Kaipara Harbour
Intertidal vegetation mapping

Date: 27 August 2021

Authors: Andrew McDonald - Biospatial Ltd
Richard Griffiths, Katrina Hansen, Neihana Umuroa - Northland Regional Council

Northland REGIONAL COUNCIL
Te Kaunihera ā rohe o Te Taitokerau

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[1] 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.

[1] MacDonald, Griffiths, Griffin, Pene & Umuroa (2020). Northland Intertidal vegetation mapping methodology.

Area description and map outputs

Kaipara Harbour is a shallow drowned valley estuary system on the west coast of the Northland peninsula. A total of 35 saltmarsh sites (Figure 1 & Table 2) have been identified that exceed the RPS wetland area threshold of 0.5 hectare for significant saltmarsh. The 35 significant saltmarsh sites total 45.9 hectares (Table 1).

Table 1: Significant saltmarsh identified in Kaipara Harbour

Reference	Area (m^2)
AZ29 056-772	20,411
AZ29 057-775	7,184
AY29 986-858	20,193
AY29 992-855	24,929
AY29 963-995	5,000
AY30 262-874	5,552
AY29 955-967	93,611
AY29 920-968	7,333
AY29 962-989	7,936
AY29 961-992	6,386
AY29 998-974	7,764
AY29 013-963	6,586
AY29 945-968	20,035
AY29 922-964	5,483
AY29 031-827	9,074
AY29 958-986	5,632
AY29 955-975	6,434
AY30 207-892	38,222

Reference	Area (m^2)
AY30 107-029	9,712
AY30 107-027	10,298
AY30 106-028	8,551
AY30 236-916	7,934
AY30 127-882	10,597
AY30 188-938	9,993
AY30 179-956	8,281
AY30 178-957	8,209
AY31 321-910	18,889
AY31 321-911	5,616
AY30 194-936	9,011
AY30 141-964	21,182
AY30 227-913	5,784
AY30 316-893	5,553
AY30 317-895	6,110
AY31 323-912	10,145
AY30 142-020	5,527
Total	**459,154**

The tidal reaches of the Wairoa, Arapaoa, Otamatea, Oneriri, Whakaki and Oruawharo rivers and associated creeks provide important feeding areas for the critically endangered NZ fairy tern, white heron and Australasian bittern, and several species of nationally vulnerable waders, crakes and fernbird (Table 2).

The North Kaipara is an internationally important site recognised by the Important Bird Area programme[2] triggered by the following species: NZ fairy tern, black-billed gull, black stilt, NZ dotterel, wrybill, South Island pied oystercatcher and Australasian bittern[3].

[2] https://www.birdlife.org/worldwide/programme-additional-info/important-bird-and-biodiversity-areas-ibas

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

The northern Kaipara Harbour is also one of the most important estuaries in Northland because of its large size and diversity of interconnected habitat sequences which attract large numbers and a wide variety of estuarine birds.

Table 2: 'Threatened' and 'At Risk' birds using saltmarsh and adjoining mangrove habitat in the Kaipara Harbour.

Species Scientific Name	Species Common Name	NZ threat classification (2016)		Significance for species
Botaurus poiciloptilus	Australasian bittern	Threatened	Nationally critical	Locally important habitat (saltmarsh/mangrove)
Sternula nereis davisae	NZ fairy tern	Threatened	Nationally critical	Nationally important breeding and feeding (mangrove channel edges)
Ardea modesta	White heron	Threatened	Nationally critical	Nationally important feeding areas (saltmarsh/mangroves)
Hydroprogne caspia	Caspian tern	Threatened	Nationally vulnerable	Local feeding (mangrove channels)
Bowdleria punctate vealeae	North Island fernbird	At Risk	Declining	Locally important resident population (saltmarsh/mangrove)
Gallirallus philippensis assimilis	Banded rail	At Risk	Declining	Locally important resident population (saltmarsh/mangrove)
Haematopus finschi	NZ pied oystercatcher	At Risk	Declining	Local feeding (mangrove edges)
Limosa lapponica baueri	Eastern bar-tailed godwit	At Risk	Declining	Local feeding (mangrove edges)
Porzana tabuensis tabuensis	Spotless crake	At Risk	Declining	Locally important breeding and feeding (saltmarsh/mangrove)
Phalacrocorax varius varius	Pied shag	At Risk	Recovering	Nationally important breeding and feeding (mangrove roost, channels)

