

# Independent Review of the Moutere Ihupuku / Campbell Island Marine Reserve and Additional Area

Prepared for the Department of Conservation

Final Report  
November 2018

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# Executive Summary

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## *Background & Purpose of this Review*

The Department of Conservation commissioned this independent review in January 2018 in accordance with Section 8 of the *Subantarctic Islands Marine Reserves Act (2014)* (the Act). The Act was created following a 2008/2009 process led by the *Subantarctic Marine Protection Planning Forum* (the Forum), which comprised representatives from a number of interests including Māori, commercial fishing, environmental/conservation and scientific groups. The Forum recommended two options relevant to Moutere Ihupuku / Campbell Island to the Ministers of Conservation and Fisheries:

*Option C1: Part of the territorial sea around the Campbell Islands is covered by a marine reserve, with the remainder of the territorial sea being subject to Fisheries Act prohibitions on Danish seining in addition to the existing BPA prohibitions on bottom trawling and dredging; or*

*Option C2: The entire territorial sea around the Campbell Islands is covered by a marine reserve.*

Ministers adopted *Option C1*; creating a marine reserve at Motu Ihupuku / Campbell Island covering 39% of the Territorial Sea. The location and scale of the Marine Reserve was chosen to allow the potential development of a deepwater crab<sup>1</sup> fishery in territorial waters surrounding the islands outside the Marine Reserve. Included in the Act that established the Moutere Ihupuku / Campbell Island Marine Reserve was the Section 8(2) requirement for an independent review to *consider whether the Additional Area ... should be included in the Moutere Ihupuku / Campbell Island Marine Reserve* (i.e. the remainder of the Territorial Sea).

The scope of this review includes:

- Consultation, including with (but not limited to) former members of the Subantarctic Marine Planning Protection Forum.
- A technical analysis of:
  - The value of the Additional Area to a deepwater crab fishery;
  - The value and impact of other commercial fishing in the Additional Area;
  - The impact of a deepwater crab fishery in the Additional Area on the marine environment and ecosystems; and
  - The biodiversity values in the Additional Area.

## **Intent of Parliament**

The Motu Ihupuku / Campbell Island Additional Area meets the criteria under the Marine Protected Area Policy; this is supported by statements in the Departmental Report to the Local Government and Environment Select Committee: *“Officials are of the view that the territorial seas of each of the three island groups meet this test<sup>2</sup>”*.

We believe it is highly likely that the entire Territorial Sea would have been a marine reserve (i.e. ‘Option C2’ considered by the Forum) if it were not for the potential deepwater crab fishery identified by commercial fishery interests. The then Minister of Conservation, Hon. Kate Wilkinson noted *“The bill also grants a 5-year window to allow for a potential deep-water crab fishery to be*

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<sup>1</sup> The terminology used in the legislation is “deepwater crab”; however in this review we also refer to deepwater crab as “southern” and “giant spider crab” (*Jacquiniotia edwardsii*) as this has been the prevalent terminology in the various reports reviewed.

<sup>2</sup> Department of Conservation. 2013. *Report of the Department of Conservation to the Local Government and Environment Committee*. Subantarctic Islands Marine Reserves Bill. Section 24. 31 p.

*explored around Campbell Island. At the end of that 5-year period the status of this area will be reviewed. If it is decided that a viable and sustainable crab fishery does not exist, then the entire territorial sea around Campbell Island could become a marine reserve.”<sup>3</sup>*

The rationale and associated expectations of Parliament are clear; Parliament intended that the viability (or otherwise) of the deepwater crab fishery in the Additional Area was to be explored in the period following enactment of the legislation (i.e. before this review). Parliament did not signal who would be responsible for this. If viability was not proven, Parliament intended that the Additional Area could become a marine reserve.

### *Review Findings*

#### **Stakeholder Consultation**

Consultation identified that there has been no change in position of any stakeholders with regard to the Marine Reserve or Additional Area. Individuals representing environmentally focused entities, and independent scientists all maintain that the Marine Reserve should be extended to include the Additional Area. Entities interviewed that have a commercial fishery focus maintain a view that the Additional Area should remain as it is; not a Marine Reserve. Ngāi Tahu did not express a clear preference, although noted its concern regarding impact on Treaty rights for future commercial fisheries. The technical findings were not disputed (although all noted the limitations of a lack of recent data), and did not change the perspective of any stakeholders involved.

#### **Technical Findings**

The Technical Review found:

- No fishing activity has occurred in the Additional Area since the enactment of the Subantarctic Islands Marine Reserves Act in 2014. Additionally, there are no known exploratory fishing surveys planned in the near future. It has therefore been impossible to establish the viability (or otherwise) of a deepwater crab fishery from recent catch records.
- Based on available data from the 1970’s (the only catch records available) and modelling undertaken for this review, it is unlikely that the Additional Area alone could sustain a commercially and biologically viable target fishery for giant spider crab, or be a significant part of a potentially larger giant spider crab fishery in subantarctic waters. The only two fishing surveys within the Territorial Sea; in 1970 and 1976 described the crab fishery in the area surveyed as “poor” and “negligible” respectively.
- There has been no commercial fishing activity in the Additional Area. In view of the shallow bathymetry, current status as a Benthic Protection Area (BPA) and the Danish seine ban, it is unlikely that the Additional Area could sustain other commercial fisheries of value.
- There is some risk of a deepwater crab fishery, as a result of incidental captures via crab potting. Given the high numbers of endangered and endemic species present, the potential impact on these populations should be considered.
- The biodiversity value of the Additional Area is very high. It benefits from strong land-sea connectivity that provides important habitat and foraging areas and is directly linked to its sheltered inshore waters on the eastern side of the island group

The intent of Parliament that the viability of a crab fishery should be established prior to this review did not appear to contemplate that no fishing activity at all would occur in the intervening period.

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<sup>3</sup> Hon. Kate Wilkinson. 4 December 2012. Volume: 686. New Zealand Parliamentary Debates. 7118.

The only actual fishery data the technical reviewers could use to assess value provided no evidence that a viable crab fishery exists. Whilst we acknowledge that the data is more than 40 years old, the expectation was that experimental fishing would occur in the period since the Act was passed.

The lack of more recent data leads this review to rely on the studies from 1970 and 1976 which comprise the best available data, and modelling undertaken by the technical reviewers. We therefore conclude that a viable fishery does not exist.

A second important consideration for this review is whether the lack of a viable crab fishery means that the Marine Reserve should be extended, or whether the existing Benthic Protection Area and Danish seining ban suffices to provide 'de facto protection' for the Additional Area. Given the 'tests' under Marine Protected Area Policy have previously been met, and that a viable fishery has not been proven, we conclude that the Marine Reserve should be extended to include the Additional Area. A failure to establish viability of the crab fishery is not a reason to either delay a decision or to maintain the status quo.

*.Recommendation*

Our recommendation is based on findings in regard to the value of a crab (or other fishery), biodiversity threats/benefits, and feedback provided through the engagement process.

**The recommendation of this Review is that the Minister of Conservation and the Minister of Fisheries should extend the Marine Reserve at Motu Ihupuku / Campbell Island to include the Additional Area, and thus extend over the entire territorial sea.**

# Introduction and Background

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## New Zealand Subantarctic Islands

New Zealand's subantarctic islands encompass five separate island groups that are characterised by distinct ecosystems, high biodiversity, and a high level of endemism<sup>4</sup>. The Subantarctic Islands are:

1. Moutere Mahue / Antipodes Islands.
2. Motu Maha / Auckland Islands.
3. Moutere Hauriri / Bounty Islands.
4. Motu Ihupuku / Campbell Island.
5. Tini Heke / The Snares.

Their remoteness and relatively unmodified nature make them unique natural environments, and they support a diverse range of terrestrial and aquatic species, including island endemic species that only occur at individual island groups<sup>5</sup>.

Motu Ihupuku / Campbell Island is the main island of New Zealand's southernmost subantarctic island group, situated about 640 km south of South Island, and about 270 km from its nearest neighbour, Motu Maha / Auckland Islands. The main Island is relatively large (112 km<sup>2</sup>), with several smaller islands and islets on its western and southern sides comprising a total area of 113 km<sup>2</sup>.

