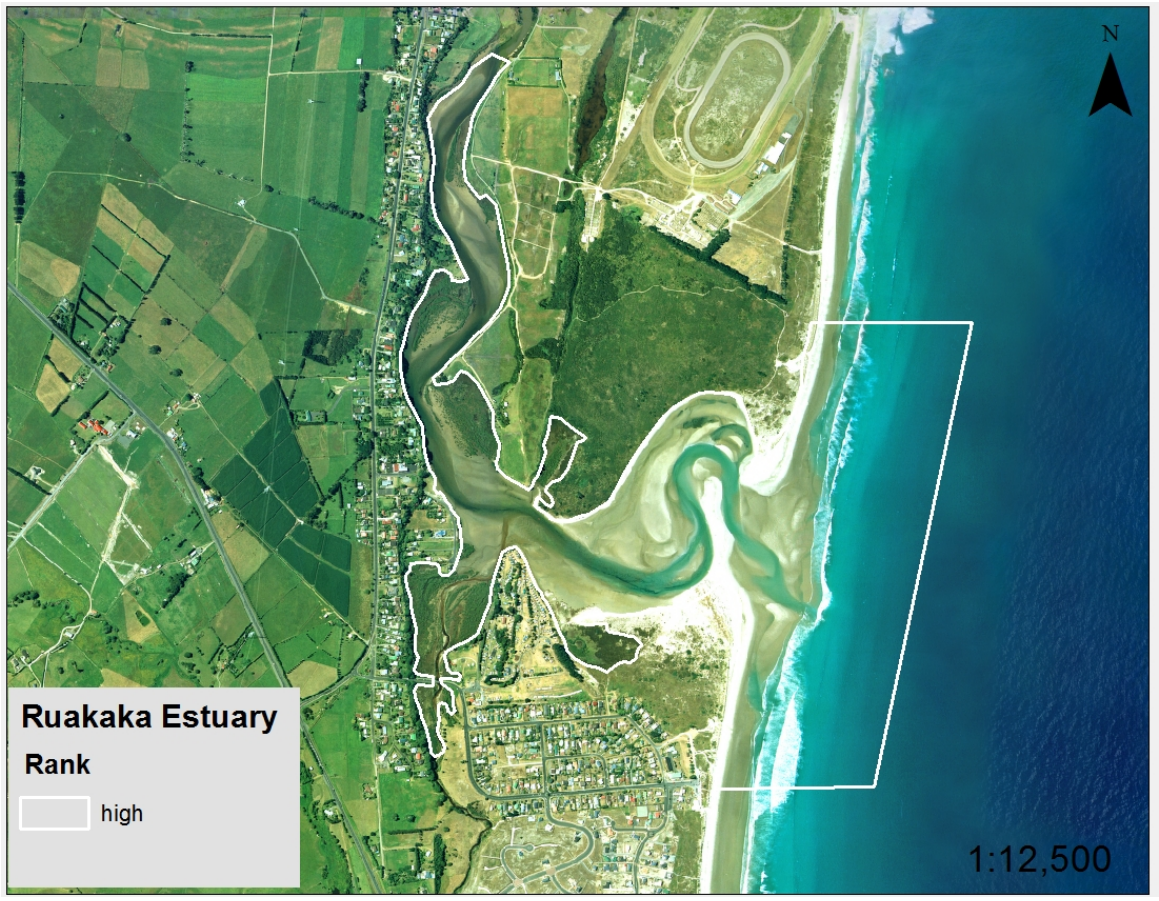
Significant Ecological Marine Area Assessment Sheet

Name: Ruakaka Estuary Marine Values

Summary:

The Ruakaka Estuary has been given a high ranking of ecological significance for marine values. The estuary has several areas of shallow tidal flat areas with healthy shellfish communities which are good examples of this important habitat in a small east coast estuary.

Aerial photo of Ruakaka Estuary, black lines depict boundary of the estuarine SEA.

