



# Ruakākā Estuary

## Intertidal vegetation mapping

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# Mapping process and purpose

A remote sensing method has been used to map wetland/saltmarsh and mangrove habitat in Northland. This mapping aims to improve spatial intertidal habitat data for Northland. Please refer to the separate methodology report<sup>1</sup> for details of the mapping process.

This is one of 19 worksheets that display the extent and location of mapped wetland/saltmarsh and mangrove habitats in the Northland region. The worksheets also identify intertidal saltmarsh habitat that exceeds the Regional Policy Statement for Northland (RPS) wetland area threshold of 0.5 hectare for significant saltmarsh (referred to below as significant saltmarsh). Oblique aerial images of all significant saltmarsh features and a summary of significant avifaunal values that are associated with this coastal wetland are also included in the worksheets. The saltmarsh and mangrove layers are available via an online viewer:

<https://localmaps.nrc.govt.nz/LocalMapsGallery/>

Where coastal wetlands extend inland, the degree of salt influence reduces until wetland transitions from saltmarsh to a freshwater wetland. In order to limit the identification of significant features to saltmarsh habitat and avoid mapping freshwater wetland, the landward extent of significant saltmarsh was delimited using selected LINZ hydro parcels. In a small number of instances (eg. Whangārei Harbour, Pātaua Estuary, Horahora Estuary and Kāretu River), where the hydro parcel clearly omitted areas of intertidal habitat, the LINZ NZ property parcel was used. By limiting the mapping of significant saltmarsh to areas within the LINZ hydro parcels, there is a high level of confidence that the significant saltmarsh mapped by this project is saltmarsh and not freshwater wetland.

During the validation process it was apparent from the oblique imagery that typically inland of the hydro parcels the saltmarsh transitions to freshwater habitat. By utilising the LINZ hydro layer, degraded habitat that may not have dominant indigenous vegetation has been avoided, as has wetland or saltmarsh on private title. However, by using the LINZ NZ property parcel and LINZ hydro parcels as the inland boundary, some saltmarsh habitat inland of these boundaries will have been omitted. Further work is required to develop a robust method to delineate the landward extent of saltmarsh habitat.

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<sup>1</sup> MacDonald, Griffiths, Griffin, Pene & Umuroa (2020). Northland Intertidal vegetation mapping methodology.

## Area description and map outputs

Nine point six hectares of mangrove and 8.8 hectares of saltmarsh were mapped in Ruakākā Estuary. A total of four saltmarsh sites have been identified in Ruakākā, that exceed the RPS wetland area threshold of 0.5 hectare for significant saltmarsh, totalling 3.5 hectares (Figure 1 & Table 1).

**Table 1:** Significant saltmarsh sites identified in Ruakākā Estuary

Reference	Area (m <sup>2</sup> )
AX30 311-271	6,300
AX30 313-262	9,012
AX30 309-256	9,146
AX30 311-263	10,081
<b>Total</b>	<b>34,539</b>

