

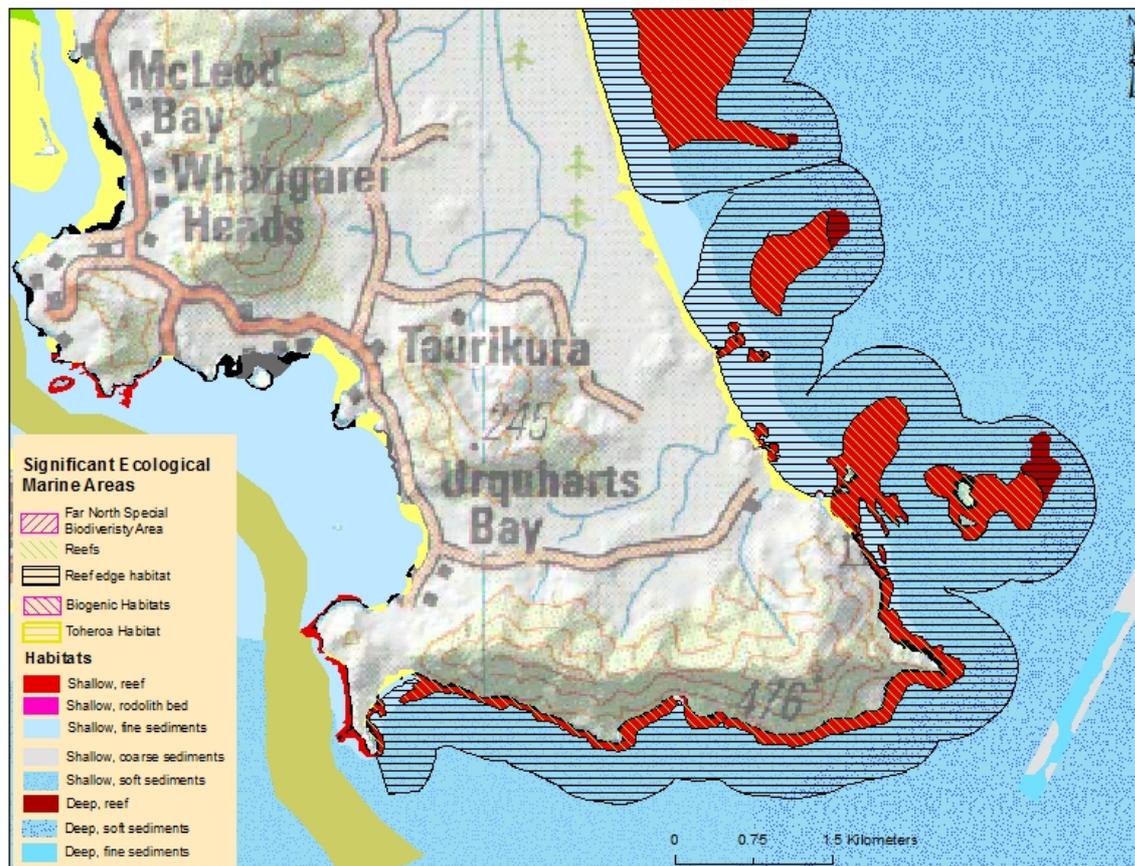
## Significant Ecological Marine Area Assessment Sheet

Name: Bream Head Coast

### Summary:

The reef systems of Bream Head and adjoining reef edges of soft bottom habitat have been scored as a high ranking ecological area. This reef system is predominantly a fringing shallow reef with only two small areas that extend beyond 30m depth as deep reefs. The area is distinctive because it has a large range of exposures from low exposure to high, and it has an unusual large boulder characteristic resulting from its volcanic origins. As a harbour entrance area it also has mixing of tidal currents and nutrients. Bream Head's shallow reefs have quite high fish diversity equivalent to some of the best east coast sites.<sup>1</sup> Contiguous with the Bream Head marine habitats is an important conservation area and indigenous coastal forest; this creates one of Northland's most valuable sequences of coastal habitat.

*Habitat map and significant ecological areas of Bream Head*



<sup>1</sup> 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

## Description:

Bream Head is located at the entrance of Whangarei. The mapped ecological area encompasses the coastline from Home Point in the west to what is locally called Procter's Beach to the north adjacent to Ocean Beach. The area extends out to sea including the shallow and deep reefs of Bream Head and soft-bottom habitats that make up the reef edge habitats of this area. The fringing reef is generally steep and irregular, being of a boulder nature. As you get further out towards Bream Head itself the boulders get increasingly larger and the reef slopes steeper. At Smuggler's Cove the reef is broken by a small stretch of sandy beach. Offshore to the east of Bream Head two small Bream Islands also have fringing reefs; this adds a more complex and deeper component to the Bream Head reefs complex. Moving up the coast to the northwest the fringing reefs give way to broken reefs running out to sea, interspersed with the clean sandy beach habitats of Ocean Beach and Procter's Beach. The reefs off Procter's Beach and the Bream Island on the seaward side run out to approximately 34m depth and have small areas of deep reef environments.<sup>2</sup>

*A view from the water looking south at Bream Head with the Bream Islands in the foreground. The Bream Islands are surrounding by high value shallow rocky reefs.*



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<sup>2</sup> Kerr, V. 2009: Marine habitat map of Northland: Mangawhai to Ahipara vers. 1. Northland Conservancy, Department of Conservation, Whangarei. 33 p..

