



Hokianga Harbour

Intertidal vegetation mapping

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Regional Council

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 report¹ 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

Hokianga Harbour is a shallow drowned valley estuary on the west coast of the Northland peninsula. Two thousand, three hundred and seventy-one hectares of mangrove and 849.5 hectares of saltmarsh have been mapped. A total of 113 saltmarsh sites have been identified that exceed the RPS wetland area threshold of 0.5 hectare for significant saltmarsh, with a total area of 492.4 hectares.

Area	Saltmarsh sites over threshold	Total area (m ²)
Motutoe Creek	2	13,519
Whirinaki River	4	221,911
Wharekauere River	3	31,391
Omanaia River	4	71,842
Lower Waima River	9	269,035
Mid Waima River	4	142,215
Upper Waima River	4	76,527
Wairere River	8	174,019
Waihou River	11	1,980,074
Oriria River	9	98,284
Upper Mangamuka River	9	483,460
Mid Mangamuka River & Oraoa Stream	10	244,182
Lower Mangamuka River	4	214,090
Lower Tapuwae River	5	40,177
Upper Tapuwae River	7	378,459
Motuti River & Whangapapatiki Creek	6	89,066
Whakapara River	6	111,766
Whanganamu Creek & Waireia Creek	5	106,894
Pupuwae Creek & Paekawa Island	3	176,943
Total	113	4,923,854

From Bellingham, M. 2019². Areas of significant indigenous vegetation and significant habitats of indigenous fauna in terrestrial, freshwater and marine environments around the Hokianga Harbour:

- The mangrove forest and shrublands, salt and brackish marshes and connected freshwater wetlands, with fringing terrestrial forests and shrublands are the habitat of a nationally significant population of the banded rail (*Gallirallus philippensis assimilis*)
- Australasian bittern *Botaurus poiciloptilus* is found throughout the mangrove forest and shrublands, salt and brackish marshes and connected freshwater wetlands in the harbour catchment. The bittern move between freshwater and intertidal habitat around the harbour and probably occupy 30-40ha of wetland habitat per pair.
- North Island fernbird (*Bowdleria punctata vealeae*) is found in mangrove shrublands, brackish marshes and connected freshwater wetlands in the harbour catchment.
- Spotless crane (*Porzana tabuensis tabuensis*) are found in the upper reaches of brackish and freshwater marsh throughout the harbour, whereas marsh crane (*Porzana pusilla affinis*) are found in brackish and salt marshes in a few localities.

Table 1: ‘Threatened’ and ‘At Risk’ birds using saltmarsh and adjoining mangrove habitat in the Hokianga Harbour

Species Scientific Name	Species Common Name	NZ threat classification (2016)		Significance for species
<i>Botaurus poiciloptilus</i>	Australasian bittern	Threatened	Nationally critical	Locally important habitat (saltmarsh/mangrove)
<i>Hydroprogne caspia</i>	Caspian tern	Threatened	Nationally vulnerable	Local feeding (mangrove channels)
<i>Bowdleria punctate vealeae</i>	North Island fernbird	At Risk	Declining	Nationally important breeding and feeding (saltmarsh/mangrove)
<i>Gallirallus philippensis assimilis</i>	Banded rail	At Risk	Declining	Nationally important breeding and feeding (saltmarsh/mangrove)
<i>Haematopus finschi</i>	NZ pied oystercatcher	At Risk	Declining	Local feeding (mangrove edges)
<i>Porzana tabuensis tabuensis</i>	Spotless crane	At Risk	Declining	Locally important breeding and feeding (saltmarsh/mangrove)
<i>Porzana pusilla affinis</i>	Marsh crane	At Risk	Declining	Locally important breeding and feeding (saltmarsh/mangrove)
<i>Phalacrocorax varius varius</i>	Pied shag	At Risk	Recovering	Locally important breeding and feeding (mangrove roost, channels)

² Bellingham M. 2019. Areas of significant indigenous vegetation and significant habitats of indigenous fauna in terrestrial, freshwater and marine habitats around the Hokianga Harbour. Aristos Consultants Ltd, Auckland

Motutoe Creek

Two significant saltmarsh features were identified in the and around Motutoe Creek, totalling 1.4 hectares (Figure 1 & Table 2).

Figure 1: Mangrove and saltmarsh habitat in Motutoe Creek

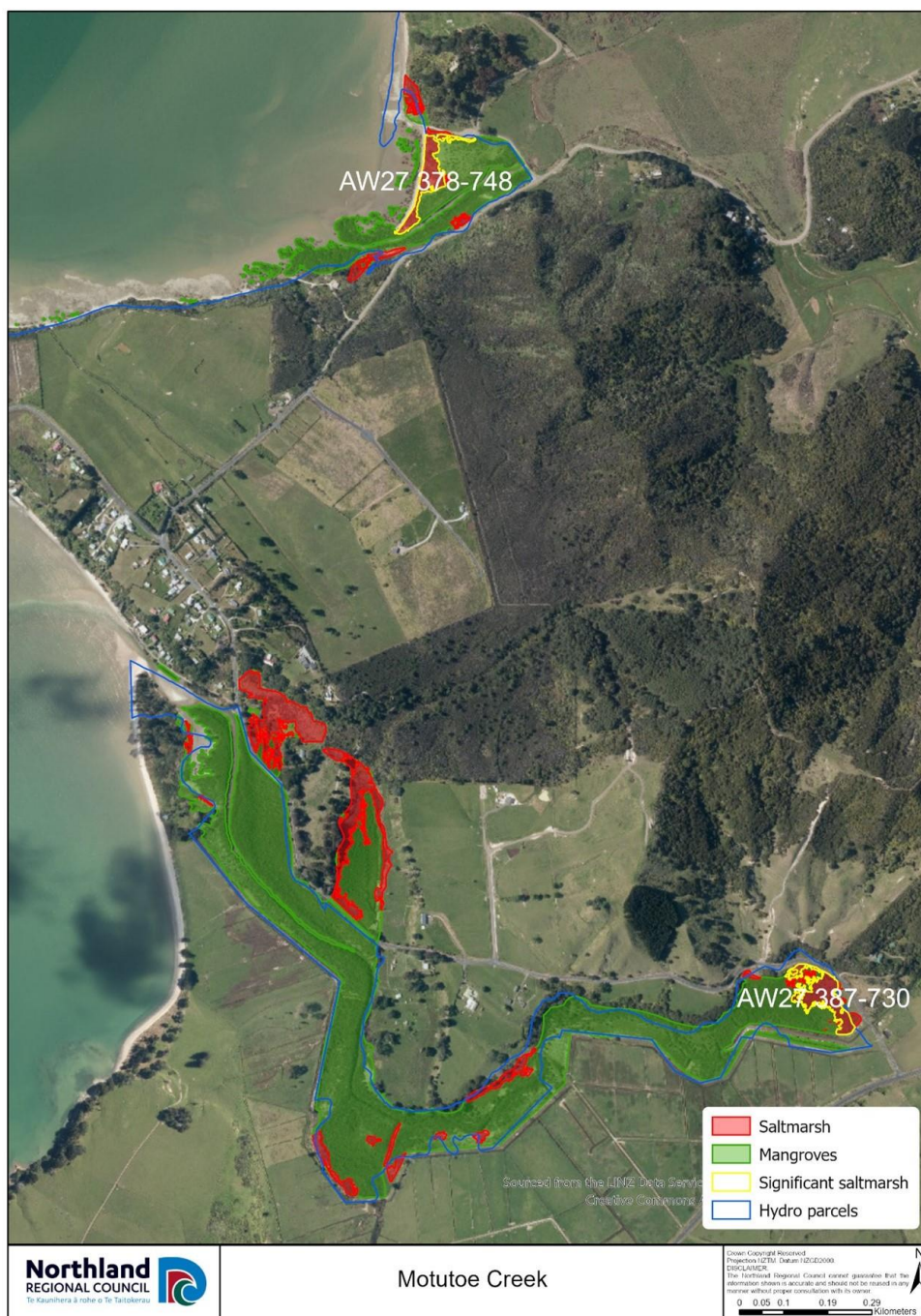


Table 2: Significant saltmarsh identified in the vicinity of Motutoe Creek

Reference	Area (m ²)
AW27 378-748	6,239
AW27 387-730	7,280
Total	13,519

Figure 2: AW27 387-730



Figure 3: AW27 378-748



Whirinaki River

Four significant saltmarsh features were identified in Whirinaki River, totalling 22 hectares (Figure 4 & Table 3).

Figure 4: Mangrove and saltmarsh habitat in Whirinaki River

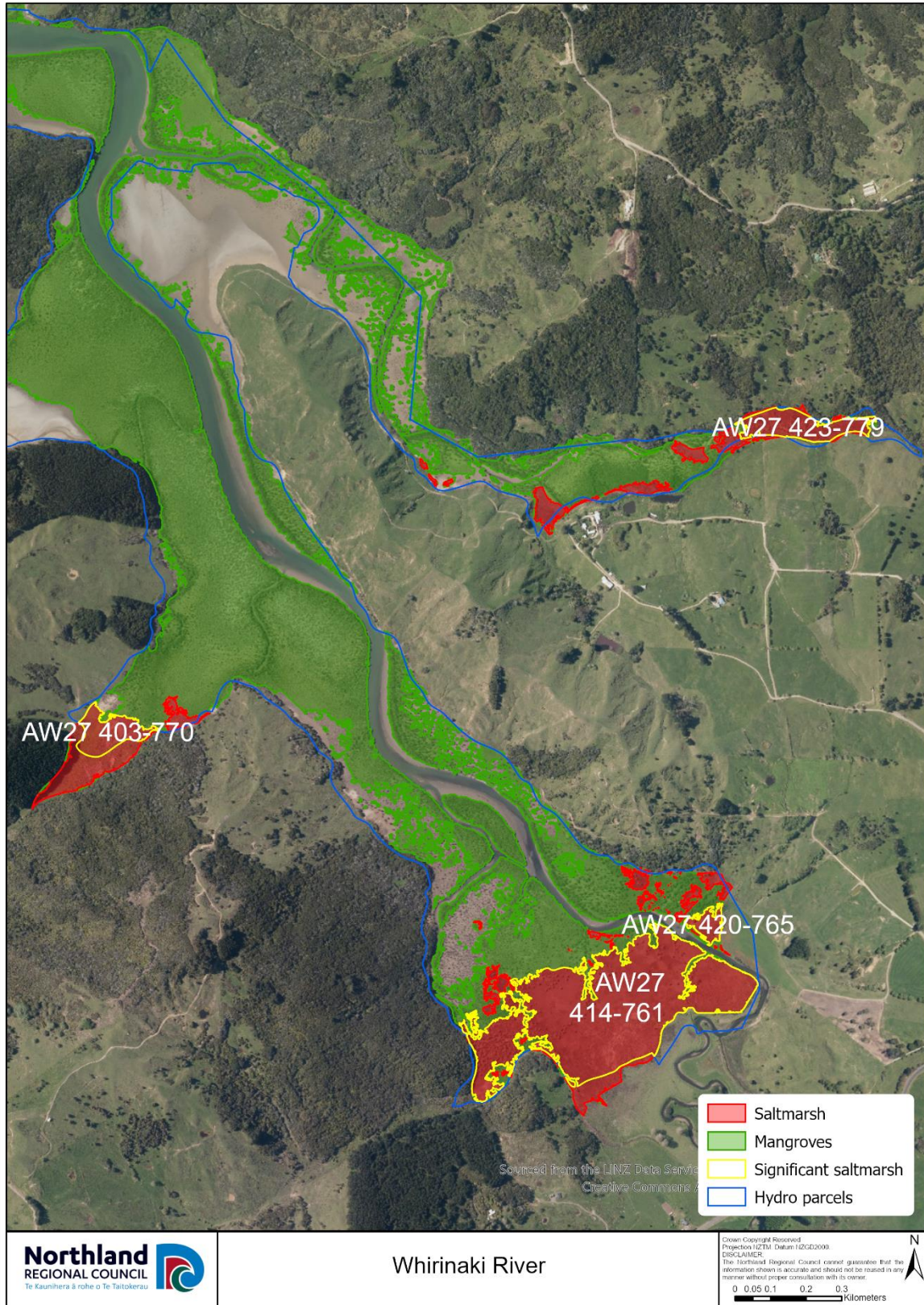


Table 3: Significant saltmarsh identified in Whirinaki River

Reference	Area (m ²)
AW27 420-765	6,238
AW27 403-770	16,275
AW27 423-779	21,002
AW27 414-761	178,396
Total	221,910

Figure 5: AW27 403-770



Figure 6: AW27 414-761, AW27 420-765



Figure 7: AW27 423-779



Wharekauere River

Three significant saltmarsh features were identified in Wharekauere River, totalling three hectares (Figure 8 & Table 4).

Figure 8: Saltmarsh and mangrove habitat in Wharekauere River

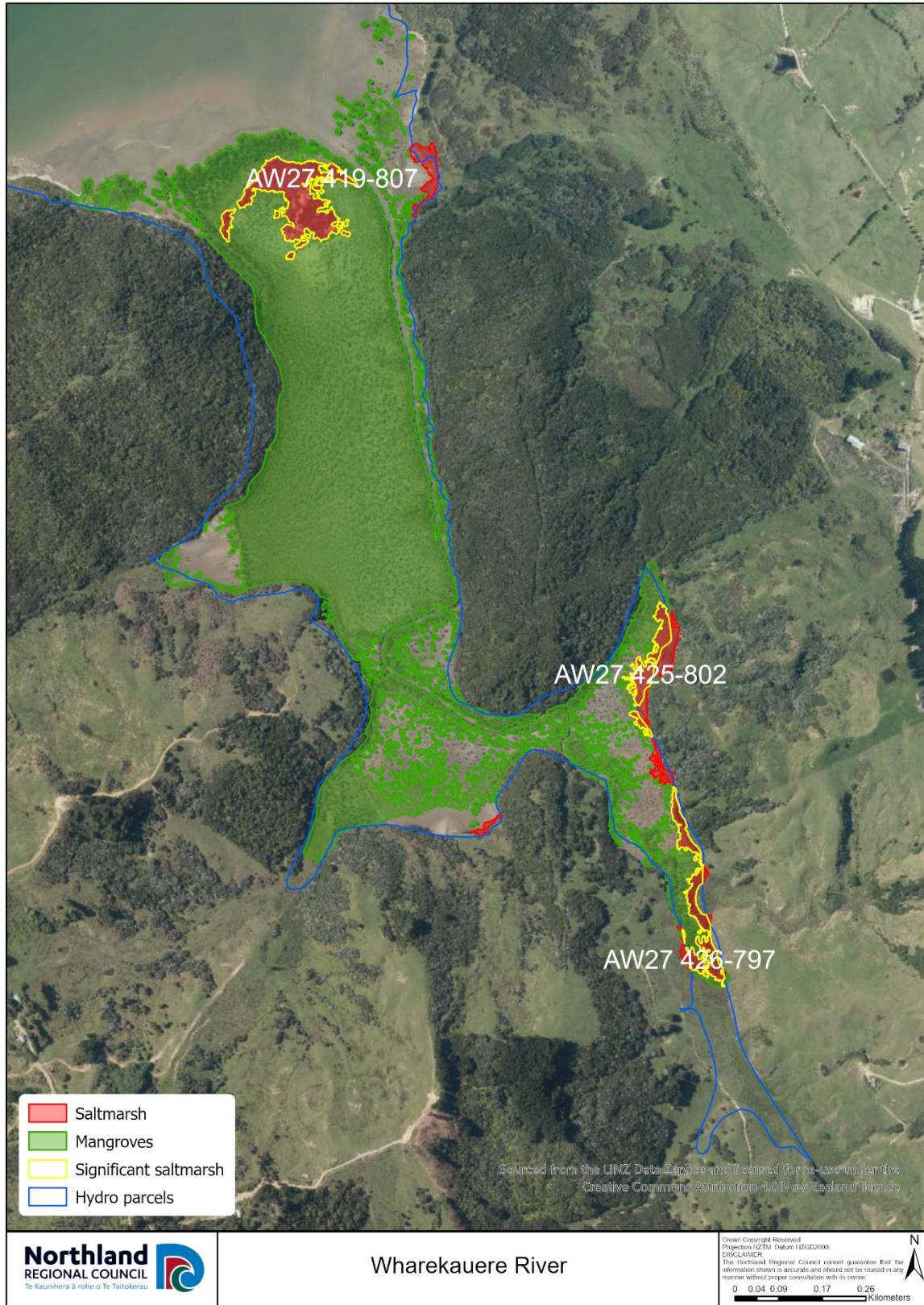


Table 4: Significant saltmarsh identified in Wharekauere River

Reference	Area (m ²)
AW27 425-802	5,415
AW27 426-797	7,594
AW27 419-807	18,382
Total	31,392

Figure 9: AW27 426-797



Figure 10: AW27 425-802



Figure 11: AW27 419-807



Omanaia River

Four significant saltmarsh features were identified in Omanaia River, totalling seven hectares (Figure 12 & Table 5).

Figure 12: Saltmarsh and mangrove habitat in Omanaia River

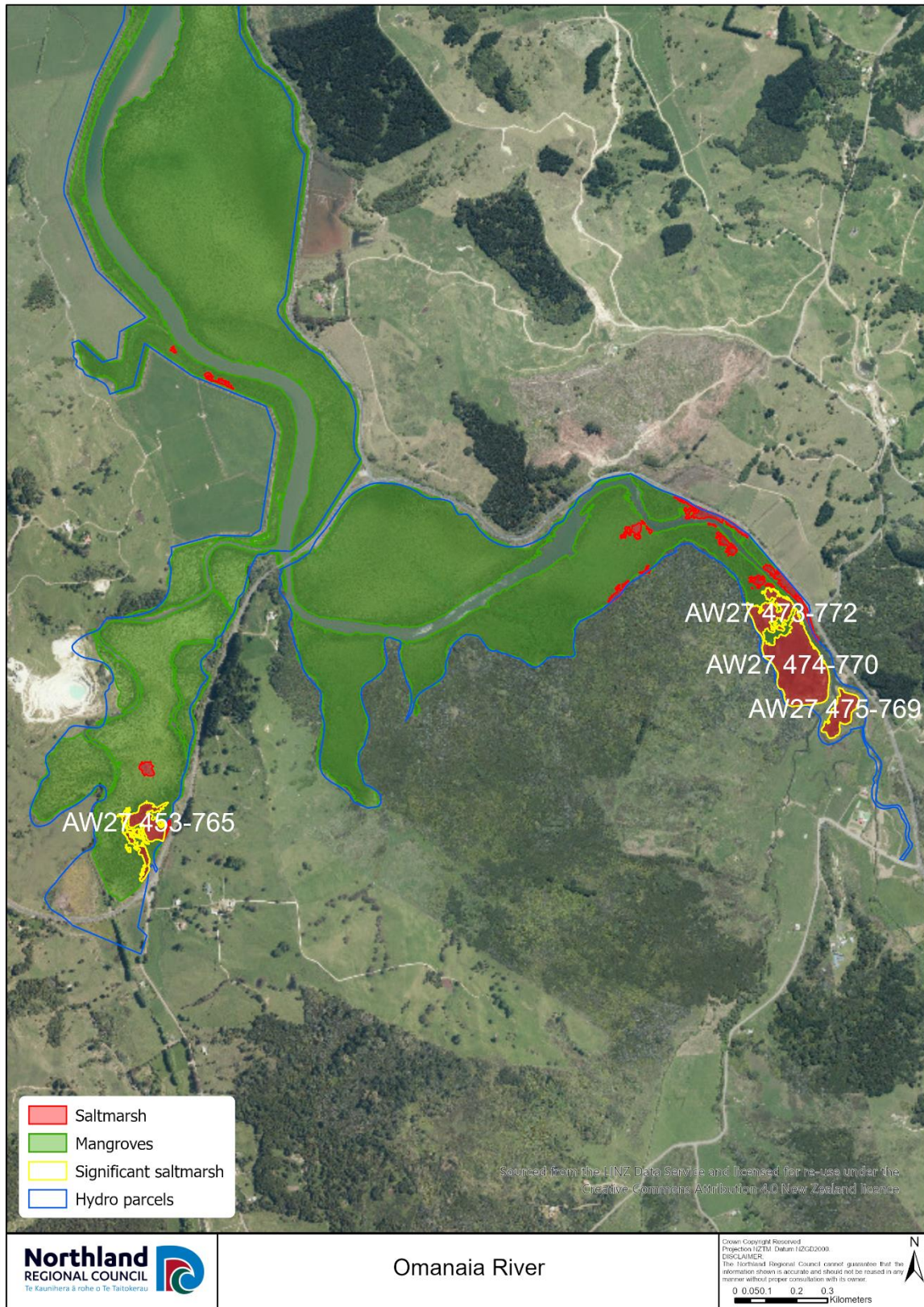


Table 5: Significant saltmarsh identified in Omanaia River

Reference	Area (m ²)
AW27 475-769	9,015
AW27 473-772	11,570
AW27 453-765	13,271
AW27 474-770	37,986
Total	71,843

Figure 13: AW27 453-765



Figure 14: AW27 473-772, AW27 474-770, AW27 475-769



Lower Waima River

Nine significant saltmarsh features were identified in the Lower Waima River, totalling 27 hectares (Figure 15 & Table 6).

