



RANKING OF TOP WETLANDS  
IN THE NORTHLAND REGION  
STAGE 4 - RANKINGS FOR  
304 WETLANDS

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## 1. INTRODUCTION

Northland Regional Council (NRC) commissioned Wildland Consultants Ltd to produce a draft list of the top wetlands in Northland. The Northland Regional Soil and Water plan requires NRC to identify and prepare a comprehensive state of the environment report on significant indigenous wetlands. To help achieve this, in the absence of comprehensive and recent survey information for the estimated more than one thousand wetlands in Northland, NRC assembled a shortlist of 355 wetlands from PNAP surveys and other sources. Each wetland has a Worksmart number, which is a unique number assigned to each site by NRC to be used as an identifier. Selection of wetlands took into account rarity of wetland types, landforms and vegetation composition as well as size, condition and representativeness across the 19 mainland ecological districts. This is because, although the crisis of wetland loss is generally portrayed as a loss of extent in Northland, the most urgent issue is the continuing loss of unique wetlands. Information about each wetland has been put into the Council Worksmart Database and GIS linked with point features.

Wildlands developed a draft scoring and grouping system for the ranking of wetlands in Northland (*Wildland Consultants Contract Report No. 2336*). The scoring system is based on accepted Landcare Research methodology, and includes a weighted score for rarity or uniqueness of wetland type. A system for grouping wetland types was also developed.

Wildlands then undertook a trial of the ranking system, assessing 20 wetlands throughout the Northland Region (*Wildland Consultants Contract Report No. 2398*). The relative scores for these wetlands were analysed to identify any problems with the system, and the scoring system was amended. The scores for the 20 ranked wetlands were then revised to reflect any changes to the ranking system.

Following this test of the ranking system, 246 high value wetlands in Northland for which there is adequate information were assessed and ranked (*Wildland Consultants Contract Report No. 2418*). Sites for which inadequate information exists were set aside, and identified as requiring field survey. This report presents the rankings for 304 Northland wetlands. These 304 wetlands comprise the 246 wetlands ranked in *Report No. 2418*, along with a further 58 wetlands assessed and ranked following undertaking field survey, and further desktop exercises.

## 2. CLASSIFICATION OF WETLAND TYPES

The classification of wetlands is based on a mutually exclusive hierarchical system (Table 1a), with the types to be used shown in bold, and also listed in Table 1b. Wetlands often comprised multiple wetland types. For these scenarios, wetlands were classified as the wetland type that was of greatest extent where this was known (e.g. a site with 1 ha of swamp and 4 ha of saltmarsh was classified as saltmarsh).

Table 1a: Classification of wetlands for Northland.

<b>HYDROSYSTEM<sup>1</sup></b>	<b>CLASS<sup>2</sup></b>	<b>LANDFORM<sup>3</sup></b>
<b>Lacustrine</b>	Open water	Lake/pond, duneland.
Palustrine	<b>Bog</b>	Level ground - hill crests, basins, terraces, duneland.
Palustrine	<b>Fen</b>	Slopes of bog margins, duneland.
Palustrine	<b>Pakihi and gumland</b>	Level to rolling, impervious soils.
Palustrine/Lacustrine/ Riverine	<b>Ephemeral</b>	Closed depressions, often on dunes.
<b>Geothermal</b>	Various	Various.
Estuarine	<b>Saltmarsh</b> (including mangroves)	Intertidal flats.
Palustrine/Lacustrine/ Riverine	<b>Swamp</b> (including marshes and seeps)	Valley floors, deltas, plains, slight slopes, toe slopes, alluvial fans, duneland.

1. As per Johnson and Gerbeaux 2004
2. Modified from Johnson and Gerbeaux 2004
3. As per Johnson and Gerbeaux 2004.

Table 1b: Wetland types used for ranking Northland wetlands, derived from hydrosystem, wetland class, and landform types (Johnson and Gerbeaux 2004).

<b>Wetland Types</b>
Lacustrine
Bog
Fen
Pakihi and gumland
Ephemeral
Geothermal
Saltmarsh
Swamp

### 3. WEIGHTING OF RANKING CRITERIA

Some criteria, e.g. size, can be of greater importance than factors such as browsing pressure, and this needs to be recognized. The weighting of criteria used for the ranking is presented in Figure 1.

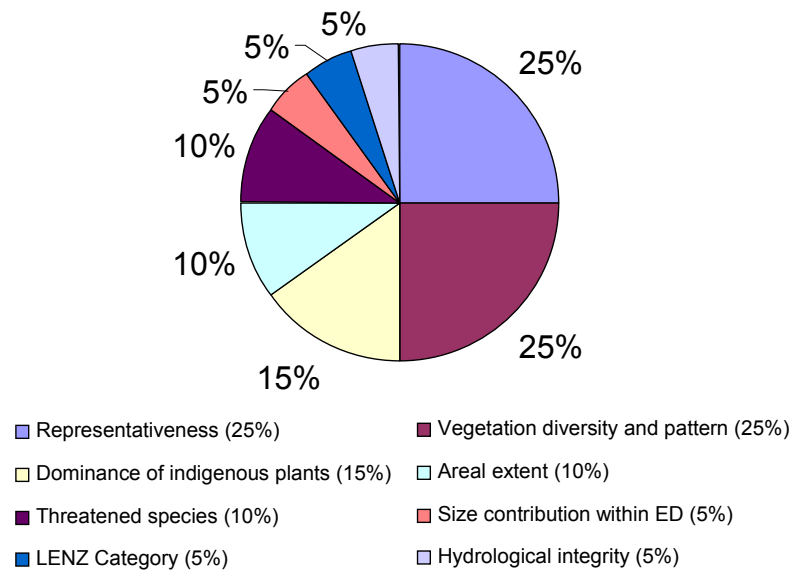


Figure 1: Weighting of criteria for ranking Northland wetlands.

## 4. RANKING CRITERIA

### 4.1 Areal extent

The wetland area (ha) within each site, for all wetland types, was used to calculate a score out of 5. A mathematical function was used, as per the Horizons Regional Council wetland ranking system (Jansenn *et al.* 2005), so that the value increases rapidly for smaller wetlands, and more slowly for larger wetlands. The value function used for areal extent was:

$$V = 5*(1-e^{-bx})$$

x being the size of the wetland in hectares, and b = 0.064377.

This value was defined so that wetlands greater than 50 ha are assigned a near maximum score for size. Areal extent comprises 10% of the total score for each wetland.

### 4.2 Size contribution to wetlands within the ecological district

The wetland area (ha) of each site was used to calculate the percentage contribution to area of PNAP wetlands within the relevant ecological district. A mathematical function was then used, as per Jansenn *et al.* (2005), to calculate a score for size contribution out of 5. The value function was:

$$V = 5*(1-e^{-bx})$$

x being the percentage of size contribution, and b = 7.

The total wetland area (ha) within each ecological district was calculated by summing the area of PNAP wetlands in the database for each ecological district. Within many ecological districts, this criteria is skewed by the presence of large estuarine wetlands, that often constitute a large proportion of wetland area within their respective ecological districts. The size contribution to wetland area will be overestimated for most ecological districts as the criteria fails to consider wetlands that have not been recognized as PNAP sites. However to obtain the current extent for all wetlands in each ecological district, extensive field surveys would need to be undertaken. Size contribution within the ecological district comprises 5% of the total score for each wetland.

#### 4.3 LENZ threat category

A score from 0-5 was assigned to each wetland according to the highest LENZ threat category for land within each wetland. Estuarine wetlands below MHWS are not classified by LENZ, as LENZ only applies to terrestrial environments. For this study we assigned a LENZ threat category to estuarine wetlands that reflected the dominant LENZ threat category for land that buffered the wetland. For estuarine wetlands, this criterion is therefore an assessment of the intactness of indigenous vegetation on the landward margin of the wetland. The LENZ threat category comprises 5% of the total score for each wetland.

#### 4.4 Representativeness

This criterion is essentially an assessment of wetland quality and rarity. Combined, these two factors can also be regarded as a measure of “irreplaceability”.

To achieve the highest score of ‘5’, a wetland needed to be “the best or only remaining representative example of an indigenous vegetation or habitat type within the Region”. Site descriptions and assessments in PNAP survey reports often comment on the representativeness of sites within the context of their ecological district. Some wetlands have therefore been conservatively assigned a score of ‘3’ for this criterion - “best or only within the ecological district” - that may, with additional regional assessment, be worthy of the highest score of ‘5’. Wetlands could also achieve a score of ‘5’ if they contained a good quality example of a historically rare ecosystem type as listed by Williams *et al.* (2007). For example, good quality examples of indigenous vegetation on damp sand plains, or herbfield on lake margins, were scored a ‘5’ for representativeness. Gumlands are listed by Williams *et al.* (2007) as historically rare ecosystems if they have not been induced by anthropogenic fires. However, given the extent of historical fires in Northland, and the lack of data as to which gumlands may be induced, gumlands were conservatively not regarded as historically rare ecosystems.

Good quality examples of indigenous vegetation or habitat types that are regionally under-represented were scored a ‘4’ for representativeness. After assessment of all of the sites, and with discussion with NRC staff, pakihi and gumland, bogs, swamp forest, dune lakes in Eastern Northland (excluding Aupouri Ecological District), and harakeke-dominated wetlands, were classified as “regionally under-represented”.

Representativeness comprises 25% of the total score for each wetland.



#### 4.5 Vegetation diversity and pattern

This criterion is an assessment of the diversity of wetland vegetation types present, and ecological sequences. Assessment of ecological sequences within a site was inclusive of adjacent terrestrial vegetation. For example, a site with only one wetland vegetation type present, could score a “5”, a “4”, or a “3” if it was part of an ecological sequence that was the best in the Region, one of the best in the Region, or a good example in the ecological district, a “2” if it was a degraded example of an ecological sequence, or a “1” if no part of the wetland was contiguous with indigenous terrestrial vegetation. Alternatively, sites could score highly for diversity and pattern if a mosaic or sequence of indigenous vegetation types occurred within the wetland itself. For example, a coastal wetland might grade from mangroves to saltmarsh to raupo reedland to swamp forest.

Vegetation diversity and pattern comprises 25% of the total score for each wetland.

#### 4.6 Hydrological integrity and water quality

This criterion is an assessment of the effect of human impacts on the natural hydrology and water quality of the wetland. The height and natural variation of water levels in wetlands can be modified by structures such as stop banks, drains, causeways, weirs, and dams. Water levels can also be modified by invasion of introduced plants, such as willows, or lowered, if a wetland on dunes is surrounded by plantation forestry that increases evapotranspiration within its catchment. Wetlands with unmodified hydrology are likely to support a higher diversity of indigenous vegetation types and flora, and be less prone to invasion by exotic species.

Modification of the catchment was also used as a proxy for hydrological integrity and water quality. Wetlands in catchments entirely covered in indigenous vegetation are likely to have better water quality than wetlands in highly modified environments, such those within urban areas or pasture. Wetlands to which stock have access were scored lower for this criteria than wetlands from which stock are excluded.

For example, wetlands were scored a ‘5’ if there was no evidence of drainage, stock were excluded, and if the wetland was well buffered by indigenous or exotic vegetation, or a ‘4’ if one or more of these modifying factors were affecting the wetland, but if the effects were minor effect, e.g. a fenced wetland with no evidence of drainage within pasture, or limited in extent, e.g. an estuarine wetland with small areas of drainage and grazing on its landward edge.

Hydrological integrity comprises 5% of the total score for each wetland.

#### 4.7 Threatened, at risk, and regionally significant species

The score given for the presence of threatened, at risk, or regionally significant species considered both the number and conservation status of threatened species, and a weighting method is described below. The low percentage contribution to the total score ensures that wetlands with little or no fauna data are not unduly disadvantaged.

This criterion is scored on the number of species present in each threatened species class listed in the scoring sheet, with greater weighting for species that are more threatened. Threatened species classifications are based on de Lange *et al.* (2009) (vascular plants), Miskelly *et al.* (2008) (birds), Hitchmough *et al.* (2007) (fish, freshwater invertebrates). The maximum possible score for the presence of threatened or "At Risk" species was capped at 60 points (only a few sites exceeded 60 points). For each site the total score out of 60 was converted to a score out of 5.

Weighting of threat classes are as follows:

Table 2: Weighting of threat classes.

Threat Category	Weighting
Nationally Critical	6
Nationally Endangered	5
Nationally Vulnerable	4
Declining/Serious Decline	3
Recovering/Gradual Decline	2
Relict/Naturally Uncommon/Sparse/Range Restricted/ Regionally Significant	1
Data Deficient	1

A worked example for Kerikeri Airport Gumland is shown in Table 3.

Table 3: Threatened species at Kerikeri Airport Gumland and calculation of the overall score for the 'threatened species' criterion, based on Hitchmough *et al.* 2007.

Species in Each Threatened Species Class	Score Calculation (Number of Species x Weighting of Threat Class)	Score
<i>Nationally Endangered</i> - Australasian bittern, Northland mudfish	2 x 5	10
<i>Nationally Vulnerable</i> - North Island brown kiwi	1 x 4	4
<i>At Risk-Declining</i> - North Island fernbird	1 x 3	3
<i>Gradual Decline</i> - Longfin eel	1 x 2	2
<i>Regionally Significant</i> - Banded kokopu	1 x 1	1
<b>Total Out of 60</b>		<b>20</b>
<b>Score Out of 5</b>		<b>1.7</b>

#### 4.8 Dominance of indigenous plants in the upper-most vegetation layer

This criterion is an assessment of the integrity of the site with regard to invasion by exotic plants. The criterion is based only on species in the upper-most vegetation layer, as many PNAP surveys are undertaken by viewing sites at a distance, without walk-through surveys. For many wetland types, for example manuka shrubland or swamp forest, PNAP surveys are likely to not detect, or underestimate, the presence of exotic plants in the understorey. The use of this criterion assumes that PNAP survey

reports list exotic vegetation types present within wetlands, rather than excluding exotic-dominated vegetation types from the site. If a site comprises wetland and terrestrial vegetation, only the wetland part of the site is assessed for this criterion.

## 5. DRAFT RANKINGS

### 5.1 Overview

Adequate information was available to calculate rankings for 255 freshwater wetlands and 49 estuarine wetlands. The full assessment and score for each wetland is captured in a Microsoft Excel spreadsheet which has been supplied to NRC. Within this report, the assessments and scores for key criteria for each ranked wetland are presented in Appendix 1 (freshwater wetlands) and Appendix 2 (estuarine wetlands).

The scores for the 304 ranked wetlands ranged from 7.84-88.24, with an average of 54.96. The 255 freshwater wetlands had scores ranging from 7.84-88.24, with an average score of 53.66. The scores for the 49 estuarine wetlands ranged from 29.88-80.87, with an average of 61.77.

Wetlands with scores greater than 75 were all large, ranging between 67.6 and 10,185 ha in extent, whilst wetlands with scores less than 40 ranged in size from 0.4-86.0 ha (Figure 2). For wetlands with scores between 40 and 75 there were no discernable size trends, with a range in sizes from 6.5-2,900 ha. Generally, the largest wetlands were assigned high rankings, and the smallest wetlands were assigned low rankings. However some small wetlands received relatively high scores, such as the bog within the Shenstone Block, Te Pahi (7.7 ha) which scored 71.46 (rank 29<sup>th</sup>) because of its high scores for representativeness and vegetation diversity. Thus small wetlands are not unduly disadvantaged by their size if they contain features of high ecological value.

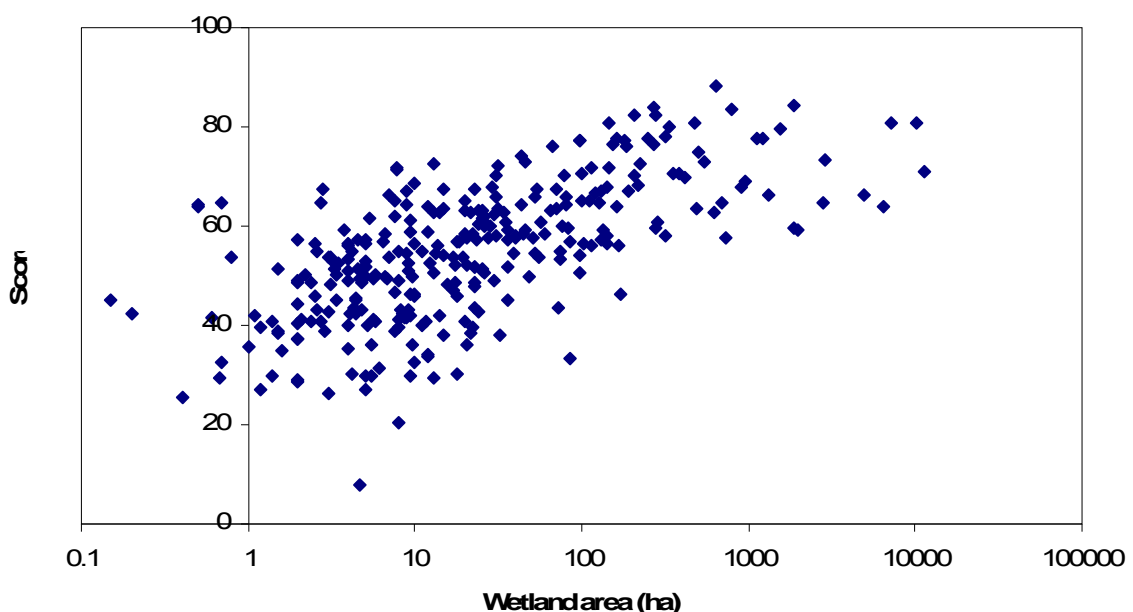


Figure 2: Wetland size versus score for 304 Northland wetlands.

Table 4: Ranking system for Northland wetlands (using PNAP data, LENZ, and aerial photography).

Indicator and Components	Score and Degree of Modification						Weighting (%)
	5	4	3	2	1	0	
Areal extent (from PNAP survey reports; combined area for all wetland types present within a site)	>50 ha (use mathematical formula to derive score out of 5)	25-49.9 ha (use mathematical formula to derive score out of 5)	15-24.9 ha (use mathematical formula to derive score out of 5)	5-14.9 ha (use mathematical formula to derive score out of 5)	2-4.9 ha (use mathematical formula to derive score out of 5)	<2 ha (use mathematical formula to derive score out of 5)	10
Size contribution to remaining area of PNAP wetlands in the relevant ecological district (from PNAP survey reports)	>80% (use mathematical formula to derive score out of 5)	50-79.9% (use mathematical formula to derive score out of 5)	25-49.9% (use mathematical formula to derive score out of 5)	5-24.9% (use mathematical formula to derive score out of 5)	1-4.9% (use mathematical formula to derive score out of 5)	<1% (use mathematical formula to derive score out of 5)	5
Highest LENZ threat category for wetland	Acutely Threatened	Chronically Threatened	At Risk	Critically Underprotected	Underprotected	Not Threatened, Better Protected and Not Reduced	5
Representativeness (from PNAP survey reports)	Best or only remaining representative example of an indigenous vegetation or habitat type within the region, or; good quality example that is a historic ally rare ecosystem type.	Good quality example of indigenous vegetation or habitat type that is regionally under-represented.	Best or only remaining example of indigenous vegetation or habitat type within an ecological district	Good quality example of indigenous vegetation or habitat type within an ecological district, or listed as a representative site for a vegetation or habitat type within an ecological district.	Degraded example of indigenous vegetation or habitat type within an ecological district, that would rapidly improve in values if modifying factors were addressed (e.g. weed control, exclusion of livestock).	Very degraded and not a representative vegetation or habitat type	25
Vegetation diversity and pattern (from PNAP data)	Best or only remaining example of a suite of vegetation types or an ecological sequence within the region	One of the best remaining examples of a suite of vegetation types or an ecological sequence within the region, or the best or only within the relevant ecological district	A good example of a suite of vegetation types or an ecological sequence within an ecological district (inclusive of surrounding terrestrial vegetation, if present).	A degraded example of a suite of vegetation types or an ecological sequence within an ecological district.	Only one indigenous wetland vegetation type present, and not part of an ecological sequence.	No indigenous wetland vegetation type present.	25
Hydrological integrity and water quality (from PNAP data, NZMS 260 map series, and aerial photographs)	Hydrology unmodified by human impacts (e.g. dams, drains, floodgates, stopbanks, willows, grazing, catchment clearance)	Minor human impacts throughout (e.g. grazed catchment), and or significant impacts (e.g. drainage) within less than 25% of wetland	Moderate human impacts throughout (e.g. grazing of wetland), and or significant impacts affect 25-49% of wetland	Significant human impacts affect 50-75% of wetland	Significant human impacts affect >75% of wetland	Significant human impacts affect all of wetland.	5
Threatened/At Risk/Regionally Significant species (from PNAP data - very variable in coverage of this indicator)	Threatened species score out of 5	Threatened species score out of 5	Threatened species score out of 5	Threatened species score out of 5	Threatened species score out of 5	Threatened species score out of 5	10
Dominance of native plants in the upper-most vegetation layer (from PNAP data supplemented by LCDB2)	All wetland vegetation types dominated by indigenous species; or few or no exotic species present.	Most wetland vegetation types dominated by indigenous species; or exotic species uncommon or are not species of conservation concern.	Most wetland vegetation types are dominated by indigenous species; exotic species are present throughout or locally common.	Some wetland vegetation types dominated by exotic species but indigenous species remain common throughout.	Most wetland vegetation types dominated by exotic species. Indigenous species uncommon or localised.	All wetland vegetation types dominated by exotic species. Few or no indigenous species present.	15

## 5.2 Freshwater wetlands

Of the top 50 freshwater wetlands, 33 are within five of the 19 ecological districts from which wetlands were ranked: Aupouri (eight wetlands), Tangihua (seven wetlands), Te Pahi (eight wetlands), Kaikohe (five wetlands), and Kaipara (five wetlands) (Appendix 1). Thirty-two of the wetlands ranked from 51-100 also come from these five ecological districts. The top 50 wetlands include 25 swamps, eight lacustrine wetlands, 10 pakihi and gumland wetlands, five bogs, and two ephemeral wetlands. Forty-seven of the top 50 wetlands are known to support Threatened, At Risk, or Regionally Significant species.

## 5.3 Estuarine wetlands

Scores were obtained for 49 estuarine wetlands within 14 ecological districts (Appendix 2). Five of the top 10 estuarine wetlands were in Whangaruru Ecological District. This is probably attributable to the long coastline of this ecological district, with a series of drowned river valleys, and in many areas, a relatively low level of vegetation clearance and development. Other estuarine wetlands with high scores were usually larger estuaries and harbours from throughout the Region (e.g. Whangarei Harbour, Rangaunu Harbour, Hokianga Harbour, Houhora Harbour, and Parengarenga Harbour).

## 5.4 Top freshwater wetlands by type

The rankings for the 201 freshwater wetlands were also grouped by wetland type, and lists produced for the top wetlands of each type (Table 5). For each type, either the top 20 sites are listed, or if there were less than 20 sites, the number of sites listed is the number of sites ranked. The pragmatic classification of sites, so that each wetland was grouped according to its most extensive "wetland type", means that some larger and or good quality examples of particular wetland types are included within other wetland types. To develop accurate rankings for different types of wetlands, survey and assessment is needed to specifically target each wetland type. For example a thorough assessment and ranking of Northland's top "bogs", would require the identification, survey, mapping, and assessment of all bogs, including those that form a smaller part of a larger wetland complex, dominated by a different wetland type.

Table 5: Top freshwater wetlands within each wetland type

Ranking	Worksmart No.	Name	Total Weighted Score
<b>WETLAND TYPE</b>			
<b>Bog</b>			
1	250332	Kaimaumau/Motutangi Wetland	84.28
2	250433	Otakairangi Peat Bog	77.47
5	250287	Ngawha Geothermal Field	77.19
3	250553	Tarakihi Fen and Environs	76.47
4	250317	Shenstone Block	71.46
6	250387	West Coast Rd Shrubland	57.31
7	250352	Southern Tokerau Swamp	54.14
8	250417	Stanner Rd Remnant - Guleray Bog	48.91
9	250089	Tangonge Wetland	43.53

Ranking	Worksmart No.	Name	Total Weighted Score
<b>Ephemeral</b>			
1	250381	Sweetwater Station Depressions	67.55
2	250325	Ngakengo Beach Wetlands	67.33
3	250107	Te Taro Pond	58.48
4	250116	Kawakawa Flood Plain	55.06
<b>Lacustrine</b>			
1	250010	Lake Omapere and Environs	77.64
2	250342	Lake Rotokawau and Puwheke Beach	77.14
3	250493	Lake Humuhumu Wetland and Forest	76.66
4	250336	Lake Waiparera and Wetlands	75.96
5	250329	Te Arai Sandfields	72.69
6	250480	Lake Kai Iwi	70.37
7	250360	Te Ramanuka Lakes and Shrubland	68.60
8	250479	Lake Taharoa Wetland	66.96
9	250011	Ruakaka Racecourse Dune Lake	64.76
10	250353	Lake Wahakari	63.92
11	250478	Lake Waikere Wetland and Shrubland	62.86
12	250383	Lake Rotoroa and Wetlands	62.42
13	250377	Lake Morehurehu and Wetland	60.66
14	250379	Lake Waihopo and Shrublands	60.06
15	250512	Lake Kanono Wetland and Forest	59.96
16	250477	Horahora Dune Lake	57.23
17	250029	Te Riu Lagoon	56.69
18	250446	Rotomate Road Volcanic Cones	56.50
19	250296	Tauanui Volcanic Lake	56.46
20	250376	Wild Horse Wetland	55.00
<b>Pakihi and Gumland</b>			
1	250348	Lake Ohia	83.65
2	250482	Maitahi Wetland Scientific Reserve	82.17
3	250372	Ahipara Massif including Epakauri	79.63
4	250111	Kerikeri Airport Gumland	76.25
5	250522	Curnow Road Gemstone Conservation Area	69.65
6	250285	Rakautao Bush Wetlands	67.92
7	250432	Puketi Forest Gumland	67.19
8	250302	Whakaruangangana Gumfield	67.15
9	250368	North Cape Scientific Reserve Gumlands	65.71
10	250351	Te Paki Gumland	64.91
11	250547	Mangaroa Stream Riverine Forest and Gumland	64.58
12	250419	Upper Pungaere Gumland	60.65
13		McDonald Coastal Shrubland	60.60
14	250112	Maungaparerua Gumlands	59.53
15	250454	Waipoua Forest Gumlands	59.40
16	250391	Pairatahi Road	57.57
17	250431	Waiare Road Quarry Gumland	57.16
18	250539	Parahaki gumland	52.53
19	250593	Pearl Street Pond and Wetland	51.23
20	250323	Te Hapua Wetland	51.14
<b>Swamp</b>			
1	250489	Pouto Dune System	88.24
2	250320	Paranoa Swamp, Waitahora Lagoon and Waitahora Wetland Complex	84.07
3	250455	Kaihu Forest	82.47
4	250249	Taikirau Swamp	80.96
5	250519	Manganui River Complex	79.99
6	250298	Kaipuha Swamp	78.21

Ranking	Worksmart No.	Name	Total Weighted Score
7	250434	Wairua River Wildlife Management Reserve	77.64
8	250030	Muriwai Stream Swamp	77.11
9	250319	Te Werahi Wetland	74.79
10	250373	Te Paki Stream	74.28
11	250394	Paranui Stream Swamp	72.85
12	250421	Opuia Forest Freshwater Wetlands	72.07
13	250338	Waiwhero Stream Wetland	71.94
14	250091	Waitangi Wetlands Complex	71.80
15	250551	Taikirau Wetland	71.60
16	250468	Russell Forest	70.70
17	250545	Kawiti Wetlands and Environs	70.68
18	250549	Te Whatianga Swamp	70.21
19	250410	Komutu Swamp	67.72
20	250555	Awakino and Flaxmill Swamps	67.61

#### 5.4.1 Bogs

Scores were obtained for nine bogs within six ecological districts, with four of these bogs within Aupouri Ecological District. Some bogs were classified as other wetland types (for example Kaipeha Swamp) because other wetland types within the site were more extensive than bog habitats. Five of the bogs had scores greater than 70, and four, which were either very small, or significantly degraded due to weed invasion, drainage, or vegetation clearance, had scores of 57.31, 54.14, 48.91, and 43.53.

#### 5.4.2 Ephemeral

Scores were obtained for only four ephemeral wetlands. Many ephemeral wetlands in Northland have probably not been identified, or have been included within other wetland types where only a small proportion of a wetland site meets this definition. The four ephemeral wetlands that were ranked are of divergent origin, one being a seasonally-inundated flood plain, one a depression ponded by basalt flows, and two being found where water pools on sandy substrates (dune slacks or sand flats). More ephemeral wetlands could be identified, surveyed, assessed, and ranked, but this would require a study specifically aimed at this wetland type.

#### 5.4.3 Lacustrine

Scores were obtained for 31 lacustrine wetlands within eight ecological districts. Lacustrine wetlands were common in the Kaipara Ecological District (11 sites) and the Aupouri Ecological District (10 sites), with two sites in each of the Kaikohe, Waipu, Rodney, and Tutamoe Ecological Districts, and one each within the Whangarei and Whangaruru Ecological Districts.

#### 5.4.4 Pahiki and gumland

Scores were obtained for 22 pakihi and gumland wetlands within 14 ecological districts. The highest ranked pakihi and gumland sites tended to be large with a wide range of vegetation types, and relatively low levels of weed invasion. Lake Ohia, with

a score of 83.65, was the 4<sup>th</sup> highest ranked wetland in the Northland Region, and a further two gumlands were ranked in the Top 10 freshwater wetlands.

#### 5.4.5 Swamps

Scores were obtained for 189 swamps throughout all of Northland's ecological districts. The top 20 swamps were within 12 ecological districts, with five sites within the Tangihua Ecological District and three sites within the Te Pahi Ecological District.

#### 5.4.6 Fens

No wetlands were classified as fens. Fens probably occur throughout Northland, with an unknown proportion of swamps probably being misidentified fens. Site surveys would be needed to separate fens from swamps and bogs.

#### 5.4.7 Geothermal wetlands

The one known geothermal wetland in Northland was classified as a bog (Ngawha Geothermal Field) as the PNAP data suggested this was more extensive than geothermal habitats within this site. The typically small extent of geothermal habitats means that site surveys are needed to identify, map, and describe geothermal wetlands. If this was undertaken, geothermal wetlands could be ranked separately from other natural areas with which they are contiguous.

### 5.5 Top wetlands by ecological district

The top wetlands within each ecological district are listed in Table 6. There is considerable variation within ecological districts in the type of wetlands that scored highly, which is reflective of the geomorphology of each ecological district. For example, all of the top 10 wetlands within each of the Hokianga and Otamatea Ecological Districts, which are centered on harbours within large drowned river valleys, are either swamps or saltmarshes. Five of the top 10 wetlands in the Kaipara Ecological District are dune wetlands, and the Ecological District is characterised by extensive coastal sand dunes. Gumlands, swamps, saltmarshes, and ephemeral wetlands make up the top 10 sites in the Kerikeri Ecological District, which is on the coast and has highly variable underlying geology.

Table 6: Top freshwater and estuarine wetlands for each ecological district in Northland.

