

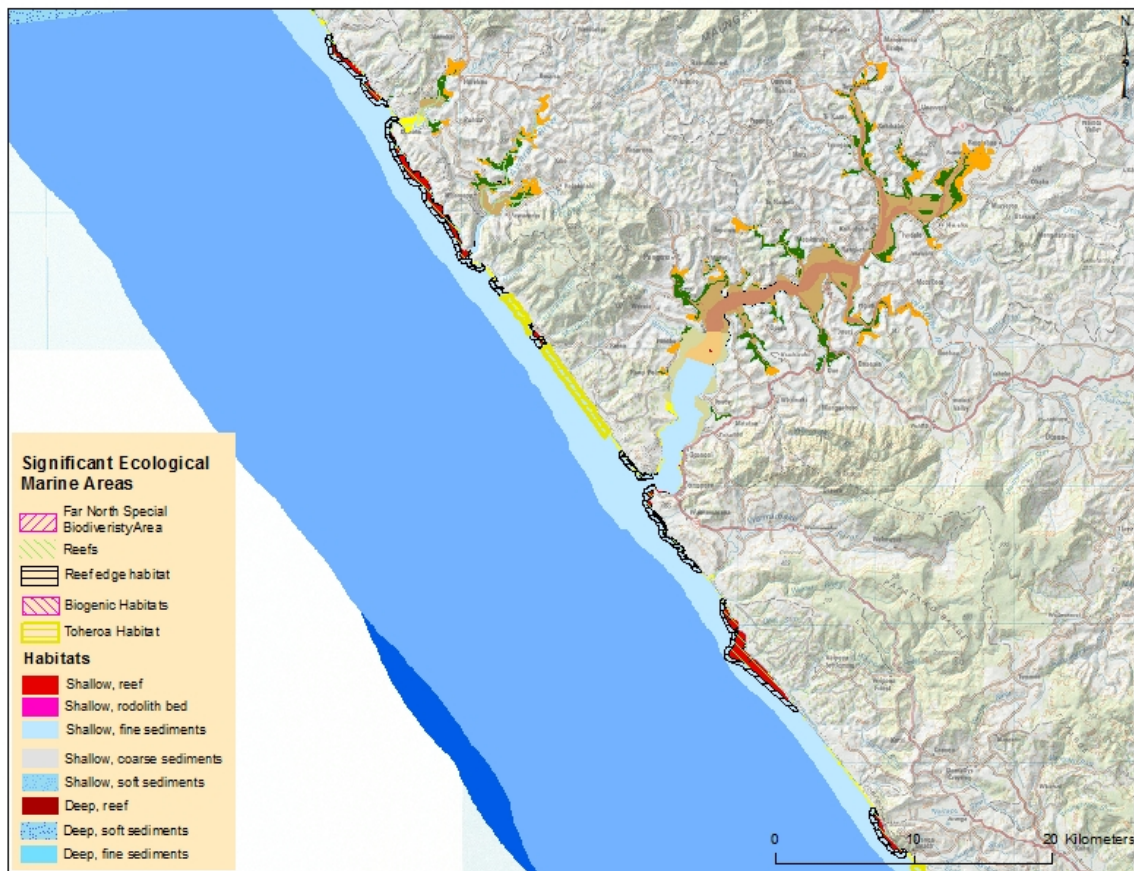
Significant Ecological Marine Area Assessment Sheet

Name: West Coast Shallow Reefs

Summary:

West Coast Shallow Reefs (Maunganui Bluff, Kawerua, Hokianga entrance & coast, Whangape coast and Herekino coast), collectively are assigned a high ecological ranking. With the exception of Kawerua, these coastal fringing reefs are not well studied but within the Central Biogeographic Region's west coast stretch they are acknowledged to be important northern examples of this habitat type. These shallow reefs are all the more important because of their size and number, which is distinctive and rare in this Bioregion.

Habitat map and significant ecological areas of the west coast shallow reefs



Description:

The west coast of Northland (within the Central Biogeographic Region, which runs from Tauroa Head to Taranaki) 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. This is a very exposed coast with consistently high wave energy. The seafloor along much of the west coast of Northland is gently sloping and sandy, with the 50 m contour being 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 and repeated at Whangape and Herekino further north.

An aerial view of the extensive rocky shore stretching northwest from the entrance of the Whangape Harbour.



View looking southwest from Kawerua to Maunganui Bluff where the next segment of rocky shoreline begins. Photo credit: DOC.



An aerial view of the rocky shoreline and intertidal rock platforms at Kawerua. In some places the shallow reefs extend up to ½ kilometres offshore.



Oceanography

The area is influenced by the north-flowing Westland Current and occasionally in summer months by the south-flowing West Auckland Current. Sea surface temperatures range between 15–22°C. This is a high wave energy coast with waves of 1.5 – 2.5 m on average. There is littoral sand movement longshore to the north, largely driven by a Southern Ocean derived swell. Due to the colder water masses moving north along this coast its marine species are dominated by species with cooler water affinities.

