

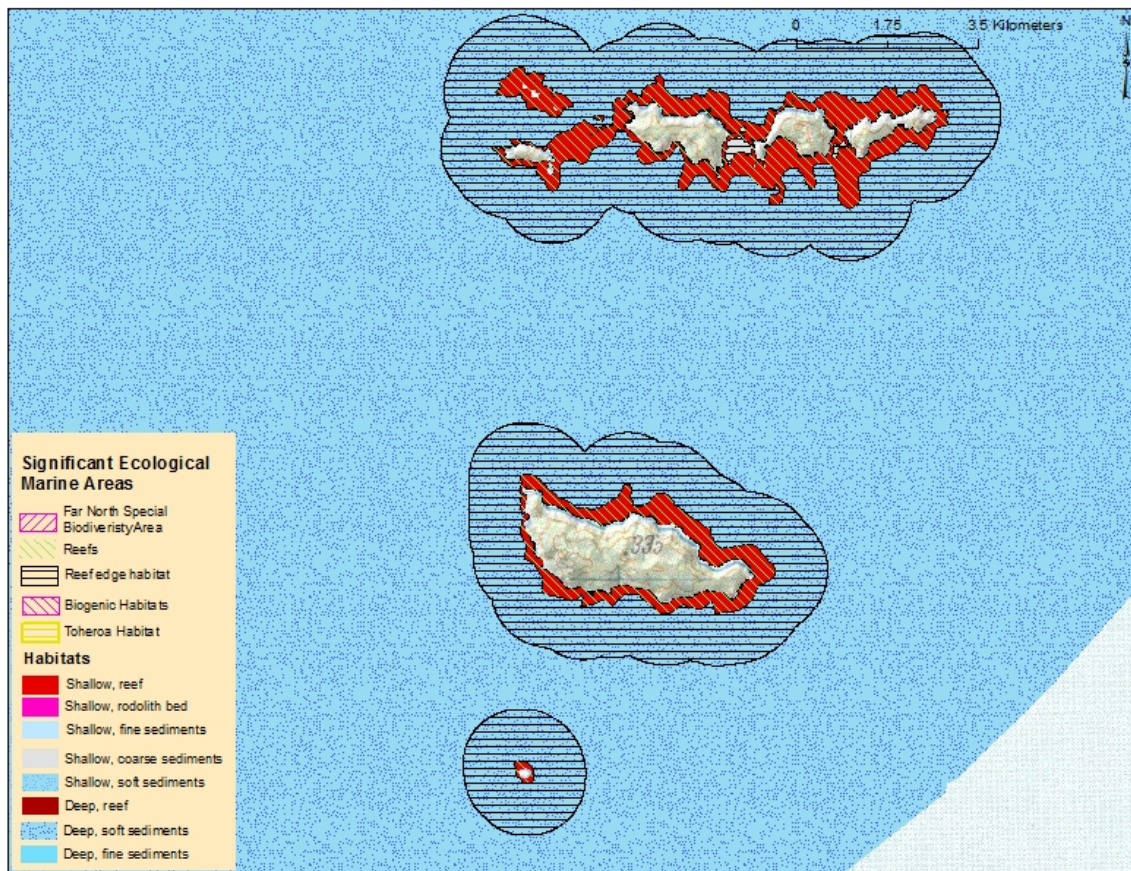
Significant Ecological Marine Area Assessment Sheet

Name: Hen and Chicken Islands

Summary:

The reef systems of Hen and Chicken Islands and adjoining reef edges of soft bottom habitat have been scored as a high ranking ecological area. This reef system is almost entirely a fringing shallow reef system which slopes down to a range of soft bottom habitats. The complex coastline and small islands and stacks create a significant sequence of high quality marine habitats. These marine habitats are continuous with important terrestrial conservation values of these islands.

Habitat map and significant ecological areas of the Hen and Chickens Islands.



Landing Beach where the DOC hut is located on Lady Alice Island in the Hen and Chicks islands. This is one of the very few small sandy beaches found on these islands. The remainder of the shorelines are all rocky shores with fringing rocky reefs. Photo credit: DOC.



Description:

The Hen and Chicken Islands, which have status as scientific reserves, lie 10–15 km east of Whangarei Heads.

The islands have a northern east to west trending island chain, the Marotere Islands (the “Chickens”), which includes three larger islands (79.5–155 ha) and a series of smaller islands and rocks. Taranga (Hen) Island to the south is the largest island in this group covering 500 ha. Sail Rock, south of this group is 3.4 ha.

The shallow fringing reef systems of the Hen and Chicken Islands are diverse, with much variation in exposure to wave energy that creates good examples of coastal rocky reef communities. Typically these reefs are boulder and slope gently down to 20-30m where the reef meets soft bottom habitats of sand shell and gravel. This boundary between shallow rocky reef habitat and soft bottom habitats is typically between 150-400 meters offshore.

The area mapped as a significant ecological area extends out from the islands to approximately 1km beyond the edge of the fringing reefs. The reef edge habitat is included for the purpose of identifying and recognising the important ecological sequences between the shallow reef systems and the surrounding soft sediment habitats that make up the edges of these reef systems. The boundary of the ecologically significant area as a result varies from 1-1.5 km offshore.

The marine habitats of the Hen and Chicken Islands were mapped in a regional scale marine habitat mapping project in 2010. ¹

Oceanography

The Hen and Chicken Islands shoreline has as a variety of exposures to wave energy. The more exposed easterly parts of the Islands are subject to considerable wave energy during easterly gales. The Hen and Chicken Islands extend out to a distance of 15kms into the offshore area. The whole area is strongly influenced by the warm subtropical East Auckland Current, derived from the north-western Tasman Sea flowing south-eastwards adjacent to the coast. This current brings with it a variety of Indo-Pacific larvae. The mix of these surviving subtropical species, along with the many endemic species, make these areas ecologically important and add to the diversity of this offshore island group.

