigation measures on commercial vessels that are reducing negative impacts on seabirds and dolphins. There are still however residual threats to these species which the proposed MPA will in part address.
167. The seaward boundary was drawn at 10 km (5.4 nm) to avoid displacing trawl fishery effort, which is likely to reduce its effectiveness in protecting the habitat of seabirds and dolphins. If protection of the known foraging habitat of seabirds and dolphins was to be maximised, the proposed MPA would be extended to the 12 nm limit. Some Forum members proposed that the boundary be extended to the 12 nm limit as a Type 2 marine protected area in order to provide protection for the foraging habitat of dolphins and seabirds and to represent the gradient across the Forum region.

168. It provides a link in the network of MPA along the Forum region's coastline, and provides replication of some habitat types present in the 'A – Tuhawaiki to Pareora (Type 2)'.
169. The extension is proposed to ensure no impact on the customary and recreational fishing associated with the river mouth. In particular white baiting and salmon fishing around the Waitaki River mouth remain unaffected by any of the proposals being put forward.

HABITAT TYPES

170. The proposed marine protected area, including the extension, would cover six habitat types.
171. Figure 13 shows the distribution of the habitat types within the proposed marine protected area.



Habitat types included within the proposed site

Area (km) is the area of that habitat type that is included within the site. Area (%) refers to how much of the habitat type within the entire Forum region is included within the site.

HABITAT	MAIN MPA		EXTENSION	
	AREA (KM ²)	AREA (%)	AREA (KM ²)	AREA (%)
Moderate Shallow Gravel	168.9	18.7	5	0.6
Moderate Shallow Sand	19.5	2.5	–	–
Deep Gravel	19.3	1.8	–	–
Moderate Shallow Mud	14.6	11	5.3	4
Exposed Shallow Gravel	1.1	16.5	–	–
Moderate Gravel Beach	0.5	14.6	0.2	5.9

Figure 13: Habitat types within the proposed Waitaki Offshore MPA.

EXISTING USERS

Cultural and Customary

172. This proposed marine protected area is within the Statutory Acknowledgement area of Te Tai o Araiteuru. Te Tai o Araiteuru is an ancestral name for the tidal area from the locality of the Mataau/Clutha River north to the coastal area off the South Canterbury region.
173. The Waitaki River mouth is an important traditional fishery and mahika kai locality for Kāi Tahu. The Waihao marae is north of the proposed marine protected area, as is the culturally important Wainono Lagoon and its associated waterways. The South Canterbury coastal area is a strong mahika kai locality and interdependent on the coastal fishery.

Commercial fishing

174. Commercial fishing in the proposed marine protected area includes Danish seining, set netting and trawling.³⁴
175. The seaward boundary of the proposed site was drawn at 10 km (5.4 nm) to avoid the most important trawl areas but there will be an impact on Danish seining. There is no commercial dredging in the proposed marine protected area.

³⁴ Danish seining is prohibited within 3 nm and set netting is prohibited within 4 nm of the south east South Island coast under reg 70 of the Fisheries (Commercial Fishing) Regulations 2001. This includes some of the proposed marine protected area, and all of the extension.

Commercial Fishing Intensity

The percentage of the regions fishery that would be displaced by the proposal is shown in the table. Displacement relates to the fishing that occurs within the Forum region, not at the Quota Management Area (QMA) Displacement does not directly relate to an impact on a fishery, but provides a relative indication of the potential impact restrictions may have.

FISHERY	FISHERY DISPLACEMENT (%)		
	MAIN MPA	EXTENSION	COMBINED
Danish seine	12	–	12
Net – Elephant Fish	0.7	–	0.7
Net – Other	0.6	–	0.6
Net – Rig	2.3	–	2.3
Net – School Shark	3.1	–	3.1
Trawl – Flatfish	<0.1	–	–
Trawl – Gurnard	0.2	–	0.2
Trawl – Other	0.5	–	0.5
Trawl – Red cod	0.3	–	0.3
Trawl – Tarakihi	0.3	<0.1	0.4

Figure 14: Commercial Fishing Intensity – Waitaki Offshore Type 2.

176. The most commonly caught fish stocks in the proposed marine protected area include school shark, rig, elephant fish, and barracouta, in net fisheries and the Danish seine fishery. The trawl fishery mainly lands tarakihi, red cod and gurnard.
177. The economic impact of the proposed marine protected area is not expected to be high.
178. It is important to note that there is uncertainty about the actual impacts (positive or negative). The information presented is based on the best estimates available. But, for many species, the spatial extent that catches are reported within means we cannot be sure how much catch is taken in a specific area or the extent of the displacement of fishing effort.
179. For more information to help you understand the table and the potential impacts of marine protected areas on commercial fishing please refer to Volume II, Appendix 4: Fisheries Reporting.

-
180. Figure 14 indicates the estimated percentage of catch from the Forum region that can in theory be attributed to the area that would be closed to commercial fishing should the Waitaki Offshore site become a Type 2 MPA³⁵.

Recreational fishing

181. The majority of recreational fishing occurs directly around the mouth of the river, including whitebaiting and salmon fishing. Under the proposed fishing restrictions, recreational fishing could continue.
182. Salmon fishing could benefit from restricting trawling nearby, as part of this MPA and the associated marine reserve (B – Waitaki Coastal (Type 1)).

Tourism

183. Indirectly this area is very important for tourism due to the importance of the area for seabirds and Hector's dolphins.

Summary

184. The use of the area by seabirds and mammals is an indicator of high biodiversity values and associated habitats. The proposed marine protected area would assist in the maintenance and recovery of those biodiversity values by prohibiting impacts on the sea floor and reducing fishing pressure and risks to seabirds and mammals. The adverse impacts on existing users, including commercial fishers, are not expected to be high.

³⁵ This is modelled data so should be used with caution. It is derived from fisheries administration data provided to MPI whereby vessels over six metres in length are required to report their trawl start positions for each fishing event by latitude and longitude to within one minute (equates to an accuracy of one nautical mile), and netting to within two nautical miles. The location of vessels less than six metres is only reported to the relevant statistical area. The Forum area encompasses part of statistical area 22 (SA022), all of SA024 and SA026 and part of SA025. For more information about commercial fisheries information, please refer to Volume II Appendix 4: Fisheries Reporting.

Making your submission

185. You are welcome to submit on any aspect of the proposal, either for or against, or suggest alterations. In particular, the Forum would like your feedback on the following for this site:

- Does this area provide adequate protection for the habitats included?
- Do you support this area going forward as a part of the south-east marine protected areas network? Why? Why not?
- Would it be preferable to include the extension in the MPA network? Why? Why not?
- How would this proposal affect how you use the area? How would this proposal affect you?
- If you do not support it in its current form, are you able to suggest alternatives to the proposal that would make it more acceptable, such as changes to its location, size, boundaries and specific rules?
- For the fishing methods noted above, how often are they used by you in this area, and how much of each species is taken by these methods?
- Do you have any information that would help the Forum decide what restrictions, if any, to recommend?

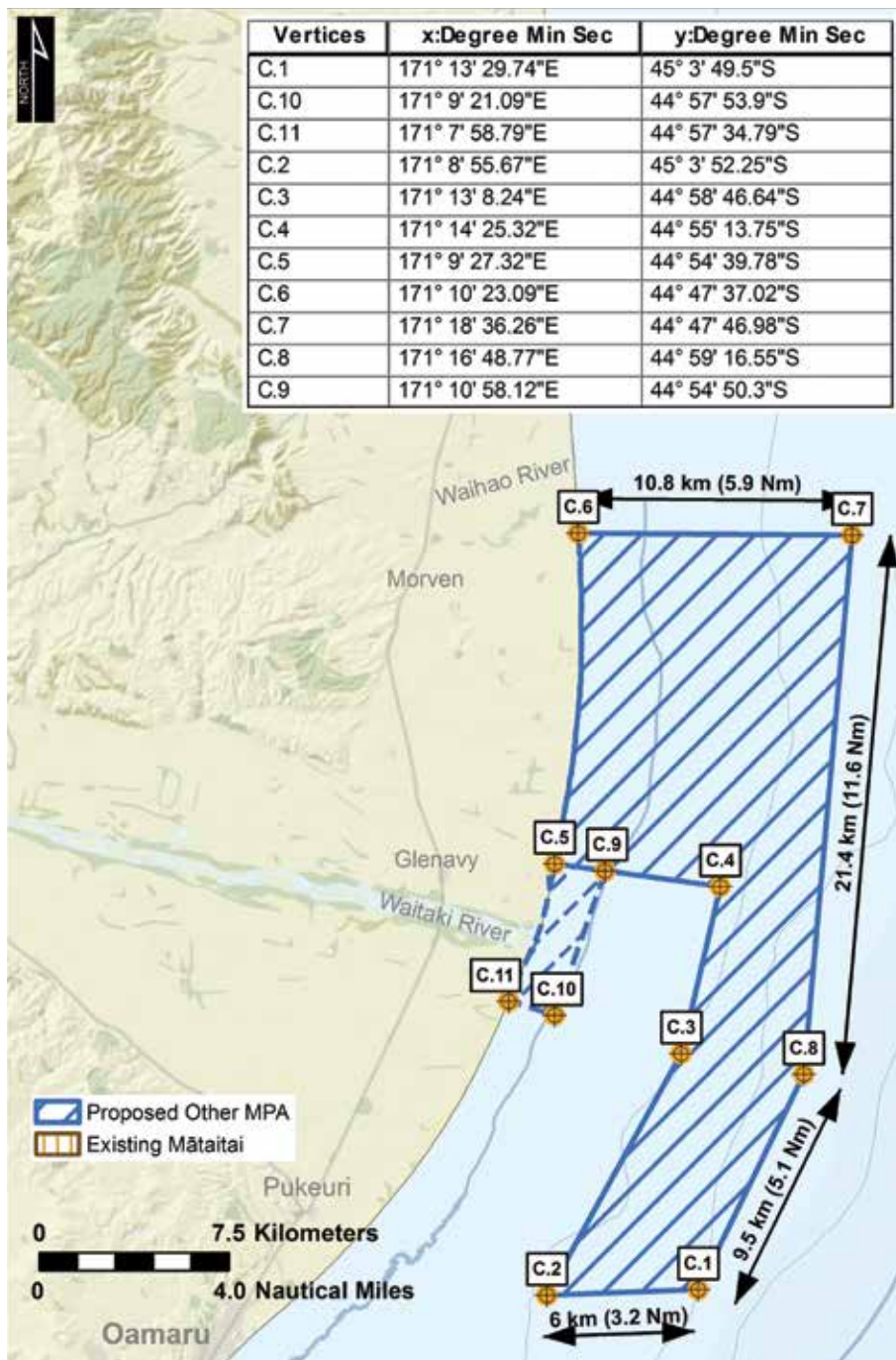
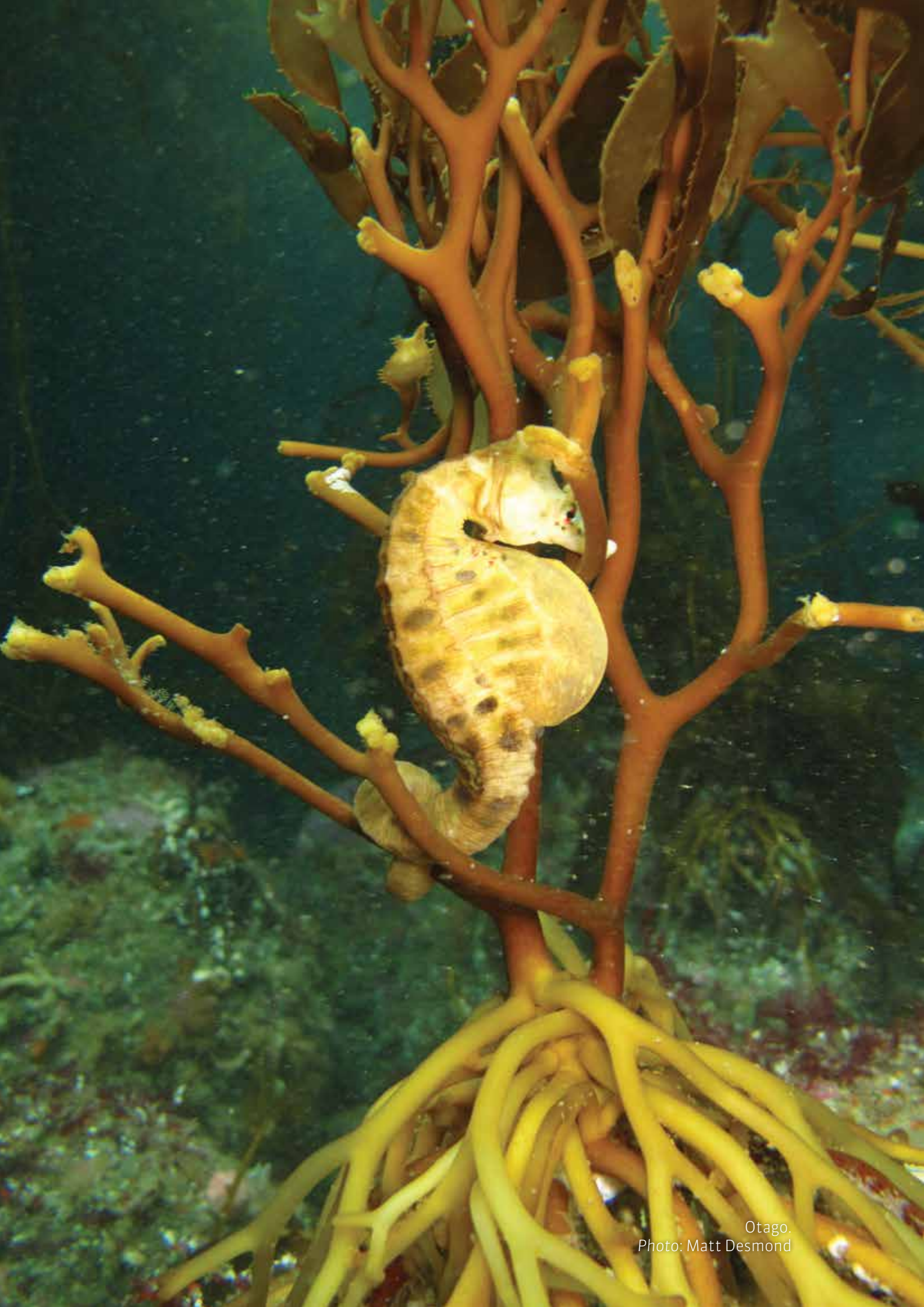


Figure 15: Proposed boundaries for the Waitaki Offshore Type 2.



Otago.
Photo: Matt Desmond



Stony Creek Coast, North Otago.
Photo: John Barkla

D. PLEASANT RIVER TO STONY CREEK (TYPE 1)



Figure 16: Proposed Type 1 MPA.

Description

186. There are two options to consider for this proposal: A coastal marine reserve that extends from the coast to the outer edge of the bladder kelp *Macrocystis* forest; and a marine reserve that extends from the coast to further offshore. The landward boundaries of the two options are identical.
187. Both options extend approximately 8km along the coast from Pleasant River estuary in the south to Stony Creek estuary in the north, incorporating both estuaries.
188. Option 1 extends from mean high water springs to a straight line that ranges between 1.5 km to 2 km (0.8 nm – 1.1 nm) offshore. It covers approximately 16.5 km² and includes 0.2% of the Forum region.
189. Option 2 extends from mean high water springs to 10 km (5.4 nm) offshore. It covers approximately 51.3 km² and includes 0.6% of the Forum region.

-
190. In both options fishing vessels would be allowed to enter the area, so long as they had no gear used for the purpose of fishing in the water at the time. This is regardless as to whether they are carrying fish or not (and in accordance with existing fisheries regulations). No discharge to the MPA would be allowed, this includes (but not limited to) grey water, sewage and fish waste.
191. There are wāhi tapu located on the coast and the recovery of koiwi and other cultural artifacts by Kāi Tahu shall not be impacted by this proposal.

Environment

192. The site contains fine-grained sandy beaches alternating with headlands of moderately exposed rock and cliffs and bounded by two estuarine areas (Stony Creek and Pleasant River).
193. Extensive forests of bladder kelp *Macrocystis pyrifera* are a dominant feature of many of the subtidal reefs within the site. Kelp forests have been likened to terrestrial forests in both their structure and their ability to support many other species, and are considered one of the most productive habitat types worldwide.³⁶ Pleasant River is a tidal lagoon salt marsh habitat and includes protected marginal strip and the Pleasant River Sand Spit Conservation Area adjacent to it. There is community support to restore the estuary. The Dunedin City District Plan lists Pleasant River Estuary as an Area of Significant Conservation Value. It is described as an estuary with succulent herb swamp, mudflat, salt rush and reed swamp, and of regional significance, and has a *High degree of wetland naturalness*³⁷. It is also listed in the Regional Plan Water for Otago's Schedule 9 as a regionally significant wetland. An Important Bird Area (IBA)³⁸ has been identified at Bobbys Head. Colonies of Spotted Shag and Sooty Shearwater have been reported from within the proposed site. Yellow-eyed penguins breed here. Right whales and Orcas are also seen along this coast.
194. Habitats include rare examples of volcanic rock reefs, estuaries, kelp forests, exposed reef shelves, sea caves, subtidal concretions (Moeraki boulders), and seaweed gardens.

³⁶ For additional information on kelp forests, refer to *An Overview of Kelp Forest Communities in the South-Eastern South Island* www.south-eastmarine.org.nz/oursea/natural-history

³⁷ <http://www.orc.govt.nz/Information-and-Services/Wetlands-Inventory/Waitaki-District/>

³⁸ Forest & Bird (2014). *New Zealand Seabirds: Important Bird Areas and Conservation*.

Why was this site chosen for consultation?

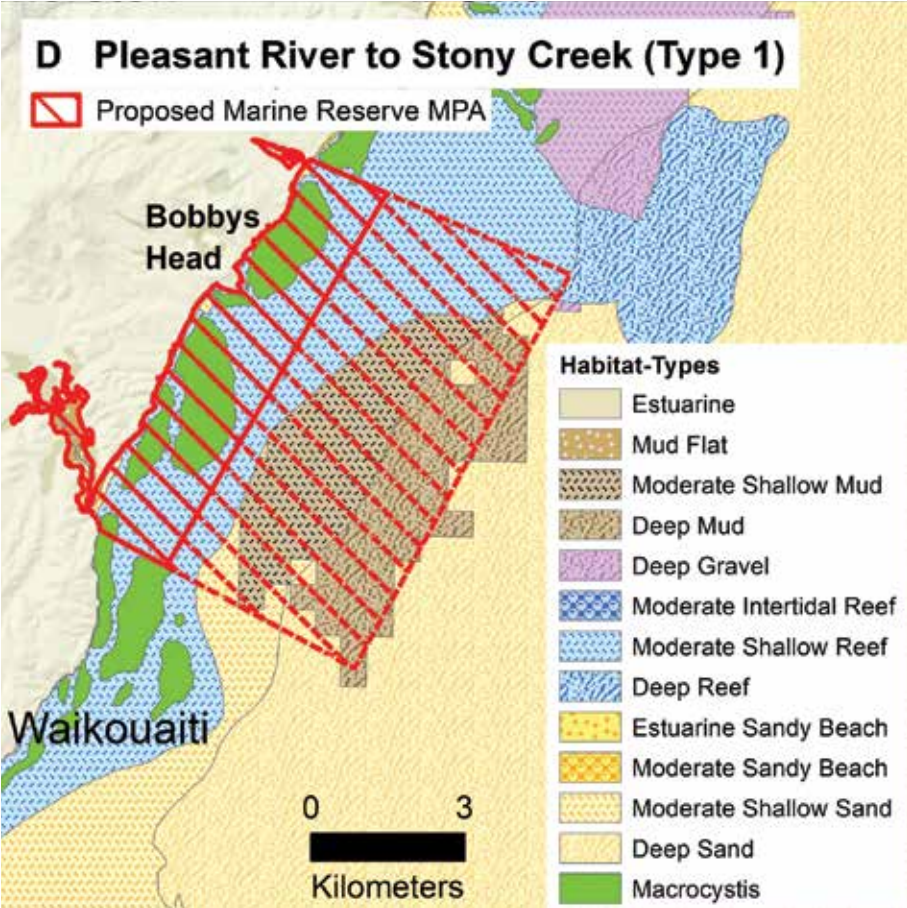
195. This site is an area where there are a large range of habitats close to each other, and so it provides an opportunity to protect several habitats in one marine protected area, including rare examples of volcanic rock reefs, estuaries, kelp forests, exposed reef shelves, sea caves, subtidal concretions (Moeraki boulders), and seaweed gardens.
196. The general area of the proposal encompasses some spectacular inshore habitats, in particular a number of kelp forest patch reefs.
197. The area also has good potential for development as a tourist attraction, and provides a good opportunity for research. Option 1 would allow for protection of the kelp forest habitat, and species that move relatively short distances (for example, pāua). Wider ranging species such as rock lobster and most exploited fin-fish species are likely to continue to be vulnerable to fishing. As such, the ability of the proposed Option 1 to enable the maintenance and recovery of ecological systems, natural species composition (including all life-history stages), and trophic linkages³⁹, is reduced⁴⁰.
198. Option 1 minimises the potential impact to customary, commercial and recreational fishing, compared to Option 2 under the MPA Policy. Where there are choices of sites that add a similar ecosystem or habitat to the protected area network, a primary consideration for site selection is to minimise adverse impacts on users.
199. Option 2 allows for additional protection of species that associate with the kelp forest habitat but have a greater range of movement. It includes a buffer from fishing and would further reduce vulnerability to fishing. Option 2 includes deeper reef habitat out to approximately 30 m depth which goes beyond the normal depth of a kelp forest. It also includes habitat types that Option 1 does not. These relate to areas of shallow and deep mud and include the only substantial area of deep mud habitat within the proposed network. It is important in meeting the MPA Policy objective to represent all habitat types and this option is the only current opportunity to represent this habitat in a marine reserve.
200. Option 2 has a greater potential impact on existing users compared to Option 1.
201. There was interest by some Forum members in proposing a marine reserve around Shag Point due to the wide range of habitat values present there. However, given the adverse impact a marine reserve around Shag Point would have on a range of values, particularly cultural significance, customary use, commercial and recreational fishing, the Forum agreed to instead consult on the Pleasant River to Stony Creek proposal, which still meets the MPA Policy requirement to represent these habitat types within the network.

³⁹ See *Volume II, Appendix 2: Marine Protected Areas: Classification, Protection Standard and Implementation Guidelines*, pages 10-11.

⁴⁰ Refer to *Network Design: Ecological Concepts* at <https://south-eastmarine.org.nz/about/marine-protected-areas/>

HABITAT TYPES

202. Option 1 includes four coastal habitat types and three estuarine habitats and a large area of *Macrocystis* forest. The additional area of Option 2 incorporates additional soft sediment habitats (sands and muds) and a larger area of reef. Figure 17 shows the extent of the habitat types in each option.



Habitat types included within the proposed site

Area (km) is the area of that Habitat type that is included within the site. Area (%) refers to how much of the habitat type within the entire Forum region is included within the site.

COASTAL HABITATS	OPTION 1		OPTION 2	
HABITAT	AREA (KM ²)	AREA (%)	AREA (KM ²)	AREA (%)
Moderate Shallow Reef	14.6	13.2	26	23.4
Moderate Shallow Sand	0.3	-	1.7	0.2
Moderate Intertidal Sand	0.2	4.2	0.2	4.2
Moderate Sandy Beach	0.2	3.9	0.2	3.9
Deep Mud	-	-	9.6	7.5
Deep Sand	-	-	1.7	-
Moderate Shallow Mud	-	-	10.7	8.1

ESTUARINE HABITATS	OPTION 1		OPTION 2	
HABITAT	AREA (KM ²)	AREA (%)	AREA (KM ²)	AREA (%)
Mud Flat	0.7	2.2	0.7	2.2
Estuarine	0.3	6.9	0.3	6.8
Estuarine Sandy Beach	0.2	1	0.1	1

SENSITIVE HABITATS	OPTION 1		OPTION 2	
HABITAT	AREA (KM ²)	AREA (%)	AREA (KM ²)	AREA (%)
Macrocystis bed	5.8	36.3	5.8	36.3

Figure 17: Habitat types within the proposed Pleasant River to Stony Creek MPA.

Existing Users

203. The entire area from Oamaru to Waikouaiti is important for many existing users of the marine environment, from customary use, recreational and commercial fishing, tourism and general enjoyment.

Cultural and Customary

204. Kāti Huirapa rohe moana.

205. From Onewhenua where the canoe Araiteuru rests, through to Purehurehu, this part of the coastline of Kāti Huirapa, and associated estuaries, rivers and streams have always sustained the manawhenua.

206. Kāti Huirapa can point to nearly two decades of successful, modern, inclusive fisheries and habitat management within the East Otago Taiāpure.

207. In principle, Kāti Huirapa are not opposed to marine protected areas in their rohe.

208. If such an area was to be installed, then a couple of things must be considered:

- Kāti Huirapa will not relinquish its sovereignty over its rohe moana, and therefore would continue to manage any marine reserve placed within their area. Potentially with stakeholders, and using the Taiāpure model.
- Kāti Huirapa are of the view that legislation needs to change, to allow the Taiāpure to respond more quickly to increased pressure caused by displacement of any area that is previously accessed by recreational fishers.

Commercial fishing

209. It is recognised that commercial fishing is an important feature of the economic, social and cultural aspect of the region.

210. Of the different areas considered, the current proposed options have been selected to minimise the displacement of commercial fishing while meeting the principles of the MPA Policy. Figure 18 provides information about relative displacement of fisheries catch that would occur under the two options.

211. Figure 18 indicates the estimated percentage of catch from the Forum region that can in theory be attributed to the area that would be closed to commercial fishing should the Pleasant River to Stony Creek site become a Type 1 MPA⁴¹.

212. The rock lobster fishery is likely to be affected by both options. Other fisheries that could be impacted include the pāua fishery, some blue cod potting and a small amount of the trawl fishery (see Figure 18).

⁴¹ This is modelled data so should be used with caution. It is derived from fisheries administration data provided to MPI whereby vessels over six metres in length are required to report their trawl start positions for each fishing event by latitude and longitude to within one minute (equates to an accuracy of one nautical mile), and netting to within two nautical miles. The location of vessels less than six metres is only reported to the relevant statistical area. The Forum area encompasses part of statistical area 22 (SA022), all of SA024 and SA026 and part of SA025. For more information about commercial fisheries information, please refer to Volume II Appendix 4: Fisheries Reporting.

213. Because of the high value of rock lobster, there is potential for high economic impacts as a result of the proposed marine reserve. This impact is higher under Option 2 than under Option 1. However, the proposal intentionally avoids encompassing all reef areas, allowing rock lobster fishing to still occur within the greater reef system. In addition, the majority of rock lobster caught within this area are migratory and therefore likely to move outside the reserve and become available at some stage of their life. Impacts to the fishery will include a displacement of effort, and reduced access to specific size classes of fish.
214. Alternative options to include an area north of Shag Point would have displaced approximately 8.7% of the pāua fishery. The pāua fishery is more susceptible to displacement due to the limited movement of the pāua compared to most other commercial species. Therefore, the current proposal has a lesser impact than a similar sized MPA in the vicinity of Shag Point, displacing approximately 0.4% – 0.5% (refer to Volume II, Appendix 4 for detail on the fisheries reporting and limitations). There is little difference in impact on the pāua fishery between Option 1 and Option 2.

Commercial Fishing Intensity

The percentage of the regions fishery that would be displaced by the proposal is shown in the table. Displacement relates to the fishing that occurs within the Forum region, not at the Quota Management Area (QMA) Displacement does not directly relate to an impact on a fishery, but provides a relative indication of the potential impact restrictions may have.

	FISHERY DISPLACEMENT (%)	
FISHERY	OPTION 1	OPTION 2
Pot – Rock lobster	5.4	11.3
Line (bottom longline and dahn line)	0.7	1.5
Dive – Pāua	0.4	0.5
Pot – Blue cod	0.3	0.8
Dive – Other	0.1	0.2
Trawl – Flatfish	<0.1	0.1
Trawl – Gurnard	<0.1	0.1
Trawl – Other	<0.1	0.1
Trawl – Red cod		<0.1
Trawl – Tarakihi	<0.1	0.1

Figure 18: Commercial Fishing Intensity – Pleasant River to Stony Creek Type 1. Please note that Figure 18 as originally provided was in error, and has been replaced. We regret any inconvenience caused.

-
215. It is important to note that there is uncertainty about the actual impacts (positive or negative). The information presented is based on the best estimates available. But, for many species, the spatial extent that catches are reported within means we cannot be sure how much catch is taken in a specific area or the extent of the displacement of fishing effort.
216. For more information to help you understand the table and the potential impacts of marine protected areas on commercial fishing please refer to Volume II, Appendix 4: *Fisheries Reporting*.

Recreational fishing

217. Recreational fishing is also an important feature of the economic, social and cultural aspect of the region. The Forum heard that Shag Point and Moeraki in particular are highly valued as recreational fishing sites. Areas within the proposed site, and south of it, are also valued for recreational fishing.
218. The current proposal has been selected to have a lesser impact on recreational fishing relative to the options closer to Shag Point, while continuing to meet the principles of the MPA Policy and the objective of establishing a network of representative marine protected areas.

Tourism

219. Shag Point would have the best accessibility of the options considered, but significant opportunities to provide access still exist for the current proposal. However, there is limited snorkeling and diving opportunities here compared to Shag Point.

Scientific value

220. The proposed area is relatively close and accessible to the University of Otago's Portobello Marine Laboratory and currently supports a range of research and teaching by the University of Otago and other institutions. It would provide a good opportunity for research with patches of pāua habitat, multiple kelp forest reef systems and connected estuaries. The proposed area is considered a significant opportunity for a variety of research and includes habitats / ecosystems that are not protected elsewhere.
221. It provides opportunities to establish protected populations for a range of exploited species that would inform fisheries management. Because of the proximity to Moeraki Mātaitai and the East Otago Taiāpure it will also provide information for management in those areas. Kelp forest ecosystems are one of the most widely studied habitats in the world and provide enormous opportunities for learning about how marine ecosystems work and the impacts of threats (e.g. fisheries, run off from the land) on marine habitats.

Summary

222. This proposal has been notified for consultation as it provides protection for a significant area of the coast that has very high biodiversity values. The site meets the objectives of the MPA Policy by protecting representative examples of several habitat types.
223. Option 1 has less potential adverse impacts on existing users, while Option 2 would protect additional habitats not protected elsewhere in the Forum region. The potential impacts of either option could be significant because of the high value of rock lobster, but the actual impacts are likely to be reduced by the ability to take rock lobster as they migrate to other areas.

Making your submission

224. You are welcome to submit on any aspect of the proposal, either for or against, or suggest alterations. In particular, the Forum would like feedback on the following for this site:
- Does this area provide adequate protection for the habitats included?
 - Would the smaller Option 1 or the larger Option 2 be preferred?
 - How would this proposal affect your current or future use of the area? How would this proposal affect you?
 - Do you support this area going forward as a part of the south-east marine protected areas network? Why? Why not?
 - If you do not support it in its current form, can you suggest alternatives to the proposal that would make it more acceptable, such as changes to its location, size, boundaries and specific rules?
 - For the fishing methods noted above, how often are they used by you in this area, and how much of each species is taken by these methods?
 - Do you have any information that would help the Forum decide what restrictions if any to recommend?

