

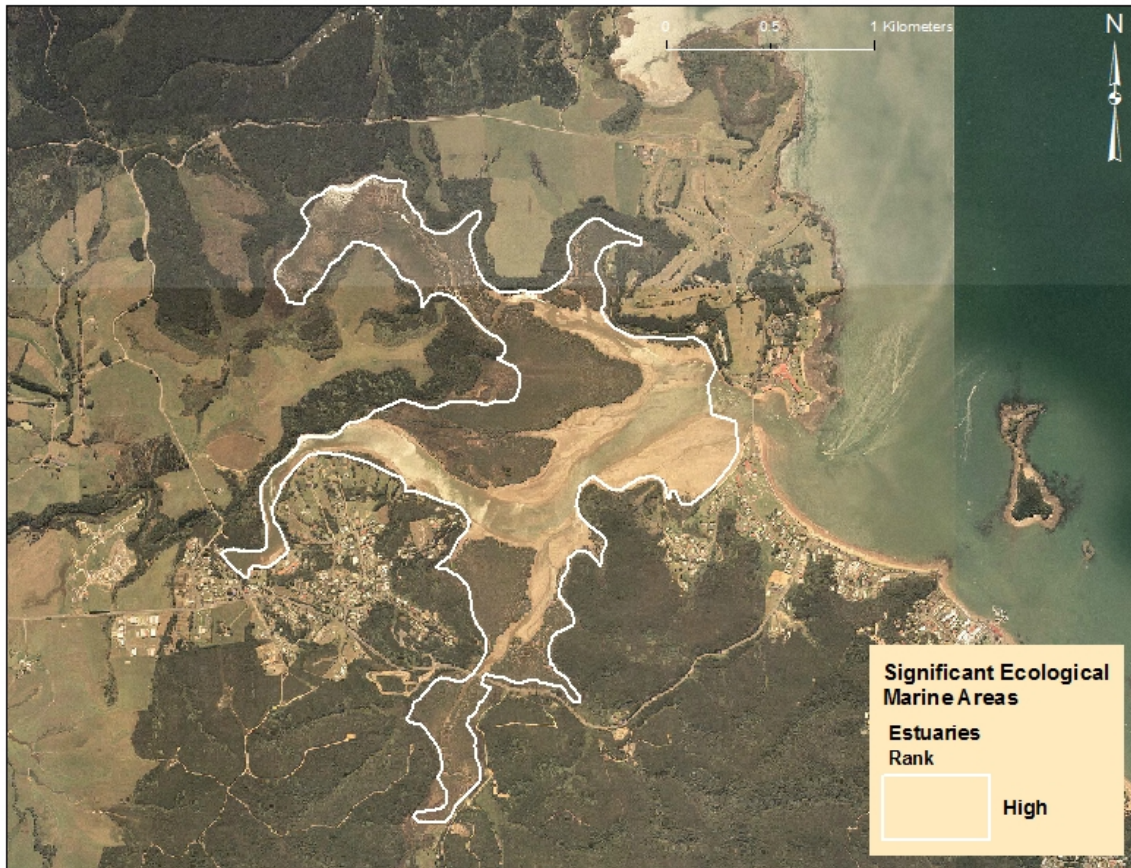
# Significant Ecological Marine Area Assessment Sheet

Name: Waitangi Estuary Marine Values

## Summary:

Waitangi Estuary as a whole has been given a high ranking of ecological significance for marine values. Waitangi Estuary has an array of estuarine habitats ranging from tidal sand flats and subtidal channels to extensive mangrove saltmarsh sequences; the latter make up the bulk of the estuary. Tidal flats in the lower part of the estuary have established shellfish beds. Taken as a whole, the estuary plays an important role in buffering the impacts of sediments and nutrients coming down the catchment and provides ecological linkages between the coastal waters and marine biodiversity, the estuarine habitats and fringing native bush and freshwater streams. The combination of intact habitats are likely to have a significant impact on maintaining water quality of the waters passing through this small estuary. <sup>1</sup>

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



<sup>1</sup> 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.