Ranking	Worksmart No.	Name	Main Wetland Type	Total Weighted Score
<b>Ahipara Ecological District</b>				
1	250372	Ahipara Massif including Epakauri	Pakihi and gumland	79.63
2	250389	Whakakoro	Pakihi and gumland	50.46
3	250388	Tauroa Lakes	Swamp	40.98
<b>Aupouri Ecological District</b>				
1	250332	Kaimaumau/Motutangi Wetland	Bog	84.28
2	250348	Lake Ohia	Pakihi and gumland	83.65
3	250370	Rangaunu Harbour	Saltmarsh	80.65
4	250342	Lake Rotokawau and Puwheke Beach	Lacustrine	77.14
5	250336	Lake Waiparera and Wetlands	Lacustrine	75.96



Ranking	Worksmart No.	Name	Main Wetland Type	Total Weighted Score
6	250373	Te Paki Stream	Swamp	74.28
7	250329	Te Arai Sandfields	Lacustrine	72.69
8	250360	Te Ramanuka Lakes and Shrubland	Lacustrine	68.60
9	250381	Sweetwater Station Depressions	Ephemeral	67.55
10	250364	Houhora Harbour	Saltmarsh	66.41
<b>Hokianga Ecological District</b>				
1	250418	Hokianga Harbour	Saltmarsh	73.44
2	250425	Whangape Harbour	Saltmarsh	67.81
3	250145	Upper Herekino River Wetlands	Swamp	67.50
4	250150	Lower Waihou Swamp and Shrubland	Swamp	64.96
5	250424	Herekino Harbour	Saltmarsh	63.68
6	250147	Haumanga Road Wetland	Swamp	60.20
7	250153	Rangiahua Wetland	Swamp	58.75
8	250154	Hautau Stream Remnant	Swamp	56.43
9	250159	Waoku Coach Road Wetlands	Swamp	55.95
10	250160	Whawharu Swamp	Swamp	54.94
<b>Kaikohe Ecological District</b>				
1	250298	Kaipeha Swamp	Swamp	78.21
2	250010	Lake Omapere and Environs	Lacustrine	77.64
3	250287	Ngawha Geothermal Field	Bog	77.19
4	250285	Rakautao Bush Wetlands	Pakihi and gumland	67.92
5	250302	Whakaruangangana Gumfield	Pakihi and gumland	67.15
6	250289	Youngs kahikatea Remnant	Swamp	63.83
7	250288	Ngawha Swamps	Swamp	63.04
8	250291	Waingaruru Stream Swamp	Swamp	62.15
9	250294	Puketotara/Patukauwae/Te Keene Stream Swamp	Swamp	61.55
10	250301	Tautoro Wetland	Swamp	61.38
<b>Kaipara Ecological District</b>				
1	250489	Pouto Dune System	Swamp	88.24
2	250482	Maitahi Wetland Scientific Reserve	Pakihi and gumland	82.17
3	250493	Lake Humuhumu Wetland and Forest	Lacustrine	76.66
4	250487	Kaipara Harbour Shrubland and Rushland	Saltmarsh	70.99
5	250480	Lake Kai Iwi	Lacustrine	70.37
6	250507	Kelly's Bay/Punahaere Creek Estuary Shrubland and Forest	Saltmarsh	68.37
7	250479	Lake Taharoa Wetland	Lacustrine	66.96
8	250496	Frith Road Dairylands Wetland	Swamp	63.18
9	250492	Wetland East of Lake Rotopouua	Swamp	62.96
10	250478	Lake Waikere Wetland and Shrubland	Lacustrine	62.86
<b>Kerikeri Ecological District</b>				
1	250111	Kerikeri Airport Gumland	Pakihi and gumland	76.25
2	250421	Opua Forest Freshwater Wetlands	Swamp	72.07
3	250091	Waitangi Wetlands Complex	Swamp	71.80
4	250097	Upper Te Puna Inlet	Saltmarsh	66.86
5	250106	Wetland located within Hutia Creek Coastal Shrublands	Swamp	65.91
6	250419	Upper Pungaere Gumland	Pakihi and gumland	60.65
7	250112	Maungaparerua Gumlands	Pakihi and gumland	59.53
8	250107	Te Taro Pond	Ephemeral	58.48
9	250096	Wetlands located at Tapuaetahi	Saltmarsh	58.05
10	250116	Kawakawa Flood Plain	Ephemeral	55.06
<b>Manaia Ecological District</b>				
1		Ocean Beach Recreation Reserve and Surrounds	Saltmarsh	64.44
2	250570	Harambee Road Swamp	Swamp	60.99
3		McDonald Coastal Shrubland	Pakihi and gumland	60.60
4	250602	Kiteone Road Saltmarsh	Saltmarsh	59.34
5	250571	Kerr Road End Swamp	Swamp	51.52
6	250572	Kauri Mountain Swamp	Swamp	49.48

Ranking	Worksmart No.	Name	Main Wetland Type	Total Weighted Score
7	250579	Timperly Road Wetland South	Swamp	39.46
<b>Maungataniwha Ecological District</b>				
1	250394	Paranui Stream Swamp	Swamp	72.85
2	250396	Mangonui Harbour	Saltmarsh	62.84
3	250392	Otaha-Ohiritoa	Swamp	62.79
4	250390	Church Rd Swamp Forest	Swamp	58.02
5	250391	Pairatahi Rd	Pakihi and gumland	57.57
6	250405	Taipa Estuary	Saltmarsh	56.54
7	250395	Oruru	Swamp	53.84
8	250407	Tangikoko Stream	Swamp	53.68
9	250398	Otianga Wetland and Riparian Forest	Swamp	49.82
10	250393	Pipiwai Stream Swamp	Swamp	49.09
<b>Otamatea Ecological District</b>				
1	250516	Arapaoa River	Saltmarsh	66.36
2	250515	Otamatea River	Saltmarsh	64.64
3	250518	Otamatea River Confluence	Saltmarsh	59.77
4	250066	Oruawharo River North Coast	Saltmarsh	59.37
5	250517	Hukatere Peninsula West Coast	Saltmarsh	57.54
6	250043	Hautakima South Forest	Swamp	44.21
7	250055	Kohatutahi Forest and Wetland	Swamp	41.85
8	250050	Te Ope Stream Remnants	Swamp	41.27
9	250060	Te Mira Road Wetland	Swamp	40.87
10	250046	Kirikiri Creek Forest and Wetlands	Swamp	38.92
<b>Puketia Ecological District</b>				
1	250432	Puketia Forest Gumland	Pakihi and gumland	67.19
2	250431	Waiare Road Quarry gumland	Pakihi and gumland	57.16
3	250430	Omahuta Wetland	Swamp	45.29
<b>Rodney Ecological District</b>				
1	250601	King Road Saltmarsh	Saltmarsh	65.28
2	250591	Topuni Saltmarsh	Saltmarsh	56.13
3	250593	Pearl Street Pond and Wetland	Pakihi and gumland	51.23
4	250595	Sands Lake	Lacustrine	48.78
5	250587	Wightmans- Lawrence Road Swamp	Swamp	32.40
6	250589	Garbolino Road Swamp	Swamp	27.00
7	250594	Cove Road Swamp	Swamp	26.36
8	250596	The Heads Subdivision Gumland-Swamp	Swamp	25.51
9	250582	Ti Kouka Way Riverine Forest Remnants and Lake	Lacustrine	20.43
<b>Tangihua Ecological District</b>				
1	250249	Taikirau Swamp	Swamp	80.96
2	250553	Tarakihi Fen and Environs	Bog	76.47
3	250551	Taikirau Wetland	Swamp	71.60
4	250545	Kawiti Wetlands and Environs	Swamp	70.68
5	250549	Te Whatianga Swamp	Swamp	70.21
6	250555	Awakino and Flaxmill Swamps	Swamp	67.61
7=	250554	William Upton Hewett Memorial Reserve	Swamp	67.44
7=	250547	Mangaroa Stream Riverine Forest and Gumland	Pakihi and gumland	64.58
9	250564	Rata Tipene Road Harakeke Swamp	Swamp	62.74
10	250552	Horahora Stream Swamp Association	Swamp	60.34
<b>Te Pahi Ecological District</b>				
1	250320	Paranoa Swamp, Waitahora Lagoon and Waitahora Wetland Complex	Swamp	84.07
2	250319	Te Werahi Wetland	Swamp	74.79
3	250338	Waiwhero Stream Wetland	Swamp	71.94
4	250317	Shenstone Block	Bog	71.46
5	250325	Ngakengo Beach Wetlands	Ephemeral	67.33
6	250341	Waihakari Wetland	Swamp	66.33

Ranking	Worksmart No.	Name	Main Wetland Type	Total Weighted Score
7	250368	North Cape Scientific Reserve Gumlands	Pakihi and gumland	65.71
8	250351	Te Paki Gumland	Pakihi and gumland	64.91
9	250346	Hauptoto/Whareana Bay Wetlands	Swamp	63.57
10	250326	Tapotupotu Stream Wetland and Estuary.	Saltmarsh	63.29
<b>Tokatoka Ecological District</b>				
1	250519	Manganui River Complex	Swamp	79.99
2	250522	Curnow Road Gemstone Conservation Area	Pakihi and gumland	69.65
3	250530	Mititai/Okahu Stream Remnant	Swamp	56.53
4	250538	Ararua North - Manganui River Complex	Swamp	36.11
5	250540	Parkers Road Bush	Swamp	29.72
<b>Tutamoe Ecological District</b>				
1	250455	Kaihu Forest	Swamp	82.47
2	250030	Muriwai Stream Swamp	Swamp	77.11
3	250031	Waipoua Coastal Strip and Taha Moana Scenic Reserve	Saltmarsh	65.10
4	250454	Waipoua Forest Gumlands	Pakihi and gumland	59.40
	250033	Tutamoe Domain Recreation Reserve and Surrounds	Swamp	58.96
	250029	Te Riu Lagoon	Lacustrine	56.69
	250032	Marlborough Road Forest	Swamp	54.96
5	250034	Lake Waingata North	Lacustrine	53.86
6	250028	Te Kaiatewhetu Shrublands and Arai Te Uru Coastal Strip	Swamp	51.43
7	250035	Tutamoe Maire Tawake Forest Remnants	Swamp	41.56
<b>Waipu Ecological District</b>				
1	250316	Waipu River Estuary and Sandspit	Saltmarsh	80.87
2	250315	Ruakaka River Estuary	Saltmarsh	65.98
3	250011	Ruakaka Racecourse Dune Lake	Lacustrine	64.76
4		McEwan Road Wetland	Swamp	64.53
5		Sime Road Wetland	Swamp	64.21
6	250039	Blacksmiths Creek Estuary	Saltmarsh	58.32
7	250038	Takahiwai Stream Estuary	Saltmarsh	51.13
8	250013	Upper Mangawai River Wetlands	Swamp	49.50
9	250312	Doctors Hill Road Wetland	Swamp	48.44
10	250321	Glenmohr Road Wetland	Swamp	44.99
<b>Whangarei Ecological District</b>				
1	250439	Whangarei Harbour	Saltmarsh	80.66
2	250434	Wairua River Wildlife Management Reserve	Swamp	77.64
3	250433	Otakairangi Peat Bog	Bog	77.47
4	250437	Maungatapere Mountain Swamp Forest	Swamp	63.99
5	250446	Rotomate Road Volcanic Cones	Lacustrine	56.50
6	250441	Mangakahia River Wetland	Swamp	54.72
7	250539	Parahaki Gumland	Pakihi and gumland	52.53
8	250590	Kerr Wetland	Swamp	51.21
9	250452	Wheki Stream Swamp	Swamp	46.86
10	250169	Akerama Bridge Riverine Forest	Swamp	43.33
<b>Whangaroa Ecological District</b>				
1	250409	Upper Whangaroa Harbour	Saltmarsh	69.00
2	250410	Komutu Swamp	Swamp	67.72
3	250412	Tauranga Bay Estuary	Saltmarsh	51.14
4	250413	Taratara Flax Swamp	Swamp	50.16
5	250411	Waihapa Bay Wetlands	Swamp	49.74
6	250414	North Whangaroa Wetlands	Swamp	45.67
7	250415	Taupo Bay Estuary	Saltmarsh	29.88

Ranking	Worksmart No.	Name	Main Wetland Type	Total Weighted Score
<b>Whangaruru Ecological District</b>				
1	250462	Eastern Bay of Islands Estuary	Saltmarsh	77.65
2	250466	Ngunguru Estuary	Saltmarsh	72.77
3	250465	Whananaki Estuary	Saltmarsh	72.72
4	250468	Russell Forest	Swamp	70.70
5	250142	Taiharuru Estuary	Saltmarsh	70.64
6	250139	Horahoa Estuary	Saltmarsh	70.09
7	250463	Matapouri Estuary	Saltmarsh	64.48
8	250122	Edwards/Tikitikioure Coastal Habitat	Swamp	64.40
9	250474	Pataua Estuary	Saltmarsh	59.42
10	250477	Horahora Dune Lake	Lacustrine	57.23

## 5.6 Top freshwater wetlands on dunes

For the purposes of this study, wetlands were defined as being on dunes if they were underlain by sand dunes, regardless of dune age. Thus the wetlands classified as on dunes can include wetlands on unconsolidated Holocene dunes on the coastal fringe, and wetlands on consolidated Pleistocene dunes, several kilometers inland from the coast. Scores were obtained for 69 wetlands on dunes. The top 20 dune wetlands are within four ecological districts (out of 18 ecological districts) (Table 7) with nine in Aupouri Ecological District, six in Te Paki Ecological District, four in Kaipara Ecological District, and one in Tutamoe Ecological District. Of the top 20 dune wetlands, seven are lacustrine, eight are swamps, two are bogs, two are ephemeral wetlands, and one is gumland. Of the top 20 freshwater wetlands overall, eight are on dunes, including all of the top four.

Table 7: Top 20 freshwater wetlands on dunes.

Ranking	Worksmart No.	Name	Main Wetland Type	Ecological District	Total Weighted Score
1	250489	Pouto Dune System	Swamp	Kaipara	88.24
2	250332	Kaimaumau/Motutangi Wetland	Bog	Aupouri	84.28
3	250320	Paranoa Swamp, Waitahora Lagoon and Waitahora Wetland Complex	Swamp	Te Paki	84.07
4	250348	Lake Ohia	Pakihi and gumland	Aupouri	83.65
5	250342	Lake Rotokawau and Puwheke Beach	Lacustrine	Aupouri	77.14
6	250030	Muriwai Stream Swamp	Swamp	Tutamoe	77.11
7	250493	Lake Humuhumu Wetland and Forest	Lacustrine	Kaipara	76.66
8	250336	Lake Waiparera and Wetlands	Lacustrine	Aupouri	75.96
9	250319	Te Werahi Wetland	Swamp	Te Paki	74.79
10	250373	Te Paki Stream	Swamp	Aupouri	74.28
11	250329	Te Arai Sandfields	Lacustrine	Aupouri	72.69
12	250338	Waiwhero Stream Wetland	Swamp	Te Paki	71.94

Ranking	Work-smart No.	Name	Main Wetland Type	Ecological District	Total Weighted Score
13	250317	Shenstone Block	Bog	Te Paki	71.46
14	250480	Lake Kai Iwi	Lacustrine	Kaipara	70.37
15	250360	Te Ramanuka Lakes and Shrubland	Lacustrine	Aupouri	68.60
16	250381	Sweetwater Station Depressions	Ephemeral	Aupouri	67.55
17	250325	Ngakengo Beach Wetlands	Ephemeral	Te Paki	67.33
18	250479	Lake Taharoa Wetland	Lacustrine	Kaipara	66.96
19	250341	Waihakari Wetland	Swamp	Te Paki	66.33
20	250362	Wairahi Swamp and Lake Taeore	Swamp	Aupouri	64.87

## 6. SUMMARY AND CONCLUSIONS

A ranking system was developed and applied to 304 wetlands throughout Northland. The wetlands were contained within the NRC Worksmart Database, and were identified from existing PNAP survey information and other sources. They included both freshwater and estuarine wetlands. The wetlands were distributed from the northern Rodney Ecological District, to Te Paki Ecological District in the Far North.

The ranking criteria were based on wetland characteristics that could be assessed and scored using standard PNAP style data. The quality, detail, and age of PNAP data varies significantly both between sites and between ecological districts, and therefore the scores and rankings derived from this data should be regarded as indicative. Common limitations of the data set included absence of fauna surveys, minimal vegetation descriptions, little or no information on hydrological modification, and probable underreporting of both exotic plant species and threatened species.

Scores were obtained for 255 freshwater wetlands and 49 estuarine wetlands. The wetlands scored included saltmarshes, bogs, pakihi and gumland wetlands, swamps, lacustrine wetlands, and ephemeral wetlands. Some wetlands contain more than one wetland type, and in these cases the wetland has been described based on its predominant type. One area of geothermal wetland was grouped within a larger site that was classified as a bog, and no fens were identified. Fens will occur in Northland, but are likely to have been misidentified as swamps or bogs in the PNAP reports, or be part of larger sites that are classified as swamps or bogs.

There were some information gaps in the existing data on these wetlands. For some of the sites scored, information gaps, such as size, were estimated from analysis of aerial photographs, if this could be done with a reasonable degree of accuracy. This prevented sites being excluded from this assessment for the lack of data for one field, and where a score has been obtained using an estimate, this has been noted in the overall summary for the site.

Further survey and assessment is desirable. The PNAP reports for each ecological district should be thoroughly checked for sites that were omitted from the database, which may contain high value wetlands. For example, two small dune slack wetlands

in the Waipu Ecological District were added to the NRC database by Wildlands during this study and achieved scores of 64.57 and 64.21. These wetlands then ranked as fourth and fifth in the top 10 wetlands in the Waipu Ecological District. It is possible that other small wetlands of high value are not included in the NRC wetland database and are therefore not included in the rankings. Additionally, for some wetlands, the field surveys indicated a significant change in condition since the time of last survey, and several wetlands described in PNAP reports have been lost. It is possible that based on desktop assessment, wetlands have been included in this assessment that have been drained or cleared, or that previously degraded wetlands have been significantly enhanced through the restoration efforts.

Finally, the score for each wetland is based on the sum of values across all of its wetland types. For example Lake Omapere and Environs, a 'lacustrine' wetland with a score of 77.64, achieves a high score because of its associated bogs, swamps, and lakeside turfs. Accurate rankings for each wetland type requires further survey as the separation of many wetland types (e.g. swamps versus bogs), cannot be undertaken by desktop exercises alone.

Any prioritization of wetland management that arises from these rankings needs to ensure excellent spatial coverage of the Northland region. For example, no wetlands within the Manaia, Otamatea, Puketi, or Rodney Ecological Districts occur in the Top 50. This is partly due to the dominance of some Ecological Districts within the Top 50 (e.g. Aupouri, Tangihua, and Te Paki ED), and lower wetland values within districts that are more highly modified. The rankings should be used as a tool for identifying priority wetlands, by score, type, and ecological district, rather than solely relying on wetland score.

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RANK AND ASSESSMENT FOR THE  
'TOP 255' FRESHWATER WETLANDS  
IN NORTHLAND



## Rank and Assessments for the 'Top 255' Freshwater Wetlands in Northland

Ranking	Worksmart No.	Name	Main Wetland Type	On Dunes	Ecological District	Size (ha): (x)	Representativeness	Representativeness Score	Vegetation Diversity and Pattern	V D & P Score	Hydrological integrity	HI Score	Dominance of Native Plants Score	LENZ_Cat	Threatened Species Score	Overall Summary	Total Weighted Score
1	250489	Pouto Dune System	Swamp	Y	Kaipara	638.00	Best remaining example of a large, relatively unmodified sand dune system including, freshwater and dune slack wetlands in Kaipara ED. Regarded as the best and most pristine example of a dune system with wetlands in New Zealand, and also one of the most extensive.	5	Contains freshwater wetland vegetation types within a sequence from coastal dunes to inland freshwater lakes. Best example of a mosaic of vegetation types on dunes in NZ	5	Adjacent to farmland and forestry operations.	4	4	At Risk	3.92	Assessed by desktop exercise. This large site contains a sequence of ecosystems from the coast to inland lakes, of which two are wetland types. It supports a high number of threatened bird species including the Nationally Critical grey duck and Nationally Endangered Australasian bittern. Size of the wetland component within this system is unknown, but is larger than the size required to achieve maximum score for size. Much of this site is protected and administered by DOC.	88.24
2	250332	Kaimaumau/Motutangi Wetland	Bog	Y	Aupouri	1,870.00	In Aupouri ED, the site is representative site for manuka gumland, manuka- <i>Schoenus brevifolius</i> association, <i>Gleichenia dicarpa</i> - <i>Schoenus brevifolius</i> association, <i>Baumea</i> spp.-manuka association, harakeke-raupo flaxland, and <i>Baumea teretifolia</i> - <i>Gleichenia dicarpa</i> association (sole record in ED). Bogs are regionally under-represented.	4	Contains six good examples of wetland vegetation types in the ED. Likely to contain good sequence of peat bog associations grading into raised shrubland (although shrubland areas are affected by weeds). Has some saline influence, but saltmarsh vegetation is not described in PNA. Best example of ecological sequence from lowland acid bog to coast in Northland.	5	Some of the edges bordered by drains and vulnerable to grazing. Good buffering by indigenous vegetation and duneland.	4	4	Under-protected	5.00	A large, highly acidic lowland bog system with smaller, fertile areas near in-flowing streams and farmland edges. Peat bogs and semi-mineralised wetlands are much depleted vegetation types. The outstanding natural values of this site include 12 "Threatened" species, 14 "At Risk" species, and four regionally significant species. Representative for six wetland habitat types and includes an unbroken zonation of wetland sequences from freshwater to saltmarsh. The area is contiguous with Houhora Harbour and Rangaunu Harbour-Lake Ohia. It is being investigated for RAMSAR status. More than 100 ha has been cleared since 1995, and present farming activities such as drainage and grazing may threaten the integrity of the site. Weeds such as pine, eucalyptus, and macrocarpa are locally frequent in drier parts of the wetland. Approximately 69.3% of the site is protected (DOC-administered).	84.28
3	250320	Paranoa Swamp, Waitahora Lagoon and Waitahora Wetland Complex	Swamp	Y	Te Paki	269.60	Representative site for eight freshwater wetland vegetation types, with the sole record of manuka- <i>Baumea juncea</i> - <i>B. teretifolia</i> shrubland in the Te Paki ED. Probably the only example of a brackish wetland in the region as the lower reaches are inundated by king tides.	5	Contains eight freshwater wetland vegetation types. Contiguous with indigenous shrubland and a sandy beach.	3	Within a fully vegetated catchment. No evidence of drainage.	5	5	At Risk	5.00	A large mesotrophic wetland within a fully vegetated catchment ranked as "Outstanding" (NIWA 2007). No pest species have been recorded in the Waitahora Lagoon and Lake. Site supports 10 "Threatened", nine "At Risk" and five regionally significant species. Probably the only example of a brackish lagoon in the region, and habitat for a brackish algae ( <i>Ruppia</i> sp.) not recorded elsewhere. Most of the area is protected within the Te Paki Recreation Reserve and administered by DOC.	84.07
4	250348	Lake Ohia	Pakihi and gumland	Y	Aupouri	800.00	One of last vestiges of heath and boglands on old sand country on the Karikari Peninsula. Representative site for manuka-kanuka shrubland on peat bed, <i>Baumea juncea</i> sedgeland, <i>B. arthropphylla</i> sedgeland (sole record in Aupouri ED), umbrella fern- <i>Schoenus</i> sp. association, manuka- <i>Schoenus brevifolius</i> association, <i>Lepidosperma filiforme</i> sedgeland (sole record in Aupouri ED), <i>Schoenus brevifolius</i> sedgeland (sole record in Aupouri ED), and wire rush sedgeland (sole record in Aupouri ED).	4	Forms a continuous ecological sequence from the eastern shoreline of Rangaunu Harbour through to Tokerau Beach (saltmarsh-dunefields-shrubland-gumland-swamp-dunefields). This is the only remaining example of such a sequence in Northland.	5	Roads bisect the site although hydrology is unlikely to be affected given the site's ephemeral nature. Some margins vulnerable to grazing.	4	4	At Risk	4.25	The site comprises a freshwater wetland (formerly a shallow lake) on interdune flats ponded between a belt of consolidated foredunes. The site contains outstanding habitat which is the last vestiges of heath and boglands on the Karikari Peninsula, forming a continuous ecological sequence from Rangaunu Harbour through to Tokerau Beach. Representative site for eight vegetation types, four of which have only been recorded once in Aupouri ED. The site supports eight threatened species, seven "At Risk" species, one regionally significant species, and contains one of the largest NI fernbird populations in the ED (R. Pierce, pers. comm.). The site is also nationally significant because of its soils: it comprises an extensive area containing a wide range of soil types and soil-vegetation associations. It also contains the only example of Waipuu and Ohia soils in the national inventory. Approximately 76% of the site is protected (DOC-	83.65

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																administered). Size roughly estimated to be 800 ha as PNA report did not classify large ephemeral areas (e.g. gumland, sedgeland on peat) as wetland.	
5	250455	Kaihu Forest	Swamp	N	Tutamoe	205.80	Kaihu Forest contains possibly the best, if not the only example of upland plateau swamp forest and shrubland in the Northland Region.	5	The site forms part of an excellent altitudinal sequence of plateau swamp forest on upland plateau grading into sub-montane forest and lowland forest.	4	Unmodified.	5	5	Better Protected and Less Reduced	1.92	Assessed by desktop exercise. The site contains one of the best (if not the best) examples of high altitude swamp forest in Northland. Supports two "Threatened" birds species, one "At Risk" snail species, and at least 12 regionally significant fauna and flora species. The site is largely beyond the influence of human activity, thus hydrological integrity is assumed to be intact. Weeds are unlikely to be present.	82.47
6	250482	Maitahi Wetland Scientific Reserve	Pakihi and gumland	N	Kaipara	280.00	Most significant mesotrophic-oligotrophic wetland in Northland. Representative for two wetland vegetation types, and the best example of pakihi-gumland vegetation in the ED.	5	Contains three wetland vegetation types on alluvium, including swamp and bog vegetation. Contiguous with manuka shrubland on gumland and manuka-hakea shrubland on hillslope. Bounded by pine plantation, farmland and subdivision development. Best example in ED of sequences from gumland to swamp and bog.	4	Some drainage and development has occurred to the east.	3	4	Acutely Threatened	3.25	The most significant mesotrophic-oligotrophic wetland in Northland with much of the wetland area buffered by manuka shrubland on gumland. Excellent example of ecological sequences from gumland to freshwater wetlands (swamp and bog). Recent photography suggests some of this site has been drained and developed in the north. Partially protected under Scientific Reserve and administered by DOC.	82.17
7	250249	Taikirau Swamp	Swamp	N	Tangihua	481.60	A relatively large and unmodified wetland that contains a very diverse flora. Representative for 12 ecological units. Contains good quality swamp forest which is a regionally under-represented vegetation type.	4	Contains excellent example of open water grading into reedland, sedgeland, shrubland, alluvial forest, and terrestrial forest.	4	Bisected by Motatau Road and railway; impounding of water caused by willows blocking stream channels.	4	5	Chronically Threatened	2.92	The site forms an important component of the Taikirau wetland complex, one of Northland's most significant wetland complexes. It supports two "Threatened" bird species, five "At Risk" bird species, one regionally significant bird species, two "At Risk" plant species, and 10 regionally significant plant species. Water impounding caused by willows makes the wetland vulnerable to weed invasion. Wetland margins are weedy in some areas.	80.96
8	250519	Manganui River Complex	Swamp	N	Tokatoka	338.40	Likely to be the best remaining example of floodplain forest in Northland. Some areas may be grazed, although this could not be confirmed during the survey.	5	Likely to contain one of the best examples of an alluvial kahikatea forest-shrubland-sedgeland sequence within the region, although this could not be confirmed during the survey.	4	Some grazing. Drains likely to be present. Lack of forested catchment likely to result in fast-flowing water and flooding during heavy rainfall.	4	4	Acutely Threatened	0.00	The site comprises an extensive area of high value floodplain that is of national significance. It is likely to be best example of its type in Northland, or possibly in the entire North Island. The alluvial forest is dominated by kahikatea, which is likely to form sequences with shrubland and sedgeland vegetation types. Parts of the site are likely to be grazed. The site was partially observed from a distance. Further assessment needed to determine the presence of threatened species and weeds.	79.99
9	250372	Ahipara Massif including Epakauri	Pakihi and gumland	N	Ahipara	1,549.70	High quality under-represented gumland vegetation types, and certainly the best wetlands within the Ahipara ED. One of the largest and most diverse areas of gumland vegetation in NZ, and probably the best gumland in Northland.	5	High diversity of freshwater wetland and gumland vegetation types grading into, and forming an extensive mosaic with, indigenous scrubland.	4	No evidence of drainage and many of the wetlands in entirely vegetated catchments.	5	3	Under-protected	3.33	Extensive areas of gumland and freshwater wetland which are contiguous with indigenous shrubland and forest. Very high flora values with a high diversity of threatened and regionally significant plant species, and habitat for a significant population of North Island fernbird. The site's large size, remoteness, and diversity of vegetation types combine to make this a high scoring wetland.	79.63
10	250298	Kaipeha Swamp	Swamp	N	Kaikohe	317.60	Contains excellent examples of raupo reedland, manuka-harakeke association, <i>Baumea</i> sedgeland, and manuka- <i>Baumea</i> association, the last three of which have only been recorded once from Kaikohe ED. Bog habitats are regionally-under-represented.	4	Contains eight wetland vegetation types, ranging from highly mineralised raupo-cabbage tree swamp to acidic bog dominated by <i>Baumea</i> and manuka. The site forms part of an altitudinal sequence grading into alluvial and hillslope forest, which is likely to be one of the	4	Some drains present. Margins vulnerable to grazing.	4	5	Chronically Threatened	0.75	The largest freshwater system in Kaikohe ED, and one of the largest in Northland, the Kaipeha Swamp and its associated forested and shrubland catchment comprise one of the most threatened, highly valued and poorly represented ecosystems in Northland. Representative for four vegetation types, three of which are sole records for Kaikohe ED. Contains one of best remaining example of a swamp-bog sequence in Kaikohe ED. Supports at	78.21

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									best in Kaikohe ED.							least one "Threatened" and two "At Risk" bird species, although further survey is required to determine the full ecological values of the site.	
11=	250434	Wairua River Wildlife Management Reserve	Swamp	N	Whangarei	160.90	Only example of original alluvial floodplain forest in Northland. Representative site for manuka swamp shrubland in the Whangarei ED, and the only site in the ED for kanuka/manuka-ti kouka-totara swamp forest, kanuka/manuka swamp shrubland, and <i>Baumea-Juncus</i> reedland in the ED. Good quality examples of swamp forest are regionally under-represented.	5	Large site with a mosaic of seven wetland vegetation types and areas of open water. Contiguous with indigenous forest on alluvium. High diversity of vegetation types within a riverine system including oxbow lakes.	4	Oxbows within the site formed by the straightening of the Wairua River and construction of stopbanks.	4	3	Acutely Threatened	2.00	Regarded as the only original alluvial floodplain forest in Northland, with influences of frost, water-logging, and summer drying. Large area of wetland habitat including oxbow lakes, swamp forest, and reedland. Representative site for manuka swamp shrubland in the Whangarei ED, and the only site in the ED for kanuka/manuka-ti kouka-totara swamp forest, kanuka/manuka swamp shrubland, and <i>Baumea-Juncus</i> reedland in the ED. Very high flora values. Only known site for <i>Hebe</i> aff. <i>bishopiana</i> "Hikurangi" (Nationally Critical) and one of the largest populations of heart leaved kohuhu (Nationally Vulnerable) in the country.	77.64
11=	250010	Lake Omapere and Environs	Lacustrine	N	Kaikohe	1,213.80	Largest freshwater lake in Northland. Little remaining indigenous vegetation in catchment, but the small areas of wetland on margins and aquatic vegetation are the only examples within the ED.	4	Rushland, swamp forest, peat bog, lakeside turfs, and flaxland on lake margins, and submerged indigenous vegetation within lake. Most of lake margins modified by drainage and intensively grazed, so no extensive sequences of riparian vegetation remain. However these are still the best examples of lakeside vegetation sequences in the ED.	4	Lake margins heavily modified by drainage, and the lake waters are eutrophic.	2	2	Acutely Threatened	3.83	Lake Omapere is the largest freshwater lake in Northland. The lake is shallow and eutrophic, but still supports important aquatic vegetation types. The margins are heavily modified by drainage and vegetation clearance, with small remnants of swamp forest, peat bogs, lakeside turfs, rushland, and flaxland remaining. Habitat for four "Threatened" species, five "At Risk" species, and at least 10 regionally significant plant species. A fern ally ( <i>Isoetes kirkii</i> - Nationally Critical) is only known from this lake.	77.64
13	250433	Otakairangi Peat Bog	Bog	N	Whangarei	250.00	Representative site for raupo reedland, harakeke wetland, and manuka swamp shrubland, and the only site in the ED for ti kouka-manuka-raupo shrubland. Largest remaining area of peat bog (previously extensive) on the Hikurangi floodplain, and one of the best examples of wetland bog floodplain in Northland.	4	Mosaic of four freshwater wetland types, including peat bog vegetation. Contiguous with a large area of mixed indigenous-exotic shrubland on hillslope.	4	Southern edge formed by a drainage channel, and Otakairangi Stream, which flows through the centre of the wetland, has been channelised.	4	5	Acutely Threatened	1.25	Largest area of undrained peat bog on the Hikurangi plains. Representative for several wetland vegetation types, including ti kouka-manuka-raupo association, not found elsewhere in the Whangarei ED. Important wildlife values - provides habitat for four threatened or "At Risk" bird species, and contains the largest population of black mudfish in the Whangarei ED.	77.47
14	250287	Ngawha Geothermal Field	Bog	N	Kaikohe	181.00	The only cold thermal bog in Northland and one of the best in NZ. Contains good examples of <i>Baumea-Schoenus</i> -manuka association in bog, <i>Gleichenia</i> fernland on swampy and low-lying flats, and <i>Baumea</i> sedgeland in bog, all of which have only been recorded once in Kaikohe ED. Also present is a representative example of manuka shrubland (on gumland), one of only two examples in Kaikohe ED, although gorse is locally frequent. Gumland and bogs are under-represented in Northland.	5	Contains some uncommon bog and gumland vegetation associations. Probably the only example in Kaikohe ED of bog vegetation grading into gumland habitat.	4	Causeway (Bannister Road) present. No drains or other structures evident. Nearby quarries may have adverse effects on water quality.	4	3	Critically Under-protected	2.25	The site comprises a large and relatively intact area of gumland and bog vegetation types in the Ngawha geothermal field, both of which are regionally under-represented. It includes the 18 ha Lake Waiparaheka Scientific Reserve, established to protect the unique geothermal flora and fauna. Representative for all vegetation types, three of which are sole records for Kaikohe ED. Supports one "Threatened" bird, one "Threatened" fish, two "Threatened" plants, two "At Risk" bird, one "At Risk" plant, and two regionally significant plants. Drier sites are threatened by gorse and prickly hakea. 43 ha are administered by DOC and 35 ha is protected under a Queen Elizabeth II National Trust Covenant.	77.19
15	250342	Lake Rotokawau and Puwheke Beach	Lacustrine	Y	Aupouri	97.90	Contains good examples of open water, manuka swamp shrubland, oiwi rushland, harakeke flaxland, and <i>Coprosma tenuicaulis</i> -manuka swamp shrubland, the latter of	4	Contains a good example of a freshwater wetland-shrubland-dunefield ecological sequence. Likely to be one of the best remaining within Northland.	4	Some farm drains present. Partially buffered by dunes and indigenous shrubland, but some margins vulnerable to grazing.	4	4	Under-protected	5.00	This site is part of a complex of lakes with a hard sand pan, wetlands, and shrublands linked to the Puwheke Beach dunes. The site is a good example in Aupouri ED of a wide diversity of habitats including coastal wetlands stretching from the Rangiputa coast to Karikari Moana, containing	77.14

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							which is the only record in Aupouri ED. Harakeke flaxland is regionally uncommon.									high wildlife values. Dune lakes are especially rare on the east coast of Northland. Representative for four ecological units and contains a rare freshwater-shrubland-dunefield ecological sequence. The site supports seven threatened species, 15 "At Risk" species, and four regionally significant species. Partially buffered by indigenous shrubland and exotic plantation. Threats include drainage, grazing, run-off, and weeds. Approximately 64.4 ha of the site are protected within a Marginal Strip (administered by DOC).	
16	250030	Muriwai Stream Swamp	Swamp	Y	Tutamoe	97.40	Representative site for all eight wetland vegetation types present, and the only location for seven of these wetland types within the Tutamoe ED. Harakeke flaxland is a regionally under-represented vegetation type.	4	Eight wetland vegetation types, including reedland, shrubland, flaxland, and ti kouka-harakeke associations. These vegetation types form a mosaic according to hydrology and fertility. Contiguous with indigenous forest.	4	No drainage, but southern edge likely to be partly modified where it is buffered by pasture.	4	5	Chronically Threatened	1.92	Largest freshwater wetland in the Tutamoe ED, and the best example in the ED of a wetland in a tidal lagoon/dune complex. High diversity of representative vegetation types, seven of which are only present in the ED at this site. Habitat for seven "Threatened" or "At Risk" bird species, and four regionally significant species.	77.11
17	250493	Lake Humuhumu Wetland and Forest	Lacustrine	Y	Kaipara	268.00	Lake and swamp deposits in depressions on mid-late Pleistocene (Karioitahi Group) consolidated parabolic dunefield, ponded at landward edge of Holocene transverse dunefield. Ranked Outstanding by Wells <i>et al.</i> (2007), Lake Humuhumu is the largest and deepest (16 m; Cromarty & Scott 1996) of the dune lakes on the eastern side of the Pouto Peninsula and supports many threatened and regionally significant species.	5	Raupo reedland, manuka-raupo shrubland, open water	3	Appears to be contiguous with 250508 Lake Rotopouua, Wetland and Forest. No structures visible on aerial photo, but lake margins and surrounding landscape mostly exotic grassland and plantation forestry.	5	5	No data	3.92	The largest and deepest dune lake on the eastern side of the Pouto Peninsula, which provides habitat for 16 threatened and uncommon species of plant, bird, and freshwater fish and invertebrates.	76.66
18	250553	Tarakihi Fen and Environs	Bog	N	Tangihua	153.30	The wetland is representative for <i>Baumea arthrophylla-Gleichenia</i> sp.-manuka sedgeland in bog (sole record in Tangihua ED), harakeke flaxland in bog, and <i>Eleocharis sphacelata</i> reedland in bog. Bogs are under-represented regionally and harakeke flaxland is a regionally uncommon vegetation type.	4	The site contains three wetland vegetation types, which form part of an extensive freshwater-shrubland-forest ecological sequence. Best and possibly the only example of an ecological sequence including a bog component in the ED.	4	Largely buffered by pine forest and indigenous shrubland, although future harvesting is likely to affect hydrology. Some drains present; some margins likely to be grazed.	4	5	Chronically Threatened	1.33	The site is part of a mosaic of forested gullies and extensive shrublands adjoining acidic and semi-fertile freshwater wetlands within several catchments. Areas of intermediate fertility are likely to comprise fens, which together with acidic peat bogs are representative of intermediate wetland fertility with areas of acidic peat bogs, are very uncommon in Northland. Representative for three vegetation types, one of which is a sole record for Tangihua ED. Supports two "Threatened" and two "At Risk" birds, and one regionally significant plant. The site is well-buffered by pine plantation and shrubland, although margins are vulnerable drainage and grazing.	76.47
19	250111	Kerikeri Airport Gumland	Pakihi and gumland	N	Kerikeri	67.60	Representative site for all three wetland vegetation types. Vegetation includes gumland on volcanic geomorphic base which is now extremely rare. Probably the only remaining area of indigenous vegetation on oxidised ironstone soil.	5	Three wetland vegetation types on gumland and in bog. Best example of bog vegetation in the Kerikeri ED.	4	Dissected by several drains, but these are of minor effect.	4	3	Chronically Threatened	1.67	Gumland and bog vegetation on a very unusual geomorphic substrate (oxidised ironstone soil). Representative for all vegetation types present, the best example of bog vegetation in the Kerikeri ED, and habitat for several "Threatened" or "At Risk" species. Site contains one of the two known populations of Northland mudfish. Site is of national significance. A fire recently burned through much of the site and careful management may be needed to address weed growth.	76.25
20	250336	Lake Waiparera and Wetlands	Lacustrine	Y	Aupouri	186.50	One of the best remaining lake/wetland systems in Northland. Representative site for open water, <i>Baumea</i>	5	Contains five habitat types; ecological sequence from open water to reedland/rushland to shrubland on lake margin.	3	PNA says the lake has stable hydrology, but it may be affected by surrounding farm	4	5	Chronically Threatened	1.83	The site comprises a large lake and an extensive semi-fertile wetland to the west, and is one of the best lake/wetland systems in the Ecological Region. Supports two "Threatened" and two "At	75.96