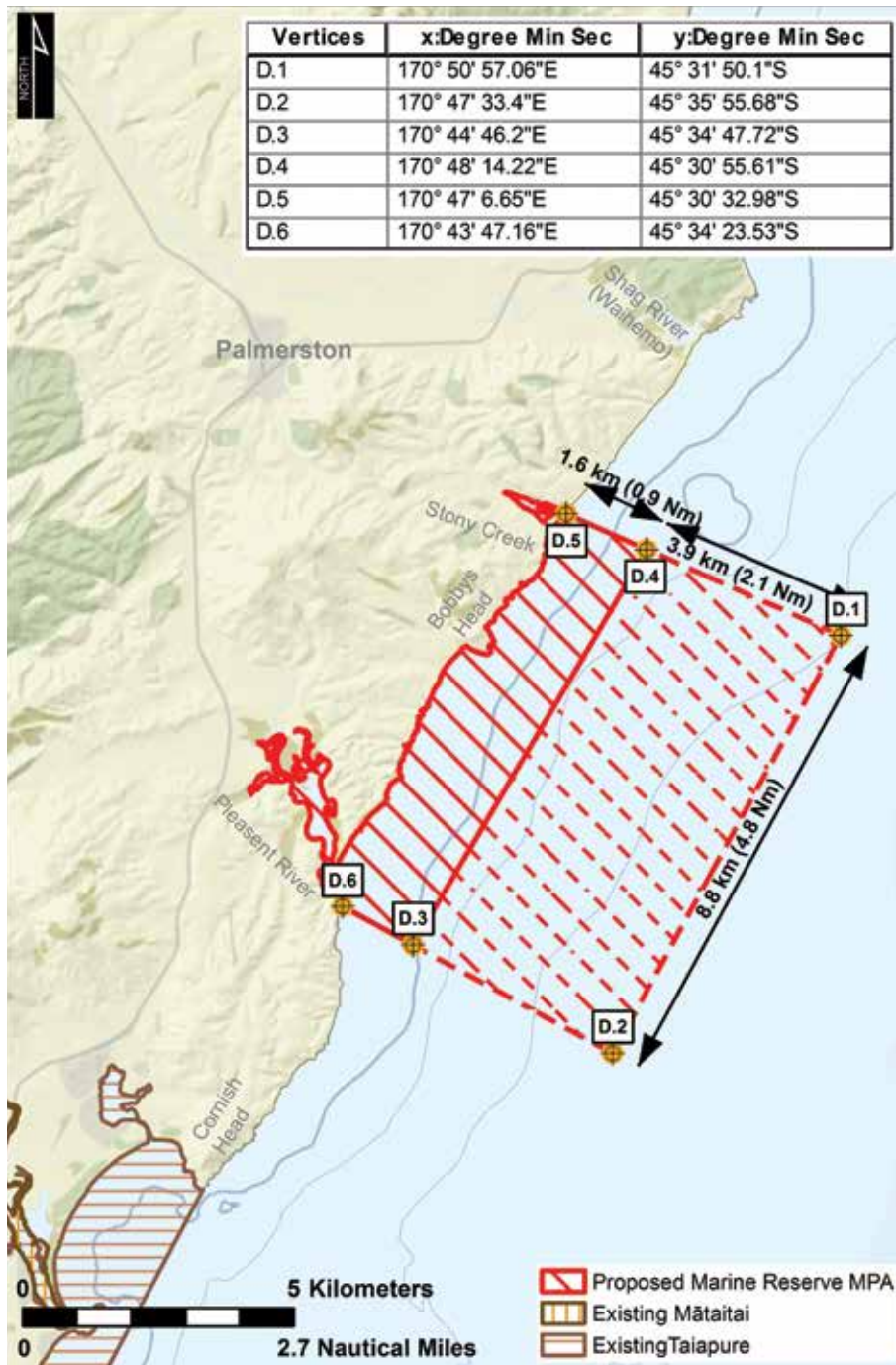


Figure 19: Proposed boundaries for Pleasant River to Stony Creek Type 1.



Aramoana, Dunedin.
Photo: John Barkla



Cape Saunders, Otago Peninsula.
Photo: John Barkla

E, F, G & H. OTAGO SHELF AND CANYONS

225. The Forum recognises the special biodiversity values associated with the continental shelf and canyons found off the Otago Peninsula. We are still considering how best to represent these values in the network, while minimising adverse effects on existing users, therefore options are being consulted on to get further information.

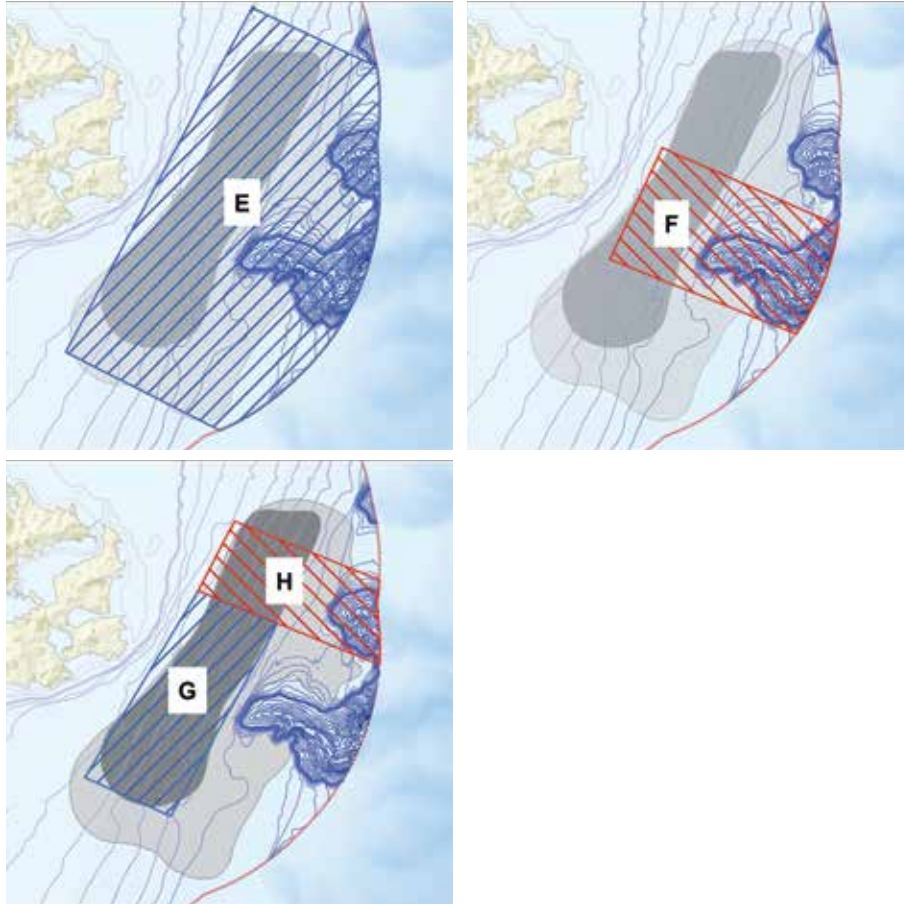


Figure 20: Map showing the proposals being consulted on (see below for detail).

ENVIRONMENT

226. The biodiversity of the area of the Otago Peninsula is strongly influenced by the impact of the Southland Current being ‘squeezed’ between the peninsula and the canyons, creating a diverse oceanographic environment.

Canyons

227. This area is one of only two areas⁴² where canyons extend substantially within the 12nm territorial sea on the east coast of the South Island, and the only place where this happens in the Forum region. The canyons are biologically diverse, providing habitats for brittle stars, sea stars, gastropods, bivalves, shrimps, hermit crabs, bryozoans, sponges and quill worms, amongst others. The canyons are hotspots for sea birds and whales including Long Finned pilot whales and Sperm whales. The canyons extend out some distance into the deeper water with correspondingly different habitats, but the extent of the canyons beyond 12nm is outside of the Forum's jurisdiction.

Bryozoans

228. The bryozoan beds (identified on the site map in grey) are a major biogenic habitat that has been identified off the Otago Peninsula. Biogenic habitats such as these create habitat for diverse invertebrate communities (e.g. sponges, anemones, worms, crabs, snails, sea stars, and sea squirts). Bryozoan habitats can significantly and positively influence survival of these invertebrates.⁴³

229. The bryozoan bed pictured in the map is not uniform in appearance, or in the species that make up the bed. Across the shelf the bryozoan species that create the beds tend to change with depth and sediment type. Likewise, the many different invertebrate species associated with bryozoans also change as one moves from shallower depths to the deep water. Bryozoans have also been found in and around the canyon heads, and are utilised by many fish species. Detailed surveys of habitat use by fish have not been carried out for the Otago Peninsula bryozoan beds however juvenile tarakihi were regularly observed off Otago Peninsula and juvenile blue cod were recently observed in association with bryozoans.

230. The narrowing of the continental shelf off Otago Peninsula, and the abundance of organisms that use the bryozoans as habitat, create feeding grounds for some larger vertebrates as well such as sea lions and yellow-eyed penguins that target the waters over the bryozoans.

231. All Forum members recognise the value of the bryozoan beds and agree that they should be protected in some way. The level and extent of protection is still under discussion, and is why alternatives have been put forward for consultation.

Plateau

232. The plateau between canyons is likely to be significantly influenced by the Southland Current and the upwelling that occurs from deeper waters up the canyons.

⁴² The other place where canyons extend into the territorial sea is at Kaikoura.

⁴³ Refer to Habitat Forming Bryozoans in the South-Eastern South Island at www.south-eastmarine.org.nz/oursea/natural-history

233. We do not know much about what lives in the plateau area. But, based on the upwelling, we expect them to be very productive areas, and potentially areas of high biodiversity.

234. This area is a significant commercial set net fishery for school shark and rig.

ALTERNATIVE OPTIONS

235. To protect the values of this area we are presenting alternatives for you to consider and comment on.

236. The alternatives incorporate a Type 1 MPA (no take marine reserve) and another marine protected area (with various fisheries restrictions).

237. The alternatives are:

- **Alternative 1:** Includes a marine reserve over Saunders Canyon and the central part of the bryozoan beds (F – Saunders Canyon) and a Type 2 MPA with various fishing restrictions to protect the remaining bryozoan beds, including Papanui Canyon (E – Bryozoan Bed). See below for descriptions of the habitats and reasons for proposing this alternative.

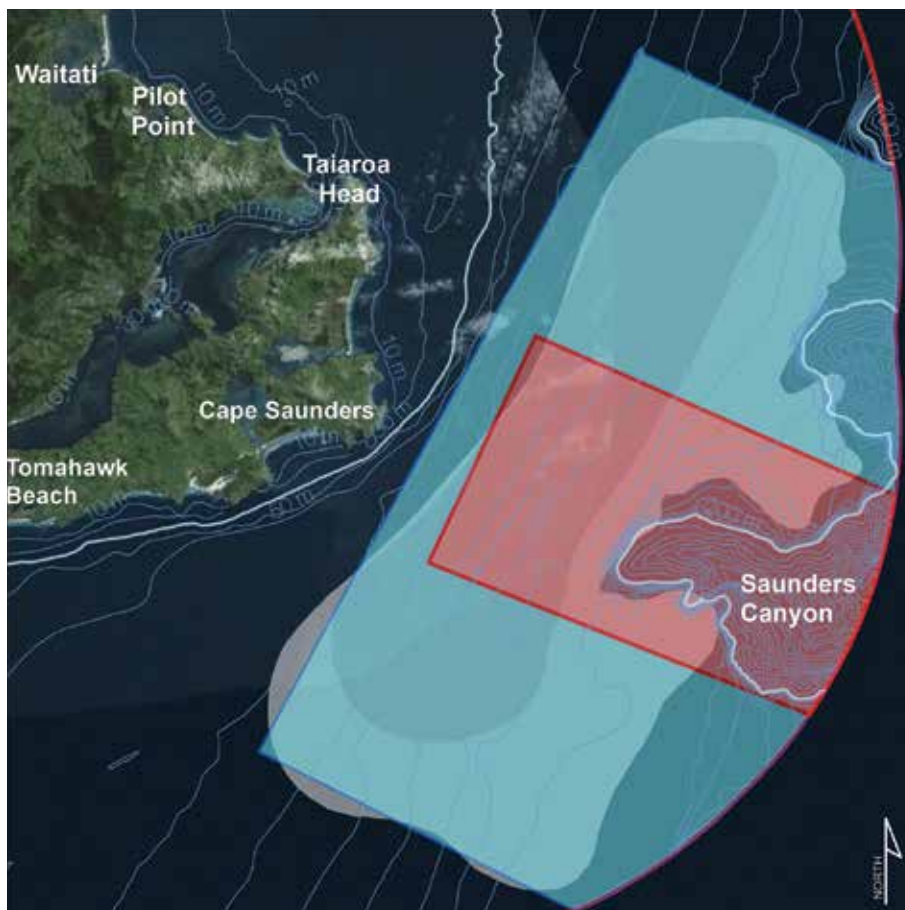


Figure 21: MPAs associated with alternative 1.

- **Alternative 2:** includes a marine reserve over Papanui Canyon (H – Papanui Canyon), combined with fishing restrictions covering the central part of the bryozoan beds (G – Bryozoan Bed). See below for descriptions of the habitats and reasons for proposing this alternative.

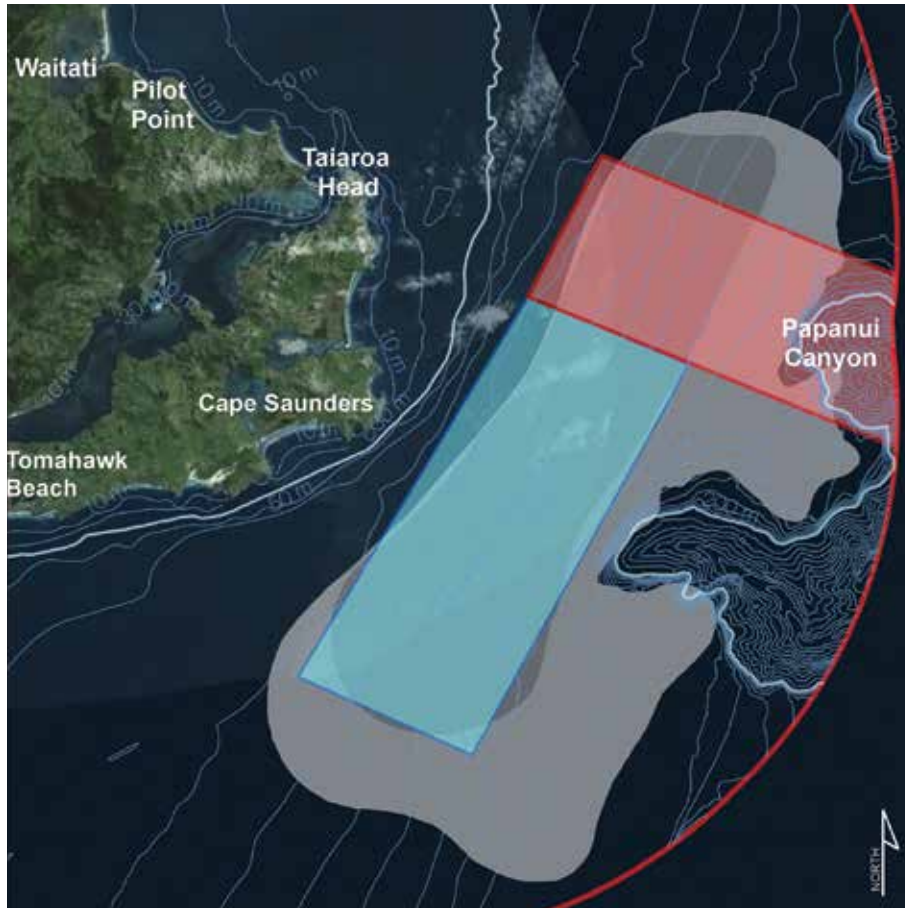


Figure 22: MPAs associated with alternative 2.

ALTERNATIVE 1

Description

238. Alternative 1 consists of two parts (see figure 21, 23 and 26): A marine reserve over the head of the Saunders Canyon including part of the bryozoan bed (F); and a Type 2 MPA covering the majority of the identified bryozoan bed, the head of Papanui Canyon and an area of the plateau surrounding the canyons (E).
239. As a marine reserve, the area (F) would be protected as a no-take marine reserve, with all fishing prohibited
240. The type 2 MPA (E) would include fisheries restrictions that would prohibit:
- dredging
 - all set netting; and
 - all trawling
 - purse seining.
 - danish seining

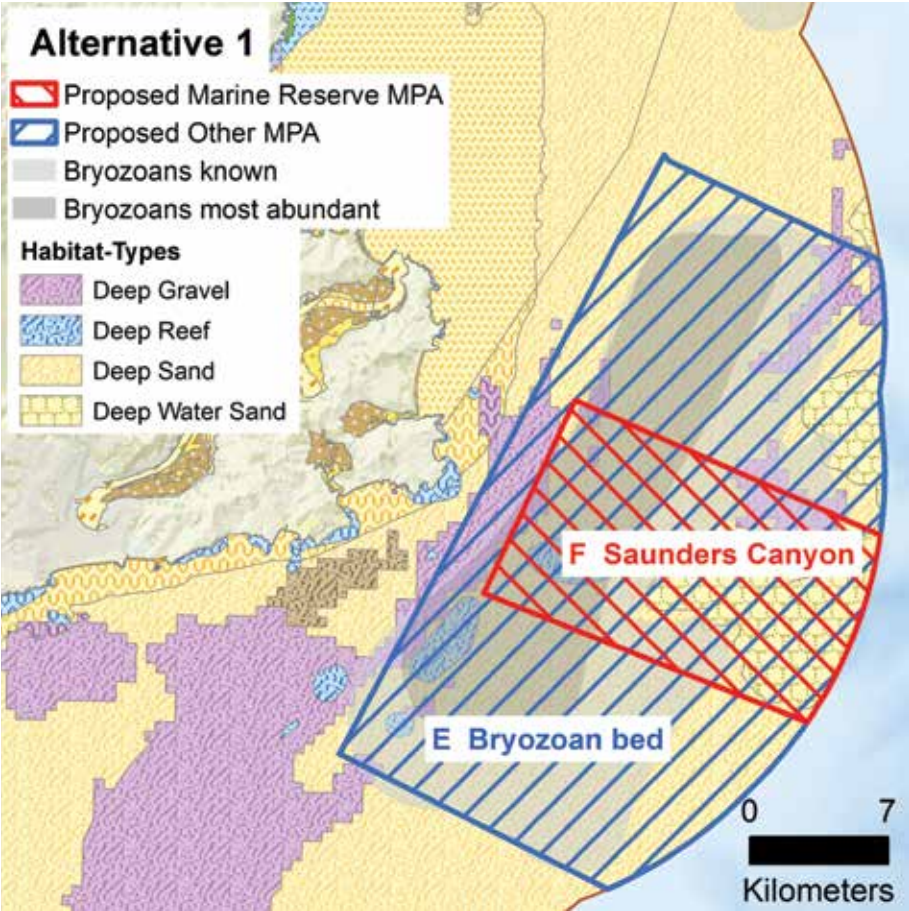
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241. The Type 2 MPA would continue to allow potting and line fishing, both commercial and recreational.
242. Together, both marine protected areas (F and E) for Alternative 1 cover an area of 618 km² and account for 6.9% of the Forum region. The marine reserve on its own would account for 186 km² and 2.1% of the region.

Why is this alternative being provided for consultation?

243. The Forum considers that the canyons are a unique feature of the region and warrant protection. Saunders Canyon head has significantly more area and contains much more of the high relief habitat where one would expect to see hard and soft corals, bryozoans and other fragile biogenic habitat forming invertebrates. The map shows areas of very sharp slope in the Saunders Canyon head that are critical places for invertebrate biodiversity.
244. Some Forum members consider that protecting Saunders Canyon in a marine reserve MPA provides a better option in terms of biodiversity benefits than Papanui Canyon. This is largely due to the head of Saunders Canyon extending further into the territorial sea, and therefore a greater area would be protected.
245. The Forum would like to hear from the public as to whether this alternative should include Saunders Canyon as proposed, or if Papanui Canyon is more appropriate to include instead (see site H from Alternative 2). A Papanui Canyon marine reserve option may achieve similar representation of habitats to the currently proposed Saunders Canyon marine reserve option.
246. Alternative 1 includes the entire known area of the bryozoan bed, although how far south the bed extends is not well known. It also provides for representation of the plateau between the canyons and the head of Papanui Canyon (replicating the canyon habitats). This alternative provides the more comprehensive level of protection over the bryozoan bed, compared to Alternative 2, because more fisheries methods are proposed to be prohibited.
247. Some Forum members consider that, in addition to protecting the habitat structure by restricting bottom impacting methods (dredging, bottom trawling and Danish seining), additional fishing restrictions on all netting, mid-water trawling and purse seining are required to maintain and restore ecological systems, natural species composition and trophic linkages, as proposed by this alternative (See MPA Guidelines section 2.5 and 2.6). As such, restrictions on all netting, mid-water trawling and purse seining are proposed for the marine protected area over the bryozoan bed (E).
248. New Zealand sea lions and a number of seabird species use the areas included within this proposal. The restrictions would protect important habitat for these species (the reason why these animals occur there), reduce the potential for incidental fisheries captures in particular by set nets, and in doing so help maintain the rich diversity of large animals that utilise the area.

HABITAT TYPES FOR ALTERNATIVE 1

249. Figure 23 shows the habitat types for the areas being proposed.



Habitats included within Alternative 1

Area (km) is the area of that habitat type that is included within the site. Area (%) refers to how much of the habitat type within the entire Forum region is included within the site.

COASTAL HABITAT TYPES	E - BRYOZOAN BED (TYPE 2)		F - SAUNDERS CANYON (TYPE 1)	
	AREA (KM ²)	AREA (%)	AREA (KM ²)	AREA (%)
Deep Gravel	67.7	6.4	15.4	1.5
Deep Reef	17.8	5.1	8.2	2.3
Deep Sand	461.1	9.9	109.8	2.4
Deep Water Sand	70.9	97.0	52.5	71.8

SENSITIVE HABITATS	E - BRYOZOAN BED (TYPE 2)		F - SAUNDERS CANYON (TYPE 1)	
	AREA (KM ²)	AREA (%)	AREA (KM ²)	AREA (%)
Bryozoans	405.2	94.1	112.1	26

Figure 23: Habitat types within the proposed alternative 1.

ALTERNATIVE 2

Description

- 250. Alternative 2 consists of two parts (see figure 22, 24, and 27): A marine reserve MPA over the head of the Papanui Canyon, including part of the bryozoan bed (H); and a Type 2 MPA covering the area of bryozoan bed identified as ‘most abundant’ (G).
- 251. Alternative 2 differs from Alternative 1 in that it would protect only one canyon, and would protect a smaller area of the known extent of the bryozoan beds and surrounding area. The type of fisheries restrictions included within the type 2 MPA area are also different compared to Alternative 1.
- 252. As a marine reserve, the area (H) would be protected as a no-take marine reserve where all fishing would be prohibited.
- 253. The Type 2 MPA (G) includes fishing restrictions that would apply over the greatest known extent of the bryozoan bed, (see the area shown in darker grey in Figure 20) and provide for commercial set netting to still be undertaken as it has done for many years.

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254. The fisheries restrictions would prohibit:
- bottom trawling
 - dredging; and
 - Danish seining.
255. Other commercial and recreational fishing would still be permitted. Together the marine reserve and fisheries restrictions proposed as Alternative 2 covers an area of 258 km² and account for 2.9% of the Forum region, with 138 km² of this area being bryozoan bed, and the marine reserve alone accounting for 106 km² and 1.2% of the region. Both areas combined will protect at least 213 km² and the majority of the bryozoan bed.

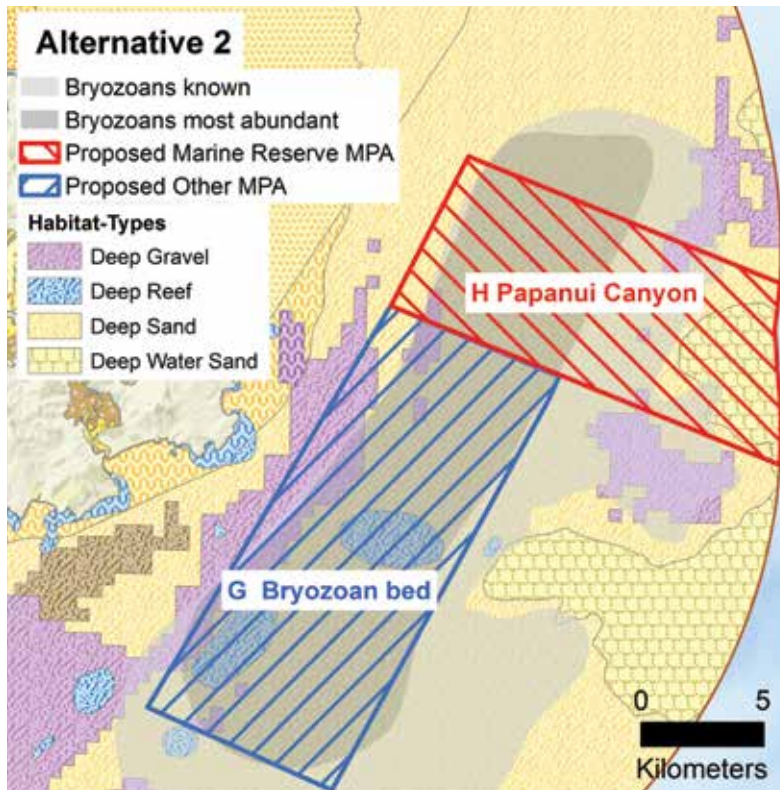
Why is this alternative being provided for consultation?

256. All Forum members agree that the canyons should be represented in the network, but, some Forum members consider Papanui Canyon should be protected rather than Saunders Canyon because it would have the least impact on commercial and recreational fishers.
257. To minimise potential impacts to commercial fishing, the boundaries of the marine reserve MPA (H) are close to the canyon head, leaving the plateau available to fishing.
258. All Forum members recognise the biodiversity value of the bryozoan beds, which are already partially protected by a voluntary bottom trawling ban. Some Forum members think that, due to the impact on commercial fishers, fishing restrictions should be limited to the main area of abundant bryozoans, and to the main threat – mobile bottom impacting methods. As a biogenic habitat, protecting at least part of the bryozoan beds in a marine reserve is required under the MPA Policy. Protecting replicate examples is also required⁴⁴.
259. The school shark set net fishery is recognised in at least three distinct areas within the Forum region and one of those is located with this Type 2 MPA, therefore no set net ban is proposed for this alternative. The additional restriction of set net would have a significant adverse impact to fishers and shift effort into the remaining school shark areas.
260. The design of the Type 1 and Type 2 areas combined minimise the impact on existing users. It is identified that there will be some impact and that boundary changes may need to be made to accommodate those users where information has been excluded from SeaSketch because of commercial sensitivity. That is, longline and potting for ling in the canyon and trawling for queen scallops.

⁴⁴ Replication is fundamental to good network design, Refer to Network Design: Ecological Concepts at <https://south-eastmarine.org.nz/about/marine-protected-areas/>

HABITAT TYPES FOR ALTERNATIVE 2

261. Figure 24 shows the habitat types for the areas being proposed.



Habitats included within Alternative 2

Area (km) is the area of that habitat type that is included within the site. Area (%) refers to how much of the habitat type within the entire Forum region is included within the site.

COASTAL HABITAT TYPES	G - BRYOZOAN BED (TYPE 2)		H - PAPANUI CANYON (TYPE 1)	
Deep Gravel	111.1	2.4	5.2	0.5
Deep Mud	24.8	2.4	0	0
Deep Reef	15.9	4.6	0	0
Deep Sand	0	0	83	1.8
Deep Water Sand	0	0	18.1	24.7

SENSITIVE HABITATS	G - BRYOZOAN BED (TYPE 2)		H - PAPANUI CANYON (TYPE 1)	
Bryozoans	138.4	32.1	75.1	17.4

Figure 24: Habitat types within the proposed alternative 2. Please note that Figure 24 as originally provided was in error, and has been replaced. We regret any inconvenience caused.

EXISTING USERS

Cultural and Customary

262. The ocean area that includes proposals 'E', 'F', 'G' and 'H' is part of the traditional "Te Tai o Araiteuru" that runs down the east coast from Timaru to the Mataau/Clutha. This is also a Statutory Acknowledgement area arising from the Ngāi Tahu Claims Settlement Act 1998.
263. Poatiri (fish hook) is the Māori name for Mount Charles, appropriate given the rich traditional fishing grounds associated with Cape Saunders that it overlooks. Traditional settlements on Cape Saunders utilised sheltered anchorages to access the rich fishery off Cape Saunders. The Crown has returned land at Cape Saunders to the hapū who were the original owners.
264. Maintaining and enhancing marine ecosystems that contribute to the biodiversity of "Te Tai o Araiteuru" is an important issue for Kāi Tahu. The fishery and associated ecosystems of the Cape Saunders area are of high importance to Kāi Tahu, local Rūnaka and their customary, commercial and recreational fishers. Te Rūnanga o Ōtākou have supported the principle of assessing the suitable options for marine protection off Cape Saunders, however note that marine reserves are alienating of customary interests and values.

Commercial fishing

265. Commercial fishing in the area includes bottom longlining, squid jigging, blue cod potting, and mixed trawling for flatfish, red cod, gurnard and tarakihi. In addition, set netting for rig and school shark occur in the proposed area.
266. Ling potting is conducted mostly on the southern edges of the canyons.
267. Scallop beds have traditionally been fished between the canyons (included within the Trawl – Other category), although due to market conditions this has not been an area utilised recently. To protect the potential of the queen scallop fishery, the boundaries of the marine reserve (H) under Alternative 2 are close to the Papanui Canyon head. This would enable fishing over the plateau to continue under this alternative. Alternative 1 would displace the fishery from this area as it includes a Type 2 that would prohibit all trawling and dredging.
268. Of the two alternatives, Alternative 2 is expected to have the least impacts on commercial fishing. This is largely due to having fewer restrictions on fishing over the bryozoan beds, and a smaller area covered.
269. As can be seen in figure 25, the biggest differences between the two alternatives is in the impact on net fisheries for school shark and rig, and line fishing. One of the three most important areas for school shark set netting within the Forum region is within this area.

Commercial Fishing Intensity

The percentage of the regions fishery that would be displaced by the proposal is shown in the table. Displacement relates to the fishing that occurs within the Forum region, not at the Quota Management level. Displacement does not directly relate to an impact on a fishery, but provides a relative indication of the potential impact restrictions may have.

FISHERY	FISHERY DISPLACEMENT (%)		
	ALTERNATIVE 1A (E+F)	ALTERNATIVE 1B (E+H)	ALTERNATIVE 2 (G+H)
Jig – Squid	2.4	1.5	1.5
Line (bottom longline and dahn line)	7.2	1.9	1.9
Net – Elephant	0.7	0.7	–
Net – Other	4	4	0.7
Net – Rig	3.2	3.2	0.8
Net – School Shark	9.8	9.8	0.5
Pot – Blue cod	2.1	1.4	1.4
Trawl – Flatfish	0.1	0.1	–
Trawl – Gurnard	0.1	0.1	–
Trawl – Other	0.2	0.2	0.1
Trawl – Red cod	0.1	0.1	–
Trawl – Tarakihi	1	1	0.3

Figure 25: Commercial Fishing Intensity – Otago Canyons.

270. Although the species impacted do not tend to have particularly high values, the amount of catch that could be displaced means that the potential economic impacts could be significant. It should also be noted that the displacement figure is based on the Forum region and not on the fishery level. As discussed earlier the school shark fishery is location based rather than widespread and that restricting access to the area would have a significant impact on fishery access and a reflection of a much higher displacement figure.

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271. It is important to note that there is uncertainty about the actual impacts (positive or negative). The information presented is based on the best estimates available. But, for many species, the spatial extent that catches are reported within means we cannot be sure how much catch is taken in a specific area or the extent of the displacement of fishing effort.
272. For more information to help you understand the table and the potential impacts of marine protected areas on commercial fishing please refer to Volume II, Appendix 4: *Fisheries Reporting*.

Recreational fishing

273. Recreational fishing will only be impacted by the marine reserve MPA options. Of the two canyons proposed, the Saunders Canyon is considered more valuable for recreational fishing.
274. The only restriction to recreational fishing in either proposed Type 2 MPA would be dredging, if that occurs at all. Line and pot fishing would not be affected.

Tourism & Access

275. The area is highly utilised by a number of bird and marine mammal species that are important for the tourism associated with the Otago coast. For example, there are an estimated 1000 yellow-eyed penguins in the Forum region and this number is declining due to unidentified causes. The marine protection being proposed in Alternative 1 would afford protection to the habitats and ecosystem important for the yellow-eyed penguins (as well as other species), and also provide additional protection from incidental capture.
276. A significant level of protection over the bryozoan beds, shelf habitats and canyons would add to the 'green' image of the greater peninsula area and provide potential benefits to the existing eco-tourism industry.

Scientific value

277. Both alternatives have good opportunities for research focused on both the canyon heads, the shelf plateau, and the bryozoan beds. Due to its larger overall size and the larger extent to which it comes within the 12 nm boundary, Saunders Canyon is likely to be of more value to scientists for study. Alternative 1 also provides the opportunity to learn if nesting a full closure (Type 1) within a partial closure (Type 2) can improve ecosystem recovery.
278. A reserve over a canyon would provide an invaluable research opportunity close to the Otago University Portobello Marine Laboratory and build on almost 70 years of research on the Otago shelf by the University and other organisations. The ability to have a range of management interventions from full closures (Type 1) to bans on bottom impacting activities (Type 2) would allow the opportunity to better understand habitat fishery links and have important implications for future MPA design in these types of important habitats. The area provides opportunities to establish protected habitat types and populations of a range of exploited species and will provide greater understanding of marine ecosystems that could inform fisheries management.