Although the general characteristics of the marine environment are shared across the subantarctic islands in this region, Motu Ihupuku / Campbell Island (as with each of the other island groups) is characterised by its own unique biodiversity. This is determined by a combination of species (or close relatives) that are shared with mainland New Zealand, other species that are circumpolar or only shared among the subantarctic islands, and species that are exclusive to each island group.

The distinctiveness of New Zealand's subantarctic islands have been recognised in their conservation status as nature reserves and in their World Heritage status that includes their territorial seas<sup>6</sup>. Protection measures for their marine environments have included a marine mammal sanctuary, implemented at Auckland Islands in 1993, followed by the first subantarctic Marine Reserve at the Auckland Islands in 2003. Subsequent measures have included the establishment of Benthic Protection Areas, preventing bottom contact fishing in the territorial seas of Motu Ihupuku / Campbell Island, Moutere Mahue / Antipodes Island and Moutere Hauriri / Bounty Islands<sup>7</sup>.

### World Heritage Status

Motu Ihupuku / Campbell Island and its Territorial Sea were afforded World Heritage Area status in 1998 to reflect its international significance, including its status as one of the world's least modified islands. The Island and surrounding Territorial Sea are deemed to have outstanding universal value, and meet several of the UNESCO selection criteria:

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<sup>4</sup> Peat, N. (2003). *Subantarctic New Zealand*. 96 p. Department of Conservation, Wellington, New Zealand.

<sup>5</sup> Booth, J. D. (2004). *The marine ecosystem of New Zealand's subantarctic islands and their surrounding plateaus*. Unpublished report prepared for Department of Conservation by the National Institute of Water and Atmospheric Research, NIWA Client Report WLG2004-47. 206 p (plus appendices).

<sup>6</sup> Booth, J. D. (2004). *The marine ecosystem of New Zealand's subantarctic islands and their surrounding plateaus*. Unpublished report prepared for Department of Conservation by the National Institute of Water and Atmospheric Research, NIWA Client Report WLG2004-47. 206 p (plus appendices).

<sup>7</sup> New Zealand Government (2007). *Fisheries (benthic protection areas) regulations 2007*. Parliamentary Counsel Office, New Zealand Legislation. Retrieved from %7Bhttp://www.legislation.govt.nz/regulation/public/2007/0308/latest/whole.html#DLM973998%7D

(vii) “to contain superlative natural phenomena or areas of exceptional natural beauty and aesthetic importance”

(viii) “to be outstanding examples representing major stages of earth's history, including the record of life, significant on-going geological processes in the development of landforms, or significant geomorphic or physiographic features”

(ix) “to be outstanding examples representing significant on-going ecological and biological processes in the evolution and development of terrestrial, fresh water, coastal and marine ecosystems and communities of plants and animals”

(x) “to contain the most important and significant natural habitats for in-situ conservation of biological diversity, including those containing threatened species of outstanding universal value from the point of view of science or conservation”.<sup>8</sup>

A notable feature of the Motu Ihupuku / Campbell Island ecosystem is the land-sea interface and the close inter-dependence of both environments for many species. The inclusion of the marine environment out to 12 nautical miles in the World Heritage Area recognises this and does not differentiate or seek to diminish the Additional Area’s value from the established Marine Reserve.

Although UNESCO World Heritage Status has been applied to the Additional Area, UNESCO does note that the existing restrictions on fishing methods provide important protection measures that significantly enhance the integrity of the islands' marine environments, and complement the protection afforded to the Island itself.<sup>9</sup>

### Subantarctic Marine Protection Planning Forum

In February 2008 the Ministers of Conservation and Fisheries appointed a 14 person Forum (led by an Independent Chair) to identify sites and potential tools for area-based protection of marine biodiversity around three subantarctic island groups (Moutere Mahue / Antipodes Islands, Motu Ihupuku / Campbell Islands and Moutere Hauriri / Bounty Island)<sup>10</sup>. The Subantarctic Marine Protection Planning Forum (the Forum) comprised representatives from a number of interests including Māori, commercial fishing, environmental/conservation and scientific groups.

**Table One. Subantarctic Marine Protection Planning Forum members.**

Name	Organisation Represented
Paul Beverley	(Independent Chair)
Richard Wells	Deepwater Group Ltd
Andrew Bond	Scampi Quota holders
Andy Smith	Crab Co.
Kate Bartram	SeaFIC
Tania McPherson	Te Ohu Kaimoana
Nigel Scott	Ngāi Tahu
Gail Thompson	Southland Kaitiaki Roopu
Rebecca Bird	WWF

<sup>8</sup> <https://whc.unesco.org/en/criteria/>

<sup>9</sup> <https://whc.unesco.org/en/list/877>

<sup>10</sup> Subantarctic Marine Protection Planning Forum (2009). *Implementation of the Marine Protected Areas Policy in the territorial seas of the subantarctic biogeographic region of New Zealand*. Consultation document. 45 p.

Kevin Hackwell	Royal Forest & Bird Protection Society
Viv Shaw	Southland Conservation Board
Don Robertson	NIWA
John Booth	Marine Science – independent
Barry Weeber	Environment and Conservation Organisations (ECO)

The purpose of the Forum was to “develop options and provide recommendations for marine protected areas in the subantarctic biogeographic region in accordance with the Marine Protected Areas Policy and Implementation Plan (2005)<sup>11</sup> (the MPA Policy) and Marine Protected Areas: Classification, Protection Standard and Implementation Guidelines (2007)”<sup>12</sup>. The Forum considered a range of information including the occurrence and representativeness of habitat types and ecosystems, the values of the areas, the existing users and Treaty of Waitangi obligations.

The Forum was formally convened in February 2008; members attended seven, full-day meetings in 2008 to work through the tasks in the 2005 MPA Policy before selecting a smaller working group of four representatives (plus the Chair) to prepare a Consultation Document for the purposes of seeking public comment on the marine protection options that had been developed by the Forum. All options for protection were considered by the Forum to meet the requirements of ‘representativeness’ as they protect examples of the full range of known or expected habitats and ecosystems, or the entire range of habitats and ecosystems out to the limits of the territorial sea<sup>13</sup>. The Forum worked through the steps set out in the 2005 MPA Policy and identified options for marine protected areas around each of the island groups.

The Consultation Document was released for public comment on 5 June 2009, for a period of two months; the Forum received 65 submissions. The full Forum then reconvened on 14 September 2009 to consider these submissions and to work towards final recommendations to Ministers<sup>14</sup>.

The Forum resolved, having considered the submissions made through the consultation process, that the same six options presented in the Consultation Document should be presented to Ministers as final options. All options provide some form of protection to the entire territorial seas of all three island groups. Options A1, B1 and C1 use a combination of marine reserves and controls under the Fisheries Act, while Options A2, B2 and C2 use marine reserves only (“A1”, “A2” referring to Moutere Mahue / Antipodes Islands, “B1”, “B2” referring to Moutere Hauriri / Bounty Islands, “C1”, “C2” referring to Motu Ihupuku / Campbell Island).

The recommendation report advised Ministers that they could select any combination of the options. The options relevant to Motu Ihupuku / Campbell Island are as follows:

***Option C1: Part of the territorial sea around the Campbell Islands is covered by a marine reserve, with the remainder of the territorial sea being subject to Fisheries Act prohibitions***

<sup>11</sup> Department of Conservation and Ministry of Fisheries. 2005. *Marine Protected Areas Policy and Implementation Plan*. Department of Conservation and Ministry of Fisheries, Wellington, New Zealand. 24 p. [www.biodiversity.govt.nz](http://www.biodiversity.govt.nz).

<sup>12</sup> 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 p. [www.biodiversity.govt.nz](http://www.biodiversity.govt.nz).

<sup>13</sup> Mulcahy, K., Peart, R., & Bull, A. 2012. *Safeguarding Our Oceans*. Environmental Defence Society. Chapter 18.

<sup>14</sup> Buddle Findlay 2010. Letter accompanying the *Select committee advice: Subantarctic Marine Protection Planning Forum recommendation report*. Wellington, New Zealand. 14 p.