An underwater view of the deeper part (18m) of the fringing reefs of Bream Islands showing the *Ecklonia* forest thinning out and sponges becoming more prolific. There is also a rich community of encrusting red algae pictured here with the goatfish.



An example of healthy *Ecklonia radiata* kelp forest common seen on the fringing reefs of Bream Head. Banded wrasse are a common reef resident fish species in this habitat. Photo credit: Vince Kerr.



*An example of some the steep terrain of the reefs fringing Bream Head. The shaded walls have diverse communities of encrusting invertebrates more typical of deeper habitats. The white tree like organism is a hydroid. Photo credit: Vince Kerr.*



*A typical view of the fringing reef of Bream Head near Peach Cove.*



*A rock lobster and typical large boulder environment of the Bream Head reef system.*



## Oceanography

The Bream Head area has a great diversity of oceanographic influences. Its outer exposed shores are exposed to gales at time high wave energy from easterly storms and ocean swell. There are relatively strong currents encountered at Bream Head itself at times, influenced by its steep topography and also the distance that the peninsula extends out in a seaward direction. From time to time the area is influenced by the West Auckland current which eddies into the coast, bringing warm water from the north and with it larvae of subtropical species. Towards the harbour entrance the influence of the water masses is increasingly a result of tidal currents and estuarine water masses. The Bream Head reef system lies along this extremely diverse gradient, which contributes to the high productivity and biological diversity of the area.

## Ecological Values

Bream Head's shallow fringing reefs are exceptional examples of their type and generally in very good health. In the upper exposed zone the shallow mixed weed algal communities are characterised by several *Carpophyllum* species, which change to the more exposed algal communities represented by *Carpophyllum maschalocarpum* and *Lessonia variegata* out at Bream Head itself. Below the shallow mixed weed zone at 2-5m depth the large brown kelp, *Ecklonia radiata* forest takes over which, at Bream Head, is very productive and home to great deal of diversity. The kelp forest and fringing reefs run out to a sand or sandy gravel bottom at 10-15m near the harbour entrance and to up to 30m at Bream Head itself. These reef edge soft-bottom habitats are high quality; they are generally quite low in sedimentation impacts and rich in invertebrate and shellfish communities, so they play a key role in supporting the high diversity of the reef systems. The soft bottom area off Smuggler's Beach has fisheries regulations which manage an important scallop bed there for recreational take.

Bream Head has traditionally been known as very productive habitat for rock lobster *Jasus edwardsii* and large packhorse crayfish *Jasus verreauxi* used to be commonly seen on this coast but unfortunately they are rare today.

A study of Northeast New Zealand reef fish biogeography by Brook<sup>3</sup> presents the results of a comprehensive survey effort and review of past survey efforts. A list of common algal species is also reported in this study. The reef fish diversity recorded at Bream Head site compare with the better East Coast sites in Northland and could be described as high compared to other regions of New Zealand. Sixty one species of reef associated fish were recorded in the Brook study at Bream Head.

The marine ecology values of Bream Head and Northland's east coast more generally are summarised in the Nearshore Classification produced by the Department of Conservation<sup>4</sup>. A further and more detailed review of natural features and ecology was completed by NIWA in 2005.<sup>5</sup> 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.

### Northland Marine Mammals

Information on the presence and conservation status of marine mammals in relation to Northland's coasts and estuaries has been reviewed by Baker.<sup>6 7</sup> 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: 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 estuaries and along the coast. All of these species have been occasionally reported at Bream Head, the dolphins and Orca especially are commonly seen along this coastline. Less common, but occasionally encountered on Northland's east coast, 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 at Bream Head Coast area as transient visitors.

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<sup>3</sup> 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

<sup>4</sup> 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](http://www.marinenz.org.nz/nml/files/documents/3_northland-mpa.html)

<sup>5</sup> 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.

<sup>6</sup> 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.

<sup>7</sup> 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.

## Assessment of Ecological Significance

Table 1 Ranking score of ecological significance of Bream Head Coast<sup>8</sup>

Bream Head Coast: 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	Has significant number subtropical fish species	M
	supports species endemic to the Northland-Auckland region or at distributional limits within the Northland region	Has significant number subtropical fish species	M
	distinctive of a naturally restricted occurrence	Diversity of habitats is good	M
	developed as a result of unusual environmental factor(s) or is part of an ecological unit that occurs within an originally rare ecosystem	Extent of large bouldery reef habitat is a unusual	H
	identified as nationally or regionally rare habitat(s) in MPA Plan	Not evaluated yet	R
Diversity and Pattern	high diversity of indigenous ecosystem or habitat types	Diversity of habitats is good	M
	high diversity of indigenous taxa	One of the better east coast sites for high diversity of fish species	H
	its composition reflects the existence of diverse natural features or ecological gradients	Good complex ecological gradients	M
	contains intact ecological sequences	good examples	M
Ecological Context	provides or contributes to ecological linkages, networks, buffering functions	Shallow reef sequences connects to high value indigenous native forest and conservation area	H
	supports the natural functioning of freshwater or coastal ecosystems	Small limited systems only	L
	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>			1-7
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			

<sup>8</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