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							<i>articulata</i> reedland, and <i>Eleocharis sphacelata</i> reedland.		Weeds are present in shrubland areas.		activities.					Risk" birds, one "At Risk" plant, two "At Risk" fish, one regionally significant bird, and one regionally significant plant. It is the most significant site for black mudfish in Northland due to the extensive size of the wetland, its stable hydrology and high density of fish surveyed showing a complete age structure (V. Kerr, pers. comm.). Representative for three wetland habitat types and contains a good example of open water grading into reedland and shrubland. Weeds threatened integrity of indigenous shrubland. Partially buffered by pine plantation and indigenous shrubland, but largely exposed to grazing and other farming activities.	
21	250319	Te Werahi Wetland	Swamp	Y	Te Paki	495.40	Largest wetland in the Te Paki ED, and one of the largest freshwater wetlands in Northland. Representative site for four freshwater vegetation types. Wetlands of this size on dunes are uncommon nationally.	4	Contains five freshwater vegetation types within a wetland complex of three swamps linked by narrow sandy stream channels.	3	Pasture surrounding some portions, grazing has been an issue. Parts recently fenced.	3	4	At Risk	5.00	Largest wetland system in the Te Paki ED and one of the largest freshwater wetlands in Northland. The freshwater wetland is on dunes, and provides habitat for seven "Threatened", ten "At Risk", and seven regionally significant species. Protected within the Te Paki Recreation Reserve and administered by DOC.	74.79
22	250373	Te Paki Stream	Swamp	Y	Aupouri	43.00	A good example of a dynamic natural system and a representative site for coastal turf association on damp sandflats (nationally rare habitat type), which has only been recorded one other time in the ED.	5	Contains good examples of coastal rushland and coastal turf, although it is not known if these habitats form an ecological sequence.	3	No structures affect stream, although it is frequently used by vehicles to access Ninety Mile Beach.	4	5	At Risk	1.92	The site comprises a freshwater stream with a large sandy bed, cutting through coastal dunelands. Representative for two vegetation types. It is still in a relatively natural state despite heavy visitor and vehicle use. Supports three "Threatened" and one "At Risk" bird species, two "At Risk" plants, and three regionally significant species (one bird and two plants). Approximately 96% of the site is protected (DOC administered).	74.28
23	250394	Paranui Stream Swamp	Swamp	N	Maungataniwha	45.30	Best example of a lowland swamp in the Maungataniwha ED. Includes kahikatea swamp forest, a regionally rare habitat type.	4	Extensive sequence from mangroves to saltmarsh to freshwater swamp, including kahikatea swamp forest.	4	Bordered by Paranui Road and crossed by several sideroads and driveways. No evidence of drainage in wetland itself, and partly buffered by scrub and plantation forest.	4	4	Chronically Threatened	1.92	Large and little modified freshwater wetland grading into estuarine vegetation. Includes kahikatea swamp forest that is regionally rare. High diversity of vegetation types that are likely to be representative for the ED. Habitat for two "Threatened" and two "At Risk" bird species, and eight regionally significant species - two fish and six plants. Several areas of crack willow are present in the upper catchment.	72.85
24	250329	Te Arai Sandfields	Lacustrine	Y	Aupouri	13.00	Representative site for open water, <i>Eleocharis sphacelata</i> -raupo reedland, and a good quality example of mixed coastal turf association on damp sand flats (the latter of which is one of two records in Hokianga ED although likely to occur elsewhere). Damp sand flats are a historically rare habitat type.	5	Contains four wetland vegetation types; ecological sequence from open water to reedland and duneland associations.	3	No structures evident; well-buffered by shrubland and duneland.	5	5	At Risk	3.00	The site consists of two small lakes bounded by dunes near the southern boundary of Parengarenga Forest. The wetlands are within one of the largest areas of mobile duneland not planted in pines, which is rare habitat type along this coast. Supports two "Threatened", two "At Risk", and one regionally significant species of birds, two "Threatened" and four "At Risk" plants. Representative for three habitat types, including damp sand flats (historically and nationally under-represented). Approximately 58.9% of the sandfields is protected (DOC-administered), although it is not known whether the two wetlands fall within the protected area.	72.69
25	250421	Opua Forest freshwater wetlands	Swamp	N	Kerikeri	31.90	Several valley-floor freshwater wetlands within an extensive tract of indigenous forest. Little modified by weeds, clearance, and human interference due to high degree of buffering. Some areas of harakeke flaxland, a regionally under-represented vegetation type.	4	Freshwater wetlands containing several indigenous vegetation types, including harakeke flaxland, raupo reedland, and manuka- <i>Baumea-Gleichenia</i> shrubland. Part of an extensive and uninterrupted sequence from forest on hillslopes, to freshwater wetlands, to estuarine habitats. Probably the	4	Unmodified. Some of the wetlands are in catchments entirely covered in indigenous vegetation. Not grazed.	5	5	At Risk	0.42	Several valley-floor freshwater wetlands that form part of an extensive tract of indigenous coastal habitats within Opua Forest. A reasonably high value site due to its contribution to an extensive sequence, and lack of modification. Habitat for North Island fernbird (recorded 2010), and two regionally significant plant species ( <i>Coprosma tenuicaulis</i> and <i>C. propinqua</i> ).	72.07

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26	250338	Waiwhero Stream Wetland	Swamp	Y	Te Paki	7.70	Representative site for all 3 wetland vegetation types present, and the only location for knobby clubrush- <i>Baumea juncea</i> sedgeland in the Te Paki ED. Sedgeland on sand flats is a historically rare ecosystem type.	5	largest and best example of this sequence in the Kerikeri ED. Three wetland vegetation types that form part of a much larger and important sequence comprising dunefield-wetland-shrubland-wetland-dunefield	4	Unmodified and in a well vegetated catchment	5	5	At Risk	0.50	A small high quality wetland with representative vegetation types, including sedgeland on damp sand flats (a historically rare ecosystem type). Links two other important natural areas which combined form a complete, extensive, and rare ecological sequence across a sand tombolo. One "Threatened" birdspecies and one regionally significant plant species.	71.94
27	250091	Waitangi Wetlands Complex	Swamp	N	Kerikeri	114.70	Large mosaic of wetland and shrubland patches in fluvial wetlands.	3	Contains the largest wetland area in the ED, has an unusual substrate, and contains a rich diversity of wetland plant species and vegetation types.	4	Bisected by roads in some parts; not drained.	4	4	Chronically Threatened	2.58	The largest wetland site in Kerikeri ED; relatively unmodified swamp but threatened by encroaching weeds such as gorse and wattle. The site contains a high diversity of vegetation types and provides linkages to surrounding natural areas. The site supports two "Threatened" bird species, four "At Risk" birds, two regionally significant birds, two "Threatened" plants, one regionally significant plant, and one regionally significant freshwater fish.	71.80
28	250551	Taikirau Wetland	Swamp	N	Tangihua	144.20	The site contains representative examples of kahikatea forest on alluvium, <i>Coprosma propinqua</i> -ti kouka shrubland in swamp (sole record in Tangihua ED), harakeke-raupo flaxland in swamp (one of three records in Tangihua ED), <i>Eleocharis sphacelata</i> -raupo reedland in swamp (sole record in Tangihua ED), <i>Coprosma tenuicaulis</i> -manuka shrubland on alluvial floodplain (sole record in Tangihua ED), and <i>Eleocharis sphacelata</i> reedland in swamp. Swamp forest and harakeke flaxland are regionally under-represented habitat types.	4	Contains a high diversity of wetland habitat types, which form a diverse assemblage of deep open water, swamp-marsh associations and riverine vegetation grading into shrubland and forest.	3	Some drains present, although some portions have been ponded by the railway, providing extensive areas of permanent wetland, offsetting the effects of peripheral drainage. Wetlands are partially buffered by indigenous forest, shrubland, and pine plantation, although some areas are vulnerable to grazing.	3	5	Chronically Threatened	1.92	The site is located within the Taikirau floodplain system and is part of the Motatau wetland complex, which is probably the largest and most significant mineralised freshwater wetland system remaining in Northland. It comprises a diverse assemblage of wetland and swamp forest association with some areas of open water. Representative for six vegetation types, three of which have only been recorded once in Tangihua ED. Supports two "Threatened", three "At Risk", and one regionally significant bird species, and four regionally significant plant species. Artificial ponding by the railway has actually enhanced the hydrological integrity of the wetland, with the resultant open and deep water providing a greater number of ecotones that would otherwise be likely lost to peripheral drainage. Parts of the site are likely to be grazed. Four hectares are protected within local purpose reserves (Far North District Council).	71.60
29	250317	Shenstone Block	Bog	Y	Te Paki	7.70	Representative for all wetland vegetation types. Only location of wirerush rushland in ED.	4	Grades from shrubland to bog to dunelakes	4	Unmodified	5	4	No Threat Category	3.92	Bog and two small dunelakes between mobile dunes and extensive shrubland. Except for the presence of two aquatic weeds, very unmodified. Extensive ecological sequences and representative vegetation types. Well buffered.	71.46
30	250468	Russell Forest	Swamp	N	Whangaruru	100.00	The best example of freshwater swamp vegetation in the Whangaruru ED. Representative site for raupo-harakeke association in swamp.	3	One of the best examples of coastal vegetation sequences in Northland, from estuarine vegetation at sea level, to freshwater wetlands, to hillslope forest up to 430 m a.s.l.	4	Many areas unmodified by drainage or catchment clearance.	4	5	At Risk	1.33	Many freshwater wetlands totalling 100 ha within a large forested area of over 22,000 ha. Representative site for raupo-harakake association. Extensive ecological sequences from hillslope forest to wetlands to coast. Wetlands well-buffered and little modified.	70.70
31	250545	Kawiti Wetlands and Environs	Swamp	N	Tangihua	357.00	Contains good examples of <i>Baumea articulata</i> sedgeland (one of two records in Tangihua ED) and manuka- <i>Coprosma tenuicaulis</i> -harakeke shrubland (sole record in Tangihua ED) in a predominantly forested catchment.	3	Displays a habitat sequence from open water (Lake Kaiwai), through wetland and swamp forest associations, which then grade into hillslope shrubland and forest. Such an altitudinal sequence is rare in Tangihua ED and it is likely to be one of the best remaining in the region.	4	No drains or structures present. Well-buffered by pine and indigenous vegetation, although future harvesting could adversely affect site.	5	5	Chronically Threatened	0.50	Kawiti Wetlands and its environs display a habitat sequence from open water (Lake Kaiwai) through wetland and swamp forest associations (including a rare maire tawake association), to hillslope shrubland and forest. This additional sequence is rare in Tangihua ED and within Northland. Contains representative vegetation types that are uncommon in Tangihua ED. The site contains excellent dense swamp habitat for wetland birds and supports at least two "At Risk" bird species and two regionally significant plant species. The site is geographically close to several large	70.68

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																wetland complexes within Tangihua ED, e.g. Tarakahi Wetland and Taikirau Wetland complex. Currently well-buffered by indigenous forest and pine plantation.	
32	250480	Lake Kai Iwi	Lacustrine	Y	Kaipara	30.80	This sites contains one representative wetland vegetation type in the Kaipara ED, however the lake is ranked as Outstanding (Wells <i>et al.</i> 2007) because it is dominated by indigenous plants and is free of aquatic weeds.	5	Open water grading into reedland grading into manuka-kanuka shrubland, which has a significant exotic component.	2	Dammed dune lake.	1	5	Chronically Threatened	2.83	Although a dammed dune lake this site is a Nationally Important Geological Site (Kenny & Hayward 1996) with a number of threatened species present including the Nationally Critical grey duck. Representative site for lacustrine reedland and free of aquatic weeds.	70.37
33	250549	Te Whatianga Swamp	Swamp	N	Tangihua	79.10	The site contains excellent examples of maire tawake forest on alluvium (sole record in Tangihua ED), kahikatea forest on alluvium, <i>Baumea articulata</i> -raupo sedgeland in swamp (sole record in Tangihua ED), kahikatea-manuka forest on alluvium (sole record in Tangihua ED), and <i>Coprosma propinqua</i> shrubland in swamp (sole record in Tangihua ED). Swamp forest is regionally under-represented.	4	Eight wetland vegetation types present, of which only one is dominated by weeds. Most wetland areas are contiguous with indigenous shrubland and forest. Contains excellent examples of reedland-sedgeland-shrubland/forest ecological sequences.	3	Bisected by Pipiwai Road. Some wetland areas are vulnerable to grazing, while other areas are buffered by surrounding shrubland and forest. Some drains present.	4	5	Chronically Threatened	1.42	This site exhibits several attributes which are rare in the Northland region or which are part of an ecological complex of outstanding quality within Tangihua ED (the Taikirau/Takapau Stream system). Five representative ecological units include low altitude swamp forest and marsh, four of which have only been recorded once in Tangihua ED. There are records of at two "Threatened" and two "At Risk" bird species, and two regionally significant plant species. NI brown kiwi (Nationally Vulnerable), NI tomtit (regionally significant), and kukupa (regionally significant) utilise surrounding shrubland forest. Hydrological integrity is largely intact, however, some areas would benefit from fencing to protect against stock and pig incursions.	70.21
34	250522	Curnow Road Gemstone Conservation Area	Pakihi and gumland	N	Tokatoka	420.00	Only area of gumland within the Tokatoka ED, which supports threatened and regionally significant flora and fauna. Good quality gumland vegetation is regionally under-represented. Habitat for 10 recorded orchid species. Most of this site (41.8 ha) is public conservation land, and is administered by DOC.	4	Gumland and <i>Carex</i> sedgeland contiguous with indigenous forest on alluvium. Site is surrounded by pasture.	3	No structures evident. Waterway flows out of site into pasture	4	4	At Risk	1.17	Only area of gumland within the Tokatoka ED, with <i>Carex</i> sedgeland and swamp shrubland in the gullies. Habitat for 10 orchid species, one "At Risk" plant species, and ten regionally significant plant species. Contiguous with forest on alluvium. Surrounded by pasture but otherwise little modified. Most of site administered by the Department of Conservation.	69.65
35	250360	Te Ramanuka Lakes and Shrubland	Lacustrine	Y	Aupouri	10.00	Representative for <i>Isolepis</i> sp. sedgeland on damp sand flats (historically rare habitat type) and knobby clubrush- <i>Juncus</i> sp.-oioi association in lake bed (sole record in Aupouri ED).	5	Part of a sequence containing lake bed, damp sand flats and duneland. Surrounded by pine plantation.	3	No structures evident, although PNA mentions the effects of ongoing hydrological changes. Northern wetland vulnerable to grazing.	4	4	At Risk	2.92	The site comprises sandy alluvial flats and freshwater wetlands/lakes located amongst dunes. It is part of a complex of lakes, wetlands, and shrubland that is an important link in the chain of habitats on Aupouri Peninsula, and supports three threatened and four "At Risk" birds, one "Threatened" and three "At Risk" plants, and one regionally significant bird. Representative site for two ecological units, one of which has been recorded only once in Aupouri ED. The site contains at least one historically (nationally) rare habitat type. The site is largely well-buffered by pine plantation and indigenous vegetation. Weeds are present in surrounding shrubland and may threatened integrity of wetland areas. It is recommended that this site be monitored regularly to determine the effects of apparent hydrological changes. Approximately 80% of the site is protected (DOC-administered).	68.60
36	250285	Rakautao Bush Wetlands	Pakihi and gumland	N	Kaikohe	141.00	Representative for manuka- <i>Gleichenia</i> shrubland (gumland) (sole record for Kaikohe ED), which comprises most of the site, and one of only two	4	Contains two wetland vegetation types which form part of an altitudinal sequence grading into indigenous shrubland and forest on	3	Drains present. Vulnerable to stock.	4	5	Critically Under-protected	0.33	The site occupies a gully floor and is contiguous with large areas of cutover and secondary forest with shrubland linkages. It contains an important representative example of gumland. Supports high density of North Island fernbird ("At Risk") and one	67.92

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							examples of raupo- <i>Baumea</i> association in Kaikohe ED. Gumland is a rare wetland habitat type in Northland.		hillslope. Bounded by indigenous forest, regenerating shrubland, and pasture.							regionally significant plant (maire tawake). Likely to be a refuge for mobile species during logging in nearby pine forest. Vulnerable to stock and drainage, but fed by at least two well-buffered streams.	
37	250410	Komutu Swamp	Swamp	N	Whangaroa	29.00	Best example of a freshwater wetland in the Whangaroa ED.	3	Four wetland vegetation types, including raupo reedland, manuka shrubland, ti kouka shrubland (now forest?), and raupo-harakeke reedland. Contiguous with indigenous shrubland on adjoining hillslope, and separated from estuarine communities by road. Best example of freshwater wetland to terrestrial shrubland sequence in the Whangaroa ED.	4	Hydrology altered by construction of SH10 from a brackish to a purely freshwater wetland. Some drainage channels on periphery.	3	5	At Risk	1.00	Best example of freshwater wetland in the Whangaroa ED. At least four wetland vegetation types, including ti kouka shrubland. Forms an important link between estuarine wetlands in Whangaroa Harbour and hillslope forest. Some drainage at southern end, and formerly much greater in extent. Habitat for four "Threatened" or "At Risk" wetland bird species.	67.72
38	250555	Awakino and Flaxmill Swamps	Swamp	N	Tangihua	69.80	Contains excellent examples of a range of swamp and alluvial vegetation types, including the only records of ti kouka- <i>Coprosma propinqua</i> shrubland, ti kouka-kahikatea swamp forest, <i>Bolboschoenus fluviatilis</i> sedgeland, <i>Lepidosperma laterale-Gleichenia</i> sp. sedgeland, manuka-harakeke shrubland, raupo-harakeke reedland, raupo-harakeke-ti kouka reedland, and <i>Eleocharis sphacelata</i> -raupo reedland. Alligator weed is locally common in some areas.	3	Large site with a mosaic of 13 wetland vegetation types and areas of open water. Contiguous with indigenous forest and shrubland on alluvium. High diversity of vegetation types. Some margins bounded by pasture.	4	Water levels subject to fluctuation. Cattle graze parts of the wetland on a seasonal basis.	3	3	Chronically Threatened	2.67	The site comprises two nationally significant, large and adjoining semi-fertile freshwater wetlands which encompass expansive areas of reedland, sedgeland, swamp forest, and alluvial shrubland. Representative for ten vegetation types. Supports two "Threatened", five "At Risk", and one regionally significant bird species; one "Threatened" and four regionally significant plant species; one "At Risk" fish, and one "At Risk" invertebrate ( <i>Peripatus</i> sp.). Includes large areas of open water, which provide habitat for diving and wading birds. Flaxmill wetland is currently administered by Fish and Game NZ, and it is accessible to the public. Reedland in the south of the site is being damaged by stock.	67.61
39	250381	Sweetwater Station Depressions	Ephemeral	Y	Aupouri	15.00	Good quality examples of rushland, reedland and shrubland within ephemeral dune depressions (nationally uncommon habitat type).	5	Contains good examples of four wetland vegetation types; unknown if any ecological sequences are present. Most wetlands are bounded by pasture.	3	Drains present. Margins grazed.	3	5	At Risk	0.17	The site comprises several small, relatively unmodified, ephemeral duneland wetlands adjacent to Sandhills Road. Ephemeral dune wetlands are a nationally uncommon habitat type. Supports one "At Risk" fish species and a range of common water birds. Gorse is local in one of the wetlands and most margins are grazed.	67.55
40	250145	Upper Herekino River Wetlands	Swamp	N	Hokianga	54.00	Representative site for seven ecological units in Hokianga ED: harakeke- <i>Juncus</i> sp. association on alluvium (sole record in ED), manuka shrubland on alluvium, raupo reedland on alluvium, manuka-raupo swamp association on alluvium (sole record in ED), harakeke-saltmarsh ribbonwood swamp association on alluvium (sole record in ED), manuka-saltmarsh ribbonwood shrubland on alluvium (sole record in ED), and giant umbrella sedge-raupo swamp association on alluvium (one of two records in ED). Harakeke-dominant swamp associations are regionally rare vegetation types in Northland.	4	The site contains seven wetland vegetation types. Ecological sequence of harakeke and raupo swamp associations grading into manuka and ribbonwood shrubland on alluvium.	3	Affected by drainage, causeway, and surrounding farm use.	3	5	At Risk	0.83	The site comprises three small wetlands in the upper Herekino River. It contains a good range of vegetation types across a freshwater-saline gradient, all of which are representative for Hokianga ED; four have only been recorded once in the ED. Supports one Threatened bird (Australasian bittern) and three "At Risk" birds. Partially buffered by indigenous shrubland, although hydrology will be adversely affected by drainage, causeway, and surrounding farm use.	67.50
41	250554	William Upton Hewett	Swamp	N	Tangihua	22.50	A largely unmodified wetland	4	Contains a diverse assemblage	3	No evidence of	4	5	Critically	2.33	The reserve is comprises a diverse ecosystem	67.44



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		Memorial Reserve					that contains good quality examples of alluvial wetland vegetation, including harakeke flaxland (regionally under-represented), <i>Coprosma propinqua</i> -harakeke-ti kouka shrubland (sole record in Tangihua ED), harakeke-raupo flaxland (sole record in Tangihua ED), and manuka shrubland.		of wetland vegetation, including areas of gumland. Harakeke-dominant areas likely to grade into alluvial forest and shrubland.		drainage. Cattle from neighbouring property are known to occasionally enter wetland.			Under-protected		predominantly characterised by gumland shrubland, an uncommon habitat type in Northland's rarest, but also includes rare wetland types along the Aponga Stream, e.g. harakeke-dominant vegetation. The site has high ecological values and supports one "Threatened" species, eleven "At Risk" species, and eight regionally significant species. Relatively well-buffered, but is vulnerable to occasional stock incursions.	
42	250325	Ngakengo Beach Wetlands	Ephemeral	Y	Te Paki	2.80	Representative site for sedgeland on damp sand flats. Damp sand plains are a historically rare ecosystem type.	5	Wetland is contiguous with indigenous shrubland and grassland on dunes	3	Unmodified and in a well vegetated catchment.	5	5	Chronically Threatened	1.83	Assessed by desktop exercise. Representative for sedgeland on damp sand flats, which is a historically rare vegetation type. Supports seven "Threatened" or "At Risk" species. Proportion of site that has been mapped as wetland may be inaccurate, given that mapping only used aerial photography.	67.33
43	250432	Puketi Forest Gumland	Pakihi and gumland	N	Puketi	9.00	Good quality example of gumland vegetation (regionally under-represented) that is contiguous with an extensive tract of indigenous forest.	4	At least two gumland vegetation types (manuka scrub, <i>Dracophyllum</i> -manuka- <i>Gleichenia</i> shrubland) contiguous with extensive indigenous forest. Probably the best example of gumland vegetation in the Puketi ED.	4	No evidence of modification.	5	5	Under-protected	0.00	Assessed by desktop exercise. Approximately 6 ha of high quality gumland vegetation on the margin of Puketi Forest. Assessed from aerial photographs and photographs previously taken in field. Appears to be little modified with few or no weed species of concern. Detailed survey of site is desirable to determine if threatened or regionally significant species are present.	67.19
44	250302	Whakaruangangana Gumfield	Pakihi and gumland	N	Kaikohe	131.70	Representative example of gumland in the Kaikohe ED, and a regionally uncommon vegetation type.	4	Five vegetation types, of which one is the only example in the ED, and another is one of two locations in ED.	4	Small dirt roads throughout with possible localised effects. Probable increased ponding alongside SH12 embankment.	4	3	Critically Under-protected	0.00	Relatively large remnant of high quality gumland. At least four vegetation types, of which one is not found elsewhere in the ED. Recent aerial photography shows the construction of roads throughout the gumland. Fauna not surveyed.	67.15
45	250479	Lake Taharoa Wetland	Lacustrine	Y	Kaipara	189.12	Whilst this is not noted as being a representative site in the Kaipara PNAP it is ranked as outstanding by Wells (et al. 2007) as it is the best example of its type (clear water) and has the deepest recorded submerged vegetation in the North Island.	5	The open water and freshwater wetlands present at this site are bounded in some parts by a thin band indigenous shrubland.	2	Degraded by cattle. Dammed dune lake.	1	3	Chronically Threatened	3.25	The site is one of the two deepest dune lakes in New Zealand and is a Nationally Important Geological Site (Kenny & Hayward 1996). The margins support degraded ecological sequences from open water to lake margin wetlands to manuka shrubland. It is part of a parcel of crown land administered as Recreation Reserve by the Kaipara District Council and supports many indigenous flora and fauna species, including six "Threatened", five "At Risk" and three regionally significant.	66.96
46	250341	Waihakari Wetland	Swamp	Y	Te Paki	7.00	Representative site for oioi rushland on sand. Nationally uncommon habitat type in a remote location.	5	Contains two wetland habitat types of raupo reedland in swamp and oioi rushland on sand.	3	Largely unmodified.	5	5	Chronically Threatened	0.33	Site contains nationally uncommon vegetation type of oioi rushland on sand. Due to its isolation there is minimal modification. Survey to determine fauna is required.	66.33
47	250106	Wetland located within Hutia Creek Coastal Shrublands	Swamp	N	Kerikeri	30.30	Representative site for ti kouka shrubland and raupo reedland. Probably the best, if not the only, example of ti kouka shrubland in wetland in the Kerikeri ED.	3	A freshwater wetland with two vegetation types that forms part of an ecological sequence from tidal estuary to coastal forest. Probably one of the best examples of coastal sequences in the Kerikeri ED.	4	No evidence of drainage and most parts well buffered by indigenous or exotic forest.	4	4	At Risk	1.42	Freshwater wetland that is contiguous with a larger ecological sequence from tidal estuary to coastal forest. Representative site for raupo reedland and ti kouka shrubland in Kerikeri ED, and habitat for six "Threatened" or "At Risk" species, and two regionally significant plant species. Probably one of the best examples of an estuarine-terrestrial vegetation sequence in the Kerikeri ED.	65.91
48	250368	North Cape Scientific Reserve gumlands	Pakihi and gumland	N	Te Paki	52.20	Representative site for all vegetation types, including the sedgeland on plateau. Probably the best example of gumland vegetation, which is a regionally under-represented vegetation type, in the Te Paki ED.	4	Gumland on plateau and hillslope (two vegetation types) and a harakeke-ti kouka wetland in a gully	3	Unmodified	5	5	Better Protected and Less Reduced	1.42	Assessed by desktop exercise. Approximately 50 ha of gumland, and 2.2 ha of harakeke-ti kouka wetland within a much larger, internationally significant site. The contribution of the wetlands to the sites overall significance is difficult to assess. Little information is available for the harakeke-ti kouka wetland. High diversity of plant species	65.71

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49	250150	Lower Waihou Swamp and Shrubland	Swamp	N	Hokianga	20.00	Representative site for raupo reedland in swamp and kahikatea-ti kouka swamp forest on alluvium in Hokianga ED. Swamp forest is a regionally under-represented habitat type.	4	The site has two wetland vegetation types and contains a good example of raupo reedland grading into shrubland and secondary forest.	3	Significant farm drain connects the wetland to Whanganamu Creek. Margins grazed by stock.	3	5	Chronically Threatened	0.33	endemic to North Cape. The site consists of a raupo-dominant wetland which is one of the largest mineralised freshwater wetlands in Hokianga ED. It contains a rare swamp forest association and it is representative for two vegetation types. Water level and quality likely to be adversely affected by farm drain and stock, although a good proportion of the site is buffered by indigenous vegetation. Supports two "At Risk" birds (spotless crane and NI fernbird). Site needs to be re-surveyed as there is very little information in the PNAP report.	64.96
50	250351	Te Pahi Gumland	Pakihi and gumland	N	Te Pahi	100.00	Good quality representative examples of manuka shrubland on gumland (regionally under-represented), raupo reedland in valley bottom, and <i>Gleichenia</i> fernland in valley bottom.	4	Wetlands and gumlands form part of a diverse and extensive tract of indigenous habitats that is nationally significant.	4	Many areas unmodified by drainage and in a well-vegetated catchment.	4	3	Better Protected and Less Reduced	0.75	Assessed by desktop exercise. Wetlands and gumlands within a large 10,629.8 ha SNA that is nationally significant for its diverse vegetation. Habitat for one "At Risk" and five regionally significant plant species, and one of the largest populations of North Island fernbird in Northland. Contains good quality representative examples of manuka shrubland on gumland, raupo reedland, and <i>Gleichenia</i> fernland.	64.91
51	250362	Wairahi Swamp and Lake Taeore	Swamp	Y	Aupouri	127.00	Representative site for raupo reedland in dune hollow and <i>Baumea articulata</i> -manuka swamp association on peat (sole record for Aupouri ED).	3	Contains two wetland vegetation types and a good example of an ecological sequence grading from reedland in dune hollow to shrubland on dunes.	3	Farm drains may affect hydrology. Lake Taeore appears to be drying out. Wairahi Swamp is largely buffered by indigenous vegetation, but some margins are likely to be grazed. Lake Taeore has little buffering and is likely to be affected by stock.	3	5	Under-protected	2.83	A large wetland area on the east coast comprising Wairahi Swamp and Lake Taeore. Supports four "Threatened" species, six "At Risk" species, and two regionally significant species. Representative site for two ecological units, one of which is the sole record in Aupouri ED. Lake Taeore appears to be drying out, although it is unclear if the cause is anthropogenic. Surrounding farm activities are likely to affect the site, particularly Lake Taeore. The site also contains soils of national importance: lowland organic and gley soils, and good examples of Waipu and Ruakaka soils. Lake Taeore is a protected Wildlife Management Reserve with c.11.4 ha protected within this site (DOC-administered).	64.87
52	250011	Ruakaka Racecourse Dune Lake	Lacustrine	Y	Waipu	2.70	Representative for five wetland vegetation types, and the only dune lake in the Eastern Northland Ecological Region.	4	The only example of an ecological sequence in a dunelake in the Waipu ED. Grades from open water to reedland to ti kouka treeland.	4	Largely unmodified, but recent clearance of vegetation and drainage has occurred at the northern end.	4	3	Acutely Threatened	2.42	The only dune lake in the Eastern Northland Ecological Region. Representative for five wetland vegetation types, with sequences from open water to reedland to indigenous vegetation on dunes. Threatened by intensified land use within an already highly modified catchment. Habitat for three "Threatened", seven "At Risk", and three regionally significant bird species.	64.76
53	250547	Mangaroa Stream Riverine Forest and Gumland	Pakihi and gumland	N	Tangihua	695.20	A representative example of manuka shrubland on gumland in Tangihua ED, despite some invasion by gorse and woolly nightshade, and track clearance.	2	Although only one wetland vegetation type is present (manuka shrubland), it is part of an unusual gumland-riverine forest on alluvium ecological sequence, which is likely to be the best example remaining in Tangihua ED.	4	Some drains present. Some margins vulnerable to grazing.	4	3	Acutely Threatened	1.92	The site contains some unusual and very uncommon plant associations, as well as the largest area of gumland in Tangihua ED. Representative for manuka shrubland. Supports one "Threatened" bird (grey duck, Nationally Critical), three "At Risk" aquatic fauna species; one "Threatened", one "At Risk", and four regionally significant plant species. Provides buffering to the Mangaroa Stream and the Hikurangi River (buffered areas are an Acutely Threatened Land Environment).	64.58
54		McEwan Road Wetland	Swamp	Y	Waipu	0.70	Representative for five wetland vegetation types, and the only record of three of these types within the Waipu ED. Small but good quality example of dune slack vegetation that is uncommon nationally.	5	Five wetland vegetation types in a dune slack. Probably the best example of a range of dune slack vegetation in the Waipu ED. Surrounded by pasture and gorse.	4	No evidence of drainage but surrounded by pasture. Edges of wetland where stock can reach are grazed.	4	3	Acutely Threatened	0.50	Small dune slack wetland with five representative vegetation types and three vegetation types not found elsewhere in ED. One of only two dune slack wetlands in the ED, and one of five natural coastal freshwater wetlands in ED. Good quality examples of dune slack vegetation are nationally uncommon. Habitat for Australasian bittern and burr reed.	64.53

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55	250122	Edwards/Tikitikioure Coastal Habitat	Swamp	N	Whangaruru	44.00	Representative site for raupo-harakeke reedland.	2	Extensive sequences of coastal vegetation from hill forest to freshwater wetlands to mangrove forest. Contiguous with extensive estuarine habitats within Q05/001 of high ecological value.	4	Some parts affected by causeways, but several areas without drainage and well buffered by indigenous vegetation	4	4	Chronically Threatened	2.25	Several wetlands that form part of a larger area of coastal habitats including coastal forest, and estuarine wetlands. Intact ecological sequences from hill forest to freshwater wetlands to saltmarsh and mangrove forest. Some parts of the wetlands are well buffered and largely free of exotic plant species. Other areas affected by causeways and weed invasion (Mexican devil). Habitat for eight "Threatened" or "At Risk" wetland species, two regionally significant fish species, and maire tawake.	64.40
56		Sime Road Wetland	Swamp	Y	Waipu	0.50	Representative site for three wetland vegetation types in dune slack. Small but good quality example of dune slack vegetation that is uncommon nationally.	5	Four indigenous wetland vegetation types, contiguous with a small area of kanuka forest on dunes. Only dune slack wetland contiguous with indigenous forest in the Waipu ED.	4	Highly modified catchment but no evidence of drainage within the wetland itself.	4	3	Acutely Threatened	0.42	Small dune slack wetland with three representative vegetation types. One of only two dune slack wetlands in the ED, and one of only five natural coastal freshwater wetlands in ED. Only dune slack wetland in Waipu ED that is contiguous with indigenous forest. Good quality examples of dune slack vegetation are nationally uncommon. Habitat for Australasian bittern.	64.21
57	250437	Maungatapere Mountain	Swamp	N	Whangarei	0.50	Only example of maire tawake-pukatea swamp forest in the Whangarei ED, and a regionally under-represented vegetation type.	4	One wetland vegetation type (swamp forest) contiguous with broadleaved forest on the slopes of the volcanic cone. Only example of a volcanic cone in the region that has retained complete forest cover, and therefore probably the best example of an ecological sequence on a volcano driven by drainage/exposure/soil gradients.	4	No evidence of drainage. Catchment of crater entirely covered in indigenous vegetation.	5	5	Chronically Threatened	0.33	Assessed by desktop exercise. High quality maire tawake-pukatea swamp forest in a volcanic crater. Swamp forest is an under-represented vegetation type. Contiguous with, and buffered by, indigenous vegetation that covers the remainder of the cone. Habitat for four regionally significant species (three plants, one bird - North Island tomtit).	63.99
58	250353	Lake Wahakari	Lacustrine	Y	Aupouri	162.00	Representative site for open water, raupo reedland, <i>Gleichenia dicarpa</i> -manuka swamp association, the latter of which is the sole record in Aupouri.	3	Contains a good example of open water grading into reedland and terrestrial shrubland. Largely surrounded by indigenous shrubland, pine plantation, and pasture.	3	No structures evident, although proximity to agricultural land and plantation forestry is likely to affect hydrological integrity.	4	4	At Risk	2.83	An excellent example of a large freshwater lake system, which is representative for two vegetation types in Aupouri ED, including one type that has only been recorded once in the ED. Supports two "Threatened" and three "At Risk" bird species, three threatened plants, one at risk gecko, one "At Risk" fish, and one regionally significant bird. Margins support areas of raupo reedland and swamp associations in bog. Buffered by pine plantation, indigenous shrubland, and pasture. The lake is vulnerable to farming and plantation harvesting activities.	63.92
59	250289	Youngs kahikatea remnant	Swamp	N	Kaikohe	12.10	Contains a small but representative for maire tawake-kahikatea-ti kouka swamp forest on volcanic flats, which is only one of two examples in Kaikohe ED. Swamp forest is regionally under-represented.	4	Contains three alluvial wetland types; ecological sequence of manuka shrubland grading into swamp forest. Surrounded by pasture.	3	Drains present. Some areas recently cleared. Vulnerable to grazing.	2	5	Acutely Threatened	0.08	The site comprises a small area of young kahikatea-dominant swamp forest in the upper catchment of the Ngawha Stream, in an Acutely Threatened Land Environment. Representative site for two vegetation types, and supports one regionally significant plant species. No information is available on fauna, although it is likely to be seasonally utilised by kukupa (regionally significant). The site lacks buffering and is vulnerable to stock incursions; some areas have been recently cleared. Further survey is recommended to determine the current ecological values and threats of the site.	63.83
60	250366	S Ulrich Rd Wetland	Swamp	Y	Aupouri	31.60	Good quality examples of raupo reedland, harakeke-raupo flaxland, and harakeke flaxland. Wetlands dominated by harakeke are uncommon in the Northland Ecological Region (one of only two records in	4	Contains three wetland vegetation types; ecological sequence from reedland and flaxland in dune hollow to shrubland on dunes.	3	Some farm drains present. Wetlands have no buffering and are likely to be degraded by stock.	2	4	Chronically Threatened	0.42	S Ulrich Wetland is relatively large, and is part of a chain of wetlands on the eastern coast of Karikari Peninsula. The site contains three representative vegetation types, and provides habitat for at least one nationally threatened species. Invasive weeds such as pampas are notably less abundant in this wetland than Northern Tokerau Wetland, with	63.58