Figure 15: Saltmarsh and mangrove habitat in the Lower Waima River

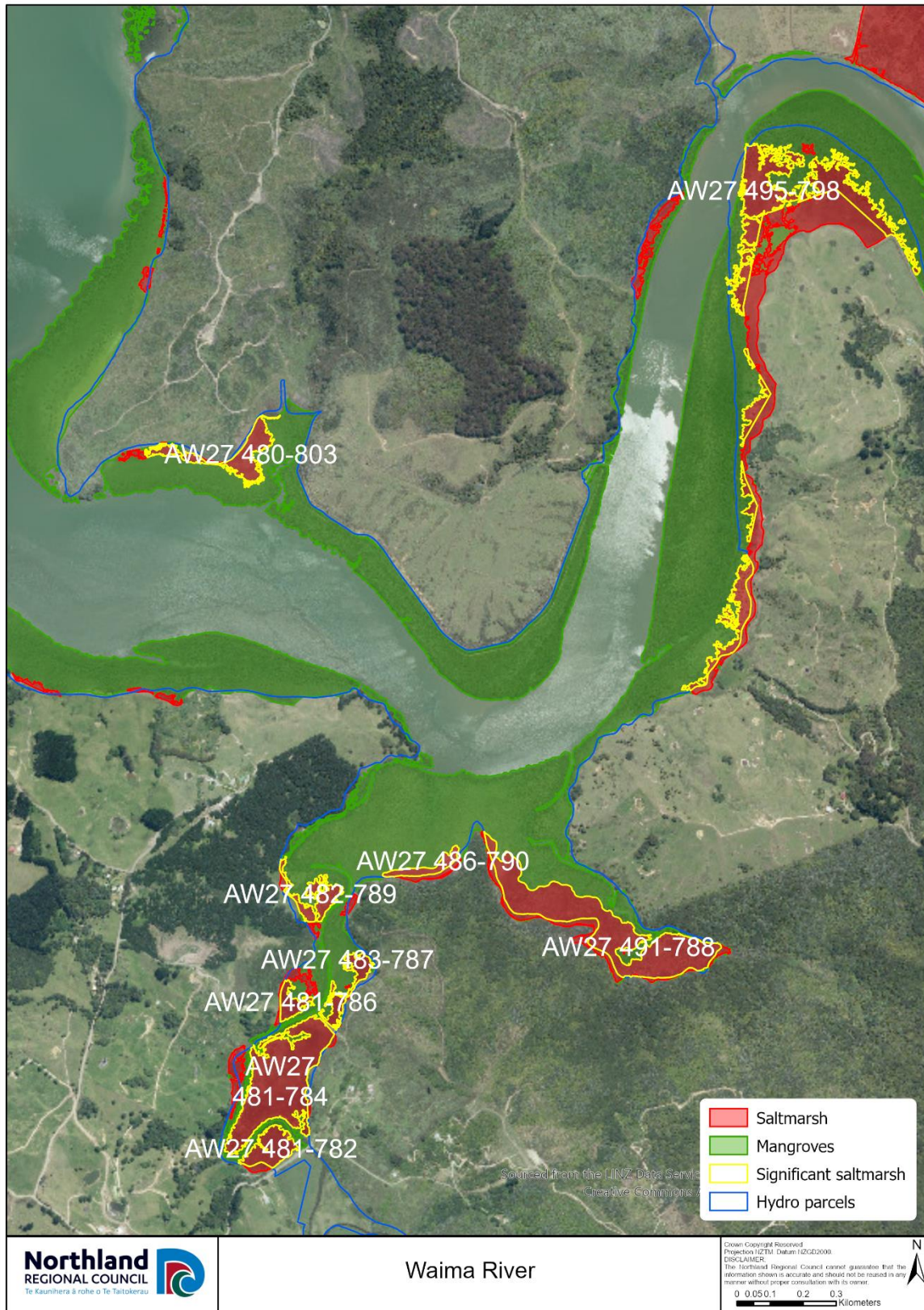


Table 6: Significant saltmarsh identified in the Lower Waima River

Reference	Area (m ²)
AW27 481-786	5,416
AW27 486-790	5,723
AW27 483-787	8,831
AW27 482-789	10,058
AW27 481-782	12,097
AW27 480-803	16,582
AW27 481-784	59,566
AW27 491-788	72,995
AW27 495-798	77,767
Total	269,035

Figure 16: AW27 480-803



Figure 17: AW27 483-787, AW27 481-786, AW27 481-784, AW27 481-782

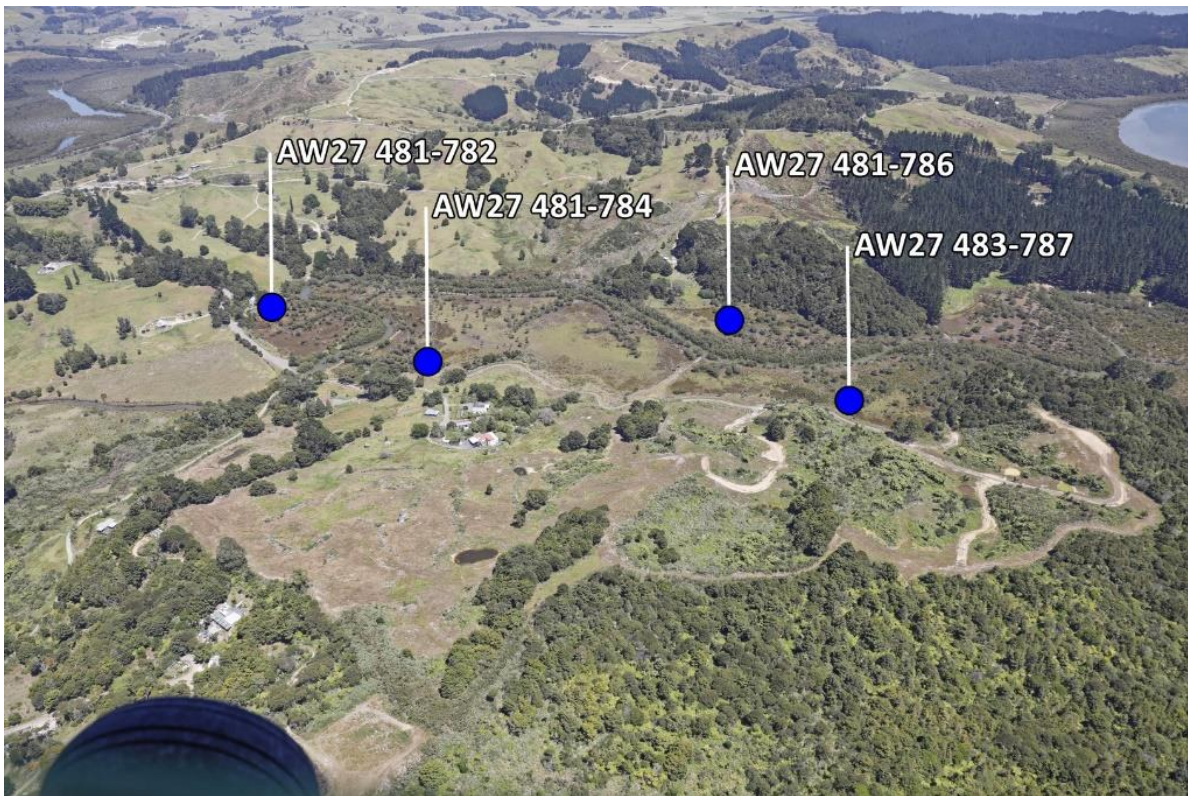


Figure 18: AW27 486-790, AW27 482-789



Figure 19: AW27 491-788



Figure 20: AW27 495-798



Figure 21: AW27 495-798

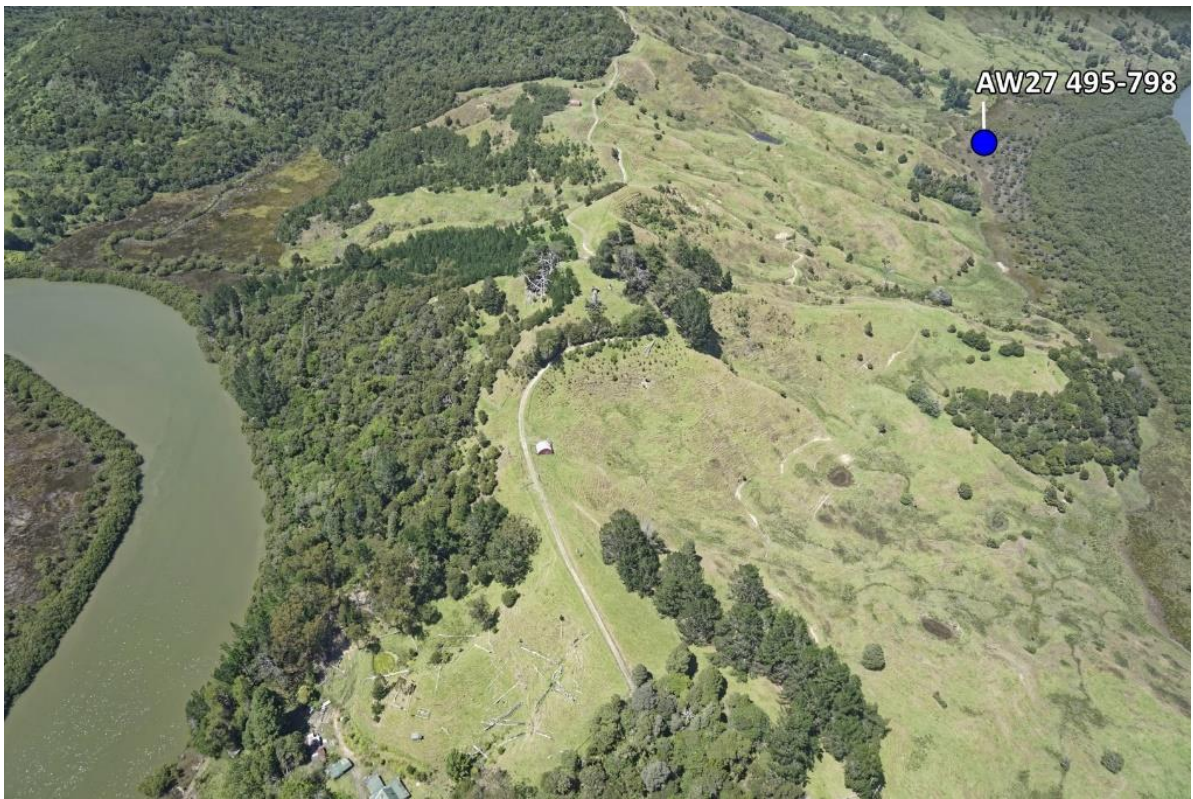


Figure 22: AW27 495-798



Mid Waima River

Four significant saltmarsh features were identified in the middle section of the Waima River, totalling 14 hectares (Figure 23 & Table 7).

Figure 23: Saltmarsh and mangrove habitat in the Mid Waima River

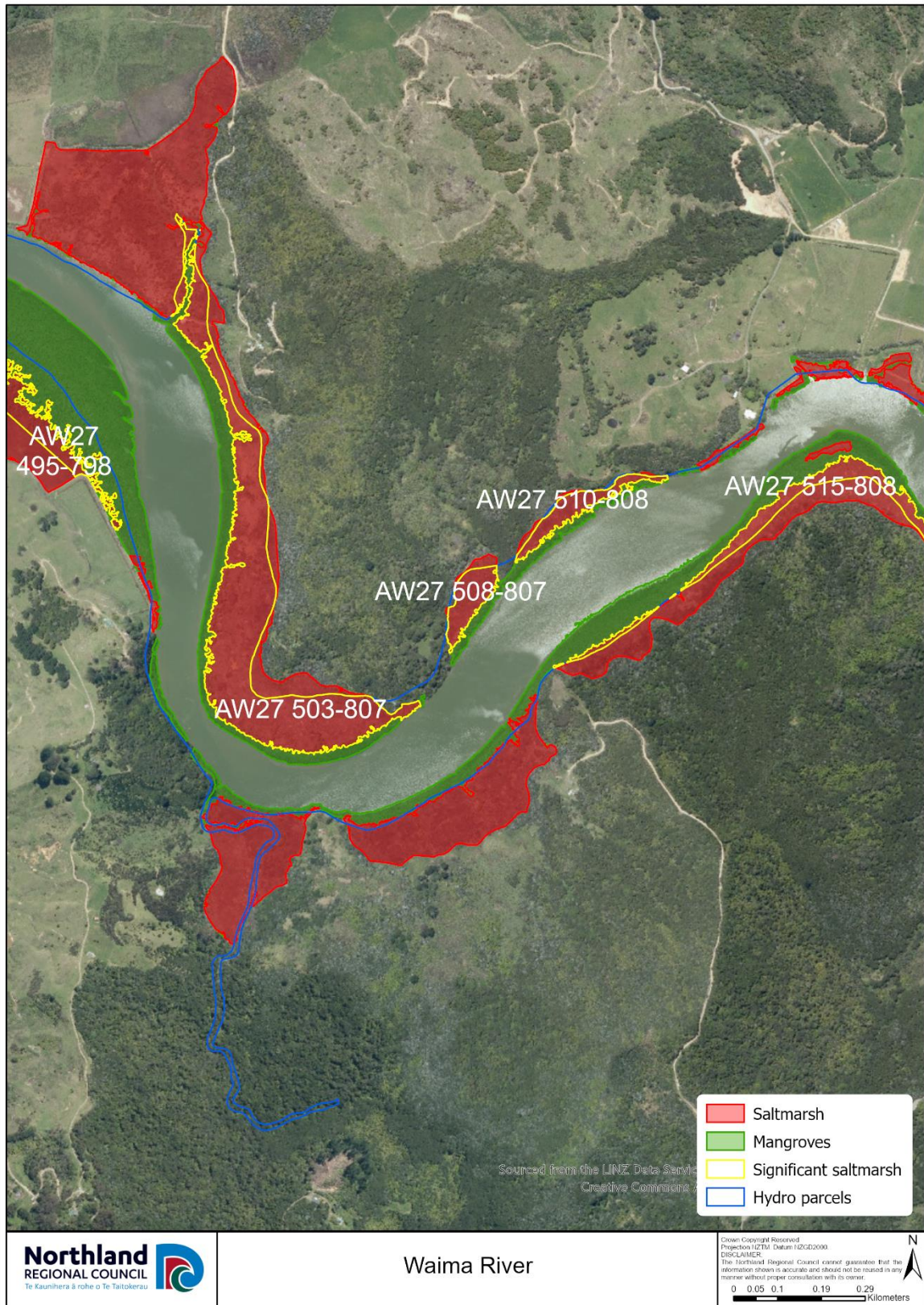


Table 7: Significant saltmarsh identified in the middle section of the Waima River

Reference	Area (m ²)
AW27 515-808	18,788
AW27 510-808	10,157
AW27 503-807	103,422
AW27 508-807	9,848
Total	142,216

Figure 24: AW27 515-808



Figure 25: AW27 508-807, AW27 510-808



Figure 26: AW27 503-807



Upper Waima River

Four significant saltmarsh features were identified in the Upper Waima River, totalling 7.7 hectares (Figure 27 & Table 8).

Figure 27: Saltmarsh and mangrove habitat in the Upper Waima River

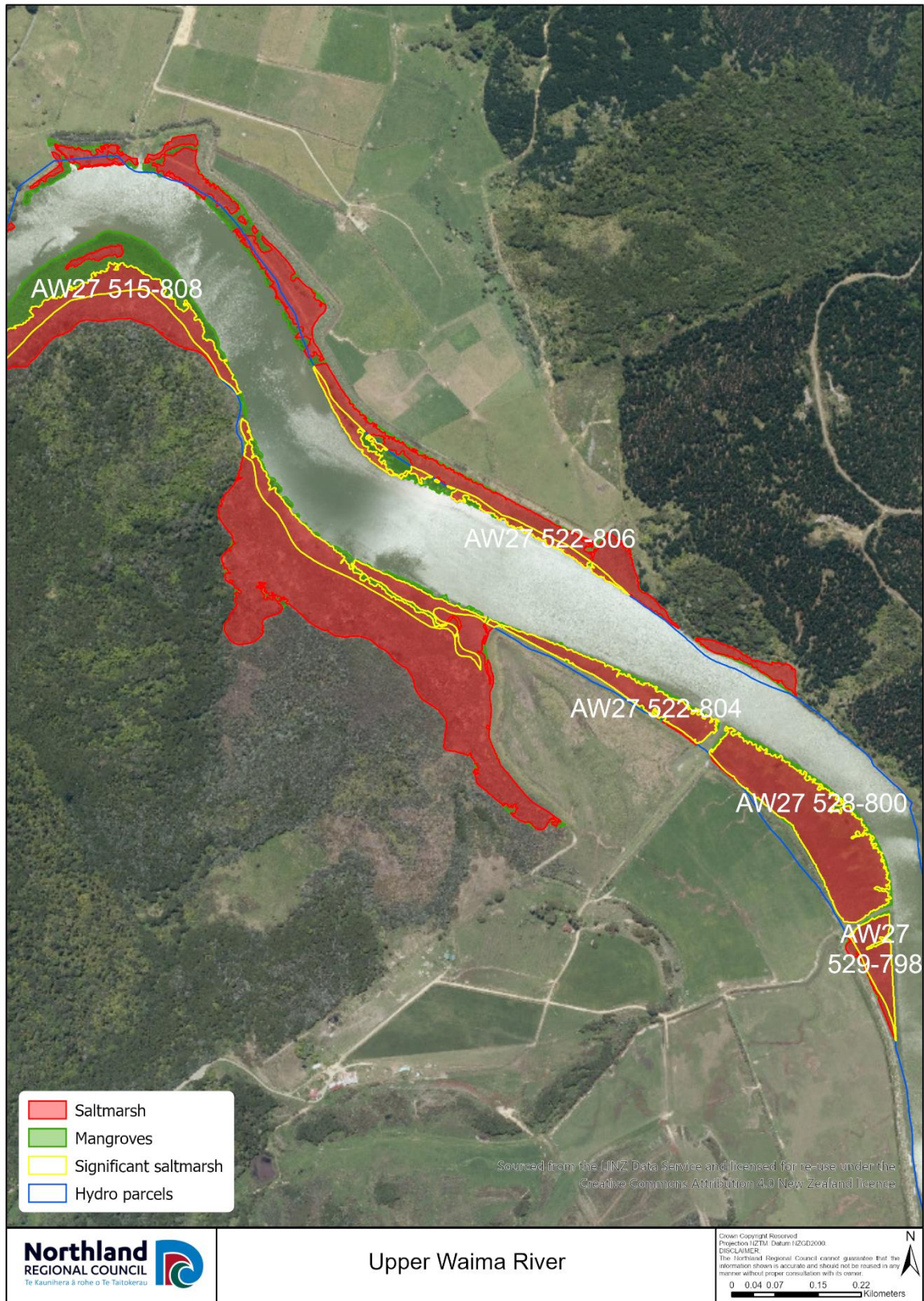


Table 8: Significant saltmarsh identified in the Upper Waima River

Reference	Area (m ²)
AW27 522-804	26,763
AW27 529-798	6,880
AW27 522-806	7,200
AW27 528-800	35,684
Total	76,527