Ecological Values

In the 1970s and 80s the Auckland University Field Club had a small research station at Kawerua. There are a series of descriptive papers published in their journal *Tane*. In a paper by Dickson in 1986 the subtidal habitats of Kawerua were described and mapped.

¹

The subtidal reef fish fauna outside the Hokianga Harbour is low in diversity compared with other sites in northern New Zealand. There is a predominance of widespread species and an absence of subtropical species. Species richness appears to be temperature related and species composition and richness between exposed coastal sites and sheltered harbour mouth sites is similar. Descriptions of the fauna and flora at Kawerua reflect the extreme exposure there and influence of cold waters. Algal communities reflect a composition more similar to Wellington than they do to Northland's east coast. Fish communities also reflect a complete absence of the subtropical species so common on Northland's east coast. The fish community appears to be diverse when compared to colder areas in more southern regions of New Zealand. The study of Northland fish biogeography completed by Brook ², had study sites on reefs of the Hokianga entrance, supporting this observation.

¹ Dickson, P.K.1986: A survey of marine habitats at Kawerua.*Tane*31:19-30.

² 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

The extent of the fringing reefs on this coast and the depth at which they transition to sand bottom habitats are not well known and require further study. At Kawerua, Dickson reports a transition to sand habitat at 6-8m depth but some of the reefs at the Hokianga entrance are known to extend further offshore to depths of at least 15m.

The marine ecology values of West Coast Shallow Reefs are summarised in the Nearshore Classification produced by the Department of Conservation³. A further and more detailed review of natural features and ecology was completed by NIWA in 2005.⁴ 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 progressed by Kerr⁵

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.^{6 7} 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. There is a paucity of sightings of marine mammals on the West Coast, largely due to the remote nature of these waters. Three threatened species are amongst the species most likely to be encountered in inshore waters: Bryde's whales *Balaenoptera edni*, bottlenose dolphins *Tursiops truncates*, and Orca *Orcinus orca*. The Hector's dolphin *Cephalorhynchus hectori* population off the west coast is ranked as critically endangered. A marine mammal sanctuary has been established for this species extending offshore to the 12 mile limit running south from Maunganui Bluff.

There is a historic record of Orca and Risso's dolphin *Grampus griseus sightings* at Kawerua. The common dolphin *Delphinus delphis*, which is not threatened, is also commonly seen in estuaries and along the coast. Transient New Zealand fur seals are reported occasionally in small numbers

Assessment of Ecological Significance

Table 1 Ranking score of ecological significance of West Coast Shallow Reefs⁸

West Coast Shallow Reefs x Estuary Shorebird Values: Assessment of Ecological Significance	Rank
--	------

³ 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

⁴ 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.

⁵ 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.

⁶ 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.

⁷ 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.

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

Overall Ranking		Notes	High
Representation	supports most taxa expected for habitat type	Diversity is likely to be large for its type but only two sites studied	DD, R
	large example of its type	These reefs good example but not described as large	M
Rarity and Distinctiveness	supports indigenous species threatened, at risk, or uncommon, nationally or within the relevant ecological scale	Orca has been cited there but use is poorly known NZ Dotterel use nearby beaches	DD, R
	supports species endemic to the Northland-Auckland region or at distributional limits within the Northland region	Level of endemism is not well known but these reefs system are the northern extreme of this Bioregion	M, R
	distinctive of a naturally restricted occurrence	Shallow rocky reefs are rare in this entire Bioregion some important examples	H
	developed as a result of unusual environmental factor(s) or is part of an ecological unit that occurs within an originally rare ecosystem	Very complex geological history and rare occurrence on this coast and in this Bioregion	H
	identified as nationally or regionally rare habitat(s) in MPA Plan	Not evaluated as of yet	R
Diversity and Pattern	high diversity of indigenous ecosystem or habitat types	Expected to be high for this habitat and Bioregion but only documented in two sites.	M
	high diversity of indigenous taxa	Expected to be high for this habitat and Bioregion but only documented in two sites.	DD, R
	its composition reflects the existence of diverse natural features or ecological gradients	Expected to be high for this habitat and Bioregion	DD, R
	contains intact ecological sequences	Expected to be high for this habitat and Bioregion	DD, R
Ecological Context	provides or contributes to ecological linkages, networks, buffering functions	Expected to be high for this habitat and Bioregion	DD, R
	supports the natural functioning of freshwater or coastal ecosystems	Expected to be high for this habitat and Bioregion	DD, R
	supports life stages of indigenous fauna	Expected to be high for this habitat and Bioregion	M,R
Assessed by: Vince Kerr		Date: September 2015	
Information Source(s) <i>see below</i>			1-7
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