Mangawhai Harbour
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[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

Mangawhai Harbour is a tidal lagoon on the east coast of the Northland peninsula of which 111.6 hectares of mangrove and 152.8 hectares of wetland/saltmarsh have been mapped. Ten sites, that exceed the Regional Policy Statement for Northland wetland area threshold of 0.5 hectares for significant saltmarsh, have been identified, totalling 23 ha (Figure 1 & Table 1).

Four significant saltmarsh habitats were identified upstream of the Insley Road causeway, and these are likely to form one large saltmarsh complex comprising 9.0 ha. Four significant features were identified in Tara Creek and this is also likely to be an important saltmarsh complex comprising 8.8 ha. One large saltmarsh habitat was also identified adjacent to Molesworth Drive (4.5 ha) and another smaller feature was identified near Tern Point (0.6 ha).

Table 1: Significant saltmarsh identified in Mangawhai Harbour

Reference	Area (m^2)
AY31 411-993	5,902
AY31 433-013	6,387
AY31 411-991	6,558
AY31 414-045	11,319
AY31 413-003	12,901
AY31 411-041	18,545
AY31 412-042	20,926
AY31 413-036	37,090
AY31 419-024	45,475
AY31 416-998	64,954
Total	**230,057**

The saltmarshes and mangroves support Australasian bittern, banded rail, fernbird and other birds (Table 2). The saltmarsh-mangrove sequence is particularly important to banded rail, as they are now restricted to this habitat in the upper North Island[2]. They use this vegetation for breeding and feeding, with most of their time spent foraging under mangrove cover.

Mangawhai Harbour has national significance on the basis of being the primary breeding ground for a New Zealand endemic and critical taxon, the NZ fairy tern. In a recent study[3] researchers notably identified habitats that are believed to be critical foraging areas during the breeding season. These habitats are the shallow channel edges, shallow open coast and significantly the shallow 'edge' of mangrove forest areas.

[2] Bellingham, M. 2013. Banded rail. *In* Miskelly, C.M. (ed.) *New Zealand Birds Online*. www.nzbirdsonline.org.nz

[3] Ismar, S.M.H., Trnski, T., Beauchamp, T., Bury, S.J., Wilson, D., Kannemeyer, R., Bellingham, M., Baird, K. 2014. Foraging ecology and choice of feeding habitat in the New Zealand Fairy Tern *Sternula nereis davisae*. Bird Conservation International, 24: 72-87