Figure 1: Significant saltmarsh habitat in the Kaipara Harbour

Figure 2: Significant saltmarsh along the Pouto Peninsula in the Kaipara Harbour

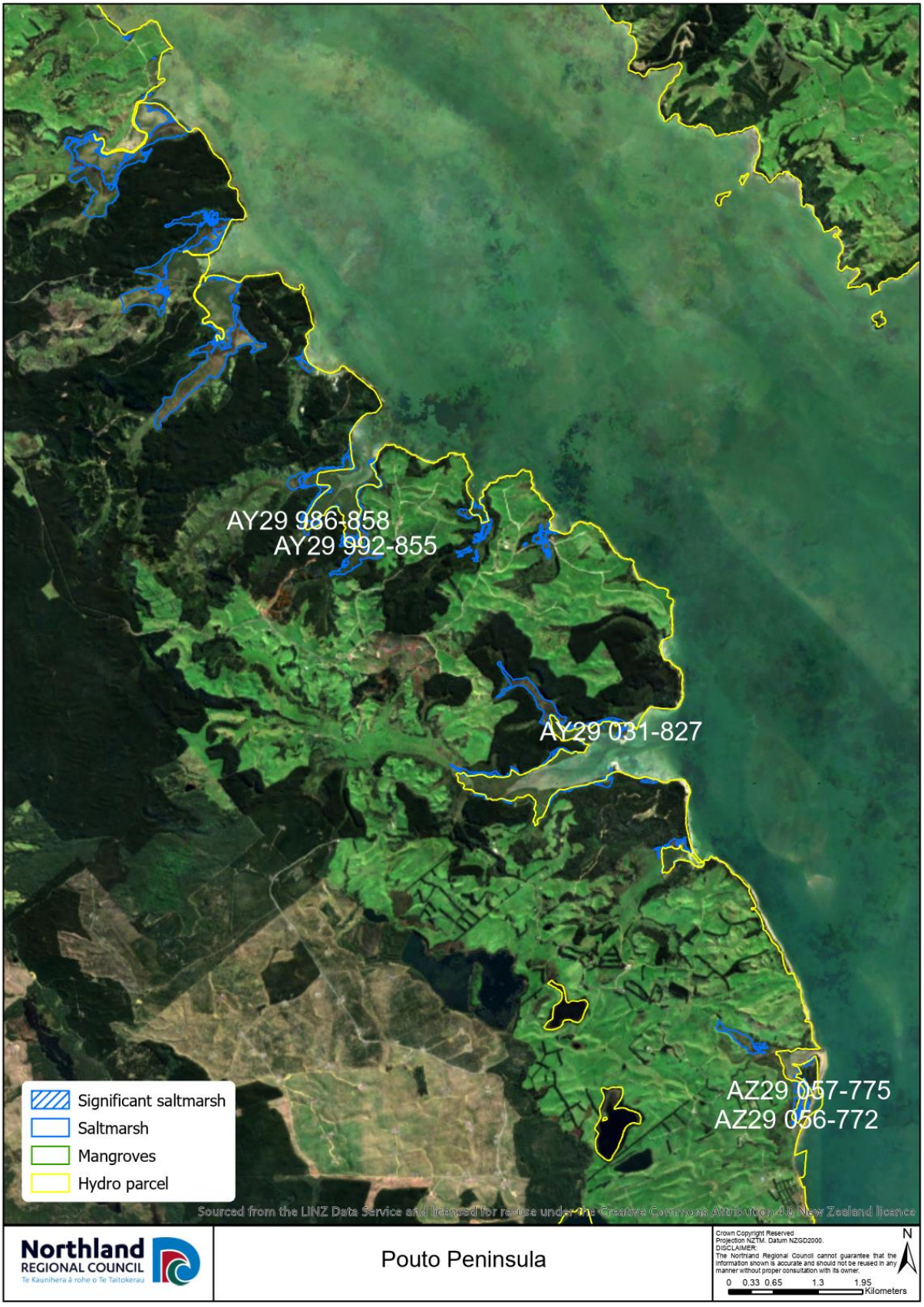


Figure 3: AZ29 056-772

Figure 4: AZ29 057-775

Figure 5: AY29 031-827

Figure 6: AY29 992-855

Figure 7: AY29 986-858

Figure 8: Significant saltmarsh in Awaroa River and Burgess Island in the Kaipara Harbour