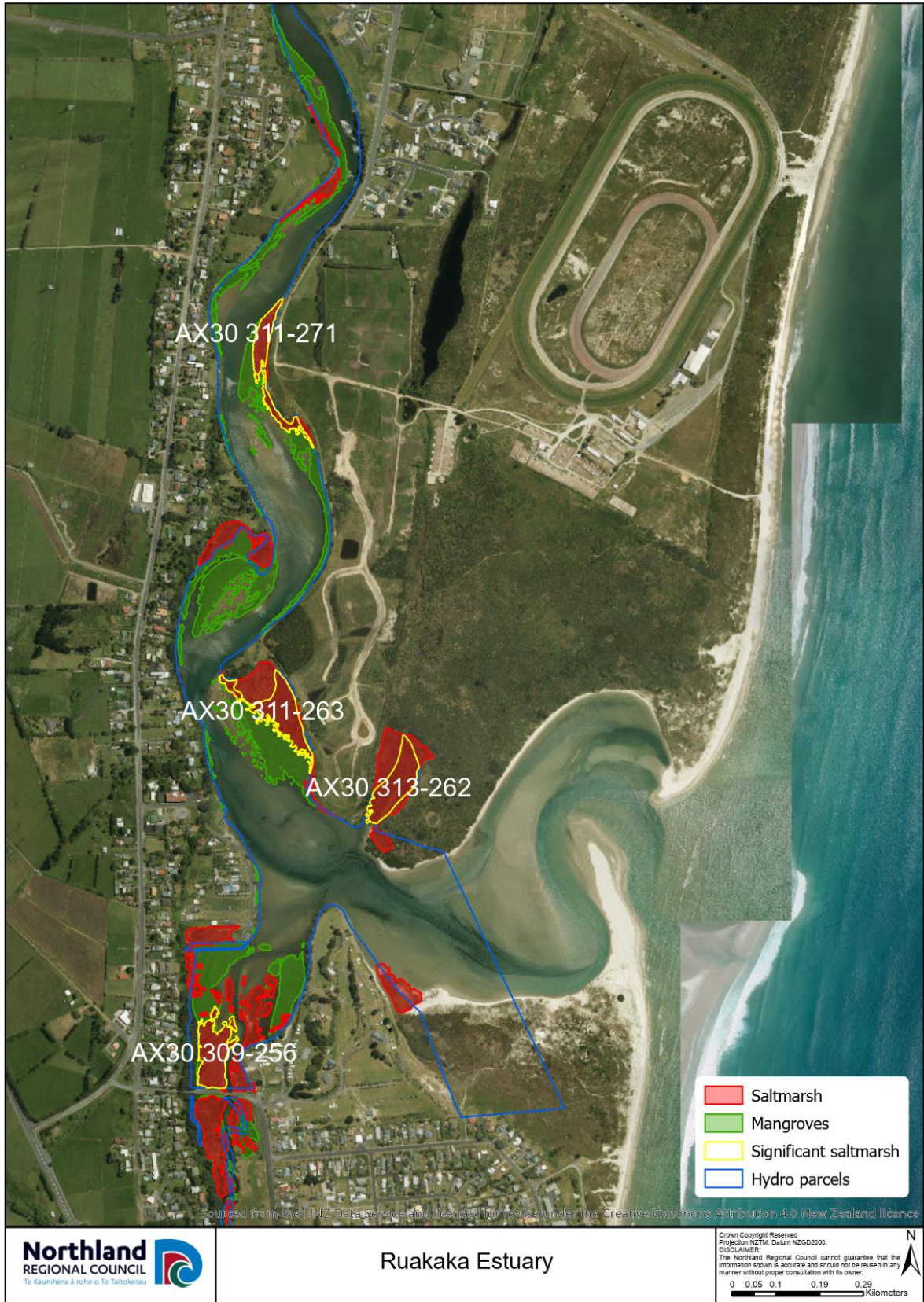
The Ruakākā Estuary is a small estuary, with limited saltmarsh and mangrove fringes, and a level of disturbance from surrounding subdivision, visitors and roaming pets. The intertidal flats and tidal channels provide feeding habitat for threatened bird species including reef heron, pied shag, northern NZ dotterel, variable oystercatcher and occasionally NZ fairy tern. Waders, terns and gulls use Ruakākā Estuary and adjacent sandy beaches, particularly during high tide (Table 2). It is the most important roost site within the Whangārei area during king tides when thousands of bar-tailed godwits come from nearby Whangārei Harbour.

**Table 2.** ‘Threatened’ and ‘At Risk’ birds using saltmarsh/mangrove habitat in the Ruakākā Estuary

Species Scientific Name	Species Common Name	NZ threat classification (2016)		Significance for species
<i>Botaurus poiciloptilus</i>	Australasian bittern	Threatened	Nationally critical	Local feeding habitat (saltmarsh/mangrove)
<i>Sternula nereis davisae</i>	NZ fairy tern	Threatened	Nationally critical	Potential nationally important site (mangrove channel edges)
<i>Hydroprogne caspia</i>	Caspian tern	Threatened	Nationally vulnerable	Locally important feeding (mangrove channels)
<i>Bowdleria punctata vealeae</i>	North Island fernbird	At Risk	Declining	Locally important resident population (saltmarsh/mangrove)
<i>Gallirallus philippensis assimilis</i>	Banded rail	At Risk	Declining	Locally important breeding and feeding (saltmarsh/mangrove)
<i>Haematopus finschi</i>	NZ pied oystercatcher	At Risk	Declining	Locally important feeding and roosting (mangrove edges)
<i>Limosa lapponica baueri</i>	Eastern bar-tailed godwit	At Risk	Declining	Locally important feeding and roosting (mangrove edges)
<i>Phalacrocorax varius varius</i>	Pied shag	At Risk	Recovering	Locally important feeding (mangrove channels)



Figure 1: Saltmarsh and mangroves in Ruakākā Estuary





**Figure 2:** AX30 313-262



**Figure 3:** AX30 309-256





Figure 4: AX30 311-263, AX30 313-262



Figure 5: AX30 311-271



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