

Significant Ecological Marine Area Assessment Sheet

Name: Cape Karikari to Rarawa Beach

Summary:

The reef systems of Cape Karikari to Rarawa Beach and adjoining reef edges of soft bottom habitat score as a high ranking ecological area. This reef system is extensive and with large areas of shallow reefs connected to a large and complex deep reef system extending offshore more than 13 kms in places. These complex reefs, coastline and small islands create a significant sequence of high quality marine habitats. In addition, the Cape Karikari to Rarawa Beach creates an ecological sequence and connectivity with important terrestrial conservation areas on the Cape Karikari peninsula and the Moturoa Islands.

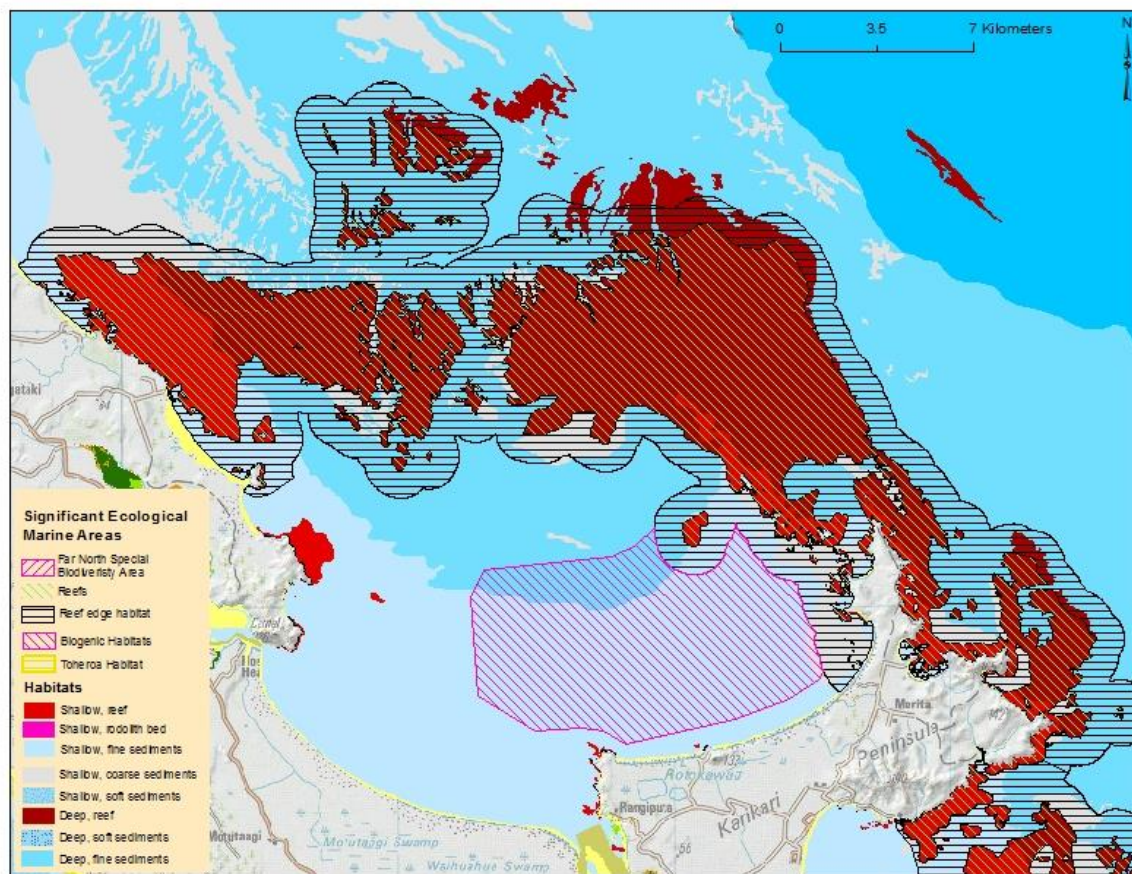


Table 1 Habitat map and mapped significant ecological areas of Cape Karikari to Rarawa Beach

Description:

Cape Karikari to Rarawa Beach is an area of exposed coastline extending from Nugget Point at the entrance to Doubtless Bay to the Moturoa Islands and across the outer part of Great Exhibition Bay to the extensive reefs off shore of Henderson Bay and Rawarawa Beach. The east coast of Northland is part of the Northeastern Biogeographic Region¹ and is generally characterised by series of rocky headlands and steep and ragged shorelines, and a number small

¹ Department of Conservation & Ministry of Fisheries, 2008. Marine Protected Areas: Classification, Protection Standard and Implementation Guidelines.

islands and pinnacles. Cape Karikari to Rarawa Beach is exceptionally diverse and has some of the best examples of coastal rocky reef communities in Northland. The mapped ecological area encompasses the exposed rocky shores and offshore reef areas from Knuckle Point on Cape Karikari and then extending offshore across the northern part of Great Exhibition Bay to the connecting deep and shallow reefs off the coast north of Houhora Harbour entrance to Rarawa Beach.

For this area NIWA as part of an Ocean 20/20 project carried out extensive sonar survey, sediment and biodiversity sampling in 2008-9.² This survey was followed by a regional scale marine habitat mapping project in 2010.³

Oceanography

The Cape Karikari area is very exposed to the oceanic influences of the East Auckland current. Bathymetry off the far extreme of the Cape drops off to 45m depths with steep sloping reefs. This results in strong oceanic influences. This current brings with it a variety of Indo-Pacific larvae. The mix of these surviving subtropical species along with the many endemic species, make these areas ecologically unique.

Ecological Values

There is great diversity in the algal communities that dominate the shallow reef areas ranging from semi sheltered shores with *Carpophyllum sp.* shallow mixed weed zones giving way to the dominant *Ecklonia radiata* forests to the very exposed shores where wave energy is very high and the more exposed algal communities, represented by *Carpophyllum maschalocarpum* and *Lessonia variegata*, make up the shallow mixed weed zone with *Ecklonia radiata* forest below and extending down to 30m.

On Cape Karikari the shallow reef drops to depths beyond 30 m at 150-300m offshore. On the coast from Houhora to Rarawa Beach this distance extends to 2.2 kms offshore. At these depths and beyond the light is insufficient to support the algal forests, so the reef communities become dominated by a diverse filter-feeding encrusting invertebrate community. Sponges play a key role in these communities. This invertebrate community provides protection and food sources for a complex community of marine species and trophic food webs culminating in the top order predators who frequent these biodiversity hotspots and at times become residential. In this area there is very good connectivity between the shallow fringing reefs and large areas of deep reefs. A special aspect of the Cape Karikari to Rarawa Beach reef systems is that they have extensive areas of soft bottom habitats surrounding them.³

A study of Northeast New Zealand reef fish biogeography by Brook⁴ presents the results of a comprehensive survey effort and review of past survey efforts. The reef fish diversity of Cape Karikari is high on the list of Northland coastal sites, with 86 species recorded. This area showed high numbers of subtropical species and is very diverse compared to other regions of New Zealand.

The marine ecology values of the Cape Karikari to Rarawa Beach area and Northland's east coast

² Mitchell, J. et al., 2010. Bay of Islands OS20/20 survey report. Chapter 2: Seafloor Mapping.
<http://www.os2020.org.nz/bay-of-islands-coastal-survey-project/> CHECK THIS REFERENCE

³ Kerr, V. 2009: Marine habitat map of Northland: Mangawhai to Ahipara vers. 1. Northland Conservancy, Department of Conservation, Whangarei. 33 p.

⁴ Brook, F.J. (2002). Biogeography of near-shore reef fishes in northern New Zealand. Journal of the Royal Society of New Zealand 32: 243-274

are summarised in the Nearshore Classification produced by the Department of Conservation⁵. A further and more detailed review of natural features and ecology was completed by NIWA in 2005.⁶ Both publications have comprehensive references covering previous descriptive work done in Northland. The later report summarises some of the local scale habitat mapping work done in the region.