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							Aupouri ED).									which it is contiguous. The site is not fenced or buffered, and is likely to be grazed in parts. Approx. 12.8 ha of the site is protected (DOC-administered).	
61	250346	Hauptoto/Whareana Bay Wetlands	Swamp	Y	Te Paki	14.90	Representative example of unmodified raupo reedland in swamp within a fully vegetated catchment.	2	Contains three vegetation types and is within a coastal duneland-shrubland sequence.	5	Surrounded by indigenous vegetation.	5	5	Under-protected	0.67	A largely unmodified wetland system in the valley floor of a fully vegetated catchment. One "Threatened" and one "At Risk" species present. Site fully protected by a Scenic Reserve, administered by DOC.	63.57
62	250496	Frith Road Dairylands Wetland	Swamp	N	Kaipara	65.20	Good quality examples of kahikatea swamp forest (regionally under-represented), manuka shrubland, and Coprosma reedland, where wetness reduces access by stock. Best example of kahikatea swamp forest in Kaipara ED.	4	Extensive area of freshwater wetland with several vegetation types. Some areas grading into indigenous forest on hillslope, remainder bordered by pasture.	3	No evidence of drainage but most of the wetland is grazed.	4	3	Chronically Threatened	1.08	Extensive interconnected areas of swamp forest, raupo-Coprosma reedland, and shrubland on seepages. Mostly grazed but retains high flora values with two "At Risk" and nine regionally significant plant species. The wetlands are partly contiguous with indigenous hillslope forest so the site is also important within the Kaipara ED for representation of vegetation sequences from wetlands to dryland forest. The largest and best example of kahikatea swamp forest in the Kaipara ED.	63.18
63	250288	Ngawha Swamps	Swamp	N	Kaikohe	24.10	Representative site for raupo reedland and kahikatea-ti kouka-maire tawake swamp forest, the latter of which is only one of two examples in Kaikohe ED.	3	Contains only two wetland vegetation types; wetlands in the south of the site are contiguous with indigenous forest/shrubland, thus a freshwater-terrestrial vegetation sequence is implied. Bounded by SH12 and farmland.	3	Partially bisected by SH12. Drains present. Some margins vulnerable to grazing.	3	5	Acutely Threatened	0.83	The site comprises a small area of remnant swamp forest hydrologically linked to four scattered raupo-dominant wetlands in an Acutely Threatened Land Environment. Representative for two wetland vegetation types, including one of only two examples of its type recorded in Kaikohe ED. Some wetlands are contiguous with a relatively large area of indigenous forest/shrubland to the south, while others are bordered by pasture and are thus vulnerable to grazing and trampling. The site supports one "At Risk" and one regionally significant plant species, and one "Threatened" and one "At Risk" bird species.	63.04
64	250492	Wetland East of Lake Rotopouua	Swamp	Y	Kaipara	20.00	Representative site for manuka- <i>Baumea articulata</i> shrub reedland within the Kaipara ED. Oligotrophic wetlands are rare in the Kaipara ED.	4	Contains two wetland vegetation types and the only population of wire rush in the Pouto Peninsula. Surrounded by pasture.	3	Surround by farmland and deep drains.	1	4	Acutely Threatened	0.33	Representative freshwater wetland isolated by pastoral land that contains indigenous wetland vegetation including manuka- <i>Baumea articulata</i> shrub reedland and raupo reedland on alluvium. Probably an oligotrophic wetland which are rare in the Kaipara ED.	62.96
65	250478	Lake Waikere Wetland and Shrubland	Lacustrine	Y	Kaipara	21.35	Representative site for wetland on littoral sandfield in the Kaipara ED. Lake margin wetlands are a historically rare ecosystem.	5	Three freshwater vegetation types partially bounded by kanuka-manuka shrubland; pasture and forestry surround the rest of the site.	2	Dammed dune lakes. From the smaller north-western lake, major drains flow into Lake Waikere. Smaller lake is unfenced.	1	3	Chronically Threatened	2.67	The site, which comprises two lakes, contains one of the two deepest dune lakes in New Zealand. Indigenous wetland communities occur on the lake margins. Despite being unfenced this area supports five "Threatened", six "At Risk" and two regionally significant species. It is part of a 538 ha Recreation Reserve administered by the Kaipara District Council.	62.86
66	250392	Otaha-Ohiritoa	Swamp	N	Maungataniwha	33.90	Large valley floor wetland including the best and largest example of open water habitats in the Maungataniwha ED	3	An extensive wetland with sequences from indigenous forest to reedland to open water. Best example of a wetland gradient including open water in the ED.	4	The two lakes are constructed, but are probably now functioning as a semi-natural system.	4	3	At Risk	1.25	Assessed by desktop exercise. Extensive wetland within a larger site of c.376 ha. High diversity of wetland types, including raupo reedland and open water. Largest area of open water in ED. Habitat for several "Threatened" or "At Risk" wetland bird species, and two regionally significant plant species.	62.79
67	250564	Rata Tipene Road Harakeke Swamp	Swamp	N	Tangihua	13.00	The site contains a good example of harakeke flaxland, a regionally uncommon vegetation type and one of only three records in Tangihua ED.	4	The site contains two wetland vegetation types, and is surrounded by rough pasture.	3	Drains present (peripheral drainage is likely to have encouraged spread of harakeke). Margins vulnerable to grazing.	2	5	Chronically Threatened	0.00	The swamp is the upper-most component of the Taikirau wetland chain in the Horahora Stream catchment. It is representative for one wetland vegetation type (harakeke flaxland), which is regionally uncommon. The swamp is surrounded by pasture and is vulnerable to drainage and stock. There is no information on fauna, and additional survey is recommended to determine the full ecological values of this site.	62.74

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68	250382	Sandhills Rd Wetland No'1	Swamp	Y	Aupouri	14.10	Dune slack wetlands with one area of peat bog, which is an under-represented habitat type in Northland. The site contains a representative example of <i>Baumea articulata-Eleocharis sphacelata-Isolepis prolifer</i> association, which has only been recorded once in the ED.	4	Contains four wetland habitat types and some good examples of peatland vegetation types. Ecological sequences include reedland grading into manuka shrubland, and open water grading into a sedge-restiad association.	3	Some drains present; all areas grazed to their margins.	3	4	Acutely Threatened	0.83	The site comprises a mosaic of wetland habitats, including open water and associations of reedland and shrubland on peat. Peat bogs are much reduced from their previous extent and are now an under-represented habitat type in Northland. Representative site for <i>Baumea articulata-Eleocharis sphacelata-Isolepis prolifer</i> association, which is the sole record for Aupouri ED. Supports one "Threatened" bird, one "At Risk" fish, and one "At Risk" plant. All areas are grazed to their margins, and some weeds are present.	62.66
69	250383	Lake Rotoroa and Wetlands	Lacustrine	Y	Aupouri	29.90	Representative for open water and <i>Eleocharis sphacelata-Baumea articulata</i> reedland, the latter of which is the sole record for Aupouri ED.	3	Contains several wetland vegetation types and an ecological sequence of open water-reedland-terrestrial shrubland.	3	Drains present. Margins grazed.	3	5	At Risk	1.42	One of the largest in a chain of dune lakes, with high ecological values, supporting two "Threatened" and one "At Risk" bird species, and one "Threatened" and one "At Risk" plant species. Representative site for two habitat types, one of which has only been recorded once in Aupouri ED. Only one small part is fenced; most of the margins of the site are grazed. Forms an important component in a local habitat network, providing a linkage to other lakes and wetlands. 91.8% protected (administered by DOC).	62.42
70	250291	Waingaruru Stream Swamp	Swamp	N	Kaikohe	7.50	Representative for all four vegetation types, and contains the only known examples in Kaikohe ED of toetoe-raupo association in swamp and harakeke-raupo association in swamp. Harakeke-dominant habitats are regionally under-represented.	4	Contains a relatively diverse range of swamp associations which grade into a small area of peripheral swamp forest.	3	Small drains present though unlikely to affect site. Vulnerable to grazing.	4	5	Chronically Threatened	0.58	The site comprises a small, isolated, mineralised wetland fed by the Wainguru Stream, with peripheral swamp forest remnant. Representative for all four vegetation types, three of which are sole records for Kaikohe ED. Provides habitat for one "Threatened" and two "At Risk" bird species. Partially buffered by shrubland and forest, though some margins are vulnerable to stock incursions. Despite its size, it is likely to act as an important stepping stone between larger wetland sites (including Lakes Omapere and Owhareiti).	62.15
71	250331	Kapowairua Wetland and Lagoon	Swamp	Y	Te Pahi	26.40	Representative site for raupo reedland.	2	Raupo reedland grading into tidal lagoon. Surrounded by indigenous shrubland.	3	Unmodified and in a well vegetated catchment	5	5	At Risk	3.83	26.4 ha of raupo reedland grading into a tidal lagoon. Representative for raupo reedland, and contains an important ecological sequence. The catchment is largely covered in indigenous vegetation, and the wetland very unmodified. Supports 13 "Nationally Threatened" or "At Risk" bird species, and two "At Risk" plant species.	61.96
72	250294	Puketotara/Patukauwae/Te Keene Stream Swamp	Swamp	N	Kaikohe	25.30	Contains the only known examples of kahikatea swamp forest on alluvial flats and manuka- <i>Coprosma propinqua</i> swamp shrubland on alluvial flats in Kaikohe ED. Also contains a representative example of raupo reedland. Swamp forest is a regionally under-represented habitat type.	4	Likely to contain a good example of a mineralised wetland-swamp shrubland-swamp forest sequence, although this may be threatened by spread of crack willow.	3	Difficult to discern if drains are present. Cattle access is restricted by the river and wet substrate.	4	3	Chronically Threatened	1.00	The site comprises a moderately-large mineralised wetland on an alluvial floodplain associated with the Puketotara and Patukauwae Streams. Outside of the Kaipaha Swamp, it is one of the largest wetlands in Kaikohe ED. Representative for three vegetation types, two of which are the only known examples in the ED. Supports two "Threatened" and one "At Risk" bird species. May perform a linking function for the dispersal/movement of wetland species between the Motatau-Pokapu wetland complex and those of the Waitangi Forest complex. Although bordered by pasture, stock access to the site is limited.	61.55
73	250301	Tautoro Wetland	Swamp	N	Kaikohe	5.40	Representative of one of only three examples of <i>Eleocharis</i> sedgeland in Kaikohe ED and the only example of <i>Carex secta</i> sedgeland in the ED. <i>Carex secta</i> dominant wetlands are rare in Northland.	4	Only two wetland vegetation types, but includes a sequence of open water grading into indigenous sedgeland. Wetland is bounded by pasture.	3	Water level may be kept artificially high by impoundment of stock race. Also bisected by Mangakahia Road. No drains present, but vulnerable to grazing.	3	5	Chronically Threatened	0.67	The site comprises a small mineralised wetland remnant with a substantial area of open water, bisected by Mangakahia Road. Representative for two vegetation types, of which one ( <i>Carex secta</i> sedgeland) is uncommon in Northland and is the only example in Kaikohe ED. Supports two regionally significant plant species: grey duck ("Threatened-Nationally Critical") has been recorded from the site, but further survey is required of the current fauna values of the site.	61.38

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																Drainage is not affecting the site and the high water table is likely to enhance the habitat values of the site. The site lacks buffering and is vulnerable to grazing.	
74	250570	Harambee Road Swamp	Swamp	N	Manaia	9.40	Contains a very good quality example of <i>Baumea rubiginosa</i> -kapungawha-raupo sedgeland, which is the only record in Manaia ED.	3	Comprises the central linkage in a complete ecological sequence from indigenous forest in the upper valley to saltmarsh in the Taiharuru estuary, the only such example in Manaia ED.	4	Fed by streams within a forested catchment. Area surveyed is fenced and partially buffered by shrubland; bisected by a farm road at the top of the wetland. Western arms of the wetland were not surveyed and may be vulnerable to grazing.	5	3	At Risk	0.75	The site is one of the best freshwater wetlands remaining in Manaia ED and is part of a very good altitudinal sequence from forest to saltmarsh. Supports at least one "Threatened" and one "At Risk" species of wetland bird, one "At Risk" fish species, and one regionally significant fish species. Most of the wetland is fenced and retired, and downstream sections are partially buffered by shrubland and the road. Some parts of the wetland, however, were not able to be surveyed and may be vulnerable to grazing. Further survey is required to determine the site's full ecological values.	60.99
75	250377	Lake Morehurehu & Wetland	Lacustrine	Y	Aupouri	56.60	Lake Morehurehu is representative as a dune lake in Aupouri ED.	2	Contains two habitat types, with an ecological sequence of open water grading into reedland, which connects with surrounding manuka shrubland on sand flats.	3	Completely buffered by pine. No drains or stock access. Removal of pine could affect water table.	4	5	Chronically Threatened	1.92	A relatively large open-water dune lake and wetland on Chronically Threatened Land Environment that supports two "Threatened" and three "At Risk" bird species and one "Threatened" plant species. The dune lake is a representative example of its type in the ED, but is vulnerable to the effects of future pine harvesting.	60.66
76	250419	Upper Pungaere gumland	Pakihi and gumland	N	Kerikeri	287.50	Representative site for manuka shrubland on gumland in Kerikeri ED. Possibly the best example of this vegetation type in the ED.	3	Only one vegetation type is listed as present but there is probably considerable variation within the site according to drainage and soil types.	3	No evidence of drainage.	5	4	Critically Under-protected	0.25	Large area of manuka-dominated gumland with unusual underlying geology. Representative site for manuka shrubland in the Kerikeri ED, and habitat for North Island fernbird. Recent vegetation clearance at northern end.	60.65
77		McDonald Coastal Shrubland	Pakihi and gumland	N	Manaia	35.00	The only gumland in the Manaia ED. Good quality manuka shrubland on gumland.	3	Gumland contiguous with secondary coastal forest.	3	No evidence of grazing or drainage.	5	3	At Risk	0.83	The only area of gumland in the Manaia ED. On a dacite dome and contiguous with secondary coastal forest. Habitat for North Island brown kiwi, North Island fernbird, and three regionally significant plant species. Threatened by weed invasion (radiata pine, contorta pine, hakea, aristeia).	60.60
78	250552	Horahora Stream Swamp Association	Swamp	N	Tangihua	24.00	The site is representative for <i>Coprosma propinqua</i> -kahikatea-ti kouka shrubland in marsh and harakeke-ti kouka flaxland in swamp, both of which are sole records in Tangihua ED. Harakeke-dominant habitat types are regionally uncommon.	4	The site contains a relatively diverse wetland flora, which form part of an excellent alluvial floodplain swamp forest-wetland-terrestrial forest sequence.	3	Some drains present. Wetland is being grazed.	3	4	Critically Under-protected	0.17	The site is part of a diverse assemblage of hill country forest and shrubland, wetland, swamp forest and riverine forest types. It is representative for two wetland vegetation types, both of which have only been recorded once in Tangihua ED. It is part of an ecological sequence which is uncommon in Northland. Supports two regionally significant plant species; fauna has not been surveyed. The wetland is largely surrounded by pasture and is subjected to drainage. Further survey is required to determine the full ecological values of the site.	60.34
79	250355	Karatia Wetland	Swamp	N	Aupouri	27.00	Representative site for <i>Baumea articulata</i> - <i>Eleocharis sphacelata</i> -harakeke-manuka association (sole record for Aupouri ED), raupo reedland, <i>Eleocharis sphacelata</i> -wire rush association (sole record for Aupouri ED).	3	Contains a very good example of a sequence of two swamp associations grading into raupo reedland and then manuka shrubland. Surrounded by pine plantation and pasture.	3	Some drains present on wetland margins. Some margins buffered by pine while other areas vulnerable to grazing.	4	5	Under-protected	1.50	The wetland occupies a narrow valley floor and is representative for three vegetation types, two of which are sole records for Aupouri ED. Supports one "Threatened" bird (Australasian bittern), one "Threatened" plant ( <i>Todea barbara</i> ), one "At Risk" bird (NI fernbird), one "At Risk" plant ( <i>Myriophyllum robustum</i> ), one regionally significant plant ( <i>Coprosma propinqua</i> ), and one regionally significant fish (giant bully). Partially buffered by pine plantation and indigenous shrubland. Some areas are grazed and vulnerable to drainage.	60.29
80	250147	Haumanga Road Wetland	Swamp	N	Hokianga	26.00	Representative site for raupo reedland on alluvium, manuka shrubland on alluvium, and giant umbrella sedge-raupo swamp	3	Contains three wetland vegetation types. The adjoining saltmarsh grades into raupo then manuka then kanuka	3	No drains or structures evident. Grazed.	4	5	Chronically Threatened	0.00	A small wetland situated at the freshwater-saline interface of the Awaroa River. Representative for three vegetation types and is part of a saltmarsh-freshwater-terrestrial ecological sequence. A	60.20

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							association on alluvial flat (only one other record in the ED).		forest.							comprehensive fauna survey needs to be undertaken. Partially buffered by pine and indigenous shrubland and forest, although some margins are grazed. Provides buffering to the Awaroa River.	
81	250379	Lake Waihopo and Shrublands	Lacustrine	Y	Aupouri	28.00	Contains good quality examples of <i>Eleocharis sphacelata</i> reedland and <i>Baumea articulata</i> reedland, both of which are representative for their types in Aupouri ED.	2	Three wetland habitat types. Contains a small ecological sequence of open water grading into reedland and kanuka shrubland.	3	Drains present next to larger western wetland, but is generally well-buffered by shrubland. Smaller eastern wetland is grazed.	3	5	Chronically Threatened	2.33	The site comprises two small dune lakes, the larger of which is fringed by indigenous shrubland. Representative site for two wetland vegetation types and supports three "Threatened", three "At Risk", and one regionally significant bird species, and one "At Risk" fish. Also supports one "Threatened" plant and one "At Risk" plant. The site provides a linkage between the various habitats which stretch along Aupouri peninsula. The larger, western wetland appears to be well-buffered by indigenous shrubland and it is unlikely to be grazed by stock. The smaller, eastern wetland has open water during winter and is grazed to its margins.	60.06
82	250512	Lake Kanono Wetland and Forest	Lacustrine	Y	Kaipara	77.20	Dune lake ranked "Outstanding" by Wells <i>et al.</i> (2007) for its wildlife values. Representative site for raupo reedland on alluvium within the Kaipara ED.	2	Contains two freshwater wetland vegetation types within a dune lake. This site is part of a sequence from open water to lacustrine reedland to kanuka forest.	3	Bordered by plantation forestry, kanuka forest and pastoral land. No evidence of drainage.	4	4	Chronically Threatened	2.92	Large dune lake with important wildlife values. Ranked "Outstanding" by Wells <i>et al.</i> (2007). Fencing of this site would increase its conservation value as it provides habitat for three "Threatened", nine "At Risk", and four regionally significant species, and contains no pest fish or invasive aquatic weed species. Much of this site is protected in three blocks, all administered by DOC.	59.96
83	250112	Maungaparerua Gumlands	Pakihi and gumland	N	Kerikeri	83.00	Largest area of gumland vegetation remaining in the Kerikeri ED, and the only vegetation of this type on a rhyolitic dome. Increasingly modified by pine invasion and clearance.	4	Gumland vegetation dominated by manuka and <i>Schoenus brevifolius</i> . Contiguous with indigenous forest on the lower hillslopes adjacent to Kerikeri River, and a small area of freshwater wetland dominated by raupo. Integrity of vegetation threatened by pine invasion and clearance.	3	No evidence of drainage.	5	3	Under-protected	0.17	The largest area of gumland in the Kerikeri ED, and the only example of gumland on a rhyolitic dome in the ED. Contiguous with indigenous forest and freshwater wetland. Threatened by clearance and invasion by radiata pine.	59.53
84	250363	Kowhai Swamps	Swamp	Y	Aupouri	36.00	Contains representative examples of raupo reedland, giant umbrella sedgeland-swamp millet sedgeland (sole record in Aupouri ED), and <i>Eleocharis acuta-Isolepis prolifer-Juncus articulatus</i> association (sole record in Aupouri ED).	3	Contains three wetland vegetation types; ecological sequence grading from reedland and sedgeland in dune hollow to shrubland on dunes	3	No structures evident. A large part of the catchment is forested, although some areas of the wetland are likely to be grazed.	4	5	Under-protected	0.67	A narrow wetland system ponded by Holocene coastal dunes which is contiguous with duneland habitat. Supports one "Threatened" bird (Australasian bittern), one "At Risk" fish (black mudfish), one regionally significant plant ( <i>Coprosma parviflora</i> ), and provides potential habitat for spotless crake (At Risk-Relict) and other wetland fauna. Representative for three wetland vegetation types, two of which have only been recorded once in Aupouri ED. Well-buffered by pine plantation.	59.41
85	250454	Waipoua Forest Gumlands	Pakihi and gumland	N	Tutamoe	45.80	Good quality example of gumland, which has been much reduced in extent in local area.	3	Grades from <i>Baumea</i> -umbrella fern associations into shrubland	3	Largely forested and unmodified catchment	5	5	Better Protected and Less Reduced	0.33	The Waipoua Forest gumlands helps link the Mountain Top of Waima and Waipoua to the sea. The site is part of the greater Waipoua Forest tract, which supports many threatened and regionally significant indigenous fauna and flora. Most (c.77%) of Waipoua Forest is administered as DOC Conservation Park; smaller areas are protected the QEII National Trust and Nga Whenua Rahui. Gumland is a regionally and nationally uncommon habitat type. The overall score of this site is likely to increase significantly upon further survey.	59.40
86	250339	Waimango Swamp	Swamp	Y	Aupouri	134.50	Representative site for <i>Baumea arthropylla-B. juncea</i> sedgeland and manuka	2	Two vegetation types that form a sequence grading from reedland in dune hollow to	3	Drains present on swamp margins. Some margins vulnerable to	4	4	Under-protected	3.92	The site comprises a freshwater wetland ponded between coastal foredune belt and consolidated foredunes, and is a good example of a formerly	59.05

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							shrubland in swamp.		manuka shrubland on dunes.		stock.					widespread coastal wetland complex which is habitat for many threatened plants and animals. The site supports seven threatened species, seven "At Risk" species, and one regionally significant species. Partially buffered by dunes, indigenous shrubland, exotic plantation, and pasture. Representative for two ecological units. Approximately 46.6% of the site is protected (DOC-administered).	
87	250033	Tutamoe Domain Recreation Reserve and Surrounds	Swamp	N	Tutamoe	9.30	Representative site for kahikatea-maire tawake swamp forest and towai swamp forest, and the only location for these vegetation types in the Tutamoe ED. Good quality examples of swamp forest are regionally under-represented.	4	Two wetland vegetation types present, surrounded by pasture.	3	Hydrologically unmodified	5	5	No Threat Category	0.58	Small area of old-growth kahikatea-maire tawake swamp forest within a larger area of swamp forest dominated by towai. Representative for both swamp forest types present, which are both not recorded elsewhere in the Tutamoe ED. Swamp forest on alluvium is a habitat type that has been significantly reduced at a national scale.	58.96
88	250153	Rangiahua Wetland	Swamp	N	Hokianga	12.00	Representative site for harakeke- <i>Coprosma propinqua</i> -manuka-ti kouka swamp association on alluvium in Hokianga ED (sole record in the ED). Harakeke-dominant wetlands are a regionally rare habitat type.	4	Contains only one vegetation type. The site was once part of an extensive transitional ecotone between alluvial swamp forest and saltmarsh associations.	3	Bisected by driveway; margins likely to be grazed. Crack willow is frequent and may influence water level. Some of the site has already been lost to pastoral development.	2	4	At Risk	0.17	This site is a small remnant of a once extensive transitional ecotone between alluvial swamp forest and saltmarsh associations. It is influenced primarily by a high water table, high fertility and periodic inundation by brackish water during spring tides. Supports two regionally significant plants and is a representative site for harakeke- <i>Coprosma propinqua</i> -manuka-ti kouka swamp association on alluvium (the sole record in Hokianga ED). Not surveyed for fauna, but sites of this nature are used extensively by spawning galaxids, NI fernbird, and banded rail which are known from sites further downstream. Some areas have been drained for pasture. Crack willow is frequent throughout the site.	58.75
89	250107	Te Taro Pond	Ephemeral	N	Kerikeri	44.60	Representative site for <i>Baumea</i> sedgeland and <i>Polygonum-Epilobium-Isolepis</i> herbfield. Ephemeral wetlands on volcanic substrates are under-represented regionally, but the site is degraded by weed invasion and drainage.	3	A good example of wetland vegetation types, including open water, ephemeral herbfield, sedgeland, and reedland.	3	Main wetland area dissected by drains but these do not exit the wetland area. Well buffered by indigenous and exotic scrub.	3	3	Acutely Threatened	0.67	Ephemeral wetland on volcanic substrates. The wetland is in a former lake bed, and floods after heavy rain. Small areas of permanent open water, ephemeral herbfields, sedgeland and reedland. Representative for two wetland vegetation types and habitat for waterfowl.	58.48
90	250557	Uekehue Wetlands	Swamp	N	Tangihua	22.40	Contains good quality examples of kahikatea swamp forest and manuka shrubland in swamp.	4	Contains two wetland vegetation types, which form part of an ecological sequence with surrounding shrubland and forest.	3	One drain present at north of site. Some arms of wetland are bisected by forestry roads. Future harvesting may have adverse impacts on hydrology. No stock access.	3	3	At Risk	0.33	The site comprises a relatively large wetland occupying a gully floor within pine plantation. It contains good examples of kahikatea swamp forest and manuka shrubland in swamp, and it is known to support North Island fernbird (At Risk-Declining) and lamprey (At Risk-Sparse). Well-buffered by existing plantation forest. Hydrology likely to be largely intact, although future harvesting may have adverse impacts.	58.43
91	250565	Mangu Road Wetland	Swamp	N	Tangihua	6.70	The site is representative for raupo reedland in swamp and harakeke-raupo flaxland in swamp, the latter of which is a regionally under-represented habitat type.	4	The site contains two wetland vegetation types, and an example of raupo reedland grading into manuka shrubland.	3	The wetland is bounded by Pokapu Road along its northern boundary. Well-buffered by pine plantation and not accessible by stock. No drains evident.	5	4	Chronically Threatened	0.42	The site comprises a narrow raupo-dominant wetland buffered by pine plantation. It is linked to Taikirau Wetland and Shrublands (P06/072) by Waipuna Stream. Representative site for two ecological units and supports two "At Risk" bird species and one regionally significant plant species. The site is currently well-buffered by mature pine plantation and most weed species are confined to the wetland margins.	58.38
92	250485	Glinks Gully Wetland	Swamp	Y	Kaipara	60.00	Freshwater wetland within a larger site which is the best example of the only semi-consolidated dune system in the ED still predominantly under	3	Contains only one wetland vegetation type, but is part of a sequence of indigenous vegetation that grades from unconsolidated coastal sand	3	Bounded by sand dunes and cliff faces, no apparent evidence of drainage.	4	3	Chronically Threatened	1.17	This large site with its diverse array of contiguous plant communities is representative of indigenous vegetation on the only semi-consolidated dune system in the ED, is still predominantly under native vegetation, and supports two "Threatened",	58.28



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							native vegetation.		dunes to semi-consolidated dunes, with occasional freshwater wetlands and manuka shrubland and shrub grassland on coastal faces.							and three "At Risk" species. However grazing and weed encroachment is an issue.	
93	250550	Totara Bush Associations	Swamp	N	Tangihua	140.00	The site contains good examples of kahikatea-ti kouka forest on alluvium and maire-tawake forest in swamp, both types of which there are two or less records in Tangihua ED.	2	The site contains four types of wetland vegetation, which range from sedgeland to swamp forest. It is part of an excellent example of secondary and cut-over hill country forest grading into alluvial and swamp forests, and eventually into freshwater wetland. The wetland is also contiguous with pine plantation.	3	Largely unmodified. Well-buffered by indigenous and plantation forest.	5	5	Chronically Threatened	0.17	The wetland is situated within the Ngati Hine plantation forest and is part of a mosaic that includes modified primary and secondary podocarp-broadleaved forest and swamp forest associations. It is contiguous with Te Ahu Ahu Wetland and Environs (P05/048), which has high botanical and wildlife values. The wetland is representative for two vegetation types, both of which are sole records in Tangihua ED. It is part of an excellent ecological sequence grading from hill country forest through to alluvial and swamp forests, and eventually into freshwater wetland. Such sequences are rare, especially in sites containing such a large swamp forest component. Supports two regionally significant plant species, while surrounding forest supports NI brown kiwi (Nationally Vulnerable), kukupa (regionally significant), and kauri snail (Gradual Decline). The site is well-buffered but hydrology could be affected by future pine harvesting.	58.07
94	250390	Church Rd Swamp Forest	Swamp	N	Maungataniwha	30.90	A rare remnant swamp forest which was formerly common in this part of the Ecological District. Site is one of the best stands of lowland kahikatea forest in the District. Contains a wide range of divaricating shrubs including one uncommon and one unusual Coprosma. Good quality examples of swamp forest are regionally under-represented.	4	Kahikatea, puriri and cabbage tree treeland; totara forest.	2	Site is fragmented within pasture, with farm tracks and fencing present, but no visible structures affecting hydrology.	4	4	Chronically Threatened	0.50	Modified but one of best examples of lowland kahikatea forest in Maungataniwha ED.	58.02
95	250340	Waitangi Stream Wetland and Riparian Strip	Swamp	N	Te Paki	20.50	Representative example for raupo reedland within swamp in the Te Paki ED.	2	Contains only one vegetation type (raupo reedland), but is contiguous with a large area of indigenous forest and shrubland.	3	Mostly buffered by indigenous vegetation, some plantation forestry.	3	5	Chronically Threatened	1.67	Freshwater wetland dominated by raupo within indigenous and plantation forest. Habitat for one "Threatened", ten "At Risk", and two regionally significant species.	57.75
96	250508	Lake Rotopouua Wetland and Forest	Swamp	Y	Kaipara	27.70	Good quality dune lake and associated swamp. Representative site for two wetland vegetation types.	2	Contains three wetland vegetation types within a sequence from open water to kanuka forest.	3	Partially buffered by plantation forestry.	3	4	Chronically Threatened	2.67	Good quality dune lake and associated swamp. Habitat for three "Threatened", six "At Risk" and five regionally significant species. Diverse range of habitat types including open water, reedland on lake margins, swamp in dune depression, and kanuka forest on dunes. More than half of the site is protected as a conservation area and administered by DOC.	57.72
97	250391	Pairatahi Rd	Pakihi and gumland	N	Maungataniwha	50.70	Valley floor freshwater wetlands with gumland vegetation on ridges and hillslopes. Degraded by weed invasion and clearance but still the best, if not the only, example of gumland on a raised marine terrace in the Maungataniwha ED.	3	Nearly continuous sequences from freshwater wetlands to gumland vegetation. Saline influenced wetlands are probably also present on the margins of the Pairatahi River.	3	Drainage ditches visible within some freshwater wetlands, with one constructed pond.	3	3	Chronically Threatened	0.67	Several freshwater wetlands and gumlands within a larger area of secondary scrub. Gumland on raised marine terrace is unusual in this ED and the site is habitat for five regionally significant gumland plant species. The site is threatened by weed invasion and clearance, the site being significantly larger until recent clearance within gumland areas.	57.57
98	250378	Wageners Swamps	Swamp	Y	Aupouri	40.00	This site contains a representative example of manuka- <i>Eleocharis spacelata</i> swamp association, which is only one of two records in	2	Three vegetation types are present, forming ecological sequences of open water grading into reedland, shrubland and dunefields.	3	Drains present. Some margins grazed.	4	5	At Risk	1.08	The site comprises several freshwater wetlands ponded behind coastal dunes along Henderson Bay. The sites supports two "Threatened" and one "At Risk" bird species, and one "At Risk" and one regionally significant fish species. Representative	57.47