Summary

279. The alternatives have been put forward for consultation because the Forum considers both the canyons and the bryozoan beds are valuable habitats that should be protected.
280. The two alternatives protect different areas and provide different levels of protection for the canyons and the bryozoan beds. Each alternative has benefits and costs associated with it, and our discussions have been about the biodiversity and habitat protection benefits, and the consequences the options for protection would have on existing users.
281. Alternative 1 would protect Saunders Canyon in a marine reserve MPA, while Alternative 2 would protect Papanui Canyon in a marine reserve MPA. The marine reserve proposed under Alternative 1 protects a larger area of the bryozoan beds than Alternative 2, and also includes part of the plateau between the canyons.
282. Alternative 1 proposes a Type 2 MPA with fishing restrictions to protect a more extensive area than Alternative 2, and with a more comprehensive level of protection. Alternative 2 proposes a smaller area with fishing restrictions that are limited to mobile, bottom impacting methods. No fishing restrictions are proposed that would impact recreational fishing under any options for areas outside proposed marine reserves, with the exception of recreational dredging should that currently occur.
283. We are seeking further input as to which option you think best meets the objective and principles of the MPA Policy.

Making your submission

284. You can submit on any aspect of the proposal, and say whether you are for or against, or suggest changes. In particular, the Forum would like you to think about the following questions for the above alternatives:
 - Which alternative do you prefer? Why?
 - Are there other combinations of the sites E – H that you prefer? Why?
 - For each alternative, how would it affect how you use the area, now or in the future? How would each alternative affect you?
 - Do you support this area off the Otago Peninsula going forward as a part of the south-east marine protected areas network? Why? Why not?
 - If you do not support any of the alternatives in their current form, are you able to suggest changes to the proposals that would make it more acceptable, such as changes to its location, size, boundaries and specific rules?
 - For the fishing methods noted above, how often are they used by you in this area, and how much fish is taken by these methods?
 - Do you have any information that would help the Forum decide what restrictions to recommend?

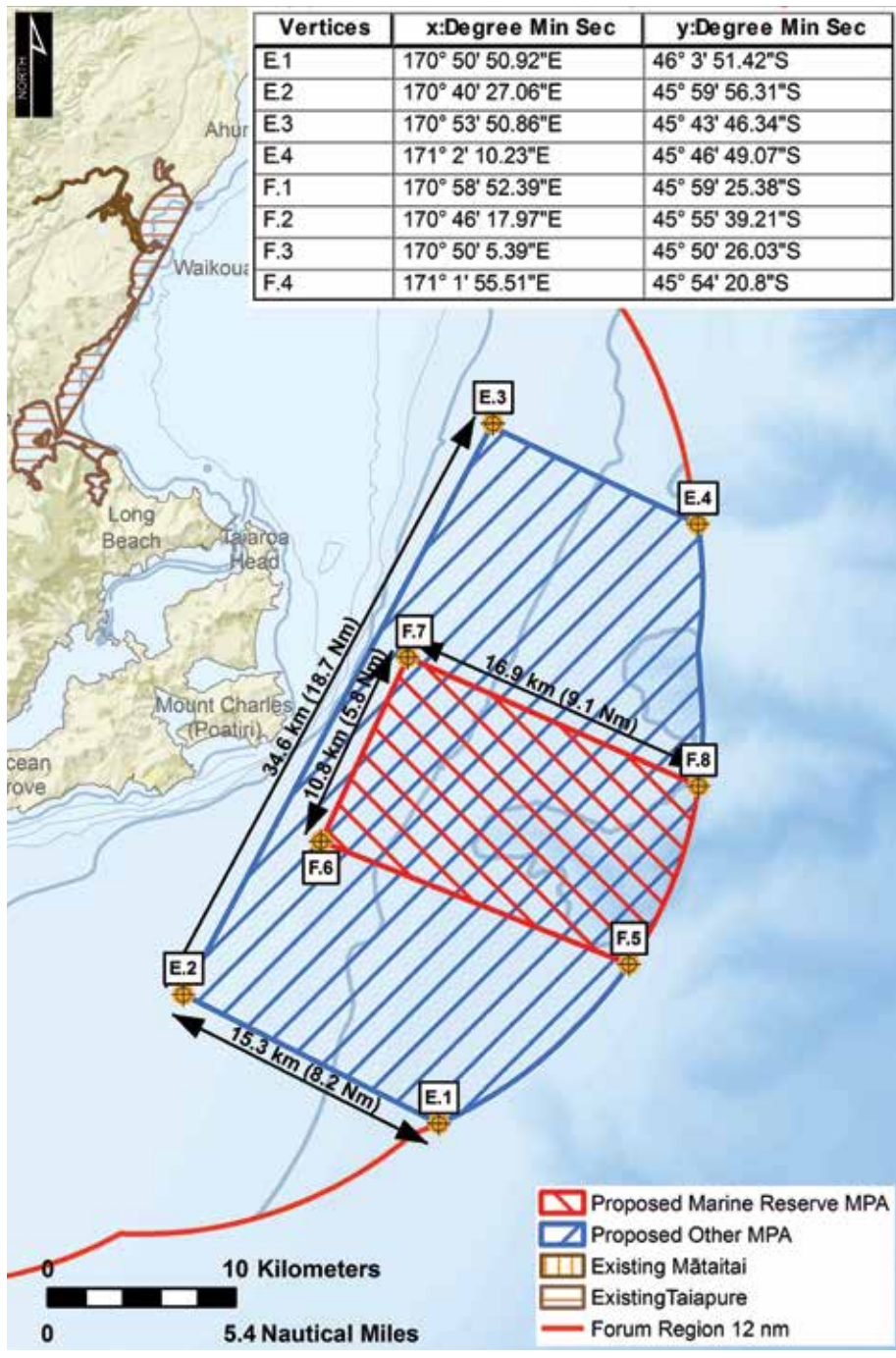


Figure 26: Proposed boundaries for Alternative 1.

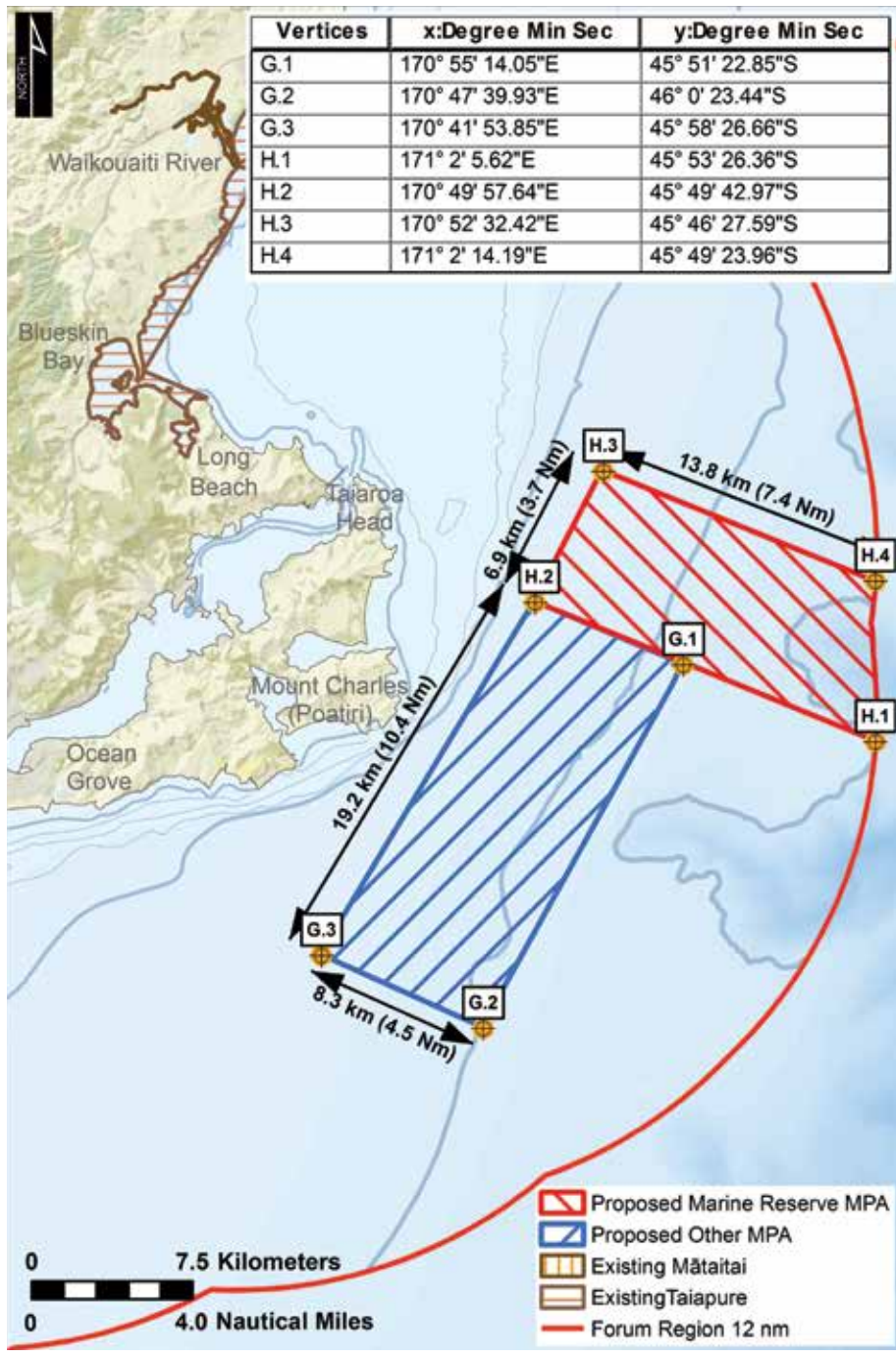


Figure 27: Proposed boundaries for Alternative 2.



Blackhead, Dunedin.
Photo: Chris Hepburn

I. HARAKEKE POINT TO WHITE ISLAND (TYPE 1)



Figure 28: Proposed Type 1 MPA.

Description

285. Two options are proposed for consultation. Both options are for a marine reserve, extending along the coast from in the vicinity of Harakeke Point to approximately one km to the south of the breaking rock to the west of White Island:
- Option 1: Has the boundary which extends directly from Harakeke Point to a point approximately one km to the south of the breaking rock to the west of White Island. Its coastal boundary is near the St Clair Salt Water Pool. Option 1 excludes Tow Rock.
 - Option 2: Has the same boundary as Option 1, but extends further offshore to include Tow Rock.
286. These MPA options are both no-take marine reserves and as such, all forms of fishing would be prohibited.
287. Both options extend 17.8 km (9.6 nm) along the shoreline (which equates to 2.3% of the Forum region's coastline).
288. Option 1 covers 28.8 km² which is 0.3% of the Forum region's area; whereas Option 2 covers 35.5 km², 0.4% of the region's area.

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289. For both options fishing vessels would be allowed to enter the area, so long as they had no gear used for the purpose of fishing in the water at the time. This is regardless as to whether they are carrying fish or not (and in accordance with existing fisheries regulations). No discharge to the MPA would be allowed, this includes (but not limited to) grey water, sewage and fish waste.
290. There are wāhi tapu located on the coast and the recovery of koiwi and other cultural artifacts by Kāi Tahu shall not be impacted by this proposal.

Environment

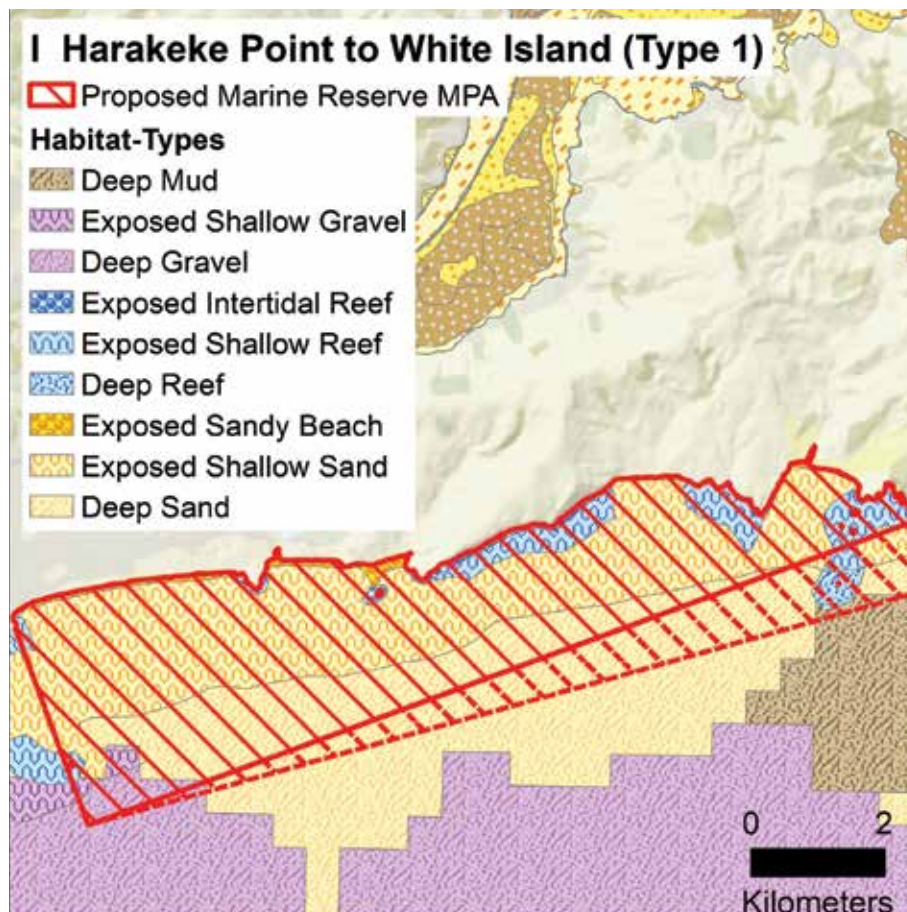
291. This site has a variety of habitats in close proximity. It is a highly productive area that tends to be more wave exposed than Green Island, and therefore includes different habitats to those at Green Island.
292. This area comprises cliffed coastal hills, medium to coarse grained sandy beaches, rocky outcrops, offshore stacks, Bird Island and White Island and a boulder covered beach (Boulder Beach). It would include examples of basalt rock, and is one of the few places where there are rock stacks in the Forum region. There are also caves under Gull Rock.
293. The water clarity around Tow Rock may be some of the best in the region. The strong currents around Tow Rock, along with the water clarity, create an area of high biodiversity value. The Tow Rock area is important for a range of recreational and commercial activities.
294. The rocky reefs are dominated by forests of bull kelp *Durvillaea spp.* in the shallows and diverse understory of seaweeds below. A range of reef fish including species such as moki, trumpeter and green bone (butterfish), as well as rock lobster are found on reefs in this area. Near Cape Saunders, the rocky reef drops steeply to 20 m depth, and down to 15 m is largely dominated by seaweeds with some sponge and ascidians. Below 15 m depth, the algae thins out and sponges and ascidians increase in cover. This area is unusual on a national scale context due to the presence of a relatively intact pāua population. The existence of this pāua population is due to the prohibition of commercial pāua harvest on this portion of coast for at least the last 30 years.
295. There are also rock pools along the coast and around Bird Island in which pāua might recover if given the chance. This site represents an opportunity to have a marine reserve with a relatively intact pāua population.
296. There are a number of adjacent conservation areas, including those at: Boulder Beach, Sandfly Bay, Tomahawk Lagoon and White Island. It is a significant seabird area, especially noted for its yellow-eyed penguins. It is also a sea lion haul-out area. Seals, little blue penguins, red billed gulls, fairy prions and terns (as well as various other seabirds) are commonly seen.
297. There are a few existing consented activities that occur within the area, that need to be considered: sand extraction at Tomahawk Lagoon, treated sewage discharge at Lawyers Head and offshore. These do not preclude a marine reserve being established and conditions can be written allowing activities to continue.

Why was this site chosen for consultation?

298. The area has high diversity of habitats in close proximity, both intertidal and subtidal rocky and soft sediment habitats. However, excluding Tow Rock would limit the ability to protect deeper rocky reef areas.
299. The Forum has provided options because Tow Rock is a highly valued place. It has high significance for iwi, recreational and commercial interests, and the Forum expects the public will have a range of views about whether Tow Rock should be included in the proposed marine reserve or not.
300. Being on the doorstep of Dunedin, a marine reserve here would be a flagship marine reserve for the entire coast, in terms of the number of people who were aware of it and may visit it.
301. The Forum considered a shore to 12 nm option from Cape Saunders to Harakeke Point and including Papanui Inlet but agreed not to consult on this option due to the significant cultural values of the coastal area to Kāi Tahu and the recreational and commercial interests in the coastal and offshore region.

HABITAT TYPES

302. Figure 29 shows the distribution of the habitat types defined in the MPA Policy for the proposed marine reserve.



Habitat types included within the proposed site

Area (km) is the area of that habitat type that is included within the site. Area (%) refers to how much of the habitat type within the entire Forum region is included within the site.

COASTAL HABITATS	OPTION 1		OPTION 2	
	AREA (KM ²)	AREA (%)	AREA (KM ²)	AREA (%)
Exposed Shallow Sand	17.2	3.5	17.6	3.6
Deep Sand	7.1	0.2	12.5	0.3
Exposed Shallow Reef	2.4	1.7	2.6	1.9
Deep Gravel	0.7	0.1	0.9	0.1
Exposed Sandy Beach	0.6	9.1	0.6	9.1
Exposed Intertidal Reef	0.4	6.3	0.4	6.3
Exposed Shallow Gravel	0.2	3.5	0.2	3.5
Exposed Boulder Beach	<0.1	80.3	<0.1	80.3
Deep Mud	–	–	0.2	0.1
Deep Reef	–	–	0.3	0.1

Figure 29: Habitat types within the proposed Harakeke Point to White Island MPA.

EXISTING USERS

Cultural and Customary

303. This area is part of the traditional moana, “Te Tai o Araiteuru” that lays off this coast. The coastal area is rich in traditional association, an old buried village is located in the sands of Sandfly Bay, traditional trails linked to the north, and south to Tomahawk (Tomohaka) and beyond. The Dunedin beaches St Clair and St Kilda were a part of the traditional overland route south to Taieri Mouth and inland to the Wetlands of the Taieri Plains.
304. The coastal area and sea fishery are of customary importance, sustaining the generations and continues to be an important kaimoana and sea fishery for Kāi Tahu customary, recreational and commercial fishers. Marine reserves displace Kāi Tahu from their traditional fisheries, and compound this effect across the generations.

Commercial fishing

305. Most of the rock lobster caught from within Option 1 are migrating through the area, and are available on the outside of Tow Rock. Some rock lobster become resident for a short time, and are generally bigger than those taken at Cape Saunders.
306. Tow Rock is an important area for commercial fishers, with a high catch-per-unit-effort, and provides access to better sized rock lobster. As such, the table showing fisheries displacement likely does not reflect the actual displacement of effort from excluding Tow Rock from the fishery. This largely relates to the limitations of fisheries reporting and further explanation of why this discrepancy occurs can be found in Volume II, Appendix 4: Fisheries Reporting.

Commercial Fishing Intensity

The percentage of the regions fishery that would be displaced by the proposal is shown in the table. Displacement relates to the fishing that occurs within the Forum region, not at the Quota Management level. Displacement does not directly relate to an impact on a fishery, but provides a relative indication of the potential impact restrictions may have.

	FISHERY DISPLACEMENT (%)	
FISHERY	OPTION 1	OPTION 2
Pot – Rock lobster	2.3	2.8
Jig – Squid	0.5	0.6
Line (bottom longline and dahn line)	0.5	0.6
Pot – Blue cod	0.5	0.6
Dive – Other	0.2	0.2
Trawl – Tarakihi	<0.1	0.1
Trawl – Flatfish	<0.1	<0.1
Trawl – Gurnard	<0.1	<0.1
Trawl – Other	<0.1	<0.1
Trawl – Red cod	<0.1	<0.1

Figure 30: Commercial Fishing Intensity – Harakeke Point to White Island options.

-
307. Traditionally, there is little commercial fishing in the White Island area. But, there is some commercial crab potting. Impacts on other fisheries are not expected to be significant. The biggest impact and the biggest difference in impact between the options, is expected to be on the rock lobster potting fishery.
308. Because rock lobster has a high economic value, apparently small differences in displacement can actually be significant.
309. Commercial pāua harvesting is currently prohibited within the boundaries of this proposed MPA.
310. It is important to note that there is uncertainty about the actual impacts (positive or negative). The information presented is based on the best estimates available. But, for many species, the spatial extent that catches are reported within means we cannot be sure how much catch is taken in a specific area or the extent of the displacement of fishing effort.
311. For more information to help you understand the table and the potential impacts of marine protected areas on commercial fishing please refer to Volume II, Appendix 4: *Fisheries Reporting*.

Recreational fishing

312. White Island is a popular small recreational boat fishing area. Recreational fishing occurs primarily to the western side of the island, which is largely outside the boundaries of this proposed MPA. Public feedback suggests that White Island is one of the most popular small boat cod-fishing areas within the Dunedin area.
313. Tow Rock is also a high recreational fishing value area, and the proposal to protect it as a marine reserve is likely to face strong opposition. Some boat, shore and spear fishing occurs along the coast covered by this proposed MPA.
314. Seal Point has historically been an important recreational pāua area, and is also popular for spear fishing.

Tourism and access

315. A marine reserve on Dunedin city's doorstep would be a drawcard and an addition to the green image of the Otago Peninsula. It would provide for:
- Diving (particularly at Tow and Gull Rocks)
 - Good snorkeling areas
316. Access is good along most of the proposed MPA, from Ocean View right around to Sandfly Bay. Sandfly Bay is already a high use tourism site for viewing yellow-eyed penguins and sea lions and a marine reserve could complement this. Access is convenient by road and walkway. Tomahawk beach and Otago Harbour are the key entry points by boat.

Scientific value

317. This area provides a good example of a wave-exposed shoreline. The response of shallow subtidal and intertidal habitats to removal of fishing will provide interesting topics for scientific study. A relatively intact pāua population could provide a control/reference site for the southern coast. In good conditions this area is easily accessible from the shore and is less than an hour by boat from the University of Otago's Portobello Marine Laboratory. The area provides opportunities to establish protected habitat types and populations of a range of exploited species and will provide greater understanding of marine ecosystems that could inform fisheries management.

Summary

318. This proposal has been notified for consultation as it provides protection for a significant area of the coast that includes a variety of habitat types. It is likely to be an iconic marine reserve with excellent access for the public. The options that have been considered by the Forum for protecting the near-shore reef and soft sediment habitats have been discussed at length. The current proposal would provide a balance between meeting the requirements of the MPA Policy in representing habitats in a marine reserve, and minimising impacts to existing users. The Forum understands that this proposal will still affect many users and wants views and information from affected people to help the Forum with its next stage of decision making.

Making your submission

319. You are welcome to submit on any aspect of the proposal, either for or against, or suggest alterations. In particular, the Forum would like your feedback on the following for this site:
- Does this area provide adequate protection for the habitats included?
 - How would this proposal affect your current or future use of the area? How would this proposal affect you?
 - Should Tow Rock be included in the marine reserve? Why? Why not?
 - Do you support one of the options going forward as a part of the south-east marine protected areas network? Why? Why not?
 - If you do not support it in its current form, are you able to suggest alternatives to the proposal that would make it more acceptable, such as changes to its location, size, boundaries and specific rules?

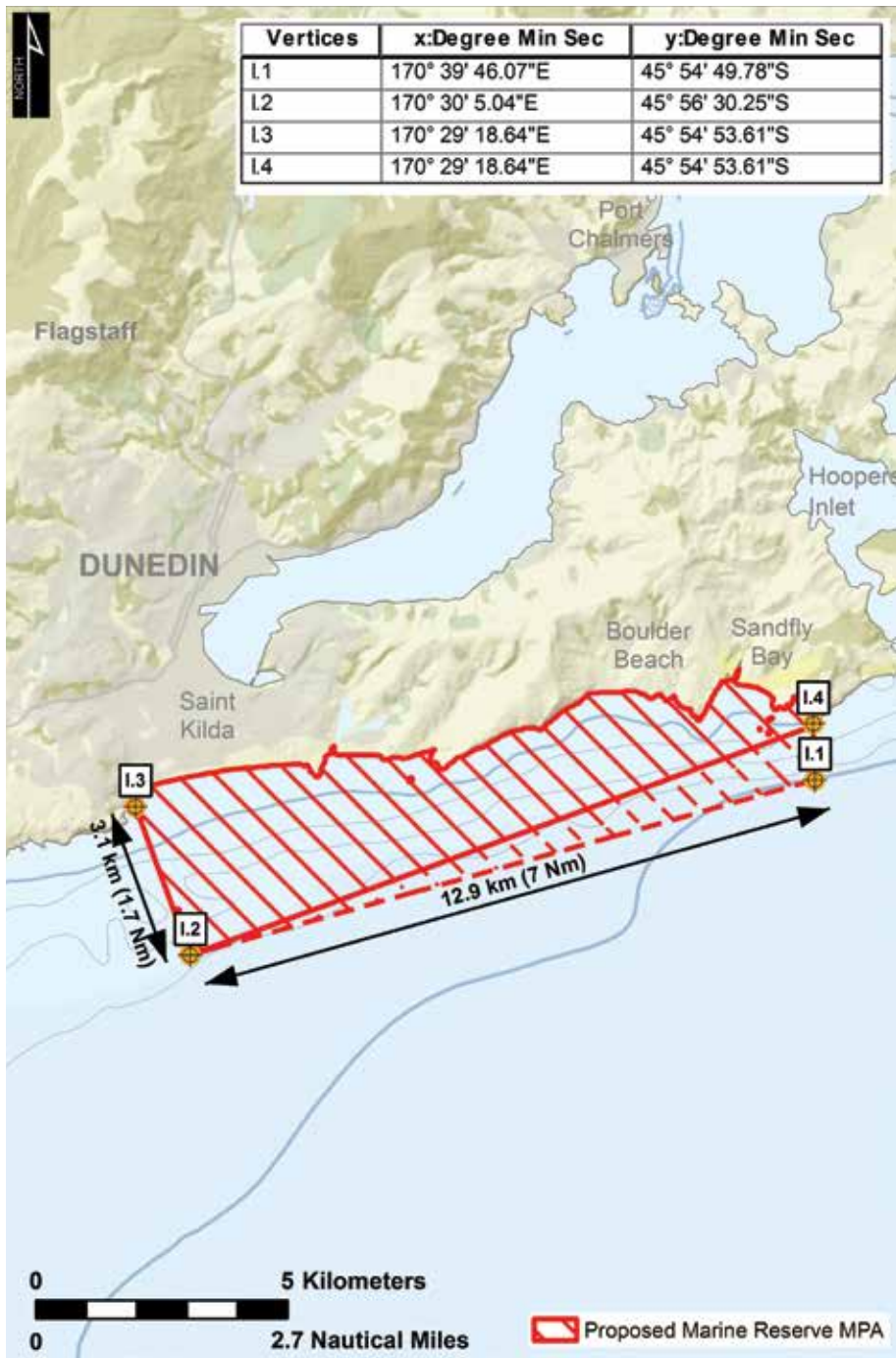


Figure 31: Proposed boundaries for the site put forward for consultation.



Blackhead, Dunedin.
Photo: Chris Hepburn



Wharauwerawera / Long Beach, Dunedin.
Photo: John Barkla

J. WHITE ISLAND TO WALDRONVILLE (TYPE 2)



Figure 32: Proposed Type 2 MPA.

Description

320. The proposed marine protected area extends from approximately the St Clair Salt Water Pool to approximately one km south of the breaking rock to the west of White Island, then aligning with the southern boundary of the proposed Harakeke Point to White Island marine reserve (see I), before extending to the eastern extent of the southern boundary of the proposed Green Island marine reserve (see K) and running back into shore.
321. The proposal extends along 9 km (4.9 nm) of coastline and extends approximately 2.7 km (1.5 nm) offshore at Blackhead. It encompasses 24.7 km² and accounts for 0.3% of the Forum region.
322. The proposals to consult on are:
 - Exclusion of all commercial fishing activities
 - Decreased recreational species bag limits

-
323. The Forum wants to explore the benefits of stopping commercial fishing and reducing the effects of recreational fishing on biodiversity through reductions to bag limits as it could help address additional recreational fishing effort in this MPA which might occur as the result of any adjacent marine protected areas. The Forum is aware that the review of marine protection legislation includes consideration of marine recreational fishing parks. While recreational parks are not available under existing legislation, controls on bag limits could be put in place by the Minister for Primary Industries. The Forum considers it has a duty to consult, and get views of the public on this proposal.
324. There are wāhi tapu located on the coast and the recovery of koiwi and other cultural artifacts by Kāi Tahu shall not be impacted by this proposal.

Environment

325. The coastal Dunedin area is characterised by coastal cliffs, medium to coarse-grained sandy beaches, rocky outcrops and offshore stacks. Shallow rocky outcrops tend not to extend very far offshore before they are replaced by sandy bottom.
326. The rocky reefs are dominated by extensive forests of bull kelp in the shallows, with an understory of leathery kelp *Lessonia variegata* and diverse assemblages of red foliose algal species.
327. There are a number of conservation areas that adjoin this proposal including: Tunnel Beach Conservation Area and the White Island Scenic Reserve.

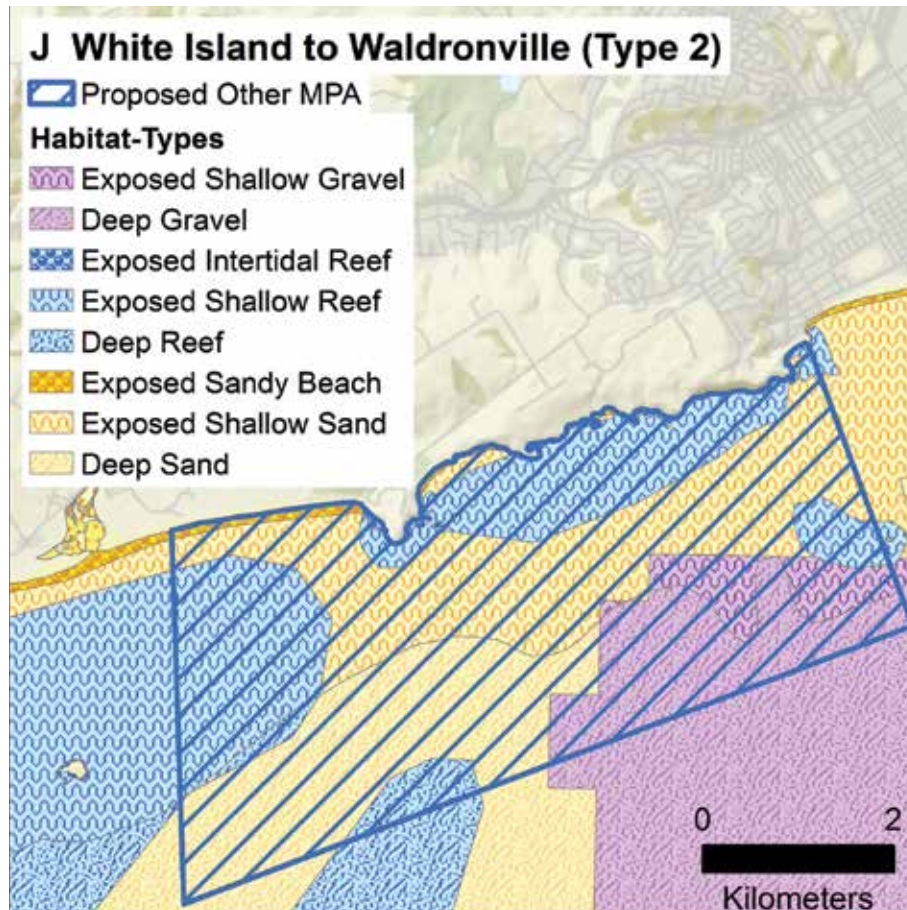
Why was this site chosen for consultation?

328. The intention of the proposed White Island to Waldronville MPA is that it protects against the potential effect of recreational fishing displacement from the two proposed adjacent marine reserves, and in so doing maintains the biodiversity of the environment contained within this MPA while allowing for an ongoing recreational fishing experience.
329. To achieve the aims of this MPA it would be necessary to exclude all commercial fishing and to recommend to the Minister to consider recreational bag limits be reduced to what was felt to be a level capable of maintaining biodiversity in the face of ongoing recreational fishing pressure, e.g. five blue cod, two pāua and two rock lobster per person per day (under either the Fisheries Act or special legislation).
330. Tying in the area between I and K as a Type 2 MPA could additionally protect further examples of shallow reef as well as shallow and deep sand and gravel.
331. Together with the two proposed marine reserves on either side, it is expected that this marine protected area would contribute to the protection and maintenance of biodiversity over the whole area between Harakeke Point and Green Island.