***on Danish seining in addition to the existing BPA prohibitions on bottom trawling and dredging; or***

***Option C2: The entire territorial sea around the Campbell Islands is covered by a marine reserve.***

On 28 March 2011, Cabinet agreed to progress the *Subantarctic Islands Marine Reserves Bill* to implement the following:

1. Create a marine reserve over the entire territorial sea of the Antipodes Island Group;
2. Create a marine reserve over 58 percent of the territorial sea of the Bounty Islands; and
3. Create a marine reserve over 39 percent of the territorial sea of Motu Ihupuku / Campbell Island.

Cabinet resolved that the remainder of the territorial sea surrounding Motu Ihupuku / Campbell Island would be a marine protected area established by way of regulation under Section 11 of the Fisheries Act (1996) by banning Danish seining<sup>15</sup>. Cabinet further agreed that there would be a review of the size of the Marine Reserve around Motu Ihupuku / Campbell Island commissioned no more than five years after the Marine Reserve was established, to consider protecting the remainder of the Campbell Island Territorial Sea as a marine reserve.

## Subantarctic Islands Marine Reserves Act 2014

The *Subantarctic Islands Marine Reserves Act*<sup>16</sup> was enacted in 2014 to officially recognise and protect the marine environment around the subantarctic islands; Moutere Mahue / Antipodes Island, Moutere Hauriri / Bounty Islands, and Motu Ihupuku / Campbell Island.

Section 7 of the Act creates the Moutere Ihupuku / Campbell Island Marine Reserve:

### ***7. Moutere Ihupuku / Campbell Island Marine Reserve created***

- (1) *The area comprising Section 1 on Survey Office plan SO 442749 is declared to be a marine reserve.*
- (2) *The marine reserve is named the Moutere Ihupuku / Campbell Island Marine Reserve.*
- (3) *For reference, the area declared to be a marine reserve is indicated on the map in Schedule 3, but the Survey Office plan overrides the map if they conflict.*

The location and scale of the Marine Reserve at Motu Ihupuku / Campbell Island was chosen to allow the potential development of a deepwater crab fishery in territorial waters surrounding the islands outside the Marine Reserve.

*“the Bill reflects the Cabinet decision for a marine reserve covering 39 percent of the territorial sea in the area immediately around the island to a distance of approximately 2.4 nautical miles to the east of the island, and to the edge of the territorial sea to the west of*

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<sup>15</sup> Department of Conservation. 2013. *Report of the Department of Conservation to the Local Government and Environment Committee*. Subantarctic Islands Marine Reserves Bill. 31 p.

<sup>16</sup> New Zealand Government (2014). *Subantarctic Islands Marine Reserves Act 2014*. Parliamentary Counsel Office, New Zealand Legislation. Retrieved from <http://www.legislation.govt.nz/act/public/2014/0002/latest/whole.html#DLM3852425>

*the island. This is to allow exploratory fishing for deepwater crabs in the remainder of the territorial sea.”<sup>17</sup>*

Although this deepwater crab fishery had only been experimental, consideration of stock quota owners led to the adoption of the smaller marine reserve area, restricting it to 39% of the territorial seas<sup>18</sup>. Included with establishment of the Moutere Ihupuku / Campbell Island Marine Reserve was the future requirement for an independent review of extending this protection measure to all of the territorial seas. This review would include the Additional Area that is not currently part of the Moutere Ihupuku / Campbell Island Marine Reserve (i.e. the remainder of the territorial sea); the Act does not require consideration of whether the current protection of the additional area is sufficient.

Sections 8(1) and 8(2) of the Act outline the requirements and scope for this independent review:

#### **8. Extension of Moutere Ihupuku / Campbell Island Marine Reserve**

- (1) *The Department of Conservation must, in consultation with the Ministry for Primary Industries, commission an independent review of the Moutere Ihupuku / Campbell Island Marine Reserve.*
- (1A) *The review must—*
  - (a) *start on or after the third anniversary of the date of commencement of this Act; and*
  - (b) *be completed before the fifth anniversary of the date of commencement of this Act.*
- (2) *The review must consider whether the Additional Area described in **subsection (6)** should be included in the Moutere Ihupuku / Campbell Island Marine Reserve.*
- (2A) *In considering that matter, the review must take into account the following:*
  - (a) *the value of the Additional Area to a deepwater crab fishery;*
  - (b) *the impact of a deepwater crab fishery in the Additional Area on the marine environment and ecosystems;*
  - (c) *the biodiversity values in the Additional Area.*
- (2B) *The review must include consultation with relevant stakeholders.*
- (2C) *The Minister of Conservation must, as soon as practicable after receiving the reviewer's report on the completed review, provide the report to the Minister for Primary Industries.*
- (2D) *The Ministers must consult each other about the report and, no later than 90 working days after receiving the report, the Minister for Primary Industries must provide to the Minister of Conservation his or her response to the report.*

### **Independent Review**

The Department of Conservation commissioned this independent review in January 2018.

The scope includes:

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<sup>17</sup> Department of Conservation. 2013. *Report of the Department of Conservation to the Local Government and Environment Committee*. Subantarctic Islands Marine Reserves Bill. Section 86. 31 p.

<sup>18</sup> Department of Conservation. 2011. *Regulatory Impact Statement: Subantarctic Islands Marine Protected Areas: Subantarctic Islands Marine Reserves Bill and accompanying Fisheries Act measures*. Subantarctic Islands Marine Reserves Bill. 14 p.

- Consultation with relevant stakeholders – this included (but was not limited to) all members of the Subantarctic Marine Planning Protection Forum.
- A technical analysis of:
  - The value of the Additional Area to a deepwater crab fishery;
  - The value and impact of other commercial fishing in the Additional Area<sup>19</sup>.
  - The impact of a deepwater crab fishery in the Additional Area on the marine environment and ecosystems; and
  - The biodiversity values in the Additional Area.

## Approach

The approach to the Review involved two workstreams:

1. Consultation - led by Dr Nigel Bradly with support from Dragonfly Data Science technical experts where necessary.
2. Technical Review:
  - The value of the Additional Area to a deepwater crab fishery, led by Dr Philipp Neubauer (Dragonfly Data Science).
  - The value of the Additional Area to other fisheries, led by Dr Philipp Neubauer.
  - The impact of a deepwater crab fishery and other commercial fishing in the Additional Area on the marine environment and ecosystems, led by Dr Katrin Berkenbusch (Dragonfly Data Science).
  - Biodiversity values in the Additional Area, led by Dr Katrin Berkenbusch.

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<sup>19</sup> The inclusion of consideration of impacts on other fisheries in the additional area was at the request of Fisheries New Zealand (during the Review process) and approved by the governance group as being a relevant consideration.

## Background Analysis - Intent of the Act

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### Process

It is important to understand the intent of Parliament in selecting 'Option C1'; the smaller marine reserve with additional Fisheries Act protection measures, and in requiring this review with the scope described in Section 8 of the Act. We analysed a range of material in order to understand historic perspectives of stakeholders, officials involved in providing advice to Ministers, and the expectations of Parliament. The analysis included consideration of:

- Stakeholder perspectives expressed through written submissions to the *Local Government and Environment Select Committee*.
- Questions for Written Answer from the *Local Government and Environment Select Committee*.
- The *Regulatory Impact Statement*<sup>20</sup> prepared by the Department of Conservation.
- The *Departmental Report*<sup>21</sup> accompanying the Bill.
- *Hansard* records from Parliamentary debates.

### Summary of Historic Stakeholder Perspectives

We undertook background research into the stakeholder perspectives presented through submissions presented to the Select Committee and during the Forum process considering the Bill. A letter<sup>22</sup> from the Independent Chair Paul Beverley accompanying the Forum Recommendation Report noted the submissions received reinforced that the process undertaken by the Forum was appropriate and that the information considered by the Forum was comprehensive. Having considered the submissions, the Forum concluded that it had already considered most of the information provided through submissions, and there were no alternative options proposed that would meet the requirements of the 2005 Marine Protected Area Policy.

#### *Preference for Protection Measures*

The quotes below show a clear division between the perspectives of commercial fishery interests (including Te Ohu Kaimoana) which all opposed the creation of a marine reserve across the entire territorial sea, and the NIWA representative, the independent scientist, and the environmental NGO's which all supported a marine reserve across the entire territorial sea. Both Ngāi Tahu and Southland Kaitiaki Roopu (Awarua Runanga); noted that 'option 2' was the preferred option<sup>23</sup>.