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							Aupouri ED.									site for manuka- <i>Eleocharis sphacelata</i> swamp association. Sydney golden wattle is present on some wetland margins. Some parts grazed.	
99	250387	West Coast Rd Shrubland	Bog	Y	Aupouri	5.10	Contains peat swamp (regionally uncommon habitat type), although quality cannot be assessed from the information available. Representative for <i>Baumea juncea</i> -manuka association.	4	No ecological sequences are evident, although the site contains up to four wetland vegetation types.	3	Adjacent areas of shrubland have been recently cleared. Stock unlikely to impact site.	4	5	Under-protected	0.25	Two small wetlands in consolidated dune hollows, buffered by exotic and indigenous vegetation. The site contains swamp and bog systems, although bogs are likely to dominate (but this is not stated in PNAP report). Supports one "At Risk" bird (NI fernbird) and at least two orchid species ( <i>Thelymitra malvina</i> and <i>T. carnea</i> ), and is also potential habitat for black mudfish (Gradual Decline). Peat swamps and gumlands are regionally uncommon. The site is representative site for one vegetation type. Weeds such as Sydney golden wattle, prickly hakea and wilding pine are present in adjacent shrubland. Clearance of nearby shrubland may affect hydrology.	57.31
100	250477	Horahora Dune Lake	Lacustrine	Y	Whangaruru	2.00	Not covered by PNAP report. Only dune lake in Whangaruru ED, and one of two in the Eastern Northland Ecological Region.	4	The only sequence in a dunelake from open water to reedland to indigenous scrub in the Whangaruru ED. However the lake catchment is mostly grazed pasture.	4	No evidence of drainage, and likely fed by groundwater and rainfall. Mostly surrounded by pasture.	4	3	At Risk	0.00	Small dune lake at the mouth of the Horahora Estuary. Only dune lake in ED, and one of only two in Eastern Northland Ecological Region. Degraded by grazing and predominantly pastured catchment. Could rank higher if more was known about weediness (extent of <i>Ottelia</i> ?) and fauna (not surveyed).	57.23
101	250431	Waiare Road Quarry gumland	Pakihi and gumland	N	Puketi	23.30	Representative site for gumland vegetation in the Kerikeri ED, but invaded by gorse.	2	One gumland vegetation type (manuka- <i>Gleichenia</i> scrub) grading into secondary indigenous forest and scrub, and one small area of raupo reedland.	3	Some drainage on the flatter parts of the site.	4	5	Critically Under-protected	0.00	Gumland vegetation dominated by manuka- <i>Gleichenia</i> scrub near the south-eastern edge of Puketi Forest. Gorse is present and drains are present on the flatter parts of the site, and some areas appear to be of recent origin following clearance. Site assessed from road edge above quarry, and from site photographs of western edge. Further site survey on private land may reveal other gumland vegetation types are present, or that other areas on the margins of farmland are more modified.	57.16
102	250297	Punakitere Valley Swamp Forest	Swamp	N	Kaikohe	130.00	Although the site is fragmented, it is representative for manuka shrubland on alluvium and kahikatea forest on alluvium (the largest recorded area in Kaikohe ED). Swamp forest is a regionally under-represented habitat type.	4	Contains an unusual sequence of alluvial kahikatea forest grading into manuka and kohuhu-manuka-putaputaweta shrubland on alluvium, though may be degraded by gorse.	2	Peripheral drains present. Some areas cleared. Vulnerable to grazing.	3	3	Chronically Threatened	0.00	The site is situated in the Punakitere Valley and comprises a relatively large area of fragmented alluvial forest and shrubland remnants dominated by secondary kahikatea and manuka. Representative for two habitat types, although the presence of gorse threatens the site's integrity. Bounded by pasture, so may be vulnerable to grazing and other farming activities. No information available on significant fauna and flora, thus further survey is recommended.	57.13
103 =	250471	Kaimamaku Stream Riverine Forest	Swamp	N	Whangaruru	4.55	Representative site for kahikatea forest on alluvium. Presence of maire tawake is indicative of swamp forest, and swamp forest on alluvium is regionally under-represented.	4	Only one wetland vegetation type present, but grades into forest on alluvium dominated by kanuka, taraire, and totara.	3	Well connected to floodplain of Kaimamaku Stream. Bordered by pasture or plantation forest.	4	4	Chronically Threatened	0.25	Small area of swamp forest within a larger area of riparian forest. Representative site for kahikatea forest on alluvium. Presence of maire tawake (regionally significant) is indicative that the riparian forest contains at least some areas of swamp forest. No evidence of drainage, and no weed invasion noted in PNAP report.	57.09
103 =	250467	Punaru/Parorerahi Bay Coastal Habitat	Swamp	N	Whangaruru	36.00	Good quality example of an infertile freshwater wetland on a valley floor.	2	Only one wetland vegetation type listed as present, but a thorough site survey would likely identify additional wetland vegetation types. Part of an ecological sequence from forest on hillslope to freshwater wetland to estuary and coast.	3	Unmodified. Entirely vegetated catchment and no evidence of drainage.	5	5	Chronically Threatened	0.33	Large, unmodified infertile freshwater wetland in an entirely vegetated coastal catchment. Vegetation dominated by "rushes" - determining vegetation composition to species level is likely to lift the ranking of this site, and allow for better assessment of significance within the district.	57.09
105	250356	Whakatereohao Stream Swamp	Swamp	Y	Aupouri	18.40	Representative site for oiio saltmarsh and <i>Baumea rubiginosa</i> sedgeland, the latter	3	Contains a good quality freshwater wetland to estuarine ecological sequence.	3	No structures evident, although recent pine harvesting has	4	5	Under-protected	0.50	A moderately-sized high quality valley ponded dune swamp containing a variety of vegetation types grading into the upper reaches of the	56.97

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							of which has only been recorded once in Aupouri ED.				removed significant buffering.					Parengarenga Harbour. Supports 1 "At Risk" bird, 1 "At Risk" fish, and 1 regionally significant fish. Representative for one vegetation type. Partially buffered by pine plantation; recent pine harvesting around the site has left much of the wetland exposed, which may facilitate weed invasions and alter hydrology.	
106	250237	Maraeroa Swamps	Swamp	N	Kaikohe	6.50	The only site in Kaikohe ED that contains <i>Apodasmia</i> sedgeland in swamp.	3	Grades from reedland to sedgeland to alluvial forest.	3	A third wetland was also identified in 1978 and registered as a SSBI but has since been drained, reducing the total area by c. 9 hectares.	4	5	Acutely Threatened	0.08	This site comprises two small remnant freshwater swamps within the Lower Utakura River valley on Acutely Threatened Land Environment. Contain three vegetation types, two of which representative, and supports one "At Risk" bird species. The wetlands do not appear to be grazed. Exotic shrubland borders both, but the wetlands are not currently under threat from weeds.	56.72
107	250029	Te Riu Lagoon	Lacustrine	Y	Tutamoe	17.80	Representative site for all four wetland vegetation types present, and the only location for open water in dune lake and raupo reedland in dune lake in the Tutamoe ED.	3	Four wetland vegetation types but some degradation due to weed invasion and lowered water table. Surrounded by plantation forestry.	3	Surrounding pine forestry is probably causing lowered water levels	2	3	Chronically Threatened	1.67	Largest of two dune lakes in Tutamoe ED. Four vegetation types, all of which are representative, and two ecological units not found elsewhere in Tutamoe ED. Four "Threatened" or "At Risk" wetland bird species, one "Regionally Threatened" bird species, and one regionally significant plant species. Site is the only known habitat in the Tutamoe ED for the Nationally Endangered bladderwort <i>Utricularia australis</i> . The site is threatened by the surrounding pines that are probably lowering the water table.	56.69
108	250481	Omamari Government Purpose Wildlife Management Reserve and Surrounds	Swamp	N	Kaipara	85.20	Representative site of harakeke-pampas flaxland, <i>Baumea arthrophylla</i> sedgeland and raupo reedland on alluvium in Kaipara ED.	2	This site has four wetland vegetation types and contains a good example of freshwater vegetation grading into manuka shrubland on adjacent hillslopes.	3	More than half of the wetland edge is buffered by indigenous shrubland, with much of the rest likely to be affected by surrounding farm activities. No evidence of drainage.	4	3	Acutely Threatened	2.25	Largest remaining freshwater wetland in the Kaipara ED, relatively weed free and provides habitat for two "Threatened", five "At Risk" and three regionally significant species. A portion of the site is protected as a Wildlife Management Reserve and administered by DOC. Three discrete wetlands are undescribed to the north of the main wetland.	56.67
109	250530	Mititai/Okahu Stream Remnant	Swamp	N	Tokatoka	4.00	Good example of ti kouka swamp forest within Tokatoka ED. Swamp forest is a regionally uncommon vegetation type.	4	One wetland vegetation type (swamp forest) contiguous with indigenous forest.	3	Well connected to stream channel but almost surrounded by pasture and probably grazed.	3	4	Chronically Threatened	0.08	Ti kouka swamp forest on alluvium. Surrounded by pasture but well connected with stream channel. Habitat for one regionally significant plant species (manatu). Size estimated from aerial photograph, and fauna not surveyed.	56.53
110	250446	Rotomate Road Volcanic Cones	Lacustrine	N	Whangarei	2.50	Representative site for manuka swamp shrubland in the Whangarei ED, and the only site in the ED for <i>Baumea rubiginosa-Juncus-willow</i> weed-Sphagnum association. The site is the only wetland in a volcanic crater in the ED, and this feature is also regionally rare.	4	Three wetland habitat types are present (open water, <i>Baumea rubiginosa-Juncus-willow</i> weed-Sphagnum association, and manuka swamp shrubland) and these form an ecological sequence within the wetland. The site is surrounded by pasture but is close to indigenous forest on the slopes of the volcanic cone.	3	No evidence of drainage, but the hydrology is probably partially modified by grazing.	4	5	Critically Under-protected	0.00	Small wetland in the crater of a volcanic cone. Unusual geological substrate, both within the ED and regionally. Representative for manuka swamp shrubland, and the only locality for <i>Baumea rubiginosa-Juncus-willow</i> weed-Sphagnum association in the ED. Most of surrounding crater sides are covered in pasture.	56.50
111	250296	Tauanui Volcanic Lake	Lacustrine	N	Kaikohe	10.00	Good quality example of a volcanic lake, a habitat type that is regionally uncommon in Northland.	4	Although indigenous wetland vegetation types have not been recorded from the site, it still forms part of good quality lacustrine-terrestrial forest ecological sequence.	3	Limited grazing. Overall, hydrological integrity is likely to be good. Lake is ponded by basalt cone and lava flows.	4	3	Chronically Threatened	0.25	Assessed by desktop exercise. This site comprises a small lake located next to Tauanui Volcano. It is well-buffered by indigenous forest and is hydrologically intact, although some margins are likely to be grazed. The site provides important habitat for waterfowl, including little shag (At Risk-Naturally Uncommon), black shag (At Risk-Naturally Uncommon), and NZ shoveller (regionally significant). Volcanic lakes are regionally uncommon in Northland. The lake contains at least two species of invasive aquatic weeds.	56.46

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112	250154	Hautau Stream Remnant	Swamp	N	Hokianga	5.00	Representative site for <i>Coprosma propinqua</i> -manuka-ti kouka swamp shrubland on alluvium, oioi-saltmarsh ribbonwood association in estuary, and <i>Coprosma propinqua</i> swamp shrubland on alluvium. Only examples of oioi-saltmarsh ribbonwood association in estuary and <i>Coprosma propinqua</i> swamp shrubland on alluvium in Hokianga ED.	3	Part of a good example of an ecological sequence which includes freshwater swamp grading into saltmarsh ribbonwood and secondary riparian shrubland.	3	Likely to be affected by surrounding farm activities. Partially buffered by indigenous forest and pines.	3	5	Chronically Threatened	0.83	The site comprises a small wetland along the estuarine margins of the Waihou River. It contains a sequence of brackish to saline wetland types and is representative for three vegetation types, two of which are sole records in Hokianga ED. Supports one "Threatened" bird (Australasian bittern) and one "At Risk" bird (NI fernbird). Approximately two hectares of the freshwater wetland is protected Stewardship Land administered by the DOC. Past drainage schemes and dykes have greatly reduced the area of this habitat type.	56.43
113	250380	Far North Rd Shrublands and Wetlands	Swamp	Y	Aupouri	13.80	Representative site for manuka- <i>Baumea teretifolia</i> swamp association, <i>Baumea</i> -juncea- <i>Eleocharis</i> -manuka association, and <i>Baumea articulata</i> -giant umbrella sedge-manuka-raupo association, with the latter two only recorded once in Aupouri ED.	3	Contains five vegetation types which form part of a freshwater-terrestrial sequence of reedland and swamp association grading into shrubland.	3	Some parts vulnerable to grazing.	3	4	At Risk	1.08	The wetlands form part of a mosaic of partially linked shrubland and wetland habitats, including eutrophic and mesotrophic wetland types. The site supports one "Threatened" and one "At Risk" bird species, two "At Risk" and one regionally significant fish species. Representative site for three wetland vegetation types. At least one wetland is fenced, although weeds remain a threat. 30.6 ha of the site is protected by a QEII Open Space Covenant, although it is not known what area of wetlands fall within this covenant. Additional survey is recommended to determine further ecological significance.	56.08
114	250159	Waoku Coach Road Wetlands	Swamp	N	Hokianga	4.00	Representative site for maire tawake forest, which is the only example recorded in Hokianga ED and is regionally under-represented.	4	Contains three wetland vegetation types, and an ecological sequence whereby swamp forest grades into <i>Carex</i> sp., raupo and open water.	3	Both ponds are artificial.	3	5	Better Protected and Less Reduced	0.33	The site comprises two small artificial ponds buffered by exotic plantation forest. Representative for maire tawake forest, which is the only record in Hokianga ED, although diversity is restricted by small size and lack of open water. Supports one "At Risk" bird (NI fernbird) and one regionally significant plant species (maire tawake). Buffering and exclusion of farming activities would improve hydrology, although this may decline following the harvesting of adjacent pines.	55.95
115	250116	Kawakawa Flood Plain	Ephemeral	N	Kerikeri	75.00	Representative site for open water, <i>Carex</i> sedgeland, and harakeke-ti kouka association. The only location for harakeke-ti kouka association in the Kerikeri ED, which is also regionally rare.	4	Six wetland vegetation types, of which two are dominated by indigenous species. However indigenous species are frequent throughout.	2	Some of the edges bordered by drains but a natural stream channel flows through the centre of the site, so hydrological function still largely intact.	4	2	Chronically Threatened	1.00	A relatively large freshwater wetland on a swampy floodplain that is seasonally flooded. Dominated by exotic plant species, but contains areas of harakeke-ti kouka association that are rare in the district and regionally. Important habitat for waterfowl. Streams with an extensive vegetated floodplain (albeit exotic dominated) are probably now rare in the Northland region.	55.06
116	250376	Wild Horse Wetland	Lacustrine	Y	Aupouri	7.90	Representative site for oioi rushland.	3	Only one wetland vegetation type present. Contains a good example of open water grading into oioi rushland on dunes.	3	Unmodified.	5	5	At Risk	0.00	The site comprises a small, isolated freshwater wetland in a coastal dune deflation zone. Representative site for oioi rushland on dunes. Not grazed and likely to be buffered by dunes and pine plantation. Fauna and flora surveys required.	55.00
117	250032	Marlborough Road Forest	Swamp	N	Tutamoe	2.60	Representative and the only site for maire tawake forest in Tutamoe ED. Maire tawake forest is a regionally under-represented vegetation type.	4	One wetland vegetation type contiguous with indigenous forest.	3	Likely to be grazed.	4	5	Better Protected and Less Reduced	0.17	Assessed by desktop exercise. A small but regionally representative example of maire tawake forest on alluvium. Supports at least two regionally significant species. Site description also refers to a QEII open space covenant that includes a small peaty swamp. Further survey required to accurately map boundaries and determine current threats to the site.	54.96
118	250160	Whawharu Swamp	Swamp	N	Hokianga	11.00	Representative for kahikatea-ti kouka swamp forest in swamp and raupo reedland in swamp. It is only one of three examples of kahikatea-ti kouka associations in Hokianga ED.	4	Contains two indigenous vegetation types and one type dominated by willows. A good example of ecological sequence from raupo reedland grading into swamp forest into	3	Bounded by SH12 along its northern margin and well-buffered by indigenous forest. No evidence of drains; PNA states that	4	2	Acutely Threatened	0.42	A small, high quality wetland comprising raupo reedland and kahikatea-ti kouka swamp forest near the upper reaches of the Taheke River, on an Acutely Threatened Land Environment. Representative for one vegetation type (one of three examples in Hokianga ED) and is part of a	54.94

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									peripheral secondary podocarp-broadleaved forest. Threatened by spread of willows.		wetland has a high water table.					good reedland-swamp forest-terrestrial forest sequence. Willow is locally abundant on the north-eastern edge an area of the site, and its spread may threaten its ecological values. Supports one "Threatened" bird (Australasian bittern). When surveyed the wetland had a high water table; it is currently well-buffered by indigenous vegetation.	
119	250441	Mangakahia River Wetland	Swamp	N	Whangarei	4.20	Representative site for ti kouka- <i>Coprosma propinqua</i> swamp forest in the Whangarei ED. Good quality examples of swamp forest are a regionally under-represented vegetation type.	4	Two wetland vegetation types (kahikatea swamp forest and ti kouka- <i>Coprosma propinqua</i> swamp forest) within a larger group of indigenous forest remnants on alluvium.	3	No evidence of stop banks or drainage, but surrounded by pasture and likely to be grazed.	4	3	Acutely Threatened	0.17	Assessed by desktop exercise. Representative site for kahikatea swamp forest and the only site for ti kouka- <i>Coprosma propinqua</i> swamp forest on alluvium in the Whangarei ED. Partly cleared post last survey in 1994, and further survey is needed to accurately determine extent of wetland habitat. The site is probably grazed but there is no evidence of drainage. Habitat for two regionally significant plant species (kaikomako and <i>Hoheria sextylosa</i> ).	54.72
120	250123	Whangaruru North Head Coastal Remnant	Swamp	N	Whangaruru	9.00	Representative site for raupo reedland.	2	Raupo reedland in a gully grading into estuarine wetland with mangroves. Contiguous with indigenous shrubland and forest.	3	Hydrologically unmodified and in a well-vegetated catchment.	5	5	Acutely Threatened	1.08	Valley floor wetland dominated by raupo reedland. Lower reaches grade into mangrove forest in small tidal creek, and upper reaches contiguous with, and buffered by, Whangaruru North Head Scenic Reserve. Representative for raupo reedland, and habitat for four "Threatened" or "At Risk" species, and one regionally significant species.	54.67
121	250125	Naiotonga Swamp	Swamp	N	Whangaruru	39.00	Representative site for raupo reedland, which is a rare habitat type in Whangaruru ED.	2	Raupo is abundant, with frequent kuta, harakeke, ti kouka and manuka. Occasionally occurring species include pakihi rush, giant umbrella sedge, wheki. The lower reaches of the wetland grade into mangrove estuary. There is no buffer to the wetland which is surrounded by pasture.	3	Recent drainage work has been carried out. Past drainage has meant that the area which was once a large wetland is now fragmented into two main parts divided by pasture. Whangaruru North Road and farm tracks cross the wetland. Other, smaller raupo swamps feed the same catchment.	4	4	Chronically Threatened	0.50	Gully wetland dominated by raupo with kuta, harakeke, ti kouka and manuka that is mostly surrounded by pasture, but grading into mangrove estuary. Three "At Risk" species of birds recorded. Representative for raupo reedland in Whangaruru ED. Modified and further threatened by drainage.	54.63
122	250513	Lake Kahuparere Wetland and Shrubland	Lacustrine	Y	Kaipara	13.50	Good quality raupo and raupo- <i>Schoenoplectus tabernaemontani</i> reedlands on the margins of a dune lake.	2	Three freshwater wetland vegetation types with raupo and raupo- <i>Schoenoplectus tabernaemontani</i> reedlands. Complete sequence from open water to lake edge reedlands to kanuka shrubland, which in turn links the site to the Kaipara Harbour.	3	Bordered by plantation forest, pasture, and kanuka shrubland, all of which is grazed. No evidence of drainage.	3	3	Chronically Threatened	3.83	Dune lake fringed by reedland and kanuka shrubland. Fencing of this site would increase its conservation value as it provides habitat for five "Threatened", 10 "At Risk" and four regionally significant species. Most of this site is protected in three conservation areas, all administered by DOC.	54.51
123	250158	Te Hurunga Forest	Swamp	N	Hokianga	15.00	A good quality example of raupo reedland in swamp in Hokianga ED.	2	One wetland vegetation type which forms part of an ecological sequence with indigenous shrubland and forest.	3	Currently well-buffered by indigenous shrubland and forest and pine plantation. No evidence of drainage.	4	5	Acutely Threatened	0.00	The site comprises a small area of raupo buffered by indigenous vegetation and pine forest in the lower Waihopai River. Representative for one vegetation type, which forms part of a freshwater-terrestrial sequence with a coastal influence, reflected in the frequent occurrence of kowhai and karaka. Very little information provided in the PNAP report about this wetland; fauna not surveyed. The Nationally Vulnerable swamp herb <i>Mazus novaezeelandiae</i> subsp. <i>impolitus</i> f. <i>impolitus</i> was recorded in 1949. Hydrology largely unmodified but this is likely to change following harvesting of adjacent pines.	54.23
124	250352	Southern Tokerau Swamp	Bog	Y	Aupouri	97.60	A degraded example of manuka swamp shrubland on dunes and harakeke-raupo reedland in	2	Contains ecological sequence of harakeke-raupo reedland grading into manuka swamp	3	Some farm drains present; bisected by Inland Road. Margins	3	3	Chronically Threatened	1.50	This wetland adjoins Tokerau beach and is contiguous with the Lake Ohia complex. It is ponded in parts by Holocene foredunes. It is an	54.14

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							dune hollow.		shrubland.		likely to be grazed.					example of a nationally threatened habitat type and supports two "At Risk" birds, two "Threatened" and one "At Risk" plant species, one regionally significant plant and one regionally significant fish. It also provides potential habitat Australasian bittern (Nationally Endangered) and spotless crane (Relict). Representative site for both vegetation types. Partially buffered by pine plantation; mostly surround by farmland. Margins likely to be grazed. 68.8 ha are protected (DOC-administered).	
125	250241	Okaka Road Wetland	Swamp	N	Kaikohe	6.90	Contains manuka-ti kouka-Carex and Raupo-Carex associations, both of which have only been recorded once from Kaikohe ED. Likely to be degraded by weeds.	3	Only two wetland types. Not known if any ecological sequence is present at the site. Partially buffered by pine plantation.	3	Bisected by Okaka Road. Some margins vulnerable to grazing.	3	4	Acutely Threatened	0.08	The site comprises a small, isolated freshwater wetland characterised by manuka-ti kouka-Carex and raupo-Carex associations, both of which have only been recorded once from Kaikohe ED. Supports at least one regionally significant plant species (maire tawake). Despite its size and isolation, the site is well-placed as a stepping stone between Hokianga Harbour and Lake Omapere. No information available on fauna values or weeds. Further survey is required to determine the full ecological values and current threats of the site.	53.90
126	250034	Lake Waingata North	Lacustrine	Y	Tutamoe	0.80	A good quality example of dune lake vegetation types.	2	Probably the best ecological sequence from open water to reed beds to indigenous shrubland in the ED. At least two wetland vegetation types present.	4	No drainage and buffered by indigenous scrub. Pines in upper catchment.	5	5	Chronically Threatened	0.17	Small but representative dunelake surrounded by a buffer of indigenous scrub. Remote, and no exotic species present within the lake. Two wetland vegetation types, open water, and habitat for two regionally significant plant species.	53.86
127	250395	Oruru	Swamp	N	Maungataniwha	19.20	Freshwater valley floor wetlands grading into estuarine environments. Probably the best examples of manuka-Baumea shrubland and Coprosma propinqua shrubland in the Maungataniwha ED.	3	Part of an extensive and diverse sequence from hillslope forest to freshwater wetlands to estuarine habitats.	3	Some parts probably modified by road causeway but in a well buffered vegetated catchment.	4	4	No Threat Category	0.75	Three areas of freshwater and estuarine wetlands within a much larger site. Extensive ecological sequences, uncommon and representative vegetation types, and in a well-vegetated and little modified catchment. Habitat for an important population of North Island fernbird.	53.84
128	250143	Parua Bay Remnants	Swamp	N	Whangaruru	3.00	Representative site for kuta-Baumea juncea reedland, and the only locality for this vegetation type in the Whangaruru ED.	3	Contains a freshwater wetland-estuarine wetland vegetation sequence from raupo reedland to kuta-Baumea juncea reedland to mangrove forest. Contiguous with indigenous forest.	3	No evidence of drainage. Buffered on one side by indigenous forest.	4	5	Chronically Threatened	0.00	Small valley floor wetland that grades from freshwater to estuarine environments. Representative site, and the only record within Whangaruru ED, for kuta-Baumea juncea reedland. Contiguous with indigenous forest.	53.79
129	250333	Te Huriwai Stream Wetland	Swamp	N	Te Paki	17.00	Reasonably extensive area of raupo reedland. Quality within the context of Te Paki ED unknown.	2	One vegetation type present within the site, but contiguous with upper arm of Parengarenga Harbour. Likely to form an ecological sequence with saltmarsh (estuarine) and contiguous with indigenous shrubland.	3	Unmodified and in a well vegetated catchment	5	5	At Risk	0.50	17 ha of raupo reedland in a well-vegetated catchment. Contiguous with estuarine vegetation types in an upper arm of Parengarenga Harbour. No exotic species recorded but this may reflect the lack of a detailed site survey? Australasian bittern and spotless crane probably use the site.	53.73
130	250407	Tangikoko Stream	Swamp	N	Maungataniwha	3.10	Good quality swamp forest (regionally under-represented) with maire tawake and some old-growth rimu/kahikatea. A small component of the site is also good quality manuka-Gleichenia gumland (regionally under-represented).	4	Three wetland vegetation types dominated by indigenous species, and gumland. Parts of the site grade into areas of secondary indigenous forest on hillslope.	3	Wetlands on narrow floodplain within unmodified connection to the stream channel. Most of the immediate catchment of the wetlands is in exotic or indigenous woody vegetation.	4	3	At Risk	0.42	High quality swamp forest on a stream floodplain that is one of the best examples of this vegetation type in the Maungataniwha ED. Also has raupo reedland, Baumea reedland, and gumland vegetation. Catchment reasonably well buffered, hydrology little modified, and weeds currently limited in extent. Habitat for North Island brown kiwi and maire tawake.	53.68
131	250324	Ponaki Wetland	Swamp	Y	Te Paki	55.00	Representative site for Baumea arthrophylla-B. articulata-B. jucea-B. rubiginosa sedgeland in swamp.	2	Contains four freshwater wetland vegetation types. Contiguous with indigenous shrubland.	3	Fully vegetated catchment, however road bisects wetland at points along western	3	4	Under-protected	1.33	Large freshwater wetland complex within a fully vegetated catchment. Protected within the Mokaikai Scenic Reserve and administered by DOC.	53.62

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											edge. Cattle and horses impact on some margins.						
132	250359	Te Kao South Swamp	Swamp	Y	Aupouri	74.00	A good example of manuka-raupo swamp association in Aupouri ED.	2	Contains a good example of an ecological sequence of open water (ephemeral) grading into manuka-raupo and manuka shrubland. Some margins adjacent to pasture.	3	Drain present on margins. Some margins likely to be grazed.	3	4	Under-protected	1.08	Two freshwater wetlands (one relatively large) ponded between in a dune valley. Supports two "Threatened" and one "At Risk" bird species, and one regionally significant bird (although records for grey duck and little shag are historical). Representative site for one vegetation type. The larger wetland is partially buffered by pine plantation; the smaller wetland is surrounded by pasture and is likely to be grazed. PNA notes that wetlands may be drying out.	53.20
133	250427	Pahangahanga Remnant	Swamp	N	Hokianga	3.20	Representative for kanuka/manuka-ti kouka swamp shrubland, which is the only example of its type in Hokianga ED.	3	Only one wetland vegetation type, but it forms a sequence with forest and alluvium and forest and shrubland on hillslope.	3	No drains evident but margins likely to be impacted by stock and farm road.	3	5	At Risk	0.08	The site comprises a very small area of swamp shrubland partially buffered by indigenous forest on alluvium and hillslope. The wetland is representative for its type in the ED and supports an "At Risk" invertebrate (Northern tussock weta). NI brown kiwi (Nationally Vulnerable) is present in surrounding forested areas. Further survey is required to determine the full ecological values of the site. The site contributes to riparian water and soil protection, although its hydrological integrity may be threatened by stock and other farming activities.	53.04
134	250130	Parsons Road Swamp Forest Remnant	Swamp	N	Whangaruru	5.00	Representative for three wetland vegetation types, and the only location for these in the Whangaruru ED. Good quality swamp forest vegetation is regionally under-represented.	4	Three wetland vegetation types, including swamp forest and sphagnum moss swamp, contiguous with indigenous forest on hillslope.	3	No evidence of drainage. Bordered by pasture, exotic scrub, and road.	4	4	Better Protected and Less Reduced	0.08	Small area of swamp forest in a depression on Kerikeri Volcanics. Three wetland vegetation types (pukatea-maire tawake forest, kahikatea-maire tawake forest, and sphagnum moss swamp), all of which are representative and not found elsewhere in ED. Good quality swamp forest is regionally under-represented.	52.98
135	250539	Parahaki gumland	Pakihi and gumland	N	Whangarei	3.50	Good quality examples of <i>Gleichenia-Lepidosperma</i> -manuka gumland and <i>Lepidosperma</i> gumland vegetation. Probably the largest and best gumland in the Whangarei ED. Gumland is an under-represented habitat type.	4	Gumland on mid and upper hillslopes grading into secondary forest and scrub on the lower hillslopes. Some areas threatened by clearance or invasion by maritime pine or Hakea.	3	No evidence of drainage.	5	3	Critically Under-protected	0.75	Two areas of gumland vegetation within a larger tract of indigenous forest and shrubland. The upper larger area is on a north-west facing hillslope and comprises <i>Gleichenia</i> fernland with frequent <i>Lepidosperma</i> , <i>Dracophyllum</i> , and manuka. This area is being increasingly invaded by <i>Pinus pinaster</i> . The lower area is <i>Lepidosperma</i> sedgeland with frequent <i>Gleichenia</i> and manuka. Habitat for several regionally significant plant species, North Island brown kiwi, and Auckland green gecko. <i>Lepidosperma</i> dominated communities not listed as occurring elsewhere in the Whangarei ED PNAP report.	52.53
136	250384	Turk Lake and Wetland	Lacustrine	Y	Aupouri	12.40	Representative for raupo reedland and <i>Eleocharis sphacelata-Baumea articulata</i> reedland.	2	Contains several wetland vegetation types and forms part of an ecological sequence of open water grading into reedland and terrestrial shrubland.	3	No structures evident, though water level reportedly fluctuates. Surrounded by pine and eucalyptus plantation..	4	5	At Risk	0.50	The site comprises a small, isolated freshwater wetland within a small lake ponded by dunes. The site is representative site for two vegetation types and is dominated by indigenous species. Supports one "At Risk" bird and one "At Risk" plant. Surrounded by pine and eucalyptus plantation; not accessed by stock. 8.1 ha protected (administered by DOC).	52.52
137	250496	Frith Road Northern Dairylands Forest	Swamp	N	Kaipara	9.10	Representative site for shrub wetland on alluvium.	2	Contains kahikatea-ti kouka- <i>Coprosma propinqua</i> -harakeke shrub wetland and contiguous with the best kahikatea forest on alluvium in the Kaipara ED.	3	Unfenced with cattle intrusion. No evidence of drainage.	3	5	Chronically Threatened	0.50	Kahikatea-ti kouka- <i>Coprosma propinqua</i> -harakeke shrub wetland within a larger forested site on alluvium and hillslope. Provides habitat for six regionally significant flora species.	52.46
138	250311	Mokaikai Scenic Reserve	Swamp	N	Te Pahi	20.40	Contains good quality example of raupo reedland in swamp and is likely to contain good quality example of floodplain vegetation along the major watercourses.	2	Raupo reedland (and most likely undescribed floodplain vegetation) contiguous with indigenous forest and shrubland.	3	Unmodified.	5	5	Under-protected	0.42	Assessed by desktop exercise. The site comprises a series of long, narrow gully floors dominated by raupo reedland and undescribed floodplain vegetation. The wetlands are located within a much larger contiguous indigenous forest and	52.23

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																shrubland, much of which is protected as a Scenic Reserve (administered by DOC) and Kawenata through Nga Whenua Rahui. Supports North Island fernbird (At Risk-Declining) and at least two regionally significant plant species, although the exact number of uncommon or threatened species present in the wetlands cannot be determined.	
139	250357	Upper Karatia Swamp	Swamp	Y	Aupouri	17.50	A good example of <i>Baumea rubiginosa</i> -manuka association in dune hollow.	2	Contains sequence of freshwater wetland grading into manuka shrubland.	3	Activities in surrounding pine plantation may be affecting hydrology. Aerial photography indicates wetland area may be shrinking.	3	5	Under-protected	0.67	A small swamp ponded by Holocene dunes which is representative for one vegetation type. Supports one threatened plant ( <i>Todea barbara</i> ) and one "At Risk" bird (NI fernbird). Largely buffered by pine plantation and indigenous shrubland. Further survey is required to determine current hydrological status.	52.12
140	250114	Lodore wetland	Swamp	N	Kerikeri	5.00	The only known locality in the Kerikeri ED for manuka-harakeke association in swamp.	3	Three wetland vegetation types (manuka-harakeke, <i>Baumea</i> reedland, manuka shrubland). Surrounded by pasture.	3	Drainage channels have lowered the water table at this site.	3	5	Under-protected	0.00	Small semi-mineralised freshwater wetland. Only locality in Kerikeri ED for manuka-harakeke association in swamp. Partly drained and in a highly modified catchment. Fauna not surveyed.	51.84
141	250369	Waiparera Creek Wetland	Swamp	N	Aupouri	22.50	Representative for oioi saltmarsh, raupo reedland, and <i>Coprosma</i> spp.-giant umbrella sedge association (the latter of which is the sole record in ED).	3	Contains four wetland vegetation types; good example of an ecological sequence grading from saltmarsh to freshwater swamp and shrubland on alluvium.	3	Stop bank present. Some drains present on margins. Cattle likely to have impact on margins. Very little buffering.	3	3	Under-protected	0.50	One of the few freshwater wetland areas remaining on the margin of the Rangaunu Harbour. The site provides important habitat for wetland fauna and supports two "At Risk" birds and two regionally significant plants. Representative site for three ecological units, and contains saline to terrestrial scrub sequence, although weeds dominate scrub areas. Pampas is likely to threaten ecological integrity of site if not controlled. Approx. 8 ha of the site is protected (DOC-administered).	51.69
142	250386	Ninety Mile Swamp	Swamp	Y	Aupouri	5.10	Contains a good example of raupo-harakeke reedland for Aupouri ED. Weeds are more frequent in the smaller, southernmost wetland.	3	Contains two good examples of freshwater wetland vegetation types.	3	Coast Road bisects the coastal end of the northern wetland, which may potentially effect its drainage. Well-buffered by dunes and pine plantation.	4	4	At Risk	0.42	The site comprises two small freshwater wetlands situated on the foredunes of Ninety Mile Beach. The wetlands are good examples of their type and provide habitat for one "At Risk" plant ( <i>Cyclosorus interruptus</i> ). Fauna species have not been surveyed, although banded kokopu (regionally significant), giant bully (regionally significant), and inanga have been recorded from Karaka Stream, which flows into the northernmost wetland. Weeds are probably the main threat to this site.	51.64
143	250559	Patutahi River Wetlands	Swamp	N	Tangihua	4.50	Contains three representative wetland vegetation types: raupo reedland, harakeke flaxland (regionally under-represented), and manuka-harakeke shrubland in swamp.	4	Contains a range of swamp vegetation types; forms an ecological sequence with terrestrial shrubland and forest.	3	Not grazed. Unlikely to be affected by drainage. Future pine harvesting may impact hydrological integrity.	3	2	Acutely Threatened	0.00	Assessed by desktop exercise. The site is located in the Kaikau Forest and comprises a large mosaic of wetland vegetation types along the Patutahi River, three of which are representative examples. The site functions as a protective buffer along the Patutahi River. Hydrological integrity largely intact, but may be affected by future harvesting activity. Pig rooting is common in wetland areas.	51.54
144	250571	Kerr Road End Swamp	Swamp	N	Manaia	3.30	Kerr Road Swamp is one of best remaining examples of a fertile swamp remaining in Manaia ED, and is representative for kahikatea- <i>Bolboschoenus fluviatilis</i> treeland (sole record in Manaia ED), <i>Baumea articulata</i> reedland, raupo reedland, and harakeke-manuka- <i>Baumea articulata</i> flaxland (sole record in Manaia ED).	3	A mosaic of reedland, sedgeland and herbfield vegetation types, eight of which are dominated by indigenous species. The wetland is part of an altitudinal sequence grading into indigenous shrubland and forest.	3	Farm track bisects wetland. Lower half grazed.	3	3	Acutely Threatened	0.25	The site comprises a mosaic of reedland, sedgeland and herbfield vegetation types, bisected by a farm track. Representative for four wetland vegetation types, two of which have only been recorded once in Manaia ED. The larger, northern part of the wetland is not grazed and is well-buffered by indigenous shrubland. The lower half of the site is degraded, grazed, and lacks any buffering. The site supports one "At Risk" bird (NI fernbird, Declining), although further survey is recommended to determine the full fauna values of the site.	51.52
145	250028	Te Kaiatewhetu Shrublands and Arai Te Uru Coastal Strip	Swamp	Y	Tutamoe	25.20	Representative site for raupo reedland.	2	Raupo reedland in stream valleys and small dune lakes and ponds. Some of these wetlands are contiguous with	3	Some of the wetlands are within well vegetated catchments. No evidence of	4	4	Critically Under-protected	0.33	Assessed by desktop exercise. Freshwater wetlands in gullies and on dunes that form part of a larger area of coastal habitats. Likely to support North Island fernbird (At Risk-Declining) and	51.43



