Significant Ecological Marine Area Assessment Sheet

Name: Toheroa Beaches, West Coast

Summary:

Three beaches on the West Coast have been ranked high in ecological significance: Ninety Mile Beach, Mitimiti Beach and Rapiro Beach. The Toheroa *Paphies ventricosa* beaches were once some of the most productive shellfish beaches in the world and represent a special habitat of this type. Populations of this iconic species are now severely depleted but efforts are underway to restore these shellfish communities. Ninety Mile Beach is also an important spat collecting area for the commercial and ecologically significant green-lipped mussel.

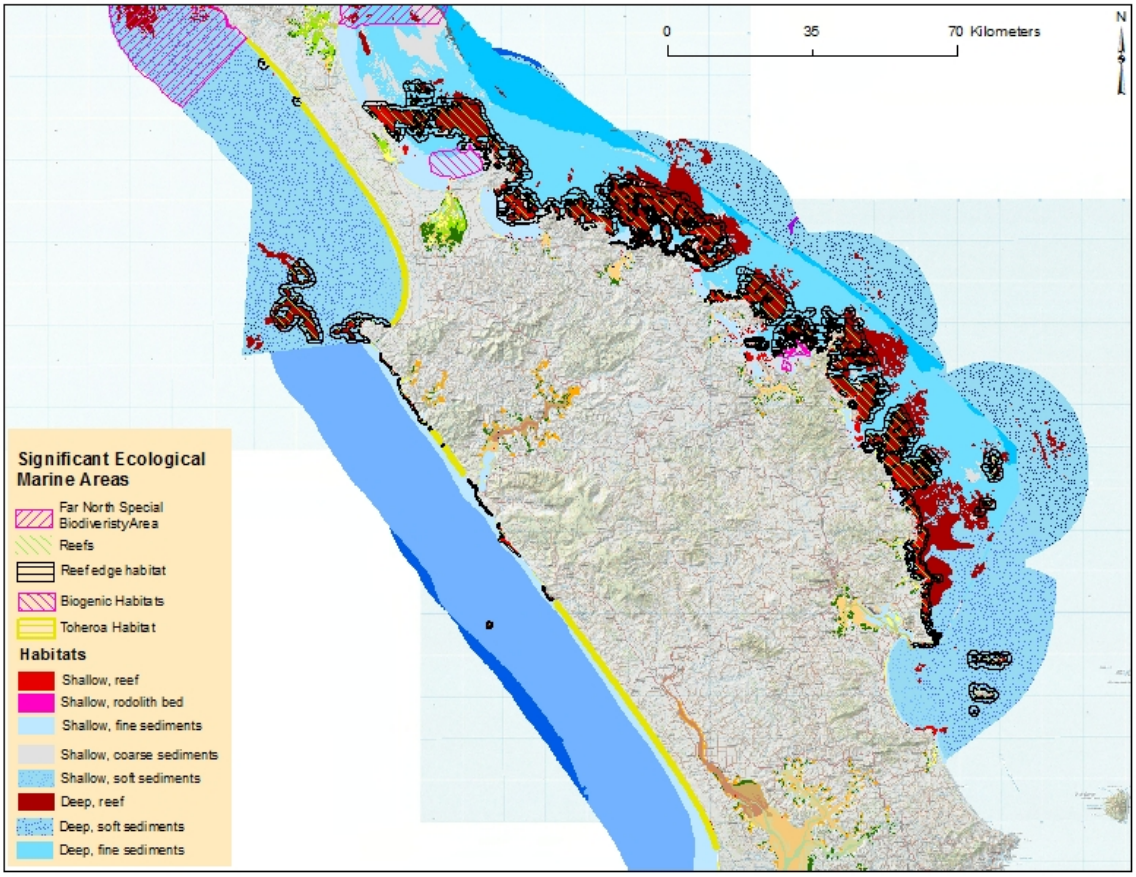

Figure 1 Habitat map and mapped significant ecological areas making up the habitat and range of the Toheroa on the West Coast.

Description:

Toheroa Beaches, West Coast

The west coast of Northland (within the Central Biogeographic Region) has a relatively smooth outline, with several extensive shallow harbours opening via narrow mouths to the sea. Significant harbours include the Herekino, Whangape, Hokianga and the Kaipara Harbours. The west coast is less sheltered then the east coast; it is exposed to the onshore oceanic swells of the Tasman Sea, causing a high degree of turbulence, turbidity and sediment movement in the intertidal and shallow shelf habitats. The seafloor along much of the west coast of Northland is gently sloping and sandy, with the 50 m contour located about 3 - 14 km offshore. Most of the coastal reefs drop off to sand very quickly, but deeper subtidal reefs are widespread between Kawerua and Hokianga

Harbour. Rocky banks extend up to 30 - 45 m depth off from Ahipara, and up to 6 m depth off from Cape Maria van Diemen. The coast is influenced by the West Auckland Current, and is dominated by species with cooler water affinities.