332. This proposed MPA is specifically associated with areas 'I-Harakeke Point to White Island' and 'K – Green Island'. If areas I and K do not proceed to the next stage in the process the White Island to Waldronville proposal may also not proceed, or alternatively its boundaries may change.

HABITAT TYPES

333. This marine protected area would contain nine different MPA Policy derived habitat types. Figure 33 shows the distribution of the habitat types and area of the habitats for the proposed MPA.



Habitat types included within the proposed site

Area (km) is the area of that habitat type that is included within the site. Area (%) refers to how much of the habitat type within the entire Forum region is included within the site.

HABITAT	AREA (KM²)	AREA (%)
Exposed Shallow Sand	7.2	1.4
Exposed Shallow Reef	6.4	4.6
Deep Sand	5.5	0.1
Deep Gravel	3.2	0.3
Exposed Shallow Gravel	1.2	18.7
Deep Reef	0.7	0.2
Exposed Intertidal Reef	0.2	2.7
Exposed Sandy Beach	0.2	4
Exposed Boulder Beach	–	19.7

Figure 33: Habitat types within the proposed White Island to Waldronville MPA.

EXISTING USERS

Cultural and Customary

334. Ponuihine (White Island) to Kaikarae (Kaikorai) Estuary is linked to the traditional moana of Te Tai o Araiteuru and part of the traditional trails both land and sea. An old and large village stood on the northern side of the Kaikorai Estuary mouth, archaeological values are associated with this stretch of coast. Customary fishers utilise the fishery.

Commercial fishing

335. The biggest impact of this proposed marine protected area on commercial fishing would be on potting for rock lobster, which occurs seasonally within this area and when the weather doesn't allow fishers to go elsewhere. Effort within this area is less intensive than other areas such as Tow Rock and Cape Saunders.
336. Occasional commercial cod potting also occurs within this area, generally when the weather doesn't allow fishers to go further offshore. It is also a place to go when the current becomes too strong at Cape Saunders. Minimal amounts of commercial line fishing, squid jigging and trawling may also be displaced by the proposed marine protected area (see Figure 34). Commercial pāua harvesting is currently prohibited within the boundaries of this proposed MPA.

337. It is important to note that there is uncertainty about the actual impacts (positive or negative). The information presented is based on the best estimates available. But, for many species, the spatial extent that catches are reported within means we cannot be sure how much catch is taken in a specific area or the extent of the displacement of fishing effort.
338. For more information to help you understand the table and the potential impacts of marine protected areas on commercial fishing please refer to Volume II, Appendix 4: Fisheries Reporting.

Commercial Fishing Intensity

The percentage of the regions fishery that would be displaced by the proposal is shown in the table. Displacement relates to the fishing that occurs within the Forum region, not at the Quota Management level. Displacement does not directly relate to an impact on a fishery, but provides a relative indication of the potential impact restrictions may have.

FISHERY	FISHERY DISPLACEMENT (%)
Pot – Rock lobster	1.5
Pot – Blue cod	0.4
Line (bottom longline and dahn line)	0.3
Jig – Squid	0.1
Dive – Other	0.1
Trawl – Red cod	<0.1
Trawl – Gurnard	<0.1
Trawl – Flatfish	<0.1
Trawl – Tarakihi	<0.1
Trawl – Other	<0.1

Figure 34: Commercial Fishing Intensity – White Island to Waldronville.

Recreational fishing

339. The White Island to Waldronville area is popular for recreational boat fishing and shellfish harvesting. It is expected that this proposed MPA would preserve the ability for fishers to catch and harvest recreational species.

-
340. Discussions also included establishing the whole coastal area from Harakeke Point to Green Island as a Type 2 MPA, with restrictions mainly on commercial fishing and recreational bag limits. Not all Forum members were comfortable with that option but it was agreed it would be helpful to get more information through consultation.

Scientific value

341. The ability to have a range of management interventions from full closures (Type 1) to bans on particular activities (Type 2) would allow the opportunity for research that seeks to better understand how different user groups impact on marine ecosystems and have important implications for future MPA design in these types of important habitats.

Summary

342. This proposal has been proposed to provide an integrated protection to biodiversity alongside sites I and K. It is not expected to adversely impact commercial fishers.
343. Sites I and K are proposed as marine reserves therefore this site could potentially experience increased fishing pressure due to displacement from the marine reserve areas – having an adverse impact on biodiversity if not addressed. So the Forum is seeking your views on what impacts you expect from the proposals as a whole.
344. It is proposed as commercial and recreational fisheries restrictions. The controls on recreational fishing would potentially require special legislation, which may pose additional challenges for this proposal.
345. As the area is specifically associated with areas ‘I – Harakeke Point to White Island’ and ‘K – Green Island’, if those areas do not proceed to the next stage in the process this proposal may also not proceed, or alternatively its boundary may change.

Making your submission

346. You are welcome to submit on any aspect of the proposal, either for or against, or suggest alterations. In particular, the Forum would like your feedback on the following for this site:
- Does this area provide adequate protection for the habitats included?
 - How would this proposal affect your current or future use of the area? How would this proposal affect you?
 - Do you support this area going forward as a part of the south-east marine protected areas network? Why? Why not?
 - If you do not support it in its current form, are you able to suggest alternatives to the proposal that would make it more acceptable, such as changes to its location, size, boundaries and specific rules?
 - Do you think this area would experience increased recreational fishing pressure if it is adjacent to two marine reserves? If so, how could the health and biodiversity of the area be protected?

- For the fishing methods noted above, how often are they used by you in this area, and how much of each species is taken by these methods?
- Do you have any information that would help the Forum decide what restrictions if any to recommend?



Figure 35: Proposed boundaries for the site put forward for consultation.



Okaihe / Green Island.
Photo: John Barkla

K. GREEN ISLAND (TYPE 1)



Figure 36: Proposed Type 1 MPA.

Description

347. This proposed marine reserve is centred on Green Island (Okaihe), extending approximately 1 km (0.54 nm) to the north, west and east of the island, and 1.3 km (0.7 nm) south of the island. It includes 5 km² of marine area and encompasses approximately 0.1% of the Forum region.
348. As a marine reserve, it is a no-take area where all fishing would be prohibited.
349. Fishing vessels would be allowed to enter the area, so long as they had no gear used for the purpose of fishing in the water at the time. This is regardless as to whether they are carrying fish or not (and in accordance with existing fisheries regulations). No discharge to the MPA would be allowed, this includes (but not limited to) grey water, sewage and fish waste.
350. There are wāhi tapu located on the coast and the recovery of koiwi and other cultural artifacts by Kāi Tahu shall not be impacted by this proposal.

Environment

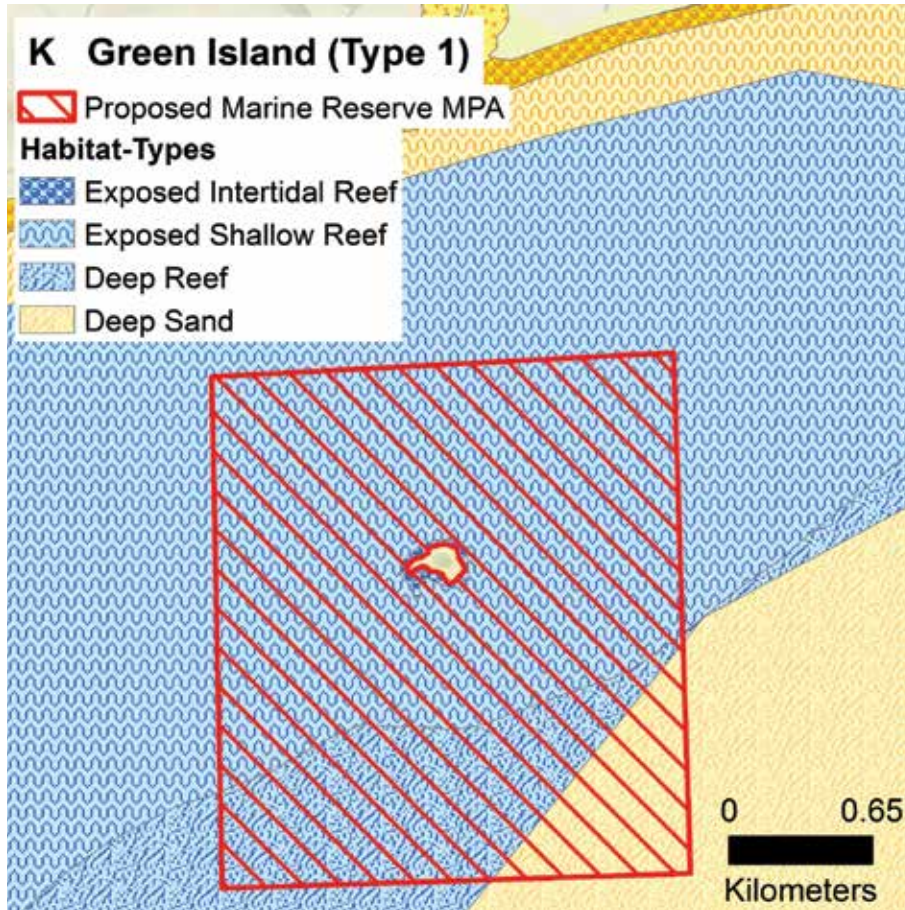
351. Green Island is an important wildlife area. It is a rat free protected nature reserve (meaning a permit is required to land there). It is one of a few predator free vegetated offshore islands in the south-east region.
352. Inshore of the island the reef drops to about 18 m and is semi-sheltered. Outside of the island the reef extends deeper to approximately 30 m and more exposed.
353. The rocky reefs include forests of bull kelp *Durvillaea spp* in the shallows with an understorey of seaweed species below. It provides habitat for many reef fish species such as moki, trumpeter and green bone (butterfish), as well as rock lobster. Anecdotally, hapuka were also commonly found on the Green Island reefs, less so these days.
354. The island is home to a number of seabird species such as: the 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.
355. There is a lot of sand around the island that breaks up the rock forms and creates a patchy reef extending out from the island, in places more sand than rock.

Why was this site chosen for consultation?

356. Green Island is important ecologically, and historically had a diverse array of marine life (and still has to a lesser extent).
357. Anecdotally, the Green Island marine environment has undergone a considerable decline in diversity and abundance of species over the last few decades. Under protection, it is considered that the area could respond well.
358. The MPA would be accessible by boat, and is visible from Dunedin. Green Island could become an iconic place with the existing nature reserve extending through to the marine environment as a marine reserve.
359. Most recreational fishing occurs to the west of the island so the proposed boundaries minimise the potential impact on recreational fishing.
360. Green Island is a very different habitat to White Island and would represent a range of biodiversity that is not represented elsewhere.

HABITAT TYPES

361. Figure 37 shows the distribution of the Habitat types defined in the MPA Policy for the proposed MPA.



Habitat types included within the proposed site

Area (km) is the area of that habitat type that is included within the site. Area (%) refers to how much of the habitat type within the entire Forum region is included within the site.

HABITAT	AREA (KM ²)	AREA (%)
Exposed Shallow Reef	3.4	2.4
Deep Reef	1.1	0.3
Deep Sand	0.5	<0.1
Exposed Intertidal Reef	<0.1	0.4

Figure 37: Habitat types within the proposed Green Island MPA.

EXISTING USERS

Cultural and Customary

362. Okaihe (Green Island) is a component of Te Tai o Araiteuru, a former place of mahika kai, and fishery for Kāi Tahu. Marine reserves displace Kāi Tahu from their traditional fisheries, and compound this effect across the generations.

Commercial fishing

363. This area is used for some blue cod and rock lobster potting. Centre Reef is an important area, but it has not been included within the proposed marine reserve. There is also some trawling close around the island area.
364. Boats quite often anchor on the inside of the island for shelter. That activity would not be prevented in a marine reserve. But, fishing gear and catch would need to be stored away before the boat entered the marine reserve.

Commercial Fishing Intensity

The percentage of the regions fishery that would be displaced by the proposal is shown in the table. Displacement relates to the fishing that occurs within the Forum region, not at the Quota Management level. Displacement does not directly relate to an impact on a fishery, but provides a relative indication of the potential impact restrictions may have.

FISHERY	FISHERY DISPLACEMENT (%)
Pot – Rock lobster	0.2
Pot – Blue cod	0.1
Trawl – Gurnard	<0.1
Trawl – Flatfish	<0.1
Dive – Other	<0.1
Trawl – Red cod	<0.1
Line (bottom longline and dahn line)	<0.1
Trawl – Other	<0.1

Figure 38: Commercial Fishing Intensity – Green Island.

-
365. The biggest commercial impact of the proposed marine reserve is expected to be on the rock lobster fishery. Although rock lobster is a high value stock, the volumes that might be displaced are relatively small. So, the impact of the proposed marine protected area is not expected to be significant. It is important to note that there is uncertainty about the actual impacts (positive or negative). The information presented is based on the best estimates available. But, for many species, the spatial extent that catches are reported within means we cannot be sure how much catch is taken in a specific area or the extent of the displacement of fishing effort.
366. For more information to help you understand the table and the potential impacts of marine protected areas on commercial fishing please refer to Volume II, Appendix 4: *Fisheries Reporting*.

Recreational fishing

367. This is an accessible fishing area from Brighton, and will affect recreational fishers, particularly as the island provides relative shelter from prevailing sea conditions.
368. Public feedback suggests most of the recreational fishing probably occurs to the west of the island. The relatively small size of the reserve is intended to ensure recreational fishing can still occur in the general vicinity. Green Island is a spear fishing area.
369. It is important to note that there is uncertainty about the actual impacts (positive or negative) of displacing these recreational fishers.

Tourism

370. The area has the potential for tour boat visits to view wildlife. There are diverse diving opportunities, including easier, sheltered dive sites and more advanced dive sites. This is a popular snorkeling site.

Scientific value

371. There is considerable value from a research perspective and as an island this area provides a range of habitat types within a clearly defined boundary. This area is likely to support broad number research projects related to the proposed reserve. The site is accessible from the Portobello Marine Laboratory and from other boat launching sites and includes relatively sheltered dive sites with high levels of water clarity. The area provides opportunities to establish protected habitat types and populations of a range of exploited species and will provide greater understanding of marine ecosystems that could inform fisheries management. The marine reserve would be an educational experience for young people.

Summary

372. This proposal has been notified for consultation due to its unique diversity of marine life, and an iconic status on the coast. Anecdotally it has undergone a decline in fish species and abundance, but has a good chance at recovery if the fishing pressure is released. While the Green Island area is a popular recreational fishing spot, the majority of recreational fishing is considered to occur outside the boundary of the proposed MPA. The Green Island proposal would provide for biodiversity protection from island to the sea, extending the nature reserve to the deep reef.

Making your submission

373. You are welcome to submit on any aspect of the proposal, either for or against, or suggest alterations. In particular, the Forum would like your feedback on the following for this site:

- Does this area provide adequate protection for the habitats included?
- How would this proposal affect your current or future use of the area? How would this proposal affect you?
- Do you support this area going forward as a part of the south-east marine protected areas network? Why? Why not?
- If you do not support it in its current form, are you able to suggest alternatives to the proposal that would make it more acceptable, such as changes to its location, size, boundaries and specific rules?

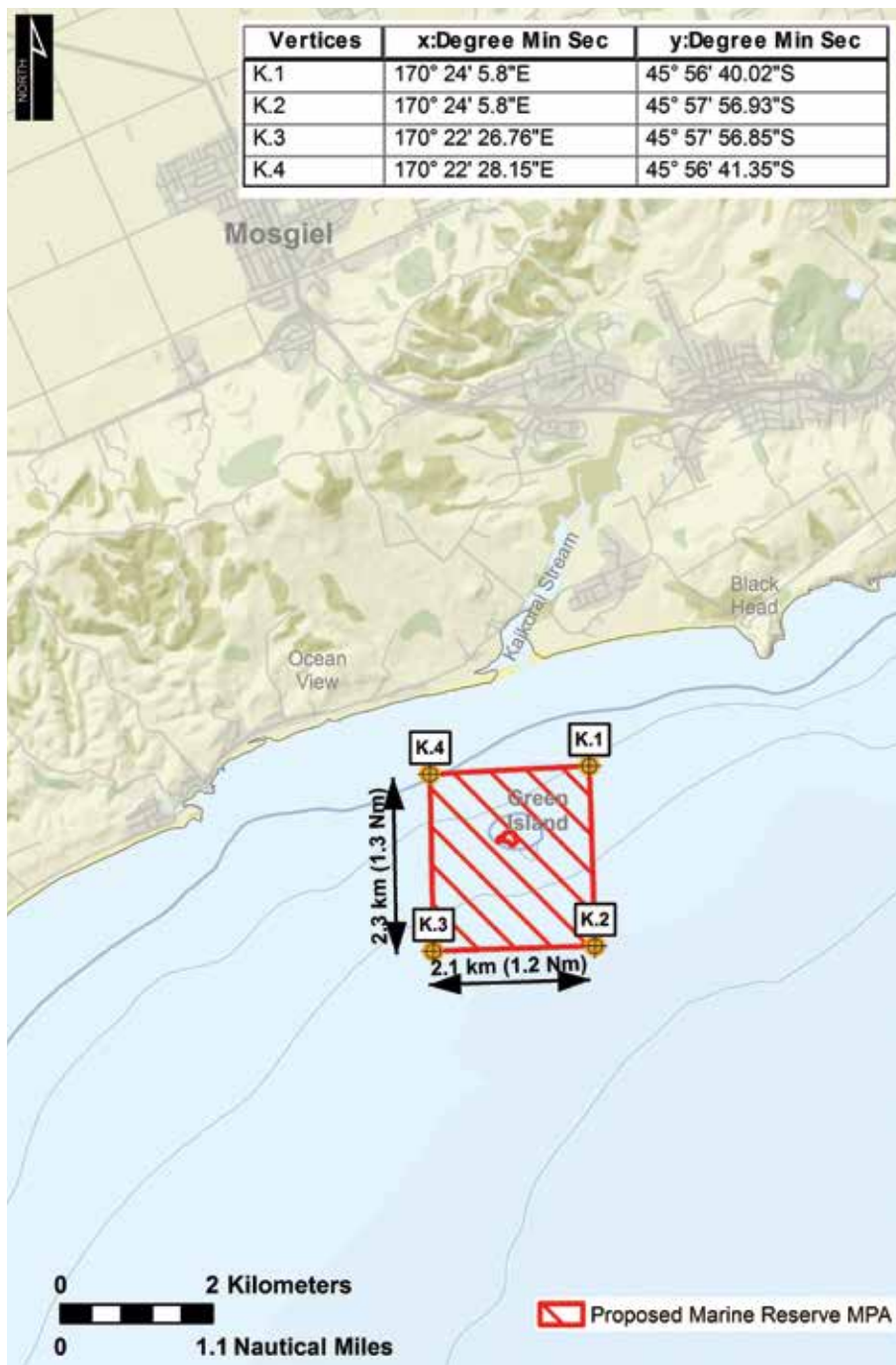


Figure 39: Proposed boundaries for the site put forward for consultation.



Akatore Estuary.
Photo: Fergus Sutherland

L. AKATORE ESTUARY (TYPE 2)



Figure 40: Proposed Type 2 MPA.

Description

374. The proposed marine protected area with fishery restrictions includes the entire Akatore Estuary and incorporates 0.3 km² of estuarine habitat. The boundary of this MPA adjoins the proposed MPA 'M – Akatore Coastal' that includes a marine reserve MPA on the open coastal area from just north of the estuary to 600 m south of Watson's Beach.
375. The restrictions that are proposed for this estuary are designed to protect the estuary from high levels of fish extraction that would compromise the ecological systems, as well as bottom disturbance. They include:
- no dredging
 - no set net fishing
 - no commercial line fishing
 - no mechanical harvesting (including spades for collecting shellfish)
 - no fyke net fishing
 - no whitebaiting
376. Hand-gathering, spear fishing and recreational line fishing, non-commercial gathering of paruparu and beach cast kelp will be permitted.

-
377. This package of fishing restrictions is proposed to allow for the maintenance and recovery of the biodiversity of the area, by prohibiting bottom impacting methods and reducing fishing effects on the ecosystem, natural species composition and trophic linkages.
378. There are wāhi tapu located on the coast and the recovery of koiwi and other cultural artifacts by Kāi Tahu shall not be impacted by this proposal.

Environment

379. The Akatore estuary catchment includes a wildlife management area in the upper reaches, and the northern bank borders an area protected by a QEII covenant. The location of the estuary near to these protected terrestrial areas mean it is likely to be in a more natural state than an estuary surrounded by farmland, for example. The estuary itself includes a good area of saltmarsh habitat.
380. All estuaries in the Otago area are listed in the Otago Regional Council's Regional Plan: Coast for Otago as coastal protection areas.⁴⁵ In regard to the Akatore Creek Estuary, the Regional Plan notes, "Estuarine values such as nationally significant wildlife areas for waterfowl, waders and Fern birds, and whitebait can be found in the estuary".

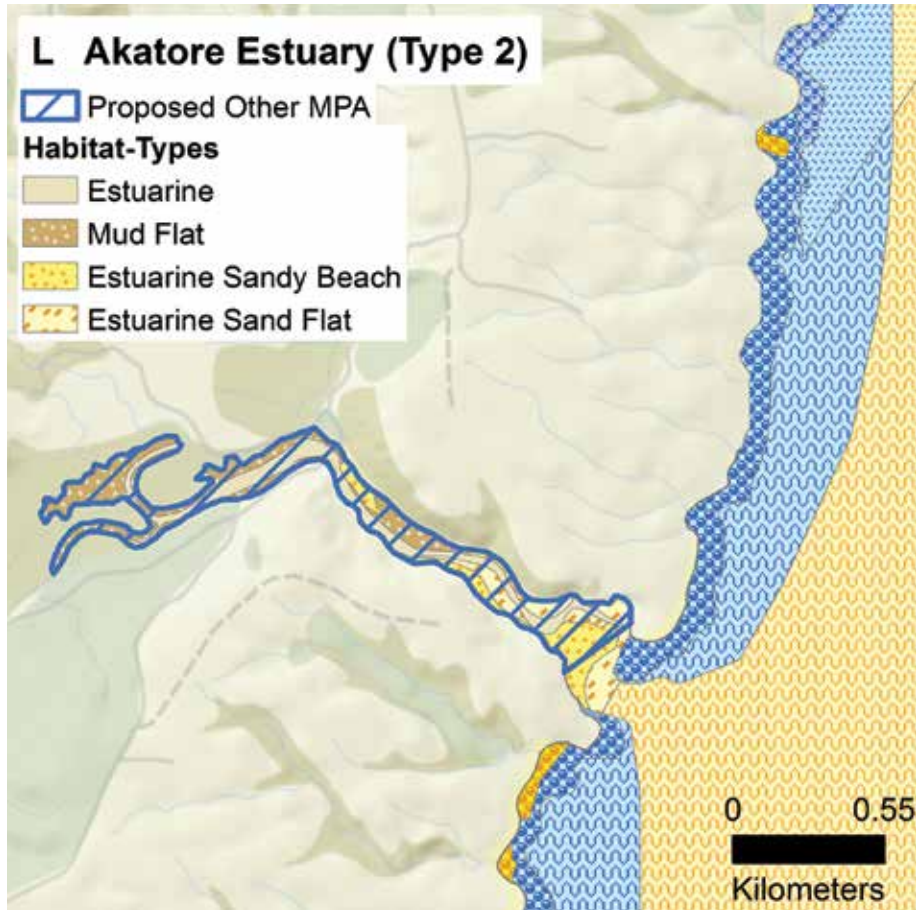
Why was this site chosen for consultation?

381. This site would protect an estuary on this coast, and is required under the MPA Policy. Of the three similar estuaries proposed for protection within the region, this ranks highly.
382. Akatore Estuary is one of the best estuaries for naturalness within the Forum region and is relatively easy for people to visit. There are few environmental threats associated with it. It includes significant salt marsh; it is one of the best examples of it outside the Catlins.

⁴⁵ Coastal protection areas are areas "that are considered to be of regional, national or international importance in terms of their ecological and scenic values, and including those areas having spiritual or cultural significance." (Otago Regional Council Regional Plan: Coast for Otago, Schedule 2 (2012)).

HABITAT TYPES

383. Figure 41 shows the distribution of the habitat types defined in the Policy for the proposed MPA.



Habitat types included within the proposed site

Area (km) is the area of that habitat type that is included within the site. Area (%) refers to how much of the habitat type within the entire Forum region is included within the site.

ESTUARINE HABITATS	AREA (KM ²)	AREA (%)
Mud Flat	0.1	0.4
Estuarine Sandy Beach	0.1	0.3
Estuarine (unclassified)	0.1	2

Figure 41: Habitat types within the proposed Akatore Estuary MPA.

EXISTING USERS

Cultural and Customary

384. The Akatore estuary is a customary mahika kai resource for whānau and hapū associated with this area of coast. For example, tuaki (cockles) found in the estuary are traditional kai (food), and remain important for those people living in the area. The Otago Regional Council's recognition of Akatore Creek Estuary as a coastal protection area is due in part to its Kāi Tahu cultural and spiritual values.

Commercial fishing

385. Commercial eeling occurs within the catchment of the estuary. But, the scale at which commercial eel catches are reported means it is unknown how important the estuary is for the fishery. Any reduction in the available habitat for eel fishing may impact the commercial fishers, depending on whether they can catch their quota elsewhere, and the impact of having to displace effort elsewhere. There is no other known commercial fishing in the estuary.

Recreational fishing

386. Cockles are likely to be taken from the estuary recreationally, which would still be allowed under the current proposal if collecting by hand. Recreational fishers may currently use set nets to take flounder from the estuary. Under the proposal for consultation set netting would be prohibited.

Making your submission

387. You are welcome to submit on any aspect of the proposal, either for or against, or suggest changes. In particular, the Forum would like your feedback on the following for this site:

- Does this area provide adequate protection for the habitats included?
- How would this proposal affect your current or future use of the area? How would this proposal affect you?
- Do you support this area going forward as a part of the south-east marine protected areas network? Why? Why not?
- If you do not support it in its current form, are you able to suggest alternatives to the proposal that would make it more acceptable, such as changes to its location, size, boundaries and specific rules?
- For the fishing methods noted above, how often are they used by you in this area, and how much of each species is taken by these methods?
- Do you have any information that would help the Forum decide what restrictions if any to recommend?



Figure 42: Proposed boundaries for the site put forward for consultation.



Taiari Mouth.
Photo: John Barkla

M. AKATORE COASTAL (TYPE 1)



Figure 43: Proposed Type 1 MPA.

Description

388. This proposed marine reserve begins 1 km north of Akatore Creek and extends south along the coastline for approximately 7 km (3.8 nm) to approximately 700 m south of Watson's Beach. It extends approximately 1 km (0.54 nm) offshore.
389. The proposed marine reserve includes 6.3 km² and accounts for approximately 0.1% of the area of the Forum region. It includes 10.5 km of coastline, approximately 1.4% of the overall coastline within the Forum region.
390. As a marine reserve, it would be a no-take area. All fishing would be prohibited.
391. This proposed marine reserve is associated with two other sites being proposed, 'L – Akatore Estuary' and 'N – Akatore Offshore'.

-
392. Fishing vessels would be allowed to enter the area, so long as they had no gear used for the purpose of fishing in the water at the time. This is regardless as to whether they are carrying fish or not (and in accordance with existing fisheries regulations). No discharge to the MPA would be allowed, this includes (but not limited to) grey water, sewage and fish waste.
393. There are wāhi tapu located on the coast and the recovery of koiwi and other cultural artifacts by Kāi Tahu shall not be impacted by this proposal.

Environment

394. This site includes a rare example of exposed schist in the Forum region. Schist offers different habitat than other types of rocks – including intricate quartz veins, and holes – it is a great habitat for intertidal and subtidal animals including rock lobster.
395. The site includes rock platforms with rock pools that the public can get to easily.
396. Bladder kelp habitat historically occurs in the area, but comes and goes intermittently.

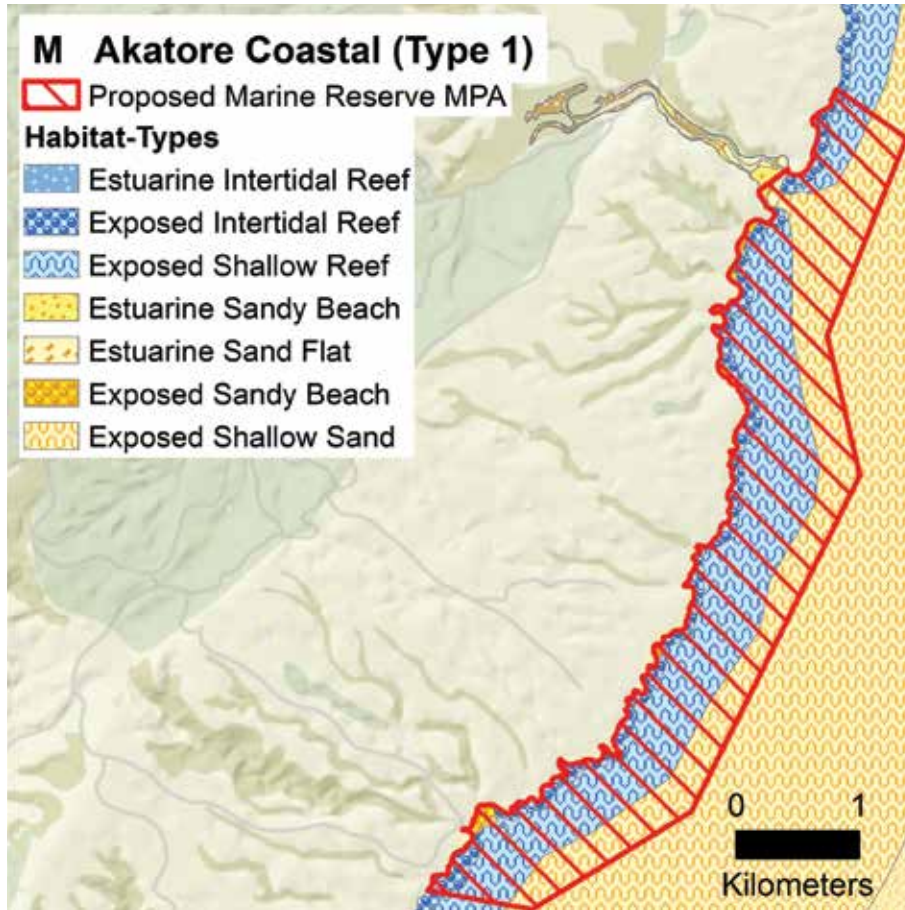
Why was this site chosen for consultation?

397. This proposal would replicate another example of exposed intertidal and shallow rocky reef. It would potentially improve connectivity between the two other proposed marine reserves that include this habitat (“I” and “O”) that are separated by approximately 100 km. Connectivity and replication are important considerations in creating a network.⁴⁶
398. Due to the geology of the area, in particular the schist landforms, the ecology is likely to be different from other parts of the coast.
399. Rocky reef habitats are close inshore in this area. So, it is possible to protect inshore reef here without a marine protected area having to extend very far offshore.
400. The Forum decided not to include the area between this proposed marine reserve and the proposed ‘N – Akatore Offshore’ marine protected area due to the trawl fishery that occurs there, and because of Akatore Reef’s importance for both commercial and recreational fishing.

⁴⁶ Refer to Network Design: Ecological Concepts at <https://south-eastmarine.org.nz/about/marine-protected-areas/>

HABITAT TYPES

401. Figure 44 shows the distribution of the habitat types and area of the habitats for the proposed MPA.



Habitat types included within the proposed site

Area (km) is the area of that habitat type that is included within the site. Area (%) refers to how much of the habitat type within the entire Forum region is included within the site.

HABITAT	AREA (KM ²)	AREA (%)
Exposed Intertidal Reef	0.7	9.9
Exposed Shallow Reef	3.1	2.2
Exposed Sandy Beach	0.1	1
Exposed Shallow Sand	2.3	0.5

Figure 44: Habitat types within the proposed Akatore Coastal MPA.

EXISTING USERS

Access

402. The northern area is only accessible at low tide. There is a road at the south end at Watson's beach. There are also two unformed legal roads to this section of coast.

