

BEFORE THE ENVIRONMENT COURT

Auckland Registry

ENV-2015-AKL-0000134

IN THE MATTER

of the Resource Management Act 1991

AND

of an appeal under Clause 14 of the First Schedule  
of the Act

BETWEEN

TRUSTEES OF MOTITI ROHE MOANA TRUST

Appellant

AND

BAY OF PLENTY REGIONAL COUNCIL

Respondent

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STATEMENT OF EVIDENCE OF REBECCA LIV STIRNEMANN ON BEHALF OF THE ROYAL  
FOREST AND BIRD PROTECTION SOCIETY OF NEW ZEALAND INC

24<sup>th</sup> October 2017

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## INTRODUCTION

1. My full name is Rebecca Liv Stirnemann.
2. My evidence describes the birdlife of the Motiti Natural Environment Management Area (MNEMA) and wider Bay of Plenty, and assesses the threats to the birdlife including the effects of fishing, and the likely effects of marine protection proposed by Motiti Rohe Moana Trust for the MNEMA, on birdlife.
3. I am currently hold the position with the Royal Forest and Bird Protection Society of New Zealand Inc ("Forest & Bird") as a Regional Manager for the central North Island. I have been employed by Forest & Bird in that capacity since April 2017. Forest & Bird has asked me to present evidence in my capacity as an Ornithologist, not in my capacity as a Regional Manager.

## Qualifications and experience

4. I hold two Masters of Science degrees from the University of Pretoria, South Africa and from Trinity College Dublin, Ireland respectively. I also hold a PhD in Ecology and Ornithology from Massey University in New Zealand. My PhD thesis, completed in 2016 was on the ecology and threats to an endangered bird species.
5. I have over 12 years' experience in ecological research on birds and their interactions with human impacts and ecological drivers.
6. My area of expertise includes: impacts of climate change on terrestrial birds and seabirds; connectivity between populations and habitats, relationships between abiotic and biotic factors and reproduction in birds, impacts of invasive species on survival rates; impacts of consumption and illegal trade on population persistence, the impact of invasive fish species on mangrove communities. I design and undertake ecological studies in both marine and terrestrial habitats. My research has been undertaken in New Zealand, the South Pacific, South Africa and European countries.
7. I have authored more than 25 scientific documents (articles, book chapters, reports, reviews), over 12 of which have been published in international peer-reviewed scientific journals. Many of these studies have focused on ornithology and anthropogenic influences.

**Scope of evidence**

8. My evidence addresses the following matters:
- a) The bird values of the Motiti Natural Environment Area (MNEMA) and broader Bay of Plenty region.
  - b) The threats to those values.
  - c) What measures are needed to maintain or enhance those values.
  - d) An assessment in terms of Policy 11 of the New Zealand Coastal Policy Statement.

**Expert witness Code of Conduct**

9. I confirm that I have read the Code of Conduct for expert witnesses set out in the Environment Court's Practice Note 2014 and I agree to comply with it. Except where I state that I am relying upon the specified evidence of another person, my evidence in this statement is within my area of expertise. I have not omitted material facts known to me that might alter or detract from my expressed opinions.

**SUMMARY OF EVIDENCE**

10. The seabird values of the proposed MNEMA and broader Bay of plenty region are high. Many of the seabirds utilising and breeding in this area are threatened or at risk with declining populations.
11. There are substantial anthropogenic threats to these species, including from fishing. Maintaining the status quo approach is not sufficient to alter the direction of the current declines, and ultimately the loss of species and ecosystem interactions is expected if activities do not alter.
12. Rules and methods such as waahi tapu and waahi Taoanga are warranted to improve the resilience of seabird populations against both natural and human impacts.
13. Improved protection is required to comply with Policy 11 of the New Zealand Coastal Policy Statement.

## EVIDENCE

### The bird values of the proposed MNEMA and broader Bay of Plenty.

14. New Zealand is a global centre of seabird diversity, and particularly threatened seabirds. New Zealand has 92 resident (breeding in New Zealand) indigenous seabird species and subspecies, which is the highest number of endemic seabirds in the world (Croxall et al, 2012). Thirty-two (35%) of these indigenous resident seabird species or subspecies are threatened with extinction. Twelve (13%) of these are classified as nationally critical (meaning they face the highest risk of extinction). Another 51 species (55%) are at risk of extinction.
15. Historical records suggest seabirds were once very numerous in New Zealand. This can be seen in this excerpt from Booth's 2017 report "Arthur Pycroft, stationmaster for Opuā, which noted in the late 1890s how the southern black-backed gull was very common (and breeding) in the Bay, as were the red-billed gull, the white-fronted tern, and the blue (reef) heron; all of these bred on the Black Rocks (Pycroft 1898). He also found breeding sooty shearwaters - whose nearest breeding spots these days are the Cavalli Islands (30 km northwest of the Bay of Islands) and the Hen and Chickens Islands (100 km to the southeast) - on nearby Moturoa Island, and little penguins nested in many places around the harbour. Other seabirds he saw - but did not find breeding in the Bay of Islands - were, commonly, the Arctic skua gull, Caspian tern, common diving petrel, and Australasian gannet; and, occasionally, the wandering albatross, and northern giant petrel. Among the shorebirds, the black shag was common, and there were also pied shags and little shags. 'I secured eight of these birds at one shot when a flock of about sixty were fishing in front of the Opuā Railway-station. (Pycroft 1898)."
16. The Bay of Plenty and Hauraki Gulf, with its diverse habitats and offshore islands, is one of the most diverse seabird communities in the world – a result of the high diversity of foraging habitat and breeding sites.
17. These global values are recognised by the Important Bird Area (IBA) programme, launched for New Zealand seabirds in 2014 to guide the implementation of national conservation strategies. IBAs are those sites that are recognised globally as internationally important for bird conservation and known to support key bird species. Sites are identified both on land and at sea on the basis of threat

