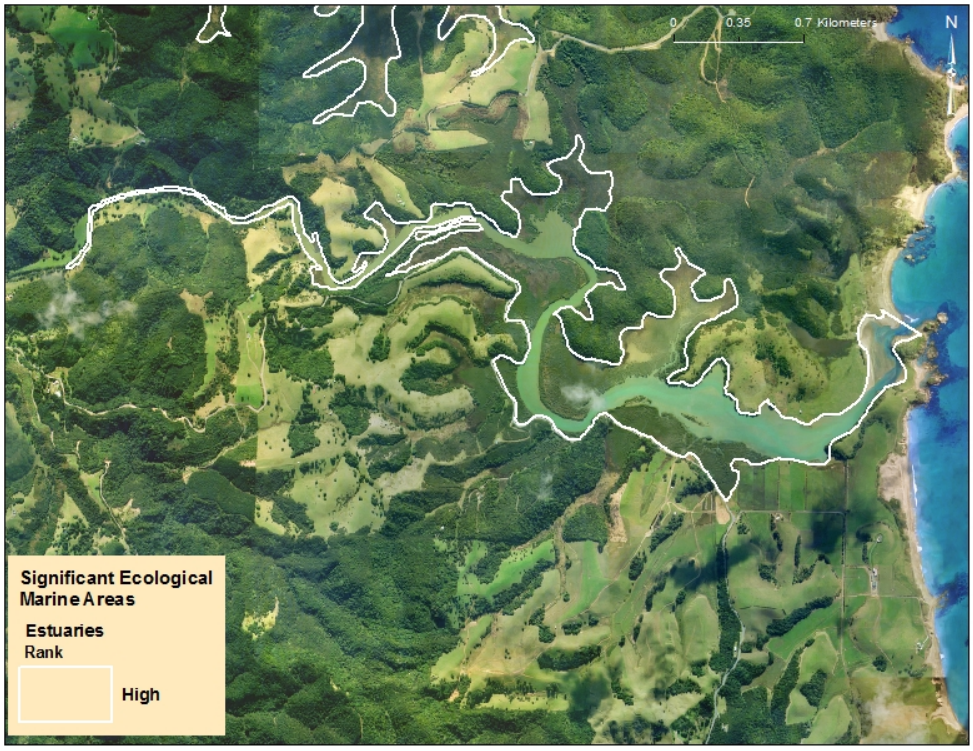
Significant Ecological Marine Area Assessment Sheet

Name: Horahora Estuary Marine Values

Summary:

Horahora Estuary as a whole has been given a high ranking of ecological significance for marine values. It is an excellent example of an east coast small estuary. Horahora Estuary has small areas of sandy tidal flats and beaches towards its entrance and extensive areas of channel and significant areas of intact mangrove saltmarsh sequences. The clean sandy tidal flats have healthy cockle beds *Austrovenus stutchburyi*. Pipis *Paphies australis,* can be found on some of the channel edges and channel bottoms. Combined, these habitats perform important ecological roles as nursery and feeding areas for a wide variety of marine life. These habitats also play a vital role in maintaining water quality and provide connectivity between fresh water ecosystems and the coastal waters.

Aerial photo of Horahora Estuary *Photo Credit: Apple Maps*



Description:

The Horahora Estuary is situated just to the north and west of Pataua, north of Bream Head on the Whangarei coast. While this estuary is smaller than neighbouring Pataua, Taiharuru and Ngunguru estuaries it has a full range of interconnecting marine habitat types[1]. These habitats include saltmarshes, mangroves, intertidal flats and extensive channels. Each of these habitats contain plant and animal species that contribute to the ecological values.

The entrance to estuary is bordered by rocky reef to the east and a secluded sand beach and small sand spit to the west. The estuary itself is predominantly shallow but extends

[1] Kerr, V.C., 2010. Marine Habitat Map of Northland: Mangawhai to Ahipara Vers. 1. Technical Report, Department of Conservation, Northland Conservancy, Whangarei, New Zealand.

well into the surrounding hilly terrain with several arms draining side catchments. The mangrove area and connected saltmarsh include some excellent examples of this habitat and make up the largest part of this small estuary.