Figure 28: AW27 529-798, AW27 528-800, AW27 522-804

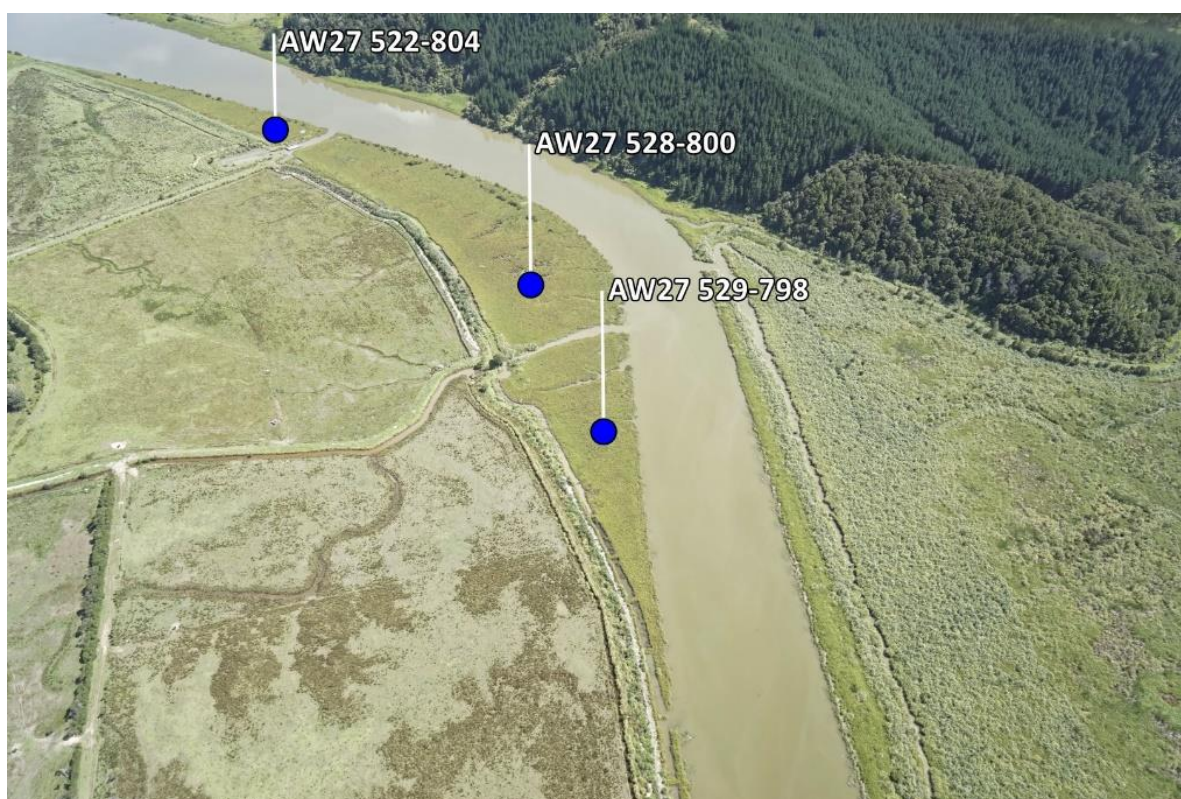


Figure 29: AW27 522-806



Wairere River

Eight significant saltmarsh features were identified in the Wairere River, totalling 12 hectares (Figure 30 & Table 9).

Figure 30: Saltmarsh and mangrove habitat in the Wairere River

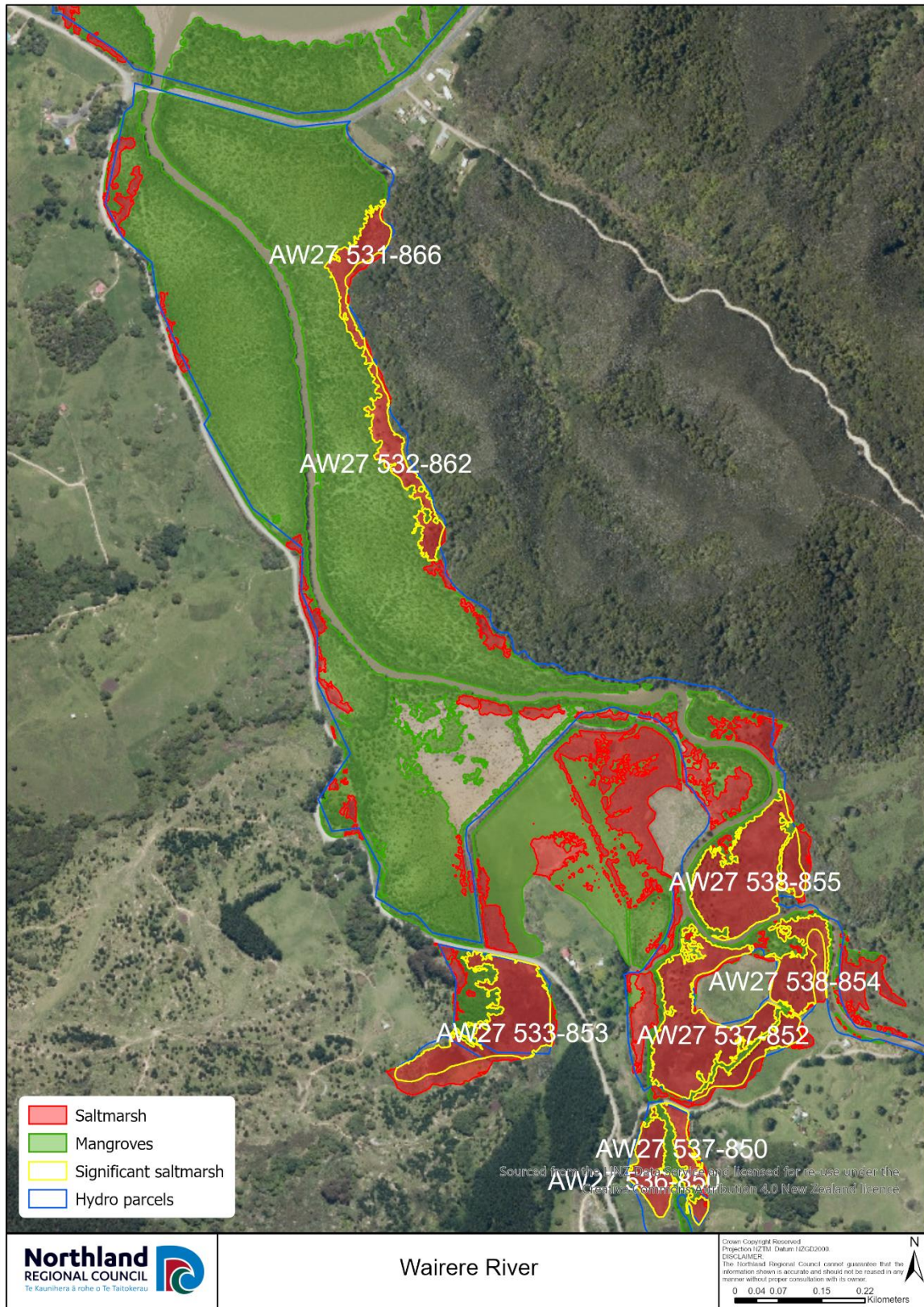


Table 9: Significant saltmarsh identified in the Wairere River

Reference	Area (m ²)
AW27 537-850	56,511
AW27 531-866	7,906
AW27 536-850	7,956
AW27 538-854	9,422
AW27 532-862	9,505
AW27 533-853	23,314
AW27 538-855	27,191
AW27 537-852	32,214
Total	174,019

Figure 31: AW27 533-853



Figure 32: AW27 538-855, AW27 538-854, AW27 537-852



Figure 33: AW27 536-850, AW27 537-850



Figure 34: AW27 531-866



Figure 35: AW27 532-862



Waihou River

Eleven significant saltmarsh features were identified in the Waihou River, totalling 198 hectares (Figure 36 & Table 10).

Figure 36: Saltmarsh and mangrove habitat in the Waihou River

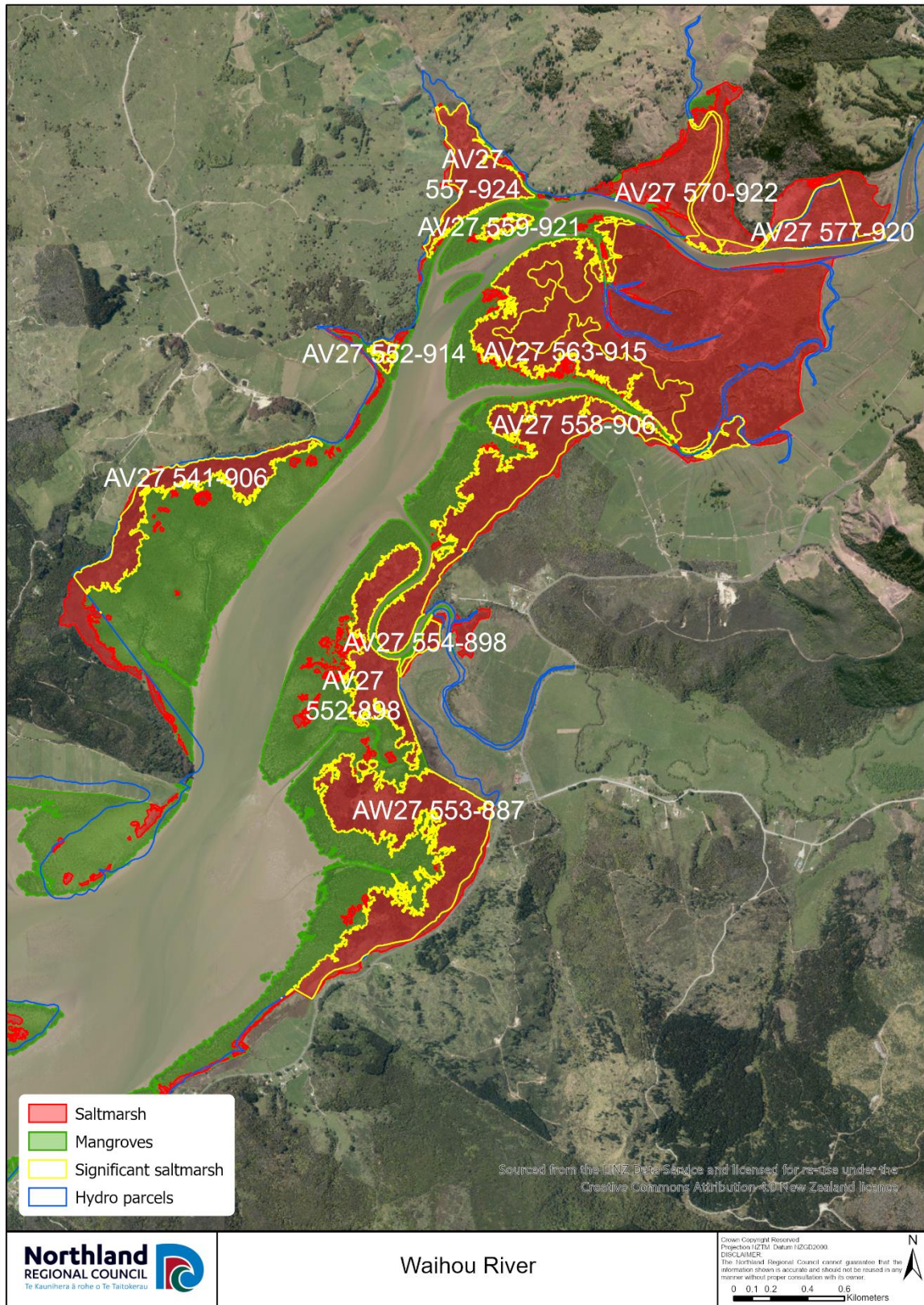


Table 10: Significant saltmarsh identified in the Waihou River

Reference	Area (m ²)
AV27 552-914	13,124
AV27 559-921	16,876
AV27 554-898	18,463
AV27 570-922	39,116
AV27 577-920	115,230
AV27 557-924	150,307
AV27 552-898	187,002
AV27 541-906	191,900
AV27 563-915	369,641
AV27 558-906	397,496
AW27 553-887	480,919
Total	1,980,074