classifications, and the bird numbers and species' complements that they hold. Designation of these areas for seabirds provides valuable input to the identification of marine protected areas and regional plan overlays, and contributes to effort to ensure sustainable management of New Zealand's territorial sea and wider exclusive economic zone. IBA designation has been considered relevant by the New Zealand Environment Court in at least one previous decision relating to the impact of mussel farms on New Zealand king shag habitat in the Marlborough Sounds (*RJ Davidson Family Trust v Marlborough District Council* [2016] NZEnvC 81).

18. So far only two of the global IBA criteria have been applied in the marine environment in New Zealand. The proposed MNEMA is contained within the North Eastern North Island marine IBA. This marine IBA area covers 73,040km.2 of which only 980.2 km2 (less than 2%) is protected (Forest and Bird 2014). A copy of the relevant excerpt of the Important Bird Areas for Seabirds report is annexed as Appendix 1.
19. The IBA programme only identifies important bird areas, it does not provide methods to protect the species that use it, although key threats where known are identified.
20. The Bay of Plenty area is a significant breeding site for a number of seabird species, especially the Mercury and Ohinau Islands, Aldermen Islands, Karewa Island, Motuotau Island, Plate Island, Moutohora Island and White Island (Map 6 of Di Lucas evidence maps). The Aldermen Islands and Moutohora Island hold more than half of the New Zealand population of grey-faced petrels. Indeed more than half of the New Zealand flesh-footed shearwater population nest on the Mercury, Ohinau and Karewa Islands (Map 6 of Di Lucas evidence maps). The diving petrel colony on Aldermen Islands is regionally significant in the upper North Island. White Island holds one of the five largest gannet colonies in New Zealand. Albatross species are also known to forage within the area in the winter.

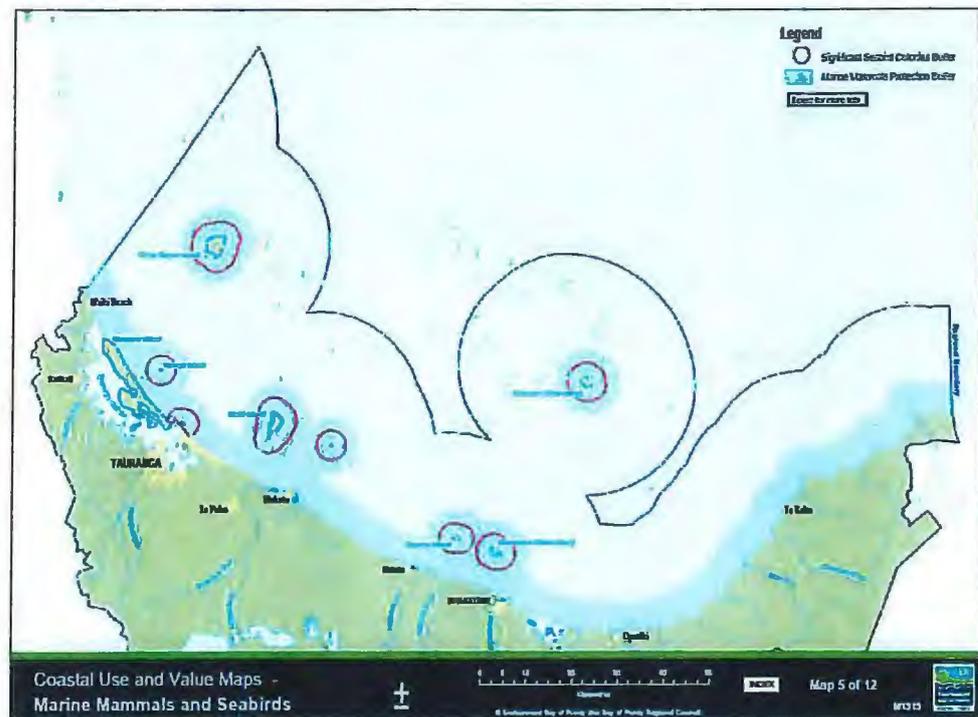


Figure 1. The Bay of Plenty regional council map showing significant terrestrial seabird colonies and their associated recommended buffer.