Figure 9: AY29 922-964

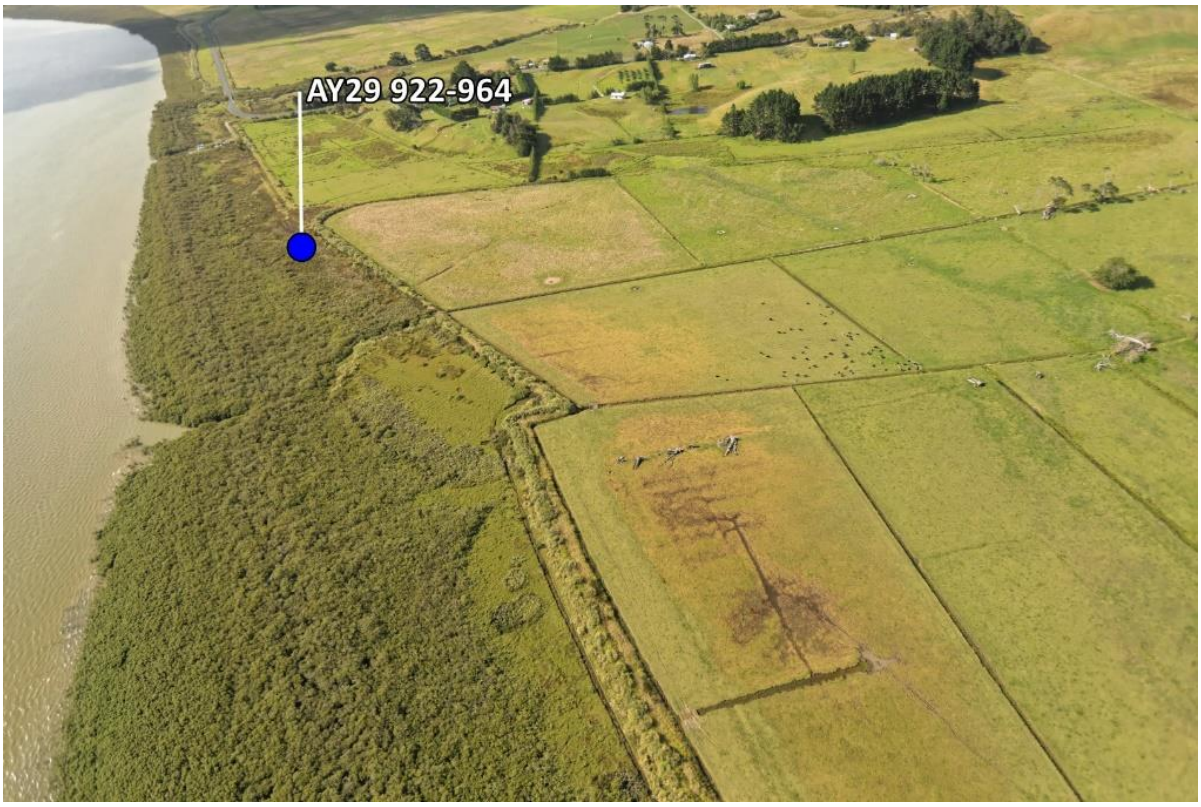


Figure 10: AY29 920-968

Figure 11: AY29 963-995

Figure 12: AY29 961-992

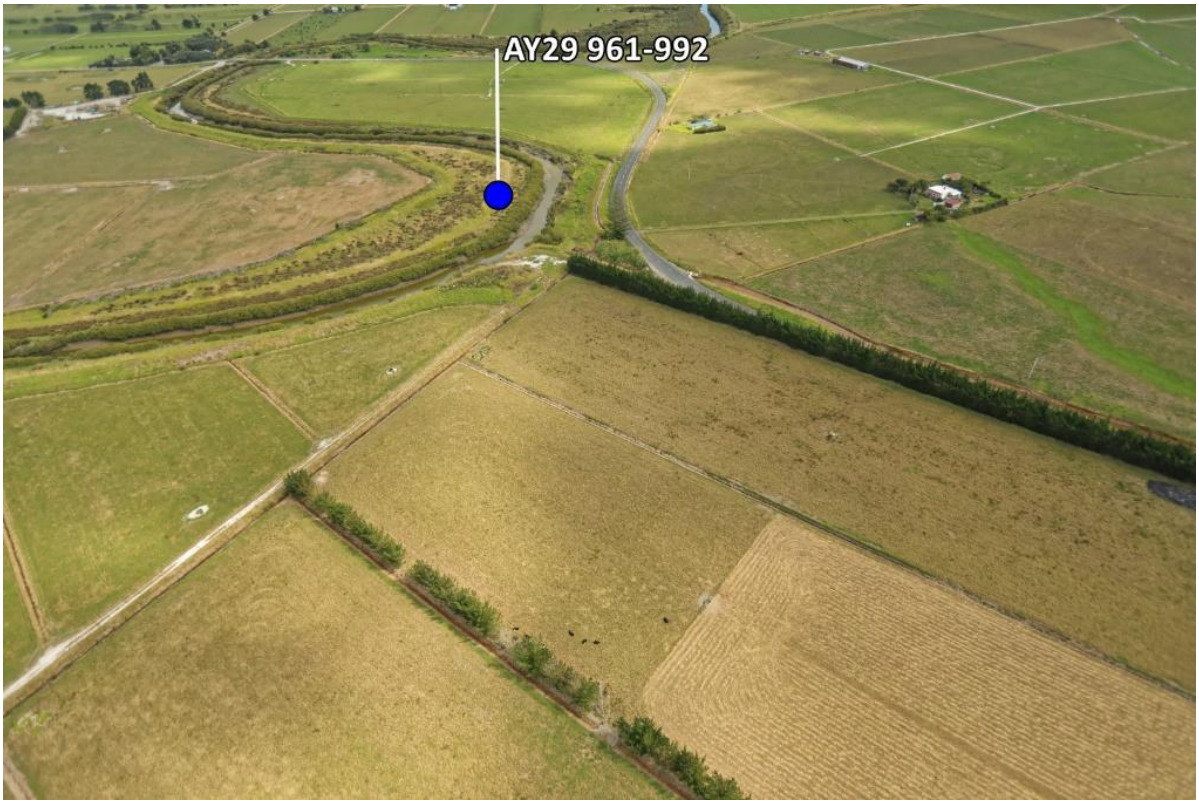


Figure 13: AY29 962-989

Figure 14: AY29 958-986