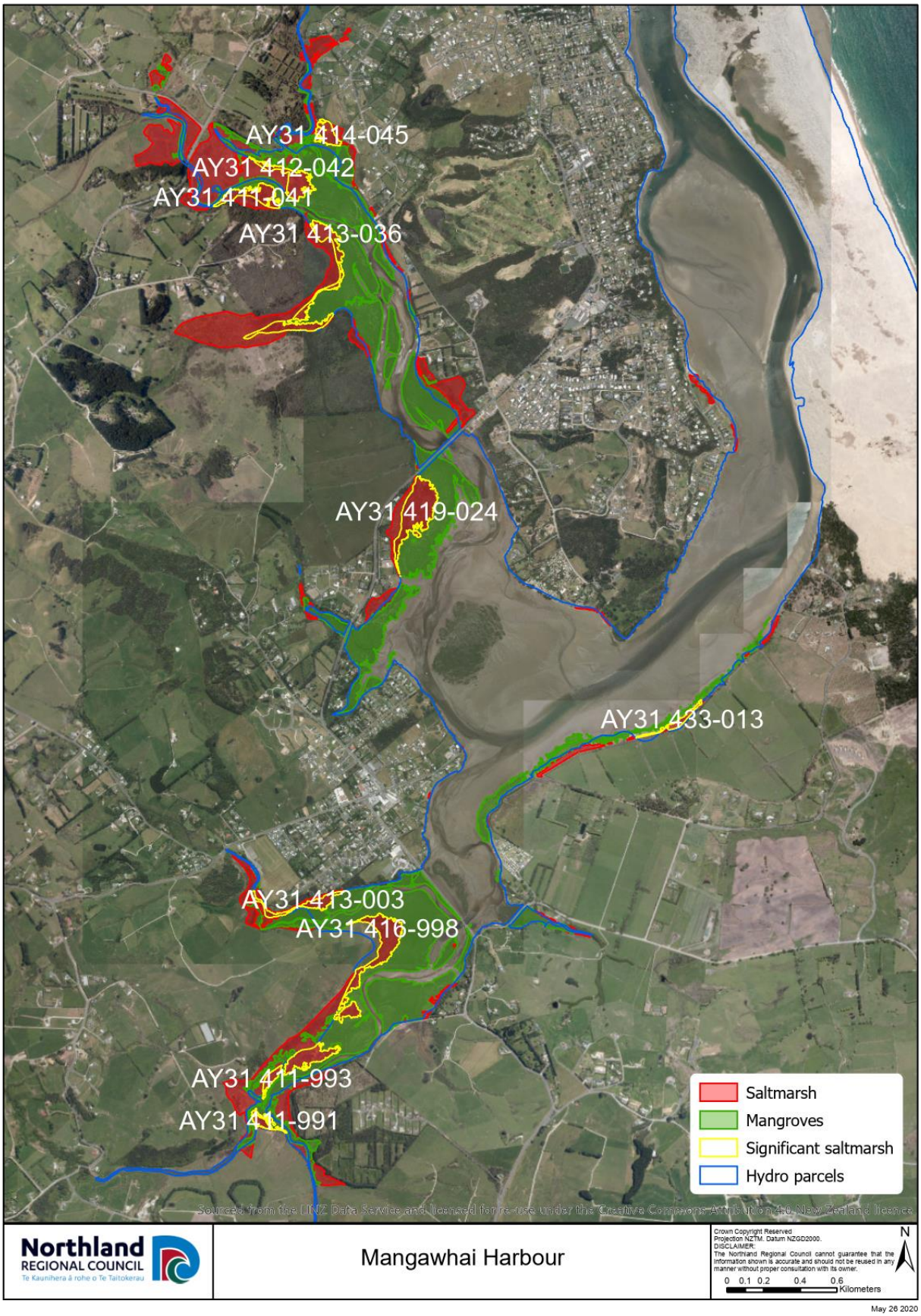
The harbour is an internationally important site recognised by the Important Bird Area programme[4] (IBA) triggered by the following species: NZ fairy tern, black-billed gull, NZ dotterel, wrybill and Australasian bittern[5].

Table 2: 'Threatened' and 'At Risk' birds using saltmarsh/mangrove habitat in the Mangawhai Harbour

Scientific name	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)
Hydroprogne caspia	Caspian tern	Threatened	Nationally vulnerable	Local feeding (mangrove channels)
Bowdleria punctata 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)
Phalacrocorax varius varius	Pied shag	At Risk	Recovering	Nationally important breeding and feeding (mangroves & channels)

[4] www.birdlife.org/worldwide/programme-additional-info/important-bird-and-biodiversity-areas-ibas
[5] Gaskin, C. 2013. Important areas for New Zealand seabirds, Part 1 – North Island. Compilation for Forest & Bird / BirdLife International.