21. Astrolabe Reef is ecologically unique as it is one of several isolated complex pinnacle structures in an environment that consists of flat inshore sandy mud and soft sediment shelf habitat. The topographic structure of the reef has made it a diverse habitat. Indeed many of the seabirds present around the Astrolabe reef differ from those close to Motiti. A range of procellariiform species that are known to associate with shoaling fish schools in northern New Zealand waters gather in the upwelling areas to feed (Gaskin 2017). These upwelling areas are particularly important for feeding during the breeding season for seabirds such as Fluttering shearwater, Buller's shearwater, Fairy prions, red billed gulls and White fronted terns. Astrolabe Reef also has a regional significance as New Zealand fur seal (*Arctocephalus forsteri*) habitat and is also visited by the common dolphin (*Delphinus delphis/capensis*). It is also frequently visited by many whale species.
22. Motiti supports many seabirds including significant numbers of Red-billed gulls, a nationally vulnerable species, and pied shag colonies. Matarehu island (The Knoll) at the south end of the island is a nesting area for grey-faced petrels (See Figure 2.) Little penguins, a species that is At risk and in decline, also nest around the island (Baird, 2016). Motuputa Rock on the north-east corner of the island is recognised as a breeding site for fluttering shearwater (breeding September to Feb), flesh-footed

shearwater (breeding Nov-May) and common diving petrels. New Zealand fur seal (*Arctocephalus forsteri*) also have multiple haul out locations all along the coast of the islands and islets within the MNEMA. Details on species utilising the MNEMA and their threat status are listed in table 1 below (Map 6 of Di Lucas evidence maps).

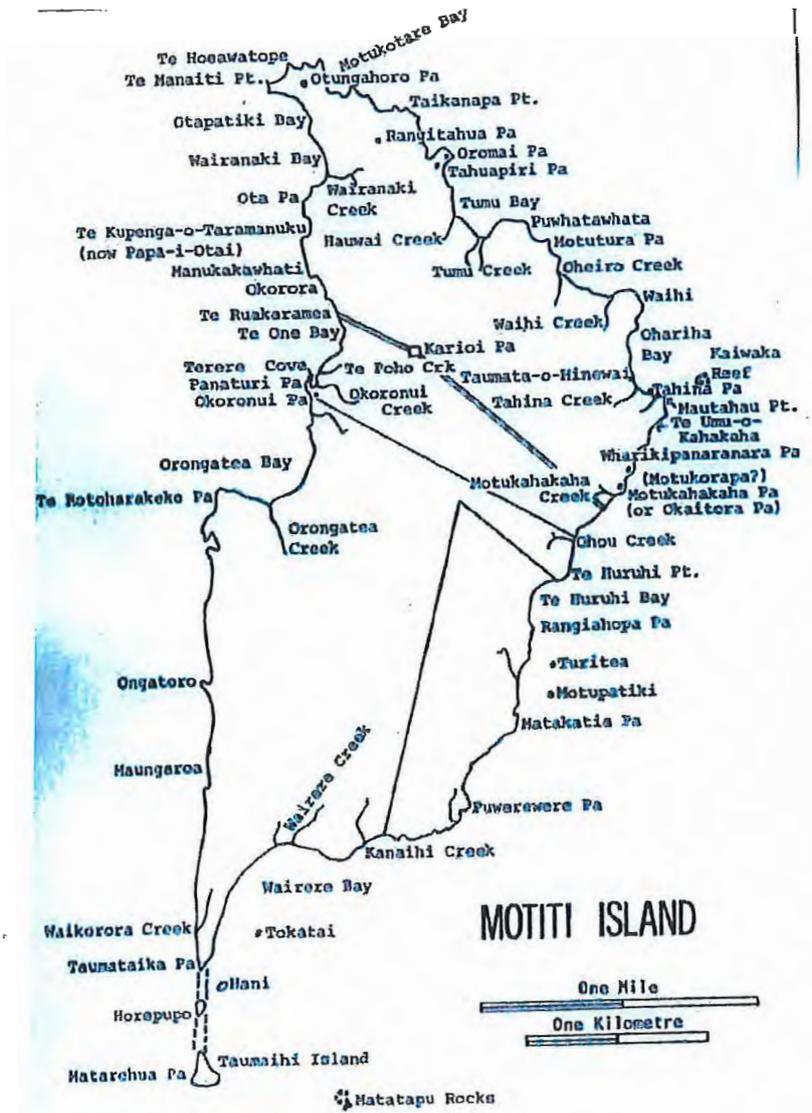


Figure 2. Map of Motiti Island and areas of interest.