Figure 37: AW27 553-887



Figure 38: AV27 554-898, AV27 552-898

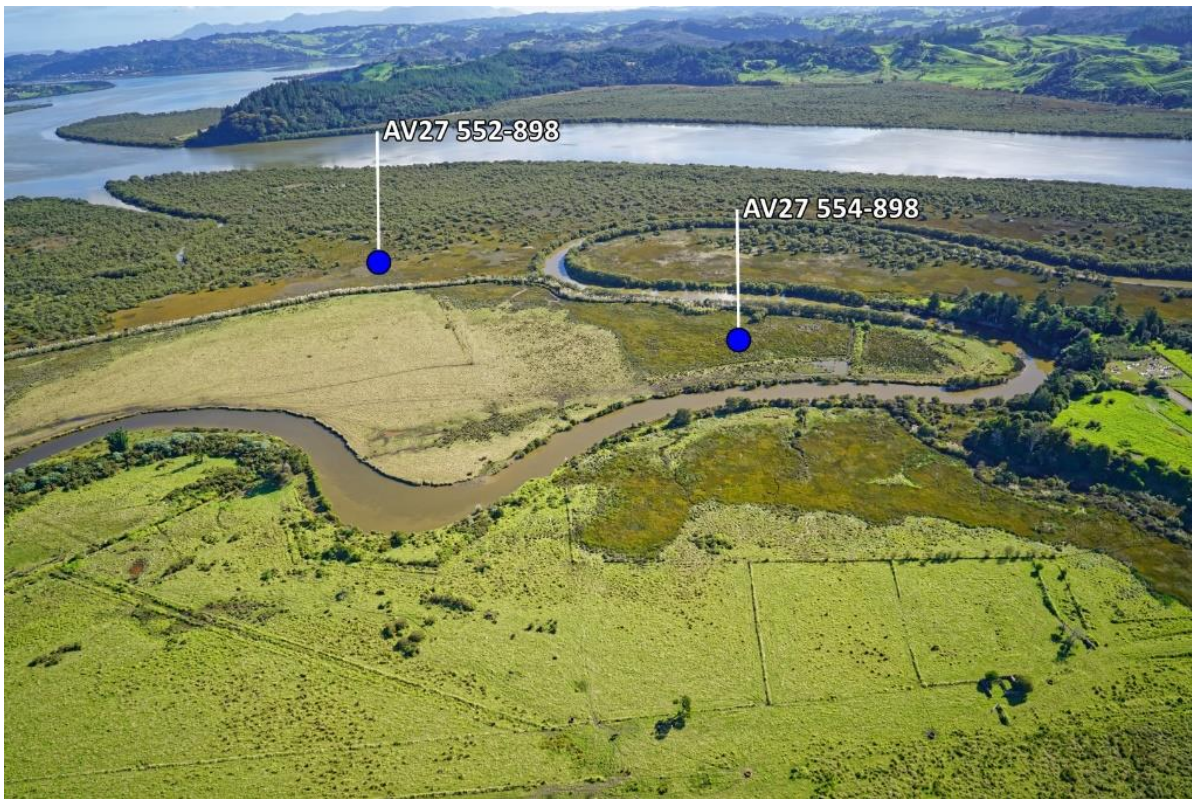


Figure 39: AV27 558-906



Figure 40: AV27 563-915

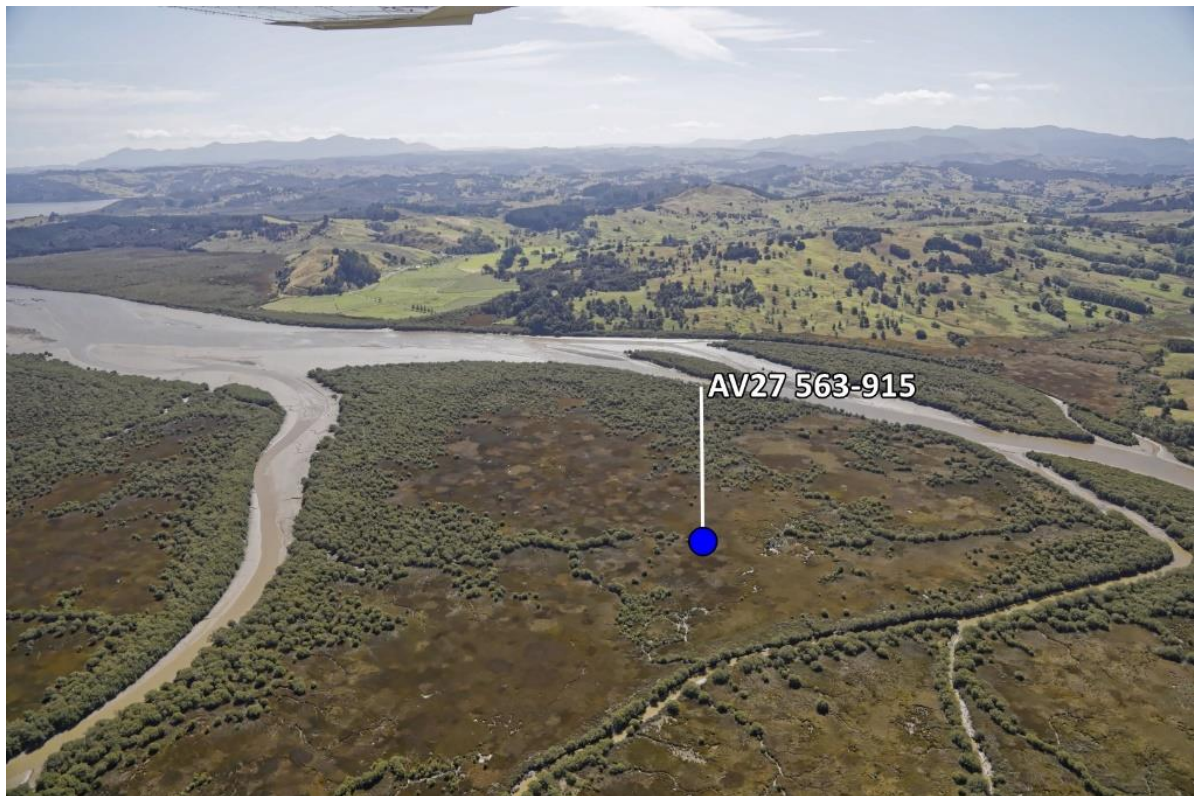


Figure 41: AV27 577-920

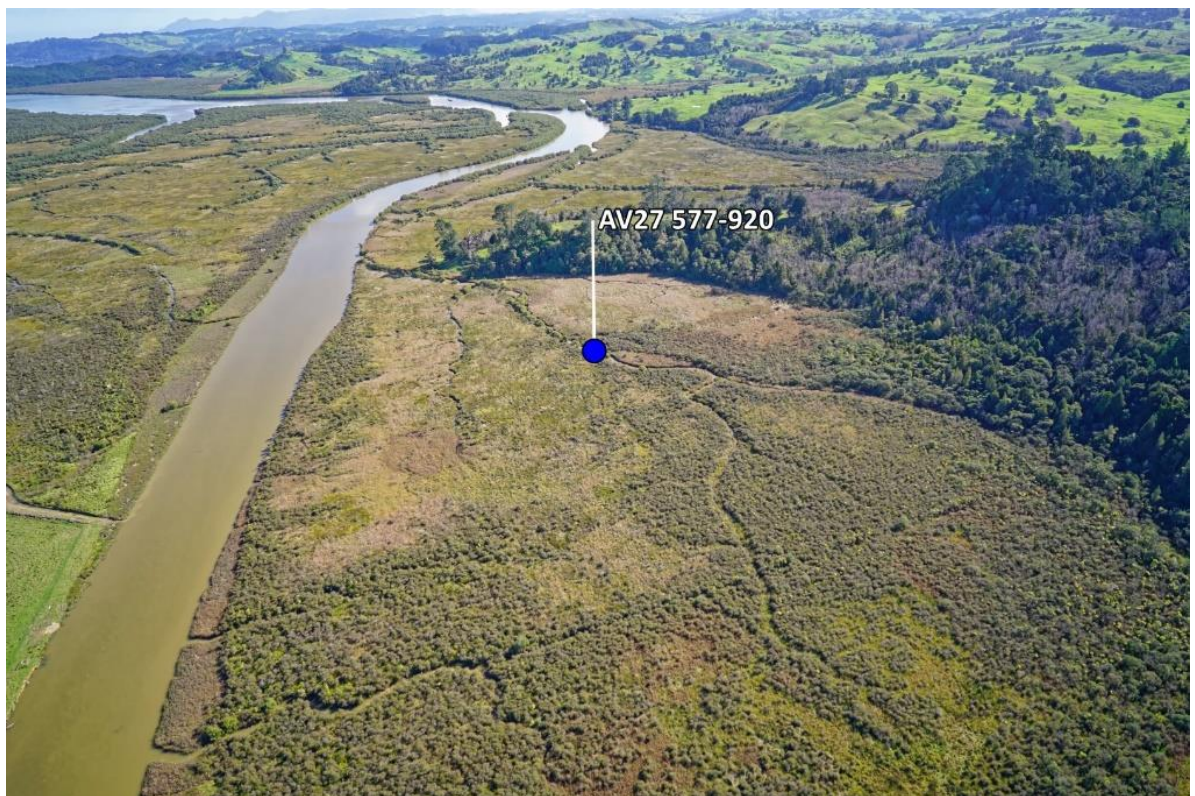


Figure 42: AV27 570-922



Figure 43: AV27 557-924, AV27 559-921

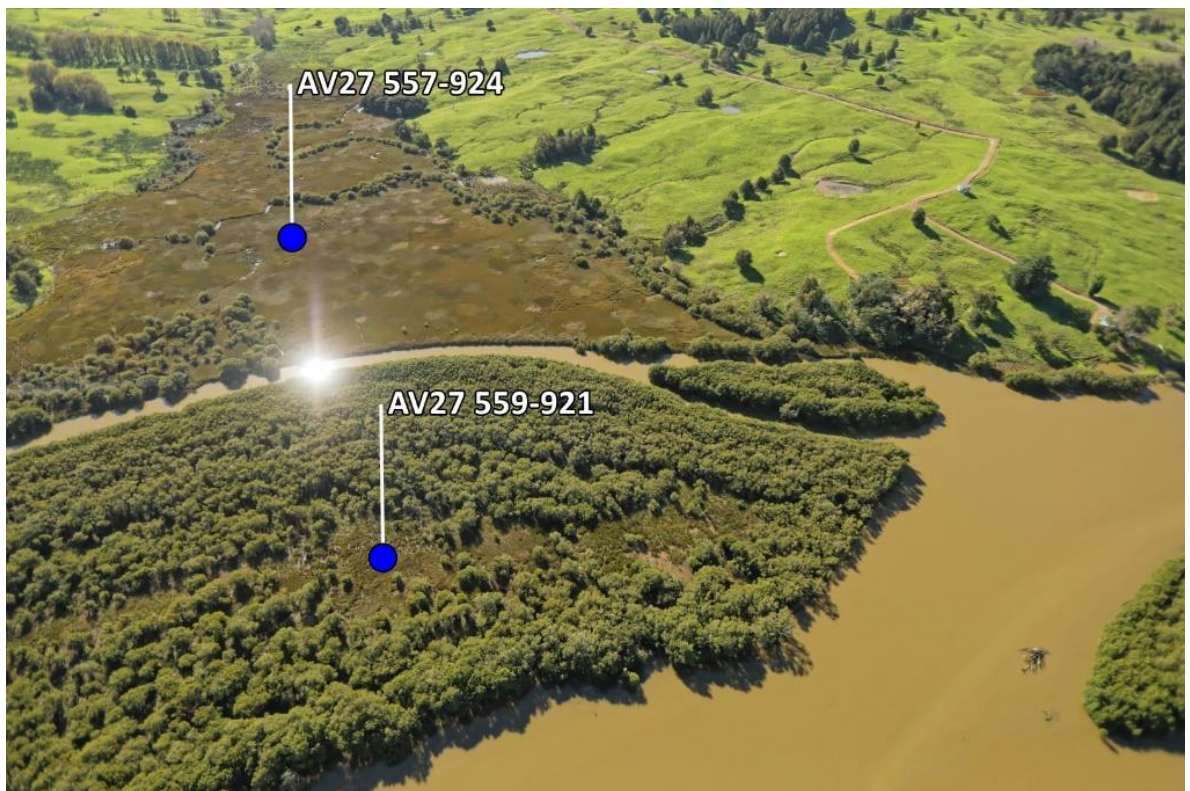


Figure 44: AV27 552-914



Figure 45: AV27 541-906



Figure 46: AV27 541-906



Figure 47: AV27 541-906



Oriria River

Nine significant saltmarsh features were identified in the Oriria River, totalling ten hectares (Figure 48 & Table 11).

Figure 48: Saltmarsh and mangrove habitat in Oriria River

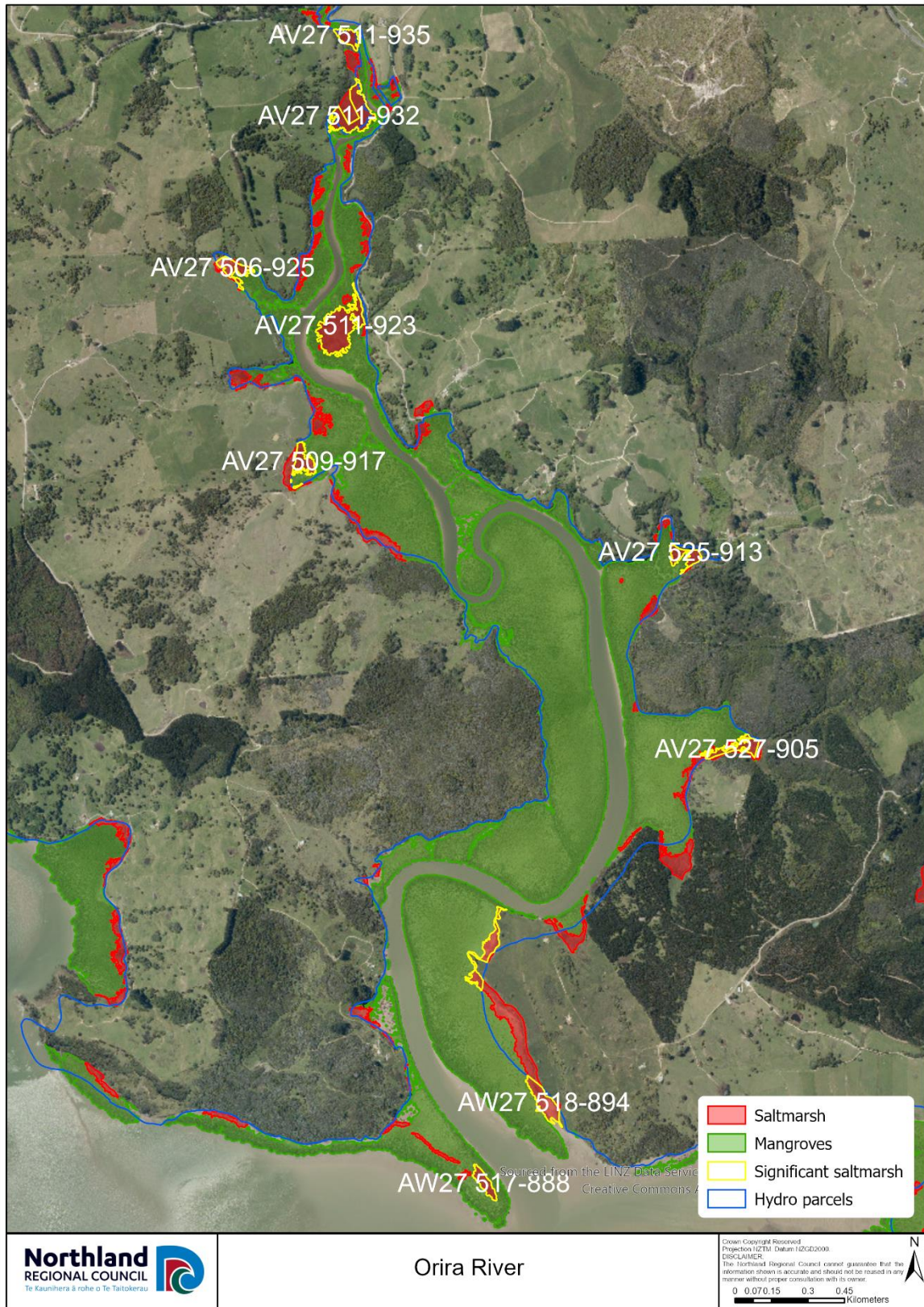


Table 11: Significant saltmarsh identified in the Orira River

Reference	Area (m ²)
AV27 511-935	5,026
AW27 517-888	5,445
AV27 525-913	6,249
AV27 506-925	6,630
AV27 509-917	7,038
AV27 527-905	7,067
AV27 511-932	15,810
AW27 518-894	20,284
AV27 511-923	24,735
Total	98,283

Figure 49: AW27 518-894



Figure 50: AV27 527-905



Figure 51: AV27 525-913



Figure 52: AV27 511-923

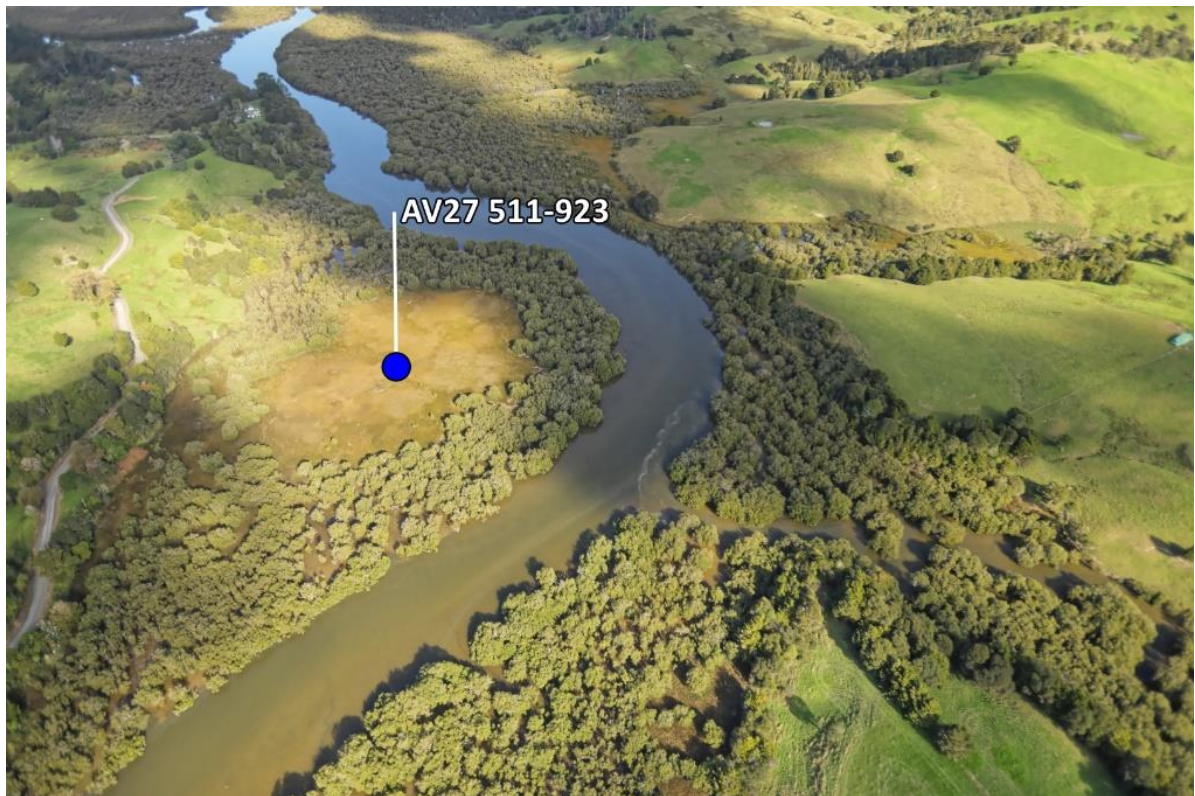


Figure 53: AV27 511-935



Figure 54: AV27 511-932



Figure 55: AV27 506-925

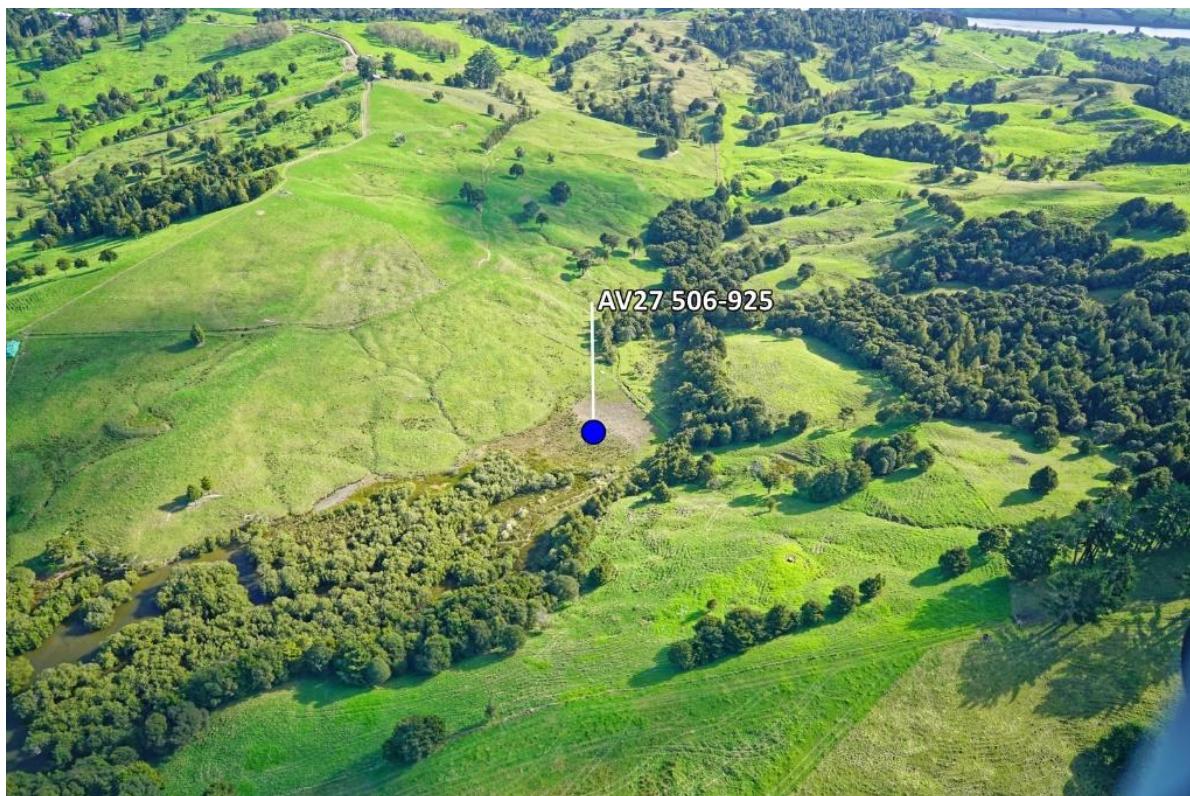


Figure 56: AW27 517-888



Upper Mangamuka River

Nine significant saltmarsh features were identified in the Upper Mangamuka River, totalling 48 hectares (Figure 57 & Table 12).

Figure 57: Saltmarsh and mangrove habitat in the Upper Mangamuka River

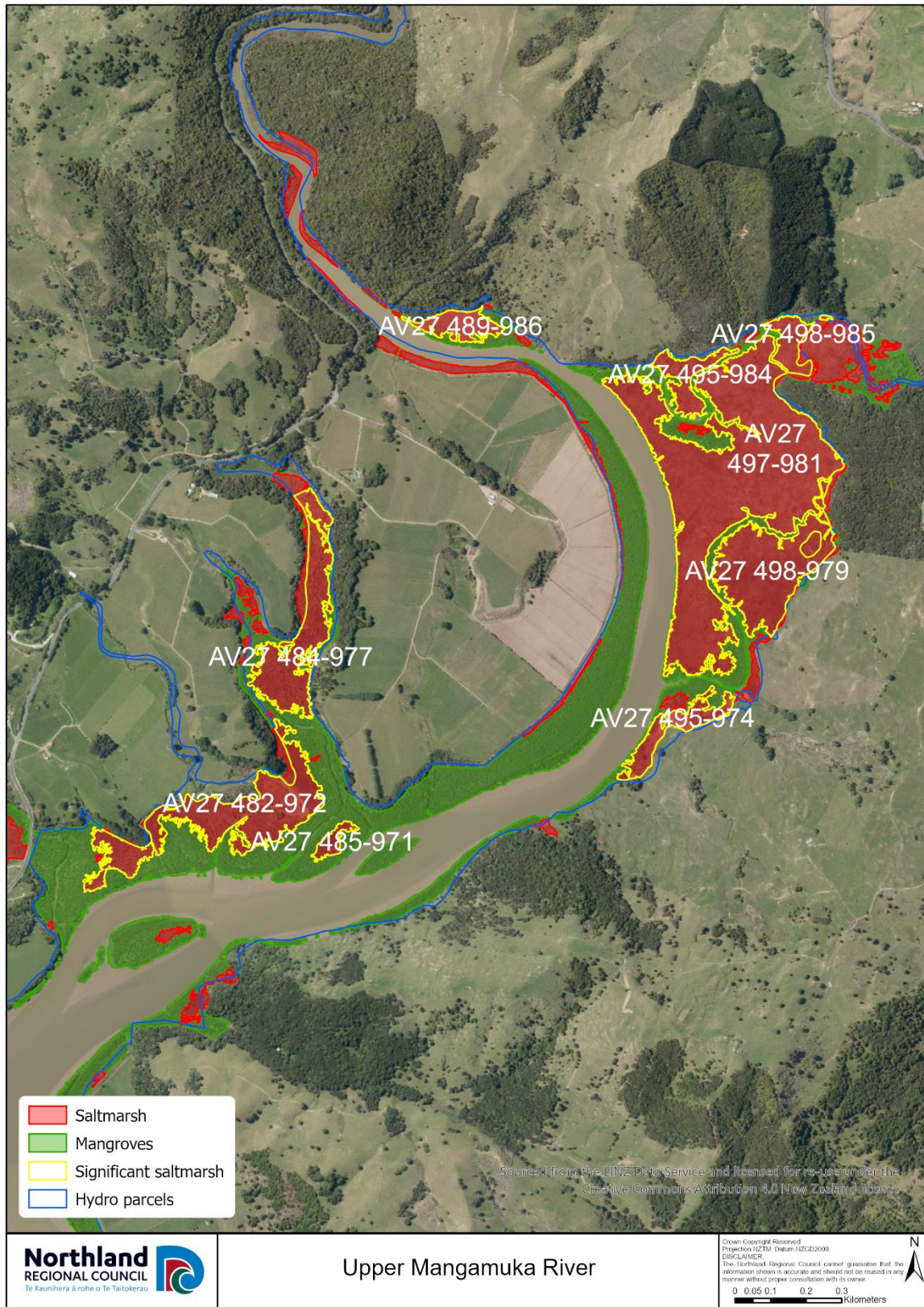


Table 12: Significant saltmarsh identified in the Upper Mangamuka River

Reference	Area (m ²)
AV27 498-979	61,183
AV27 497-981	230,366
AV27 498-985	12,546
AV27 495-974	18,391
AV27 495-984	15,691
AV27 482-972	74,386
AV27 485-971	5,128
AV27 484-977	52,014
AV27 489-986	13,755
Total	483,460

Figure 58: AV27 495-974



Figure 59: AV27 497-981, AV27 498-979, AV27 495-984



Figure 60: AV27 498-985, AV27 497-981



Figure 61: AV27 489-986



Figure 62: AV27 484-997

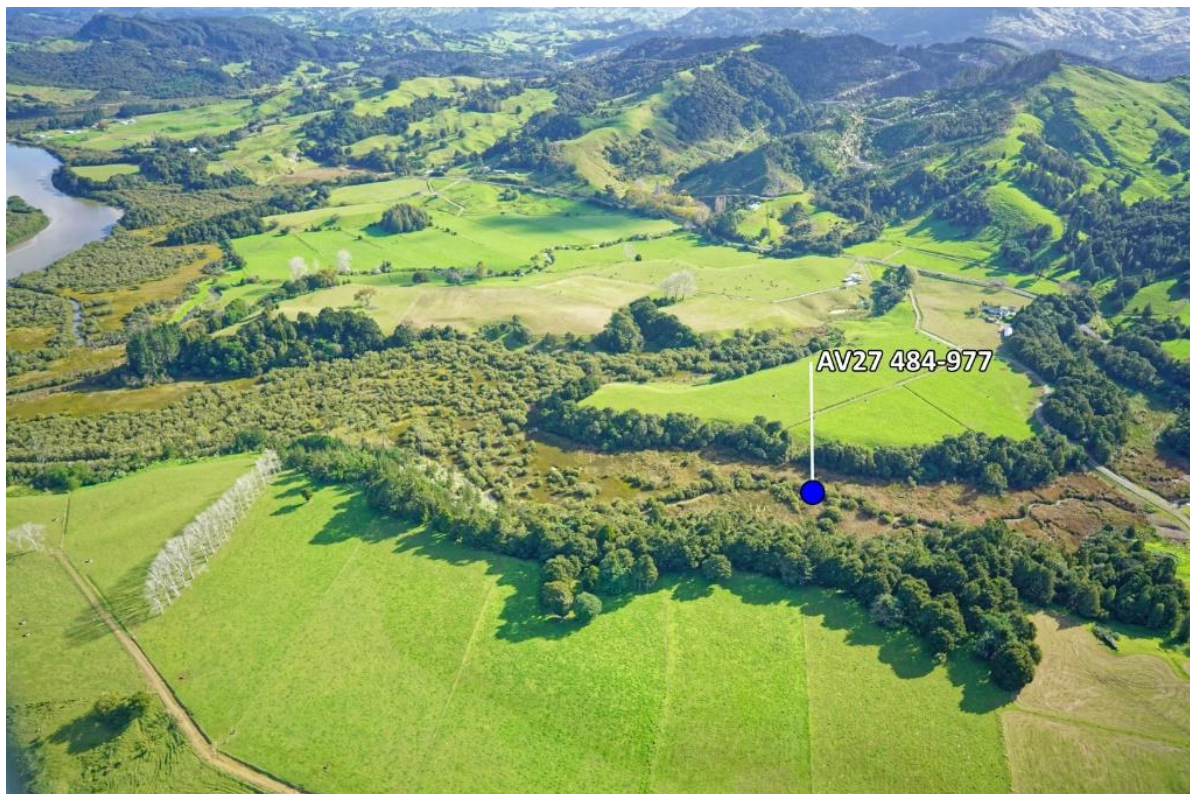


Figure 63: AV27 482-972, AV27 485-971



Figure 64: AV27 466-964, AV27 464-964



Mid Mangamuka River & Oraoa Stream

Ten significant saltmarsh features were identified in the middle section of the Mangamuka River and Oraoa Stream, totalling 24 hectares (Figure 65 & Table 13).

