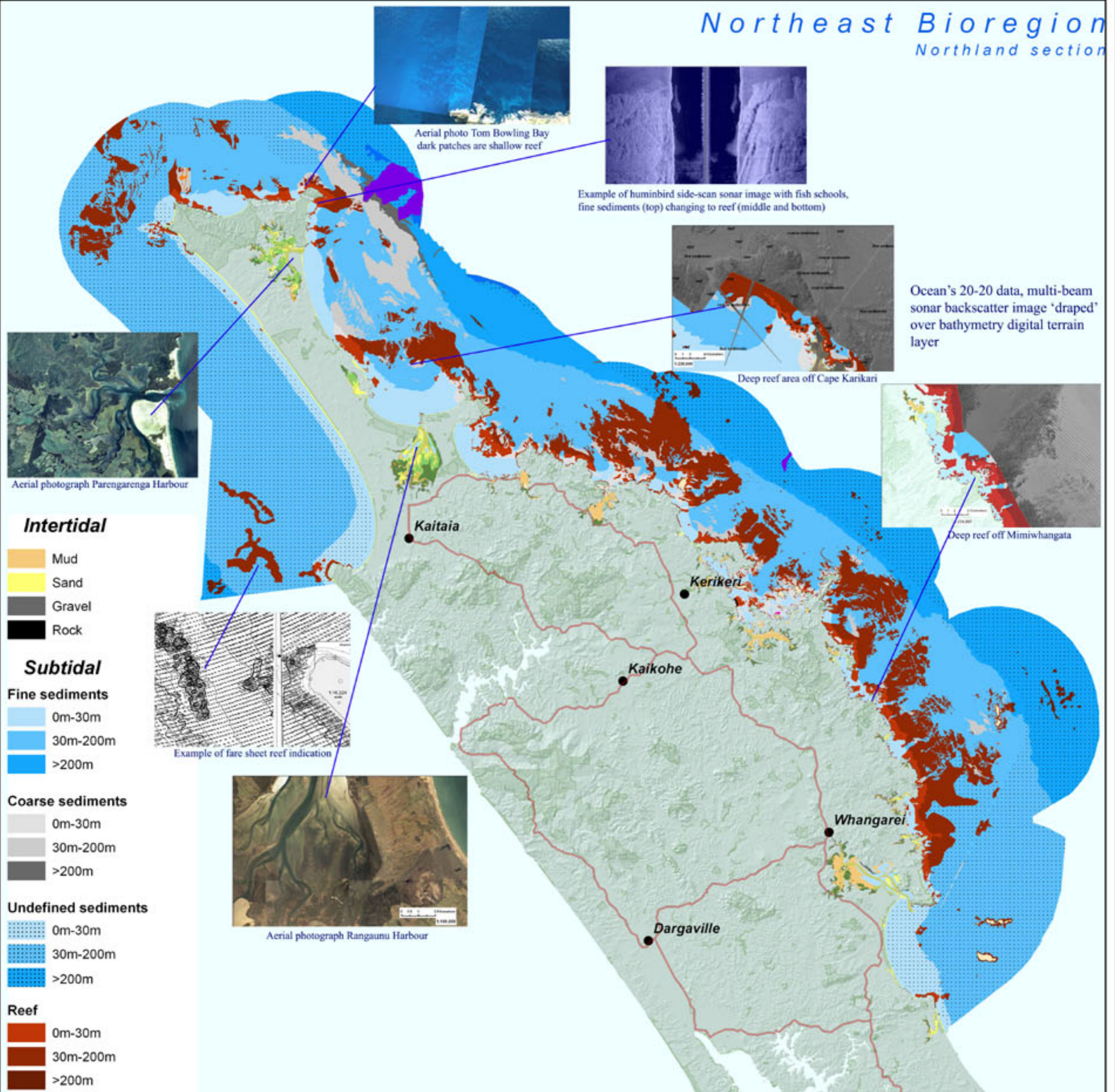
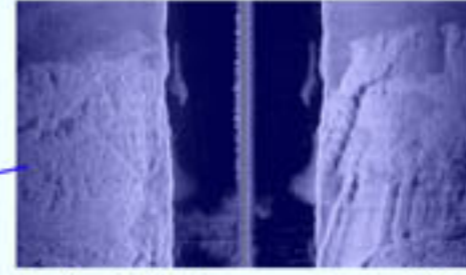