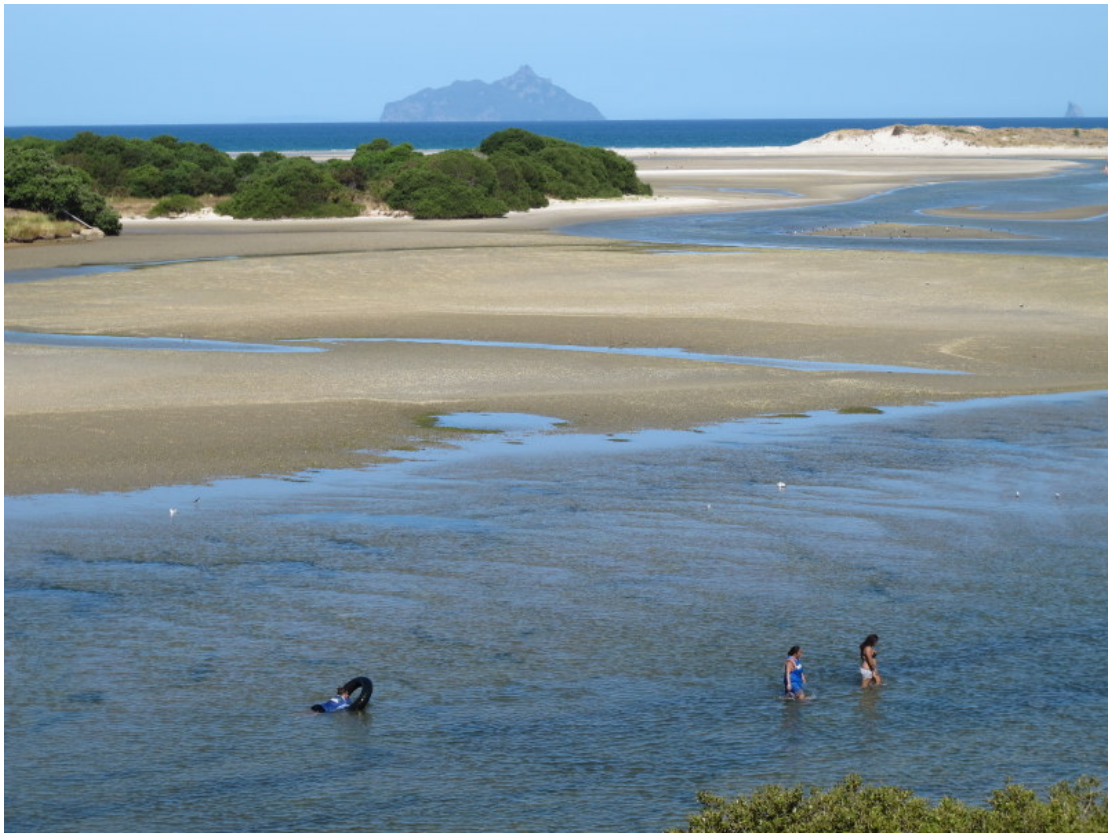


Description:

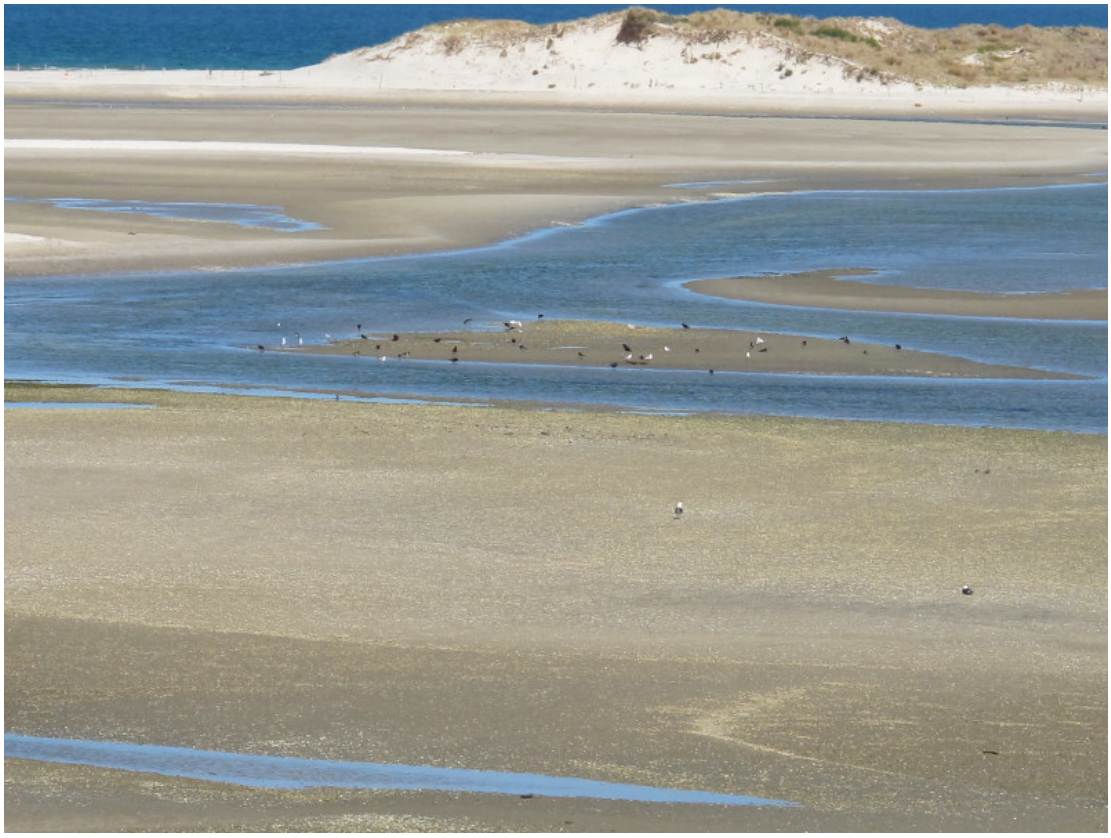
The Ruakaka Estuary is situated south of Whangarei along the Bream Bay coast on the east coast. It is a small estuary, at approximately 72 ha and has a range of estuarine habitat types typical of small east coast estuaries[1]. These habitats include small patches of saltmarshes and mangroves. Most of the estuary is made up of intertidal flats, shifting sand bars and shallow channels. Each of these habitats contains plant and animal communities; all contribute to the ecological values supporting marine and bird life there and in the coastal environment. The estuary generally has narrow margins of riparian protection on the harbour's edges and catchment.