Cultural and Customary

403. The moana "Te Tai o Araiteuru" extends off this coast, traditional fishing villages were located along this coast and are evident in the archaeological evidence that remains. This coast remains an important kaimoana and fishery for Kāi Tahu customary, recreational and commercial fishers. There is a statutory acknowledgement for Te Tai O Arai Te Uru (Otago Coastal Marine Area) which includes the site of the proposed marine reserve.⁴⁷

Commercial fishing

404. Taieri Mouth is nearby. It is an iconic seaside fishing village. Impacts on commercial fishing in this area would likely have both economic and social impacts.
405. The table indicates the estimated percentage of catch from the Forum region that can in theory be attributed to the area that would be closed to commercial fishing should the site become a marine reserve MPA.
406. Due to the size of their boats, and having to work with the timing of the tides to get in and out of the harbour, trawler fishermen based at Taieri Mouth are restricted to fishing near Taieri Mouth. Leaving the area between the proposed marine reserve and the proposed 'N – Akatore Offshore' marine protected area open to fishing recognises these restrictions on where fishers can fish and aims to lessen the impact on commercial fishing of marine protection measures in this area.
407. The most significant impact on commercial fishing is likely to be on rock lobster potting. Other fisheries that could be affected include flatfish, paddle crab and red cod (see table). Because rock lobster has a high economic value the impacts of displacement could be significant, financially.
408. It is important to note that there is uncertainty about the actual impacts (positive or negative). The information presented is based on the best estimates available. But, for many species, the spatial extent that catches are reported within means we cannot be sure how much catch is taken in a specific area or the extent of the displacement of fishing effort.
409. For more information to help you understand the table and the potential impacts of marine protected areas on commercial fishing please refer to Volume II, Appendix 4: *Fisheries Reporting*.

⁴⁷ Schedule 103 of the Ngāi Tahu Claims Settlement Act 1998.

Commercial Fishing Intensity

The percentage of the regions fishery that would be displaced by the proposal is shown in the table. Displacement relates to the fishing that occurs within the Forum region, not at the Quota Management level. Displacement does not directly relate to an impact on a fishery, but provides a relative indication of the potential impact restrictions may have.

FISHERY	FISHERY DISPLACEMENT (%)
Pot – Rock lobster	1.3
Line (bottom longline and dahn line)	0.7
Trawl – Flatfish	0.3
Trawl – Red cod	0.1
Dive – Pāua	<0.1
Trawl – Gurnard	<0.1
Pot – Blue cod	<0.1
Trawl – Other	<0.1

Figure 45: Commercial Fishing Intensity – Akatore Coastal.

Recreational fishing

410. People with cribs in the area, for example at Bull Creek, may recreationally fish in this area. People from Taiari Mouth and Measley Beach may also use the area, including for boat fishing. Establishing the proposed marine reserve will limit the choices of places to fish for people with small boats, in particular.
411. There is good reef and rock fishing for hapuku (groper), blue cod and moki in the area, as well as pāua fishing. Although the outer reef is not included in the proposed marine reserve, recreational fishing is likely to be impacted as it includes areas of shallow and intertidal reef.

Scientific value

412. This area provides a good example of a wave-exposed shoreline. The response of shallow subtidal and intertidal habitats to removal of fishing will provide interesting topics for scientific study. In good conditions this area is accessible from the shore and is less accessible by boat. The area provides opportunities to establish protected habitat types and populations of a range of exploited species and will provide greater understanding of marine ecosystems that could inform fisheries management. The area provides good intertidal and rockpool habitat that is very useful for science and educational purposes.

Making your submission

413. You are welcome to submit on any aspect of the proposal, either for or against, or suggest alterations. In particular, the Forum would like your feedback on the following for this site:

- Does this area provide adequate protection for the habitats included?
- How would this proposal affect your current or future use of the area? How would this proposal affect you?
- Do you support this area going forward as a part of the south-east marine protected areas network? Why? Why not?
- If you do not support it in its current form, are you able to suggest alternatives to the proposal that would make it more acceptable, such as changes to its location, size, boundaries and specific rules?

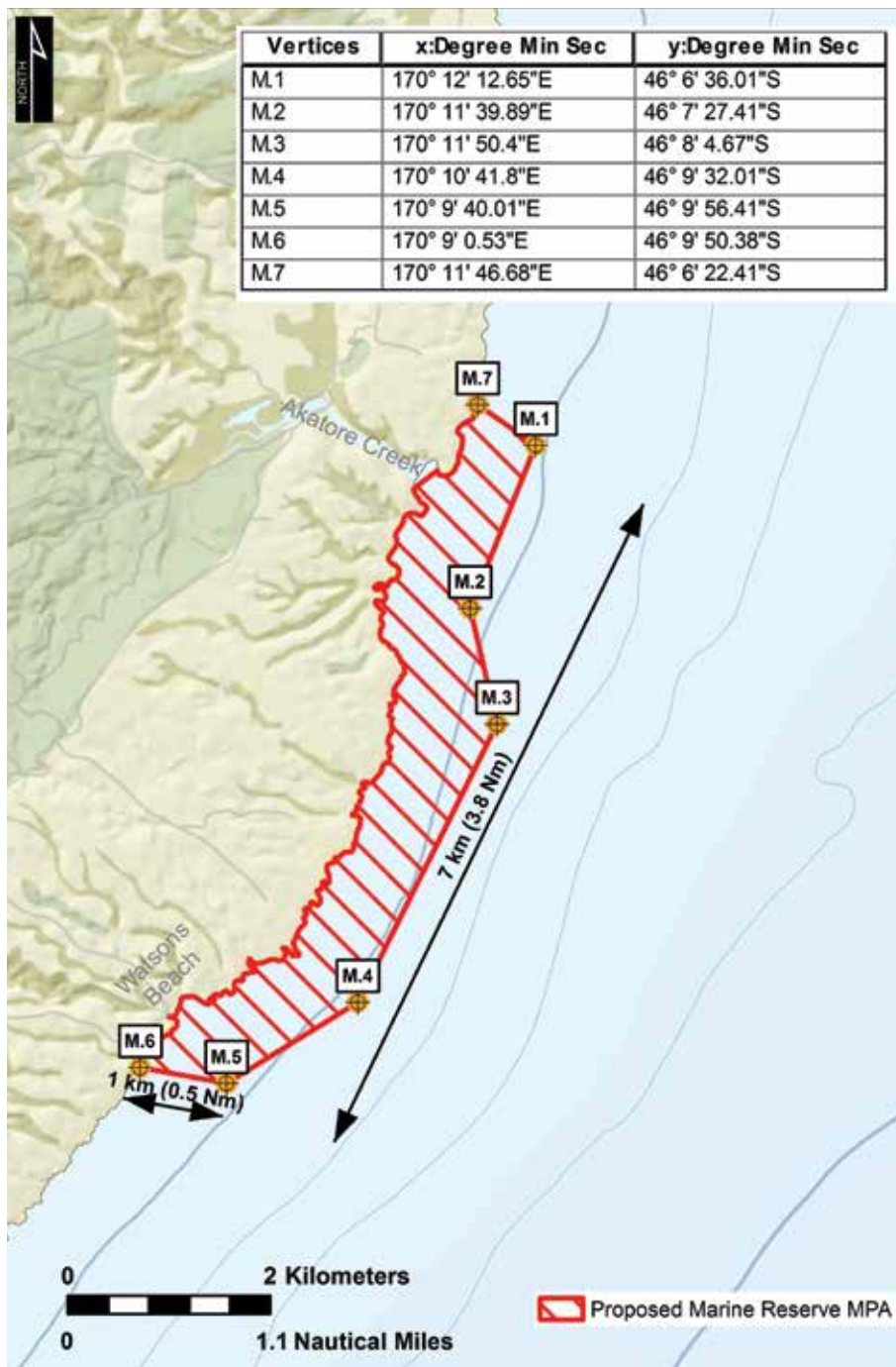


Figure 46: Proposed boundaries for the site put forward for consultation.



Otago.
Photo: Otago Daily Times

N. AKATORE OFFSHORE (TYPE 2)

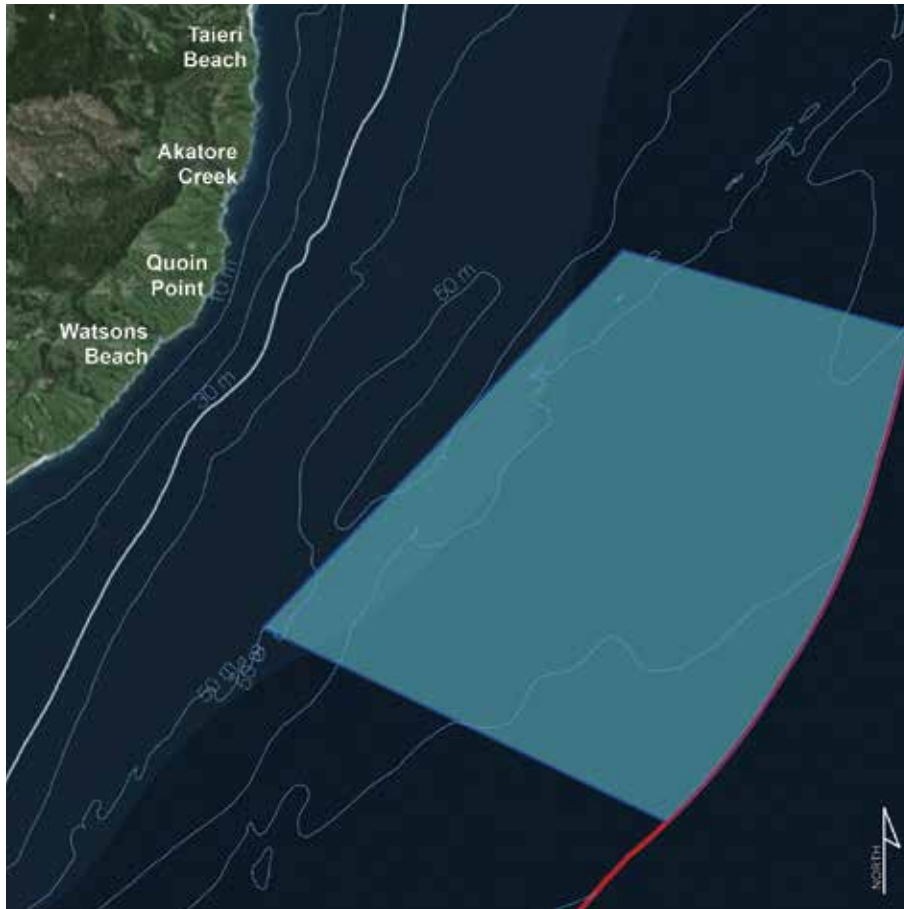


Figure 47: Proposed Type 2 MPA.

Description

414. This proposed MPA with fisheries restrictions extends from approximately the 50 m depth contour, ranging from 8.5 to 12 km (4.6 to 6.5 nm) offshore, out to the 12 nm territorial sea boundary. It extends approximately 17 km from the northern end to the southern end. It covers 223 km², and incorporates 2.5% of the Forum region.
415. Proposed fisheries restrictions that would prohibit:
- dredging
 - all trawling
 - danish seining
 - all set netting; and
 - purse seining.
416. The restrictions would not impact recreational fishing, except for set netting and dredging. Commercial potting and line fishing would be able to continue.
417. This package of fishing restrictions is proposed to allow for the maintenance and recovery of the biodiversity of the area, by prohibiting bottom impacting methods and reducing fishing effects on the ecosystem, natural species composition and trophic linkages.

Environment

418. The proposed marine protected area has extensive areas of deep offshore reef and gravel. The Forum is aware that the reef area is not as consistent as the habitat map (Figure 48) would indicate, but is more broken 'foul ground' with areas of sand in between.
419. The gravel area is an ice age relict shoreline gravel. It has a high likelihood of being suitable habitat for bryozoans, and hence high biodiversity values.
420. The area covered by this proposal is an area identified as a foraging area for Otago Peninsula yellow-eyed penguins.⁴⁸
421. Outside the 12 nm territorial sea, but still on the shelf are a number of accidental captures of protected species including the New Zealand fur seal, sooty shearwaters and Buller's albatross, with white-capped albatross caught within the 12 nm. While no captures are reported within the proposed area, the data does indicate that these species are likely present within this area, and reflects the significant biodiversity values of the area.

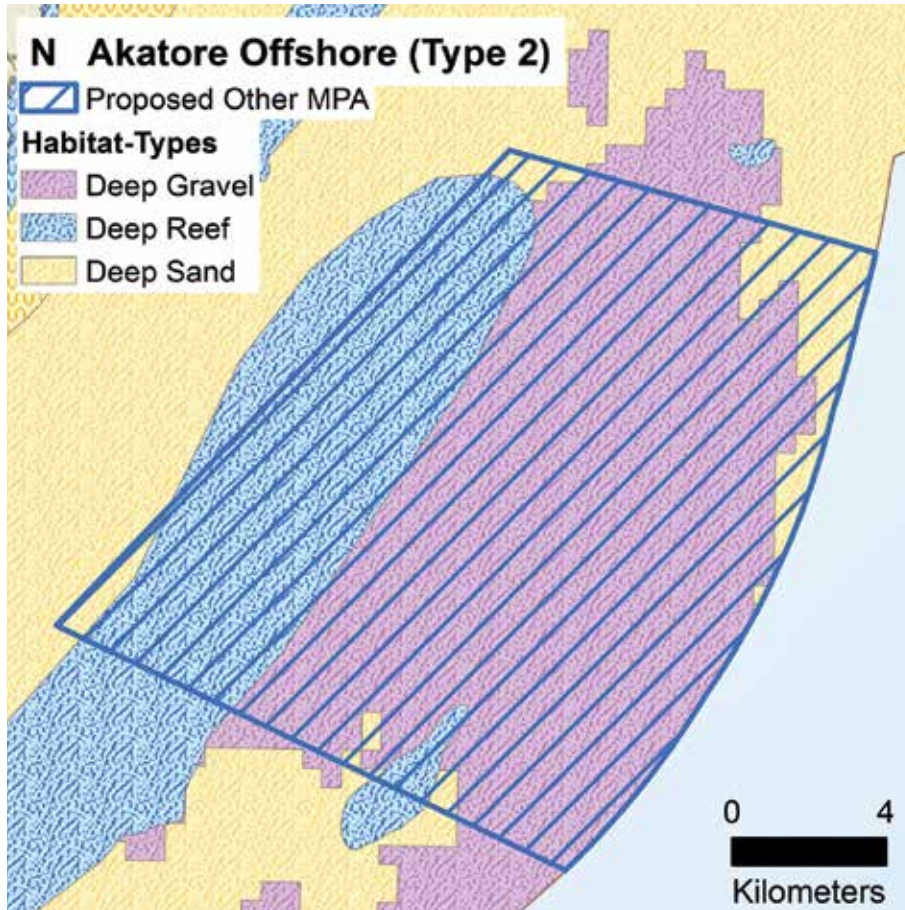
Why was this site chosen for consultation?

422. This is one of the few options proposed that encompass a significant area of deep offshore reef. It would provide a 'replicate' deep reef habitat, as per the MPA Policy and Guidelines.
423. The site includes a substantial area of deep gravel habitat. Based on the very different oceanographic conditions and seafloor terrain compared to other deep gravel locations within the proposed network (off the Otago Peninsula and Waitaki), this gravel habitat type is likely to contain different biodiversity values.
424. This site is associated with site 'M – Akatore Coastal (Type 1) and 'L – Akatore Estuary (Type 2)'. Consideration was given to extending the marine reserve (M) out to the 12 nm territorial sea boundary, but the potential impacts on commercial and recreational fishing were considered too high and the potential environmental benefits foregone for this reason. It was also noted that the habitats could be protected elsewhere (See Long Point site "O").
425. This proposal avoids inshore trawl areas. Records and consultation indicates there would be relatively low intensity fishing for other commercial fishing that would be affected by this type of MPA.
426. The restrictions would protect important habitat and biodiversity values indicated by the presence of several important seabird species, reduce the potential for incidental fisheries captures, and help maintain the rich diversity of large animals that use the area.

⁴⁸ Ellenburg & Mattern (2012). *Yellow-eyed penguin – review of population information*, Department of Conservation Science Publication (POP2011-08). The information can be viewed on SeaSketch at <http://bit.ly/YEPforaging>

HABITAT TYPES

427. Figure 48 shows the distribution of the habitat types and area of the habitats for the proposed MPA.



Habitat types included within the proposed site

Area (km) is the area of that habitat type that is included within the site. Area (%) refers to how much of the habitat type within the entire Forum region is included within the site.

HABITAT	AREA (KM ²)	AREA (%)
Deep Gravel	146.6	13.9
Deep Reef	59	16.9
Deep Sand	17	0.4

Figure 48: Habitat types within the proposed Akatore Offshore MPA.

EXISTING USERS

Cultural and Customary

428. This proposed marine protection site is a part of the “Te Tai o Araiteuru”, a Statutory Acknowledgment arising from the Ngāi Tahu Settlement Act 1998. Kāi Tahu customary, recreational and commercial fishers utilise this sea fishery.

Commercial fishing

429. Taieri Mouth is an iconic seaside fishing village. So any impact on commercial fishing not only has an economic impact, it has a social impact as well.
430. The area between the coast and the 12 nm boundary is important to trawlers and to rock lobster fishers. Fishers also catch good blue cod on gravel within this area. Rock lobster and blue cod potting can continue in this proposed MPA.
431. Consultation and personal observation record that foul ground is less consistent /less dense than as shown in the habitat maps, which affects where different fisheries can operate.
432. To limit the impacts on commercial trawl fishers, the boundaries of the proposed marine protected area avoid the most frequently used inshore trawl areas.

Commercial Fishing Intensity

The percentage of the regions fishery that would be displaced by the proposal is shown in the table. Displacement relates to the fishing that occurs within the Forum region, not at the Quota Management level. Displacement does not directly relate to an impact on a fishery, but provides a relative indication of the potential impact restrictions may have.

FISHERY	FISHERY DISPLACEMENT (%)
Net – Other	2.4
Trawl – Tarakihi	1.2
Net – School Shark	0.6
Trawl – Other	0.4
Net – Rig	0.3
Trawl – Flatfish	0.1
Trawl – Red cod	0.1

Figure 49: Commercial Fishing Intensity – Akatore Offshore.

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433. The biggest impact of the proposed marine protected area is expected to be on netting.
434. It is important to note that there is uncertainty about the actual impacts (positive or negative). The information presented is based on the best estimates available. But, for many species, the spatial extent that catches are reported within means we cannot be sure how much catch is taken in a specific area or the extent of the displacement of fishing effort.
435. For more information to help you understand the table and the potential impacts of marine protected areas on commercial fishing please refer to Volume II, Appendix 4: *Fisheries Reporting*.

Recreational fishing

436. This offshore proposal would not affect recreational fishing significantly. It would only prohibit set nets and dredging. The area is likely to be used by recreational fishers from Taieri Beach and Measley Beach, fishing from boats. Line fishing is not impacted by the fishing restrictions proposed in the area.

Making your submission

437. You are welcome to submit on any aspect of the proposal, either for or against, or suggest alterations. In particular, the Forum would like your feedback on the following for this site:
- Does this area provide adequate protection for the habitats included?
 - Do you support this area going forward as a part of the south-east marine protected areas network? Why? Why not?
 - How would this proposal affect how you use the area? How would this proposal affect you?
 - If you do not support it in its current form, are you able to suggest alternatives to the proposal that would make it more acceptable, such as changes to its location, size, boundaries and specific rules?
 - For the fishing methods noted above, how often are they used by you in this area, and how much of each species is taken by these methods?
 - Do you have any information that would help the Forum decide what restrictions if any to recommend?

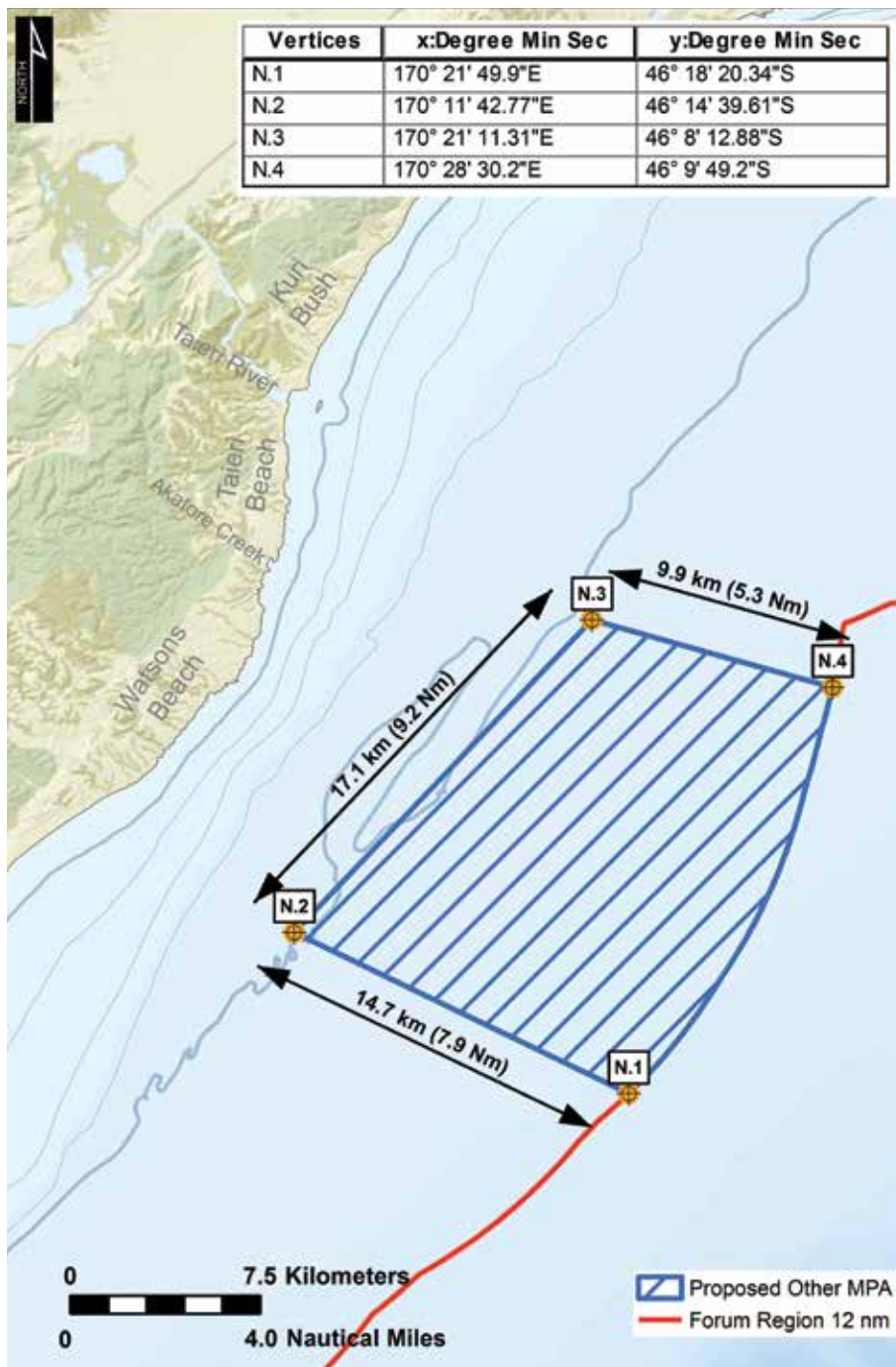


Figure 50: Proposed boundaries for the site put forward for consultation.



Otago.
Photo: Chris Hepburn



Irihuka / Long Point.
Photo: John Barkla

O. LONG POINT (TYPE 1)



Figure 51: Proposed Type 1 MPA.

Description

438. This proposed marine reserve reaches from Pillans Head to north of Purakaunui Bay, including Cosgrove Island. It extends 7.5 km (4 nm) offshore from Long Point on the Catlins coast.
439. The proposal includes 65.6 km² of coastal area, which accounts for 0.7% of the Forum region. It includes 15.8 km of coastline, equivalent to 2.1% of the Forum region coastline.
440. As a marine reserve, it would be a no-take area. All fishing would be prohibited. Fishing vessels would be allowed to enter the area, so long as they had no gear used for the purpose of fishing in the water at the time. This is regardless as to whether they are carrying fish or not (and in accordance with existing fisheries regulations). No discharge to the MPA would be allowed, this includes (but not limited to): grey water, sewage and fish waste.
441. There are wāhi tapu located on the coast and the recovery of koiwi and other cultural artifacts by Kāi Tahu shall not be impacted by this proposal.

Environment

442. This proposed marine reserve includes areas of spectacular cliffed coastline, a sheltered bay, tidal rock pools, shallow and deep sand habitats, and a continuum of habitats from shallow waters through to deep reef.
443. The rocky reefs in the shallow areas are dominated by bull kelp forests to a depth of a few metres. The understorey contains a diverse mix of smaller kelp species and extensive areas of red algal species. This site is a good habitat for juvenile pāua.
444. The fish diversity of the Catlins includes species such as banded wrasse, the spotty, scarlet wrasse, girdled wrasse, green bone, marble fish, blue moki, and trumpeter. Pāua are also common in patches around the Catlins coast.
445. The deeper sand areas within the site are highly structured by the currents and exposure. Large seabed features are easily seen in the seafloor terrain images. Seafloor structures are well recognised as important for biodiversity.
446. The area is visited by a range of seabirds and is identified as an 'Important Seabird Area (IBA)'.⁴⁹ Species present within the area include (but not limited to): sooty shearwaters, yellow-eyed penguins, little blue penguins and prions.
447. One of the most significant yellow-eyed penguin colony clusters occurs adjacent to this area. The proposal, along with the associated proposal 'P – Long Point Offshore (Type 2)' includes a large proportion of the habitat utilised by the yellow-eyed penguins from these colonies⁵⁰.
448. The New Zealand fur seal breeds here and the New Zealand sea lion and Hector's dolphin are all known to frequent this area.
449. The coastal land adjacent to the proposed site includes two scenic reserves (Purākaunui Bay and Long Point), and two Conservation Areas (Pillans Head and Chasm Island Bird Sanctuary).

Why was this site chosen for consultation?

450. This proposed site has a wide range of important habitats from a biodiversity perspective, and would provide a continuum of protected land and protected marine area. The coastal habitats included within this site represent the unique habitats of the Catlins coast, and are not included in any other MPA within the proposed network.
451. As shown by the large number of iconic and protected species that use the area (i.e. seabirds and marine mammals), the habitats that this area would protect are ecologically significant and have high biodiversity values.

49 Forest & Bird (2014). *New Zealand Seabirds: Important Bird Areas and Conservation*. SeaSketch link <http://bit.ly/SeaSketchIBA>

50 Ellenburg & Mattern (2012). *Yellow-eyed penguin – review of population information*, Department of Conservation Science Publication (POP2011-08). The information can also be viewed on SeaSketch at <http://bit.ly/SeaSketchYEP>

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452. The area of the proposed marine reserve is one of only two areas within the proposed network where rocky reef extending from intertidal to deep subtidal occurs. The only other location where this continuum would be included within the proposed network is site 'I – Harakeke to White Island', if site 'I' were to include the 'Tow Rock extension'.
453. Other locations on the Catlins coast were discussed at length. Some of the Forum members consider that this proposal better provides for high biodiversity values whilst minimising potential impact to customary, commercial and recreational fishing interest, compared to other sites considered. While not all Forum members agree, this proposal is included for consultation to get further information from the public about its values and the likely impacts on existing users of a marine reserve here.

THE NUGGETS

454. The Forum acknowledges that there is a high degree of interest in protecting the Nuggets, and there have been attempts to protect them in the past. The inset box provides some context around the Nuggets, its history, its controversy and its special significance to the people of the region.
455. Because of this history, and the significant impacts on cultural, customary, recreation and commercial fishing, the Forum agreed to consult on the Long Point option instead of the Nuggets.



Tokata / Nugget Point.
Photo: Fergus Sutherland

THE NUGGETS

History

A number of processes have occurred over the last 25 years, that have looked at protection for this iconic location, starting from 1989. As a result, there has been a longstanding tension between various proponents and opponents to the Nuggets marine reserve proposals. No one, however, disagrees that the Tokata (The Nuggets) is a special place.

Why not the Nuggets?

Why has Long Point been put up as an alternative in meeting the MPA Policy objectives?

While there is no doubt that the Nuggets is a unique and iconic place, there are wildly differing views as to whether it could, or should, be managed as a protected area. The Nuggets has exceptionally high cultural value for manawhenua, and very high commercial and recreational value for fishing. Given the high potential for impact on existing users, as per planning principle 5 of the MPA Policy, the Nuggets was withdrawn from the proposed network. While not all Forum members agreed, the alternative at Long Point was considered to meet the biodiversity requirements of the MPA Policy, whilst having a lesser potential impact on existing users. This process is consistent with the 'Site Selection' guidelines that state "Where there are several sites that would add a similar ecosystem or habitat to the protected area network if protected, the site(s) chosen should minimise adverse impacts on existing users and Treaty settlement obligations". While the habitats at the Nuggets are potentially different to those at Long Point at some level, both sites were considered generally representative of the Catlins coastal habitats.

Why is the Nuggets so special?

The marine environment around the Nuggets is extremely diverse with respect to wave exposure and shore type. The Nuggets area can be divided into three separate rocky reef habitat zones: the semi-sheltered northern zone; the area amongst the rock stacks and the exposed southern zone (Fyfe 1992, Gorter 1992). Each zone has a distinctive assemblage of species which relates primarily to the depths and degree of exposure within the zone as well as substrate type.

The wildlife of the Nuggets is exceptional, with numerous seabirds visiting and breeding within the area, as well as a number of marine mammal visitors.

Cultural

Tokata (The Nuggets) is an important location for manawhenua, the headland and rocky reefs being endowed with a variety of bird species, seal colonies and rich in kaimoana. The rimurapa (kelp) on this coast being particularly popular for making traditional poha (food storage bags). Tokata provided good shelter for the villages located on the northern side of the headland, and was the scene of contested rights between Kāi Tahu (Kāi Te Pahi) and Kāti Māmoe tupuna. The headland is also a gazetted Statutory Acknowledgement in the Ngāi Tahu Claims Settlement Act 1998.

Social

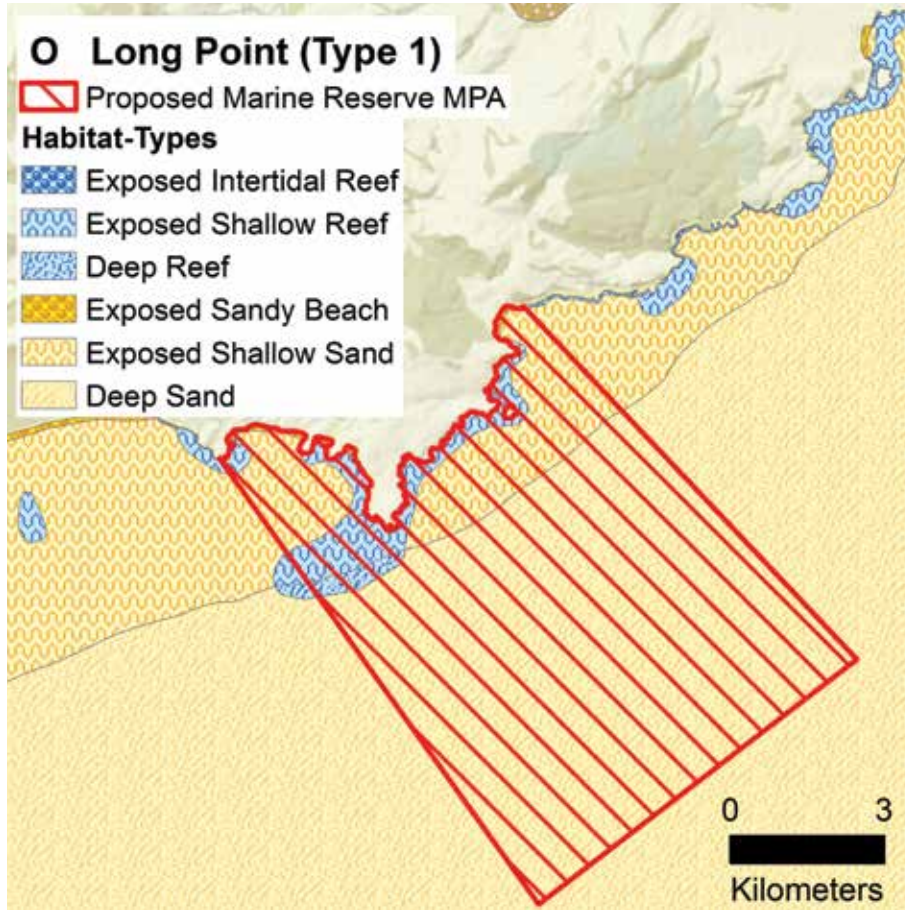
The Nuggets are a well recognised high value area for recreational fishing. Species fished include trumpeter, blue cod, moki, red cod, salmon (north of the rock stacks). There is also significant pāua on the south side.

Commercially, the area is also highly valued. There is a significant amount of pāua taken from the reefs, and trawling, mainly for red cod and flatfish, also has a significant take from the near-shore sandy areas.

In addition to the extractive uses, the Nuggets are an iconic tourist location, with a significant number of visitors annually.

HABITAT TYPES

456. Figure 52 shows the distribution of the habitat types and area of the habitats for the proposed MPA.



Habitat types included within the proposed site

Area (km) is the area of that habitat type that is included within the site. Area (%) refers to how much of the habitat type within the entire Forum region is included within the site.

