Significant Ecological Marine Area Assessment Sheet

Name: Houhora Harbour Marine Values

Summary:

The entrance subtidal channel, tidal flats, seagrass mangrove and saltmarsh habitats of Houhora Harbour have given a high ranking of ecological significance for marine values. These habitats, individually and collectively, support important marine biodiversity values and estuarine ecological functions. The tidal flats support large areas of seagrass beds *Zostera muelleri,* which have been recognised as significant biogenic habitats which supporting a diverse benthic invertebrate community and feeding and nursery area for coastal fishes. Houhora Harbour is situated on the Aupouri peninsula between the large harbours of Parengarenga and Rangaunu. As such, its habitats have special significance because of the connectivity between these estuaries and the high value reef and soft bottom marine habitats offshore. The movement of seabirds between these habitats is evidence of this significance.I In the marine envrironment there is similar dispersal - or movement - between these habitats: notably with pelagic fish species and their spawning cycles; and the general movement of larval forms of the life stages of marine organisms, especially in the case of subtropical species which arrive with the warm East Auckland currents coming down the east coast. The marine habitats of Houhora Harbour play a crucial role in preserving water quality of the waters passing through this estuary.

Aerial photo of Houhora Harbour Photo Credit: Apple Maps

Description:

Houhora Harbour (1,500 ha) is a shallow estuarine harbour, 8.5 km long, with extensive sand flats and significant areas of mangrove, saltmarsh and seagrass beds making up much of the harbour area. Mangroves are most dense in the upper reaches, where mature trees attain heights of 7 m. The extensive saltmarsh on the eastern shore grades to freshwater swamps and

shrublands and has high habitat value. A narrow channel over 4 m deep extends about 3 km upstream. Mount Camel, a 235 m high volcanic outcrop, forms the north head of the entrance.

Although Houhora catchment is not large there are impacts from sediments entering the system. 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 and catchment. Estuarine habitats and species generally will benefit from the combined effects of buffering sediments and nutrients entering the marine envoriment.

Ecological Values

The marine ecology of the Houhora Harbour more generally is summarised in the Nearshore Classification produced by the Department of Conservation [1]. A further review of natural features and ecology was completed by NIWA in 2005.[2] 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. The most recent habitat map of the harbor was produced in 2010 [3]

Given the large area of shallow habitats , Houhora Harbour is very well flushed with coastal waters. This daily flow of tides across the harbour means that the Houhora is well connected to the rich marine biodiversity of this northern part of Northland's east coast. The northern harbours in general have been shown to have high benthic invertebrate diversity, high productivity and are characterised by significant numbers of subtropical species owing to the effects of the East Auckland current carrying subtropical species larvae from warmer regions to the north and east of New Zealand. [1,2]

The intact sequences of mangrove and saltmarsh are significant in Houhora and play an important role in providing ecological connections between the expansive tidal flat communities, coastal waters and the wetlands and fresh water streams of the catchment. The role of these habitats in filtering and buffering sediments and nutrients as they enter the estuarine system is a vital one that has significance to the wildlife values of the estuary and the aquaculture established here. [4] The large tidal flat areas are a rich area of benthic invertebrate diversity and support a large and valuable area of seagrass that joins the neighbouring areas of seagrass beds in Parengarenga and Rangaunu Harbours to create the largest overall area in the country. In total 467 ha of seagrass beds have been mapped recently in this area. Seagrass beds are an important biogenic habitat supporting a diverse benthic invertebrate communities and are identified as a key habitat for the early life stages of many coastal fish species. [5]

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[1] 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

[2] 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.

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

[4] 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.

[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.

Assessment of Ecological Significance

Table 1 Ranking score of ecological significance of Houhora Harbour[6]

Houhora Harbour Marine Values: Assessment of Ecological Significance			Rank
Overall Ranking		Notes	High
Representation	supports most taxa expected for habitat type	Soft bottom communites are diverse and include high quality seagrass beds, juevenile fish diversity and abundance is high – an excellent example but adjacent to two very high scoring representative estuaries	M
	large example of its type	Not a large example	M
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	Good example but not distinctive	M
	developed as a result of unusual environmental factor(s) or is part of an ecological unit that occurs within an originally rare ecosystem	Good example but not distinctive	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	Habitat sequences excellent, salt marsh, mangrove, tidal flat and seagrass beds important estuaries on East Coast	H
	high diversity of indigenous taxa	Soft bottom communites are generally diverse and include high quality seagrass beds, juevinile fish diversity and abundance is good compared to other estuaries on East Coast	M
	its composition reflects the existence of diverse natural features or ecological gradients	The range of estuarine habitats are well represented but limited to a degree by size and complexity of the harbour connected	M
	contains intact ecological sequences	Areas identified are all connected as part of the estuarine system.	H

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[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

Ecological Context	provides or contributes to ecological linkages, networks, buffering functions	All identified areas are strong contributors to providing ecological connections and the buffering functions generally	H
	supports the natural functioning of freshwater or coastal ecosystems	All identified areas are strong contributors to providing ecological connections and the buffering functions generally	H
	supports life stages of indigenous fauna	Provides support for various life stages for all shorebird juevinile coastal fish species an diverse benthic invetebrate communities	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	