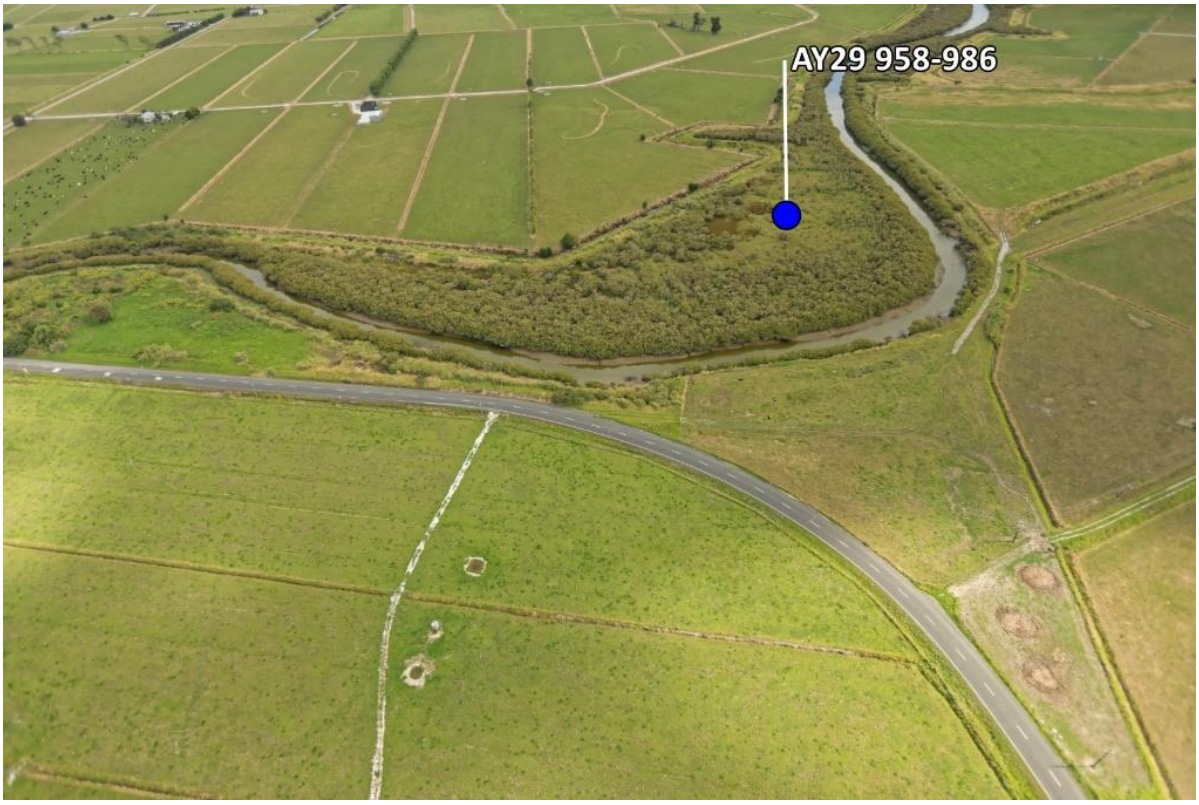


Figure 15: AY29 955-975

Figure 16: AY29 945-968

Figure 17: AY29 955-967

Figure 18: AY29 998-974

Figure 19: AY29 013-963

Figure 20: Significant saltmarsh in Awaroa River and Burgess Island in the Kaipara Harbour