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									indigenous shrubland, others are surrounded by pasture and grazed.		drainage.					banded kokopu (regionally significant). Current mapping unlikely to be accurate. Further survey is required to map full extent of raupo reedland and ephemeral wetlands in dune slacks.	
146	250593	Pearl Street Pond and Wetland	Pakihi and gumland	N	Rodney	1.50	A good quality example of manuka- <i>Gleichenia</i> gumland, which is regionally under-represented. Subdivision and weed encroachments threatened values of the site.	4	One gumland vegetation type (manuka- <i>Gleichenia</i> shrubland) grading into secondary indigenous scrub and treefernland. There is also a constructed pond fringed by <i>Baumea teretifolia</i> sedgeland.	3	The gumland has been affected by development (driveways and culverts) related to adjacent subdivision. The pond is man-made.	2	3	At Risk	0.00	The site comprises a small area of manuka- <i>Gleichenia</i> gumland situated on the floor of a largely vegetated gully, on the periphery of Mangawhai township. The site contains some good quality gumland vegetation, however, the ecological and hydrological integrity of the site is being impacted by adjacent development, clearance, and weeds. Weeds - some of which are garden escapes - are local along a track on the south-west border of the site. The site provides potential habitat for North Island fernbird (At Risk-Declining). Stock cannot access the site.	51.23
147	250590	Kerr Wetland	Swamp	N	Whangarei	4.86	Good quality example of a spring-fed seep on volcanic substrate, and regarded as "one of the best and most unusual" in the Whangarei ED.	3	Several freshwater wetland vegetation types, including raupo reedland and swamp forest, contiguous with podocarp-broadleaved forest. Probably the best example of an ecological sequence from indigenous forest to seep wetland in the Whangarei ED.	4	A small proportion of the wetland has been affected by drainage, and the margins are grazed.	4	3	No Threat Category	0.25	Assessed by desktop exercise. Freshwater wetland in stream valley and on a hillside with a volcanic seep. A good diversity of vegetation types, including raupo reedland and swamp forest. Probably the best, if not the only, example of a volcanic seep wetland in the Whangarei ED. Partly modified by grazing and drainage, but these factors could be reversed through appropriate management.	51.21
148	250323	Te Hapua Wetland	Pakihi and gumland	N	Te Paki	25.20	Representative site for sedgeland on interglacial flats, which is the only example of this type in Te Paki Ecological District.	3	Only contains one wetland vegetation type, but this forms an ecological sequence with surrounding indigenous shrubland.	3	Not grazed, although some drains are present.	4	3	Under-protected	0.00	Assessed by desktop exercise. The site includes sedgeland (possible <i>Baumea</i> sp. and/or <i>Eleocharis</i> sp.) on interglacial flats, which is the only record of its type in Te Paki ED. Species composition unknown. The site is likely to support indigenous ground orchids and North Island fernbird (At Risk-Declining). Although not grazed, there are drains present that may affect the site's hydrological integrity.	51.14
149	250337	Paingatai Channel wetlands	Swamp	N	Te Paki	12.80	Representative site for raupo reedland.	2	The raupo reedland forms part of a complete ecological sequence from indigenous forest and scrub to freshwater wetland to estuarine vegetation (saltmarsh and mangroves).	3	Unmodified and in a well vegetated catchment	5	5	Under-protected	0.50	12.8 ha of raupo reedland that links indigenous forest and scrub within Mokaikai Scenic Reserve to estuarine habitats in the Parengarenga Harbour. Hydrology unmodified and in a catchment covered in indigenous vegetation. Probable habitat for Australasian bittern and spotless crane.	50.67
150	250389	Whakakoro	Pakihi and gumland	N	Ahipara	98.00	Manuka gumland. Weeds such as prickly hakea and gorse are likely to be present.	2	Wetland grades into indigenous terrestrial forest.	3	No structures evident. Waterway flows out of site into pasture	4	4	Better Protected and Less Reduced	0.00	The site is situated on a steep hillside near the Whangape Harbour and contains a representative example of gumland habitat buffered by indigenous forest and shrubland. Grazed in parts. No information on significant flora and fauna, thus further survey is recommended.	50.46
151	250426	Upokowhaha Forest Remnant	Swamp	N	Hokianga	2.20	Representative for old growth kahikatea forest on alluvium, a very rare vegetation type in Hokianga ED (not recorded elsewhere in the ED).	4	Only one wetland vegetation type present. Semi-contiguous with kahikatea-nikau-puriri-tarairae forest on hillslope, but largely surrounded by pasture.	2	Fed by a small stream, although most indigenous vegetation has been cleared in the catchment. No drains or structures evident, but likely to be grazed.	2	5	Critically Under-protected	0.00	A small alluvial remnant dominated by a representative example of old growth kahikatea forest, a rare forest type in the Northland Region. Semi-contiguous with a larger remnant of podocarp-broadleaved forest at the head of the catchment. Provides partial buffering to a small stream, although the site is unfenced and likely to be grazed. No information on fauna. Further survey is recommended.	50.33
152	250495	Newlove Airstrip Wetland	Swamp	Y	Kaipara	5.80	Good quality example of a wetland vegetation on alluvium within a dunefield.	2	Contains four wetland vegetation types that occur as a mosaic. Surrounded by pasture.	3	Fenced with a ditch on all sides.	2	5	Chronically Threatened	0.08	A small, fenced wetland on dunes with a mosaic of four wetland vegetation types. Habitat for a regionally significant plant species.	50.30
153	250413	Taratara Flax Swamp	Swamp	N	Whangaroa	3.40	Good quality example of harakeke flaxland on alluvium (a regionally under-represented vegetation type). Degraded raupo reedland in upper	4	Lower wetland is contiguous with extensive manuka scrub on adjacent hillslope (P04/015) and is a good example of a wetland-scrub and forest	3	No evidence of drainage. Upper wetland in intensively modified catchment.	4	3	Under-protected	0.08	Two valley-floor freshwater wetlands. The northern wetland is a narrow raupo reedland that has been invaded by pampas and Mexican devil. The southern wetland is harakeke flaxland between the road and a hillslope covered in indigenous scrub.	50.16

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							catchment.		transition. Upper wetland adjoins pasture and road.							No evidence of drainage, but the upper part has been modified by grazing and weed invasion.	
154	250238	Moehau wetland and Forest Remnant	Swamp	N	Kaikohe	48.80	Representative site for <i>Coprosma propinqua</i> - <i>Coprosma rigida</i> - <i>Bolboschoenus</i> sp. swamp shrubland, a rare vegetation type in Northland and the only example recorded in Kaikohe ED. Threatened by weeds.	3	Only contains one wetland vegetation type, but is part of a degraded altitudinal sequence from forested hill country to estuarine areas. Buffered by Waimea River and forest.	2	Modified by stopbanks and internal drainage.	2	3	At Risk	0.17	The site is part of a relatively large remnant bordering the Waimea River, which drains into the upper Hokianga Harbour. Despite being modified by stop banks and internal drainage, which has encouraged a significant weed problem (gorse and pampas), the site remains one of the few in Kaikohe ED that exhibit altitudinal gradients from hill country to estuarine habitat. Representative for one habitat type, which is the only example in Kaikohe ED, and supports two species of regionally significant plants. Little is known about the site's fauna values, so further survey is recommended.	49.84
155	250398	Otianga Wetland and Riparian Forest	Swamp	N	Maungataniwha	5.00	Representative site for a degraded but nationally uncommon sequence from saltmarsh to freshwater wetland to riparian forest on estuarine deposits.	3	Ecological sequence from mangrove to saltmarsh to raupo reedland to riparian forest, but degraded by weed invasion.	3	Buffered by a narrow but nearly continuous band of indigenous forest. No evidence of drainage.	4	3	Acutely Threatened	0.00	Small freshwater wetland that is part of an uncommon ecological sequence from riparian forest on estuarine deposits to raupo reedland to saltmarsh to mangroves. Extent of wetland within the larger site estimated, and fauna not surveyed, invaded by pampas and Japanese honeysuckle.	49.82
156	250411	Waihapa Bay wetlands	Swamp	N	Whangaroa	9.70	Good quality example of freshwater wetlands within the Whangaroa ED.	2	Three indigenous wetland vegetation types (raupo- <i>Baumea</i> reedland, manuka shrubland, ti kouka-hukihuki-manuka shrubland) which grade into mangrove forest in Waihapa Bay. Contiguous with, and well buffered by, manuka-dominant scrub on adjacent hillslopes.	3	Most areas of the wetland are unmodified. Some localised areas of drainage and grazing in the upper reaches.	4	4	At Risk	1.00	Coastal freshwater wetlands on alluvium. At least three indigenous wetland vegetation types (raupo- <i>Baumea</i> reedland, ti kouka-hukihuki-manuka scrub, and manuka shrubland) grading into estuarine habitats in Whangaroa Harbour. Well buffered by indigenous scrub, with only localised weed invasion. Small areas of grazing and drainage at upper reaches. Habitat for two regionally significant plant species, and four "Threatened" or "At Risk" bird species - spotless crane (heard in 2010), North Island fernbird, banded rail, and Australasian bittern.	49.74
157	250499	Mangakahia Forest Wetland	Swamp	N	Kaipara	6.60	Representative site for manuka- <i>Baumea rubiginosa</i> - <i>B.tenax</i> shrub sedgeland within Kaipara ED.	4	Only one wetland vegetation type (manuka- <i>Baumea rubiginosa</i> - <i>B. tenax</i> shrub sedgeland on alluvium) present at this site. Bounded by exotic plantation on three sides.	1	Possible drainage of wetland. Buffered by pine plantation.	3	5	Acutely Threatened	0.08	Large representative wetland that is buffered by exotic forest and is relatively intact and weed free. Contains one regionally significant species. Possibly partially drained.	49.65
158	250344	Tawakewake Wetland	Swamp	Y	Te Pahi	5.60	Representative site for <i>Schoenus brevifolius</i> - <i>Baumea juncea</i> sedgeland, <i>Eleocharis sphacelata</i> sedgeland, and raupo-harakeke-ti kouka reedland.	2	Contains three wetland vegetation types contiguous with indigenous shrubland and Waiwhero Stream Wetland.	3	Buffered by indigenous vegetation.	5	5	Under-protected	1.25	Representative wetland within a sequence of indigenous vegetation that is largely unmodified and nationally uncommon. Supports two "Threatened" and two "At Risk" species. Partially protected as a Scientific Reserve and administered by DOC.	49.55
159	250013	Upper Mangawai River Wetlands	Swamp	N	Waipu	6.80	Representative site for harakeke flaxland and kahikatea-harakeke treeland in the Waipu ED. Harakeke flaxland is a regionally under-represented habitat type.	4	Three wetland vegetation types, two of which are dominated by indigenous species. Surrounded by pasture, roads, or plantation forest.	2	No evidence of drainage but grazed and in a highly modified catchment.	4	3	Chronically Threatened	0.08	Valley floor wetland dominated by harakeke, kahikatea, and reed sweetgrass. Representative site for harakeke flaxland and kahikatea-harakeke treeland. Separated into two parts by pasture, partly grazed, and threatened by weed invasion.	49.50
160	250572	Kauri Mountain Swamp	Swamp	N	Manaia	4.70	Contains representative examples of <i>Lemna minor</i> -raupo herbfield and harakeke- <i>Baumea articulata</i> -raupo flaxland, although these are likely to be degraded by weeds unless control is undertaken.	2	Contains four wetland vegetation types, most of which are adversely affected by weeds. Part of a freshwater-shrubland-forest altitudinal sequence, but largely bounded by pasture.	3	No drains present but vulnerable to grazing. Bisected by farm track near pond.	3	3	Acutely Threatened	1.08	The wetland comprises a long, thin valley floor with a 0.9 ha dammed pond at the lower end. It is part of an altitudinal sequence that connects the site to Kauri Mountain Conservation Area (Q07/078). Representative for two vegetation types, although weeds threaten the integrity of the site. Supports one "Threatened" and three "At Risk" bird species, and one "At Risk" and one regionally significant fish species. Grazed and quite degraded in parts.	49.48
161	250393	Pipiwai Stream Swamp	Swamp	N	Maungataniwha	30.00	Representative site for raupo reedland and open water. Largest raupo reedland in ED.	2	Raupo reedland with patches of open water. Grades into a small forest remnant at the upper end of one arm. Most of the wetland	2	No evidence of drainage but crossed by farm accessways in several places.	4	4	Acutely Threatened	0.58	Largest area of raupo reedland in the Maungataniwha ED. Most of the wetland is surrounded by pasture and is grazed. Small areas adjoin forest remnants. Habitat for one	49.09

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									is surrounded by pasture and is grazed.							"Threatened" and two "At Risk" wetland bird species. Size of wetland area (without forest) estimated.	
162	250162	NiNihi Swamp & Catchment	Swamp	N	Hokianga	8.00	Representative for raupo reedland.	2	Contains only one wetland vegetation type (reedland), but this grades into indigenous forest and shrubland beyond the site.	3	Largely buffered by forested catchment; northern margins bounded by Ninihi Road.	4	5	Critically Under-protected	0.00	The site comprises a narrow raupo dominant wetland located within a well-forested catchment. The wetland is an outlier to the Kaipaha wetland catchment and is physically linked to that habitat by a narrow corridor of secondary forest and swamp. Representative site for one wetland vegetation type which forms part of a freshwater-terrestrial forest sequence. Although there are no confirmed records of threatened species, it is very likely that NI fernbird (At Risk-Declining), spotless crane (At Risk-Relict), and bittern (Threatened-Nationally Endangered) utilise this area. Fernbird and crane have been recorded from adjacent wetland. NI brown kiwi (Threatened-Nationally Vulnerable) are known to utilise the surrounding indigenous forest and shrubland. Buffering would maintain water quality and help protect against weeds.	49.05
163	250146	Kohe Stream Remnants	Swamp	N	Hokianga	4.00	Representative site for raupo- <i>Juncus</i> sp. association in brackish zone.	2	Contains only one wetland vegetation type, but is part of a sequence that grades into coastal riparian vegetation dominated by manuka.	3	No structures evident; Kohe Stream mostly buffered by riparian vegetation.	5	5	At Risk	0.33	The site is part of an uncommon habitat sequence of remnant coastal riparian vegetation and freshwater wetland adjoining high-quality estuarine habitat (Whangape Harbour). Supports at least one "At Risk" bird and one regionally significant plant. Representative site for one vegetation type. Well-buffered by indigenous forest and shrubland.	48.95
164	250417	Stanner Rd Remnant - Guleray bog	Bog	N	Kerikeri	2.00	Although small, this wetland is probably the best example of a low fertility, rain and groundwater fed wetland in the Kerikeri ED.	3	Good examples of low fertility manuka shrubland and <i>Baumea</i> reedland over peaty substrates. Some of the margins are contiguous with drier manuka shrubland with totara.	3	No evidence of drainage with a stable water table. Fenced but surrounded by pasture.	4	3	Chronically Threatened	0.83	Assessed by desktop exercise. Peaty wetland on Kerikeri basalts fed mainly by groundwater. The wetland is of relatively low fertility and has good examples of manuka shrubland and <i>Baumea</i> reedland, with patches of <i>Tetraria</i> and sphagnum. Habitat for longfin eel, banded kokopu, and a good range of indigenous wetland plant species including <i>Drosera binata</i> and <i>Spiranthes novaezelandiae</i> . Fenced to exclude livestock in 2008. Gorse is present throughout, but probably only Kahili.	48.91
165	250105	Porotu Road Swamp and Environs	Swamp	N	Kerikeri	2.40	Representative site for raupo- <i>Baumea</i> reedland in Kerikeri ED.	2	Wetland grades from open water to reedland to indigenous forest dominated by podocarps.	3	No evidence of drainage but surrounded by pasture and probably grazed.	4	5	At Risk	0.67	Small wetland contiguous with podocarp forest. Representative site for raupo- <i>Baumea</i> reedland in Kerikeri ED. Habitat for three "Threatened" or "At Risk" species (Australasian bittern, spotless crane, black mudfish).	48.81
166	250595	Sands Lake	Lacustrine	Y	Rodney	2.00	1 ha dune lake close to Mangawhai. Largely native vegetation and still in mostly natural vegetation. Ranked Moderate by NIWA in 2009. One of few reasonable dune lake examples left on east coast. Previously within pine forest and appears to have been dry. Not recorded in any other previous surveys. Gumland and bog vegetation round lake. Some weeds. Threatened plants and birds. Three reports in other documents.	4	<i>Eleocharis sphacelata</i> and <i>Baumea articulata</i> reedland; <i>Baumea rubiginosa</i> and <i>Juncus</i> rushland	2	Appears to be contiguous with 250598. Tracked but no structures visible on aerial photo.	4	3	Chronically Threatened	1.08	One of few reasonable quality dune lake examples left on the east coast. Provides habitat for one "Threatened" and four "At Risk" species of plants and birds.	48.78
167	250483	Long Gully Wetland and Shrubland	Swamp	Y	Kaipara	22.80	Representative site for two wetland vegetation types in Kaipara ED.	2	Five freshwater wetland vegetation types creating a wetland mosaic. Some areas are contiguous with manuka	3	Eastern end heavily grazed and bisected by a road.	3	3	Chronically Threatened	0.00	The site comprises wetland on cemented or consolidated sands, and includes a diverse mosaic of indigenous wetland vegetation types. The western and central portions of this wetland are in	48.75

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									shrubland.							good condition, however there is some stock intrusion into the eastern end.	
168	250350	Te Hurewai Stream Wetland	Swamp	N	Te Paki	4.80	Representative site for raupo reedland in the Te Paki ED.	2	Two wetland vegetation types contiguous with indigenous forest and scrub.	3	Buffered by indigenous vegetation.	5	5	At Risk	0.00	Freshwater wetland in a stream catchment of the upper Parengarenga Harbour. Buffered by indigenous vegetation. Site survey recommended to determine flora and fauna present. Potential habitat for Australasian bittern and spotless crane.	48.68
169	250312	Doctors Hill Rd Wetland	Swamp	N	Waipu	17.60	Extensive freshwater wetland located in the gully of an unnamed stream which originates in Ruakaka Forest, and drains into the Ruakaka River Estuary. Largest natural freshwater wetland in Waipu ED.	3	Reed sweetgrass; raupo reedland; open water	2	SH1 and Doctors Hill Road divide the wetland into several parts.	4	2	Acutely Threatened	1.00	Extensive freshwater wetland located in the gully of an unnamed stream which originates in Ruakaka Forest, and drains into the Ruakaka River Estuary. Largest natural freshwater wetland in Waipu ED.	48.44
170	250138	Whakairiora Wetlands	Swamp	Y	Whangaruru	15.50	Representative site for giant umbrella sedge sedgeland on flats.	2	Wetlands form part of a continuous sequence from hillslope forest and scrub to wetlands to dunelands.	3	No evidence of drainage and in a catchment with little modification.	5	3	At Risk	0.92	Assessed by desktop exercise. Several wetlands that form part of a larger area of indigenous habitats, and form a sequence with hillslope forest and dunelands. One wetland contains a representative vegetation type - giant umbrella sedge sedgeland. The surrounding forest and shrubland has high wildlife value, and wetlands support one "Threatened" and four "At Risk" wetland bird species.	48.33
171	250284	Wetland located within Monument bush	Swamp	N	Kaikohe	3.10	Little information in the PNAP report (e.g. no mention of weeds in wetland area). Interpretation of aerial photography indicates site is fenced and well-buffered by other indigenous vegetation and pine, thus it is likely to contain a good quality example of ti-kouka-manuka forest on alluvium.	3	Only one wetland vegetation type present (ti kouka-manuka forest), although this is part of a good quality wetland-shrubland-forest ecological sequence.	3	Fenced. No drains or structures present.	5	3	Chronically Threatened	0.08	The site forms a small alluvial component of a diverse mosaic of cutover and secondary forest with shrubland linking the forest remnants. The wetland is well-buffered by (fenced) indigenous forest and pine plantation, although the abundance of gorse and woolly nightshade on the forest margins may threaten its integrity. Supports one regionally significant plant (maire tawake). Fauna not surveyed, thus further work is recommended. Lack of drainage and stock access will help keep hydrology of the site intact.	48.04
172	250335	Te Hapua Settlement Wetland	Swamp	N	Te Paki	22.60	Probably a good quality example of a freshwater wetland but little data available.	2	Raupo reedland contiguous with indigenous scrub and estuarine habitats.	3	Unmodified and in a well-vegetated catchment.	5	3	At Risk	0.00	Assessed by desktop exercise. Raupo reedland contiguous with Parengarenga Harbour. Possibly identified from aerial photographs only, and fauna not surveyed. Dominance of indigenous species unknown. Probably a good quality example but requires further survey.	47.77
173	250494	Shag Lake and Wetland	Lacustrine	Y	Kaipara	17.00	Dune lake in pasture with narrow fringe of <i>Eleocharis sphacelata</i> reedland.	1	Open water with narrow fringe of <i>Eleocharis sphacelata</i> .	2	Possible drain inflow from heavily modified catchment.	2	5	At Risk	2.67	Although grazed to the waters edge, this dunelake with fringing reedland contains four "Threatened", six "At Risk" and three regionally significant species.	47.03
174	250452	Wheki Stream Swamp	Swamp	N	Whangarei	7.50	Representative site for raupo reedland in Whangarei ED.	2	Only one vegetation type is listed as present, but the aeriels indicate an area of shrubland on the north-western edge. The wetland is surrounded by pasture.	2	Over half of the wetland is bordered by drains, and a farm race crosses the wetland. The margins are grazed.	3	5	Acutely Threatened	0.50	Small fertile wetland dominated by raupo in an Acutely Threatened Land Environment. Three "At Risk" bird species (banded rail, pied stilt, spotless crane) have been recorded as present. Edges modified by drainage and grazing. Site survey could increase ranking of site by identifying other vegetation types (swamp shrubland?).	46.86
175	250556	Awarau Trust Farm Wetland	Swamp	N	Tangihua	9.40	Representative for kahikatea treeland and <i>Carex secta</i> in swamp, both of which have only been recorded once in Tangihua ED. Some areas may be compromised by weeds.	3	Only three vegetation types present. Sedgeland and reedland may grade into kahikatea treeland. Bounded by pasture and pine plantation.	2	Drains present to the west. Partially buffered by pine forest, though most margins vulnerable to stock incursions.	3	3	Chronically Threatened	0.92	A moderately-sized, isolated wetland that is representative for two vegetation types not recorded elsewhere in Tangihua ED. Supports one "Threatened" and one "At Risk" bird species, and two regionally significant plant species. Hydrology likely to be affected by surrounding land use.	46.43
176	250546	Horahora Road Gumland	Pakihi and gumland	N	Tangihua	170.80	Contains large areas of good quality manuka- <i>Gleichenia</i> sp. gumland, which has only been recorded once in Tangihua ED. Gumland is regionally	3	Only one vegetation type is present, although scattered areas of indigenous/exotic shrubland are present on some margins. Bounded by clear-	1	No evidence of drainage. Wetland likely to be ephemeral. Not grazed or affected by other farming	5	4	Critically Under-protected	0.25	The site comprises one of the largest areas of gumland in Tangihua ED and is representative for manuka-tangle fern shrubland. Wetland areas are likely to be ephemeral (restricted to poorly drained depressions), providing abundant habitat for at	46.39

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							uncommon.		felled plantation.		activities.					least one "At Risk" bird species (NI fernbird). Weed presence is generally restricted to the road margins, although the recent loss of pine buffer may facilitate spread of weeds through site.	
177	250349	Cape Road Wetlands and shrubland	Swamp	N	Te Pahi	10.00	Relatively unmodified raupo reedland wetland in gully.	2	Contains only one vegetation type (raupo reedland), but is contiguous indigenous forest and scrub in the upper catchment of the Waitiki Stream.	3	Bordered by indigenous vegetation and pasture.	4	4	Better Protected and Less Reduced	0.67	Freshwater raupo reedland is contiguous with kanuka/manuka shrubland and together acts as a buffer to the upper Waitiki Stream which contributes to the high quality of the internationally important Parengarenga Harbour. Australasian bittern (Nationally endangered) and three regionally significant species are present. Protected as Recreation Reserve and administered by DOC. Size is estimated.	46.12
178	250102	Wetland located at Turntable Hill Bush	Swamp	N	Kerikeri	2.50	Small mineralised wetland dominated by raupo reedland.	2	Only one wetland vegetation type present but contiguous with indigenous forest and shrubland.	3	Hydrologically unmodified and in a well-vegetated catchment.	5	5	Under-protected	0.25	Small mineralised wetland dominated by raupo reedland. Buffered by indigenous forest and shrubland and little modified. Habitat for spotless crane (At Risk-Relict) and freshwater crab (At Risk-Sparse).	46.03
179	250127	Punaru Riverine Forest	Swamp	N	Whangaruru	18.00	Good quality example of a valley floor freshwater wetland.	2	Only one wetland vegetation type listed as present, but contiguous with indigenous forest on alluvium and hillslopes.	2	No evidence of drainage. Most of the wetland is buffered by forest and scrub, but the wetland and buffering vegetation both appear to be grazed.	4	4	Chronically Threatened	0.42	Freshwater wetland dominated by unidentified rushes and raupo. Identification to species level may indicate this wetland has a representative vegetation type? Large area, partly buffered by indigenous forest and scrub, but grazed. Habitat for two "At Risk" wetland bird species.	45.90
180	250115	Ngatahuna Stream Swamp	Swamp	N	Kerikeri	10.00	Good quality example of raupo reedland in the Kerikeri ED.	2	Raupo reedland and crack willow forest, contiguous with indigenous forest and scrub on adjoining hillslope.	3	No evidence of drainage. Buffered on eastern side by indigenous forest and scrub.	4	3	At Risk	0.42	A reasonably large wetland in the context of Kerikeri ED, with extensive raupo reedland. Habitat for North Island fernbird and black mudfish. No evidence of drainage, and well-buffered along eastern edge by indigenous forest and scrub.	45.75
181	250414	North Whangaroa wetlands	Swamp	N	Whangaroa	4.40	Presumably good quality raupo reedland and harakeke-ti kouka shrubland, as the wetlands are remote and within entirely forested catchments.	2	Two freshwater wetland vegetation types contiguous with, and buffered by, an extensive area of indigenous forest and scrub.	3	No evidence of drainage and located within entirely forested catchments.	5	5	No Threat Category	0.08	Assessed by desktop exercise. Two freshwater wetlands (raupo reedland and harakeke-ti kouka shrubland) within a much larger area of coastal habitats on the western side of Whangaroa Harbour. Probably very intact and of high quality due to remoteness and excellent buffering. Site survey needed to detail flora and fauna values; other wetland vegetation types may be present and the wetlands are probable habitat for spotless crane.	45.67
182	250430	Omahuta Wetland	Swamp	N	Puketi	3.40	Representative of a freshwater wetland type, manuka shrubland, not recorded elsewhere in the Puketi ED.	3	Most of the wetland is surrounded by a recently felled pine plantation. The western, lower end is contiguous with indigenous forest and scrub.	2	No evidence of drainage. The wetland is bisected by a road and this may have minor localised effects.	4	4	At Risk	0.00	Assessed by desktop exercise. Small freshwater wetland on western edge of Puketi Forest. Wetland supports vegetation type (manuka shrubland) not recorded for wetlands elsewhere in the Puketi ED. Additional survey for flora and fauna may increase wetlands score.	45.29
183		Omahuta Road Wetland	Swamp	N	Maungataniwha	0.15	Good quality examples of <i>Baumea</i> reedland and manuka shrubland with frequent maire tawake.	2	Freshwater wetland with two vegetation types grading into indigenous forest and scrub.	3	No drainage, and site may be wetter than previously due to impounding effect of adjacent road. Well buffered by indigenous vegetation.	4	5	Critically Under-protected	0.08	Small freshwater wetland within a forested catchment. Two good quality wetland vegetation types, including manuka shrubland with maire tawake. Not modified by drainage or grazing, and no weed species noted within wetland. Tree privet is present on the roadside edge.	45.26
184	250511	Lake Rotokawau and Wetland	Lacustrine	Y	Kaipara	36.00	Dune lake ranked as "High" (Wells <i>et. al.</i> 2007), probably for its wildlife and botanical values. Degraded by grazing and weed invasion.	1	Contains three vegetation types. Ecological sequence from open water to reedland on alluvium, although this is degraded by the presence of weeds. Surrounded by pasture.	2	The margins of the lakes are grazed.	3	3	Chronically Threatened	3.00	Three dune lakes on consolidated parabolic dune field. Degraded by weed invasion and grazing. Habitat for five "Threatened", eight "At Risk" and three regionally significant species. Weed control and fencing would improve the site's ecological values. Partially protected as Lake Rotokawau Marginal Strip.	45.11
185	250321	Glenmohr Rd Wetland	Swamp	N	Waipu	4.40	Largest and best example of raupo reedland in gully in the	3	Only one indigenous wetland type present. Surrounded by	2	Crossed by farm accessways and one	3	4	At Risk	0.00	Raupo reedland in gully. Representative for raupo reedland, the largest example of this vegetation	44.99

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							Waipu ED		pasture, but one small area is contiguous with indigenous forest.		area excavated to form a farm dam. Some areas buffered by pine forestry.					type in the Waipu ED, and the third largest freshwater wetland in the ED overall. Mostly surrounded by pasture and partly dammed.	
186	250043	Hautakima South Forest	Swamp	N	Otamatea	2.00	One of the best representative examples of raupo reedland in the Otamatea ED and one of the largest freshwater wetlands within the Otamatea ED.	3	A string of raupo dominated wetlands, with small areas contiguous with indigenous forest and shrubland.	2	Most if not all of the catchment is grazed, and small areas have been affected by drainage. Most of wetlands bordered by pasture.	3	4	Chronically Threatened	0.00	Freshwater wetlands dominated by raupo and partly contiguous with a larger forest remnant. One of the best representative examples within Otamatea ED Northland. Grazing will adversely affect the vegetation and hydrological values of this wetland. Further survey is required to determine presence of significant species.	44.21
187	250089	Tangonge Wetland	Bog	N	Aupouri	73.00	A degraded example of two habitat types. Weed control and improved hydrological integrity would improve the site's ecological values.	1	Contains two vegetation types. Ecological sequence from open water to rushland to shrubland on peat, although this is degraded by the presence of weeds.	2	Affected by drains and stock.	2	3	Acutely Threatened	1.25	The site comprises a seasonally wet peat bog dominated by extremely dense wire rush and manuka-gorse. Supports one "Threatened", two "At Risk", and one regionally significant bird species, and one "At Risk" fish. As many as 3,000 pied stilt (At Risk-Declining) utilise the site during the winter season (R. Pierce, pers. comm.). There are historical records of three threatened (Nationally Critical) orchids and giant twig rush (At Risk-Relict). The margins of the area are weedy and disturbed with gorse and occasional pampas. Higher dune ridges to the east are dominated by manuka. The site is a remnant of a larger system that has mostly been drained - in 1978 wetland areas were 341 ha in size; a resurvey in 1988 revealed a loss of 221 ha. Drainage of surrounding land has favoured the invasion of weeds such as blackberry, gorse, woolly nightshade, and pampas. Weed control, fencing, and improved hydrology would benefit the site. Approx. 43.2 ha is protected (DOC administered).	43.53
188	250124	Mohei Stream Wetland	Swamp	N	Whangaruru	23.00	Representative site for raupo reedland.	2	Only one wetland vegetation type present. Surrounded by pasture.	1	No evidence of drainage, but heavily grazed by livestock.	3	5	Chronically Threatened	0.25	Valley floor wetland dominated by raupo reedland. Representative site for raupo reedland. Most of surrounding catchment is pasture and the margins of the wetland are intensively grazed. An artificial pond in the upper reaches is habitat for pateke (At Risk-Recovering), and spotless crane (At Risk-Relict) have been recorded in the past.	43.49
189	250402	Toatoa Swamp	Swamp	N	Maungataniwha	4.30	Representative site for raupo reedland.	2	Raupo reedland adjoining pasture and kanuka shrubland.	2	No evidence of drainage, but mostly surrounded by pasture and grazed.	4	5	At Risk	0.50	Freshwater wetland representative for raupo reedland. Partly buffered by kanuka shrubland but grazed. Habitat for one "Threatened" and one "At Risk" wetland bird species. Spotless crane still present in 2009. No evidence of drainage and few weed species present.	43.47
190	250169	Akerama Bridge Riverine Forest	Swamp	N	Whangarei	4.77	Only known site for harakeke-ti kouka shrubland on alluvium in the Whangarei ED	3	Seven wetland vegetation types, of which six are dominated by indigenous species. However several parts of the site are degraded by weed invasion, with frequent crack willow.	2	Wetland lies between two constructed highpoints (road and rail) and may be wetter than prior to modification. However water levels appear to be reasonably stable.	3	3	Chronically Threatened	0.33	Several areas of freshwater wetland on low-lying alluvium between SH1 and a rail line. Six vegetation types dominated by indigenous species, and the only known site for harakeke-ti kouka shrubland in the Whangaruru ED. Weeds are frequent within the site, including crack willow and Chinese privet, but the site retains good diversity of indigenous wetland species, including four species that are regionally significant.	43.33
191	250283	Pukewharariki Forest	Swamp	N	Kaikohe	8.20	The wetland comprises raupo reedland that is likely to be degraded by stock and drainage.	2	Only one wetland vegetation type present (raupo reedland), although this forms part of an ecological sequence with indigenous shrubland and forest. Most of the wetland is surrounded by pasture.	2	Drains present. Adversely affected by stock.	3	5	Critically Under-protected	0.00	The site comprises a moderately-sized, degraded, fertile wetland dominated by raupo reedland. It is contiguous with Pukewharariki Forest, the largest indigenous forest tract remaining in Kaikohe ED. The site is impacted by stock, drainage, and a general lack of buffering. No information on significant fauna and flora, thus further survey is recommended to determine the full ecological values of the site.	43.27