Ecological Values

Only a limited amount of scientific investigation of marine habitats of Hen and Chicken Islands has taken place. General notes were made in 1978 by the offshore research group on intertidal zonation and fish diversity.² A 1984 study by Hayward and others characterised the fauna of soft bottom habitats out to a depth of 50m and found four distinct fauna groups of invertebrate communities. ³

The algal communities that dominate the shallow reef areas range from semi sheltered shores with *Carpophyllum* sp. shallow mixed weed zones giving way to the dominant *Ecklonia radiata* forests, to the very exposed shores where wave energy is very high and the more exposed algal communities, represented by *Carpophyllum augustifolium* and *Lessonia variegata*, make up the shallow mixed weed zone with *Ecklonia radiata* forest below and extending down to 20-30m.

A special aspect of the Hen and Chicken Islands reef systems is the extensive areas of soft bottom habitats surrounding them. Recent ecological studies of rock lobster *Jasus edwardsii* ⁴ demonstrate that important ecological connections exist between deep reef habitats, patch reefs, shallow reefs and surrounding soft sediment areas. In these studies, crayfish were found to regularly migrate up to several kilometres out onto sand and gravel areas from their reef habitats to feed on bivalves and other benthic organisms. ⁴

A study of Northeast New Zealand reef fish biogeography by Brook⁵ presents the results of a comprehensive survey effort and review of past survey efforts. The reef fish diversity of Hen and Chicken Islands is amongst the better Northland sites, with 72 species recorded. The survey found significant numbers of subtropical species and are very diverse compared to other regions of New Zealand.

Northland Marine Mammals

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

² Grace, R.V. and Grace, A.B. (1978). Marine Notes on Hen Island, Northeastern New Zealand. Tane 24.

³ Hayward, B.W., Grace, R.V., & Bull, V.H. (1984). Soft bottom macrofauna, foraminifera and sediments off the Chickens Islands, northern New Zealand. Tane 30: 141–164.

⁴ Kelly, S. 2001: Temporal variation in the movement of the spiny lobster *Jasus edwardsii*. New Zealand Journal of Marine and Freshwater Research 52: 323-331.

⁵ 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

Information on the presence and conservation status of marine mammals in relation to Northlands 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. Three threatened species are amongst the species most often encountered in inshore waters and in the waters surrounding the Hen and Chicken Islands: Bryde's whales *Balaenoptera edni*, bottlenose dolphins *Tursiops truncatus*, and Orca *Orcinus orca*. The common dolphin *Delphinus delphis*, which is not threatened, is also commonly seen in the Hen and Chicks Islands. Less common, but occasionally encountered in the Hen and Chickens Islands are pilot whales *Globicephala spp.*, false killer whales *Pseudorca crassidens*, and some of the large baleen whales. New Zealand fur seals are present in small numbers in the Hen and Chicken Islands area as transient visitors.

Seabirds

The Hen and Chickens Islands are important nesting areas for seabirds including Pycrofts petrel (*Pterodroma pycrofti*), Great-winged Petrel (Grey-faced Petrel), flesh-footed shearwater (*Puffinus carneipes*) Fluttering shearwater (*P. gavia*) and little shearwater (*P. assimilis*). Removal of kiore from the Marotere group has significantly improved breeding success of Pycrofts petrel and little shearwater. Both the Marotere Chickens Islands and Taranga Hen Island are also recognised as internationally important for bird conservation and known to support key bird species through the Important Bird Area programme⁸.

Assessment of Ecological Significance

Table 1 Ranking score of ecological significance of Hen and Chicks Islands Reefs⁹

Hen and Chicks Islands Reefs: Assessment of Ecological Significance			Rank
Overall Ranking		Notes	High
Representati on	supports most taxa expected for habitat type	High diversity of marine species	H
	large example of its type	Good size example of complex sequence of habitats.	M
Rarity and Distinctivene ss	supports indigenous species threatened, at risk, or uncommon, nationally or within the relevant ecological scale	Important area for threatened marine mammals species and rare subtropical species	H
	supports species endemic to the Northland-Auckland region or at distributional limits within the Northland region	Level of endemism of marine species not well studied	NA

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 Gaskin, C, 2013. Important areas for New Zealand seabirds, Part 1 – North Island. Compilation for Forest & Bird / BirdLife International.

⁹ 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

	distinctive of a naturally restricted occurrence	Diversity of habitats is good but not exceptional	M
	developed as a result of unusual environmental factor(s) or is part of an ecological unit that occurs within an originally rare ecosystem	Diversity of habitats is good but not exceptional	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	Diversity of habitats is good but not exceptional	M
	high diversity of indigenous taxa	One of the better east coast sites for high diversity	H
	its composition reflects the existence of diverse natural features or ecological gradients	Good sequences of ecological gradients	H
	contains intact ecological sequences	Excellent examples	H
Ecological Context	provides or contributes to ecological linkages, networks, buffering functions	Has complete marine habitat sequences and connects to important terrestrial conservation area with diverse habitats	H
	supports the natural functioning of freshwater or coastal ecosystems	Some connection with small streams and wetlands	M
	supports life stages of indigenous fauna	High diversity well supported by habitats	H
Assessed by: Vince Kerr		Date: September 2015	
Information Source(s) <i>see below</i>			2-7
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			