Figure 21: AY30 127-882

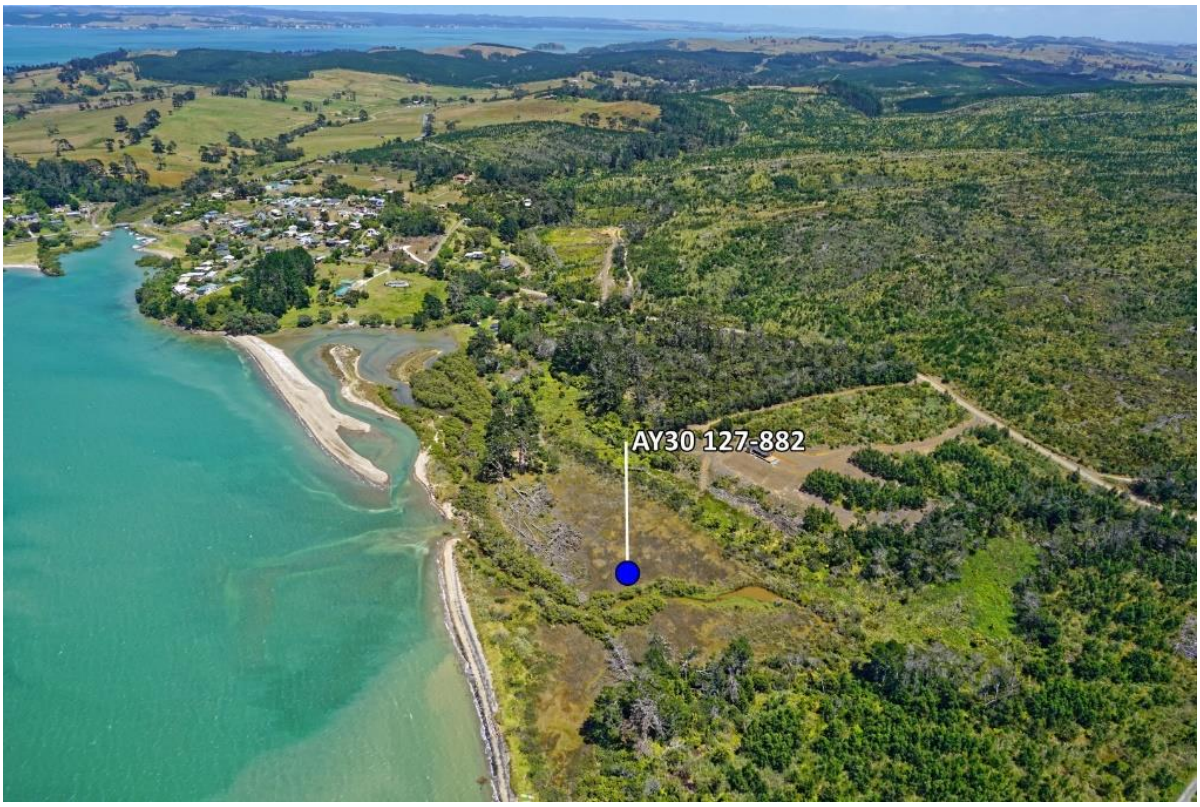


Figure 22*:* Significant saltmarsh in the Upper Arapaoa River

Figure 23: AY30 107-027, AY30 107-029, AY30 106-028

Figure 24: AY30 142-020

Figure 25: Significant saltmarsh in the Lower Arapaoa River