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192	250104	Blackridge Road Swamp	Swamp	N	Kerikeri	2.60	A large part of the wetland has been infilled, but the remaining part is relatively unmodified. Representative for raupo- <i>Baumea</i> reedland in ED.	2	A good example of two indigenous wetland vegetation types.	3	Remaining part largely unmodified but substantial recent loss of area due to quarry	4	3	Chronically Threatened	0.33	Small raupo dominated wetland ponded by basalt flows. Recent decrease in area from 6.3 to 2.6 ha. 1978 records of two "At Risk" bird species.	43.25
193		Huehue Forest and Maungakawakawa Forest	Swamp	N	Tangihua	9.20	Good quality examples of raupo reedland and <i>Juncus pallidus</i> -manuka-swamp millet rushland. One of the wetlands has been invaded by <i>Glyceria maxima</i> .	2	Contains a range of swamp vegetation types; forms an ecological sequence with terrestrial shrubland and forest.	3	Wetlands are likely to be grazed. Southern wetland may be affected by drains.	3	2	Chronically Threatened	0.25	The site comprises three small wetlands along the Mangaone Stream. Two of the wetlands are dominated by indigenous vegetation, while the third has been degraded by weeds. The wetlands form part of an ecological sequence with adjacent indigenous alluvial forest. The site provides potential habitat for North Island fernbird (At Risk-Declining) and spotless crane (At Risk-Relict). Likely to be grazed and partially drained. The mapping of this site may not be accurate, and the southernmost wetland (south of Knudsen Road) may not have been included in the original PNA survey.	43.02
194	250157	Vujcich Road Swamp	Swamp	N	Hokianga	3.00	Representative of a mineralised wetland with brackish influence. Contains the only recorded swamp association of harakeke-raupo-ti kouka in Kaikohe ED.	3	Only one wetland vegetation type present. Surrounded by pasture and is likely to be degraded by stock.	1	Drains adjacent to site. Grazed.	2	5	Acutely Threatened	0.00	This small and partially drained swamp was originally part of a larger wetland/saltmarsh system. Representative for one vegetation type, which is the sole record for Hokianga ED. Saltmarsh ribbonwood is frequent suggesting a saline influence at the upper edge of a saltmarsh which is now almost completely "reclaimed" for pastoral farming. The appearance of drier swamp vegetation is due to the effects of adjacent drains. No information on fauna, thus further survey is recommended.	42.76
195	250347	Tahuna Channel Wetlands	Swamp	N	Te Pahi	4.40	Likely to contain good quality association of <i>Juncus</i> spp. in swamp.	2	Contains one wetland vegetation type, although this forms part of a sequence with adjacent indigenous shrubland.	3	Unmodified and in a well-vegetated catchment.	5	4	Better Protected and Less Reduced	0.00	Assessed by desktop exercise. The site comprises two small freshwater wetlands that provide partial buffering for the Parengarenga Harbour. Likely to support indigenous rushland association although a survey is required to confirm. Survey also required to determine flora and fauna present. The wetlands are well-buffered by surrounding shrubland. This site is entirely within Mokaikai Scenic Reserve (DOC-administered).	42.49
196	250019	BreamTail Coastal Headland	Swamp	N	Waipu	4.10	Representative site for all four wetland vegetation types present, and the only record of <i>Baumea-Juncus</i> reedland, <i>Cyperus ustulatus</i> tussockland, and manuka-harakeke-ti kouka shrubland in the Waipu ED.	3	Four wetland vegetation types present. Some of the upper arms are contiguous with indigenous forest on hillslope.	2	Small ponds have been dug within the wetland. Most of the margins are grazed.	3	4	Better Protected and Less Reduced	0.25	Gully floor wetland that is large within the context of Waipu ED, and one of only five natural coastal wetlands remaining in Waipu ED. Four wetland vegetation types all of which are representative. Grazed at time of last survey. Fauna not surveyed.	42.31
197	250563	Ruatoro Bush	Swamp	N	Tangihua	0.20	The site contains a representative example of harakeke-manuka flaxland in swamp. Harakeke-dominated wetlands are uncommon in Northland.	4	The site only contains one wetland vegetation type, which grades into forest on alluvium and swamp.	1	The site is well-buffered by indigenous and plantation forest. Harvesting may affect hydrology.	5	5	Under-protected	0.08	Despite its small size, the site contains a representative example of a regionally uncommon habitat type, and it is likely to contain a freshwater-terrestrial forest sequence. The site is well-buffered and is not threatened by stock and other farming activities. Further survey is required to determine the fauna values of the site.	42.30
198		Kauritutahi Stream Wetland	Swamp	N	Whangarei	8.50	Good quality example of raupo reedland.	2	Raupo reedland contiguous with areas of open water and grazed kahikatea treeland	2	No evidence of drainage but some wetland margins intensively grazed.	4	4	Chronically Threatened	0.00	Freshwater wetland in stream valley. Good quality raupo reedland, with areas of open water and grazed kahikatea treeland. No evidence of drainage, partly fenced, and weeds currently limited in extent. Only surveyed from roadside.	42.25
199	250126	Bland Bay Wetland	Swamp	N	Whangaruru	14.00	Representative site for raupo reedland.	2	Only one wetland vegetation type present. Contiguous with small areas of indigenous scrub adjacent to upper arms, otherwise surrounded by pine	2	Catchment almost entirely covered with pine plantation. No evidence of drainage.	4	4	Critically Under-protected	0.00	Freshwater wetland within a pine plantation. Representative site for raupo reedland. Fauna not surveyed.	42.10

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200	250055	Kohatutahi Forest and Wetland	Swamp	N	Otamatea	1.10	Representative site for raupo- <i>Baumea articulata</i> -pink bindweed reedland.	2	Contains one wetland vegetation type of raupo- <i>Baumea articulata</i> -pink bindweed reedland. Forms a sequence with coastal forest.	3	No evidence of drainage or grazing. Buffered by indigenous forest.	5	3	Chronically Threatened	0.08	Small freshwater wetland at foot of slope between coast and indigenous forest. Representative site for one wetland vegetation type and part of a larger sequence of coastal vegetation types. Impacted by weed species that may compromise the ecological integrity of the wetland in the future. Partially protected as conservation area and administered by DOC.	41.85
201	250239	Taheke River Wetlands and Riverine Forest	Swamp	N	Kaikohe	9.50	No units listed as representative in PNAP report, but freshwater wetlands abutting a saline or brackish vegetation type and riverine forest have nearly been completely lost within the Hokianga Harbour.	2	Two wetland vegetation types (raupo reedland and manuka shrubland) form part of a forest to estuarine altitudinal sequence, although this is likely to be degraded by weeds.	2	Well-buffered by indigenous vegetation and pine plantation. Presence of drains unable to be confirmed. Stock access unlikely.	5	4	At Risk	0.00	The site comprises two small fertile freshwater wetlands about 1 km apart, adjacent to the lower Taheke River. Sites such as these where a freshwater wetland abuts a saline or brackish vegetation type and riverine forest have been almost completely lost on the margins of Hokianga Harbour. Represents a rare and diminishing habitat type, both within Kaikohe ED and Northland. No information on fauna, therefore further survey is recommended. Hydrology unlikely to be affected by agricultural activities.	41.77
202	250509	Lake Rototuna and Wetland	Lacustrine	Y	Kaipara	8.70	Degraded example of a dune lake wetland within the Kaipara ED.	1	Contains three wetland vegetation types (including raupo, <i>Glossostigma elatinoides</i> , <i>Eleocharis sphacelata</i> , <i>Eleocharis acuta</i> and <i>Schoenoplectus tabernaemontani</i> as dominant species); some infestation of weed species.	2	Surrounded by pasture and pine plantation but recently fenced. No evidence of drainage.	3	3	Chronically Threatened	3.67	Small dune lake with a fringe of reedland and herbfield. Recently fenced but degraded by weeds (reed sweet grass) and pest fish (gambusia and rudd). Habitat for six "Threatened" seven "At Risk" and five regionally significant species. Partially protected as a conservation area administered by DOC.	41.64
203	250035	Tutamoe Maire Tawake Forest Remnants	Swamp	N	Tutamoe	0.60	Representative site for maire tawake swamp forest, and one of two sites within the Tutamoe ED. Good quality examples of swamp forest are regionally under-represented.	4	Only one wetland vegetation type (maire tawake swamp forest) present.	1	Probably hydrologically unmodified as drainage would lead to the loss of this vegetation type.	4	5	No Threat Category	0.08	Small area of swamp forest representative for maire tawake forest, and one of only two sites with this ecological unit within the Tutamoe ED. Fauna not surveyed, and impacts of livestock unknown.	41.56
204	250429	Araiwhenua Stream Swamp Forest Remnants	Swamp	N	Hokianga	9.00	Contains degraded examples of alluvial kahikatea forest and kahikatea-pukatea forest, both of which are a rare and diminishing forest types in Northland. The latter is unrecorded elsewhere in the ED.	1	Contains two vegetation types. Both remnants have been degraded by grazing and trampling by stock.	2	Evidence of drainage. The remnants have no buffering and are grazed by stock.	2	5	Acutely Threatened	0.00	The site comprises two small, unfenced swamp forest remnants on alluvial flats on an Acutely Threatened Land Environment. Representative for two vegetation types, both of which are increasingly under threat from pastoral development. Little site info is contained in the PNAP survey report. No fauna survey has been carried out. Both remnants are surrounded by pasture. Stock currently threaten the ecological values of the site; the understory is sparse and the forest floor is likely to be pugged. Weeds are probably present but are not mentioned in the PNAP report.	41.42
205 =	250050	Te Ope Stream Remnants	Swamp	N	Otamatea	2.10	Representative site for raupo-ti kouka reedland in the Otamatea ED.	2	Contains one freshwater wetland vegetation type of raupo-ti kouka reedland with emergent kahikatea. The only example in the ED of this vegetation type grading into totara-kowhai forest, and part of a larger area of coastal forest (59.5 ha).	3	No evidence of drainage. Parts of the site are grazed.	3	3	At Risk	0.00	Representative raupo reedland grading into totara-kowhai forest. Sixth largest freshwater wetland in Otamatea ED and part of a larger area of forest extending inland from the coast.	41.27
205 =	250404	Mangatoetoe Wetlands	Swamp	N	Maungataniwha	5.60	Representative site for raupo reedland.	2	Raupo reedland mostly surrounded by pasture but with small areas grading into secondary forest and scrub.	2	No evidence of drainage. Most of the catchment is pasture, and all of the wetland appears to be grazed.	3	4	Chronically Threatened	0.08	Freshwater wetland representative for raupo reedland. Some areas buffered by indigenous forest and scrub but all of the site appears to be grazed. Habitat for spotless crane, an "At Risk" wetland bird species.	41.27
207	250242	Horeke Road Swamp	Swamp	N	Kaikohe	8.00	Representative for raupo-	3	Only one vegetation type	1	Largely surrounded by	3	4	Chronically	0.00	A small, isolated swamp remnant surrounded by	41.19



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							<i>Baumea</i> association.		present. Not contiguous with any other natural areas. Also contains frequent ti kouka, <i>Carex</i> sp. and occasional crack willow and harakeke.		pasture. Vulnerable to grazing and drainage.			Threatened		farmland. The vegetation is dominated by raupo- <i>Baumea</i> association, which is representative for its type in Kaikohe ED. Also contains frequent ti kouka, <i>Carex</i> sp. and occasional crack willow and harakeke. Despite its size and isolation, the site is well-placed as a stepping stone between Hokianga Harbour and Lake Omapere. No information on fauna. Further survey work required to determine the full ecological values of the site.	
208	250388	Tauroa Lakes	Swamp	Y	Ahipara	5.80	Only wetland on dunes in the Ahipara ED.	3	Only one wetland vegetation type (raupo reedland) present.	1	No structures affect wetland but highly modified catchment	5	4	Chronically Threatened	0.42	The only dune wetlands in the Ahipara ED. Site in two parts, and surrounded by pasture. Periphery grazed by cows. Habitat for Australasian bittern.	40.98
209	250502	Lake Rotootuauru	Lacustrine	Y	Kaipara	19.73	Freshwater wetland (predominantly open water with raupo reedland on the littoral margins) within the Kaipara ED.	1	Ecological sequence from open water to raupo reedland to <i>Glossostigma elatinooides</i> herbfield or kanuka forest. Degraded by stock access and weed invasion.	2	Unfenced with cattle intrusion.	3	3	Chronically Threatened	1.83	A modified and degraded dune lake. Retains some ecological sequences on the lake margins, and provides habitat for two "Threatened", seven "At Risk" and four regionally significant species. A small marginal strip is protected and administered by DOC.	40.91
210	250060	Te Mira Road Wetland	Swamp	N	Otamatea	1.40	One of the best representative examples of raupo reedland in a gully system within Otamatea ED.	3	Contains one freshwater vegetation type (raupo reedland) that is contiguous in its upper reaches with indigenous shrubland.	2	Buffered on all sides by plantation forestry. No evidence of drainage.	3	3	Chronically Threatened	0.00	Freshwater wetland that is one of the best examples of raupo reedland in the Otamatea ED. In a narrow gully surrounded by plantation forestry and may be substantially damaged when harvesting occurs. Possible habitat for NI fernbird and spotless crane.	40.87
211	250450	Te Hihi Stream	Swamp	N	Whangarei	2.72	Good quality example of raupo reedland, purei sedgeland, swamp millet- <i>Baumea</i> grassland, <i>Eleocharis acuta</i> sedgeland. Degraded example of kahikatea-maire tawake swamp forest (invaded by <i>Glyceria maxima</i> ).	2	Four wetland vegetation types dominated by indigenous species, grading into swamp forest and podocarp-broadleaved forest on an adjacent hillslope. The wetland vegetation types occur along a gradient from wet soils to areas of saturated soils and shallow water.	3	An old drain runs along the northern, downstream edge of the site. Water levels are presently stable, but were probably historically higher over at least half of the wetland (and in particular in the north-west).	3	3	Critically Under-protected	0.08	Four freshwater wetland vegetation types on alluvium, including a narrow band of swamp forest. Contiguous with podocarp-broadleaved forest on an adjacent hillslope. Weeds are presently of localised occurrence ( <i>Glyceria maxima</i> , <i>Cortaderia selloana</i> ), but this appear to be spreading. Wetland probably drier due to an old drain along one side, but hydrology currently stable.	40.78
212	250385	Selwyn Flat Wetland	Swamp	Y	Aupouri	11.70	Representative site for <i>Baumea articulata</i> -raupo reedland.	2	Contains only one vegetation type (reedland). Surrounded by kanuka, eucalyptus, and pine plantation (as at the date of the aerial photography).	1	Largely unmodified; no drains, although future harvesting of pine may have adverse impacts on wetland vegetation.	4	5	At Risk	0.67	An isolated fertile freshwater wetland in a dune hollow. It is representative site for one vegetation type and supports one "At Risk" bird (NI fernbird), one "At Risk" plant ( <i>Thelypteris confluens</i> ), and two regionally significant plant species. Currently buffered by pine plantation. May form part of a local habitat network for wetland birds. 8.9 ha of the site are protected (DOC-administered).	40.64
213	250129	Akerama Wetland	Swamp	N	Whangaruru	2.40	Representative site for raupo reedland.	2	Raupo reedland contiguous with secondary forest and scrub. Degraded on the margins by grazing.	2	No evidence of drainage but some wetland margins intensively grazed.	4	4	Chronically Threatened	0.58	Assessed by desk top exercise. PNAP report incorrectly maps wetland as being further to the east. This mineralised freshwater wetland is covered in raupo reedland, and adjoins secondary forest and scrub. Most if not all of the wetland and adjoining forest and scrub is grazed, and the margins are likely to be significantly modified. The wetland is habitat for grey duck and spotless crane.	40.63
214	250408	Whatakau Wetland	Swamp	N	Maungataniwha	2.00	Representative site for raupo reedland.	2	Only one wetland vegetation type present. Grazed. Grades into kanuka forest in upper reaches.	2	Grazed and mostly surrounded by pasture. No evidence of drainage.	3	4	Acutely Threatened	0.08	Small raupo reedland mostly surrounded by pasture but with two areas of kanuka forest on adjoining hillslopes. Site probably c.2 ha in area (mapped as 12 ha for wetland and forest components in 1996). No evidence of drainage but grazed. Record of spotless crane (At Risk) from 1978.	40.40
215	250505	Lake Rehutai and Wetland	Lacustrine	Y	Kaipara	5.20	Representative site for <i>Eleocharis sphacelata</i> reedland on edge of dune lake within the Kaipara ED.	2	Open water in dune lake with a fringe of reedland. Lake surrounded by pasture.	1	Fenced but surrounded by pasture. No evidence of drainage.	4	4	Acutely Threatened	2.17	Representative, fenced dune lake that is relatively weed free. Open water with a fringe of reedland. Two "Threatened", four "At Risk", and two regionally significant avifauna species are present.	40.19

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																This site is partially protected as a Conservation Area and administered by DOC.	
216	250135	Te Wairahi / Taupari Stream Riverine Habitat	Swamp	N	Whangaruru	4.00	Small umbrella sedge-raupo wetland invaded by Mexican devil.	1	Only one wetland vegetation type present. Contiguous with, and forms a sequence with, estuarine wetlands in Whananaki Inlet, which are of much greater extent and ecological value.	3	Crossed by roading, but probably bridged.	4	3	Chronically Threatened	0.83	Small wetland that forms part of a larger ecological sequence with estuarine wetlands in Whananaki Inlet. Wetland would rank higher if it was grouped with Q06/105, of which it forms a part. Important habitat for wetland birds (Australasian bittern and pateke). Mexican devil is common.	39.98
217	250401	Te Pui Swamp #1 and Bush	Swamp	N	Maungataniwha	10.90	Valley floor wetlands of varying quality, mostly grazed but some areas without grazing are representative.	2	Freshwater wetlands containing several indigenous vegetation types, including raupo reedland, and manuka-wheki shrubland, and raupo- <i>Baumea</i> reedland. Many parts grazed, some upper reaches grade into secondary forest and scrub.	2	Lower reaches grazed and partly drained - formerly more extensive on adjacent alluvial flats.	3	3	At Risk	0.33	Freshwater wetlands on valley floor. Mostly raupo reedland with smaller areas of manuka-wheki reedland, raupo- <i>Baumea</i> reedland, and raupo with kahikatea. Large areas grazed, especially in lower reaches where there are also drainage ditches and areas of <i>Glyceria</i> grassland. Contiguous with grazed secondary forest and scrub. Habitat for North Island brown kiwi.	39.85
218	250435	Cabbage Tree Remnant	Swamp	N	Kerikeri	1.20	The best, if not the only, remaining example of ti kouka forest on alluvium in the Kerikeri ED. A regionally under-represented vegetation type.	4	Only one indigenous vegetation type present, and surrounded by pasture.	1	No evidence of drainage. Historical changes in flood regime unknown.	4	3	Chronically Threatened	0.00	A 3 ha stand of ti kouka forest on the floodplain of the Kawakawa River. Site was surveyed at a distance from Kawakawa township. Cattle were grazing within the site, and no regeneration of canopy species was visible. An on-site survey, with permission from the landowner, is recommended.	39.76
219	250579	Timperly Road Wetland South	Swamp	N	Manaia	22.10	Contains examples of harakeke flaxland and manuka shrubland on alluvium, but these habitat types are likely to be degraded by weeds.	1	A mosaic of up to four indigenous vegetation types; bounded by pasture along most of the margins.	2	Drains present. Vulnerable to grazing and fouling by stock.	3	2	Chronically Threatened	0.00	Combines sites 250568 and 250579 as per PNAP Q07/083. The wetland comprises a meandering, narrow wetland that follows the c.4 km length of Waikare Creek, the longest watercourse in Manaia ED. The site has been degraded by weeds and stock incursions, but retains significant natural areas, including two representative vegetation types. Further survey is required to determine the full fauna values of the site.	39.46
220	250132	Ngahau Remnant	Swamp	N	Whangaruru	8.00	Representative site for raupo reedland.	2	Only one wetland vegetation type present. Mostly surrounded by pasture.	1	A causeway crosses an upper arm of the wetland. Most of the margins are grazed.	4	5	Chronically Threatened	0.17	Wetland dominated by raupo reedland. Representative site within the Whangaruru ED. Catchment mostly grazed, and a causeway crosses an upper arm of the wetland. Habitat for pateke (At Risk-Recovering).	39.45
221	250046	Kirikiri Creek Forest and Wetlands	Swamp	N	Otamatea	1.50	Good example of raupo reedland as part of the site is fenced to exclude cattle.	2	Three small wetlands covered in raupo reedland. Indigenous and exotic rush species are also likely to form an important vegetative component. Two of the wetlands, although grazed, are contiguous with indigenous forest. The lower wetland is fenced but surrounded by pasture. One willow present in lower wetland.	2	One of the three wetlands is affected by drainage. Two of the wetlands are grazed, and all are within a catchment mostly covered in pasture. A stream draining into the lower wetland is dammed.	3	4	Chronically Threatened	0.00	Three small wetlands dominated by raupo, that cumulatively total 1.5 ha. This area is large in comparison with other remaining raupo reedlands in the Otamatea ED. Two of the wetlands are contiguous with indigenous forest. The wetland adjacent to Tinopai Road is the only one from which livestock is excluded. A man-made pond drains into this wetland. Provides potential habitat for spotless crane (At Risk-Relict). Invasive weeds are largely absent, with only one willow recorded from the lower wetland.	38.92
222	250447	Waitangi River	Swamp	N	Whangarei	7.50	Only record in Whangarei ED of raupo-soft rush reedland.	3	A small wetland dominated by raupo that forms part of a larger complex of riparian forest on alluvium and volcanic flats.	1	No evidence of drainage. Hydrology probably partly modified by grazing.	4	3	Chronically Threatened	0.50	Small raupo dominated wetland that forms part of a larger area of riparian forest on alluvium and volcanic flats. Probably grazed, and soft rush is common within the wetland. Two "At Risk" wetland bird species (pied stilt, North Island fernbird) have been recorded from the greater site and are likely to use the wetland or its margins.	38.86
223	250064	Puketotara Forest Remnants 3	Swamp	N	Otamatea	2.90	Good representative example of raupo reedland in gully. Sixth largest raupo reedland in the Northland part of the Otamatea ED.	2	Raupo reedland grading into estuarine vegetation dominated by mangroves. Terrestrial component of site mostly surrounded by pasture.	2	Unfenced with cattle intrusion. No evidence of drainage.	3	4	At Risk	0.00	Representative raupo reedland habitat that could support threatened species such as spotless crane, marsh crane, banded rail, and Australasian bittern, although none have been recorded here. Contiguous with estuarine vegetation. Further survey is required to determine presence of significant species and current hydrological status.	38.71

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224	250497	Scotty's Camp Road Shrubland	Swamp	N	Kaipara	21.58	Degraded wetland with manuka shrubland on alluvium.	1	Manuka shrubland, with some weed invasion, contiguous with manuka shrubland on hillslope.	2	Part of the wetland has been drained and converted to pasture, and the remaining area is still partially drained and grazed.	1	3	Acutely Threatened	0.00	Degraded example of manuka shrubland on alluvium within the Kaipara ED. Further site survey required to determine flora and fauna present.	38.56
225	250062	Tinopai Road Wetland	Swamp	N	Otamatea	1.50	One of the best representative examples of raupo reedland on alluvium within Otamatea ED.	3	Contains one vegetation type of raupo reedland. Surrounded on three sides by plantation forestry, and on its western edge is bordered by Tinopai Road. The raupo reedland is diverse with patches of other indigenous species such as bracken lake clubrush, <i>Baumea</i> sp., and kiokio.	1	No evidence of drainage, however bordered by pine plantation and road.	3	4	Chronically Threatened	0.25	Freshwater wetland dominated by raupo. One of the best examples of raupo reedland in the Otamatea ED as the wetland has a wide range of wetland plant species. Margins of the wetland is impacted by weed species. Wetland buffered by pine plantation. One of two known populations of North Island fernbird (At Risk) in the ED.	38.42
226	250375	Te Ahu Rd	Swamp	N	Aupouri	15.00	Two small areas of raupo reedland.	2	Raupo reedland is the only wetland vegetation type present, although this grades into surrounding shrubland.	2	No structures evident, though southern wetland is grazed.	3	3	Under-protected	0.00	Small freshwater wetlands dominated by raupo reedland. Forms part of a natural area midway between east and west coasts, providing a link with the various wetlands, sand dunes, forest remnants and shrublands that stretch along Aupouri peninsula. It has a linkage to Lake Wahakari. One wetland is buffered by shrubland, while the other wetland is surrounded by pasture and most likely grazed.	38.22
227	250345	Waiheuheu Catchment Wetlands	Swamp	N	Te Paki	32.20	Representative example of raupo reedland in swamp within the Te Paki ED.	2	Contains only one wetland vegetation type (raupo reedland).	1	Buffered by plantation forestry.	1	4	Under-protected	0.00	Representative site for raupo reedland. Further survey is required to determine presence of significant species.	37.88
228 =	250397	Te Rore Wetland	Swamp	N	Maungataniwha	2.00	Representative site for raupo reedland and harakeke-ti kouka shrubland on alluvium.	2	Two wetland vegetation types surrounded by pasture. Grazed.	2	Heavily grazed with little or no buffering vegetation. Some sections of the stream have been channelised.	3	4	Critically Under-protected	0.08	Small freshwater wetland comprising raupo reedland and harakeke-ti kouka shrubland. Representative for both wetland vegetation types present. Surrounded by pasture and grazed. Site should be resurveyed to determine current extent (possibly much reduced).	37.40
228 =	250136	Hugh Crawford Memorial Scenic Reserve	Swamp	N	Whangaruru	2.00	Representative site for harakeke-kanuka/manuka-raupo association on alluvium	2	Only one wetland vegetation type present. Contiguous with indigenous shrubland and forest.	1	Hydrologically unmodified and in a well-vegetated catchment.	5	5	Chronically Threatened	0.58	Small wetland that is a representative site for one wetland vegetation type. One "Threatened", one "At Risk", and one "regionally significant" species likely to be present. Part of a larger tract of indigenous forest and shrubland.	37.40
230	250367	Paparore Wetland and Shrubland	Swamp	N	Aupouri	20.50	Freshwater wetland at the head of Rangaunu Harbour. Weed control and improved hydrological integrity would improve site's ecological values.	1	Contains two wetland vegetation types; ecological sequence from reedland shrubland. Weeds frequent. Some saline influence.	2	Drains present throughout. Cut off from inland wetland areas by Paparore Road. Partially buffered by shrubland, but likely to be grazed.	2	3	Under-protected	0.92	The site comprises a freshwater wetland on alluvium/estuarine deposits at the head of Rangaunu Harbour. Supports one "Threatened" and one "At Risk" bird species, one "At Risk" fish, one regionally significant plant and one regionally significant fish. One of the few remaining wetland/shrubland associations on the Rangaunu Harbour. The peat swamp is a good example of a habitat now uncommon in the region, although weeds and drainage threaten its integrity.	36.19
231	250538	Ararua North - Manganui River Complex	Swamp	N	Tokatoka	5.50	Contains a good example of kahikatea forest on alluvium. Presumably the 5.5 ha of the site that is mapped as wetland is this vegetation type.	2	Contains only one wetland vegetation type, which does not form part of an ecological sequence.	1	Grazed. Some drains present.	3	4	Acutely Threatened	0.00	The site comprises a small remnant of kahikatea forest on alluvium, which contributes to the outstanding Manganui River complex. Alluvial forest is regionally uncommon in Northland. Likely to be grazed. Further survey required to determine presence of threatened and/or uncommon species, and weeds.	36.11
232	250500	Rotu Bottleneck Forest	Swamp	N	Kaipara	9.70	Representative example of kahikatea-houhere-kowhai-ti kouka forest on alluvium.	2	Only one indigenous vegetation type present, and surrounded by pasture.	1	Bordered by three deep drains, and adjacent to channelised river. Flooding regime likely to be highly modified, and site much drier	1	3	Chronically Threatened	1.17	Remnant of forest on alluvium that would have been much wetter prior to drainage and river control works. However the site still floods, and despite grazing and invasion by weeds, is representative for kahikatea-houhere-kowhai-ti kouka forest, and is habitat for one "Threatened", two "At Risk", and four regionally significant plant	36.00

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											than before modification.					species.	
233	250475	Waihaha Road Swamp Forest	Swamp	N	Whangaruru	1.00	Representative site for kahikatea forest on alluvium. Presence of maire tawake is indicative of swamp forest, and swamp forest on alluvium is regionally under-represented. However the site is not a good quality example of this vegetation type.	2	Only one wetland vegetation type present, and bordered by pasture and road.	1	Modified by drainage.	0	5	Chronically Threatened	0.08	Small, drained remnant of kahikatea swamp forest, with occasional maire tawake (regionally significant). Representative of an uncommon forest type despite its degraded condition. Fauna not surveyed.	35.80
234	250141	Campbell Road Remnants	Swamp	N	Whangaruru	4.00	Representative site for raupo- <i>Baumea articulata</i> reedland. Also listed as representative for raupo-sweet reed grass wetland, but reed sweet grass is an exotic.	2	Two wetland vegetation types present. Degraded by presence of sweet reed grass.	2	Drainage channels affect several parts of the site.	3	2	Chronically Threatened	0.50	Small wetland in a gully comprising raupo- <i>Baumea articulata</i> reedland, or raupo in association with the exotic reed sweet grass. Representative for one wetland vegetation type, and habitat for one "Nationally Threatened" species (Australasian bittern) and one "At Risk" species (spotless crane). Partly modified by drainage.	35.32
235	250061	Parry Road Wetland	Swamp	N	Otamatea	1.60	Representative site for raupo-bracken reedland, and the only record of this vegetation type in Otamatea ED.	3	Contains one wetland vegetation type of raupo-bracken reedland surrounded by plantation forestry.	1	No evidence of drainage. Catchment is entirely pine plantation.	4	3	Chronically Threatened	0.00	Freshwater wetland within a pine plantation. Representative site for raupo-bracken reedland, and the only record of this vegetation type within Otamatea ED.	34.98
236	250134	Mimiwhangata South Wetland and Streams	Swamp	N	Whangaruru	12.00	No representative wetland vegetation types. Exotic species common or dominant.	1	Three of five wetland vegetation types are dominated by indigenous species.	2	No evidence of drainage, but probably grazed by livestock.	4	2	Chronically Threatened	0.83	Gully floor wetland in grazed catchment with five wetland vegetation types, of which three are dominated by indigenous species. The primary value of this wetland is the habitat it provides for Australasian bittern and pateke.	34.19
237	250561	Mangaroa Wetland	Swamp	N	Tangihua	11.90	The site contains a representative example of harakeke-kahikatea-ti kouka swamp forest on alluvium, although this ecological unit is likely to be degraded by weeds.	1	The site contains four vegetation types, three of which are dominated by invasive weeds such as <i>Glyceria maxima</i> and pampas.	2	The site is largely surrounded by farmland and is thus vulnerable to degradation by stock. No evidence of drains.	3	3	Critically Under-protected	0.25	The site comprises a narrow freshwater wetland and swamp forest near the headwaters of the Mangaroa Stream. Most of the site is dominated by indigenous swamp forest, although weeds are more prevalent in wetter areas. Representative for one vegetation type and supports one "At Risk" bird (North Island fernbird). Margins are likely to be grazed and trampled.	33.92
238	250365	Northern Tokerau Swamp	Swamp	Y	Aupouri	86.00	A degraded example of raupo reedland in peaty dune hollow.	1	Only one wetland vegetation type (raupo reedland) present, which is degraded by weeds.	1	Some farm drains present. Wetlands have no buffering and are likely to be degraded by stock.	2	2	Chronically Threatened	1.17	A mineralised swamp on peat adjoining Tokerau Beach which supports one "Threatened" and one "At Risk" birds, and one "Threatened" and one "At Risk" plants (although the record for <i>Lycopodiella serpentina</i> ("Threatened-Declining") is from 1967). Partially buffered by pine plantation and sandfields. When the site was last surveyed in 1995, the wetland was described as raupo reedland, with pampas present. Pampas is now common, highlighting its rapid spread within the site over the past 15 years. 96.3% protected (administered by DOC).	33.43
239	250085	Frenchman's Bay Forest & Wetland	Swamp	N	Otamatea	0.70	Wetland habitats are in mediocre condition as they continue to be grazed and are poorly connected.	1	Wetland grades into indigenous terrestrial forest. Floral diversity is average and areas of forest are being browsed by possums.	2	Likely to be affected by farm activities within catchment.	3	4	At Risk	0.00	The site comprises a very small raupo-dominated swamp buffered by 25 ha of indigenous forest. The wetland does not contain any representative vegetation types. Grazing is adversely affecting the wetland. Unconfirmed report of Australasian bittern (Nationally Endangered). Further survey is recommended to determine the site's current ecological values.	32.44
240	250587	Wightmans-Lawrence Road Swamp	Swamp	N	Rodney	9.80	A degraded example of swamp habitat. Weeds and cattle adversely affect the site.	1	Two wetland vegetation types present (raupo reedland and <i>Baumea</i> sp. reedland), although these are patchy throughout. Upper wetland is contiguous with a small area of indigenous shrubland.	2	Wetland severely grazed and trampled in parts. Drains present downstream.	2	2	At Risk	0.00	The site comprises scattered wetland vegetation occupying a series of highly modified, narrow gully arms, converging at the valley floor. The site is surrounded by pasture and significantly impacted by stock and weeds. A small proportion of wetland habitat is contiguous with indigenous shrubland in the gully heads. The site was observed from a distance thus the presence of threatened and/or	32.40

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																regionally significant species could not be determined. The site spans across two properties, which may add complexity to future management.	
241	250406	Blue Gorge Swamp	Swamp	N	Maungataniwha	6.10	Representative site for raupo reedland.	2	Only one indigenous wetland vegetation type present and surrounded by pasture. Grazed.	1	Heavily grazed with some areas flooded by farm dams.	3	3	At Risk	0.00	Freshwater wetland in valley dominated by raupo. Mapped as 22.1 ha in 1994 but only 6.1 ha in 2009. Invaded by grey willow, grazed, and partly dammed. Site may no longer be "one of the best examples of its type in the Ecological District" (Conning 2002).	31.33
242	250498	Mosquito Gully Wetland	Swamp	N	Kaipara	18.00	Valley floor wetland with manuka-pampas shrub tussockland on alluvium.	1	The site has one vegetation type and has been extensively invaded by pampas. Surrounded by pine forest.	1	Modified by roading at downstream end. Buffered by pine forest.	3	2	Acutely Threatened	0.58	Freshwater wetland on valley floor dominated by manuka and pampas. Although the contiguous vegetation sequence from the Kaipara Harbour has been lost and the site is widely invaded by pampas, it contains three "At Risk" species.	30.07
243	250453	Heaton Road Bush	Swamp	N	Whangarei	4.20	Representative site for raupo reedland in Whangarei ED.	2	Only one wetland vegetation type (raupo reedland) present.	1	No evidence of drainage. Lower reaches possibly grazed.	4	3	Critically Under-protected	0.33	Small raupo reedland contiguous with larger area of indigenous forest. Lower reaches may have been lost post the 1996 survey.	30.05
244	250540	Parkers Road Bush	Swamp	N	Tokatoka	9.30	A degraded example of alluvial swamp forest. Threatened by willows and cattle.	1	Contains one wetland vegetation type, although this forms part of a sequence with adjacent hillslope totara forest.	2	No drains present. Likely to be grazed.	4	1	Acutely Threatened	0.00	Assessed by desktop exercise. The site comprises a regionally rare but degraded example of alluvial swamp forest bordering a river. Willows are likely to be the dominant canopy species. The site is almost certainly grazed. The site could not be accessed, thus information on threatened or regionally significant species could not be obtained. Hydrology seems to be largely intact.	29.72
245	250503	Babylon Smith Wetland	Swamp	N	Kaipara	5.50	A small example of raupo reedland in Kaipara ED.	1	One wetland vegetation type (raupo reedland) present at this site.	1	Western end dammed to create small area of open water. Stock excluded by steep relief surrounding wetland.	4	3	Acutely Threatened	0.83	Raupo reedland on a valley floor, modified at one end by damming. However it is protected from grazing by steep surrounding hillslopes and is habitat for one regionally significant plant species and, at least historically, for one "Threatened" (Australasian bittern), and two "At Risk" species.	29.66
246		Hently Road Swamp Forest	Swamp	N	Whangaruru	0.67	Small area of maire tawake-kahikatea swamp forest and manuka-Baumea shrubland. Degraded by grazing and likelihood of strong edge effects.	1	Maire tawake-kahikatea swamp forest and manuka-Baumea shrubland surrounded by pasture.	2	No evidence of drainage but most if not all of the wetland is grazed.	4	4	Better Protected and Less Reduced	0.00	Small area of maire tawake-kahikatea swamp forest grading into manuka-Baumea shrubland. Not drained, but grazed and surrounded by pasture. This site, and other areas of swamp forest in the local area, require walk-through surveys.	29.43
247	250473	Owai Stream Riverine Habitat	Swamp	N	Whangaruru	13.00	Raupo reedland with exotic grasses within pasture.	1	Only one wetland vegetation type present. Highly modified by drainage and grazing.	1	Stream channel often channelised, with many side drains. Grazed and mostly surrounded by pasture.	1	3	Critically Under-protected	0.75	Highly modified raupo reedland in channelised stream channels and on partly drained alluvial flats. Grazed and surrounded by pasture. Primary value is the provision of habitat for brown teal (At Risk-Recovering) and Australasian bittern (Threatened-Nationally Endangered).	29.32
248	250155	Herbert Road Swamp Forest	Swamp	N	Hokianga	2.00	Representative site for kahikatea-pukatea-ti kouka forest on alluvium. Although the site is severely degraded, this is only one of two examples in Hokianga ED.	1	Only one wetland vegetation type present at the site. Bounded by Herbert Road on western edge; pasture surrounds the rest of the site.	1	Grazed by cattle; peripheral drains present.	3	5	Critically Under-protected	0.00	A small remnant of lowland floodplain forest on the flats at Te Umuhuki Road. comprising kahikatea, pukatea, and ti kouka. Representative site although degraded. The swamp forest remnant is a very rare forest type and one of only two examples recorded in the ED. No information on fauna or significant flora. Further survey is recommended.	29.21
249	250128	Tutaematai Stream Riverine Forest	Swamp	N	Whangaruru	2.00	Two small areas of raupo reedland on alluvium.	1	Only one wetland vegetation type present.	1	Drainage channel passes through smaller southern part of site. Bordered by treeland, pasture, and roads.	3	4	Chronically Threatened	0.17	Two small areas of raupo reedland that link riparian treeland and forest with the Whangaruru Estuary. Level of modification difficult to assess from PNAP data and aerial photography. Habitat for pateke (At Risk-Recovering).	28.56
250	250443	Kara Rd Wetland	Swamp	N	Whangarei	5.00	Example of harakeke flaxland within a stream bed, degraded by weed invasion and damming.	1	Only one indigenous wetland type present. Surrounded by pasture.	1	Bisected into three parts by roads, with a dam and some drainage channels in the lower reaches.	3	3	Chronically Threatened	0.17	Small fertile wetland dominated by harakeke. Reed sweet grass is common and the catchment is predominately pasture. Hydrology modified by dam and drainage channels at downstream end. According to the PNAP report, harakeke wetlands are rare in the ecological district and region. Habitat for spotless crane.	27.11