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<sup>20</sup> Department of Conservation. 2011. *Regulatory Impact Statement: Subantarctic Islands Marine Protected Areas: Subantarctic Islands Marine Reserves Bill and accompanying Fisheries Act measures*. Subantarctic Islands Marine Reserves Bill. 14 p.

<sup>21</sup> Department of Conservation. 2013. *Report of the Department of Conservation to the Local Government and Environment Committee*. Subantarctic Islands Marine Reserves Bill. Section 86. 31 p.

<sup>22</sup> Buddle Findlay 2010. Letter accompanying the *Select committee advice: Subantarctic Marine Protection Planning Forum recommendation report*. Wellington, New Zealand. Appendix A. 14 p.

<sup>23</sup> Buddle Findlay 2010. Letter accompanying the *Select committee advice: Subantarctic Marine Protection Planning Forum recommendation report*. Wellington, New Zealand. Appendix A. 14 p.

**Figure One. Excerpts from Stakeholder Submissions to the Select Committee and Forum processes**

Submissions to Select Committee	Submissions during Forum Process
<p><b>Stakeholders Seeking Limited Protection</b>  <i>"The reserve's ability to protect biodiversity is not dependent on the additional space to be considered in 5 years' time. If the space is not required now to achieve adequate biodiversity protection, then why should it be required 5 years hence? Its value to biodiversity protection is obviously marginal. If it were valued highly, it would be reserved now."</i><sup>24</sup> (Written submission by Seafood NZ (SeaFIC)).</p> <p><b>Support Full Protection</b>  <i>"NZMSS is of the view that while the three proposed marine reserves go some way towards recognising that the marine environments around the Subantarctic islands are unique and nationally important, a great deal more needs to be done to protect these globally valuable ecosystems. We ...retain our original recommendation that their territorial seas be given full protection."</i> (Written submission by NZ Marine Sciences Society).<sup>25</sup></p> <p><i>"The Board is unanimously of the view that the marine reserves should cover the entire territorial sea to 12 nautical miles around all three island groups. The Subantarctic Islands have the highest level of protection possible under New Zealand legislation and the surrounding marine environment should receive a similarly high level of protection."</i> (Written submission by Southland Conservation Board).<sup>26</sup></p> <p><i>"ECO welcomes moves to create additional marine reserves in areas internationally recognised as World Heritage Areas but consider that all the territorial sea around the three sub-Antarctic Islands (Campbell, Bounty and Antipodes) should be included in</i></p>	<p><b>Stakeholders Seeking Limited Protection</b>  <i>"Supports and endorses SeaFIC submission, so may be assumed to support options preferred by that organisation, i.e. C1".</i> (Written Submission by Scampi Fishery Development Company).</p> <p><i>"Believes no additional protection is necessary".</i> (Submission by Sanford).</p> <p><i>"Support C1 but prefer status quo".</i> (Submission by Crab Co).<sup>29</sup></p> <p><b>Support Full Protection</b>  <i>"The territorial seas around each of the subantarctic island groups meet each of the government's MPA Policy criteria for protection as a marine reserve including "representativeness", "outstanding", "rare" or "distinctive", "internationally important" and "nationally important".</i> (Submission by Royal Forest &amp; Bird Society of New Zealand Inc.).<sup>30</sup></p> <p><i>"There are a range of impacts of extending the proposed Moutere Ihupuku / Campbell Island Marine Reserve, other than commercial fishing. Positive impacts would be anticipated on activities such as tourism and scientific research, and full marine reserve status would also support the preference put forward by Ngāi Tahu; the iwi with tangata whenua status over these islands and surrounding seas". ... Given the range of cultural values that require protection (taonga species such as titi, albatross and sea lions and the cultural landscape - e.g. who holds manawhenua, manamoana over the area), the likelihood of Ngāi Tahu customary non-commercial or customary commercial fishing in the area and the fact that Ngāi Tahu Whanui do not wish to</i></p>

<sup>24</sup> Seafood NZ (SeaFIC). 2013. *Select committee evidence: Seafood NZ. Subantarctic Islands Marine Reserves Bill. Section 17. 5 p.*

<sup>25</sup> New Zealand Marine Science Society. 2013. *Select committee evidence: NZMSS. Subantarctic Islands Marine Reserves Bill. Section 2. 8 p.*

<sup>26</sup> Southland Conservation Board. 2013. *Select committee evidence: Southland Conservation Board. Subantarctic Islands Marine Reserves Bill. 8 p.*

<sup>29</sup> Buddle Findlay 2010. Letter accompanying the *Select committee advice: Subantarctic Marine Protection Planning Forum recommendation report*. Wellington, New Zealand. Appendix A. 14 p.

<sup>30</sup> Department of Conservation. 2013. *Report of the Department of Conservation to the Local Government and Environment Committee. Subantarctic Islands Marine Reserves Bill. Section 13. 31 p.*

<p><i>Marine Reserves</i>". (Written submission by ECO).<sup>27</sup></p> <p><i>"Crabco Ltd is an umbrella company that represents most of those who own deepwater crab quota and was represented on the Subantarctic Marine Protection Planning Forum. During the 2008 Forum and 2009 public consultation processes the company provided no compelling evidence for the potential viability of a crab fishery within the Campbell Islands' territorial sea".<sup>28</sup> (Written Submission by Royal Forest and Bird Protection Society of New Zealand Inc.).</i></p>	<p><i>establish area management tools, the relevant constituent entities of Te Rūnanga prefer option 2 for each island group. ... Ngāi Tahu have customary rights in the areas concerned.</i></p> <p><i>While Te Rūnanga o Ngāi Tahu support both options, they state a preference for Option 2 given the range of cultural values and rights that require protection".<sup>31</sup></i></p>
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<sup>27</sup> Environment and Conservation Organisations of NZ Inc. (ECO). 2012. *Select committee evidence: ECO*. Subantarctic Islands Marine Reserves Bill. 4 p.

<sup>28</sup> Royal Forest and Bird Protection Society of New Zealand Inc. 2013. *Select committee evidence: Forest and Bird*. Subantarctic Islands Marine Reserves Bill. Section 32. 7 p.

<sup>31</sup> Subantarctic Marine Protection Planning Forum. 2013. *Questions for Written Answer from Select Committee*. Subantarctic Islands Marine Reserves Bill. (Summary) 3 p.

## Expectations of Parliament

Having established that stakeholders had differing views of what should occur, the Review next considered what was intended by the timeframe allowed by Parliament, and the scope of this review as described in Section 8 of the Act.

We have seen no evidence that stakeholders, officials or Parliament considered that there would be insufficient time for the viability of a deepwater crab fishery to be established prior to this review, or that there should be an extension of time to establish viability should efforts to undertake experimental fishing fail to proceed. Comments from stakeholders reinforce this, for example:

*"It is our understanding that the five-year window between enactment of the Bill and the timing of the review was intended to enable industry to explore the viability of establishing a crab fishery in the area."* (Written submission by Te Ohu Kaimoana).<sup>32</sup>

*"In oral submissions to the Select Committee, the Seafood NZ Policy Manager submitted that Seafood NZ does not object to the rest of the territorial sea becoming a marine reserve, should the fishery prove unsatisfactory".*<sup>33</sup>

There does not appear to have been explicit consideration given to what should occur if no attempt had been made to explore the viability of the deepwater crab fishery prior to this Review. Illustrative quotes from the Regulatory Impact Statement and Departmental Report to the Select Committee support this, for example:

*"The proposed Fisheries Act restrictions on Danish seining and marine reserves are a package of marine protected areas formulated to provide a high level of biodiversity protection and allow for some existing and potential fishing to occur." ... "The impact of the proposed restrictions on the fishing industry is not substantial." ... "The proposal is for a marine reserve covering 39 percent of the territorial sea around the island. The remainder of the territorial sea around the island is to be a marine protected area established under the Fisheries Act. This option will allow for experimental fishing of deepwater crabs".*<sup>34</sup>

*"The policy intent was for this option to allow experimental fishing for deepwater crabs. The review was to cover the value of the Motu Ihupuku / Campbell Island territorial sea to the deepwater crab fishery, the fishery's impact on the marine environment and an overview of the biodiversity. The Department considers that this should remain the focus of the review".*<sup>35</sup>

Further to the stakeholder and officials interpretations of the policy intent, it is clear that Parliament expected that experimental fishing for deepwater crabs would be undertaken prior to this review. For example:

*"The bill also grants a 5-year window to allow for a potential deep-water crab fishery to be explored around Campbell Island. At the end of that 5-year period the status of this area will be reviewed. If it is decided that a viable and sustainable crab fishery does not exist, then the entire territorial sea*

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<sup>32</sup> Te Ohu Kaimoana. 2013. *Select committee evidence: Te Ohu Kaimoana*. Subantarctic Islands Marine Reserves Bill. Section 13. 13 p.