HABITAT	AREA (KM ²)	AREA (%)
Deep Sand	50	1.1
Exposed Shallow Sand	10.5	2.1
Exposed Shallow Reef	3.7	2.6
Deep Reef	0.6	0.2
Exposed Intertidal Reef	0.4	6
Exposed Sandy Beach	0.2	4

Figure 52: Habitat types within the proposed Long Point MPA.

EXISTING USERS

Cultural and Customary

457. Irihuka (Long Point) is adjacent to the Kuramea Statutory Acknowledgement resulting from the Ngāi Tahu Settlement Act, 1998. Irihuka for Kāi Tahu holds principal values of mahika kai (including the kai, places and resources used to gather that kai), kai moana and wāhi tōaka and paruparu – known history and archaeological sites have been located here. Purākaunui is utilised by manawhenua to gather mahika kai and teach our rangatahi those practices. Marine reserves alienate these customary rights, connections and interests. Nearby Catlins Lake is the subject of a statutory acknowledgment.⁵¹

Commercial fishing

458. This is a highly valued area for commercial pāua fishers. There is an area close by that is a voluntarily closed area to commercial pāua harvest. The proposed marine reserve MPA would have an impact on pāua fishers. The area is important for fishers from Waikawa and Owaka.

459. In 2013 commercial rock lobster fishers received access to this area for rock lobster after years of closure (the area has now been added to the CRA 7 fisheries management area). Prior to 2013 the area was closed as part of a buffer zone for the Otago rock lobster concession area.⁵² It is more highly valued now than it was. As the figures in the table do not include the most recent fishing years, the impacts on rock lobster may be higher than indicated.

460. Rock lobster migrate progressively down the coast; the longer they have been moving, the older and larger they are. This provides opportunity for commercial take of different sized rock lobster, dependent on the value of the market.

461. The proposal includes areas of high intensity trawling, and therefore important to the commercial fishing industry. A lot of trawling is done just off Long Point and Cosgrove Island, where higher concentrations of fish occur.

462. Commercial boats anchor within the proposed area. In particular, during north-east weather / sea conditions, boats will shelter behind the point to 'clean up'. White Head does not offer similar shelter from either direction. Boats would have to go behind the Nuggets or Tautuku Peninsula for shelter to clean up, which is not always suitable in heavy weather. Boats would still be able to anchor within the proposed marine reserve, but not allowed to discharge anything into the reserve when 'cleaning up' after fishing.

463. Cosgrove is only used in fine weather. So, boats could avoid anchoring around Cosgrove; but it is not ideal for it to be unavailable.

⁵¹ Schedule 28 of the Ngāi Tahu Claims Settlement Act 1998.

⁵² The legal size for rock lobster is lower in the Otago concession area than other parts of the rock lobster fishery.

464. The most significant impact on commercial fishing is likely to be on the flatfish trawl fishery. Though flatfish does not have a high port price, the volume of fish impacted means the value of the displaced catch is not insignificant. Other fisheries that could be affected include pāua, stargazer and rock lobster (see table).
465. It is important to note that there is uncertainty about the actual impacts (positive or negative). The information presented is based on the best estimates available. But, for many species, the spatial extent that catches are reported within means we cannot be sure how much catch is taken in a specific area or the extent of the displacement of fishing effort.
466. For more information to help you understand the table and the potential impacts of marine protected areas on commercial fishing please refer to Volume II, Appendix 4: Fisheries Reporting.

Commercial Fishing Intensity

The percentage of the regions fishery that would be displaced by the proposal is shown in the table. Displacement relates to the fishing that occurs within the Forum region, not at the Quota Management level. Displacement does not directly relate to an impact on a fishery, but provides a relative indication of the potential impact restrictions may have.

FISHERY	FISHERY DISPLACEMENT (%)
Trawl – Flatfish	6.1
Dive – Pāua	5.6
Trawl – Red cod	2
Jig – Squid	1.3
Line (bottom longline and dahn line)	1.1
Net – School Shark	0.4
Trawl – Other	0.3
Pot – Blue cod	0.2
Pot – Rock lobster	0.2
Net – Rig	0.1
Net – Other	<0.1
Trawl – Tarakihi	<0.1

Figure 53: Commercial Fishing Intensity – Long Point.

Recreational fishing

467. This area is a reasonably well used recreational area, particularly by fishers from the south, both for rock fishing and boat fishing. Species taken recreationally from the area include pāua, mussels, blue cod, jock stewarts and rock lobster.

Tourism and Access

468. This area has considerable wildlife tourism potential for visiting a marine reserve both at Purākaunui Bay and Long Point. A reserve here could be a boost to Catlins tourism.
469. The marine reserve could enhance the diving in the gut by Cosgrove Island due to expected recovery of exploited species and subsequent effects of protection.
470. Access to the north end would be via Purākaunui Bay Camp Ground and around the shore line. In the south there is road access to Helena Falls Beach. Access to Long Point / Irahuka is available through the Yellow-Eyed Penguin Trust Land. Most of the area is accessible by boat in calm conditions.
471. For the yellow-eyed penguin, the total number of birds in the Forum region is estimated at about 1000 and this number is currently declining. This proposal, in addition to protecting the habitats and ecosystems is important for these species and would afford additional protection from incidental capture.
472. At present the area is used by the local community for access to fishing, diving and surfing; this is allowed by, and partly facilitated by, the Yellow-Eyed Penguin Trust at Long Point and by Department of Conservation facilities at Purākaunui Bay.

Scientific value

473. This is an excellent option for a large marine reserve in the Catlins area. It would provide research opportunities and enable studies to focus on a recovering ecosystem.
474. This is a relatively remote area but access for research by land and boat is possible when conditions are appropriate. The area provides opportunities to study a range of wave-exposed reef and soft sediments habitat types that extend from the intertidal to relatively deep water. The area provides opportunities to establish protected habitat types and populations of a range of exploited species and will provide greater understanding of marine ecosystems and could inform fisheries management.

Summary

475. The Forum is consulting on this proposed marine reserve as it provides protection for a significant area of the coast that has very high biodiversity values. The proposal meets the objectives of the policy as protecting representative examples of several habitat types. The current proposal is identified as the best example that meets policy objectives, whilst achieving biodiversity protection and having less impact to existing users compared to the alternative to protect similar habitats, namely, the Nuggets. This is one of only two options that have been proposed that includes rocky reef from the intertidal to the deep subtidal habitats (the other being area 'I').

Making your submission

476. You are welcome to submit on any aspect of the proposal, either for or against, or suggest alterations. In particular, the Forum would like your feedback on the following for this site:

- Does this area provide adequate protection for the habitats included?
- How would this proposal affect your current or future use of the area? How would this proposal affect you?
- Do you support this area going forward as a part of the south-east marine protected areas network? Why? Why not?
- If you do not support it in its current form, can you suggest alternatives to the proposal that would make it more acceptable, such as changes to its location, size, boundaries and specific rules?
- Do you have any comments to make regarding this proposal?

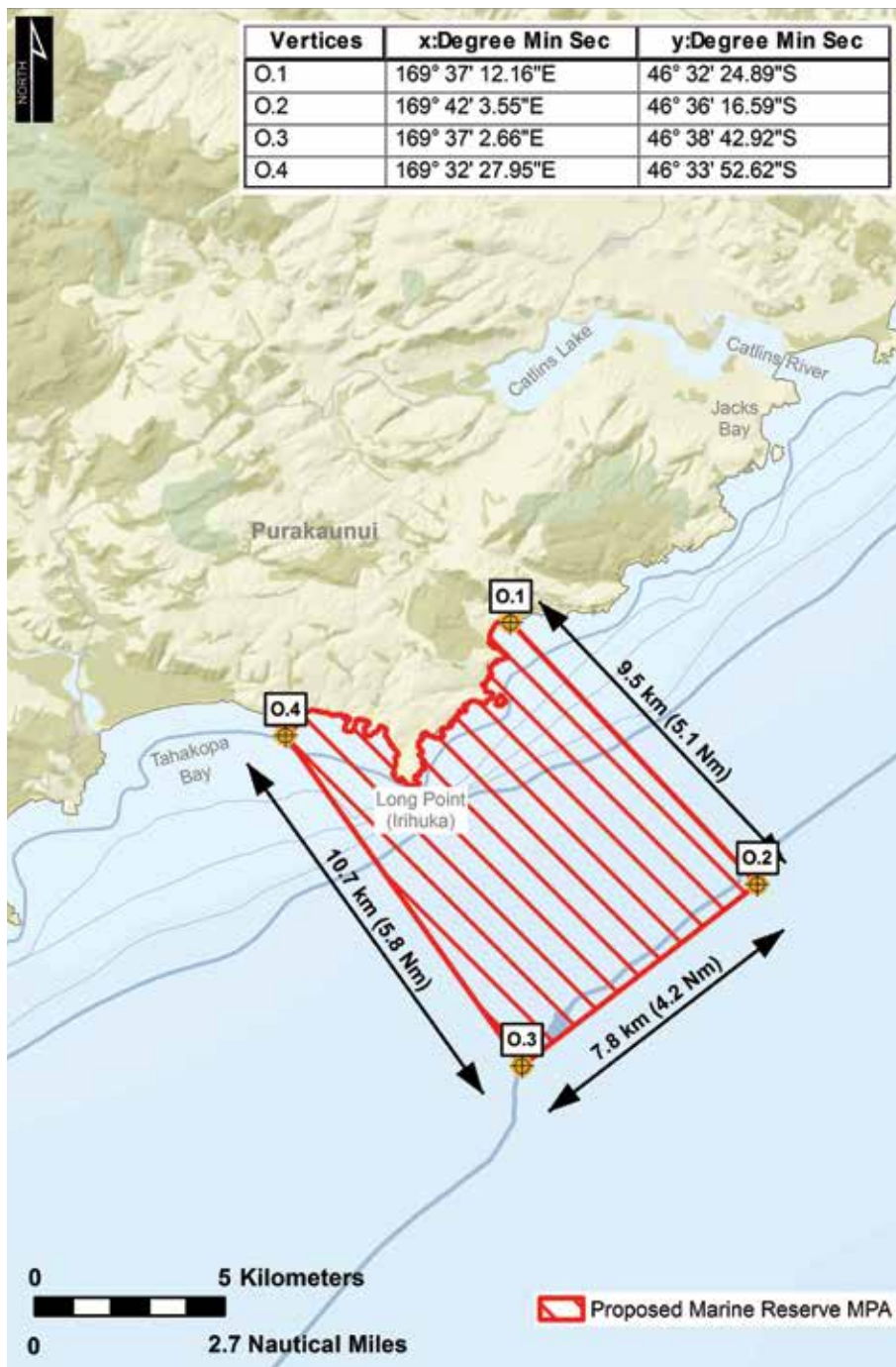


Figure 54: Proposed boundaries for the site put forward for consultation.



Irihuka / Long Point.
Photo: John Barkla



Cosgrove Island.
Photo: Fergus Sutherland

P. LONG POINT OFFSHORE (TYPE 2)



Figure 55: Proposed Type 2 MPA.

Description

477. This proposed marine protected area with fisheries restrictions is associated with proposed marine reserve 'O – Long Point (Type 1)'. The proposed area extends 30 km (16 nm) along the boundary of the 12 nm limit and is approximately 12 km (6.5 nm) wide. It is located approximately 7.5 km (4 nm) offshore from Long Point. It contains an area of 460 km² which is approximately 5.2% of the Forum region.
478. The boundaries have been drawn to exclude the highest intensity trawl fishery area to the landward side of the site.
479. The area would be protected by various fisheries restrictions, banning:
- All trawling
 - All dredging
 - Danish and purse seining
 - All set netting
480. Other forms of commercial fishing would be permitted. The proposal would only restrict recreational set net and dredge fishing.

-
481. This package of fishing restrictions is proposed to allow for the maintenance and recovery of the biodiversity of the area, by prohibiting bottom impacting methods and reducing fishing effects on the ecosystem, natural species composition and trophic linkages.

Environment

482. Little is known specifically about this deeper offshore part of the Catlins coast however it is known that the seafloor terrain⁵³ has some interesting features near the southwest corner of the site. The limited sampling from the area identified scallops and brachiopods (lamp shells) being present. The utilisation of the area by a number of iconic marine mammal and seabird species indicate that is the area has important biodiversity values. Species present within the area include (but are not limited to): sooty shearwaters, yellow-eyed penguins, little blue penguins, prions. The inner section of the area is identified as an 'Important Seabird Area (IBA) extension'⁵⁴.
483. One of the most significant yellow-eyed penguin colony clusters occurs within this area. The proposal, along with the associated proposed marine reserve 'O – Long Point (Type 1)' includes a large proportion of the habitat utilised by the yellow-eyed penguins from this colony cluster.⁵⁵

Why was this site chosen for consultation?

484. Despite the habitat map showing the area as almost exclusively uniform sand habitat, the seafloor terrain information shows substantial seafloor features are present. Structural complexity of the seafloor is well recognised as important for biodiversity. The origin of those features are likely to be a result of the currents and exposure as well as the biology (biogenic features). This proposal provides protection to a large area of soft sediment habitat that is likely to be different from those contained in proposals further north, due to the proximity to currents from Foveaux Strait and direct exposure to the south. The restrictions would protect important habitat and biodiversity values indicated by the presence of several important seabird species, reduce the potential for incidental fisheries captures, and help maintain the rich diversity of large animals that use the area.
485. This could also be an area where biogenic habitats, in particular bryozoans, are still in reasonable condition.
486. Some Forum members consider that, in addition to protecting only the habitat structure by restricting bottom impacting methods, additional fishing restrictions on all netting, mid-water trawling and purse seining are required to maintain and restore ecological systems, natural species composition and trophic linkages. Therefore, further information is sought from the public about the types of fishing restrictions proposed for this area specifically, as well as the general proposal for an MPA.

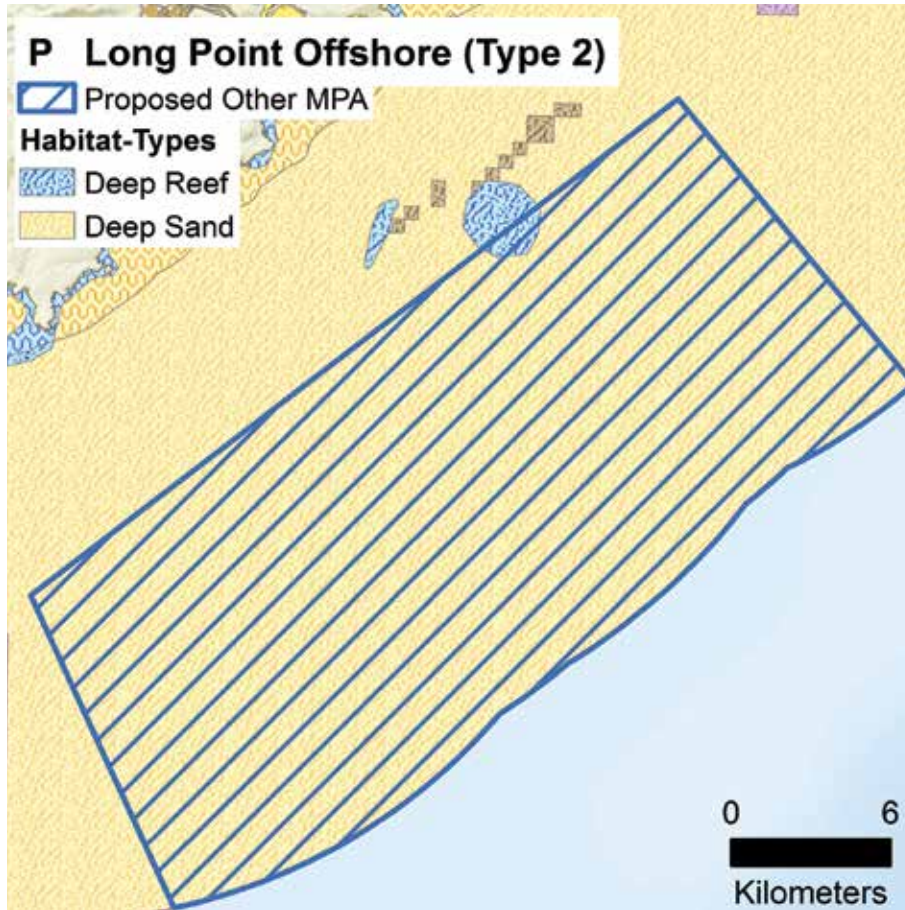
53 The seafloor terrain is sourced from LINZ multibeam. Multibeam is a high resolution bathymetry that is referred to as "acoustic imagery". See SeaSketch link <http://bit.ly/SeaSketchMultibeam>

54 Forest & Bird (2014). New Zealand Seabirds: Important Bird Areas and Conservation. SeaSketch link <http://bit.ly/SeaSketchIBA>

55 Ellenburg & Mattern (2012). Yellow-eyed penguin – review of population information, Department of Conservation Science Publication (POP2011-08). The information can also be viewed on SeaSketch at <http://bit.ly/SeaSketchYEP>

HABITAT TYPES

487. Figure 56 shows the distribution of the Habitat types and area of the habitats for the proposed MPA.



Habitat types included within the proposed site

Area (km) is the area of that habitat type that is included within the site. Area (%) refers to how much of the habitat type within the entire Forum region is included within the site.

HABITAT	AREA (KM ²)	AREA (%)
Deep Sand	458.6	9.9
Deep Reef	2	0.6

Figure 56: Habitat types within the proposed Long Point offshore MPA.

EXISTING USERS

Cultural and Customary

488. The offshore Long Point MPA could alienate whānau from using historical fishing marks located by tūpuna. These fishing marks are still used frequently by manawhenua to manaaki whānau, the local marae and manuhiri.

Commercial fishing

489. The main impacts on existing commercial fishers based on records on fishing undertaken in the area would be on set netting and trawling. There is high trawling intensity inshore (flatfish, stargazer, gurnard, red cod, rig, school shark), which is the main trawl area for Port Chalmers boats. The boundaries have been drawn to exclude the highest intensity trawl fishery area to the landward side of the proposed marine protected areas, and minimise the impact on these fishers.

490. The biggest impacts of the proposed marine protected area would be on the school shark and rig fisheries.

491. Other fisheries that could be affected include the trawl fisheries for gurnard and red cod (see table). No dredging and very little Danish seining is thought to occur in the area.

Commercial Fishing Intensity

The percentage of the regions fishery that would be displaced by the proposal is shown in the table. Displacement relates to the fishing that occurs within the Forum region, not at the Quota Management level. Displacement does not directly relate to an impact on a fishery, but provides a relative indication of the potential impact restrictions may have.

FISHERY	FISHERY DISPLACEMENT (%)
Net – School Shark	5
Net – Rig	2
Net – Other	0.7
Trawl – Flatfish	0.3
Trawl – Other	0.1
Trawl – Gurnard	0.1
Trawl – Red cod	0.1

Figure 57: Commercial Fishing Intensity – Long Point Offshore.

-
492. It is important to note that there is uncertainty about the actual impacts (positive or negative). The information presented is based on the best estimates available. But, for many species, the spatial extent that catches are reported within means we cannot be sure how much catch is taken in a specific area or the extent of the displacement of fishing effort.
493. For more information to help you understand the table and the potential impacts of marine protected areas on commercial fishing please refer to Volume II, Appendix 4: *Fisheries Reporting*.

Recreational fishing

494. This proposal is unlikely to impact recreational fishers. It would only prohibit recreational dredging and set netting.

Summary

495. The use of this area by seabirds indicates that there are high biodiversity values associated with the site. While there is little information about the specific habitats within the proposed area, it appears to be significant habitat for a range of species and therefore warrants protection. For the yellow-eyed penguin, the total number of birds in the Forum region is estimated at about 1000 and this number is currently declining due to unidentified causes. This proposal, in addition to protecting the habitats and ecosystems that are important for these species, would also afford additional protection from incidental capture.

Making your submission

496. You are welcome to submit on any aspect of the proposal, either for or against, or suggest alterations. In particular, the Forum would like your feedback on the following for this site:
- Does this area provide adequate protection for the habitats included?
 - Do you support this area going forward as a part of the south-east marine protected areas network? Why? Why not?
 - How would this proposal affect how you use the area? How would this proposal affect you?
 - If you do not support it in its current form, are you able to suggest alternatives to the proposal that would make it more acceptable, such as changes to its location, size, boundaries and specific rules?
 - For the fishing methods noted above, how often are they used by you in this area, and how much of each species is taken by these methods?
 - Do you have any information that would help the Forum decide what restrictions if any to recommend?

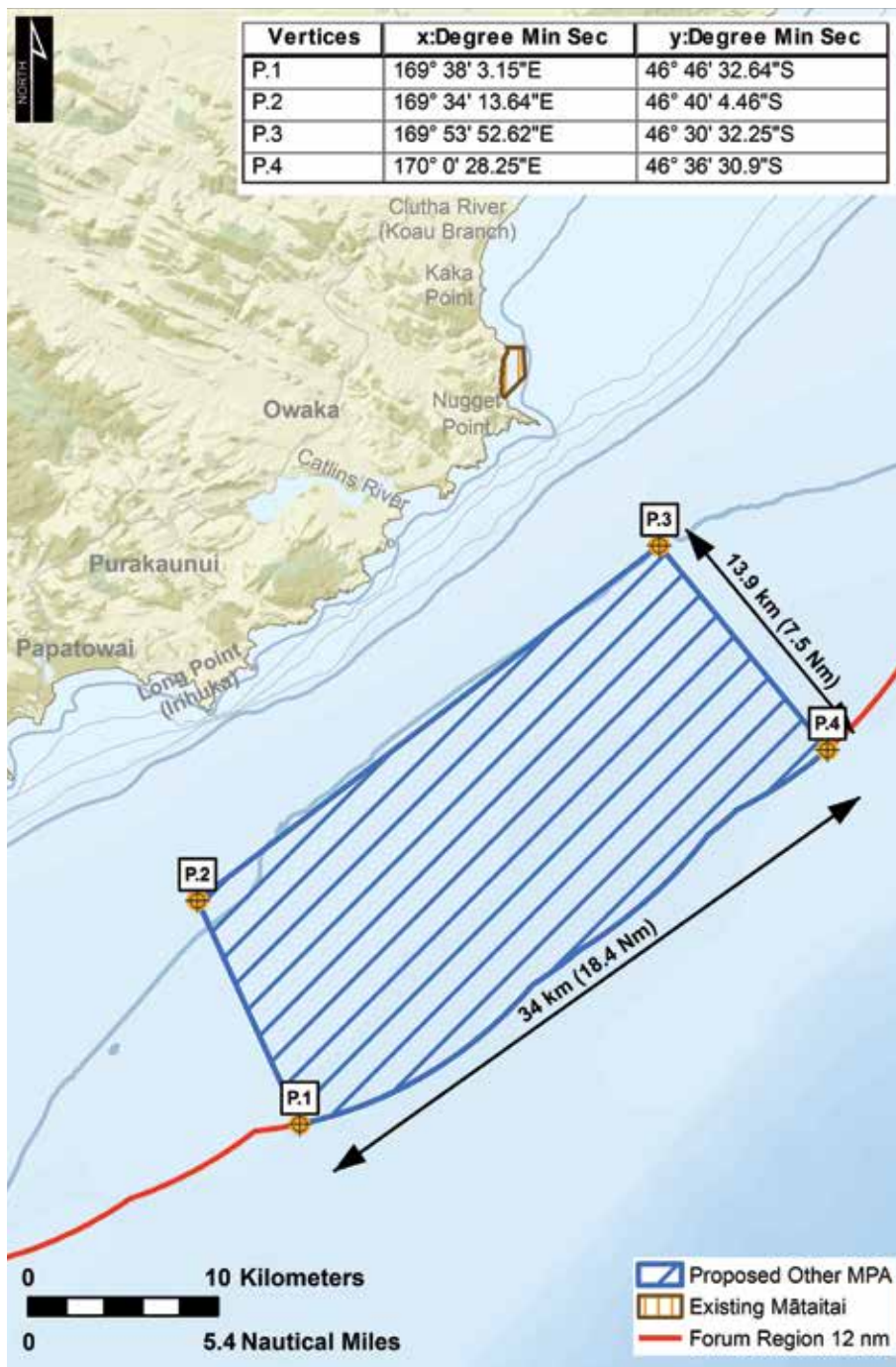


Figure 58: Proposed boundaries for the site put forward for consultation.



Irihuka / Long Point.
Photo: Fergus Sutherland



Tahakopa Estuary.
Photo:Fergus Sutherland

Q. TAHAKOPA ESTUARY (TYPE 1)



Figure 59: Proposed Type 1 MPA.

Description

497. This proposed marine reserve includes the left bank of the Tahakopa Estuary. It extends from the bridge at Papatowai north for approximately 2 km upstream. The proposed area contains 0.3 km² of estuarine habitat.
498. As a marine reserve, it would be a no-take area. All fishing would be prohibited.
499. Fishing vessels would be allowed to enter the area, so long as they had no gear used for the purpose of fishing in the water at the time. This is regardless as to whether they are carrying fish or not (and in accordance with existing fisheries regulations). No discharge to the MPA would be allowed, this includes (but not limited to) grey water, sewage and fish waste.
500. There are wāhi tapu located on the coast and the recovery of koiwi and other cultural artifacts by Kāi Tahu shall not be impacted by this proposal.

Environment

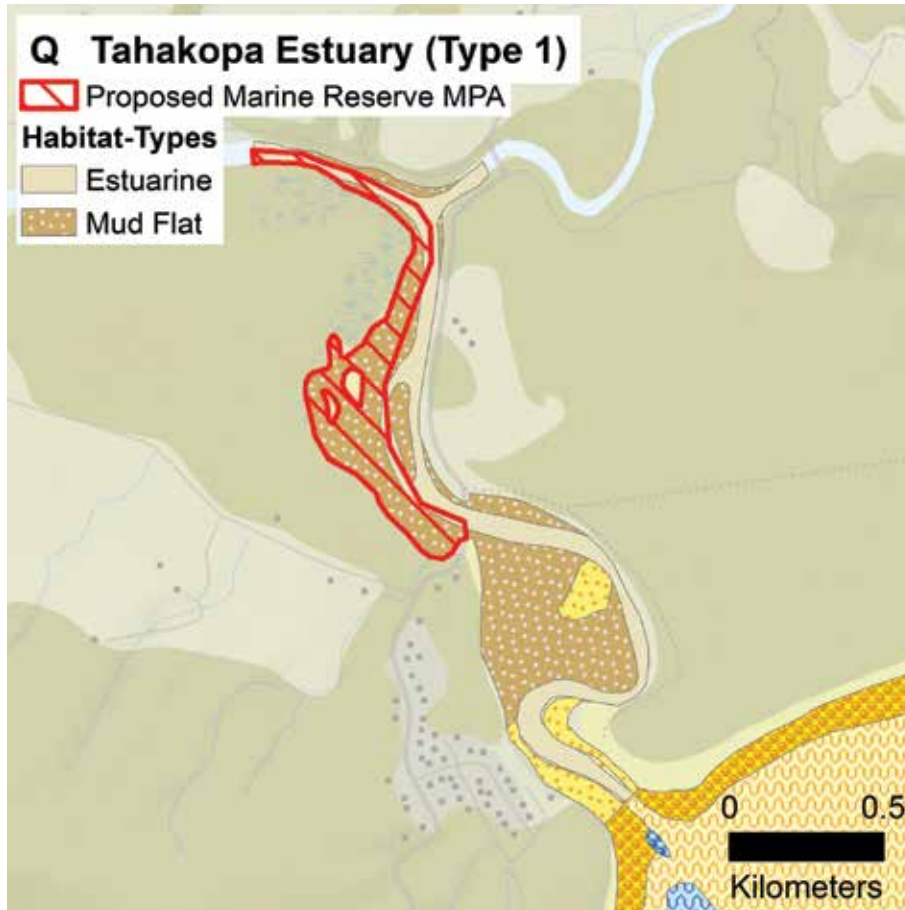
501. The western side (left bank) of the estuary that the proposal incorporates is unmodified mudflats with a small area of salt marsh turf, and an extensive area of tall jointed rush. It is an intricate area of wetland. It is an area of special significance for wading birds and whitebait breeding. Flatfish are also a feature of the estuary's biodiversity. Saltmarsh has been removed by human action elsewhere in this estuary and the proposal would protect and / or allow restoration of what remains.
502. The reserve would be flanked by the Papatowai Scenic Reserve on land, and Shank's Bush private QEII Reserve on land. On the opposite side of the river part of the land is in the Tahakopa Bay Scenic Reserve. There is a landfill nearby that has a consent to discharge leachate into the northern side of the estuary, subject to monitoring conditions.

Why was this site chosen for consultation?

503. This proposal would protect half the estuary as a marine reserve.
504. The estuarine habitats in the Catlins tend to be in catchments surrounded by bush. This means estuaries will have less sediment entering into them and be in a less modified state than estuaries with more developed catchments.
505. The Forum recognises that the MPA Policy requires at least one example of estuarine habitat to be protected in a marine reserve. The Forum has chosen this site for consideration as a marine reserve because of its particular qualities, and because it may have less adverse impacts on existing users compared with alternative locations.

HABITAT TYPES

506. Figure 60 shows the distribution of the Habitat types and area of the habitats for the proposed MPA.



Habitat types included within the proposed site

Area (km) is the area of that habitat type that is included within the site. Area (%) refers to how much of the habitat type within the entire Forum region is included within the site.

HABITAT	AREA (KM ²)	AREA (%)
Mud Flat	0.1	0.5
Estuarine (unclassified)	<0.1	0.8

Figure 60: Habitat types within the proposed Tahakopa Estuary MPA.

EXISTING USERS

Cultural and Customary

507. The estuary and rivers within this rohe are a source of mahika kai for the whānau from this area. The name Tahakopa is a reference to the name kokopu speaking of the native fish that inhabit this area. The area has wāhi tōaka and wāhi tapu along the shores.
508. The area today is used still for these mahika kai purposes but also for educational purposes to teach the next generation traditional fishing methods along with waka ama and mokihi.
509. The Otago Regional Council's recognition of Tahakopa Estuary as a coastal protection area is due in part to its Kāi Tahu cultural and spiritual values.

Commercial fishing

510. Commercial eeling occurs within the catchment of the estuary. But, the scale at which commercial eel catches are reported means it is unknown how important the estuary is for the fishery. Any reduction in the available habitat for eel fishing may impact the commercial fishers, depending on whether they can catch their quota elsewhere, and the impact of having to displace effort elsewhere. There is no other known commercial fishing in the estuary.

Recreational fishing

511. There is some recreational set netting and floundering within the estuary. In areas of the estuary outside the proposed marine reserve, recreational fishers indicated they also collect shellfish and spearfish.

Tourism

512. The area proposed is highly visible from the scenic highway. The estuary, as a whole, is much visited via various walks and access points, although the area proposed for protection would be accessed to the public by water only.

Summary

513. The area would provide recognition and protection for part of a relatively pristine estuary, with significant ecological values. There is one viewing point from the private reserve.

Making your submission

514. You are welcome to submit on any aspect of the proposal, either for or against, or suggest alterations. In particular, the Forum would like your feedback on the following for this site:
 - Does this area provide adequate protection for the habitats included?

- How would this proposal affect your current or future use of the area? How would this proposal affect you?
- Do you support this area going forward as a part of the south-east marine protected areas network? Why? Why not?
- If you do not support it in its current form, are you able to suggest alternatives to the proposal that would make it more acceptable, such as changes to its location, size, boundaries and specific rules?



Figure 61: Proposed boundaries for the site put forward for consultation.



Tautuku Upper Estuary,
Photo: Fergus Sutherland

R. TAUTUKU ESTUARY (TYPE 2)



Figure 62: Proposed Type 2 MPA.

Description

515. The proposed marine protected area with fishery restrictions covers the Tautuku Estuary and incorporates 0.5 km² of estuarine habitat.
516. The restrictions that are proposed for this estuary are designed to protect the estuary from high levels of extraction that would compromise the ecological systems, as well as bottom disturbance. They include:
 - no dredging
 - no set net fishing
 - no commercial line fishing
 - no mechanical harvesting (including spades for collecting shellfish)
 - no fyke net fishing
 - no whitebaiting
517. Hand-gathering, spear fishing and recreational line fishing, non-commercial gathering of paruparu and beach cast kelp will be permitted. The recovery of koiwi and other cultural artifacts by Kāi Tahu are not impacted by this proposal.

-
518. This package of fishing restrictions is proposed to allow for the maintenance and recovery of the biodiversity of the area, by prohibiting bottom impacting methods and reducing fishing effects on the ecosystem, natural species composition and trophic linkages.
519. There are wāhi tapu located on the coast and the recovery of koiwi and other cultural artifacts by Kāi Tahu shall not be impacted by this proposal.