23. Seabirds carry out an important ecological function or service by linking sea to land. Marine nutrient inputs from seabirds benefits terrestrial flora and fauna by enabling the transfer of matter across ecosystem boundaries, bringing ashore nutrients in the form of guano and dead tissue. This activity elevates soil nutrients and plant growth with subsequent benefits to invertebrate and vertebrate populations of island communities (W.B. Anderson, Polis G. A. 1999). These relationships are damaged if

population numbers of seabirds are impacted by offshore threats to feeding habitat and loss of prey diversity.

Table 1. Key avifauna species utilising the area within the MNEMA and their threat status

Name	Feeds in area	Breeding within the MNEMA	Threats	Threat status
Red billed gull	Yes	Yes	Has been caught in commercial fisheries, upwelling areas with work ups critical during the breeding period	Threatened
Little penguin	Inshore forager with its range generally limited to c. 30 km from breeding sites during the nesting period.	Yes	Blue penguins have been caught in near-shore set nets. Penguins returning to breeding colonies or landing beaches at dusk are vulnerable to near-shore set nets (Crawford et al. 2017). Low fish numbers reproductive success. Increasing storm events from climate disruption impacts survival, Oil spills	At risk: declining
Fluttering shearwater	Yes, Forages over the continental shelf and inshore waters including sheltered bays and harbours.	yes	Frequently feed close inshore and dive deep for food. Has been caught by fishers using hand and reel-lines in inshore waters. The birds sometimes swallow hooks or get tangled in the lines. Flocks of shearwaters are occasionally caught in set nets	At risk: Relict
White-faced storm petrel	During the summer breeding season this is the most commonly encountered storm-petrel in coastal waters, particularly near breeding sites. Like other storm-petrels, white-faced storm petrels are surface feeders. The species usually forages over the continental shelf during the breeding season	Yes	This species has been recorded being killed during commercial fishing operations. Light attraction (vessels and cities) especially young birds	At risk
Little shearwater	Possibly	Yes nearby	Few known threats at sea. Feeds on small	At risk: Recovering

			fish and crustaceans, especially krill.	
Pied shag	Yes	Yes	Pied shags have been reported caught in set nets and by inshore longline fisheries; especially vulnerable to recreational hand lines and associated impacts.	Threatened: Nationally vulnerable
Buller's shearwaters	yes	No	It was previously caught in north Pacific drift-nets (Gould et al. 1998), and is still potentially at risk from set-nets. It is occasionally caught on longlines, and on hand and reel lines. (Tennyson et al. 2012).	IUCN listed: Vulnerable
Fairy prions	Yes		Occasionally caught in trawl nets and bottom longlines, (dragonfly database) Light attraction. Oil spills	At risk: Relict
White fronted terns	yes			At risk: declining

#### The threats to those values

24. Globally, seabird and marine mammal capture by commercial fisheries is a serious threat to many species (e.g., Abraham et al 2016). In New Zealand there is ongoing research estimating the bycatch of seabirds and marine mammals. These studies have focused on bycatch associated with commercial fishing (e.g. Smith & Baird 2009, Abraham et al 2016). However, recreational fishing by-catch of seabirds could also potentially cause population level impacts to some species of seabirds in New Zealand. Abraham et al (2010) estimated 11,500 birds annually could be caught.
25. The most frequently caught were reported as petrels (most likely shearwaters), but albatrosses, gannets, penguins, shags and terns are also caught. Flesh-footed shearwaters and some Buller's and Sooty shearwaters have been killed by fishing activities in the Bay of Plenty area. Aside from area closures that restrict recreational set netting in order to reduce Hector's and Maui's dolphin mortality (e.g., Ministry of Fisheries 2008), there is little direct management of protected species captures in recreational fisheries. Set nets present the greatest threat to penguins globally and a recent global review showed that little penguins are also at

risk (Crawford et al. 2017). MPA's online database shows that there has been no monitoring of set net vessels in the NE of New Zealand since 2002, despite being a common commercial fishing technique.

[\(https://psc.dragonfly.co.nz/2017v1/released/birds/setnet/all-vessels/eez/2002-03-2015-16/\)](https://psc.dragonfly.co.nz/2017v1/released/birds/setnet/all-vessels/eez/2002-03-2015-16/)

26. Various observers (Booths report, and as described in Roger Grace's statement of evidence) have reported reductions in fish numbers and size throughout the North East coast of New Zealand waters within the century with many fish populations having been reduced to less than 20% of their original size. This is likely to have had significant impacts up the food chain to seabirds by affecting both their food supply directly or by impacting the large pelagic fish schools/balls/workups on which they were dependent (see below). Several studies describe a threshold in forage-fish (prey) abundance (often due to overfishing) below which seabirds experience consistently reduced and more variable productivity (Cury 2011). This response was common to all seven ecosystems and 14 bird species examined within the Atlantic, Pacific, and Southern Oceans (Cury 2011).
27. The impact is not merely restricted to the total abundance of prey but may also extend to its spatial distribution and the encounter rate between prey and predators (Furness, 1982). Fishing may even eliminate trophic groups or keystone species and result in a complete change to the overall community structure (Botsford, 1997). Destructive fishing practices such as trawls and dredges may modify or destroy habitat and thus impact species in the upper trophic levels (Sainsbury, 1993).
28. The long-term viability of some seabird populations is threatened if essential fish habitat and diversity is degraded. It is therefore essential there are areas of refuge and protection for already heavily exploited fish species to maintain key food resources.
29. Functional loss of large fish numbers has been experienced throughout New Zealand: The loss of, and reduction in abundance of, large shoaling fish schools in the north east coast of New Zealand has significant implications on reproductive ability and function of avifauna (Gaskin 2017). The loss of schooling fish due to the excessive use of net fishing methods such as purse seining, trawling (bottom, mid