<sup>33</sup> Department of Conservation. 2013. *Report of the Department of Conservation to the Local Government and Environment Committee*. Subantarctic Islands Marine Reserves Bill. Section 94. 31 p.

<sup>34</sup> Department of Conservation. 2011. *Regulatory Impact Statement: Subantarctic Islands Marine Protected Areas: Subantarctic Islands Marine Reserves Bill and accompanying Fisheries Act measures*. Subantarctic Islands Marine Reserves Bill. (Regulatory impact analysis for marine reserve proposals). 14 p.

<sup>35</sup> Department of Conservation. 2013. *Report of the Department of Conservation to the Local Government and Environment Committee*. Subantarctic Islands Marine Reserves Bill. Section 94. 31 p.

*around Campbell Island could become a marine reserve.” – Hon. Kate Wilkinson, in-committee, 4 Dec 2012.<sup>36</sup>*

*“We have allowed for an investigation into the deep-sea crab fishing in that area, but we wanted to make sure that that was done in a reasonable time frame, so we shortened the length of time for it to begin—within 3 years—and for it to be completed within 5 years.” – Hon. Nicky Wagner in-committee, 29 Jan 2014.<sup>37</sup>*

*“There is even a compromise written into the bill, as there had been identified the possibility of a commercial deep-water crab-fishing industry around Campbell Island. This bill gives a window of time to explore that option. If the evidence shows that a viable, sustainable fishery with minimal impact on the marine environment and ecosystems is possible, then the boundaries will remain as stated in this bill. But if not, the reserve will be expanded to take in the whole of the territorial sea around Campbell Island”. – Hon. Nicky Wagner in-committee, 11 Feb 2014.<sup>38</sup>*

*“There are not big vested commercial interests that are wanting to protect their right to fish in the area, although I know that earlier in the debate a number of speakers pointed out that one of the zones was somewhat truncated in order to allow the possibility that the industry might develop some commercial fishing in that area.” – Hon. Phil Twyford in-committee, 11 Feb 2014.<sup>39</sup>*

In summary, our interpretation of the policy intent of the review provisions of the Act is that experimental fishing for deepwater crabs would be undertaken prior to this review and if viability and sustainability was not proven then the entire territorial sea could become a marine reserve, noting that the Additional Area meets the criteria under the Marine Protected Area Policy: *“officials are of the view that the territorial seas of each of the three island groups meet this test<sup>40</sup>”* [of the Subantarctic Marine Reserves Act, 2014].

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<sup>36</sup> Hon. Kate Wilkinson. 4 December 2012. Volume: 686. New Zealand Parliamentary Debates. 7118.

<sup>37</sup> Hon. Nicky Wagner. 29 January 2014. Volume: 696. New Zealand Parliamentary Debates. 15658.

<sup>38</sup> Hon. Nicky Wagner. 11 February 2014. Volume: 696. New Zealand Parliamentary Debates. 15825.

<sup>39</sup> Hon. Phil Twyford. 11 February 2014. Volume: 696. New Zealand Parliamentary Debates. 15825.

<sup>40</sup> Department of Conservation. 2013. *Report of the Department of Conservation to the Local Government and Environment Committee.* Subantarctic Islands Marine Reserves Bill. Section 24. 31 p.



## Summary of Consultation

Having established the policy intent of the Act, and Section 8 in particular, the Review undertook stakeholder consultation in two stages: initial interviews to establish historic perspectives; and technical briefings following completion of the draft technical review.

Prior to meeting with individual stakeholders, the former independent chair of the Subantarctic Marine Protection Planning Forum, Paul Beverley, briefed the Review team to provide context. We also received oral briefings from officials at the Ministry for Primary Industries (Richard Ford and Tiffany Bock, as well as former MPI official Dr Jeremy Helson who was MPI lead support to the Forum) and the Department of Conservation (Dr Debbie Freeman and Sean Cooper who had both provided support to the Forum process). No opinion was sought (or received) from officials at either MPI or DOC, or Paul Beverley regarding what review findings should be; engagement was simply to provide background context from agencies and to seek access to any technical data or reports that may be of relevance.

### Stage One: Interviews to Ascertain Stakeholder Perspectives

#### Approach

Initial direct engagement through in-person or telephone interviews was undertaken to ascertain current views of former Forum members and submitters to the Forum process. The stakeholder list was developed in 2017/2018:

- On 28 September 2017, an email was sent by DOC to previous Forum members and all submitters to the Forum process inviting them to participate in the Review.
- An initial list of stakeholders was established from those who indicated a willingness to be involved. This list was then returned to DOC to confirm that there were no omissions.
- DOC also put a notice on its website instructing anyone who believed they were a relevant stakeholder to make contact with the Reviewer.

Before the interviews all stakeholders were provided with the Terms of Reference for this review for context. While every effort was made to engage with former members of the Forum it was not possible to gain all of their perspectives due to a range of factors, including:

- Crabco Ltd (a partnership between Aotearoa Fisheries Ltd, New Zealand Longline Ltd, and Te Ohu Kaimoana) has dissolved since the Forum process. The former Crabco representative (Andy Smith) was interviewed in his staff capacity at Talley’s Group, which owned half of NZ Longlines stake in Crabco and still holds deepwater crab quota.
- Subsequent to the Forum process, Deepwater Group (DWG) has been provided the mandate to speak on behalf of its member organisations. DWG advised the Review team that it would speak on behalf of its members.
- The independent scientist is now retired.
- NIWA scientists did meet with the technical reviewers to identify relevant material, but did not have perspectives for consultation.

**Table Two. List of stakeholders interviewed.**

Organisation	Representatives
Te Rūnanga o Ngāi Tahu	Dr Ronnie Cooper, Julian Phillips
Awarua Rūnanga	Tā Tipene O’Regan
Te Ohu Kaimoana	Kim Drummond, Tamar Wells

Deepwater Group	George Clement, Richard Wells
Talley's Group	Andy Smith (was the Crabco representative on the Forum)
Marine Science – independent scientist	John Booth (via email)
World Wildlife Fund*	Peter Hardstaff
Southland Conservation Board	John Whitehead (Chair)
Royal Forest and Bird Protection Society	Kevin Hackwell
PEW Trust**	Bronwen Golder
Environment and Conservation Organisations	Barry Weeber

\* While WWF were invited to be on the Subantarctic Forum, they did not participate and did not present their views on options developed by the Forum as part of the Forum's planning process.

\*\* Pew was not a member of the original Forum but was added to the list of stakeholders at its request.

Semi-structured interviews based on the Terms of Reference with these stakeholders were led by Dr Nigel Bradly to ascertain views with regard to Forum outcomes and the Review scope and timing. A semi-structured interview in this context does not provide specific, standardised questions for each discussion; rather it allows the conversation to be adapted to the particular context. For example, some people interviewed were not involved in the original Forum (although their respective organisations were) so have limited prior knowledge and therefore less context. Others were actively involved from the outset and have a great deal of understanding of context.

Interviews were qualitatively analysed, with a focus on identifying trends and consistent themes. No attempt was made to undertake quantitative analysis because the semi-structured nature of the interviews does not lend itself to quantitative analysis. Interviewees were asked:

- Whether they supported or opposed the Marine Reserve being extended to include the Additional Area, and why (noting this was before the technical components of this Review had been completed).
- What they thought Parliament had intended in creating the Review scope and process within the Act.
- Whether they had any relevant technical information that may not have been available to the Forum.

### Findings from Interviews

The individual interviews clearly identified that there has been no change in position (as expressed through the submissions to the Forum and Select Committee) of any of the former Forum members with regard to the Marine Reserve and potential extension to the Additional Area (Table 2 summarises the views). The illustrative quotes provided in the previous section from stakeholders to the Select Committee process are still very much aligned with the perspectives expressed to the Review team in interviews.