A view looking north at Mitimiti Beach. Note the rich layer of concentrated plankton that has washed up with the tide. The combination of large fetch, long periods of onshore wind and productivity of the coastal waters combine to create this tea of extremely rich food for the likes of shellfish and mullet feeding along these beaches. Photo credit: Vince Kerr.

Ecological Values

Populations of Toheroa along the extent of their Northland habitat have been regularly surveyed and are believed to be at very low levels generally especially in the larger age classes. In the most recent survey only Rapiro Beach had reliable recruitment to the population taking place. [1]

Although not well known there is series of Toheroa beds on the Mitimiti Beach which has been surveyed. It was never significant as a commercial bed but is highly significant to the local maori community. [2]

The green-lipped mussel (*Perna canaliculus*) is the most valuable aquaculture species in New
Zealand, valued at $260 million of production in 2009. The industry is almost 100%

[1] Williams, J.; Sim-Smith, C.; Paterson, C., 2013. Review of factors affecting the abundance of toheroa *Paphies ventricosa*. New Zealand Aquatic Environment and Biodiversity Report No. 114. 76 p.

[2] Morunga, R and Bedford, C. 2001. Population, location and relocation of toheroa along Mitimiti beach. Complied by for Nga Ngaru o Hokianga Takiwa Trust. (unpublished) Bay of Plenty Polytech Marine Studies.

reliant on seed mussels, or spat, caught from the wild. The majority of these wild seed mussels (more than 80%) are harvested from fisheries management area GLM 9, mostly from Ninety Mile Beach in the far north of the North Island. At certain times of the year, drifting spat material arrives in the surf zone just offshore from the beach. The material consists of detached seaweeds and hydroids, as well as other debris, to which the mussel spat are attached, often at more than a million mussels per kilogramme of material. An excess of 100 tonnes of mussel spat material is harvested from the beach each year and distributed to mussel farms around New Zealand. [3]

The marine ecology values of Toheroa Beaches, West Coast are summarised in the Nearshore Classification produced by the Department of Conservation[4]. A further and more detailed review of natural features and ecology was completed by NIWA in 2005.[5] 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. More recently regional scale marine habitat maps have been completed by Kerr. [6] [7]

Marine Mammals

New Zealand fur seals are present in small numbers on the Toheroa Beaches, West Coast

Assessment of Ecological Significance

Table 1 Ranking score of ecological significance of Toheroa Beaches West Coast [8]

Toheroa Beaches West Coast x Estuary Shorebird Values: Assessment of Ecological Significance			**Rank**
Overall Ranking		**Notes**	**High**
Representation	supports most taxa expected for habitat type	Productive shellfish habitat	M
	large example of its type	large example of its type	H
Rarity and Distinctiveness	supports indigenous species threatened, at risk, or uncommon, nationally or within the relevant ecological scale	Not Assessed commercial species not part of Threatened Species Classification Scheme	NA
	supports species endemic to the Northland-Auckland region or at distributional limits within the Northland region	Is most of the important range of this species	H

[3] Alfaro, A.C.; Jeffs, A.G.; Gardner, J.P.A.; Bollard Breen, B.A.; Wilkin, J., 2011. Green-lipped Mussels in GLM 9 New Zealand Fisheries Assessment Report 2011/48.

[4] 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

[5] 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.

[6] Kerr, V., 2015. Marine habitat map of Northland's west coast, (draft). Unpublished GIS project in progress. Kerr & Associates, Whangarei, Northland. Email: vince@kerrandassociates.co.nz.

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

[8] 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

	distinctive of a naturally restricted occurrence	Highly productive shellfish beach	H
	developed as a result of unusual environmental factor(s) or is part of an ecological unit that occurs within an originally rare ecosystem	Not Assessed	NA
	identified as nationally or regionally rare habitat(s) in MPA Plan	Not Assessed	NA
Diversity and Pattern	high diversity of indigenous ecosystem or habitat types	Not Assessed	NA
	high diversity of indigenous taxa	Not Assessed	M
	its composition reflects the existence of diverse natural features or ecological gradients	Not Assessed	NA
	contains intact ecological sequences	Not Assessed	NA
Ecological Context	provides or contributes to ecological linkages, networks, buffering functions	Not Assessed	NA
	supports the natural functioning of freshwater or coastal ecosystems	Not Assessed however there is a connection bed location and localised fresh water streams and seepage – not fully understood	NA
	supports life stages of indigenous fauna	Provides support for shellfish community and bird species	H

Assessed by: Vince Kerr	Date: September 2015
Information Source(s) *see below*	**1-7**
Reliability of Information *see below*	**+++**

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