Figure 65: Saltmarsh and mangrove habitat in Mangamuka River and Oraoa Stream

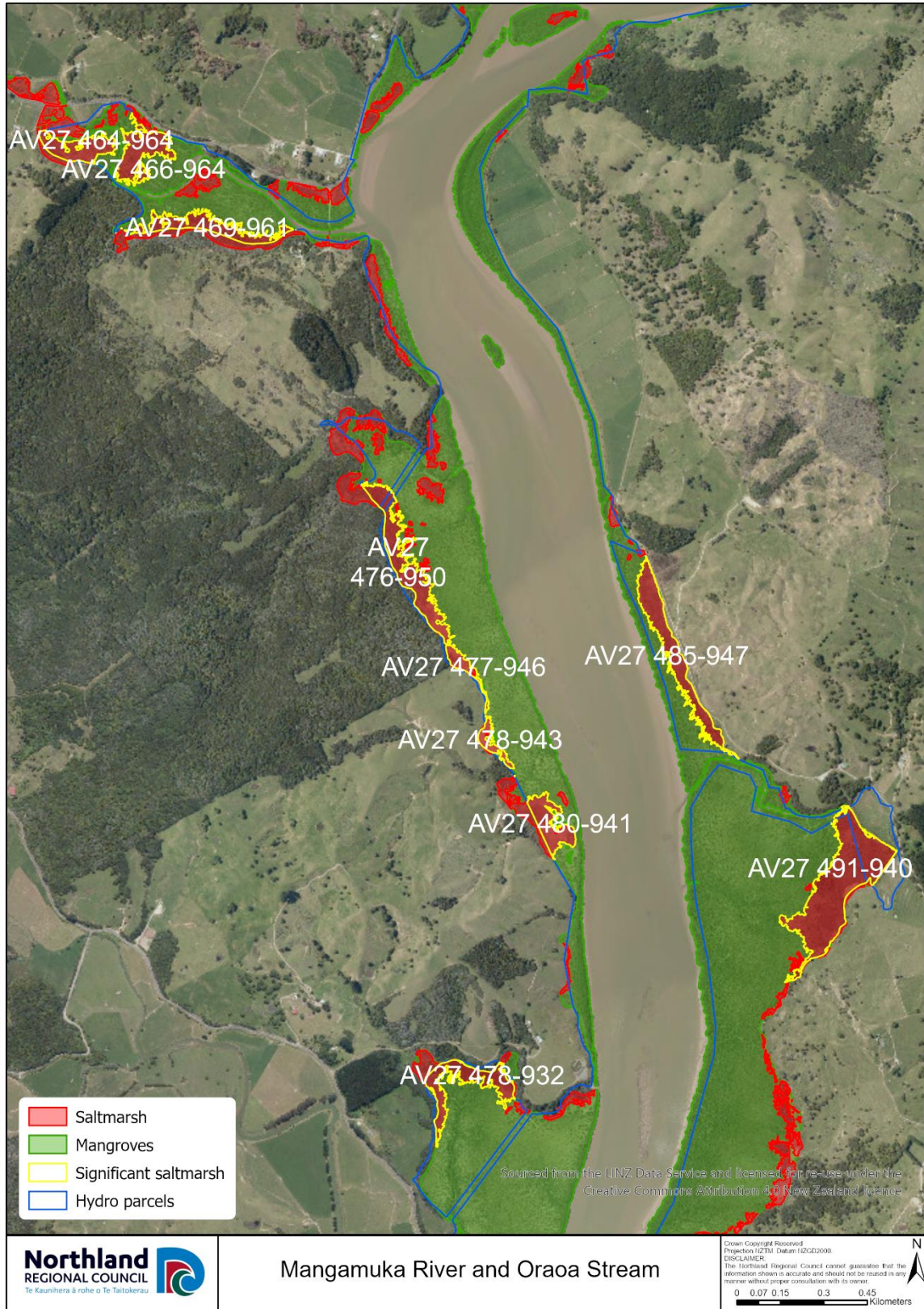


Table 13: Significant saltmarsh identified in the middle section of the Mangamuka River

Reference	Area (m ²)
AV27 491-940	72,364
AV27 478-932	22,292
AV27 477-946	5,825
AV27 480-941	15,761
AV27 478-943	5,375
AV27 469-961	19,778
AV27 466-964	20,231
AV27 464-964	16,006
AV27 485-947	33,242
AV27 476-950	33,308
Total	244,182

Figure 66: AV27 478-932



Figure 67: AV27 478-943



Figure 68: AV27 480-941



Figure 69: AV27 477-946

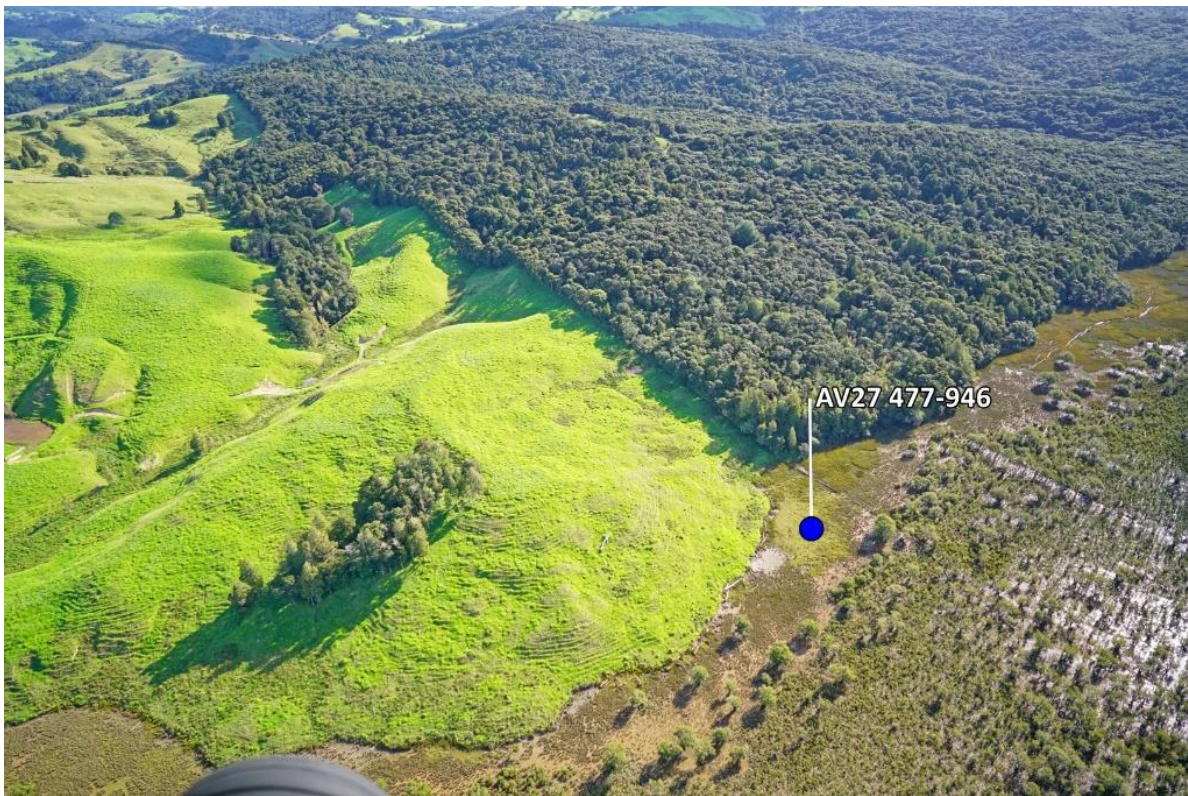


Figure 70: AV27 476-950



Figure 71: AV27 466-964, AV27 464-964, AV27 469-961

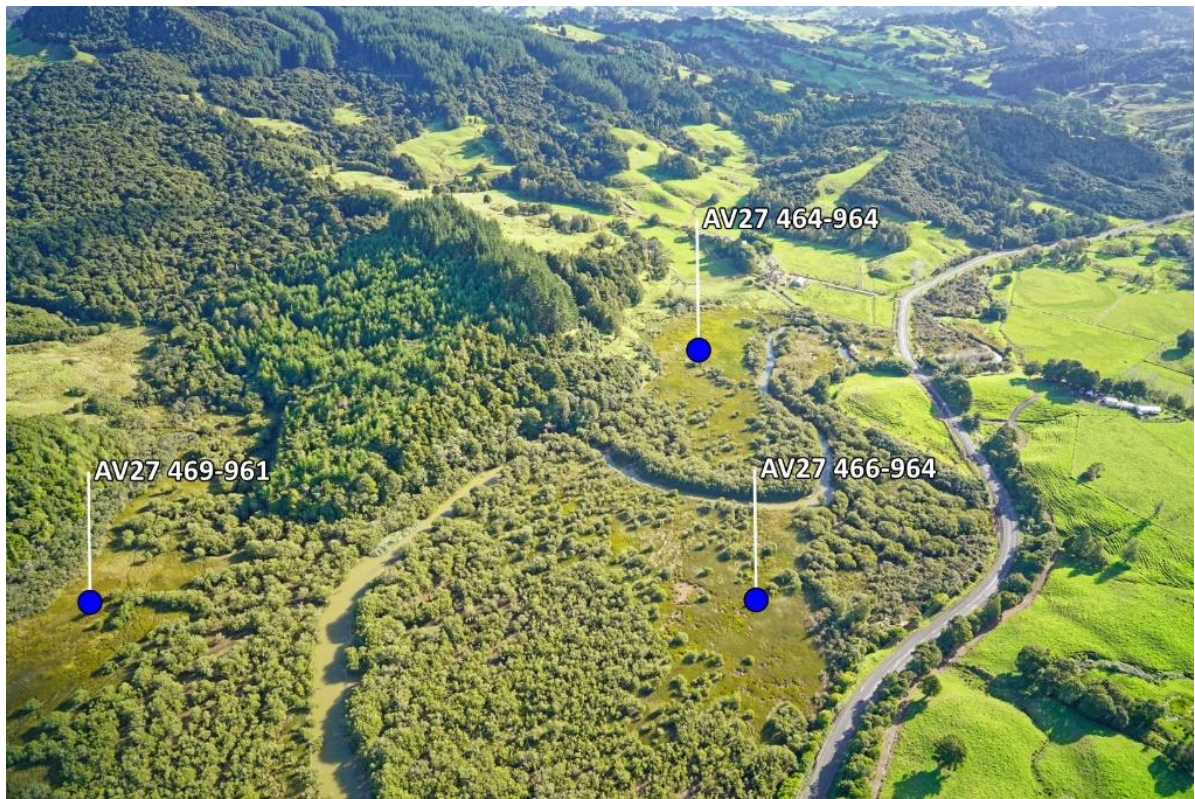


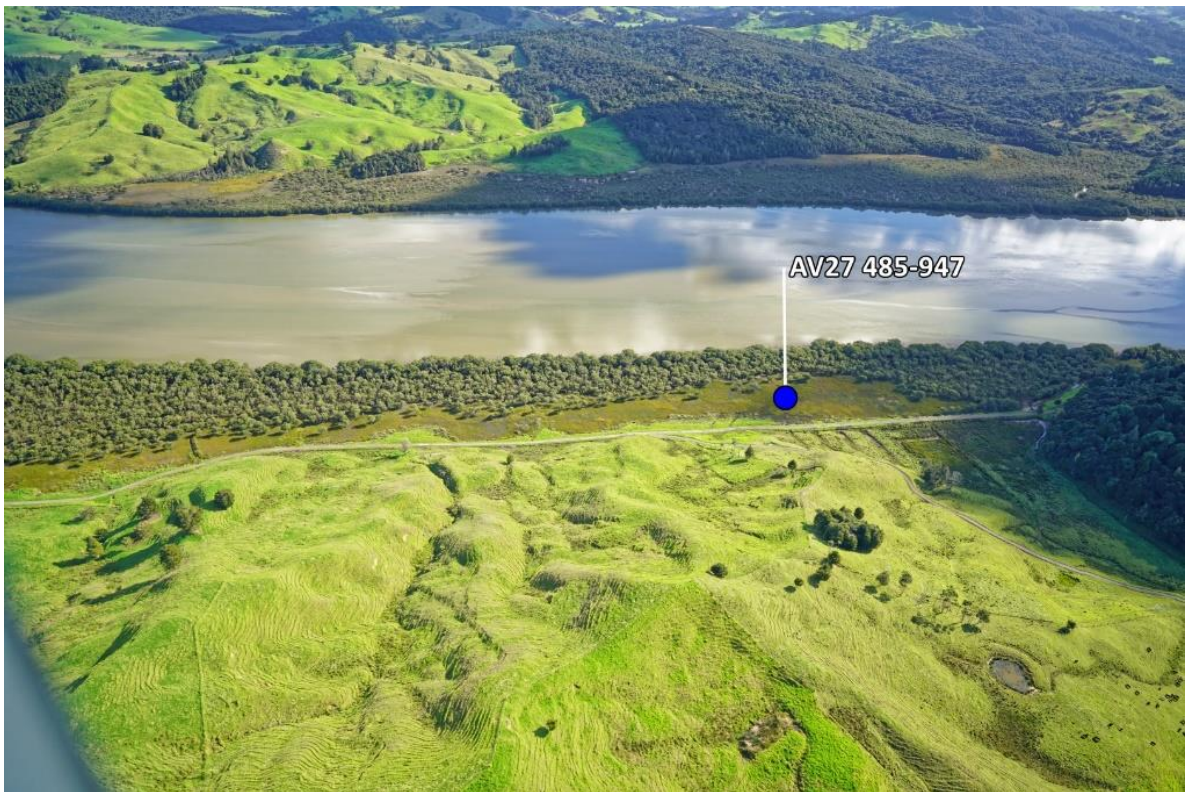
Figure 72: AV27 469-961



Figure 73: AV27 491-940



Figure 74: AV27 485-947



Lower Mangamuka River

Four significant saltmarsh features were identified in the Lower Mangamuka River, totalling 21 hectares (Figure 75 & Table 14).

Figure 75: Saltmarsh and mangrove habitat in the Lower Mangamuka River

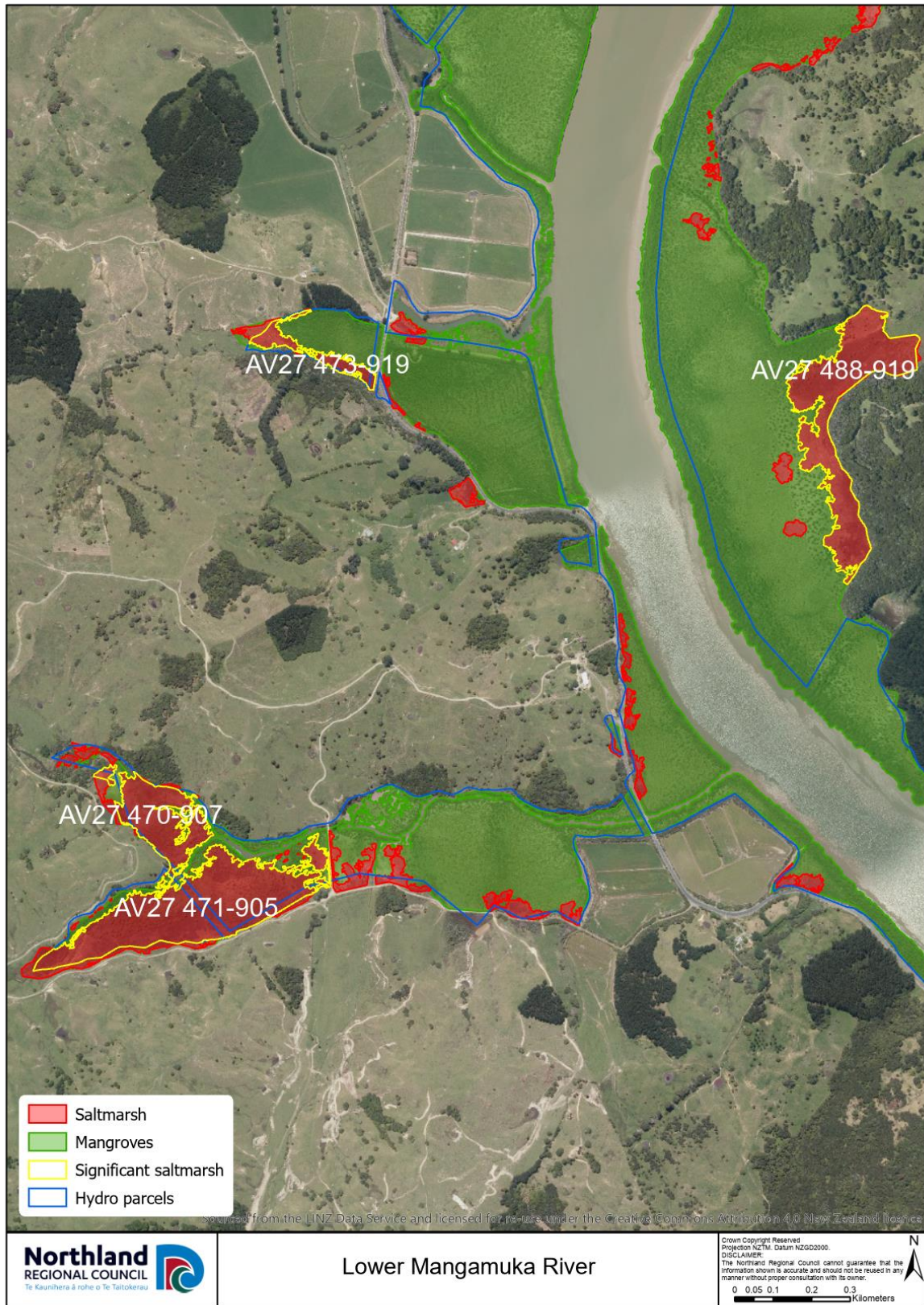


Table 14: Significant saltmarsh identified in the Lower Mangamuka River

Reference	Area (m ²)
AV27 471-905	94,646
AV27 473-919	10,723
AV27 470-907	34,016
AV27 488-919	74,705
Total	214,090