Northland Marine Mammals

Information on the presence and conservation status of marine mammals in relation to Northland's coasts and estuaries has been reviewed by Baker.^{7 8} Thirty-five species of marine mammals are known from Northland waters (within the 12 n ml limit). Some marine mammal species are resident or semi-resident and breed along the Northland coast, and others are transients. Three threatened species are amongst the species most often encountered in inshore waters: Bryde's whales *Balaenoptera edni*, bottlenose dolphins *Tursiops truncatus*, and Orca *Orcinus orca*. The common dolphin *Delphinus delphis*, which is not threatened, is also commonly seen in the Cape Karikari area. Less common, but occasionally encountered in the Eastern Bay of Islands are pilot whales *Globicephala spp.*, false killer whales *Pseudorca crassidens*, and some of the large baleen whales. New Zealand fur seals are present in small numbers in the Cape Karikari to Rarawa Beach area as transient visitors.

Assessment of Ecological Significance

Table 1 Ranking score of ecological significance of Cape Karikari to Rarawa Beach Reefs⁹

Cape Karikari to Rarawa Beach Reefs: Assessment of Ecological Significance			Rank
Overall Ranking		Notes	High
Representation	supports most taxa expected for habitat type	High diversity of marine species	H
	large example of its type	Good size example of complex sequence of habitats.	H
Rarity and Distinctiveness	supports indigenous species threatened, at risk, or uncommon, nationally or within the relevant ecological scale	Important area for threatened marine mammals species and rare subtropical species	H
	supports species endemic to the Northland-Auckland region or at distributional limits within the	Level of endemism of marine species not well	NA

⁵ Department of Conservation, 2005. Near Shore Marine Classification System. Compiled by Vince Kerr for Northland Conservancy, Department of Conservation. Revised September 6, 2005. http://www.marinenz.org.nz/nml/files/documents/3_northland-mpa.html

⁶ Morrison, M., 2005. An Information Review of the Natural Marine Features and Ecology of Northland. Prepared for the Department of Conservation. NIWA Client Report: AKL 2005-50.

⁷ Baker, A. N., 2005. Sensitivity of marine mammals found in northland waters to aquaculture activities. Report to the Department of Conservation, Northland Conservancy. A. N. Baker Cetacean Biology Consultant, Kerikeri.

⁸ Baker, C.S, Chilvers, B.L., Constantine, R., DuFresne, S., Mattlin, R.H., van Helden, A. & Hitchmough, R., 2010. Conservation status of New Zealand marine mammals. New Zealand Journal of Marine and Freshwater Research, 44:2, 101-115.

⁹ Table 1 details the ranking criteria and scoring that was used to determine the overall high ranking given to the ecological significance of this area. The criteria used have been adopted from Appendix 5 of the Northland Regional Council Proposed Policy Statement. See reference to Methodology report or other council documents to call up

	Northland region	studied	
	distinctive of a naturally restricted occurrence	Diversity of habitats is exceptional and projection of topography into deep waters and reef systems	H
	developed as a result of unusual environmental factor(s) or is part of an ecological unit that occurs within an originally rare ecosystem	Diversity of habitats is exceptional	H
	identified as nationally or regionally rare habitat(s) in MPA Plan	Diversity and quality of habitats is recognised as regionally significant	H
Diversity and Pattern	high diversity of indigenous ecosystem or habitat types	Diversity of habitats is exceptional	H
	high diversity of indigenous taxa	One of the better east coast sites for high diversity	H
	its composition reflects the existence of diverse natural features or ecological gradients	Very complex ecological gradients	H
	contains intact ecological sequences	Excellent examples	H
Ecological Context	provides or contributes to ecological linkages, networks, buffering functions	Has complete marine habitat sequences and connects to important terrestrial conservation area with diverse habitats	H
	supports the natural functioning of freshwater or coastal ecosystems	Some connection with small streams and wetlands	M
	supports life stages of indigenous fauna	High diversity well supported by habitats	H
Assessed by: Vince Kerr		Date: September 2015	
Information Source(s) <i>see below</i>			2-7
Reliability of Information <i>see below</i>			++
Rank (overall score) H = high, M = moderate, L = low, DD = data deficient, R = recommended for further investigation			
Information Source(s) 1 = quantitative report, 2 = qualitative report, 3 = habitat map or classification, 4 = expert opinion, 5 = personal communication, 6 = anecdotal information, 7 = visit and observation			
Reliability of Information expressed as a scale of confidence ranging from high (+++) to low confidence (---)			
Criteria Rank - score for each individual criteria) H = high ranking, M = moderate ranking, L = low ranking, DD = data deficient, R = recommended for further investigation, NA = not assessed for this criteria			