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

An example of the clean sand tidal flats at the Ruakaka Estuary that are productive cockle bed habitats and important bird feeding areas. This view looks down the estuary towards the entrance. Photo Credit: Vince Kerr



Birds feeding on the tidal flats of Ruakaka Estuary. Photo Credit: Vince Kerr



The Ruakaka Estuary's habitats would greatly benefit from better riparian management, wetland restoration and reforestation in the catchment or riparian margins. [2] Patuharekeke hapu have identified this estuary as having high values to the hapu and have declared the estuary to be an important Mahinga Mataitai (place of traditional food gathering).

Ecological Description

Two tidal flats of the middle and lower part of the of the estuary are a sandy soft bottom intertidal habitat. These areas have extensive cockle beds, *Austrovenus stutchburyi,* which have been monitored as part of the Northland Regional Council estuaries monitoring program [3] and more recently by NIWA as part of the regional shellfish monitoring program. [4] In this report, the cockle community is described as productive and in good health. Cockles are an indicator of a healthy estuarine soft bottom community. They are generally associated with high benthic invertebrate diversity and substrates that are not heavily impacted by sedimentation. These shellfish communities play a key role in filtering nutrients and plankton from the water column. This in turn has beneficial effects on water clarity and productivity of various algal communities that make up the biodiversity of the estuary. These shellfish and the other associated benthic invertebrates are also a major food source for shorebirds and a significant nursery and feeding area for many coastal fish species. [5]This is a dynamic area in terms of tidal currents, changing water masses with excellent tidal flushing of oceanic waters. The area has high wader and sea bird use indicating good levels of biological activity. Shellfish are collected locally on these tidal flats, (V. Kerr pers. obs.). There are several small areas of salt marsh and mangrove fringes along channels.

Assessment of Ecological Significance

Table 1 Ranking score of ecological significance of Ruakaka Estuary[6]

Ruakaka Estuary Marine 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

[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.

[3] NRC, 2008. Ruakaka Estuary, Estuary Monitoring Program. A technical report prepared for the NRC.

[4] Berkenbusch, K.; Neubauer, P., 2015. Intertidal shellfish monitoring in the northern North Island region, 2014–15. New Zealand Fisheries Assessment Report 2015/59. 110 p.

[5] 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.

[6] 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

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	L
	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	L
	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	Shellfish bed typical community of type	M
	high diversity of indigenous taxa	Shellfish bed typical community of type	M
	its composition reflects the existence of diverse natural features or ecological gradients	Not Assessed	NA
	contains intact ecological sequences	Intact estuaries of clean sand tidal flats tidal channels, salt marsh and mangrove on channel edges.	H
Ecological Context	provides or contributes to ecological linkages, networks, buffering functions	Shellfish beds play very important buffering and ecological role in estuary, this estuary includes connections to small salt marsh and mangrove areas significant at the scale of this estuary	H
	supports the natural functioning of freshwater or coastal ecosystems	Shellfish beds saltmarsh and mangrove areas play important buffering and ecological roles in this estuary	H
	supports life stages of indigenous fauna	Provides important support for 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*	**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 criterion