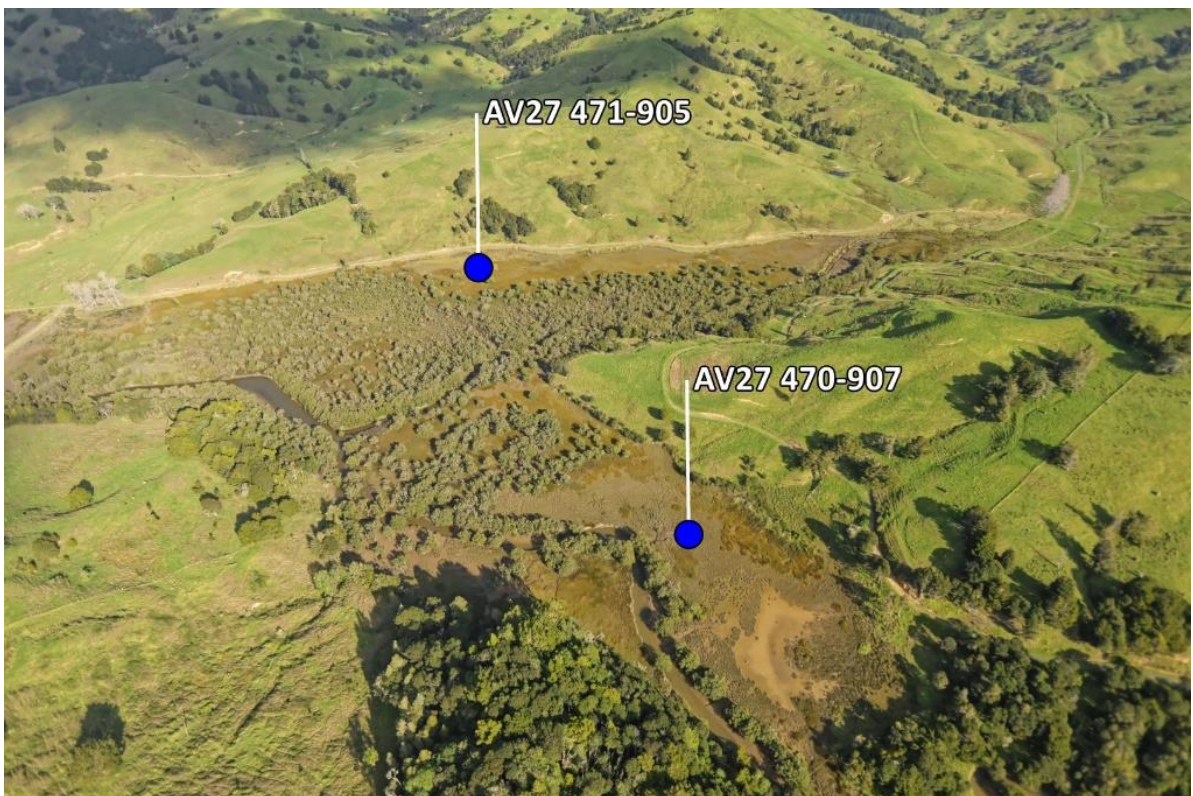
Figure 76: AV27 488-919



Figure 77: AV27 473-919

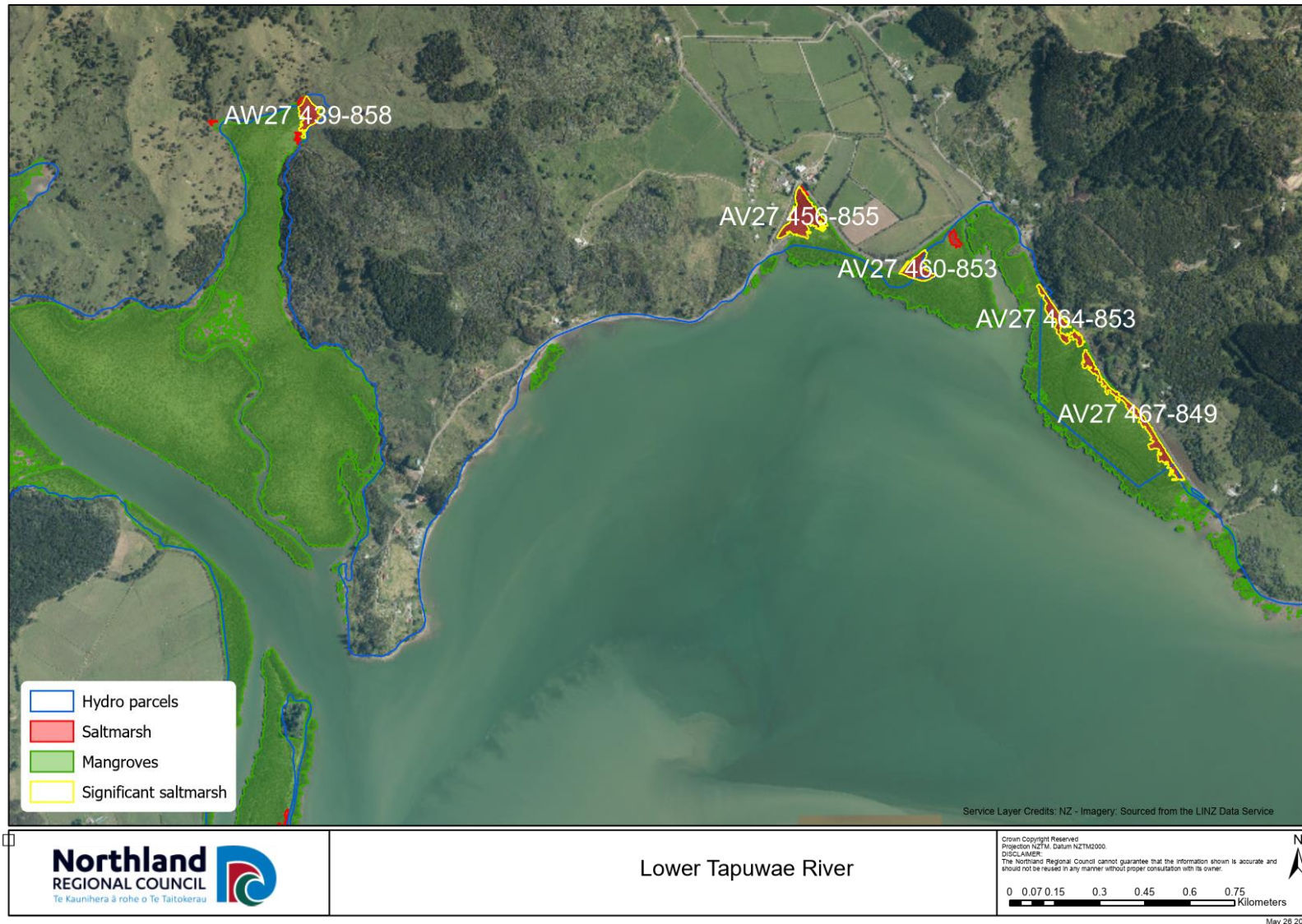


Figure 78: AV27 471-905, AV27 470-907



Lower Tapuwae River

Figure 79: Saltmarsh and mangrove habitat in the Lower Tapuwae River



Five significant saltmarsh features were identified in the vicinity of the Lower Tapuwae River, totalling four hectares (Figure 79 & Table 15).

Table 15: Significant saltmarsh identified in the Lower Tapuwae River

Reference	Area (m ²)
AW27 439-858	5,174
AV27 467-849	11,125
AV27 464-853	6,185
AV27 456-855	11,827
AV27 460-853	5,866
Total	40,177

Figure 80: AW27 439-858



Figure 81: AV27 464-853



Figure 82: AV27 467-849



Figure 83: AV27 460-853



Figure 84: AV27 456-8552



Upper Tapuwae River

Seven significant saltmarsh features were identified in the Upper Tapuwae River, totalling 38 hectares (Figure 85 & Table 16).

Figure 85: Saltmarsh and mangrove habitat in the Upper Tapuwae River

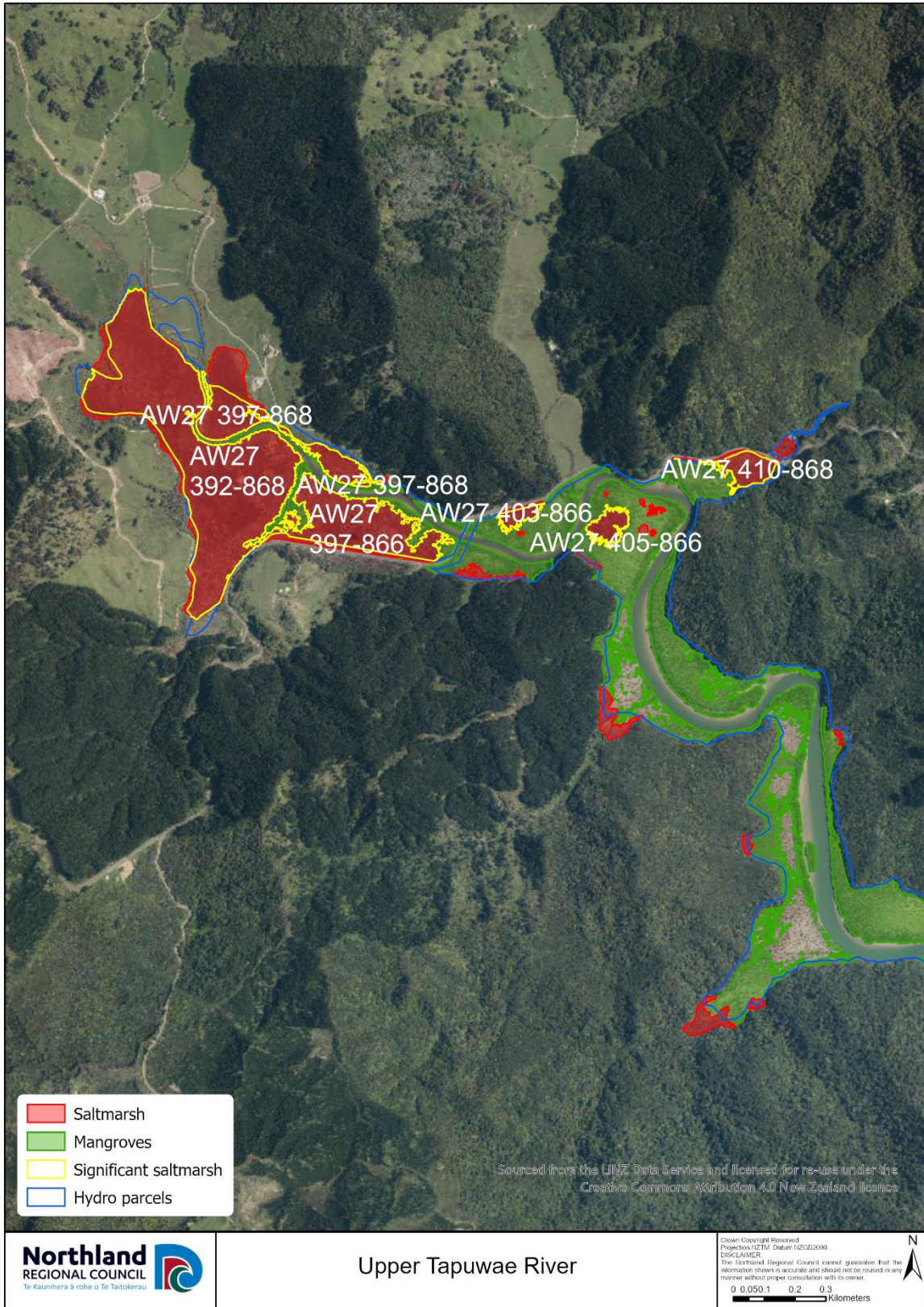


Table 16: Significant saltmarsh identified in the Upper Tapuwae River

Reference	Area (m ²)
AW27 410-868	14,862
AW27 392-868	239,348
AW27 397-866	69,222
AW27 405-866	10,080
AW27 397-868	15,058
AW27 393-869	23,953
AW27 403-866	5,936
Total	378,459

Figure 86: AW27 397-868



Figure 87: AW27 393-869

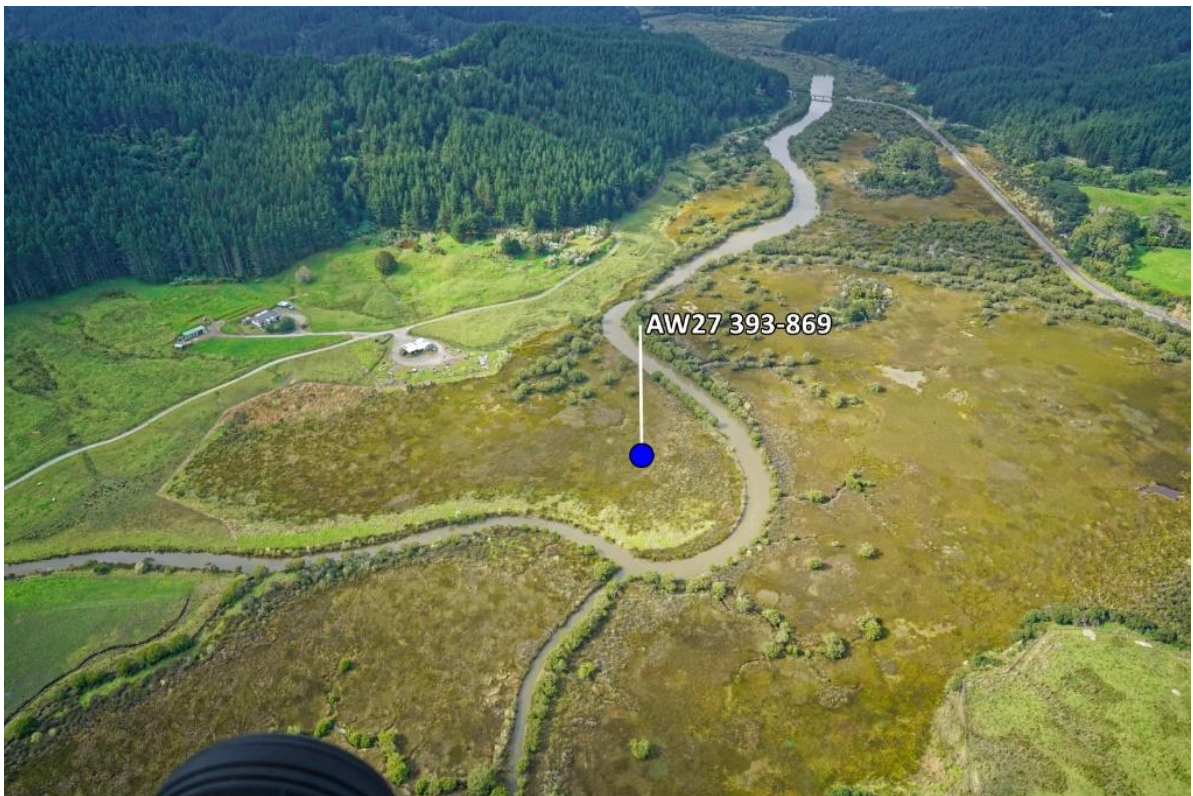


Figure 88: AW27 392-868

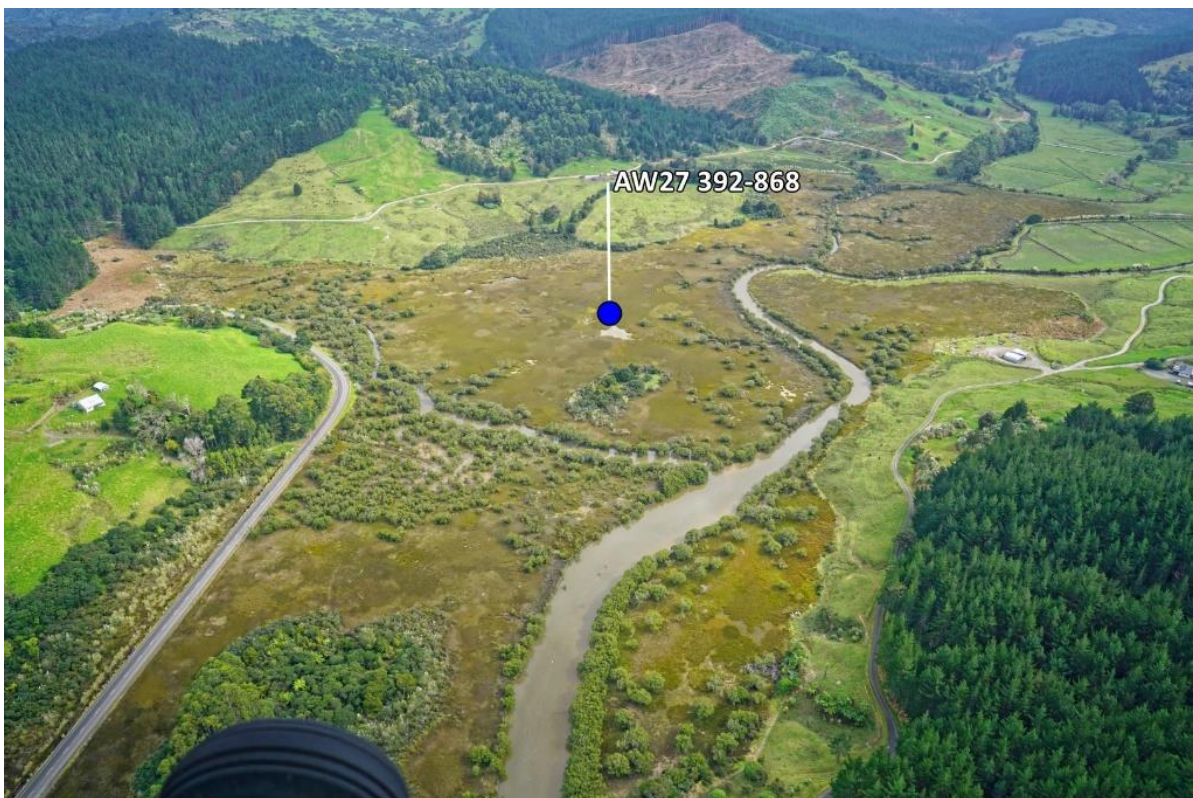


Figure 89: AW27 397-866



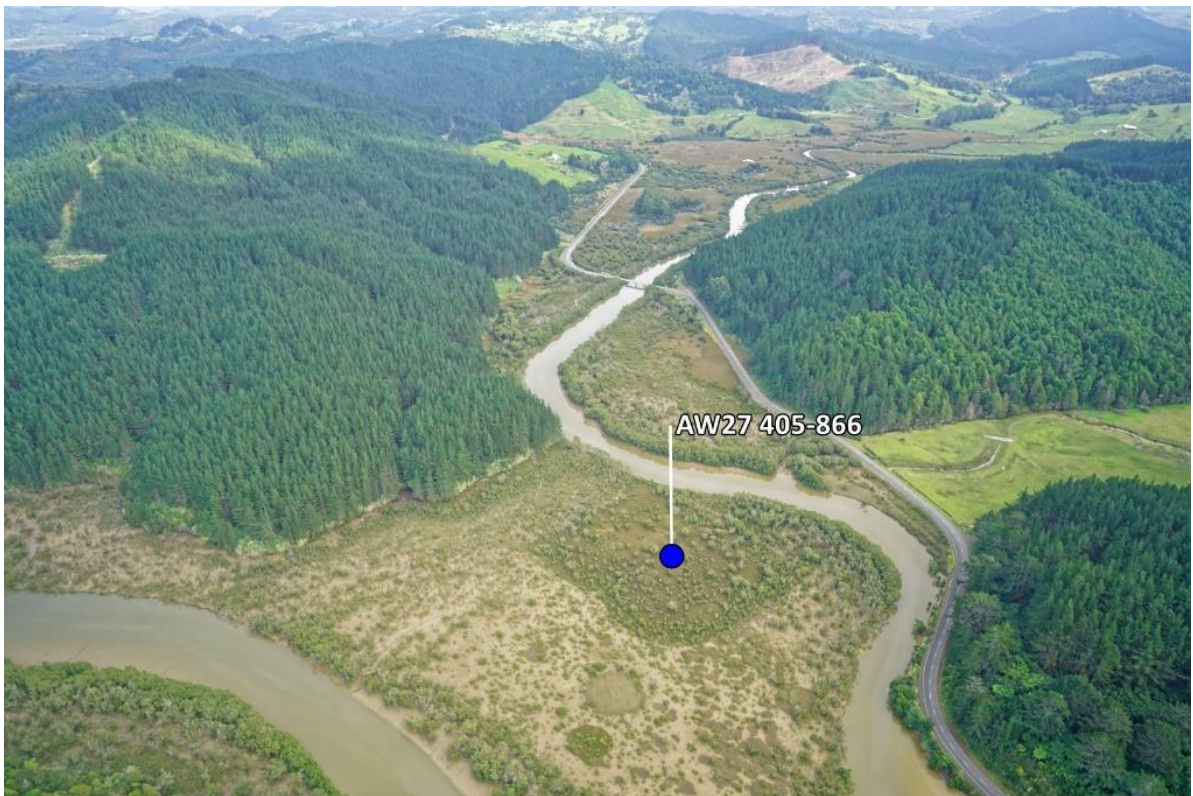
Figure 90: AW27 410-868



Figure 91: AW27 403-866



Figure 92: AW27 405-866



Motuti River and Whangapapatiki Creek

Six significant saltmarsh features were identified in the Motuti River and Whangapapatiki Creek, totalling nine hectares (Figure 93 & Table 17).