Figure 1: Mangrove and saltmarsh habitat in Mangawhai Harbour



Insley Street

Figure 2. Mangrove and saltmarsh habitat upstream of Insley Street, Mangawhai

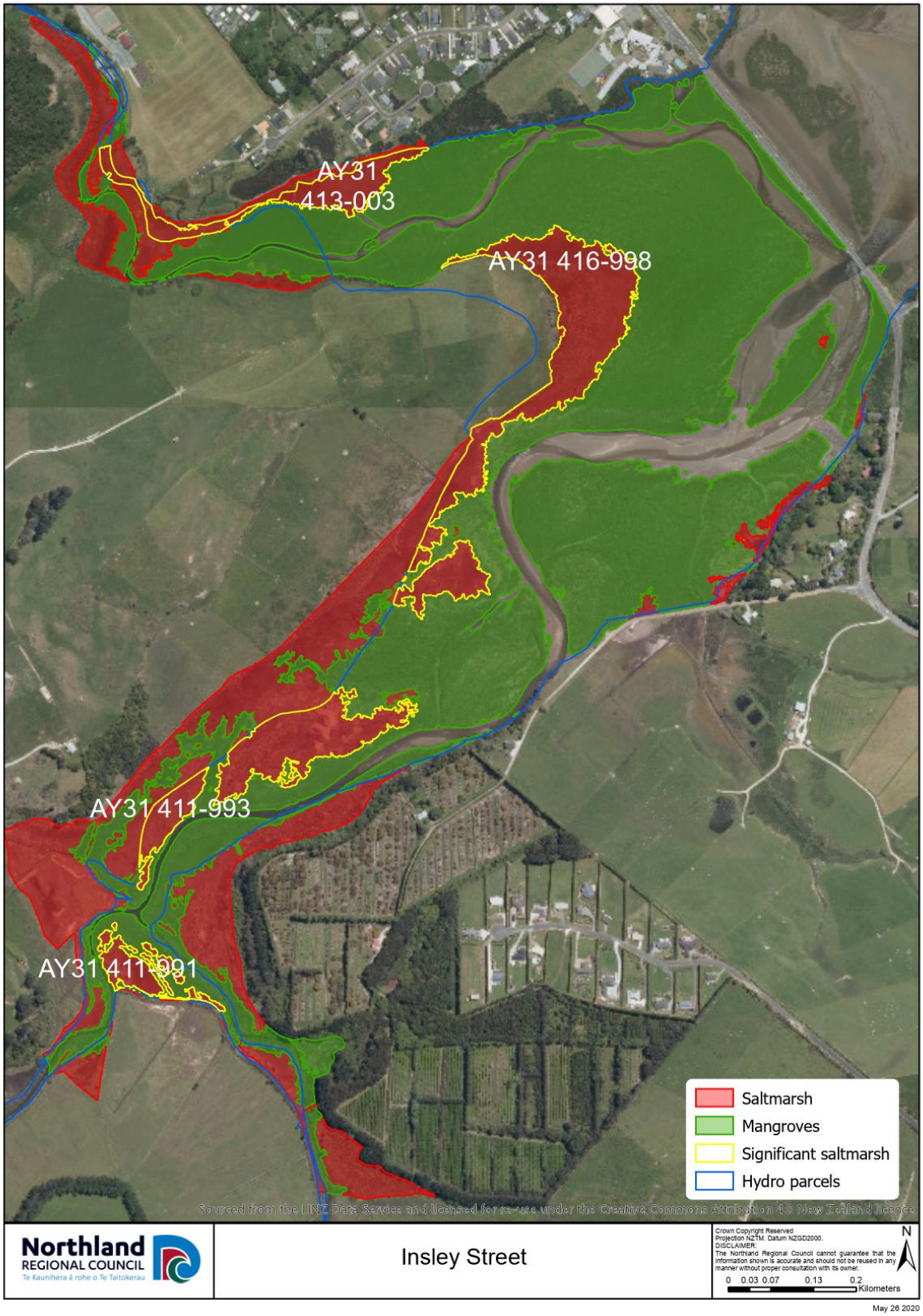


Figure 3: AY31 413-003

Figure 4: AY31 416-998