Farming intensity in the catchment has been decreasing in favour of lifestyle blocks, which are slowly growing in number. There is also substantial Maori owned land in the catchment with many areas of reverting bush fringing the estuary. The estuary's saltmarsh and mangrove sequence is contiguous with the Whakareora Coastal Forest.

Improving riparian protection in the catchment would greatly enhance the connectivity between estuarine habitats, freshwater wetlands, stream corrridors and the bush covered fringes of the estuary. The marine wetland/marsh group of shorebirds will benefit directly from these changes. Estuarine habitats and species generally will benefit from the combined effects of buffering sediments and nutrients entering the marine envorinment. [2]

A 3D aerial image looking at Horahora Estuary from the sea. The array of habitats can be clearly seen; shallow rocky reefs at the entrance clean sand channels and shellfish beds extending up to more muddy channels and mangrove and saltmarch sequences.

[2] Morrison, M.A.; Lowe, M.L.; Parsons, D.M.; Usmar, N.R.; McLeod, I.M., 2009. A review of land-based effects on coastal fisheries and supporting biodiversity in New Zealand. *New Zealand Aquatic Environment and Biodiversity Report No. 37.* 100 p.

A significant shag colony is situated near the entrance to the Horahora Estuary along a rocky shore. Photo Credit: Vince Kerr

A view of productive cockle beds looking towards the entrance to the estuary. Photo Credit: Vince Kerr

Mid estuary sand/mud flat looking toward the upper reaches of the Estuary. Productive cockle beds. Photo Credit: Vince Kerr

An example of the high quality salt marsh at the upper end of the estuary. Note connectivity with regeneration native forest. Photo Credit: Vince Kerr

Ecological Values

Horahora is a relatively well-functioning small estuary that is in a long term period of recovery from the impacts of intensive deforestation followed by pastoral farming of the last 200 years. Today the tidal flats have healthy shellfish beds. The buffering effect of the extensive areas of mangroves and saltmarsh should be seen as very valuable in their role of maintaining high water quality that the estuary enjoys. The shellfish beds make a major contribution to these processes as well as filtering plankton and nutrients from the water column with each tide cycle. Horhora Estuary can be expected to play an important role as a nursery and feeding area for coastal fishes. [3]

Assessment of Ecological Significance

Table 1 Ranking score of ecological significance of Horahora Estuary[4]

Horahora Estuary Shorebird Values: Assessment of Ecological Significance			**Rank**
Overall Ranking		**Notes**	**High**
Representation	supports most taxa expected for habitat type	Shellfish beds are typical of this habitat and good examples	M
	large example of its type	Not a large example of its type	L
Rarity and Distinctiveness	supports indigenous species threatened, at risk, or uncommon, nationally or within the relevant ecological scale	Not Assessed	NA
	supports species endemic to the Northland-Auckland region or at distributional limits within the Northland region	Not Assessed	NA
	distinctive of a naturally restricted occurrence	Typical small east coast estuary	M
	developed as a result of unusual environmental factor(s) or is part of an ecological unit that occurs within an originally rare ecosystem	Typical small east coast estuary	M
	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	Typical community of type	M
	high diversity of indigenous taxa	Typical community of type	M
	its composition reflects the existence of diverse natural features or ecological gradients	Typical community of type	M
	contains intact ecological sequences	Sequences outstanding from esturine entrance rocky reefs to salt marsh	H

[3] Morrison, M.A.; Jones, E.G.; Parsons, D.P.; Grant, C.M., 2014. Habitats and areas of particular significance for coastal finfish fisheries management in New Zealand: A review of concepts and life history knowledge, and suggestions for future research. New Zealand Aquatic Environment and Biodiversity Report No. 125. 202 p.

[4] 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

Ecological Context	provides or contributes to ecological linkages, networks, buffering functions	Shellfish beds play very important buffering and ecological role in estuary	H
	supports the natural functioning of freshwater or coastal ecosystems	Shellfish beds play very important buffering and ecological role in estuary ,but small example	H
	supports life stages of indigenous fauna	Provides important support for various life stages of benthic invertebrates, shorebirds and nursery for coastal fish species	H

Assessed by: Vince Kerr	Date: September 2015
Information Source(s) *see below*	**2,3,4,5,6 ,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