Figure 93: Saltmarsh and mangrove habitat in the Motuti River and Whangapapatiki Creek

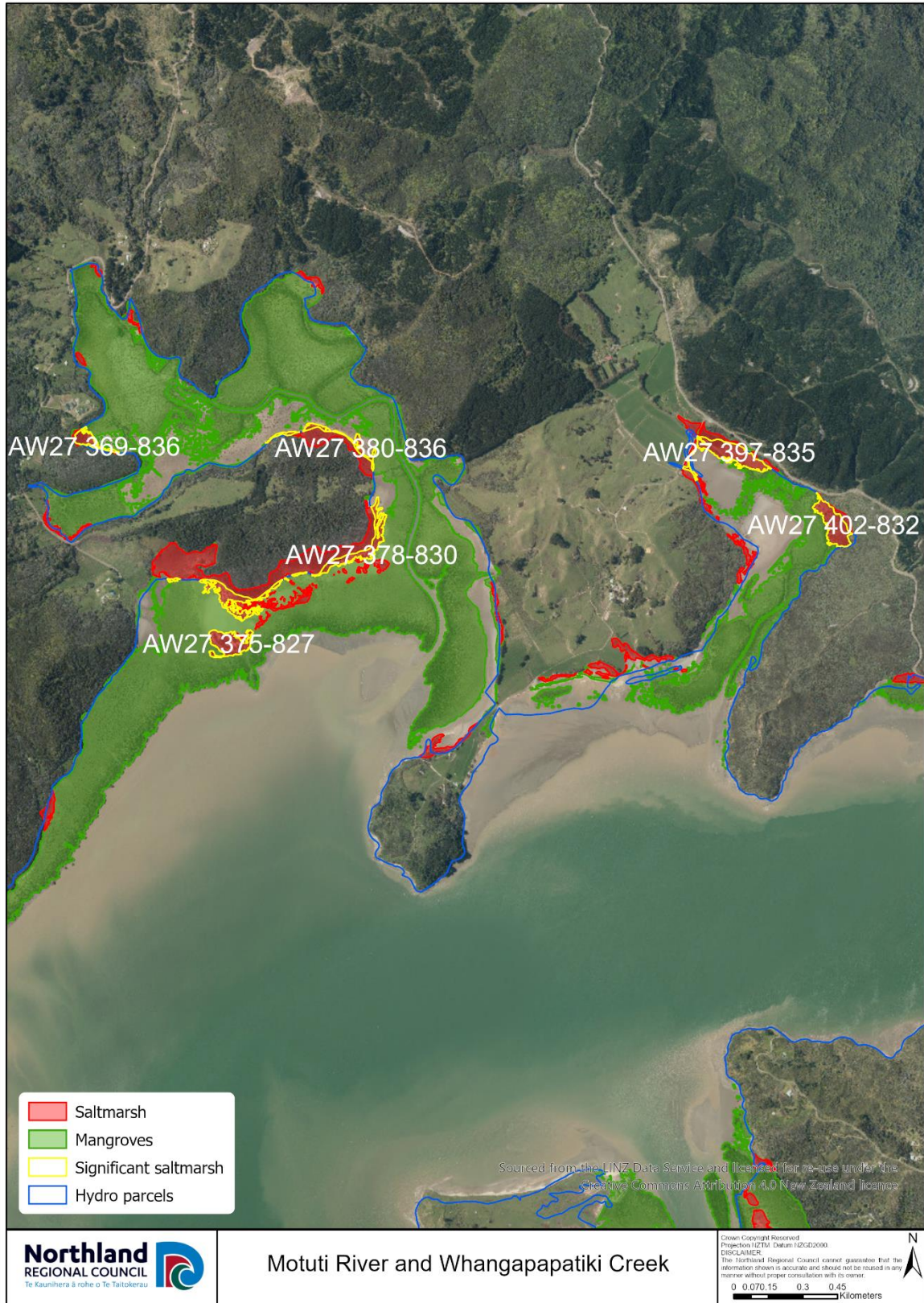


Table 17: Significant saltmarsh identified in the Motuti River and Whangapapatiki Creek

Reference	Area (m ²)
AW27 378-830	27,685
AW27 375-827	13,966
AW27 380-836	6,249
AW27 397-835	19,765
AW27 402-832	15,849
AW27 369-836	5,552
Total	89,066

Figure 94: AW27 402-832



Figure 95: AW27 397-835



Figure 96: AW27 375-827

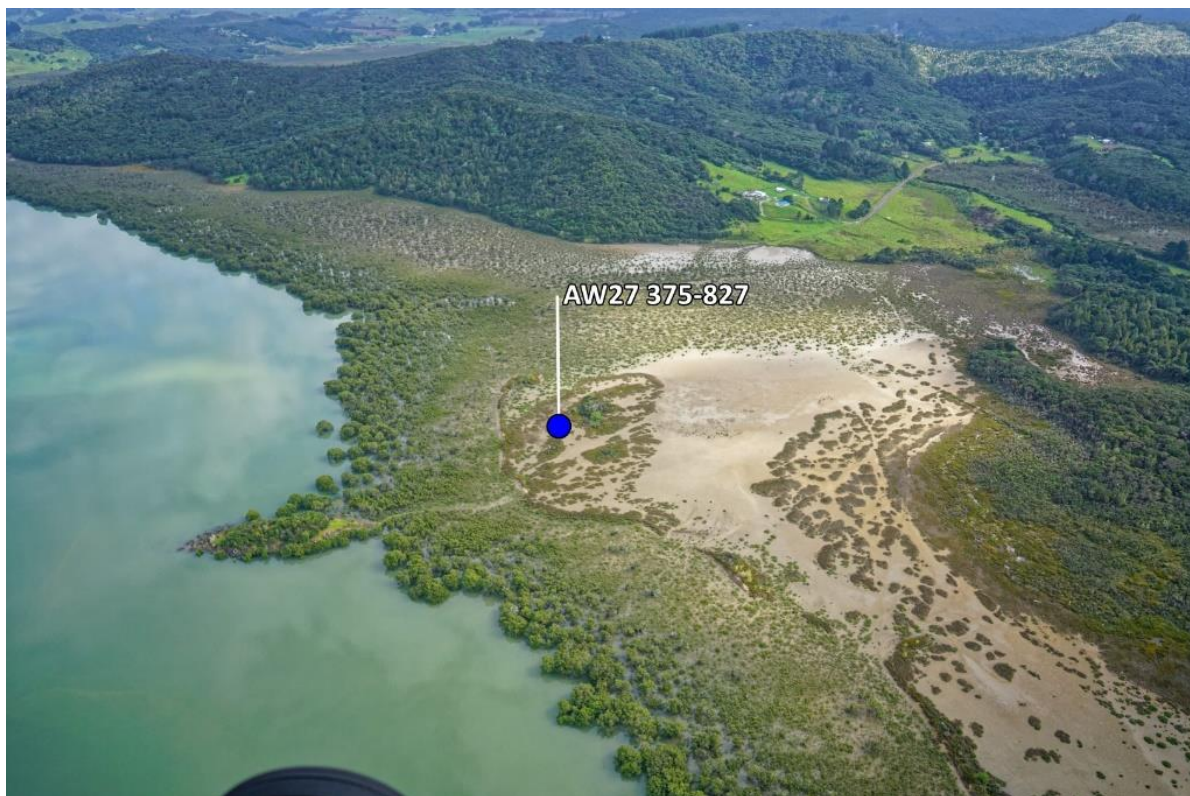


Figure 97: AW27 378-830



Figure 98: AW27 380-836



Whakarapa River

Six significant saltmarsh features were identified in the Whakarapa River, totalling eleven hectares (Figure 99 & Table 18).

Figure 99: Saltmarsh and mangrove habitat in the Whakarapa River

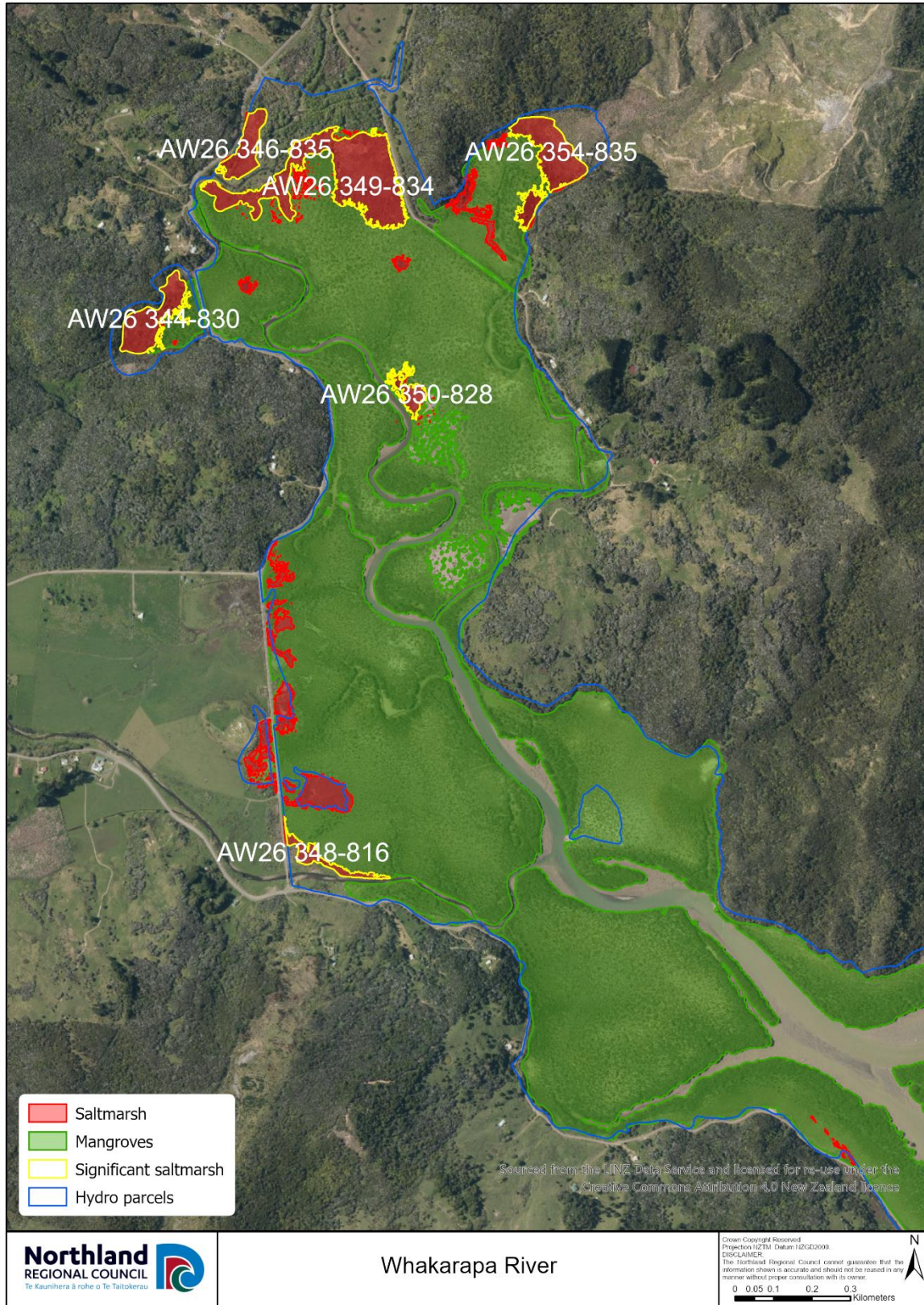


Table 18: Significant saltmarsh identified in the Whakarapa River

Reference	Area (m ²)
AW26 344-830	15,972
AW26 348-816	5,765
AW26 349-834	52,832
AW26 350-828	5,227
AW26 346-835	10,088
AW26 354-835	21,882
Total	111,766