Individuals representing environmentally focused entities (WWF, Pew, Forest & Bird, ECO, Southland Conservation Board, John Booth – former marine science representative (via email)) all expressed a view that the Marine Reserve should be extended to include the Additional Area. Further, all felt that the entire Territorial Sea should have been a Marine Reserve from the outset (i.e. 'Option C1').

Individuals interviewed representing entities that have a commercial fisheries focus (DWG, Talley's Group, Te Ohu Kaimoana) all expressed a firm view that the Additional Area should remain as it is; outside the Marine Reserve. Reasons include:

- The industry still “holds strong interest” in a potentially valuable and viable crab fishery in the Additional Area, despite not yet having explored its commercial viability.
- The Additional Area is already a Benthic Protection Area (section 297 of the Fisheries Act describes the purpose of BPA’s as the “*prohibition on use of dredge, and restrictions on use of trawl net*”) and has a Danish seine ban, so very little other fishing can occur anyway (the nearest current commercial fishery is the Southern Blue Whiting fishery well outside the territorial sea).
- If the Additional Area is closed permanently to fishing there is a potential opportunity cost associated with the inability to commercially exploit an as-yet unknown species. Te Ohu Kaimoana and Ngāi Tahu noted that this has implications in terms of the Treaty of Waitangi (Fisheries Claims) Settlement Act 1992.<sup>41</sup>

Despite the point above, Ngāi Tahu did not express a firm view in advance of the technical findings.

**Table Three. Stakeholder Preference**

Organisation	Response: Extend Marine Reserve / Status Quo
Te Rūnanga o Ngāi Tahu	No preference (wait for technical review)
Awarua Rūnanga	No preference (wait for technical review)
Te Ohu Kaimoana	Status Quo
Deepwater Group	Status Quo
Talley’s Group	Status Quo
World Wildlife Fund	Extend Reserve
Southland Conservation Board	Extend Reserve
Royal Forest and Bird Protection Society	Extend Reserve
PEW Trust	Extend Reserve
ECO	Extend Reserve
Former NIWA representative John Booth (via email, not interviewed)	Extend Reserve

## Stage Two: Presentation and Discussion of Draft Technical Material

### Approach

The second stage of consultation involved the presentation of the draft technical findings with the opportunity for stakeholders to clarify any points raised by the technical team. Five presentations were held to accommodate availability:

- Wellington on 14 June 2018 where 12 people from 8 organisations attended (Table 3).
- Invercargill on 22 June 2018 to present to the Southland Conservation Board.
- Christchurch on 2 July 2018 to present to Ngāi Tahu (both Te Rūnanga o Ngāi Tahu staff and Awarua Rūnanga representatives).
- Forest & Bird on 20 July 2018 (ECO rep also invited but unable to attend); and
- Te Ohu Kaimoana on 6 August 2018.

For clarity, attendees at all meetings were told that the presentation was convened to:

- Provide a transparent opportunity for interested stakeholders to hear directly from the technical team; and

<sup>41</sup> New Zealand Government (1992). *Treaty of Waitangi (Fisheries Claims) Settlement Act 1992*. Parliamentary Counsel Office, New Zealand Legislation. Retrieved from <http://www.legislation.govt.nz/act/public/1992/0121/latest/DLM281433.html>

- Provide the opportunity to ask any questions that arose from the presentation.

The review timeline and milestones, and scope was identified at the outset to ensure all attendees had a consistent understanding. MPI and DOC officials also attended the Wellington briefing, and DOC officials attended both the Ngāi Tahu hui on 2 July, and Southland Conservation Board meeting on 22 June. Attendees were also informed that the presentations and discussion would not:

- Discuss the findings and recommendations of the overall review (which had not yet been made); or
- Serve as a ‘negotiation’ to any particular outcome (of either technical information or the overall review recommendations) to ensure the independence of the Review process.

**Table Four. List of stakeholders and officials who attended the technical briefing on 14 June 2018.**

<b>Name</b>	<b>Organisation</b>
Tamar Wells	Te Ohu Kaimoana
Richard Wells	Deepwater Group Ltd
Andy Smith	Talley’s Group
Peter Hardstaff	WWF
Bronwen Golder	PEW Trust
Dr Ronnie Cooper	Te Rūnanga o Ngāi Tahu
Julian Phillips	Te Rūnanga o Ngāi Tahu
Kilali Gibson	Ministry for Primary Industries
Dr Debbie Freeman	Department of Conservation
Luisa Kliman	Department of Conservation
Don Neale	Department of Conservation (on skype)
Tania Wrightson	Department of Conservation

### Findings

One area of discussion with attendees following presentations was the general dearth of technical data or reports for the Additional Area. This has meant that the technical reviewers have relatively little information beyond that which was used for the Forum Report. The value of the crab fishery in particular has very little existing information for the technical review, and the only two previous studies<sup>42,43</sup> that do exist from near Campbell Island have had to serve as the basis for modelling the value of the deepwater crab fishery. Neither study was undertaken in the Additional Area, and both were more than forty years ago.

Subsequent to the 14 June meeting Dr Debbie Freeman (DOC) provided a written summary of ongoing research activities of relevance, and some studies for which recent funding applications had been declined, in response to stakeholder queries.

One stakeholder queried whether a third option for the Review might be to defer any recommendation (or decision by the Ministers) until more scientific work has been undertaken to provide a definitive answer as to the commercial viability of the crab fishery in the Additional Area, and that the government could fund the experimental fishing to determine viability. We have

<sup>42</sup> Ritchie, L. (1970). *Southern spider crab (Jacquinotia edwardsii (Jacquinot, 1853)) survey - Auckland Islands and Campbell Island*. Fisheries Technical Report No. 52. New Zealand Marine Department, Wellington. 122 p.

<sup>43</sup> Ryff, M.; Voller, R. (1976). *Aspects of the southern spider crab (Jacquinotia edwardsii) fishery of southern New Zealand islands and Pukaki Rise*. Fisheries Technical Report No. 143. New Zealand Ministry of Agriculture and Fisheries, Wellington. 71 p.

addressed this in the previous section. There was no change in perspective offered by any attendee at briefings from the original interviews conducted.

The 2 July Ngāi Tahu hui was attended both by staff from Te Rūnanga o Ngāi Tahu (Julian Phillips and Dr Ronnie Cooper) and Awarua Rūnanga representatives Tā Tipene O'Regan and Gail Thompson. Key points arising from the hui are what is not known following the technical review (*italics indicate response from review team during the hui*):

- Changing sea temperatures will mean changing location of fish stocks. What might this mean for future fisheries? *Unknown and therefore not able to be considered by the technical reviewers.*
- Fisheries info is ~50 years old. How much credence can we give it? *It is all the review team has available, so constitutes best available evidence.*
- Fish must exist to have such a large bird / marine mammal population (acknowledging that albatross travel a long way to feed). *Noted*

No formal position (opposing or supporting extension of the Marine Reserve) was offered by Ngāi Tahu at the hui but the key concern identified is the precedent effect as it relates to Treaty of Waitangi fisheries matters, if the Additional Area be added to the Marine Reserve.

Key points arising from the 20 July briefing with the Forest & Bird representative included:

- Why had the scope been expanded beyond the legislative requirements to include commercial fisheries, but not other uses such as tourism or comparison of market vs non-market values? *The review team was unable to comment as it did not determine its own scope.*
- Whether the technical review had included flow-on effects to other species after removal of deepwater crabs through commercial fishing? *It could not, as insufficient information exists about the role of deepwater crabs in the ecosystem.*
- That additional impact could arise from the introduction of vessels into an area that doesn't have boats (e.g. fuel spills, loss of fishing gear etc). *Noted*

The key point noted by Te Ohu Kaimoana staff at the 6 August briefing was the opportunity cost for potential future commercial fisheries, and associated Treaty of Waitangi implications if the Marine Reserve is extended. *The review team noted that this is a matter for discussion between the Crown and Treaty Partners subsequent to the recommendations of the review, rather than being considered by the Review team.*

## Summary of Technical Findings

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This section summarises the findings from the technical review undertaken by Dragonfly Data Science. The full technical review is available as a supplementary document.