Northeast Bioregion

Northland section



Aerial photo Tom Bowling Bay dark patches are shallow reef

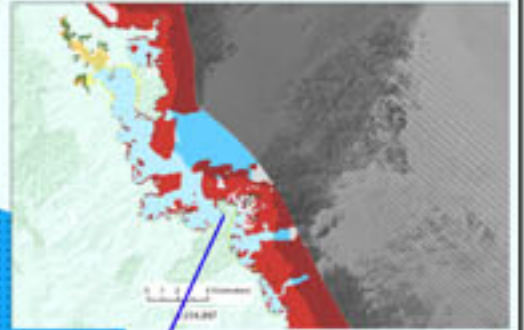


Example of huminbird side-scan sonar image with fish schools, fine sediments (top) changing to reef (middle and bottom)



Ocean's 20-20 data, multi-beam sonar backscatter image 'draped' over bathymetry digital terrain layer

Deep reef area off Cape Karikari



Deep reef off Mimiwhangata



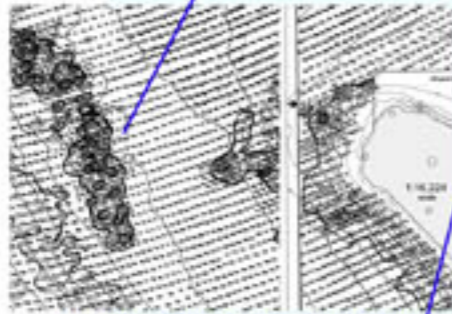
Aerial photograph Parengarenga Harbour

Intertidal

- Mud
- Sand
- Gravel
- Rock

Subtidal

- Fine sediments**
- 0m-30m
 - 30m-200m
 - >200m



Example of fare sheet reef indication

- Coarse sediments**
- 0m-30m
 - 30m-200m
 - >200m

- Undefined sediments**
- 0m-30m
 - 30m-200m
 - >200m



Aerial photograph Rangaunu Harbour

- Reef**
- 0m-30m
 - 30m-200m
 - >200m
 - 30m-200m, ridge feature

- Shelf**
- 30m-200m, shelf canyon
 - >200m, shelf canyon
 - >200m, steep shelf

- Biogenic**
- Salt marsh
 - Mangroves
 - Seagrass
 - Rodolith bed

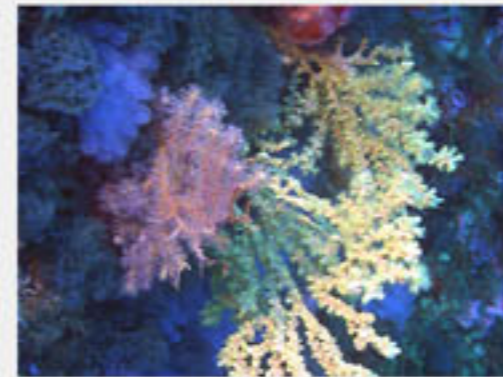
- Island
- Channel
- Public conservation land
- Roads

Project Summary June 2010

The version 1 Northland section of the Northeast Marine Bioregion MPA habitats map covers an area of 1.34 million hectares extending out 12 nautical miles from the coast between Ahipara in the west to Mangawhai on the east coast. Data from a range of recent and historic sources, was analysed in ArcGIS 9.3. These data include aerial photos, multibeam and sidescan sonar data from the NIWA and LINZ. A 'rapid sonar survey' technique was developed to fill data gaps. Habitat maps are useful to identify potential locations for a network of marine protected areas and support the use of decision support tools to assist in planning, education and community engagement. This work is progressing in Northland now.

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Deep reefs



Shallow kelp forests



Fine sediments



Intertidal habitats