Figure 26: AY30 141-964

Figure 27: AY30 179-956

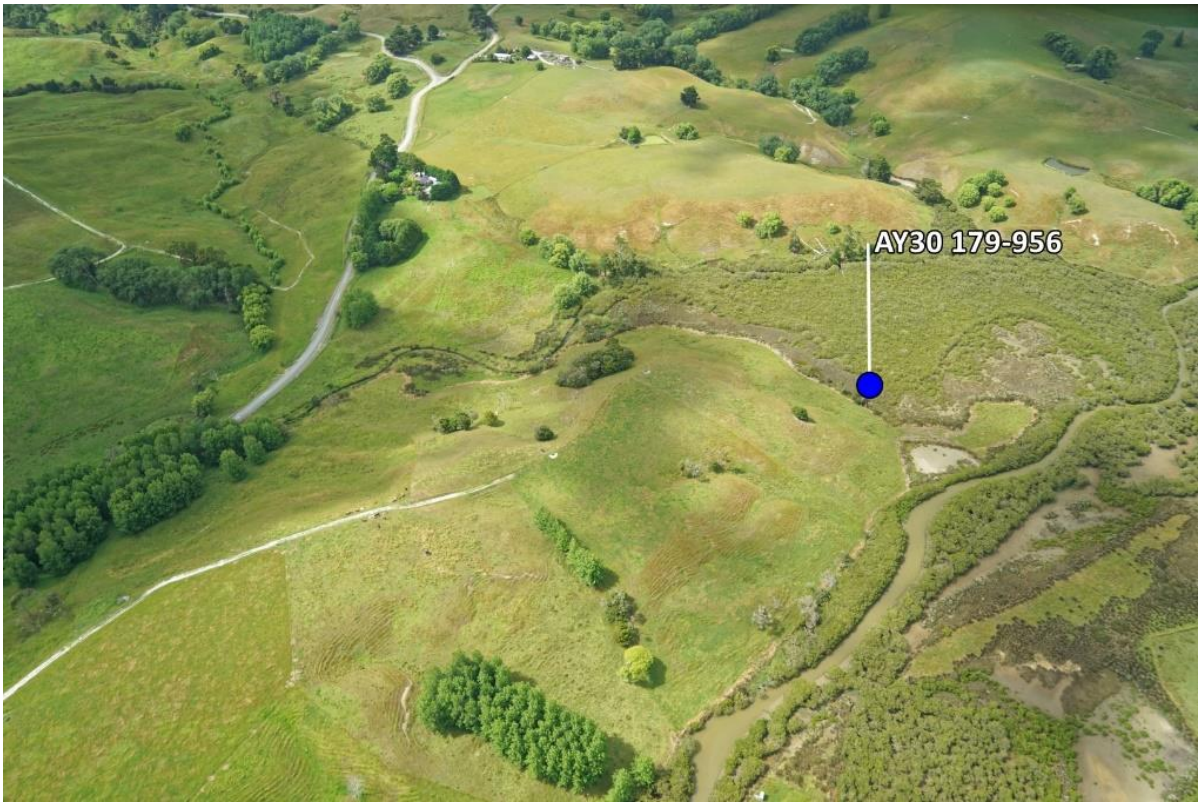


Figure 28: AY30 178-957

Figure 29: AY30 194-936

Figure 30: Significant saltmarsh in the Otamatea River

Figure 31: AY30 207-892