### Value of Additional Area to a Deepwater Crab Fishery

#### Approach

To assess the value of the deepwater crab fishery and other commercial fishing in the Additional Area, the technical reviewers consulted MPI databases to summarise and map data from the deepwater crab fisheries in quota management area GSC 6A, which includes the Additional Area. For the purposes of this assessment, value can be defined in terms of proportion of the total fishery (i.e. the number of boats and fishing events) or total landings and direct market value. For bycatch species, value can also be derived from bycatch allowance if particular areas have low rates of bycatch, and balance areas with high bycatch (i.e. the value of the fishery might decrease if all effort is displaced to areas of high bycatch). We considered all of these different options to define value, and clearly outline how value was derived during the assessment process.

This workstream was constrained by the following:

- Lack of catch data for the Additional Area from MPI databases, MPI catch-mapper maps.
- Suitable data to estimate Catch Per Unit of Effort (CPUE) indices for areas within proposed reserve boundaries.
- The need to model value of the deepwater crab fishery because of a lack of actual fishing events since the 1970's.

#### Findings

There has been no deepwater crab fishing in the Additional Area since the Act came into force; therefore it was not possible to quantify the value of the crab fishery from recent commercial (or exploratory) fishing records. For this reason, the analysis modelled the potential value of a deepwater crab fishery in terms of potential catch rates, based on limited information from exploratory fishery surveys of southern or giant spider crab (*Jacquiniotia edwardsii*) in the territorial sea around Motu Ihupuku / Campbell Island in 1970<sup>44</sup> and 1976<sup>45</sup>. Based on available data, there is no evidence that the Additional Area could sustain a commercially and biologically viable target fishery for giant spider crab, or be a significant part of a potentially larger giant spider crab fishery in subantarctic waters.

Key findings include:

- Likely areas of highest crab abundance are already protected by the current extent of the Marine Reserve and in shallower waters than the Additional Area.
- Potential catch rates in the Additional Area are likely to be low even in the present un-fished state (i.e., one takeable crab per pot).

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<sup>44</sup> Ritchie, L. (1970). *Southern spider crab (Jacquinotia edwardsii (Jacquinot, 1853)) survey - Auckland Islands and Campbell Island*. Fisheries Technical Report No. 52. New Zealand Marine Department, Wellington. 122 p.

<sup>45</sup> Ryff, M.; Voller, R. (1976). *Aspects of the southern spider crab (Jacquinotia edwardsii) fishery of southern New Zealand islands and Pukaki Rise*. Fisheries Technical Report No. 143. New Zealand Ministry of Agriculture and Fisheries, Wellington. 71 p.

- Expected catch rates are much lower than those reported from Auckland Islands and Pukaki Rise – Motu Ihupuku / Campbell Island fishing considered “poor”<sup>46</sup> and “negligible”<sup>47</sup>.

## Value of Other Fisheries in Additional Area

### Approach

To assess the value of the other commercial fishing in the Additional Area, the technical reviewers consulted MPI databases to summarise and map data.

This workstream was constrained by the following:

- Lack of catch or survey data for the Additional Area from MPI databases, MPI catch-mapper maps.

### Findings

There have been no other fishing events in the Additional Area in the period 2007 and 2013. In addition, we found no indication of an active fishery in the Additional Area prior to 2007.

Furthermore, current protection measures restrict fishing in the Additional Area through its status as a Benthic Protection Area and a Type 2 marine protected area, prohibiting bottom trawling, dredging, and Danish seining. Mid-water trawling is banned within 100m of the sea floor (with a 50m buffer zone)<sup>48</sup>. Little information is available to conclusively determine if any other species of potential commercial interest reside in the Additional Area. Available trawl survey information from Campbell Plateau is restricted to waters that are deeper than 300m<sup>49</sup>.

In view of the shallow bathymetry and current status as a Benthic Protection Area (BPA) that prevents bottom-contact fishing methods, it is unlikely that the area would sustain other fisheries of value.

Key findings include:

- Commercial target species in subantarctic waters such as southern blue whiting, hoki, ling, hake occur in deeper waters than the maximum depth of the Motu Ihupuku / Campbell Island territorial sea (100–250m) and are, therefore, not targeted in the Additional Area.
- Current BPA status limits fishing activity to >100m above seafloor, or to the use of lower-impact gear (pots, longline), thereby reducing the fishing potential in the Additional Area.
- Based on available data from fishing surveys and protection considerations above, it is unlikely that an unknown resource of sufficient value exists to warrant exploitation.

## Impact of a Deepwater Crab Fishery and other Fisheries in the Additional Area on the Marine Environment and Ecosystems

### Approach

The reviewers analysed available information from subantarctic waters, and also from studies conducted elsewhere to assess the potential impacts of a deepwater crab fishery and other

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<sup>46</sup> Ritchie, L. (1970). *Southern spider crab (Jacquinotia edwardsii (Jacquinot, 1853)) survey - Auckland Islands and Campbell Island*. Fisheries Technical Report No. 52. New Zealand Marine Department, Wellington. 122 p.

<sup>47</sup> Ryff, M.; Voller, R. (1976). *Aspects of the southern spider crab (Jacquinotia edwardsii) fishery of southern New Zealand islands and Pukaki Rise*. Fisheries Technical Report No. 143. New Zealand Ministry of Agriculture and Fisheries, Wellington. 71 p.

<sup>48</sup> New Zealand Government (2007). *Fisheries (benthic protection areas) regulations 2007*. Parliamentary Counsel Office, New Zealand Legislation. Retrieved from %7Bhttp://www.legislation.govt.nz/regulation/public/2007/0308/latest/whole.html#DLM973998%7D

<sup>49</sup> Bagley, N. W.; Ballara, S. L.; O’Driscoll, R. L.; Fu, D.; Lyon, W. S. (2013). *A review of hoki and middle-depth summer trawl surveys of the subantarctic, november december 1991–1993 and 2000–2009*. New Zealand Fisheries Assessment Report, 41.

commercial fishing in the Additional Area. Relevant data from the Motu Ihupuku / Campbell Island marine ecosystem was scarce so we considered information from other regions in New Zealand and overseas to provide a general understanding of ecological repercussions in the context of the Motu Ihupuku / Campbell Island ecosystem. This workstream was constrained by the availability / existence of data and information from the Additional Area.

### Findings

Given there has been no subsequent development of deepwater crab fisheries since the exploratory surveys in the 1970s and no other commercial fishing in recent times, the technical reviewers focused on potential impacts from this type of fishery in the context of the Motu Ihupuku / Campbell Island marine ecosystem.

Key findings include:

- Potential impacts from a deepwater crab fishery include the entanglement and capture of resident marine mammals and seabirds, removal of a functionally important species, and adverse effects through the physical disturbance of the seafloor.
- There is a risk to biodiversity as a result of incidental captures via crab potting, and given the high numbers of endangered and endemic species present, the potential impact on these populations should be considered.
- Vulnerable species include endangered New Zealand sea lion (*Phocarctos hookeri*), southern right whale (*Eubalaena australis*), and locally endemic Campbell Island shag (*Leucocarbo campbelli*).
- Giant spider crab (*Jacquiniotia edwardsii*) is considered to be functionally important and removal of this species has the potential to alter food web structure and ecosystem productivity.
- The removal of crabs may cause nutritional stress for species that rely on giant spider crab as a food source. This has been identified in literature as a potentially significant threat to the New Zealand sea lion (*Phocarctos hookeri*) population.
- Continued fishing of target and non-target species by derelict pots ('ghost fishing') may be indefinite, depending on the materials used and the environmental setting (although new pot technologies include use of biodegradable material). Long-term impacts have been attributed to pots retaining a high capture efficiency through a rebaiting cycle (by continuously attracting and trapping animals).

## Biodiversity Values in the Additional Area

### Approach

The reviewers analysed available information on the biodiversity values of the Motu Ihupuku / Campbell Island island group. This workstream was constrained by the availability / existence of data and information; the remoteness of Motu Ihupuku / Campbell Island means that there have been few ecological studies, with most research efforts focused on megafauna, particularly seabirds and marine mammals<sup>50,51,52</sup>.

<sup>50</sup> Waugh, S.; Weimerskirch, H.; Cherel, Y.; Prince, P. (2000). *Contrasting strategies of provisioning and chick growth in two sympatrically breeding albatrosses at Campbell Island, New Zealand*. *The Condor*, 102, 804–813.