Figure 5: AY31 411-993

Figure 6: AY31 411-993

Figure 7: AY31 411-991

Tara Creek

Figure 8: Mangrove and saltmarsh habitat Tara Creek, Mangawhai Harbour

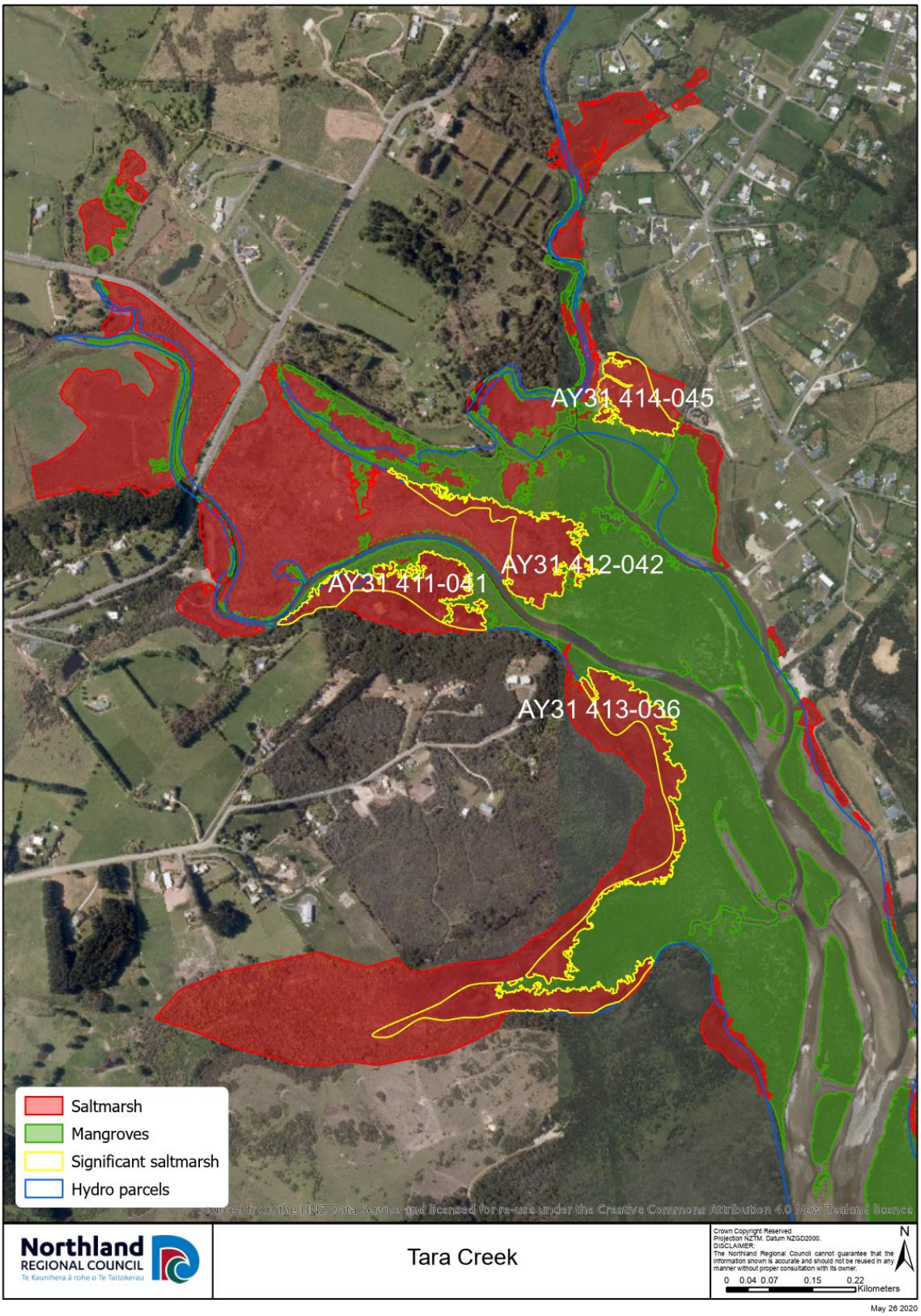


Figure 9. AY31 412-042, AY31 411-041, AY31 414-045

Figure 10: AY31 413-036