and surface water), and industrial longlining are the primary contributors to the pelagic marine life decline. Many seabirds rely on food being driven to the surface by subsurface predators where they become more accessible to birds. These associations are well known in the tropics (Tuna birds), and recent research in NZ is revealing similar dependencies for some procellariiforms (Hebshi 2008). Upwelling areas such as Astrolabe reef and the MNEMA are also critical since they concentrate the plankton and zooplankton such as krill which bring it close to the surface so seabirds such as Fluttering shearwater, Buller's shearwater, Fairy prions, red billed gulls and White fronted terns can feed (Gaskin 2017). This ecosystem service is particularly critical during breeding season, enabling these seabirds access to this food source during this critical period of its life cycle (Gaskin 2017).

30. Wide scale impacts of climate change are already having a large impact on seabirds (e.g. Thomson et al 2015). In order to maintain populations, it is important that non-climatic threats are reduced or eliminated to improve resilience to changing climatic events. Reducing anthropogenic competition for resources is likely to be increasingly important as increased impacts are observed on seabird populations (Thomson et al 2015).
31. The seabirds within the Bay of Plenty around the MNEMA were impacted in several ways by the Rena grounding. More than 1350 oiled seabirds of 23 species were recovered dead following the RENA grounding. Common diving petrel, fluttering shearwater, Buller's shearwater, little penguin, white-faced storm petrel, sooty shearwater and little shearwater were all found. Though none of these species are listed as Threatened, seven are At Risk. Most of these birds will have been breeding and either sitting on eggs or chicks at the time.
32. Plastic beads from the Rena also pose a potentially significant impact to seabirds in the Bay of Plenty region due to the significant volume (multiple tonnes) discharged or lost at sea (Brodie et al. 2014:). There is potential for plastic bead ingestion to have affected breeding populations of seabirds in the Bay of Plenty. Indeed seabirds have been found containing plastic beads internally (Riddell pers com). Further monitoring of this was recommended by Graeme Taylor (Department of Conservation), but as far as I am aware was not undertaken so the impact of this is not clear (Avifauna evidence to the RENA consent process).

33. Currently the remaining large shoaling fish are intensively removed by purse seiners (See Figure. 3). Figure 3 shows that there is very little protected area for the threatened and at risk seabird populations to forage.

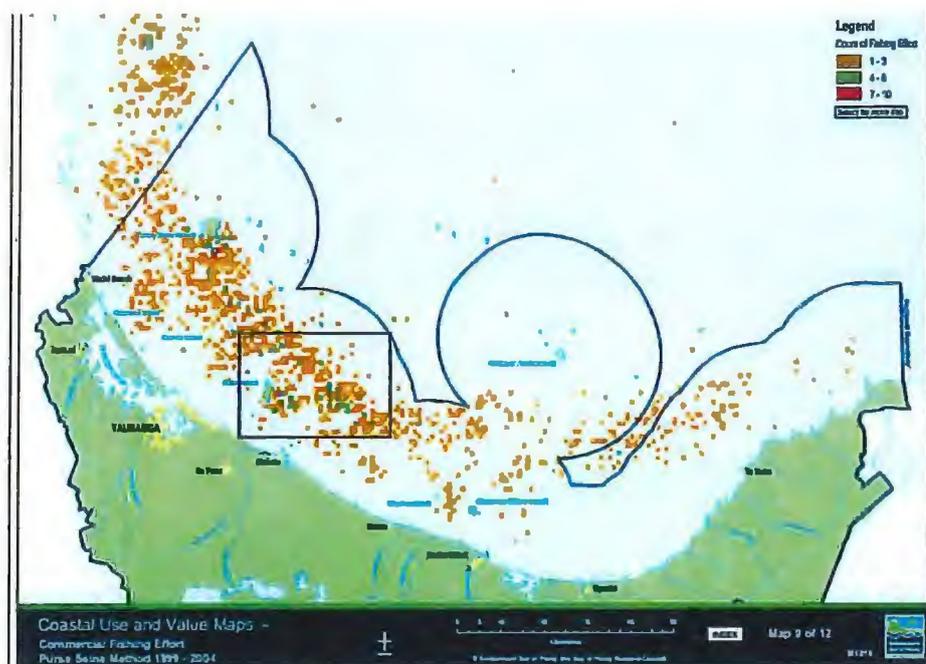


Figure 3. Distribution of purse seine effort, Bay of Plenty 1999-2004 showing the intensive removal of fish schools within the proposed protected areas which is roughly within the black rectangle. (Source:<http://www.boprc.govt.nz/media/306908/aquaculture-map-09-purseseine.pdf>)