Environment

520. The Tautuku Estuary is a largely unmodified estuary with its catchment surrounded largely by native forest and protected wetland (including the William King Scenic Reserve) which is mainly conservation land, private nature reserve, 1906 SILNA land and Māori freehold land. The Otago Regional Council describes the area as having a ‘high degree of wetland naturalness’⁵⁶ and it is listed as a regionally significant wetland⁵⁷. It states: “*Pristine saltmarsh and estuarine communities. It is an important breeding ground for black and yellow-belly flounder. It also provides an important habitat for regionally threatened fern birds*”.

Why was this site chosen for consultation?

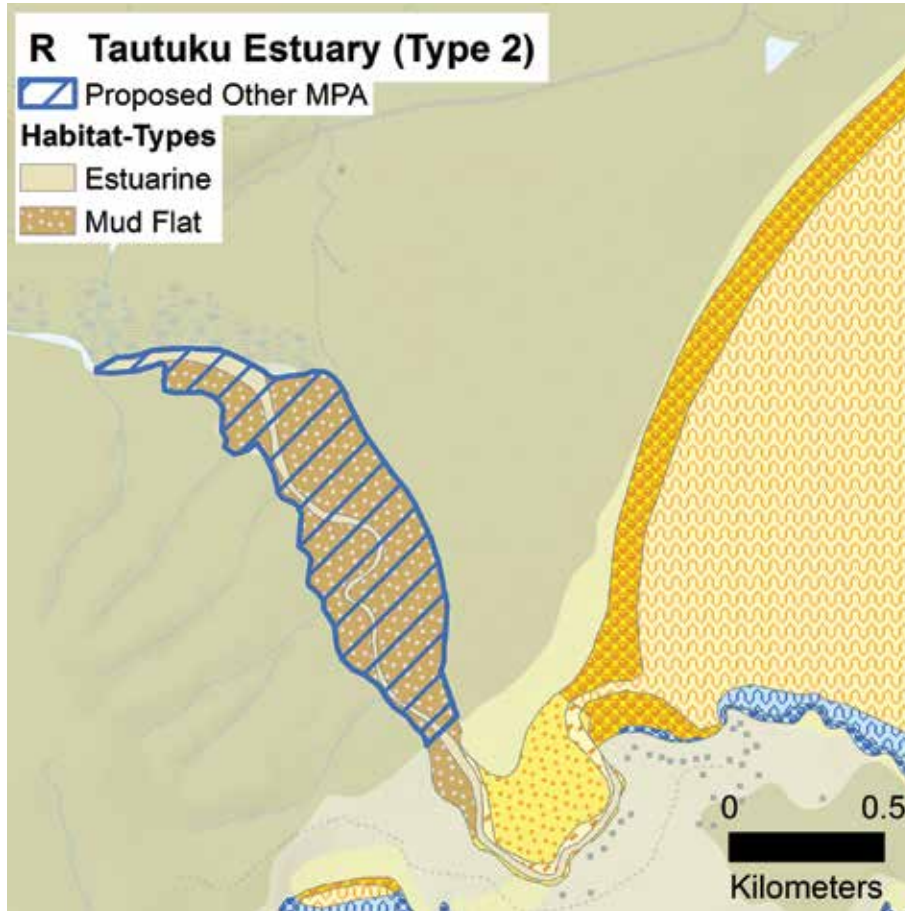
521. This is an example of a small, unmodified estuary, surrounded by native forest and protected wetland. The catchment of the estuary has the least human impact of any estuary on the east coast.
522. Estuarine values include tidal mud flats and adjacent jointed rush fields and areas of salt marsh.
523. The estuary provides a protected nursery area for flatfish in part of their early life cycle. The estuary is used by locally migrating birds such as spoonbills, pied oyster catchers and stilts and in this way has connectivity to other estuarine areas.

⁵⁶ <http://www.orc.govt.nz/Information-and-Services/Wetlands-Inventory/Clutha-District/>

⁵⁷ Regional Plan Water for Otago, Schedule 9.

HABITAT TYPES

524. Figure 63 shows the distribution of the Habitat types and area of the habitats for the proposed MPA.



Habitat types included within the proposed site

Area (km) is the area of that habitat type that is included within the site. Area (%) refers to how much of the habitat type within the entire Forum region is included within the site.

HABITAT	AREA (KM ²)	AREA (%)
Mud Flat	0.4	1.3
Estuarine	0.1	1.3

Figure 63: Habitat types within the proposed Tautuku Estuary MPA.

EXISTING USERS

525. People need to cross the estuary mouth to get to their cribs by vehicle as it is their only access point. This occurs at the lower end of the estuary over hard sand, and therefore does not impact the estuary proper. The proposed MPA excludes the access route for vehicles.

Cultural and Customary

526. The SILNA lands and Māori freehold land bound this estuary and river on the south-west side. It was gifted back for the purpose of allowing whānau to survive and carry out cultural practices. Wāhi tōaka and wāhi tapu sites including urupa frequent the shores of this area. It is still a well-used site for education, gathering purposes such as mahika kai, paruparu, rongoa, and other cultural materials.
527. This site holds mauri (life force) and is significantly used today by whānau for practices that have travelled through time. Removing the ability for whānau to practise mahika kai, kai moana and cultural materials and use the site spiritually would eliminate cultural practices, connections and interests.
528. Inanga and dye (from mud) for carving are both sourced from here.
529. The Otago Regional Council's recognition of Tautuku Estuary as a coastal protection area is due in part to its Kāi Tahu cultural and spiritual values. The local manawhenua has commissioned ongoing scientific monitoring and assessments of fish stocks in the estuary.

Commercial fishing

530. Commercial eeling occurs within the catchment of the estuary. But, the scale at which commercial eel catches are reported means it is unknown how important the estuary is for the fishery. Any reduction in the available habitat for eel fishing may impact the commercial fishers, depending on whether they can catch their quota elsewhere, and the impact of having to displace effort elsewhere. There is no other known commercial fishing in the estuary.

Recreational fishing

531. The area is used for floundering by spear and net, as well as collecting cockles. The proposed restrictions would impact these activities by requiring gathering by hand only.

Tourism and access

532. Existing users include birdwatchers and tourists using the Tautuku boardwalk through the jointed rush to the mudflats.
533. Educational groups staying at the adjacent Tautuku Outdoor Education Centre use the estuary for estuary studies.
534. Access via boardwalk has a very low impact. Access from the beach requires a long walk.

Summary

535. The proposed marine protected area would provide recognition and protection for a relatively pristine estuary, with significant ecological values and potential for education and tourism benefits. Impacts on existing users are not expected to be significant. But, the extent of commercial eeling in the area is unknown.

Making your submission

536. You are welcome to submit on any aspect of the proposal, either for or against, or suggest alterations. In particular, the Forum would like your feedback on the following for this site:

- Does this area provide adequate protection for the habitats included?
- How would this proposal affect your current or future use of the area? How would this proposal affect you?
- Do you support this area going forward as a part of the south-east marine protected areas network? Why? Why not?
- If you do not support it in its current form, are you able to suggest alternatives to the proposal that would make it more acceptable, such as changes to its location, size, boundaries and specific rules?
- For the fishing methods noted above, how often are they used by you in this area, and how much of each species is taken by these methods?
- Do you have any information that would help the Forum decide what restrictions if any to recommend?



Figure 64: Proposed boundaries for the site put forward for consultation.



Tautuku Estuary.
Photo: Fergus Sutherland



The Catlins.
Photo: Fergus Sutherland

S. HALDANE (TYPE 2)

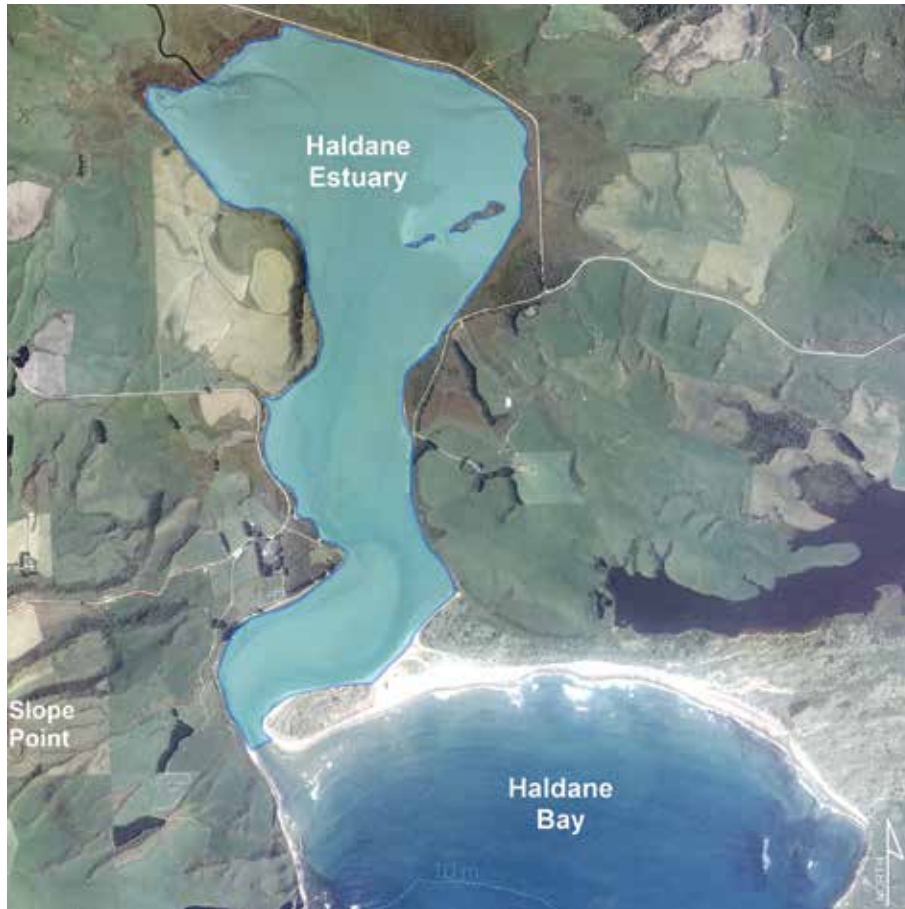


Figure 65: Proposed Type 2 MPA.

Description

537. The proposed MPA covers the Haldane Estuary and incorporates 1.8 km² of estuarine habitat.
538. The restrictions that are proposed for this estuary are designed to protect the estuary from high levels of extraction that would compromise the ecological systems, as well as bottom disturbance. They include:
- no dredging
 - no set net fishing
 - no commercial line fishing
 - no mechanical harvesting (including spades for collecting shellfish)
 - no fyke net fishing
 - no whitebaiting
539. Hand-gathering, spear fishing and recreational line fishing, non-commercial gathering of paruparu and beach cast kelp will be permitted. This package of fishing restrictions is proposed to allow for the maintenance and recovery of the biodiversity of the area, by prohibiting bottom impacting methods and reducing fishing effects on the ecosystem, natural species composition and trophic linkages.

-
540. There are wāhi tapu located on the coast and the recovery of koiwi and other cultural artifacts by Kāi Tahu shall not be impacted by this proposal.

Environment

541. Haldane Estuary is a medium-sized, shallow, “tidal lagoon” type estuary that drains a primarily native bush catchment but is bordered mainly by grazed pasture.
542. Haldane is a very significant estuary for birds. It is a significant wading and shore bird feeding ground. It has a wide range of estuarine habitats and adjacent, significant remnant wetland, as well as examples of sandy beach, mudflat and sub-tidal mud.
543. Haldane is a kōhanga (nursery) area for inanga and fern birds. Estuaries are a significant habitat for some flatfish.
544. Monitoring by Environment Southland states that the dominant upper estuary intertidal habitat (i.e. unvegetated tidal-flat) in Haldane Estuary was generally in a fair to moderate condition, and that the lower estuary is probably in better condition than the upper estuary.⁵⁸
545. Pīngao restoration has been attempted in the area. It will benefit from a clear plan for restoration if it is made an MPA.
546. The Haldane Estuary is included in the Catlins Coast Marine Mammal Sanctuary, and is near two conservation areas (the Catlins Conservation Rainforest and the Reservoir Conservation Area).
547. In its Regional Coastal Plan for Southland, Environment Southland states, *...Haldane Estuary (is a) geologically significant (estuary)... relatively unmodified by structures, reclamation or non-point source discharges despite being surrounded largely by pastoral land. Further, Parts of the estuary retain significant natural character, especially towards the seaward end where the margins include natural vegetation and a sandy spit. The catchment of the Waikopikopiko stream, the main stream to enter the estuary, is largely located in the Catlins Forest Park.*

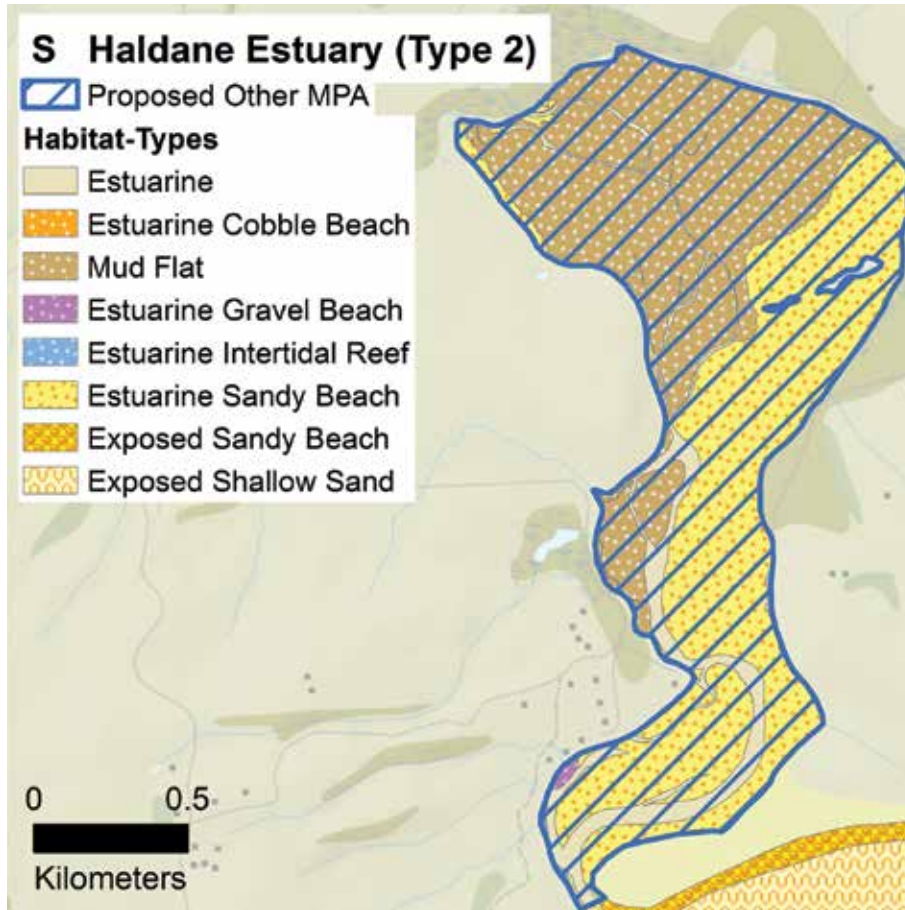
Why was this site chosen for consultation?

548. Haldane Estuary is probably the most significant estuary for birds in the southern area, and is the best option in the South Catlins to represent estuarine habitat in the marine protected areas network. The Forum thinks that its overall biodiversity value make it an important site to consider for a marine protected area.
549. Existing management and monitoring could provide a sound basis for future management of the area as a marine protected area.

⁵⁸ For detailed information on the estuaries within Southland, including Haldane, please visit Environment Southland at <http://www.es.govt.nz/environment/estuaries/>

HABITAT TYPES

550. Figure 66 shows the distribution of the Habitat types and area of the habitats for the proposed MPA.



Habitat types included within the proposed site

Area (km) is the area of that habitat type that is included within the site. Area (%) refers to how much of the habitat type within the entire Forum region is included within the site.

HABITAT	AREA (KM ²)	AREA (%)
Estuarine Sandy Beach	0.9	5.6
Mud Flat	0.8	2.6
Estuarine (unclassified)	0.2	3.8
Estuarine Gravel Beach	<0.1	1.8
Estuarine Boulder Beach	<0.1	12.3
Estuarine Intertidal Reef	<0.1	0.2
Estuarine Cobble Beach	<0.1	3.4

Figure 66: Habitat types within the proposed Haldane MPA.

EXISTING USERS

Cultural and Customary

551. Known to local manawhenua as Waipohatu the area and its two tributaries were abundant in mahika kai. Many wāhi tōaka and wāhi tapu sites are present, these archaeological sites have been dated and are some of the oldest in New Zealand. This estuary hosts a small remnant wetland that is one of the last remaining of its type.
552. Today the area is used to uphold the mana of the local marae for gathering purposes and for cultural traditions. The removal of this capability would alienate these traditions.

Commercial fishing

553. Commercial eeling occurs within the catchment of the estuary. But, the scale at which commercial eel catches are reported means it is unknown how important the estuary is for the fishery. Any reduction in the available habitat for eel fishing may impact the commercial fishers, depending on whether they can catch their quota elsewhere, and the impact of having to displace effort elsewhere. There is no other known commercial fishing in the estuary.

Recreational fishing

554. The area is used by crib owners for shellfish gathering. Some spear and net floundering also occurs.

Tourism and access

555. The area is popular for tourists, in part due to its accessibility.

Summary

556. The marine protected area would provide recognition for an estuary with significant ecological values. It would build on existing management and restoration efforts. It is not expected to have significant impacts on existing users. But, the extent of commercial eeling in the area is unknown.

Making your submission

557. You are welcome to submit on any aspect of the proposal, either for or against, or suggest alterations. In particular, the Forum would like your feedback on the following for this site:
- How would this proposal affect your current or future use of the area? How would this proposal affect you?
 - Do you support this area going forward as a part of the south-east marine protected areas network? Why? Why not?
 - If you do not support it in its current form, are you able to suggest alternatives to the proposal that would make it more acceptable, such as changes to its location, size, boundaries and specific rules?

- For the fishing methods noted above, how often are they used by you in this area, and how much of each species is taken by these methods?
- Do you have any information that would help the Forum decide what restrictions if any to recommend?



Figure 67: Proposed boundaries for the site put forward for consultation.



Otago.
Photo: Matt Desmond

T. KELP FOREST (TYPE OTHER)

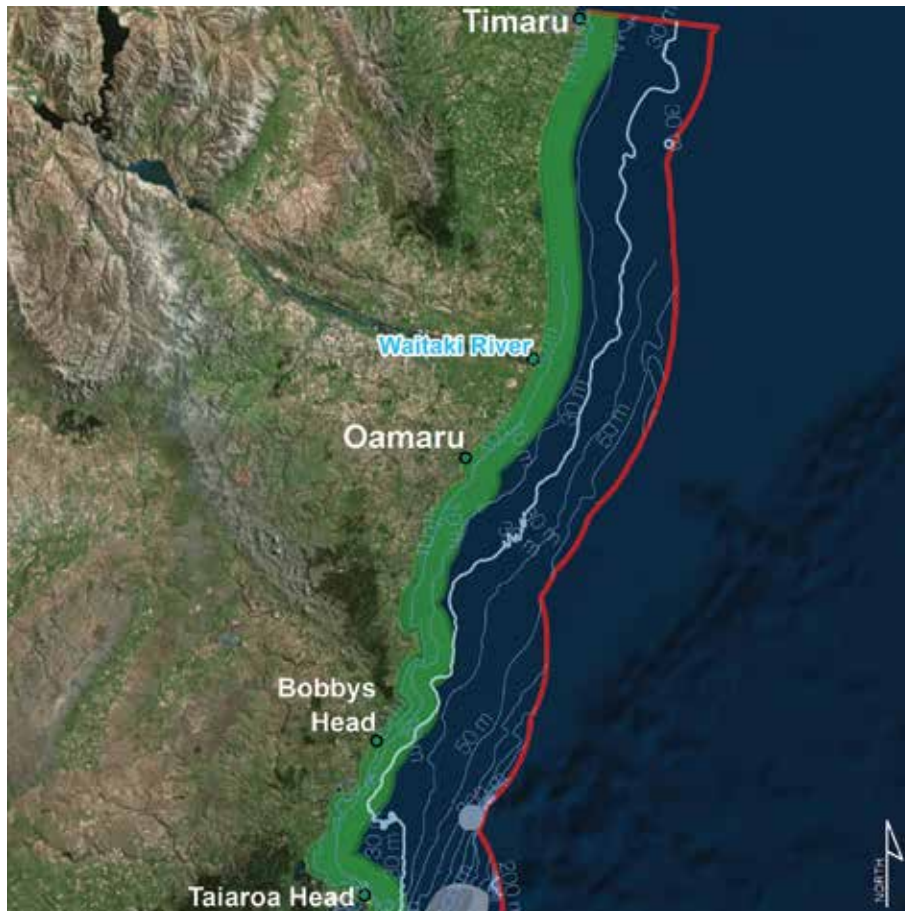


Figure 68: Proposed Other MPA.

Description

558. This area extends from Timaru breakwater to Pipikaretu Point, and seaward 5.5 km (3 nm).
559. The mechanism for protection is a matter which the Forum would like further information on from the public. The most obvious method to protect the kelp habitat at this scale is specific restrictions on the ability to commercially harvest kelp. However, this may not be a mechanism that can be implemented through the current legislation, but it could be implemented through special legislation. But using special legislation could be difficult. At this stage the Forum wants to keep all options open, and to evaluate how to best advance protection of this habitat the Forum is seeking input from the public.
560. The proposal does not meet the protection standard as set out in the MPA Policy, and therefore is not considered a Type 2 MPA. As such, it does not contribute to an overall network, but is termed as “Other Protection Tool” within the MPA Policy as it does contribute to biodiversity and habitat protection.
561. The Forum welcomes submissions with additional suggestions about how kelp habitat can be protected.

-
562. There are wāhi tapu located on the coast and the recovery of koiwi and other cultural artifacts by Kāi Tahu shall not be impacted by this proposal.

Environment

563. *Macrocystis pyrifera*, is a habitat forming native kelp (biogenic habitat). It is long-lived, recovers slowly (if at all depending on the harvesting method), and is an important habitat for fisheries. Kelp-forests form the base of complex food webs which provide for both coastal and pelagic species and provide habitat for, numerous commercially harvested fish and invertebrate species. For example, kelp is well known to be an important habitat for rock lobster settlement.
564. It has been estimated that, in some nearshore ecosystems, macroalgae such as *Macrocystis* may be responsible for 90% or more of the total carbon fixation, and ninety percent of the photosynthetic biomass of *Macrocystis* is in the top metre.
565. They are in decline globally and similar kelp forests in south eastern Australia have been listed as an Endangered Habitat type under the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act). Kelp forests have been lost from Tasmania's east coast due to increasing sea surface temperatures. Similar warming may be occurring in the Forum region.
566. Anecdotal evidence suggests loss of kelp forest in this region and further south (Nugget Point to Green Island) in the last 50 years. Offshore and fringing kelp forests in the area from Warrington to Kakanui are nationally and globally significant. 90% of the photosynthetic biomass is in the top metre, therefore harvesting the top section of the kelp affects its productivity. Kelp is well known to be an important habitat for rock lobster settlement.

Why was this site chosen for consultation?

567. The proposed area includes the majority of the *Macrocystis* habitat within the Forum region. *Macrocystis* occurs to a depth of approximately 25 m, so the proposed boundary would ensure that all potential *Macrocystis* habitat would be protected.
568. The Forum is seeking stakeholder views about protection of kelp because of its importance as a habitat. Offshore and fringing kelp forests in the area from Warrington to Kakanui are nationally and globally significant.
569. Anecdotal evidence suggests loss of kelp forest in the area of interest and further south (Nugget Point to Green Island) in the last 50 years.
570. Harvest of kelp for fertilisers, fish food and human consumption has the ability to significantly reduce kelp biomass, altering food-web dynamics. The harvest method is to remove the surface tissue down to a depth of 1.2m; this process has been found to reduce the generation of reproductive blades by an average of 86% within New Zealand populations⁵⁹.

59 Geange, S. W. 2014. Growth and reproductive consequences of photosynthetic tissue loss in the surface canopies of *Macrocystis pyrifera* (L.) C. Agardh. *Journal of Experimental Marine Biology and Ecology* 453:70–75.

571. The importance of this biogenic habitat for commercial, recreational; social and cultural reasons is why it has been proposed.
572. Because of the importance of the kelp habitat, the Forum considered it necessary to consult and get as much information from the public as possible on its potential protection. Effective, fit for purpose protection may require special legislation if it does not fit within the current laws. Special legislation may face hurdles, therefore the Forum wants any recommendations it makes in respect of protection of the kelp habitat to be well informed and robust.

HABITAT TYPES

573. This protected area would include 98.8% of the mapped *Macrocystis* habitat within the Forum region.

Habitat types included within the proposed site		
<i>Area (km) is the area of that habitat type that is included within the site. Area (%) refers to how much of the habitat type within the entire Forum region is included within the site.</i>		
HABITAT	AREA (KM²)	AREA (%)
Macrocystis bed	15.8	98.8

Figure 69: Habitat type within the proposed Kelp Forest MPA.

EXISTING USERS

574. If a protection mechanism restricted commercial harvest of kelp, this would affect six known quota holders, who do not currently harvest in the proposed area. There is currently little, if any, attached *Macrocystis* harvest in the Forum region; most harvest is of free floating or beach cast.
575. Impacts on other existing users would depend on what area was protected and the mechanism that was used. Provision would be made for incidental harvest (bycatch) as part of other fishing operations.

Summary

576. The Forum is considering appropriate protections for bladder kelp forest habitat in the area of interest because of its importance as a biogenic habitat for commercial, recreational, social and cultural reasons.
577. While it does not contribute to the MPA network as it does not meet the protection standard as a Type 2 MPA, it does contribute to overall biodiversity protection.
578. The MPA Policy explicitly states that in implementing the MPA Policy, protection can be given using a range of tools i.e. Marine Reserve MPAs, other Marine Protected Areas and other Marine Protection Tools. All forms of marine protection are relevant when measuring progress towards the NZ Biodiversity Strategy target. However, only Types 1 and 2 are considered to be MPAs for the purpose of the MPA Policy.
579. There is a requirement within the MPA Policy that tools are used in a manner consistent with the Fisheries Act, i.e. to address either actual or potential adverse effects of fishing on the environment, and are implemented in a manner consistent with the statutory requirements.

Making your submission

580. You are welcome to submit on any aspect of the proposal, either for or against, or suggest alterations. In particular, the Forum would like your feedback on the following for this site:
- What sort of protection over kelp forest habitat do you think is appropriate?
 - How would this proposal affect your current or future use of the area? How would this proposal affect you?
 - Do you support this area going forward as a part of the south-east marine protected areas network? Why? Why not?
 - If you do not support it in its current form, are you able to suggest alternatives to the proposal that would make it more acceptable, such as changes to its location, size and boundaries?



Figure 70: Proposed boundaries for the site put forward for consultation.

MARINE PROTECTED AREAS SUMMARY

Aramoana, Dunedin.
Photo: John Barkla

Summary of Habitats

581. The areas being notified for consultation are proposed to represent the different habitats from the MPA Policy Habitat Classification⁶⁰ as best they can, while also taking into consideration other habitat information and local knowledge about the marine environment.
582. The figures below (Figures 71 -74) give the total square kilometres of each habitat that is covered by each individual proposed area.
- Figure 71 gives the area covered for proposed Type 1 marine reserve MPAs for coastal habitat types.
 - Figure 72 gives the area covered for proposed Type 1 marine reserve MPAs for estuarine habitat types.
 - Figure 73 gives the area covered for proposed Type 2 MPAs for coastal habitat types.
 - Figure 74 gives the area covered for proposed Type 2 MPAs for estuarine habitat types.
583. It is important to note that under the MPA Policy:
- *A marine reserve will be established to protect at least one sample of each habitat or ecosystem type in the network.*⁶¹
 - *The number of replicate MPAs included in the network will usually be two. However, in circumstances where a habitat or ecosystem is particularly vulnerable to irreversible change, more replicates may be established as a national priority.*⁶²
- Replicate MPAs can utilise any tool(s), so long as it meets the protection standard.*
- *Protected areas may be of various shapes and sizes but should be of sufficient size to provide for the maintenance of populations of plants and animals.*⁶³

60 Refer to Volume II, Appendix 2: Marine Protected Areas: Classification, Protection Standard and Implementation Guidelines (page 5).

61 Refer to Volume II, Appendix 1: Marine Protected Areas: Policy and Implementation Plan, Planning Principle 5 (page 19).

62 Refer to Volume II, Appendix 1: Marine Protected Areas: Policy and Implementation Plan, Network Design Principle 3 (page 16).

63 Refer to Volume II, Appendix 2: Marine Protected Areas: Classification, Protection Standard and Implementation Guidelines (page 19).

COASTAL HABITATS	PROPOSED MARINE RESERVE MPAS (KM ²)					
	B – WAITAKI COASTAL	B – WAITAKI COASTAL (EXTENSION)	D – PLEASANT RIVER TO STONY CREEK (OPTION 1)	D – PLEASANT RIVER TO STONY CREEK (OPTION 2)	F – SAUNDERS CANYON	H – PAPANUI CANYON
Deep Gravel	0	0	0	0	15.4	5.2
Deep Mud	0	0	0	9.6	0	0
Deep Reef	0	0	0	0	8.2	0
Deep Sand	0	0	0	1.7	109.8	83.0
Deep Water Sand	0	0	0	0	52.5	18.1
Exposed Boulder Beach	0	0	0	0	0	0
Exposed Intertidal Reef	0	0	0	0	0	0
Exposed Sandy Beach	0	0	0	0	0	0
Exposed Shallow Gravel	0	0	0	0	0	0
Exposed Shallow Reef	0	0	0	0	0	0
Exposed Shallow Sand	0	0	0	0	0	0
Moderate Gravel Beach	0.4	0	0	0	0	0
Moderate Intertidal Reef	0	0	0.2	0.2	0	0
Moderate Sandy Beach	0	0	0.2	0	0	0
Moderate Shallow Gravel	74.3	31.4	0	0	0	0
Moderate Shallow Mud	13.6	0	0	10.7	0	0
Moderate Shallow Reef	0	0	14.6	26.0	0	0
Moderate Shallow Sand	0	0	0.3	1.7	0	0
Sheltered Sandy Beach	0	0	0	0.2	0	0

Figure 71: Area of individual coastal habitat types covered by each marine reserve MPA (Type 1). Where a number is given, it refers to different options relating to the boundaries. Please note that Figure 71 as originally provided was in error, and has been replaced. We regret any inconvenience caused.

COASTAL HABITATS	PROPOSED MARINE RESERVE MPAS (KM ²)				
	I- HARAKEKE POINT TO WHITE ISLAND (OPTION 1)	I- HARAKEKE POINT TO WHITE ISLAND (OPTION 2)	K - GREEN ISLAND	M - AKATORE COASTAL	O - LONG POINT
Deep Gravel	0.7	0.9	0	0	0
Deep Mud	0	0.2	0	0	0
Deep Reef	0	0.3	1.1	0	0.6
Deep Sand	7.1	12.5	0.5	0	50.0
Deep Water Sand	0	0	0	0	0
Exposed Boulder Beach	<0.1	<0.1	0	0	0
Exposed Intertidal Reef	0.4	0.4	<0.1	0.7	0.4
Exposed Sandy Beach	0.6	0.6	0	0.1	0.2
Exposed Shallow Gravel	0.2	0.2	0	0	0
Exposed Shallow Reef	2.4	2.6	3.4	3.1	3.7
Exposed Shallow Sand	17.2	17.6	0	2.3	10.5
Moderate Gravel Beach	0	0	0	0	0
Moderate Intertidal Reef	0	0	0	0	0
Moderate Sandy Beach	0	0	0	0	0
Moderate Shallow Gravel	0	0	0	0	0
Moderate Shallow Mud	0	0	0	0	0
Moderate Shallow Reef	0	0	0	0	0
Moderate Shallow Sand	0	0	0	0	0
Sheltered Sandy Beach	0	0	0	0	0

Figure 71 continued

ESTUARINE HABITATS	PROPOSED MARINE RESERVE MPAS (KM ²)		
	D – PLEASANT RIVER TO STONY CREEK (OPTION 1)	D – PLEASANT RIVER TO STONY CREEK (OPTION 2)	Q – TAHAKOPA ESTUARY
Estuarine	0.3	0.3	<0.1
Estuarine Boulder Beach	0	0	0
Estuarine Cobble Beach	0	0	0
Estuarine Gravel Beach	0	0	0
Estuarine Gravel Field	0	0	0
Estuarine Intertidal Reef	0	0	0
Estuarine Sandy Beach	0.2	0.1	0
Estuarine Mud Flat	0.7	0.7	0.1

Figure 72: Area of individual estuarine habitat types covered by each marine reserve MPA (Type 1). Where a site includes (+), it is an extension to the main proposal. Where a number is given, it refers to different options relating to the boundaries.