Molesworth Drive

Figure 11: Mangrove and saltmarsh habitat in Tara Creek, Mangawhai Harbour

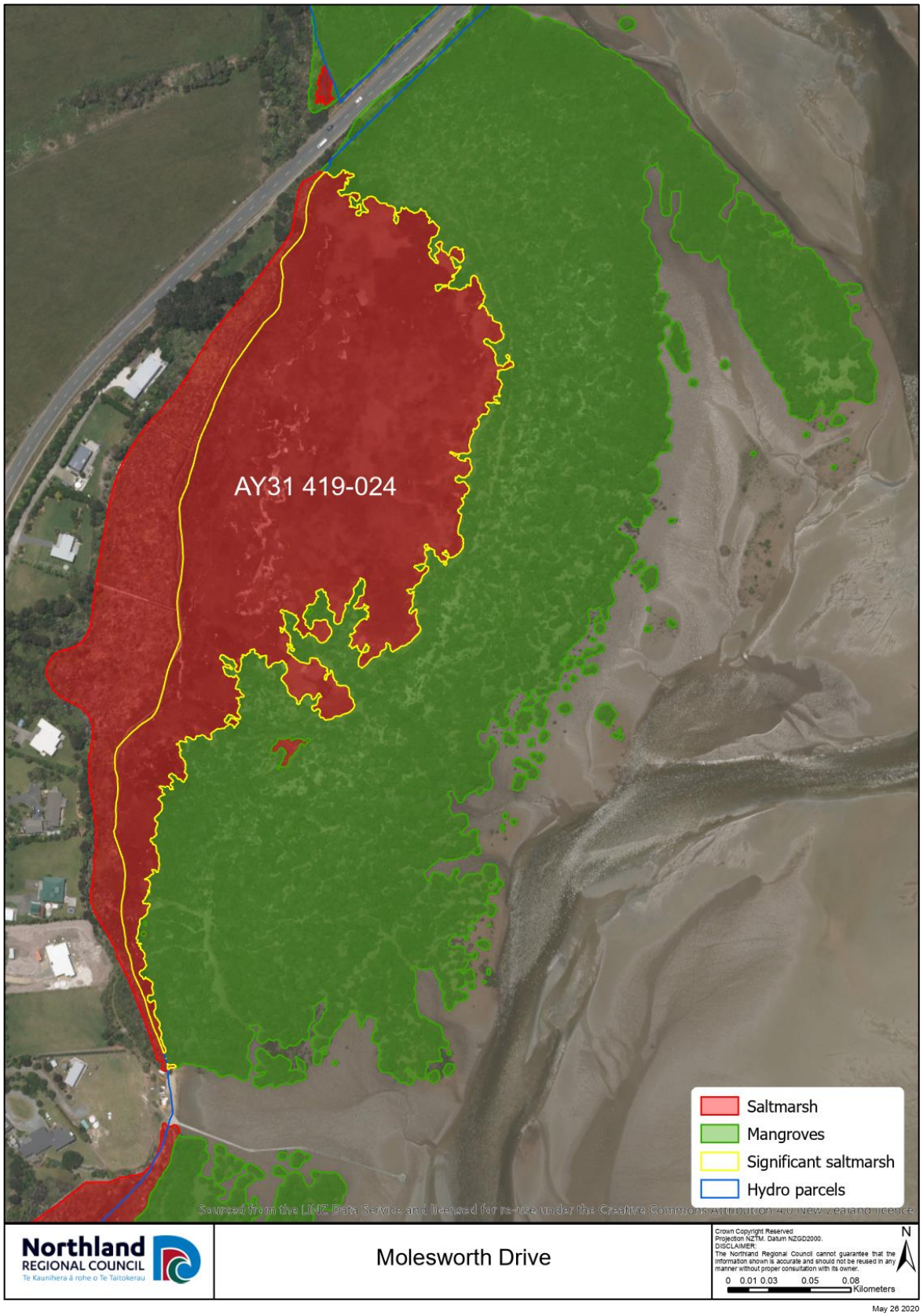


Figure 12: AY31 419-024

Tern Point

Figure 13: AY31 433-013

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