#### Measures needed to maintain and enhance seabird values.

34. Marine spatial planning, including designation of rules and methods within regional planning frameworks applying to specified areas that are important for seabirds, has the potential to offer refuge from particular fishing activities that adversely affect seabirds, and could increase food availability for species feeding in and close to the designated MNEMA. This is likely to be particularly beneficial for some species.
35. Little penguin is one example of a species which is likely to experience high benefits from protection from fishing activities. Currently in waters around the MNEMA little penguin colonies are vulnerable to accidental drowning due to netting activities. In addition some little penguin populations are experiencing high competition for

marine resources in all their foraging zones due to poor food availability. Exclusion of fishing from the MNEMA has the potential to enhance fish stocks. The proposed marine protection area would benefit the little penguins, especially if combined with terrestrial conservation efforts.

36. The MNEMA would provide a safe area for feeding to occur and allow for restoration of the natural ecological trophic relationships away from fishing practices which are affecting survival.
37. Positive impacts on seabirds such as little penguins could be monitored on Islands such as Motiti by undertaking surveys of burrows and recording breeding success rates as an integrated management method to monitor performance of the marine spatial plan.
38. A waahi taonga area with activity restrictions and thresholds will be able to provide a restorative function to ecological process and natural function. In my opinion the bigger the area, the more likely will be the recovery of large fish schooling activity, which was a feature of the Bay of Plenty 50 years ago, and which is so important for seabird feeding. The 3-nautical mile radius no-take zone around Otaiti/Astrolabe reef may eventually allow fish schools to approach similar to the characteristics which will in turn allow the associated seabirds to benefit and feed. The main species likely to benefit are fluttering shearwaters, red billed gulls, Buller's, fluttering and flesh-footed shearwaters, and white-fronted terns.
39. By restoring the habitat of the MNEMA through the application of methods and Rules such as waahi tapu and waahi taonga restoration qualities up through the food web and associated benefits to terrestrial areas (ecosystem services) will also be enhanced. The positive impacts of this may be much more significant than we can predict from existing outcomes, given that all the marine reserves up to this point have been extremely small and are not commonly nestled in additional protection areas.
40. In my opinion anything less than the 3 nautical miles suggested is not likely to restore the higher order important ecological relationships and have an associated increase in seabird numbers. At Poor Knights Islands where the marine reserve extends only 800 metres offshore, Roger Grace observed numerous small workups of trevally close in to the islands, but nothing like the several acres of boiling fish

seen in the late 1960's (Grace pers com). No-take areas need to be much larger to enable the supportive environmental attributes of ecological function for avifauna.

41. I acknowledge that not all seabird species are likely to be impacted by the MNEMA beyond avoidance of individual bird deaths, due to the vast dispersal of bird behaviour (for example species which feed on plankton such as white-faced storm petrel).
42. Serious data gaps for most seabird species (ie. lack of colony counts, especially long-term surveys, lack of a systematic approach to at-sea observing) has limited our ability to determine the true extent of the impact humans are having on seabirds. Indeed the need for accurate population data for New Zealand's seabirds has been raised by multiple groups already (Gaskin 2017). Further research into seabirds is critical if we are to further understand interactions and reduce the declines of our national taonga. Large protected areas where we can limit some of the factors driving declines are needed for further study.

**Assessment in terms of Policy 11 of the New Zealand Coastal Policy Statement.**

43. Birdlife within the MNEMA meets several of the criteria in Policy 11 of the New Zealand Coastal Policy Statement:
  - a) Policy 11 (a) is met by the presence of species listed as (a) Threatened or (b) At Risk (see Table 1, though note that Seabirds are understudied and there is a general lack of data on their spatial use in waters surrounding New Zealand therefore many additional At Risk and Threatened species may be found within the MNEMA than are listed above). The area is likely to be important foraging habitat for these species, and the MNEMA would provide a safe area for feeding to occur where the adverse effects of fishing, as described above, are avoided.
  - b) The breeding habitat within the proposed MNEMA for Pied shag, little penguin and red billed gull meets Policy 11(b).
  - c) The restoration of fish work ups in upwelling areas such the underwater area of MNEMA would also meet Policy 11(b) enabling (v) areas containing nationally significant examples of indigenous community types, important to migratory species (Fluttering and Buller's shearwaters flesh-footed, Fairy prions, red billed gulls and possibly white-fronted terns would be the main species affected) to be restored and maintained. This area also meets policy (vi) as it is a critical

ecological corridor for many wader and seabird species (thus its status as an (IBA) important marine bird area defined by Birdlife International) and is defined as critical for linking or maintaining biological values.