Akatore, Otago.
Photo: John Barkla

COASTAL HABITATS	PROPOSED TYPE 2 MPAS (KM ²)				
	A – TUHAWAIKI TO PAREORA	C – WAITAKI OFFSHORE	C – WAITAKI OFFSHORE (EXTENSION)	E – BRYOZOAN BED (OPTION 1)	G – BRYOZOAN BED (OPTION 2)
Deep Gravel	0	19.3	0	67.7	111.1
Deep Mud	0	0	0	0	24.8
Deep Reef	0	0	0	17.8	15.9
Deep Sand	0	0	0	461.1	0
Deep Water Sand	0	0	0	70.9	0
Exposed Boulder Beach	0	0	0	0	0
Exposed Intertidal Reef	0	0	0	0	0
Exposed Sandy Beach	0	0	0	0	0
Exposed Shallow Gravel	0	1	0	0	0
Exposed Shallow Reef	0	0	0	0	0
Exposed Shallow Sand	0	0	0	0	0
Moderate Gravel Beach	0.1	0.5	0.2	0	0
Moderate Intertidal Reef	0	0	0	0	0
Moderate Sandy Beach	0	0	0	0	0
Moderate Shallow Gravel	0.1	168.9	5.0	0	0
Moderate Shallow Mud	0	14.6	5.3	0	0
Moderate Shallow Reef	0.6	0	0	0	0
Moderate Shallow Sand	3.5	19.5	0	0	0
Sheltered Sandy Beach	0	0	0	0	0

Figure 73: Area of individual coastal habitat types covered by each Type 2 MPA. Where a site includes (+), it is an extension to the main proposal. Where a number is given, it refers to different options relating to the boundaries.

COASTAL HABITATS	PROPOSED TYPE 2 MPAS (KM ²)			
	G - BRYOZOAN BED (OPTION 2)	J - WHITE ISLAND TO WALDRONVILLE	N - AKATORE OFFSHORE	P - LONG POINT OFFSHORE
Deep Gravel	111.1	3.2	146.6	0
Deep Mud	24.8	0	59.0	0
Deep Reef	15.9	0.7	17.0	2.0
Deep Sand	0	5.5	0	458.6
Deep Water Sand	0	0	0	0
Exposed Boulder Beach	0	<0.1	0	0
Exposed Intertidal Reef	0	0.2	0	0
Exposed Sandy Beach	0	0.2	0	0
Exposed Shallow Gravel	0	1.2	0	0
Exposed Shallow Reef	0	6.4	0	0
Exposed Shallow Sand	0	7.2	0	0
Moderate Gravel Beach	0	0	0	0
Moderate Intertidal Reef	0	0	0	0
Moderate Sandy Beach	0	0	0	0
Moderate Shallow Gravel	0	0	0	0
Moderate Shallow Mud	0	0	0	0
Moderate Shallow Reef	0	0	0	0
Moderate Shallow Sand	0	0	0	0
Sheltered Sandy Beach	0	0	0	0

Figure 73 continued

ESTUARINE HABITATS	PROPOSED TYPE 2 MPAS (KM ²)		
	L – AKATORE ESTUARY	R – TAUTUKU ESTUARY	S – HALDANE ESTUARY
Estuarine	0.1	0.1	0.2
Estuarine Boulder Beach	0	0	<0.1
Estuarine Cobble Beach	0	0	<0.1
Estuarine Gravel Beach	0	0	<0.1
Estuarine Gravel Field	0	0	0
Estuarine Intertidal Reef	0	0	<0.1
Estuarine Sandy Beach	0.1	0	0.9
Estuarine Mud Flat	0.1	0.4	0.8

Figure 74: Area of individual estuarine habitat types covered by each Type 2 MPA. Where a site includes (+), it is an extension to the main proposal. Where a number is given, it refers to different options relating to the boundaries.

584. There are a number of habitats that are defined in the MPA Policy Habitat Classification that are either not present, or not mapped, within the region. As such these habitats are not reported on.
585. There are six habitats that are present within the region but not represented in the proposed network, those habitats are listed in Figure 75.

MPA HABITATS NOT REPRESENTED	AMOUNT WITHIN THE FORUM REGION (KM²)
Sheltered Shallow Sand	25.9
Estuarine Sand Flat	20.7
Sheltered Shallow Reef	4.5
Sheltered Sandy Beach	1.0
Sheltered Intertidal Reef	0.4
Estuarine Rocky Reef	0.2

Figure 75: Habitats known to occur in the Forum region but not included within the proposed MPA network.

586. The ‘Sheltered’ habitats all occur to the northwest of the Otago Harbour entrance, between the East Otago Taiāpure and Heyward Point. These habitats were discussed but not put forward for consultation because:

- The habitats are present within the existing taiāpure and some members of the Forum considered that the taiāpure adequately protects these habitats. The Forum acknowledges that this does not meet the MPA Policy requirement of representing each habitat type within a marine reserve.
- There was concern that there are existing pressures that either currently, or in future, may impact on these sheltered habitats. Namely the currently consented dredge spoil that is deposited near these habitats.⁶⁴

587. While there are small areas of ‘Estuarine Sand Flat’ present throughout the region, the majority of the habitat type is within the Otago Harbour. The Otago Harbour Mātaitai application has recently been approved. This habitat is also present within the East Otago Taiāpure and the Mātaitai Waikawa Harbour / Tumu Toka Mātaitai. The Forum considers that this estuarine habitat is likely protected adequately by the taiāpure, the mātaitai at Waikawa, and the mātaitai within the Otago Harbour.

588. The majority of the ‘Estuarine Rocky Reef’ is located within the Otago Harbour, and some of this habitat is also included in the Otago Harbour mātaitai.

⁶⁴ See SeaSketch map at <http://seasket.ch/y0uq38dPp2>

Meeting the Policy Requirements

How the process meets the Network Design Principles

589. The proposed sites that eventually go forward as recommendations to the Ministers are intended to protect examples of each of the classified habitat types, and take into consideration the natural variation that occurs over the Forum region from north to south. Some classified habitat types are not included within the network due to their absence from the Forum region, or the difficulty in protecting them in practical terms (as described above). Apart from those listed above, all coastal habitat types are included within a marine reserve proposal, and replicated at least once more within a Type 2 MPA proposal. Some estuarine habitats are not represented within a marine reserve MPA, but are included in various Type 2 MPA proposals that are proposed to have a high level of protection. The Forum considers that the proposals could provide comprehensive protection for the marine habitats and ecosystems of the Forum region.
590. For a network to be viable it must include enough of each habitat to sustain the ecological objectives under the MPA definition of *the maintenance and / or recovery of biological diversity at the habitat and ecosystem level in a healthy functioning state*. This includes recognising the importance of size, connectivity and replication. The Forum has considered these aspects and in some cases, some members, have different views on this and are seeking your views. In these cases, options have been provided to obtain further information as part of the consultation process (see in particular sites D and I, and combination E, F, G and H).
591. In establishing the network of MPAs within the Forum region, the Forum expects the responsible agencies to develop a monitoring programme that assesses the viability and success of the network in meeting its objectives. This must inform how the site biodiversity objectives are being met, as well as the performance of the management tools.

How the process meets the Planning Principles

592. The proposals are designated in regard to representing and replicating habitats and ecosystems in forming a marine protected areas network, except for one. Site 'T' is not proposed as contributing to the network, and does not meet the criteria to be defined as an MPA. The MPA Policy does not restrict recommendations to areas that meet the protection standard and allows for *other protection tools* to be proposed^{65, 66}.

65 Volume II, Appendix 2: Marine Protected Areas: Classification, Protection Standard and Implementation Guidelines, Section 2.1 Policy Implementation Guidelines: *This protection can be given using a range of tools of three types: Marine Reserve MPAs, other Marine Protected Areas and other Marine Protection Tools. All forms of marine protection ... are relevant when measuring progress towards the NZ Biodiversity Strategy target. However, only Types 1 and 2 are considered to be MPAs for the purpose of the MPA Policy.*

66 Volume II, Appendix 2, Section 3.5 Policy Implementation Guidelines – Tool selection guidelines: *MPPFs will not just recommend potential sites for protected areas but also will consider which of the three classes of protected area to recommend.*

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593. In particular, the management regime must provide for the maintenance and recovery at the site of:
- i. Physical features and biogenic structures;
 - ii. Ecological systems, natural species composition (including all life-history stages), and trophic linkages;
 - iii. Potential for the biodiversity to adapt and recover in response to perturbation.
594. In the absence of detailed information on specific species distributions, population structure, abundance and level of extraction, the Forum complied with the MPA Policy guidelines in determining the protection required to meet the standard for contributing to a network in a precautionary manner. The Type 2 MPAs proposed all include prohibitions on dredging, bottom trawling and Danish seining (which are required to meet the protection standard and be considered as an MPA). In addition, most of the Type 2 MPAs being proposed also include prohibitions on purse seining, midwater trawling, midwater netting and benthic netting. The MPA Guidelines state at page 12; that these fishing methods are considered to *either extract large quantities of fish over short time periods and / or are relatively unselective in nature*. The MPA Guidelines state these methods would *probably not be permitted within an MPA*. The exception to this is site 'G' over the bryozoan bed, where the basic restrictions are proposed (dredging, trawling and Danish seining).
595. Additional restrictions on fishing methods (both commercial and recreational) have been proposed for some sites on a case-by-case basis. This is consistent with the 'Tool selection guidelines' within the MPA Policy, that relate to the size of an MPA and level of extraction that could have an adverse effect on the environment that is not consistent with the MPA Policy objective.
596. Appropriate recognition of the Treaty of Waitangi and clear observance of the manawhenua status of Kāi Tahu has been applied to the Forum's processes. A feature of the Forum's work has been to understand and recognise mechanisms and rights accorded to Kāi Tahu through treaty settlements. Protecting the ongoing integrity of this settlement asset is an everlasting treaty duty and to avoid any reductive action arising from the final recommendations made by the Forum. A key task has been to recognise the intergenerational nature of Kaitiakitanga and the importance of transferal of mātauraka from one generation to the next, this is particularly challenging where permanent 'lockup' of marine resources cuts across customary use, practices and knowledge transfer.
597. The Forum has considered many different options and has identified areas for consultation that are intended to minimise potential impacts while still maintaining the biodiversity objectives. The number of areas, their size and the protection level are not agreed to by all members. The Forum is particularly interested to hear from stakeholders that would be impacted on by the proposals should they be made an MPA.
598. The Forum acknowledged that there is limited information available, both in regard to environmental aspects and social aspects.

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599. One of the primary environmental information sets was the MPA Policy defined habitat classification.⁶⁷ The Forum considers that this information to be the best available information at the broad regional scale, but that it lacks accuracy and quality when investigating local areas. As such, additional scientific information, local expert knowledge from the Forum members themselves, and the information provided by the wider public, supplemented the habitat classification in making recommendations wherever possible.
600. The Forum had limited access to detailed commercial fisheries information which was very dependent on the fishery and its reporting requirements to MPI. Generally, fisheries reporting to MPI occurs at a much larger scale than is useful for protected area planning. Some fisheries are only required to report at the scale of Statistical Areas, which can be very large (such as for most fin fish) or much smaller (such as for pāua). Information relating to the limitations of the fisheries data can be found in Volume II, Appendix 4: *Fisheries Reporting*. As such, consideration was given to local expert knowledge of the fisheries that occurred in the areas being proposed to supplement the official data.
601. Information on other uses of the marine environment was generally by expert knowledge or information sourced through various stakeholders. All information that was able to be mapped with a degree of certainty is available within the SeaSketch mapping tool at <http://southeastmarine.seasketch.org>
602. The Forum has proposed areas with generally simple boundaries, while still adhering to the principles of creating a viable network and trying to minimise impacts to existing users. Simple boundaries improve the ability for users to be aware of where they are in relation to the MPA, and for improved compliance and enforcement.
603. The Forum has raised with the agencies responsible for carrying out compliance, that ongoing compliance is expected as a result of any recommendations made to the Ministers.

⁶⁷ See Volume II, Appendix 5: *Habitat Type Maps of the Forum Region for information on the habitat classification*



Aramoana, Dunedin.
Photo: John Barkla

GLOSSARY



ACRONYMS AND ABBREVIATIONS

ACE	Annual Catch Entitlement
DOC	Department of Conservation
EEZ	Exclusive Economic Zone
FMA	Fisheries Management Area
MPI	Ministry for Primary Industries
MHWS	Mean High Water Springs
MLWS	Mean Low Water Springs
MPA	Marine Protected Area
MPA Guidelines	Marine Protected Area: Classification, Protection Standard and Implementation Guidelines (Department of Conservation and Ministry of Fisheries, 2008) ⁶⁸
MPA Policy	Marine Protected Areas: Policy and Implementation Plan (Department of Conservation and Ministry of Fisheries, 2005) ⁶⁹
MPPF	Marine Protection Planning Forum
NIWA	National Institute of Water and Atmospheric Research
Nm	Nautical miles (1 nautical mile = 1.8 kilometres)
NTSCA	Ngāi Tahu Claims Settlement Act 1998
NZCPS	New Zealand Coastal Policy Statement
NZMS	New Zealand Map Series
QMS	Quota Management System
RCP	Regional Coastal Plan
RNZN	Royal New Zealand Navy
RMA	Resource Management Act 1991
RV	Research Vessel
SEMPF	South-East Marine Protection Forum
SILNA	South Island Landless Natives Act 1906
TAC	Total Allowable Catch

TE REO

In the south of the South Island the local Māori dialect use a 'k' interchangeably with 'ng'. The preference is to use a 'k', so southern Māori are known as Kāi Tahu, rather than Ngāi Tahu. In this document the 'ng' is used for the iwi in general and the 'k' for Southern Māori in particular.

Ahi kaa

Continuous occupation / title to land through occupation

Hapū

Kinship, clan tribe

Hapūa

Tidal lagoon

Inaka

Whitebait

Iwi

Nation, Tribe, People

⁶⁸ Refer to Volume II, Appendix 2: Marine Protected Areas Classification, Protection Standard and Implementation.

⁶⁹ Refer to Volume II, Appendix 1: Marine Protected Areas Policy and Implementation Plan.

Kāeo

Sea tulip

Kāi Tahu

Tribal group of much of the South Island of New Zealand, sometimes referred to as Ngāi Tahu, who also incorporate two earlier tribes; Waitaha and Kāti Māmoe

Kaitaki

Leader, leader of a haka

Koeke

Common Shrimp

Mātauraka Māori

Māori traditional knowledge

Kaitiakitaka

Guardianship – exercise of customary custodianship, in a manner that incorporates spiritual matters, by takatawhenua who hold manawhenua status for a particular area or resource as per Kāi Tahu ki Ōtākou Iwi Resource Management Plan 2005

Koeke

Common shrimp

Mana

Prestige, spiritual power

Mahika Kai

Food gathering place

Mana Moana

Authority over the seas and lakes

Manawhenua

Territorial Rights

Mātaitai Reserves

Mātaitai reserves as coastal management areas are one of the suite of management tools created under Part IX of the Fisheries Act 1996. These are designed to give effect to the obligations stated in the Treaty of Waitangi Fisheries Claims Settlement Act 1992 to develop policies to help recognise use and management practices of Māori in the exercise of non-commercial fishing rights. Takata whenua may apply to establish a reserve on a traditional fishing ground for the purpose of recognising and providing for customary management practices and food gathering. Traditional and recreational fishing are still allowed in mātaitai reserves

Nohoaka

Dwelling places for the purposes of food gathering

Papatipu

Traditionally owned, Customary title, ancestral

Poatiri

Mt Charles – Otago Peninsula

Poha

Kelp bag in which foods are preserved

Rāhui

Temporary closure on pāua gathering

Rakatahi

Younger generation

Rimurapa

Kelp/Seaweed

Rohe moana

Area of sea which particular manawhenua have authority

Rokoā

Traditional medicines

Taiāpure

A local area management tool established in an area that has customarily been of special significance to an iwi or hapū as a source of food or for spiritual or cultural reasons (s 174 of the Fisheries Act). Taiāpure can be established over any area of estuarine or coastal waters to make better provisions for rakatirataka and for the rights secured under Article Two of the Treaty. Taiāpure provisions are contained within sections 174-185 of the Fisheries Act 1996. All fishing (including commercial fishing) can continue in a Taiāpure and this tool offers a way for manawhenua to become involved in the management of both commercial and non-commercial fishing in their area. (MPI website: <http://bit.ly/Taiāpure>) or

Areas that are given special status to recognise rakatirataka (as Taiāpure); management arrangements can be established (under the Fisheries Act 1996) for Taiāpure that recognise the customary special significance of the area to iwi or hapū as a food source or for spiritual or cultural reasons. (Biodiversity Strategy)

Tāoka

Highly prized

Te Tai o Araiteuru

Southern coastal and sea area between the Waitaki and Maitara rivers

Topūni

Cloaking a special place 'cloak of protection' over a special place/s

Tuaki

Cockles

Wāhi tapu

Sacred place, sacred site - a place subject to long-term ritual restrictions on access or use, e.g. a burial ground, a battle site or a place where tapu objects were placed

Wāhi tōaka

Places of special value

Waitaha

The tribe that formerly occupied the South Island before they were displaced by Kāti Māmoe.

Whānui

Broad

Whānau

Family group; to be born, give birth

DEFINITIONS OF TERMS

Many of the definitions for the following terms are taken from or based on definitions used in the New Zealand Biodiversity Strategy,⁷⁰ Marine Protected Areas: Classification, Protection Standard and Implementation Guidelines (MPA Guidelines),⁷¹ and the Fisheries Act 1996.

Annual Catch Entitlement

A property right, which gives the holder the right to take a certain weight of a fish stock during a fishing year.

Artificial Structures

Human-made structures that are placed in the marine environment for the purpose of human use (for example, marinas, wharfs, marine farms), habitat enhancement or recreation.

Ascidian

Belonging or pertaining to the class *Ascidacea*.

Bedrock

Stable hard substratum, not separated into boulders or smaller sediment units. These rock exposures, typically consisting of sedimentary rock benches or platforms, may also include other rock exposures such as metamorphic or igneous outcrops. Possibly with various degrees of concealment from attached plant and animal colonisation.

Benthic

Dwelling on or associated with the seabed. Benthic organisms live on or in the seabed. Examples include burrowing clams, sea grasses, sea urchins and acorn barnacles.

Benthic boundary layer

The dynamic environment at the interface between the deep water and the ocean floor.

Biodiversity (biological diversity)

The variability among living organisms from all sources including among other things terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems. It includes genetic (the variability in genetic make up among individuals of the same species), species and ecological diversity. In this report, the term refers specifically to indigenous biodiversity.

Biogenic reefs

Biogenic reefs (elevated structures on the seabed constructed of living and dead organisms) include fragile erect bryozoans and other sessile suspension feeders. Examples are bryozoan beds, rhodolith beds, tube worm mounds, sponge gardens and cold-water corals. These communities develop in a range of habitats from exposed open coasts to estuaries, marine inlets and deeper offshore habitats, and may be found in a variety of sediment types and salinity regimes.

Bioregion (biogeographic region)

⁷⁰ Department of Conservation and Ministry for the Environment (2000). *The New Zealand Biodiversity Strategy*. Wellington, 146pp. www.biodiversity.govt.nz

⁷¹ Refer to Volume II, Appendix I, Ministry of Fisheries and Department of Conservation. 2008. *Marine Protected Areas: Classification, Protection Standard and Implementation Guidelines*. Ministry of Fisheries and Department of Conservation, Wellington, New Zealand. 54 pp. www.biodiversity.govt.nz

An area that is defined according to patterns of ecological characteristics in the seascape.

Coastal environment

An environment in which the coast is a significant element or part. The extent of the coastal environment will vary from place to place depending on how much it affects, or is affected by, coastal processes and the management issues concerned. It includes at least three distinct, but inter-related, parts: the coastal marine area, the active coastal zone, and the land back-drop.

Coastal marine

For the purposes of developing a network of protected areas, the MPA Policy specifies two planning processes – one for the coastal environment and one for the deep water marine environment. For the purpose of implementing the network of protected areas, the coastal/deep water planning boundary is the limit of the Territorial Sea (12 nautical miles).

Comprehensiveness

The degree to which the full range of ecological communities and their biological diversity are incorporated within protected areas.

Continental shelf

A broad expanse of ocean bottom sloping gently and seaward from the shoreline to the shelf-slope break. The shelf area is commonly subdivided into the inner continental shelf, mid continental shelf, and outer continental shelf. The sea floor below the continental shelf break is the continental slope. Below the slope is the continental rise, which finally merges into the deep ocean floor, the abyssal plain. The pelagic (water column) environment of the continental shelf constitutes the neritic zone. The continental shelf and the slope are part of the continental margin.

Continental slope

A sloping bottom extending seaward from the edge of the continental shelf and downward toward the rise. Continental slopes are the relatively steep inclines between the continental shelf and the surrounding ocean basins and, in New Zealand, are typically inclined at an angle of three to six degrees (Lewis et al. 2006). The slope is often cut with submarine canyons.

Convention on Biological Diversity

An international agreement on biological diversity that came into force in December 1993. The objectives of the Convention are: the conservation of biological diversity; the sustainable use of its components; and the fair and equitable sharing of the benefits arising out of the utilisation of genetic resources.

Demersal

Occurring near the seabed. Demersal organisms live near, but not on, the seabed, and usually feed on benthic organisms.

Diving

Includes scuba, free diving and snorkeling.

Ecosystem

An interacting system of living and non-living parts such as sunlight, air, water, minerals, and nutrients. Ecosystems encompass communities and their surrounding environments and function through three basic cycles of matter and energy; biogeochemical cycles, life cycles and histories, and food webs. The 'interconnectedness' within and among ecosystems is provided both by the physical environment and by biological interactions.

Epipelagic zone

The 0 to 200 metre depth zone, seaward of the shelf-slope break. The epipelagic zone extends from the surface downward as far as sunlight penetrates during the day. It is a very thin layer, up to about 200 metres deep. The endemic species of this zone either do not migrate, or perform only limited vertical migrations, although there are many animals that enter the epipelagic zone from deeper layers during the night or pass their early development stages in the photic zone. The epipelagic zone overlies the mesopelagic zone.

Estuarine

The estuarine environment includes estuaries, tidal reaches, mouths of coastal rivers and coastal lagoons. The dominant functions are the mixing of freshwater and seawater, and tidal fluctuation, both of which vary depending on degrees of direct access to the sea. Estuaries are semi-enclosed bodies of water which have a free connection with the open sea. They differ from other coastal inlets in that sea water is measurably diluted by inputs of freshwater and this, combined with tidal movement, means that salinity is permanently variable.

Estuary

A partially enclosed coastal body of water which is either permanently or periodically open to the sea and within which there is a measurable variation of salinity due to the mixture of seawater and freshwater derived from land drainage (Day 1981 in Hume & Herdendorf 1988).

Exclusive Economic Zone

The area of ocean from the outside edge of the territorial sea (which covers inland waters, harbours and the area out to 12 nautical miles from the coast) out to 200 nautical miles from the coast. The resources of New Zealand's exclusive economic zone are under New Zealand control.

Exposure

Exposure is related to the prevailing energy of water movement, tidal, wave or current. Wave exposure is determined by the aspect of the coast (related to direction of prevailing or strong winds), the fetch (distance to nearest land), openness (the degree of open water offshore) and profile (the depth profile of water adjacent to the coast). For the purposes of the protected area coastal classification three levels of relative exposure are used to identify deferent categories structuring intertidal and shallow subtidal communities.

- High – describes areas where wind/wave energy is high in areas of open coasts which face into prevailing winds and receive oceanic swell (fetch >500 kilometres e.g. ocean swell environment; current >3 knots).
- Medium – describes areas of medium wind/wave energy generally including open coasts facing away from prevailing winds and without a long fetch (fetch 50-500 kilometres e.g. open bays and straits).
- Low – describes areas where local wind/wave energy is low (fetch <50 kilometres e.g. sheltered areas; small bays and estuaries; current <3 knots).

Habitat

The place or type of area in which (life/an organism) naturally occurs.

Hard bottom

Rocky reef and boulders

Indigenous species

A plant or animal species which occurs naturally in New Zealand. A synonym is “native”.

Intertidal

The area of land at the land-sea interface that is marine in character influenced periodically by the rise and fall of twice-daily tides, of bimonthly spring and neap tides, or by ebb and flow in tidal reaches of rivers.

Invertebrate

An animal without a backbone or spinal column. Insects, spiders, worms, slaters and many marine animals such as corals, sponges and jellyfish are examples of invertebrates. Invertebrates make up the vast majority of all animal species; only fish, amphibians, reptiles, birds and mammals are not invertebrates.

Marine environment

Includes all areas in which the ocean and coast are significant parts, and all natural and biological resources contained therein. It includes the area from mean spring high water mark to the full extent of our EEZ (to 200 nautical miles offshore). Environments covered in the “marine environment” include estuarine, near-shore coastal, continental shelf, seamounts, and sea trenches.

Marine Protection Tools⁷²

A range of management methods that can be used to establish a marine protected area.

Other tools such as Hector's dolphins set net controls, whitebaiting closed areas, and protected land status (public conservation land), already exist on the West Coast and contribute to the protection and management of the marine environment. Other tools that are similar to those for marine protected areas (referred to as ‘Type 3 tools’ in the MPA Protection Standard) are relevant when measuring progress towards the Biodiversity Strategy target. However, only some tools qualify as MPAs for the purpose of the MPA Policy.

Management tools

Management tools are mechanisms that, directly or incidentally, establish a protected site and/or manage threats to the maintenance and or recovery of the site's biodiversity at the habitat or ecosystem level. Direct management tools can therefore include marine reserves, fisheries restrictions, and mechanisms to reduce adverse impacts of land-based activities or shipping. Incidental management tools could include cable protection zones or marine mammal sanctuaries.

⁷² Refer to Volume II, Appendix I: MPA Policy and Implementation Plan (page 11), Integrating Marine Management Tools to Build an MPA Network.

Marine Protected Area (MPA)

An area that has been given a level of protection through a range of management tools that protect habitats and ecosystems. The Implementation Guidelines (MFish and DOC 2008 p13) prescribe 3 marine protection types, 2 of which provide enough protection to be considered MPAs. These marine protection types; type 1 (Marine Reserve) and type 2 (Other MPA) are the only types of marine protection that meet the MPA protection standard. The protection standard sets the outcome irrespective of the management tool. The outcome is described in the MPA Policy as 'enabling the maintenance or recovery of the site's biological diversity at the habitat and ecosystem level to a healthy functioning state'.

Megafaunal

Large bodied animals

Mesopelagic

The 200 metre - 1000 metre depth zone, seaward of the shelf-slope break. Midwater or "twilight zone", where there is still faint light but not enough for photosynthesis. Bacteria, salps, shrimp, jellies, swimming (cirrate) octopods, vampire and other squids, and fish are typical; many are bioluminescent.

National park or reserve status

National parks and some types of reserves provide high levels of protection and could count towards the marine protected areas network if they are of sufficient size and extend below mean high water spring (MHWS). National parks and other conservation areas under the Reserves Act 1977 can include estuarine and intertidal areas.

National Institute for Water and Atmospheric Research (NIWA)

NIWA is the Crown Research Institute providing a scientific basis for the sustainable management of New Zealand's atmosphere, marine and freshwater ecosystems and associated resources.

Neritic zone

This spans from the low-tide line to the edge of the continental shelf and extends to a depth of about 200 metres.

Network Design Principles

Principles that guide the design of the protected areas network (including concepts of representative, rare/unique, viable, replication, resilience, connectivity).

Oceanic water column

Those waters of the 'open ocean,' in areas beyond the shelf break (about 200-250 metres depth) extending to the maximum ocean depths. These waters are removed from primary continental influences, and the sea bottom interacts little or not at all with the water column.

Pelagic

Associated with open water. Pelagic organisms live in the open sea, away from the seabed.

Protection standard

The protection standard provides the guidance for assessing whether a tool, or a combination of tools, provides for the maintenance and/or recovery of biological diversity at the habitat and ecosystem level in a healthy functioning state at a particular site. The standard is described in Planning Principle 2.

Protected area network

A network or system of protected areas. The principal criteria for New Zealand's protected area network are comprehensiveness and representativeness.

Ramsar Convention

An international convention to protect internationally important wetlands. It was agreed in 1971 and signed by New Zealand in 1976.

Relict

Survived from an earlier period or in a primitive form.

Representativeness

The extent to which areas selected for inclusion in the protected area network are capable of reflecting the known biological diversity and ecological patterns and processes of the ecological community or ecosystem concerned, or the extent to which populations represent or exemplify the range of genetic diversity of a taxonomic unit (Biodiversity Strategy).

Marine areas selected for inclusion in reserves should reasonably reflect the biotic diversity of the marine ecosystems from which they derive (MPA Guidelines).

Resilience

The ability of a species, or variety or breed of species, to respond and adapt to external environmental stresses.

Resource Management Act 1991 (RMA)

The RMA provides a framework for coastal management that includes the New Zealand Coastal Policy Statement (NZCPS), which sets out national priorities for the coast including biodiversity. RMA tools can contribute to the MPA network by, establishing and reinforcing protected areas in coastal plans, and contributing to the management of existing marine protected areas. However, they do not qualify as MPAs for the purposes of the MPA Policy.

Restoration

The active intervention and management of degraded biotic communities, physical features and seascapes in order to restore biological character, ecological and physical processes and their cultural and visual qualities.

Rhodolith

Rhodoliths are free living calcified red algae.

Salinity

The quantity of dissolved salts in water, especially of seawater or its diluted products. Salinity is recorded, by convention, as parts per thousand (‰); that is, grams of salts per litre of water. Fully saline - 30 - 40‰; variable salinity/ salinity fluctuates on a regular basis - 18 - 40‰; reduced salinity - 18 - 30‰; low salinity - <18‰.

Saltmarsh

A wetland in estuarine habitats of mainly mineral substrate in the intertidal zone.

Seagrass

Seagrasses are vascular marine plants with the same basic structure as terrestrial (land) plants. They have tiny flowers and strap-like leaves. They form meadows in estuaries and shallow coastal waters with sandy or muddy bottoms. Most closely related to lilies, they are quite different from seaweeds, which are algae. The leaves support an array of attached seaweeds and tiny filter-feeding animals like bryozoans, sponges, and hydroids, as well as the eggs of ascidians (sea squirts) and molluscs. They also provide food and shelter for juvenile and small fish.

Soft bottom

Substrate defined by small particle size and unstable bottom conditions, generally with organisms that live buried beneath the surface (for example, cobble, gravel, sand and mud bottoms).

Species

A group of organisms capable of interbreeding freely with each other but not with members of other species.

Statistical area

The purpose of commercial fisheries reporting, New Zealand's exclusive economic zone is divided into statistical areas.

Submarine canyon

A valley on the seafloor of the continental slope. Submarine canyons are generally found as extensions to large rivers, and have been found to extend 1 kilometre below sea level, and extend for hundreds of kilometres. The walls are generally very steep. The walls are subject to erosion by turbidity currents, bioerosion or slumping.

Substrate

The type of bottom sediments, such as sand and gravel. Substrate type and sediment grain size have a strong influence on the types of plants and animals that can inhabit a given place. Substrates and sediment sizes range from tiny mud particles, to fine sand, to coarse sand, to pebbles, to cobbles, to boulders, to solid rock outcrop.

Subtidal

The zone of estuarine and coastal areas below the level of lowest tide; permanently inundated.

Threatened species

A species or community that is vulnerable, endangered or presumed extinct.

Type 1 MPAs

Marine reserves 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. This qualifies them as a Type 1 MPA. A broad range of activities can be managed, controlled or excluded in marine reserves, including marine farming, fishing, other extraction, anchoring, point discharges, research, bioprospecting and commercial tourism.

Type 2 MPAs

The MPA Policy uses various management tools under the Fisheries Act 1996 to protect habitats. These tools include regulations that prohibit fishing methods which impact the seabed (bottom trawling, Danish seining, and dredging). The removal of these bottom impact fishing methods qualifies as a Type 2 MPA protection standard (MFish & DOC 2008, p13).

Understorey

The shrubs and plants growing beneath the canopy of a kelp forest or other dense plant cover.

Upwelling

A process where subsurface, nutrient-rich, and usually cooler water is carried upward into the ocean's surface layers. Upwelling is caused by a complex interaction of wind, currents and the topography of the sea floor.

Vertebrate

Animal with backbone; amphibians, reptiles, birds, mammals and fish.



Papatowai.
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