Figure 100: AW26 344-830

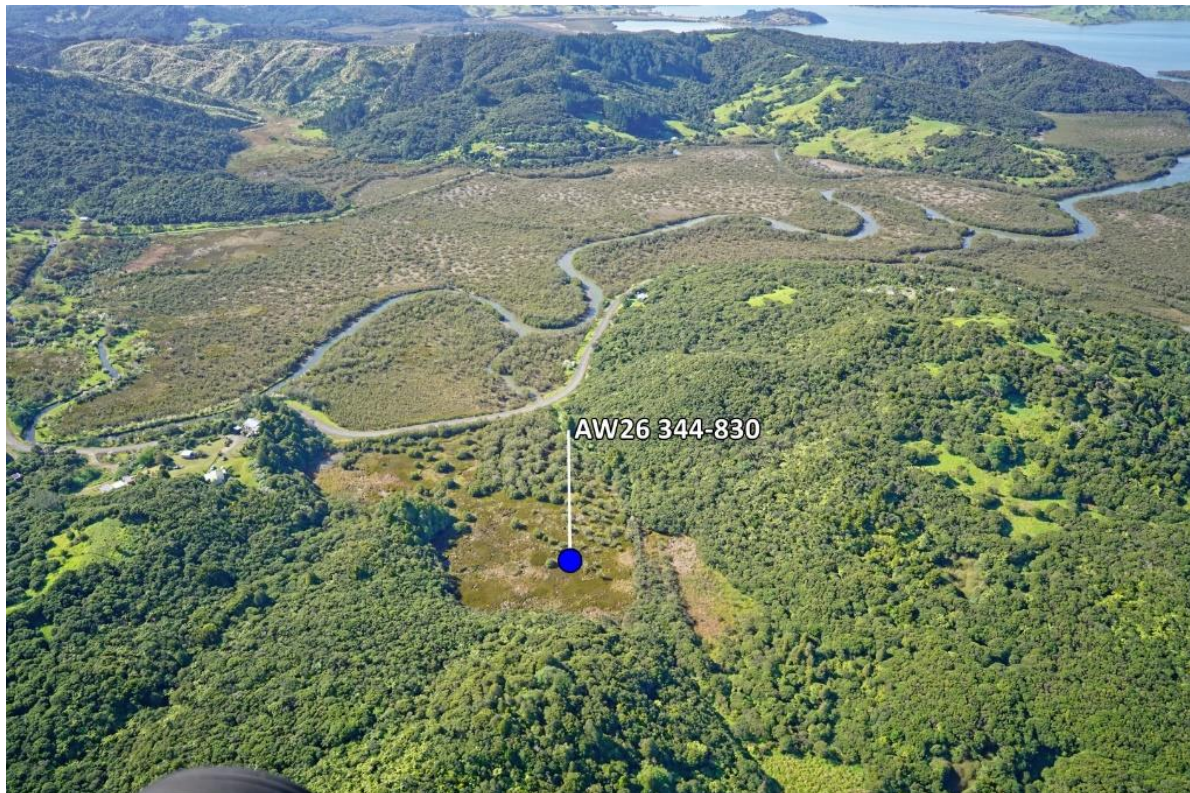


Figure 101: AW26 348-816



Figure 102: AW26 350-828

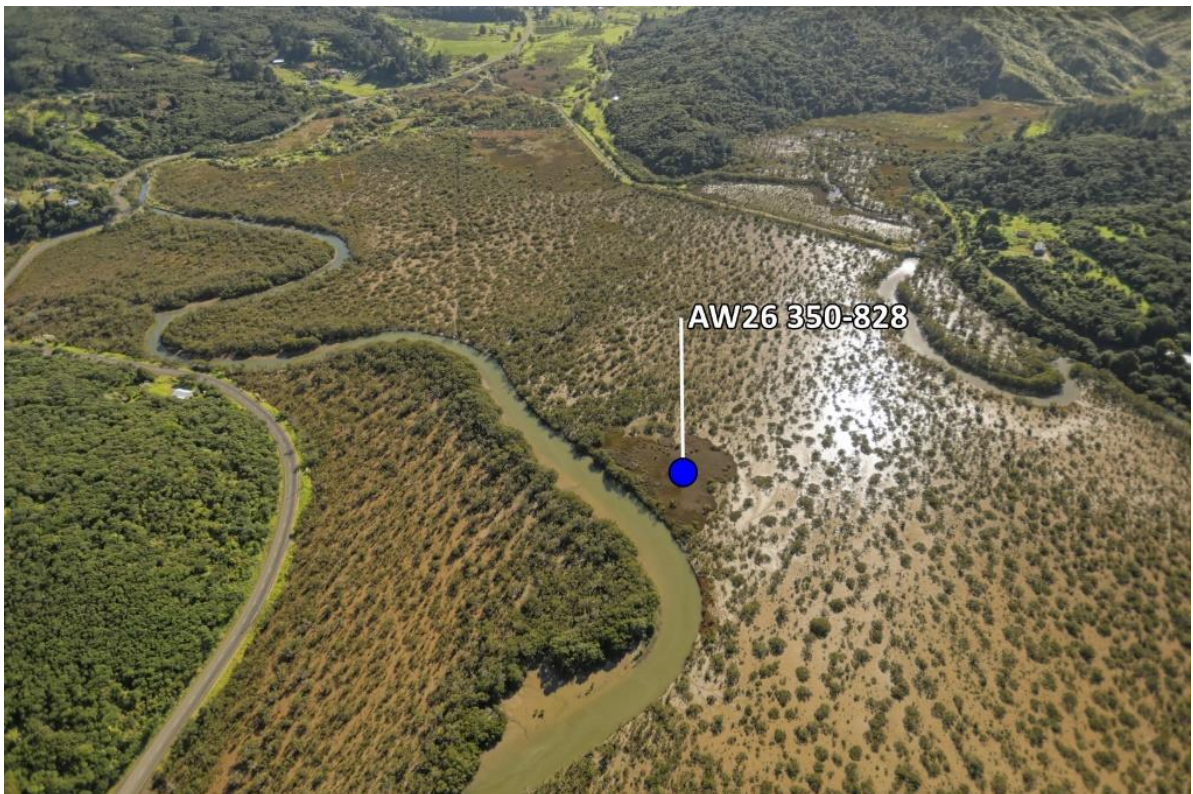


Figure 103: AW26 349-834

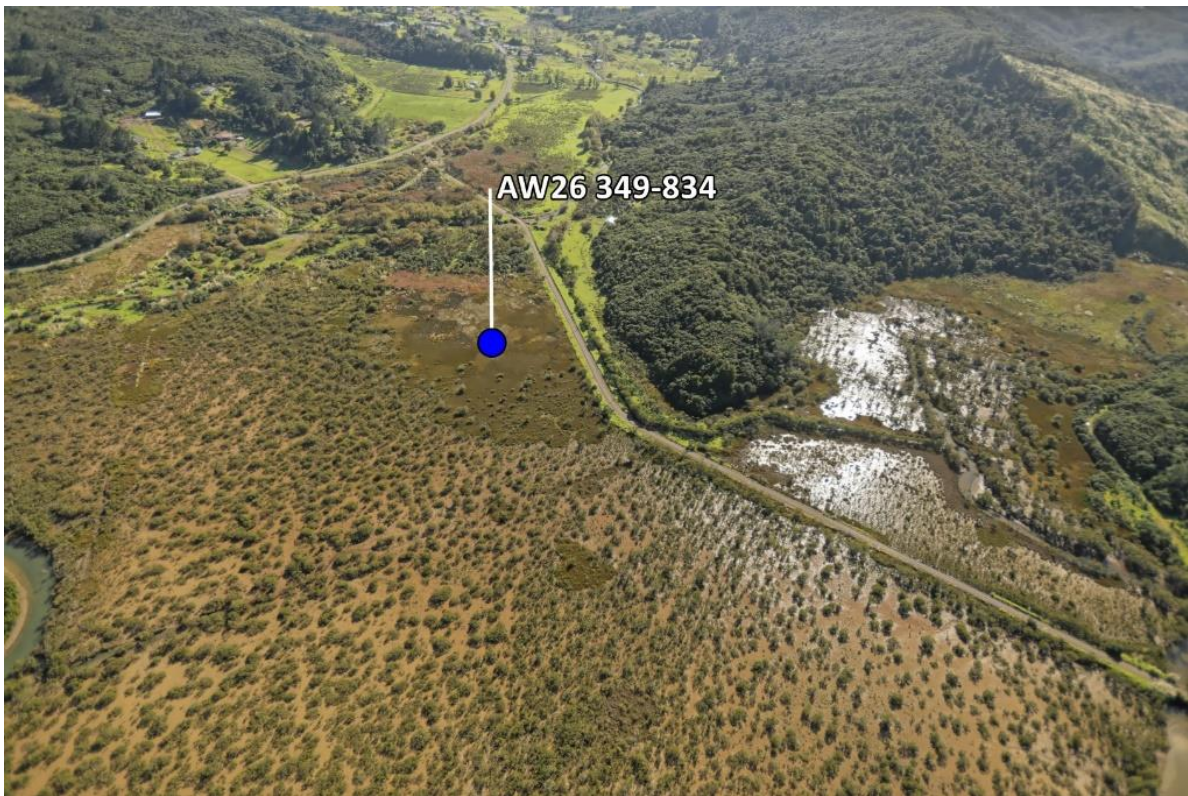


Figure 104: AW26 346-835

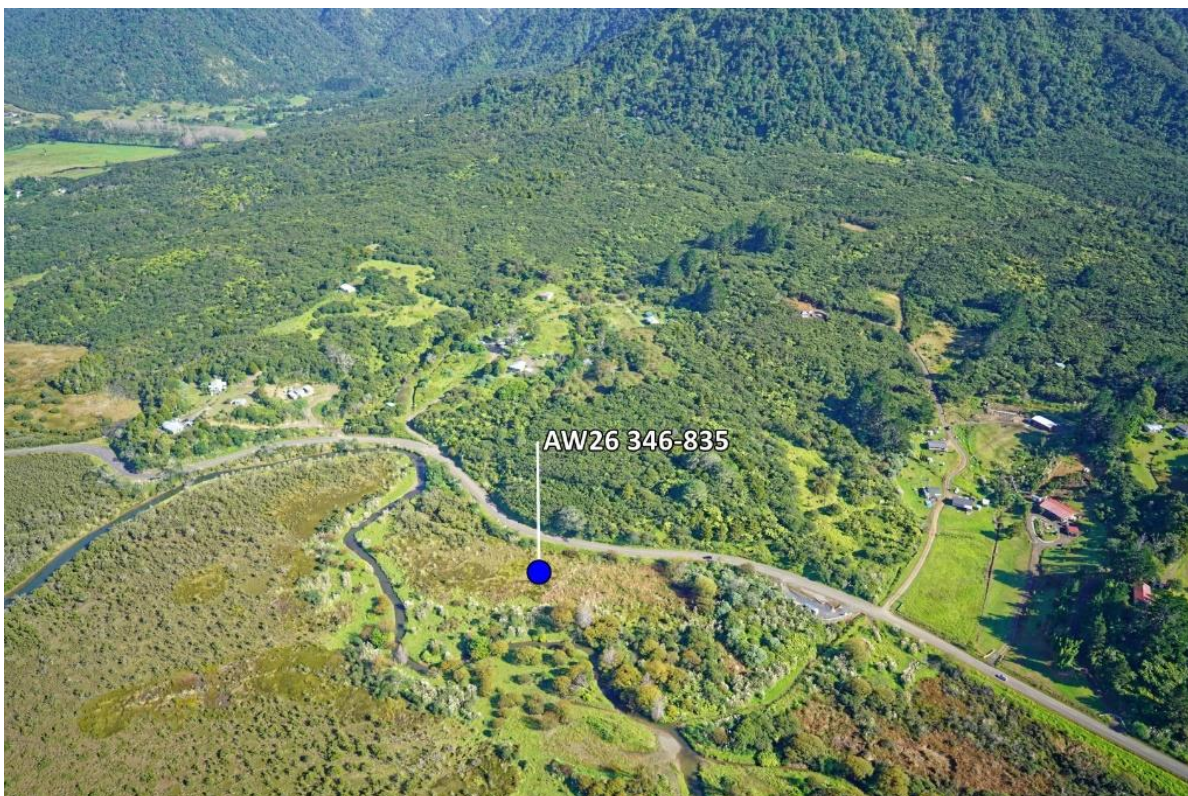
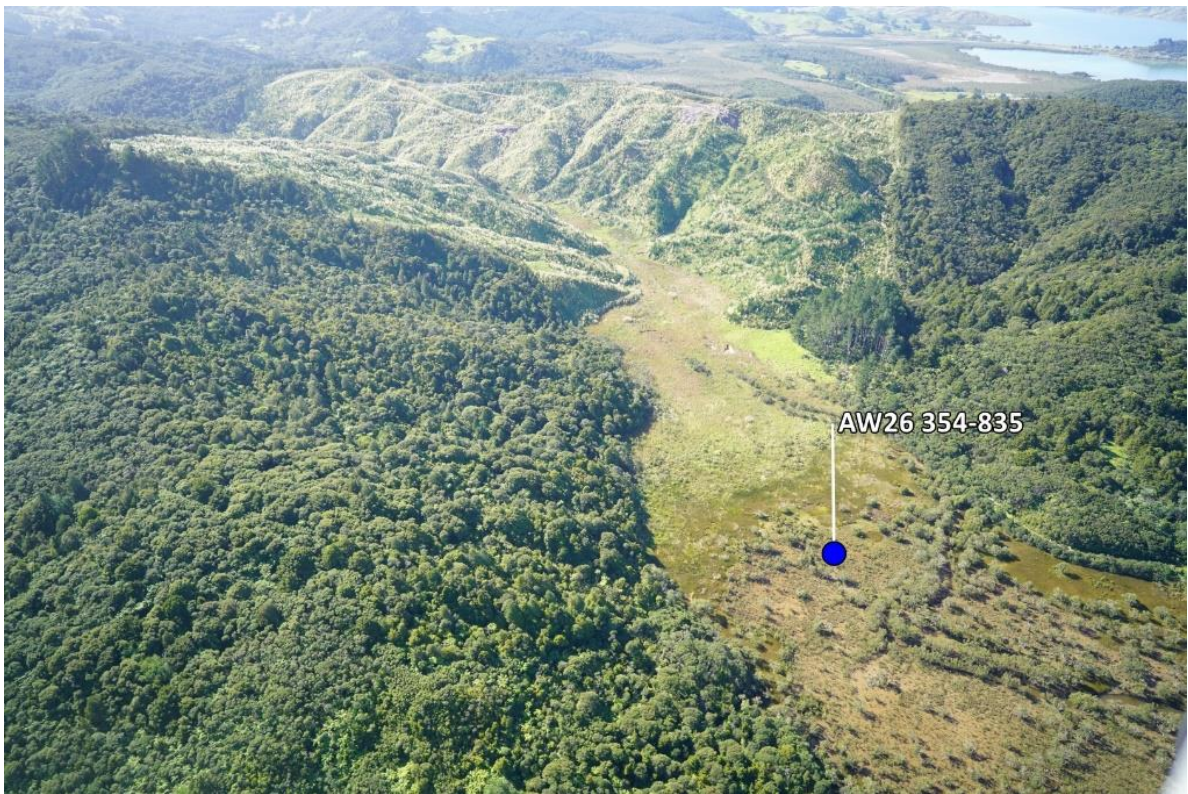


Figure 105: AW26 354-835



Whanganamu Creek and Waireia Creek

Five significant saltmarsh features were identified in the Whanganamu Creek and Waireia Creek, totalling eleven hectares (Figure 106 & Table 19).

Figure 106: Saltmarsh and mangrove habitat in Whanganamu Creek and Waireia Creek

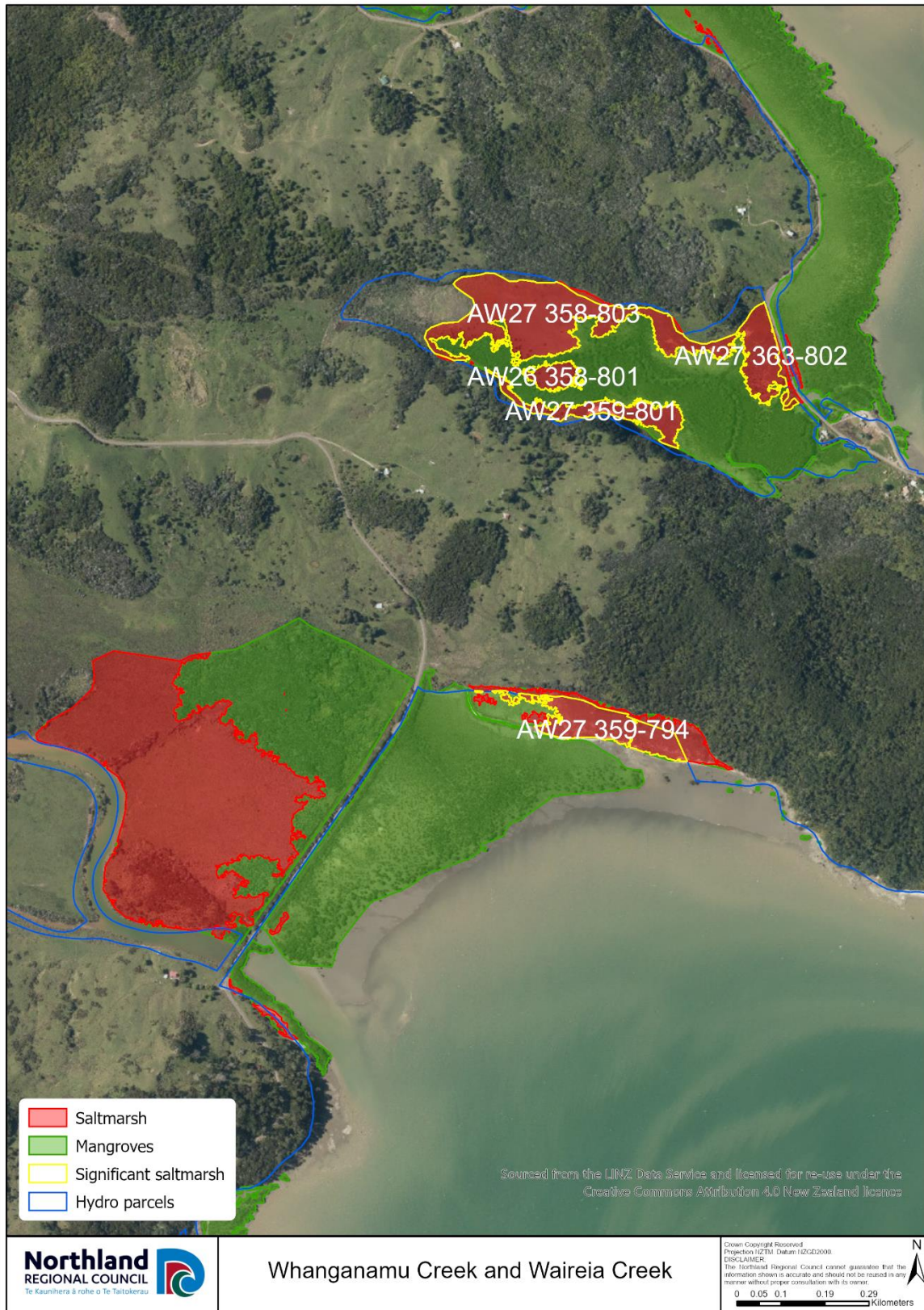


Table 19: Significant saltmarsh identified in the Whanganamu Creek and Waireia Creek

Reference	Area (m ²)
AW27 359-794	21,261
AW27 359-801	13,410
AW27 358-803	53,025
AW27 363-802	13,986
AW26 358-801	5,212
Total	106,894

Figure 107: AW27 363-802



Figure 108: AW27 358-803



Figure 109: AW27 359-801, AW26 358-801



Figure 110: AW27 359-794



Pupuwai Creek and Paekawa Island

Three significant saltmarsh features were identified in the Pupuwai Creek and Paekawa Island, totalling 18 hectares (Figure 111 & Table 20).

Figure 111: Saltmarsh and mangrove habitat in the Pupuwai Creek and Paekawa Island

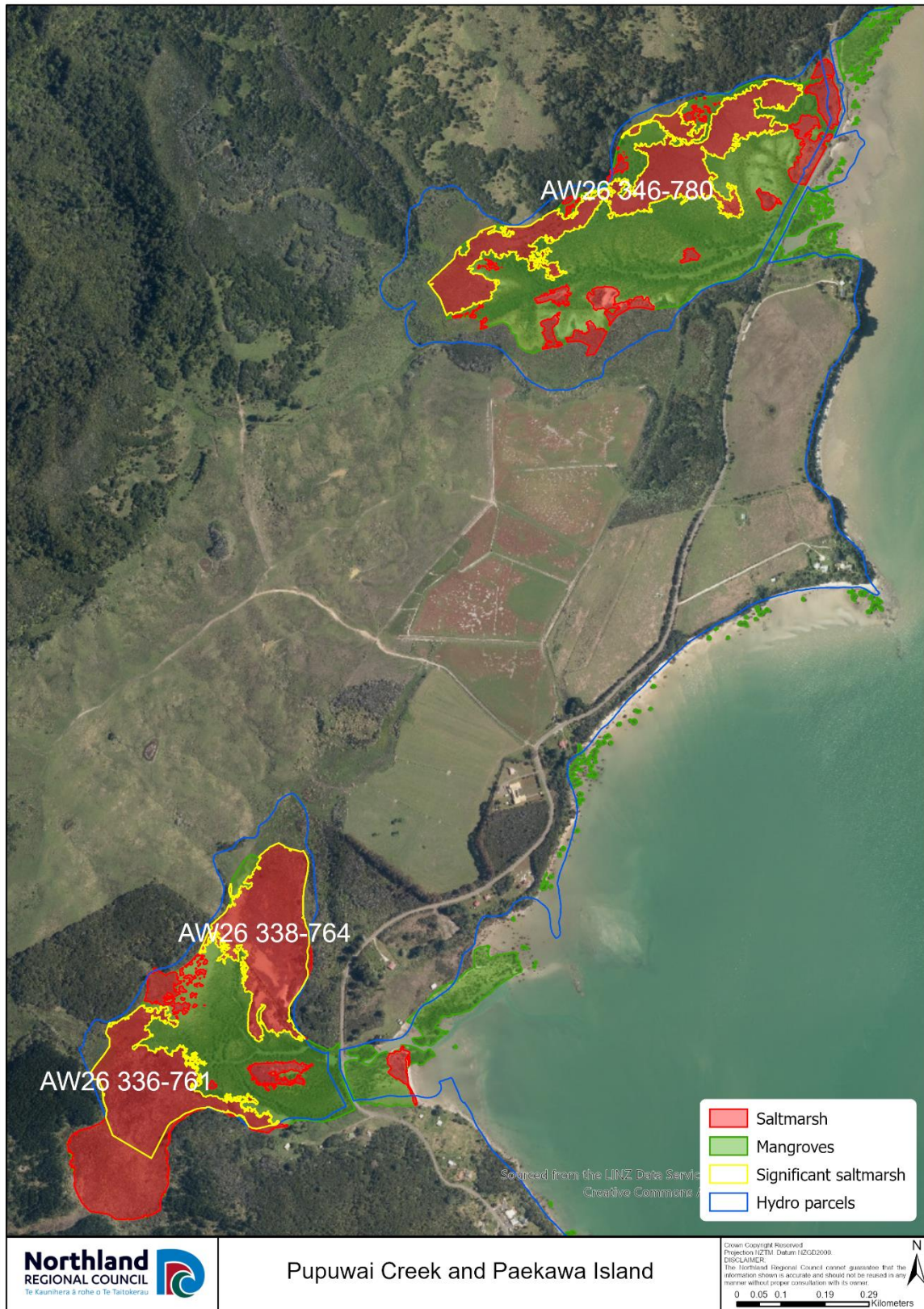


Table 20: Significant saltmarsh identified in the Pupuwai Creek and Paekawa Island

Reference	Area (m ²)
AW26 336-761	49,273
AW26 338-764	54,520
AW26 346-780	73,150
Total	176,943

Figure 112: AW26 346-780



Figure 113: AW26 338-764



Figure 114: AW26 336-761

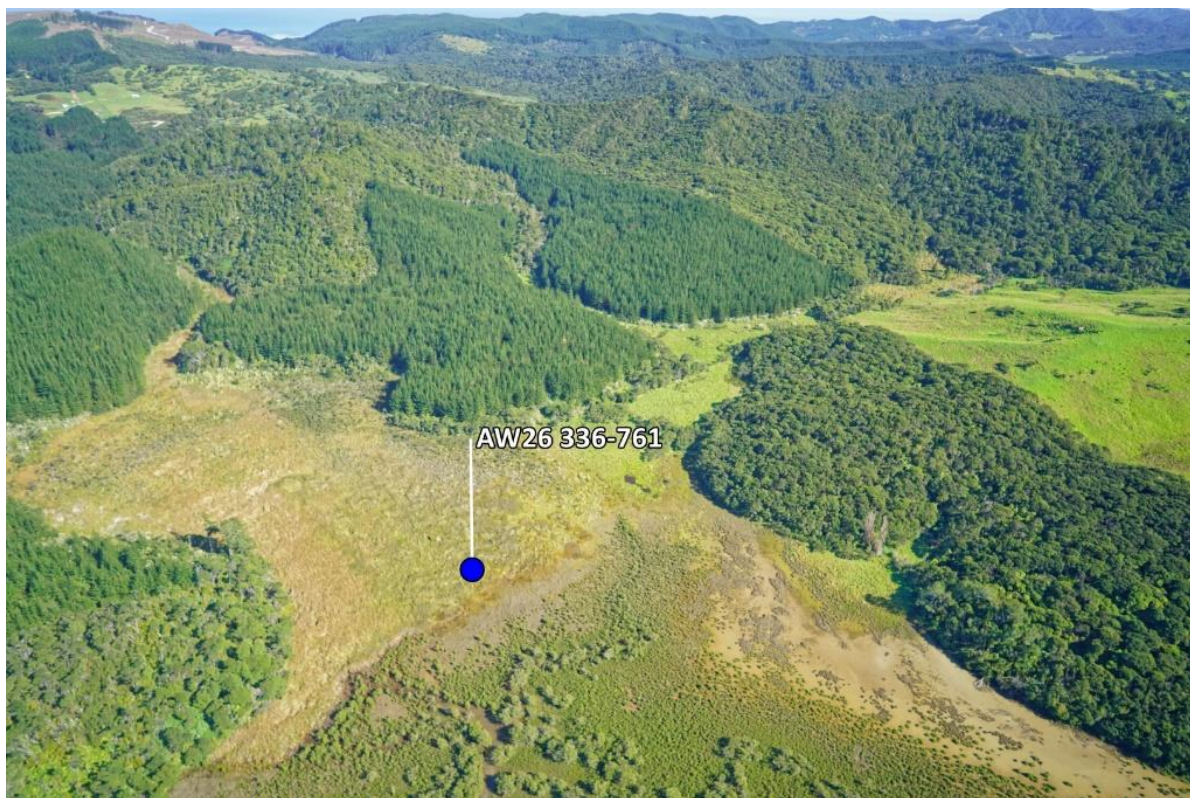


Figure 115: AW26 336-761



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