44. In order to avoid adverse effects on those species, it is necessary to control anthropogenic influences e.g. destructive fishing and practices which have resulted in a loss of ecosystem functioning as described above and in evidence by Roger Grace. The restoration of large fish schools is particularly critical since they provide a critical mechanism by which the seabirds (mentioned above) access plankton and krill for food during the breeding season.
45. The Waahi Tapu areas are critical to the restorative qualities of natural function that is required to support the integrity of the seabird element of the marine life force (referred to as the physical representation of mauri in Dr Kepa Morgans evidence).

#### **Conclusion**

46. The current status quo approach is not sufficient to prevent coastal and seabird declines and ecosystem functional loss.
47. Rules and other methods such as waahi tapu and waahi taonga are warranted to preserve the resilience of seabird populations against both natural and anthropogenic impacts.
48. These provisions need performance measures that integrated into a holistic ecosystem based management framework.

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NZ M002	North Eastern North Island
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Location	New Zealand, Northern North island
IBA criteria (see page 14)	A1, A4ii, A4iii
Area	73,040 km <sup>2</sup>
Year of Assessment	2013

## IBA trigger species:

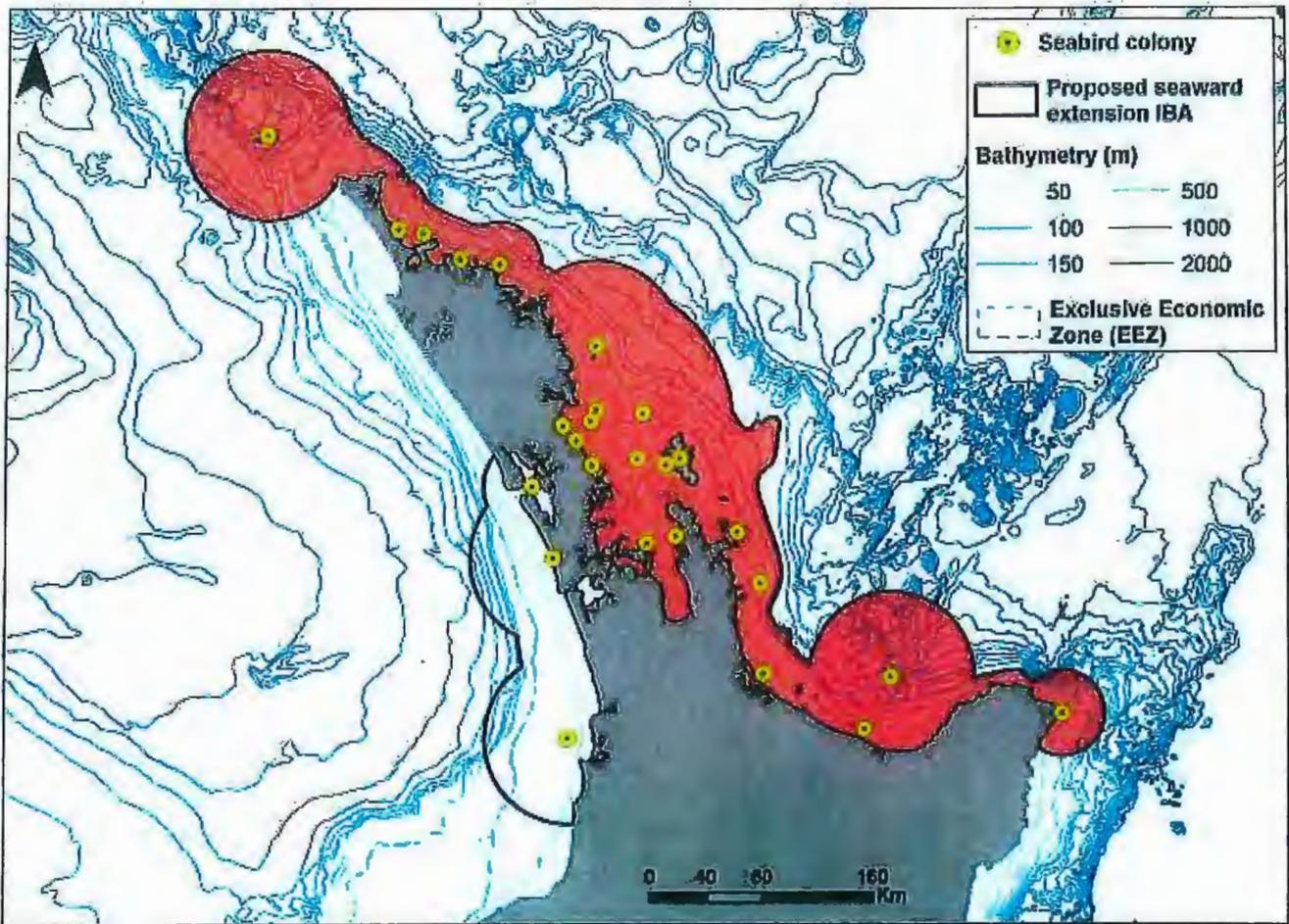
Species	Tracking	Supporting data	Activity	IBA	IUCN
Buller's Albatross <sup>1</sup>			Passage to colony	A1	VU
Black Petrel <sup>1</sup>	GLS, GPS	Observations	Foraging, passage	A1, A4ii	VU
Buller's Shearwater <sup>2</sup>	GLS	Observations	Foraging, congregations, passage	A1, A4ii	VU
Flesh-footed Shearwater <sup>2</sup>		Observations	Foraging, congregations, passage	A4ii	LC
Fluttering Shearwater <sup>2</sup>	GLS	Seaward extension (30km), observations	Foraging, congregations, passage	A4ii	LC
Cook's Petrel <sup>1</sup>	GLS	Observations	Passage, congregations	A1, A4ii	VU
Pycroft's Petrel <sup>1</sup>	GLS	Observations	Passage	A1, A4ii	VU
Grey-faced Petrel <sup>1</sup>	GLS, GPS	Observations	Passage	A4ii	LC
Fairy Prion <sup>2</sup>		Seaward extension (135km), observations	Foraging, congregations, passage	A4ii	LC
White-faced Storm Petrel		Observations, seaward extension (35km)	Foraging	A4ii	LC
NZ Storm Petrel		Observations, seaward extension (35km)	Foraging	A1, A4ii	EN
Common Diving Petrel <sup>2</sup>	GLS	Observations, seaward extension (20km)	Foraging	A4ii	LC
Australasian Gannet	GPS	Observations, seaward extension (60km)	Foraging	A4ii	LC
NZ Fairy Tern <sup>3</sup>		Seaward extension (5km)	Foraging (in-shore)	A1, A4ii	VU
Species group (multiple species including a number not listed above)		Observations		A4iii	