## Description:

The Waitangi Estuary is situated just to the north of Paihia in the central area of the inner Bay of Islands. Waitangi Estuary has a full range of interconnecting marine habitat types<sup>2</sup>. These habitats include saltmarshes, mangroves, intertidal flats and subtidal channels emptying out into the inner Bay of Islands. Each of these habitats contains distinctive plant and animal communities contributing to the ecological values.

The extent of good quality riparian margins along this estuary is notable; nearly the entire margin of the estuary is in regenerating native forest under active conservation management. This is not the case with the wider catchment, in which intensive livestock farming is the predominant land use. The estuary's mangrove and saltmarsh systems extend up the catchment and connect with small wetland areas and freshwater streams enhancing the value and ecological connectivity between estuarine habitats, freshwater wetlands, stream corridors and the bush covered fringes.

*A 3D aerial image of Waitangi Estuary looking from the sea. The Waitangi Estuary has excellent habitat sequences of fringing rocky reef near the entrance, clean sand tidal flats with productive cockle beds, extending up the estuary to mangrove and salt marsh habitats.*



## Ecological Values

Waitangi is a relatively well-functioning small estuary that is in a long term period of recovery from the impacts of intensive deforestation followed by the logging and pastoral farming of the last 200 years. Today the tidal flats have healthy shellfish beds which are monitored as part of a ongoing study of Northland shellfish beds by NRC. <sup>3</sup> The 2012 NRC monitoring report provides an extensive background to the catchment land uses and reviews previous ecological investigations carried out on the estuary. The monitoring

<sup>2</sup> Kerr, V.C., 2010. Marine Habitat Map of Northland: Mangawhai to Ahipara Vers. 1. Technical Report, Department of Conservation, Northland Conservancy, Whangarei, New Zealand.

<sup>3</sup> Griffiths, R., 2013. Northland Regional Council Estuary Monitoring Programme: Waitangi Estuary. A technical report of the Northland Regional Council. Whangarei.

program reports on sediment classification, presence of heavy metals and nutrients and benthic invertebrate communities of the estuary. In summary the estuary could be described as somewhat enriched and muddy due to the history of land use in the catchment. However the biological communities are generally diverse and productive for this habitat type. The shellfish beds cover much of the sandy tidal flats on either side of the caseway near the entrance to the estuary. Shellfish are very active filtering plankton and nutrients from the water column with each tide cycle. Waitangi estuary is a shallow estuarine system with the majority of the volume of the estuary emptying out of the system with each tide. The estuary has two main arms, with several smaller side arms, and is characterised by intact sequences of mangrove forests and saltmarshes and shallow subtidal channels. Most of the upper arms have good riparian edge environments in native regenerating forest, adding greatly to the ecological value of the estuary. Waitangi Estuary's combination of estuarine habitats plays an important role in buffering and filtering sediment and nutrients that come into this estuary prior to mixing with the waters of the central Bay of Islands. <sup>1</sup>

### Assessment of Ecological Significance

Table 1 Ranking score of ecological significance of Waitangi Estuary<sup>4</sup>

Waitangi Estuary Marine Values: Assessment of Ecological Significance			Rank
Overall Ranking		Notes	High
Representati on	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 Distinctivene ss	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 valuable - tidal flats to mangrove saltmarsh systems	H
Ecological Context	provides or contributes to ecological linkages, networks, buffering functions	Esturine habitats play very important buffering and ecological role in estuary and connectivity between coastal waters and fresh	H

<sup>4</sup> 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

		water environments	
	supports the natural functioning of freshwater or coastal ecosystems	Array of habitats in this estuary very important in this catchment for buffering and filtration roles	H
	supports life stages of indigenous fauna	Provides important support for various life stages of benthic invertebrates, shorebirds and nursery for coastal fish species	M
<b>Assessed by:</b> Vince Kerr		Date: September 2015	
<b>Information Source(s)</b> <i>see below</i>			<b>1-7</b>
<b>Reliability of Information</b> <i>see below</i>			<b>++</b>
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			