Figure 32: AY30 236-916

Figure 33: AY30 236-916

Figure 34: AY30 227-913

Figure 35: Significant saltmarsh in the Oruawharo River

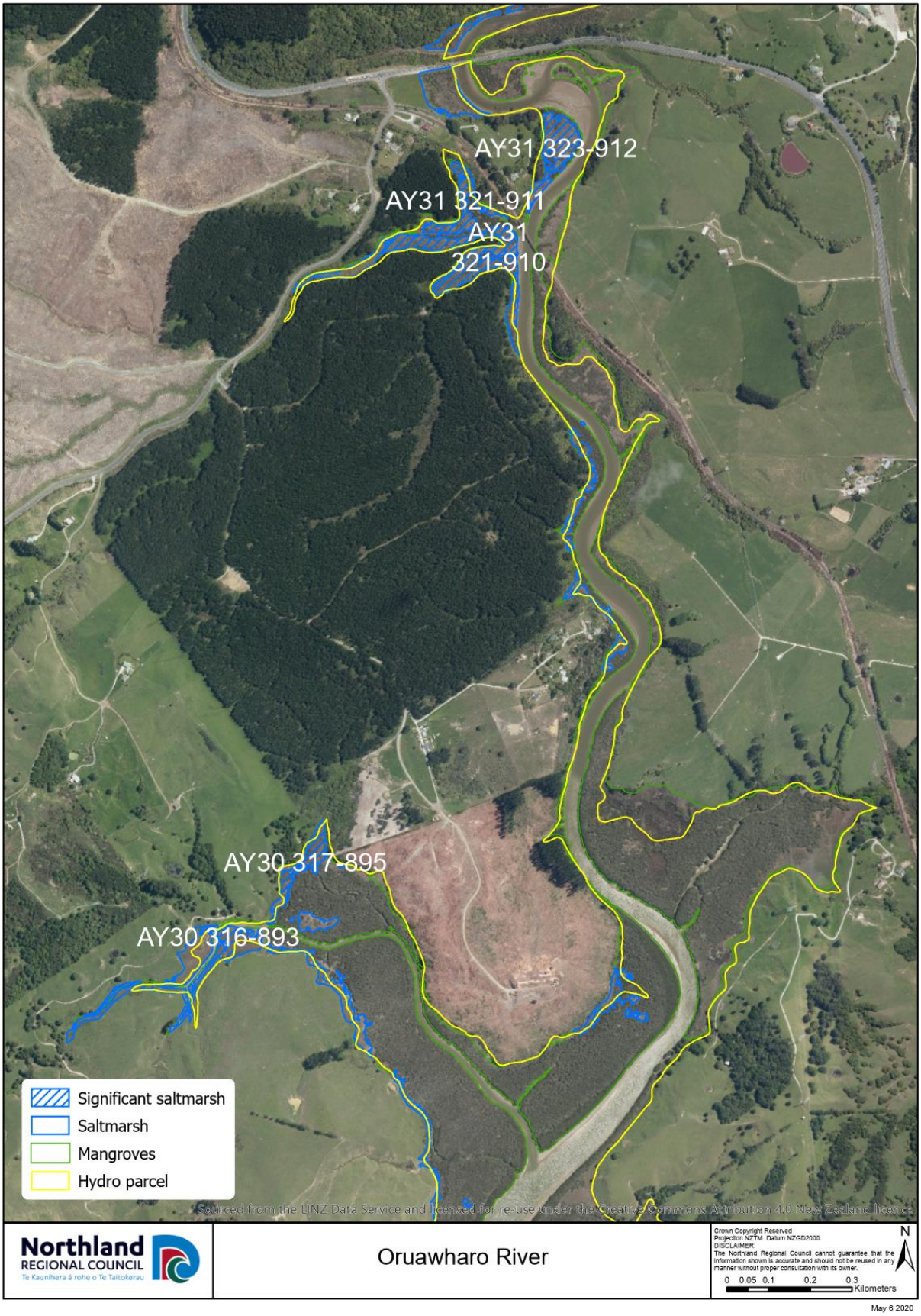
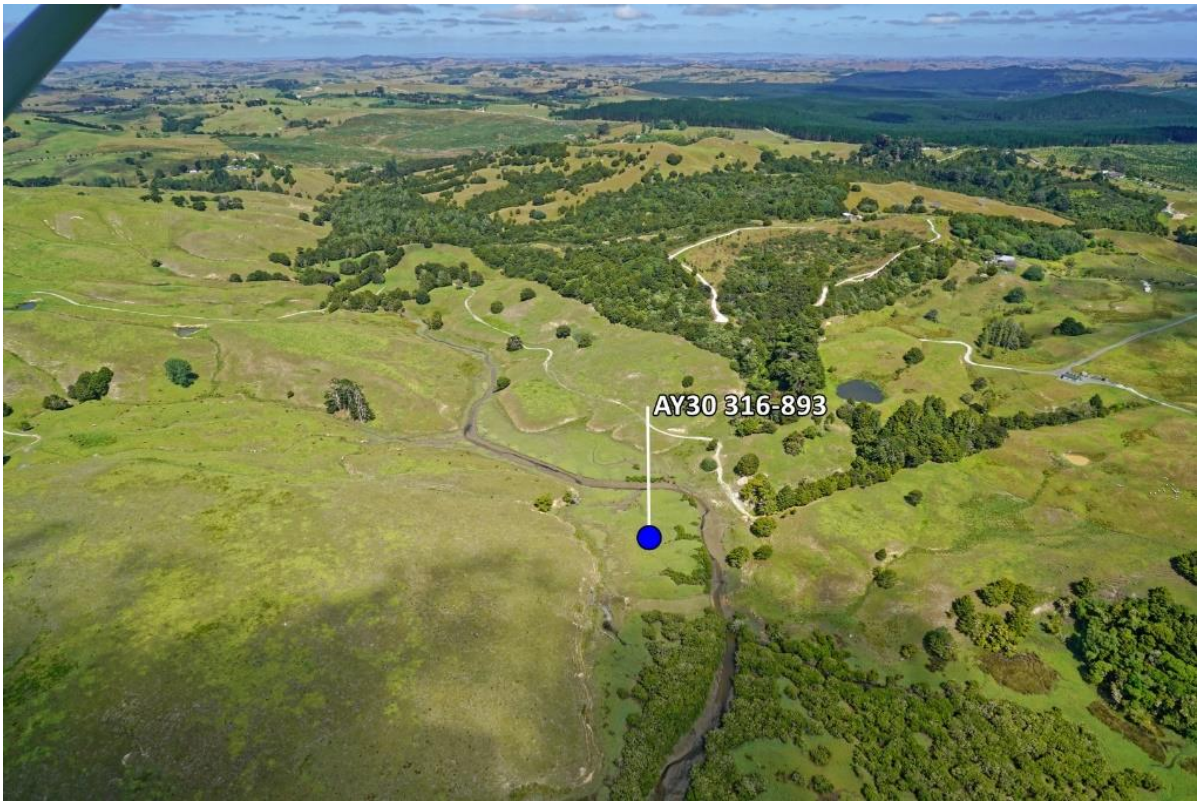


Figure 36: AY31 323-912

Figure 37: AY31 321-911, AY31 321-910

Figure 38: AY30 317-895

Figure 39: AY30 316-893



Northland Regional Council

P 0800 002 004

E info@nrc.govt.nz

W www.nrc.govt.nz

Northland REGIONAL COUNCIL
Te Kaunihera ā rohe o Te Taitokerau