<sup>1</sup>Species with pelagic ranges. Foraging extends well beyond the seaward extension shown here, however, this mIBA will capture passage to colonies and some observed feeding.

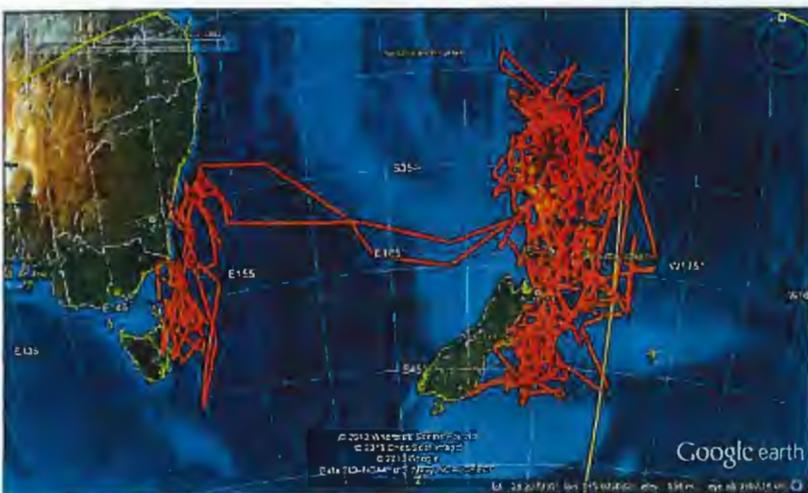
<sup>2</sup>Species observed regularly feeding within the area shown. They also, however range widely during breeding. As new tracking becomes available it is likely pelagic mIBAs will be added to the network (i.e. outside the seaward extension IBA).

<sup>3</sup>Included in Waipu, Mangawhai, Pakiri, Firth of Thames and Maketu coastal IBAs.

Threatened species (IUCN) breeding outside the region recorded in North Eastern waters: Antipodean Albatross (VU), Northern Royal Albatross (EN), Southern Royal Albatross (VU), Salvin's Albatross (VU), White-capped Albatross (NT), Buller's Albatross (NT), Black-browed Albatross (EN), Campbell Albatross (VU), Grey Petrel (NT), White-necked Petrel (VU), Providence Petrel (VU), Mottled Petrel (NT), Gould's Petrel (VU).



Protected area	Designation	Area (km <sup>2</sup> )	Relationship with IBA
Hauraki Gulf	MPA Cable Zones	879	Protected area contained within site
Poor Knights Islands, Mimiwhangata, Cape Rodney - Okakari Point (Goat Island), Tawharanui, Long Bay - Okura, Te Makutu (Waiheke Island), Te Whanganui-A-Hei (Cathedral Cove), Tuhua (Mayor Island), Te Paepae o Aotea (Volkner Rocks).	Marine Reserve/ MPA Marine Park	101.2	Protected area contained within site



Left. Tracking of a female Fluttering Shearwater from Burgess Island, Mokohinau Islands through one year showing the extent of foraging during breeding and movement post-breeding. Source: Graeme Taylor, Matt Rayner.