<sup>51</sup> Morrison, K.; Armstrong, D.; Bailey, P.; Jamieson, S.; Thompson, D. (2017). *Predation by New Zealand sea lions and brown skuas is causing the continued decline of an eastern rockhopper penguin colony on Campbell Island*. *Polar Biology*, 40, 735–751.

<sup>52</sup> Torres, L.; Rayment, W.; Olavarría, C.; Thompson, D.; Graham, B.; Baker, C.; Patenaude, N.; Bury, S.; Boren, L.; Parker, G.; Carroll, E. (2017). *Demography and ecology of southern right whales Eubalaena australis wintering at sub-Antarctic Campbell Island, New Zealand*. *Polar Biology*, 40, 95–106.



### Findings

The Motu Ihupuku / Campbell Island island group is characterised by a high abundance and diversity of seabirds and marine mammals, including a number of endemic and protected species. Of the 26 species that inhabit and breed at the island group, six species are classified as endangered by the International Union for Conservation of Nature (IUCN) red-list classification<sup>53</sup>:

- Grey-headed albatross *Thalassarche chrysostoma*,
- Antipodean albatross *Diomedea antipodensis antipodensis*,
- Yellow-eyed penguin *Megadyptes antipodes*,
- Erect crested penguin *Eudyptes sclateri*,
- Campbell Island teal *Anas nesiotis*,
- New Zealand sea lion *Phocarctos hookeri*.

Key findings include:

- Based on available data, benthic species (i.e., organisms associated with the seafloor) in the Additional Area appear to be distinct and include functionally-important taxa (e.g. habitat-forming bryozoans).
- The biodiversity value of the Additional Area is high because of strong land-sea connectivity that provides important habitat and foraging areas and is directly linked to its sheltered inshore waters on the eastern side of the island group. Habitats include: shallow areas with mud, sand, cobble or boulder fields at the seafloor, and subtidal habitats consisting of boulder fields and biogenic reefs in deeper waters that are likely to support a diverse range of species.
- Many species present are also formally recognised as taonga species by Ngāi Tahu<sup>54</sup>, including hoiho (yellow-eyed penguin), toroa (southern, Antipodean, Campbell, grey-headed, black-browed, light-mantled sooty albatrosses), titi (sooty shearwater) and tara (Antarctic tern).

At least 20 seabird species are known to maintain breeding populations at Motu Ihupuku / Campbell Island. The island group has been identified as an “Important Bird and Biodiversity Area” (IBA) by BirdLife International.<sup>55</sup>

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<sup>53</sup> IUCN (2016). *International Union for Conservation of Nature Red List of threatened species*. Version 2016-3. Retrieved from <http://www.iucnredlist.org>

<sup>54</sup> Subantarctic Marine Protection Planning Forum (2009). *Implementation of the Marine Protected Areas Policy in the territorial seas of the subantarctic biogeographic region of New Zealand*. Consultation document. 45 p.

<sup>55</sup> BirdLife International (2018). *Important bird areas factsheet: Campbell Islands*. Retrieved from <http://www.birdlife.org>

# Conclusions and Recommendation

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## Conclusions

### Intent of Parliament

The rationale and associated expectations of Parliament are clear; Parliament intended that the viability (or otherwise) of the deepwater crab fishery in the Additional Area was to be explored in the period following enactment of the legislation (i.e. before this review) Parliament did not however signal any intention of who would be responsible for this. If viability was not proven, Parliament intended that the Additional Area could become a marine reserve.

### Stakeholder Consultation

Consultation with stakeholders identified that there has been no change in position of any of the former Forum members with regard to the Marine Reserve or Additional Area. Individuals representing environmentally focused entities all maintain a view that the Marine Reserve should be extended to include the Additional Area. Entities interviewed that have a commercial fishery focus all maintain a view that the Additional Area should remain as it is; outside the Marine Reserve. Ngāi Tahu did not express a clear preference, although noted its concern regarding impact on Treaty rights for future commercial fisheries. The presentation of technical findings were not disputed (although were limited by a lack of data), and did not serve to change the perspective of any stakeholders involved.

### Technical Findings

The Technical Review found:

- No fishing activity has occurred in the Additional Area since the enactment of the Subantarctic Islands Marine Reserves Act in 2014. Additionally, there are no known exploratory fishing surveys planned in the near future. It has therefore been impossible to establish the viability (or otherwise) of a deepwater crab fishery from recent catch records.
- Based on available data from the 1970's (the only catch records available) and modelling undertaken for this review, it is unlikely that the Additional Area alone could sustain a commercially and biologically viable target fishery for giant spider crab, or be a significant part of a potentially larger giant spider crab fishery in subantarctic waters. The only two fishing surveys; in 1970 and 1976 described the crab fishery in the area surveyed as "poor" and "negligible" respectively.
- There has been no other fishing activity in the Additional Area, and in view of the shallow bathymetry and current status as a Benthic Protection Area (BPA) and the Danish seine ban, mean it is unlikely that the Additional Area could sustain other fisheries of value.
- There is a risk to biodiversity as a result of incidental captures via crab potting, and given the high numbers of endangered and endemic species present, the potential impact on these populations should be considered.
- The biodiversity value of the Additional Area is high because of strong land-sea connectivity that provides important habitat and foraging areas and is directly linked to its sheltered inshore waters on the eastern side of the island group.

## Recommendation

The Motu Ihupuku / Campbell Island Additional Area meets the criteria for a marine reserve of the Marine Protected Area Policy; this is supported by statements in the Departmental Report to the Local Government and Environment Select Committee: *“Officials are of the view that the territorial seas of each of the three island groups meet this test<sup>56</sup>”* [of the Subantarctic Marine Reserves Act, 2014].

We believe it is highly likely that the entire territorial sea would be been a marine reserve (i.e. ‘Option C2’ put forward by the Forum) if it were not for the potential deepwater crab fishery identified by commercial fishery interests. The then Minister of Conservation, Hon. Kate Wilkinson noted *“The bill also grants a 5-year window to allow for a potential deep-water crab fishery to be explored around Campbell Island. At the end of that 5-year period the status of this area will be reviewed. If it is decided that a viable and sustainable crab fishery does not exist, then the entire territorial sea around Campbell Island could become a marine reserve.”*<sup>57</sup>

The intent of Parliament that efforts to establish the viability of a crab fishery would occur prior to this review did not appear to contemplate that no fishing activity at all would occur. The only actual fishery data the technical reviewers could use to assess value provided no evidence that a viable crab fishery exists (this is the same data that the Forum was provided). Whilst we acknowledge that the data is more than 40 years old, the expectation was that experimental fishing would occur in the period since the Act was passed.

The lack of more recent data leads this review to rely on the studies from 1970 and 1976 which comprise the best available data, and modelling undertaken by the technical reviewers. We therefore conclude that a viable fishery does not exist.

There has been no other commercial fishing activity in the Additional Area, and in view of the shallow bathymetry and current status of the Additional Area as a Benthic Protection Area (BPA) and the Danish Seine ban, it is unlikely that the Additional Area could sustain other fisheries of value.

The biodiversity value of the Additional Area is very high. This is directly linked to the sheltered inshore waters on the eastern side of the island group that provide important habitat and foraging areas.

A second important consideration for this review is whether the lack of a viable crab fishery means that the Marine Reserve should be extended, or whether the existing Benthic Protection Area and Danish seining ban suffices to provide ‘de facto protection’ for the Additional Area. Given the ‘tests’ under Marine Protected Area Policy have previously been met, and that a viable fishery has not been proven, we conclude that the Marine Reserve should be extended to include the Additional Area. A failure to establish viability of the crab fishery is not a reason to either delay a decision or to maintain the status quo.

**The recommendation of this Review is that the Minister of Conservation and the Minister of Fisheries should extend the Marine Reserve at Motu Ihupuku / Campbell Island to include the Additional Area, and thus extend over the entire territorial sea.**

<sup>56</sup> Department of Conservation. 2013. *Report of the Department of Conservation to the Local Government and Environment Committee*. Subantarctic Islands Marine Reserves Bill. Section 24. 31 p.

<sup>57</sup> Hon. Kate Wilkinson. 4 December 2012. Volume: 686. New Zealand Parliamentary Debates. 7118.