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251	250589	Garbolino Road Swamp	Swamp	N	Rodney	1.20	Degraded swamp along gully floor. Lower reaches of wetland has swamp millet grassland and <i>Baumea</i> spp. sedgeland, but <i>Glyceria maxima</i> has become invasive.	1	Contains several different indigenous vegetation types, including raupo reedland, <i>Baumea</i> associations, <i>Eleocharis acuta</i> sedgeland, and swamp millet grassland. Contiguous with manuka-totara scrub but degraded by weed invasion.	2	The wetland is fenced off, though adjacent earthworks are likely to contribute to sediment run-off. At the head of the catchment, the wetland has been modified by a series of stop banks. The wetland lacks buffering along most of its margins.	2	2	At Risk	0.00	The site comprises a swamp on a narrow gully floor. The upper gully is dominated by raupo reedland, gorse, and rank kikuyu, while further downstream the wetland grades into sedgeland and grassland associations, with restoration plantings scattered along the true left margin. The wetland is fenced, but hydrology is likely to be adversely affected by stop banks and adjacent earthworks. <i>Glyceria maxima</i> has spread throughout the lower part of the wetland. No threatened species were recorded during the survey (crake tape played but no responses were heard), though the site does provide potential habitat for spotless crake (At Risk-Relict) and North Island fernbird (At Risk-Declining).	27.00
252	250594	Cove Road Swamp	Swamp	N	Rodney	3.00	Freshwater wetland at toe of slope between Cove Road and the Mangawhai River. Possibly partially planted. Buffered on one side by small area of shrubland.	1	Vegetation and habitat types present include manuka/ cabbage tree-flax- <i>Coprosma lucida</i> shrubland and <i>Baumea</i> sp.-arum lily/raupo-mercier grass sedgeland.	1	Modified and possibly drained.	2	3	Chronically Threatened	0.00	Modified and drained freshwater wetland in the Rodney ED. Small portion protected as Marginal Strip. Further survey is required to determine flora and fauna present.	26.36
253	250596	The Heads Subdivision Gumland-Swamp	Swamp	Y	Rodney	0.40	Small freshwater wetland bisected by subdivision. Gumland in valley head.	1	Vegetation and habitat types present include raupo- <i>Baumea articulata</i> reedland and <i>Coprosma propinqua</i> -mahoe shrubland. Some weed species present.	1	Highly modified by subdivision.	1	4	At Risk	0.08	Highly modified freshwater wetland within subdivision in the Rodney ED. One regionally significant species recorded ( <i>Coprosma propinqua</i> ), however a flora and fauna survey is needed.	25.51
254	250582	Ti kouka Way Riverine Forest Remnants and Lake	Lacustrine	N	Rodney	7.90	Good quality example of an uncommon habitat type, although it is man-made.	2	No indigenous wetland species were recorded from the site.	0	The lake has been artificially created. Some of its margins are grazed. No drains are present. It is not known if the lake is used for irrigation purposes.	3	0	At Risk	1.00	The site comprises a relatively large man-made lake that supports pied shag (Nationally Vulnerable), Caspian tern (Nationally Vulnerable), white-fronted tern (Declining), and little black shag (Naturally Uncommon). No indigenous vegetation is present, although the site was only partially surveyed. It does not seem to be contiguous with any riverine forest. The site is grazed in parts and its hydrology seems largely intact. The lake is dammed and would present a significant barrier to fish attempting to migrate to the upper Cook Creek catchment.	20.43
255	250010	Ruakaka Dunelands	Lacustrine	Y	Waipu	4.70	Open water in constructed pond. Raupo reedland on margins recently removed.	0	No indigenous wetland vegetation types present.	0	Open water in sand mine ponds	0	0	At Risk	0.83	Open water in the ponds of a sand mine. Raupo reedland on the margins recently removed. Habitat for two "Threatened" and one regionally significant wetland bird species.	7.84

RANK AND ASSESSMENT FOR THE  
'TOP 49' ESTUARINE WETLANDS  
IN NORTHLAND

## Rank and Assessments for the 'Top 49' Estuarine Wetlands in Northland

Ranking	Worksmart No.	Name	On Dunes	Ecological District	Size (ha): (x)	Representativeness	Representativeness Score	Vegetation Diversity and Pattern	V D & P Score	Hydrological integrity	HI Score	Dominance of Native Plants Score	LENZ_Cat	Threatened Species Score	Overall Summary	Total Weighted Score
1	250316	Waipu River Estuary and Sandspit	N	Waipu	144.6	Representative site for nine of the eleven wetland types. Largest and most diverse example of estuarine vegetation in the Waipu ED.	3	Ten wetland types dominated by indigenous species forming sequences and mosaics according to level of tidal inundation. Contiguous with indigenous vegetation on dunes. Best example of duneland-estuary sequences in Waipu ED.	4	Historical loss of saltmarsh due to drainage alongside the tidal reaches of Waipu River	4	4	Acutely Threatened	5.00	Largest estuarine wetland in the Waipu ED. Representative site for nine wetland vegetation types and a very important site for threatened bird species. Habitat for 11 "Threatened" species, six "At Risk" species, and two regionally significant species. Highly modified catchment but the long, isolated barrier spit means that parts of the site are remote.	80.87
2	250439	Whangarei Harbour	N	Whangarei	7214	A "particularly good representative example of a mangrove-dominated estuarine system" and the only site in the Whangarei ED for saltmarsh vegetation.	3	Extensive ecological sequences from intertidal flats to mangroves to saltmarsh to indigenous forest and shrubland. Small areas of freshwater wetlands, and shell bank islands. Only example within the Whangarei ED.	4	Large areas hydrologically unmodified, but substantial historical modification from reclamation, silt deposition, drainage, and road construction.	4	5	Chronically Threatened	3.83	Large estuarine wetland with a high diversity of wetland vegetation types, and extensive ecological sequences. Some parts highly modified by reclamation and drainage, but many less modified areas remain. Very high fauna values. Harbour is habitat for a high diversity of wetland bird species, including 12 "Threatened" or "At Risk" species and many migrant bird species. At times the harbour provides feeding and roosting habitat for over 10,000 waders and shorebirds.	80.66
3	250370	Rangaunu Harbour	N	Aupouri	10185	Representative site for mangrove forest, eelgrass herbfield, oioi-searush saltmeadow, glasswort herbfield, and shellbanks.	3	Likely to contain one of the best remaining eel grass-saltmeadow-mangrove sequences in Northland.	4	Largely surrounded by agricultural land, thus will be vulnerable to run-off and stock incursions.	3	5	Acutely Threatened	3.42	The Rangaunu Harbour is a large harbour with extensive mangrove forests, shellbanks, sand flats, mudflats, and islands. It contains the largest mangrove area in NZ (Ogle 1984). The harbour provides an outstanding habitat for national and international migratory waders and is one of the most important bird sites in NZ. It has been nominated for RAMSAR status as a wetland of international significance. It supports seven threatened and two at risk bird species. There are historical records of Pacific gecko (Gradual Decline) and shore skink. Representative site for five ecological units. Approximately 196 ha of the site are protected (administered by DOC). Threats to the harbour include habitat loss due to the establishment of marine farms, the spread of spartina, and surrounding land use (i.e. farm run-off and sedimentation).	80.65
4	250462	Eastern Bay of Islands estuary	N	Whangaruru	1129	Representative for 11 vegetation types, of which five types only occur here in the ED.	3	Extensive example of coastal vegetation with sequences from coastal forest to intertidal wetlands.	4	Hydrology locally affected by road causeways and drainage.	4	4	No Threat Category	4.50	Extensive sequences of coastal vegetation from hillslope forest to estuarine communities. Sixteen "Threatened" or "At Risk" bird species. Best or only example of many vegetation types within ED. Possibly best example within Northland of estuarine vegetation but this would require an assessment of regional significance.	77.65
5	250418	Hokianga Harbour	N	Hokianga	2900	Best example within Hokianga ED. Large areas grazed, some weed invasion.	3	Wide range of estuarine vegetation types with ecological sequences to terrestrial vegetation. Largest within Hokianga ED. Assessment of significance within region would require further information.	4	27% reclaimed for farming.	3	3	Chronically Threatened	4.25	Extensive intertidal wetlands supporting a wide range of common and threatened avifauna. Partly grazed, some weed invasion, significant areas reclaimed.	73.44
6	250466	Ngunguru Estuary	N	Whangaruru	543	Representative site for all four wetland vegetation types, and the only locality for sea rush saltmarsh in the Whangaruru ED.	3	Four estuarine vegetation types, which beyond the boundaries of the PNAP site are contiguous with freshwater wetlands and coastal forest.	3	Most of harbour well buffered by forest and scrub on adjacent hillslopes. Some small, localised areas affected by drainage (within saltmarsh) or road causeways.	4	5	At Risk	4.08	Large estuarine wetland representative for all vegetation types and supporting ecological sequences from estuary to freshwater wetlands to coastal forest. Well buffered by indigenous vegetation relative to other estuaries on the eastern coast of Northland, with many areas little modified by drainage, grazing, or weed invasion. Habitat for seven "Threatened" and 10 "At Risk" bird species.	72.77
7	250465	Whananaki Estuary	N	Whangaruru	225	Representative site for all five wetland vegetation types, and the only locality in the Whangaruru ED for oioi-mangrove-saltmarsh ribbonwood saltmarsh and oioi-	3	A good example of coastal vegetation sequences. Five estuarine wetland vegetation types, including mangroves and saltmarsh, which form an ecological sequence with	3	Causeways cross some of the upper estuarine arms of the wetland, with small areas of saltmarsh drainage.	4	5	Chronically Threatened	4.33	Estuarine wetland representative for all wetland vegetation types, and the only locality for oioi-mangrove-saltmarsh ribbonwood saltmarsh and oioi-manuka-raupo association within the Whangaruru ED. A small percentage of the estuarine edge is contiguous with, and buffered by, indigenous forest and shrubland, and some of the upper	72.72



Ranking	Worksmart No.	Name	On Dunes	Ecological District	Size (ha): (x)	Representativeness	Representativeness Score	Vegetation Diversity and Pattern	V D & P Score	Hydrological integrity	HI Score	Dominance of Native Plants Score	LENZ_Cat	Threatened Species Score	Overall Summary	Total Weighted Score
						manuka-raupo association in estuary.		coastal forest and shrubland.							saltmarsh arms are affected by causeways and drainage. Habitat for 17 "Threatened" or "At Risk" wetland bird species.	
8	250487	Kaipara Harbour Shrubland and Rushland	N	Kaipara	11480	Largest harbour in New Zealand and a site of national and international importance for migratory birds. Contains the largest tracts of mangrove shrubland in the ED.	3	This site is mostly open water (95%), with mangrove shrubland and oioi rushland covering the remainder. It contains the largest mangrove shrubland in the ED.	3	Adjacent to farmland.	3	4	Acutely Threatened	3.00	The site is part of the largest harbour in New Zealand and is of national and international importance. It has large tracts of mangrove shrubland and is habitat for migratory and threatened species, and is partially protected by thirteen parcels, each administered by DOC.	70.99
9	250142	Taiharuru Estuary	N	Whangaruru	384	Representative site for mangrove forest, manuka-raupo association, and oioi-sea rush saltmarsh. Only example of manuka raupo association in the Whangaruru ED.	3	A good example of estuarine-freshwater wetland sequences within the Whangaruru ED.	3	Some areas of saltmarsh and mangroves in upper tidal arms affected by drainage channels and causeways	3	4	Chronically Threatened	4.33	Estuary with complete ecological sequences from tidal flats to mangroves to saltmarsh to indigenous forest and shrubland. Habitat for eight "Nationally Threatened" and nine "At Risk" bird species. Representative for three wetland vegetation types, and the only locality for manuka-raupo association in the Whangaruru ED. Upper reaches modified by grazing, drainage, and causeways, with ongoing loss of saltmarsh habitats.	70.64
10	250139	Horahoa Estuary	N	Whangaruru	206	Representative site for all four wetland vegetation types present, and the only record of oioi-sea rush-saltmarsh and manuka swamp shrubland in Whangaruru ED.	3	Four wetland vegetation types with ecological sequences from coastal forest to saltmarsh to mangroves.	3	Causeways cross some of the upper estuarine arms of the wetland.	4	5	Chronically Threatened	3.08	Estuarine (153 ha) and freshwater wetland (53 ha) in the catchment of the Horahora Estuary. Representative for all four wetland vegetation types, and the only record of oioi-sea rush-saltmarsh and manuka swamp shrubland in Whangaruru ED. The largest freshwater wetland in the north of the site is well buffered by indigenous scrub from surrounding land uses. The upper western and southern estuarine arms are more modified, affected by causeways and grazing. Habitat for 11 "Threatened" or "At Risk" bird species and black mudfish (Gradual Decline).	70.09
11	250409	Upper Whangaroa Harbour	N	Whangaroa	948.8	Largest and best example of estuarine habitats in the Whangaroa ED.	3	Complete ecological sequences from intertidal flats to mangroves to saltmarsh to freshwater wetlands to indigenous forest and scrub. Best example of estuarine-terrestrial sequences in Whangaroa ED.	4	Upper arms crossed often crossed by causeways that impede tidal flow. Loss of saltmarsh from drainage, reclamation, and grazing.	4	3	Chronically Threatened	1.42	Largest and best estuarine wetland in the Whangaroa ED, and the best example of estuarine-terrestrial ecological sequences in the ED. Habitat for five "Threatened" or "At Risk" plant species. Upper reaches affected by drainage, causeways, and grazing. Exotic plants ( <i>Juncus acutus</i> and <i>Spartina</i> ) locally common or dominant.	69.00
12	250507	Kelly's Bay/Punahaere Creek Estuary Shrubland and Forest	N	Kaipara	220	A large site with estuarine and freshwater wetlands. Representative site for three wetland vegetation types.	2	Contains four wetland vegetation types and includes an ecological sequence from oioi- <i>Baumea juncea</i> rushland and mangrove shrubland through to kanuka forest. Possibly the best sequences of coastal vegetation, with a wetland component, in the Kaipara ED.	4	Some drainage and development has occurred in the past.	4	4	Acutely Threatened	3.42	A large and important site with sequences from estuarine to freshwater wetlands and kanuka forest. Habitat for five "Threatened" and eight "At Risk" species. Almost half of this site is protected and administered by DOC.	68.37
13	250425	Whangape Harbour	N	Hokianga	916	Representative site for mangrove forest, sea rush saltmarsh (sole record), sea rush-mangrove association (sole record), oioi-sea rush saltmarsh, and <i>Juncus</i> sp.-oioi saltmarsh.	3	Contains five saltmarsh vegetation types; includes ecological sequence of mangrove forest grading into searush and oioi saltmarsh associations and then into low manuka shrubland.	3	Largely unmodified.	5	5	Acutely Threatened	1.42	The site comprises tidal flats and saltmarsh within a deeply penetrating drowned river valley, into which feed two rivers (Awaroa and Rotokakahi). Although only c.6% of the area retains significant riparian vegetation, the high proportion of intertidal area in this harbour contributes to its value as an ecosystem, supporting three "Threatened" and two "At Risk" birds. Representative for five vegetation types, including two types which have only been recorded once before in the ED. The Awaroa arm retains a considerable degree of naturalness, particularly in the Rotowhenua River, Kohe and Humanga Streams, and upper reaches. Activities on surrounding farmland may adversely affect water quality and may contribute to excessive siltation.	67.81
14	250097	Upper Te Puna Inlet	N	Kerikeri	120	Representative site for raupo reedland, oioi saltmarsh, and mangrove forest. Probably the best example of saltmarsh vegetation in Kerikeri ED.	3	Complete sequences from intertidal mudflats to mangroves to saltmarsh to raupo reedland to indigenous forest and scrub.	3	Most of wetland well buffered by indigenous forest and scrub. Some areas of saltmarsh drainage and grazing	4	5	At Risk	2.08	Estuarine wetland with complete ecological sequences from estuary (mangroves and saltmarsh) to raupo reedland to indigenous forest and scrub. Representative for all wetland vegetation types. Most of the wetland is well buffered by indigenous vegetation, but there is some loss	66.86

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										in southern-most arm.					of habitat through drainage and grazing in the southern-most arm. Habitat for five "Threatened" and four "At Risk" bird species.	
15	250364	Houhora Harbour	N	Aupouri	1315	Representative site for mangrove-oioi association, oioi saltmarsh, glasswort herbfield, <i>Baumea</i> sp.-manuka swamp shrubland, and eelgrass beds.	2	Contains five estuarine vegetation types. Ecological sequence of eelgrass on tidal flats grading into mangrove-oioi and indigenous shrubland on sand flats.	3	Upper saltmarsh reaches affected by drainage and grazing.	4	5	Chronically Threatened	3.83	Houhora Harbour provides excellent wader habitat with extensive shellbanks and mud flats. It is an important feeding area for international migratory waders, internal migrants and sedentary species, and is a vital link in the chain of estuaries from Rangaunu to Parengarenga. More than 3,000 waders have been recorded at high-tide roosts. The site supports seven "Threatened" and six "At Risk" birds, and one "At Risk" gecko. Representative site for all five ecological units and contains good example of a saltmarsh-terrestrial shrubland sequence. Canada geese have increased over the years and pose a potential threat to the dune lake/duneland communities (R. Pierce pers. comm.). Upper reaches are affected by drainage and grazing.	66.41
16	250516	Arapaoa River	N	Otamatea	4957.5	Large site that contains the best representative example of saltmarsh ribbonwood shrubland within Otamatea ED.	3	Contains a good example of a suite of seven indigenous estuarine habitat types. Some weed species including <i>Spartina alterniflora</i> and saltwater paspalum are present.	3	Mostly bordered by pasture, with some areas of plantation and indigenous forest.	3	3	Chronically Threatened	2.83	Large area of estuarine habitat that covers 1,729 km of coastline. Best example of saltmarsh ribbonwood shrubland in Otamatea ED. This site is of particular importance to migrant birds and contains almost half of the wading bird habitat for Otamatea ED as well as providing habitat for five "Threatened", four "At Risk", and one regionally significant species. Small portions of this site are protected under Stewardship, Scenic Reserve (DOC administered), and QEII covenants.	66.36
17	250315	Ruakaka River Estuary	N	Waipu	81.3	Representative site for all nine estuarine wetland vegetation types present.	2	High diversity of estuarine vegetation types. Small areas of the site are contiguous with indigenous forest on a coastal scarp.	3	Catchment increasingly modified by urban development. Historical loss of saltmarsh in upper reaches due to drainage and grazing.	3	4	At Risk	4.33	Second largest estuarine wetland in the Waipu ED and representative for nine wetland vegetation types. Situated in an increasingly urbanised catchment. Habitat for nine "Threatened", six "At Risk", and two regionally significant species.	65.98
18	250601	King Road Saltmarsh	N	Rodney	111.3	Good quality examples of estuarine wetland vegetation types.	2	Contains a mosaic of different vegetation types: mangrove forest grading into saltmarsh ribbonwood shrubland and oioi saltmeadow. Semi-contiguous with kanuka/manuka shrubland. May also form sequence with freshwater wetland in the northern arm, but this could not be determined during the survey. Weeds are largely absent from the site, with species such as Sydney golden wattle and pampas being restricted to the saltmarsh margins.	3	Causeway bisects upper estuary. Some drains also present in upper reaches. South-west margins likely to be grazed.	3	5	Acutely Threatened	1.17	The site comprises a relatively large area of estuarine habitat along the Mangawhai River, which supports pied shag (Threatened-Nationally Vulnerable), North Island fernbird (At Risk-Declining) (heard during survey), banded rail (At Risk-Naturally Uncommon) (footprints observed during survey), black shag (At Risk-Naturally Uncommon), little shag (At Risk-Naturally Uncommon), pied stilt (At Risk-Declining), and <i>Coprosma propinqua</i> (regionally significant). The site contains a range of different wetland types, including mangrove forest, saltmarsh ribbonwood shrubland, and oioi saltmeadow. It also forms an ecological sequence with terrestrial indigenous shrubland. Weeds are largely absent from the site. Hydrological integrity may be threatened by future development along the true left of the river, close to the river mouth.	65.28
19	250031	Waipoua Coastal Strip and Taha Moana Scenic Reserve	Y	Tutamoe	7.6	Representative site for <i>Carex</i> herbfield, marsh clubbrush-raupo reedland, oioi-knobby clubbrush rushland, and <i>Gleichenia</i> -manuka-sedge gumland, all of which are not found elsewhere in the Tutamoe ED.	3	Four wetland vegetation types which are contiguous with indigenous vegetation on dunes. Site includes gumland vegetation, saltmarsh, and freshwater wetland in a lagoon. Best example of this sequence in the ED.	4	Hydrologically unmodified and well buffered by indigenous shrubland.	5	5	Chronically Threatened	2.50	Small wetland within an extensive area of coastal habitats on dunes. The only site in the Tutamoe ED for all four wetland vegetation types present. The wider site is habitat for a range of "Threatened" or "At Risk" bird species, and several of these are likely to utilise the wetlands present. Three regionally significant wetland plant species, one of which is "At Risk-Naturally Uncommon" ( <i>Myriophyllum votschii</i> ).	65.10
20	250515	Otamatea River	N	Otamatea	2790.9	Representative site for sea primrose-arrow grass-saltwater paspalum herbfield and <i>Baumea articulata</i> reedland in the Otamatea ED.	2	Contains a good example of a suite of eight indigenous habitat types within an estuary. Some weed species including <i>Spartina alterniflora</i> and saltwater paspalum are present.	3	Mostly bordered by pasture, with some areas of plantation and indigenous forest.	3	3	Chronically Threatened	4.83	A large representative estuarine wetland within the Kaipara Harbour that provides habitat for 10 "Threatened" and five "At Risk" species as well as a quarter of the wading habitat within Otamatea ED. Partially protected by QEII covenants and DOC administered blocks.	64.64
21	250463	Matapouri	N	Whangaruru	81	Representative site for	2	Two estuarine wetland	3	Upper arms of estuary	3	5	Chronically	3.33	Estuarine wetland representative for mangrove-sea rush	64.48

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		Estuary				mangrove-sea rush association.		vegetation types forming an ecological sequence with indigenous forest and shrubland.		crossed by causeways that impede tidal flow. Drainage of saltmarsh, with recent loss of north-western arm of estuary.			Threatened		association in the Whangaruru ED. Ecological sequences from coastal forest and shrubland to saltmarsh to mangrove forest. Habitat for 13 "Threatened" or "At Risk" wetland bird species, one "At Risk" plant species, and three regionally significant species. Wetland threatened by drainage of saltmarsh in upper estuarine arms, with recent loss of the north-western arm.	
22		Ocean Beach Recreation Reserve and Surrounds	Y	Manaia	9	The most extensive estuarine and freshwater wetlands on dunes in the Manaia ED. Representative site for sea rush rushland and <i>Baumea articulata</i> -kuta-raupo sedgeland, and the only site for freshwater wetland on dune slack in the ED.	3	One freshwater wetland vegetation type ( <i>Baumea articulata</i> -kuta-raupo sedgeland in dune slack) and sea rush rushland on Holocene alluvium. The wetland components are separated from other indigenous vegetation (herbfield and shrubland on dunes) by narrow bands of pasture, but still the best example of wetland vegetation types on dunes in the ED.	4	Saltmarsh encircled by drains or channelised streams. All wetland areas probably grazed.	3	3	Acutely Threatened	2.08	Estuarine wetland with two small freshwater wetlands in dune slacks. Modified by drainage and grazing, but the only area of wetlands on dunes in the Manaia ED. High avifauna values, with three Threatened and six "At Risk" wetland bird species.	64.44
23	250374	Parengarenga Harbour	N	Aupouri	6449	Contains good quality examples of mangrove forest, oioi-sea rush saltmarsh, and eelgrass beds.	2	Contains a good example of mangrove forest-saltmarsh-eelgrass sequence, though it's not known if this is the best in the Region or ED.	3	The whole northern side of the harbour catchment is vegetated, although farming activity is more predominant on the harbour's southern margins. The harbour has very high water quality due to several factors including a considerable exchange of water between the harbour and outside ocean.	4	4	Under-protected	4.25	The site comprises a harbour with an extensive sandspit and large intertidal flats. Parengarenga Harbour is of international significance due to high numbers of migratory birds and high numbers of threatened species, including seven "Threatened" and seven "At Risk" fauna species, and one "Threatened" plant species. It probably has the greatest bird diversity of any habitat in Northland (Ogle 1984) and is one of the least modified warm temperature/subtropical harbours in the world (Sewell 1985). Extensive areas of eelgrass indicate a low silt and high oxygen content, which contribute to the pristine water quality. Threatened by habitat loss due to the spread of <i>Spartina</i> , local modification from aquaculture, and siltation, particularly in the southern catchments.	63.89
24	250424	Herekino Harbour	N	Hokianga	490	Good examples of mangrove forest, sea rush saltmarsh, and oioi-sea rush saltmarsh in Hokianga ED.	2	Contains three estuarine vegetation types, with an ecological sequence of mangrove forest grading into saltmarsh rushland.	3	Affected by drainage, causeway, and grazing.	3	5	Acutely Threatened	2.25	The site comprises a small, narrow harbour within a drowned river valley with dune areas bounding the harbour entrance. It is a high quality estuarine habitat that supports four "Threatened" and five "At Risk" birds, as well as migratory bird species. The PNA report mentions that the harbour has been incompletely surveyed for fauna. Representative site for all ecological units and contains a good example of oioi and sea rush-mangrove ecological sequence. Surrounding land use may adversely affect water quality.	63.68
25	250371	Awapoko Estuary	N	Aupouri	70.3	Contains a good example of sea rush saltmarsh, which is the only record in Aupouri ED.	3	Contains mangrove-sea rush ecological sequence. Largely surrounded by pasture.	3	Farms drains present, particularly in upper reaches of estuary. Vulnerable to grazing and nutrient run-off.	3	4	Chronically Threatened	2.25	This site comprises estuarine vegetation in the lower catchment of the Aurere Stream and Parapara Stream, extending approximately 4-5 km inland from Tokerau Beach. The site supports a range of waders and seabirds, including five "Threatened" and two "At Risk" species. Representative for sea rush saltmarsh, which has only been recorded once in Aupouri ED, and is contiguous with Lake Ohia. Threats include weeds, grazing, drainage, and run-off from surrounding farmland.	63.50
26	250326	Tapotupotu Stream Wetland and Estuary.	Y	Te Paki	25.1	Representative site for raupo reedland and oioi-sea rush saltmarsh. The only site for oioi-sea rush saltmarsh in the Te Paki ED.	3	Complete ecological sequence from indigenous scrub to freshwater wetland to estuarine vegetation. Probably the best example of a sequence from estuarine to terrestrial vegetation in the Te Paki ED.	4	Unmodified and in a well vegetated catchment	5	4	Chronically Threatened	0.08	Complete ecological sequence from indigenous scrub to raupo reedland to saltmarsh in estuary. The only site in the Te Paki ED for oioi-sea rush saltmarsh. Some weed invasion but to unknown extent. One "At Risk" species (black shag) but others also likely to be present.	63.29
27	250396	Mangonui Harbour	N	Maungataniwha	625.1	Representative site for oioi saltmarsh and mangrove forest,	3	Estuarine wetland grades from intertidal flats to mangroves to	3	Upper reaches crossed by causeways,	3	4	Better Protected	1.92	Large area of estuarine habitat within the context of the ED. Representative for two vegetation types. Contains	62.84

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						and the best example of saltmarsh vegetation in the Maungataniwha ED.		saltmarsh. Contiguous with the wetland, but beyond the boundaries of the PNAP site, the area grades into freshwater wetlands and indigenous forest (O04/186).		impeding tidal flow. Saltmarsh loss through drainage and grazing alongside the Oruaiti River.			and Less Reduced		ecological sequences from estuarine to freshwater wetlands, to coastal forest. Threatened by clearance of buffering forest and scrub, weed invasion (pampas), and drainage of saltmarsh. Habitat for four "Threatened" and four "At Risk" wetland bird species.	
28	250518	Otamatea River Confluence	N	Otamatea	1878	Representative site for four estuarine vegetation types within the Otamatea ED.	2	Contains estuarine habitat sequences including mud flats and sandflats, sea primrose-remuremu-saltwater paspalum-sharp rush herbfield, oioi-sea rush rushland, mangrove shrubland, and saltmarsh ribbonwood shrubland.	3	Bordered by indigenous vegetation, pasture, residential areas, and plantation forestry.	4	3	Chronically Threatened	2.75	Large estuarine site with fast flowing water, sandy beaches, mudflats and rocky platforms, and little marginal vegetation. However, it provides habitat for NZ shorebirds and migrant species and identified as a 'site of importance' (Dowding & Moore 2006). Four "Threatened", eight "At Risk", and two regionally significant species have been recorded here.	59.77
29	250474	Pataua Estuary	N	Whangaruru	281	Good quality example of estuarine vegetation types.	2	Several wetland vegetation types present (not listed separately in PNAP report). Contiguous with coastal forest on adjoining hillslopes.	3	Upper saltmarsh reaches often drained or grazed. Some areas of the lower harbour well buffered and relatively intact.	3	4	Better Protected and Less Reduced	3.50	Estuarine wetland with mangroves grading into small areas of saltmarsh. Middle and lower reaches less modified and partly buffered by indigenous forest and scrub on adjacent hillslopes. Significant loss of saltmarsh through drainage and grazing. Habitat for six "Threatened" and eight "At Risk" bird species.	59.42
30	250066	Oruawhoro River North Coast	N	Otamatea	1984.1	Representative site for glasswort- <i>Sueda novae-zelandiae</i> -sharp rush herbfield on sand bank.	2	A good example of a suite of eight indigenous estuarine habitat types. Some weed species including <i>Spartina alterniflora</i> and saltwater paspalum are present.	3	Mostly bordered by pasture, with some areas of plantation and indigenous forest.	3	4	Chronically Threatened	1.00	Large estuarine site within the Kaipara Harbour. Representative site for glasswort- <i>Sueda novae-zelandiae</i> -sharp rush herbfield on shell bank. The site comprises 14% of the wading habitat within the Otamatea ED, and is classified as a 'site of particular importance' (Dowding & Moore 2006). Although not recorded the site provides habitat for banded rail. Two Marginal Strips (10.1 ha in total) are administered by DOC.	59.37
31	250602	Kiteone Road Saltmarsh	N	Manaia	3.8	Representative for all six vegetation types, five of which have only been recorded once in Manaia ED. Most notably, this site contains the only mangrove forest in Manaia ED.	3	Although relatively small, the site contains the best example of a mangrove-saltmarsh-freshwater wetland sequence remaining in Manaia ED, comprising five wetland vegetation types.	4	No drains or stock present. Bisected by access track. Adjacent land is being subdivided.	4	4	At Risk	0.42	The site comprises a relatively intact saltmarsh and small freshwater wetland east of Kirikiriri Point, near the northern boundary of Manaia ED. It contains the best example of a salt-marsh-freshwater wetland sequence remaining in the ED, and is representative for all six vegetation types present. Supports at least one "At Risk" bird species and two regionally significant plant species. One dead Northern little blue penguin ("At Risk") was found on the shell bank near beach access track. Weeds are present but are mainly confined to the margins. The site is protected within a WDC reserve.	59.34
32	250039	Blacksmiths Creek Estuary	N	Waipu	19.7	Representative site for marsh clubrush sedgeland on alluvium.	2	Five wetland vegetation types, including a small sequence from mangroves to saltmarsh to freshwater wetland. Contiguous with kanuka shrubland on alluvium.	3	Historical loss of saltmarsh due to drainage of estuarine wetland to the west of the causeway. Remaining area mostly unmodified.	3	5	Acutely Threatened	0.58	Third largest area of estuarine habitat in the Waipu ED. Four wetland vegetation types and representative site for marsh clubrush sedgeland. Habitat for Australasian bittern and banded rail. Threatened by increased urbanisation of catchment, and dumping of fill and garden refuse.	58.32
33	250096	Wetlands located at Tapuaetahi	Y	Kerikeri	40	Representative site for mangrove and oioi associations in estuary.	2	Two estuarine wetland vegetation types (mangrove and oioi) grading into freshwater wetlands dominated by raupo and then indigenous forest and scrub on adjacent hillslopes.	3	Wetlands well buffered by scrub and forest on adjacent hillslopes. One small area of drainage on the western edge.	4	5	At Risk	1.08	Small estuarine wetland that grades into freshwater wetlands and indigenous forest and scrub. Size of wetland component estimated from PNAP map. Well buffered by indigenous vegetation with good water quality. Some drainage of saltmarsh on western edge. Habitat for several "Threatened" or "At Risk" wetland bird species.	58.05
34	250491	Okaro Creek/Waikere Creek Duneland, Wetland and Shrubland	Y	Kaipara	316.35	Representative site in the Kaipara ED for two freshwater and two estuarine vegetation types.	2	Contains six wetland vegetation types and a good example of ecological sequence of oioi-sea rush rushland grading into manuka shrubland.	3	Some drainage, however mostly buffered by pine plantation and indigenous shrubland.	3	3	Acutely Threatened	2.58	Okaro Creek estuary is one of the most important roosting sites for migratory waders in the Northland portion of the Kaipara ED. It contains excellent ecological sequences including freshwater and estuarine wetlands, and is habitat for four "Threatened" and seven "At Risk" species.	57.92
35	250517	Hukatere Peninsula West Coast	N	Otamatea	736.5	Good quality example of estuarine habitat. Mostly open water and intertidal flats in estuary, with small areas of mangroves.	2	Contains two estuarine habitat types (intertidal flats and mangroves).	3	Mostly buffered by indigenous vegetation, with some pasture and plantation forestry.	3	4	Chronically Threatened	0.92	Large estuarine site dominated by sandy beaches and open water. Although two "Threatened" and one "At Risk" bird species have been recorded, data for avifauna at this site is lacking. A recreation reserve and marginal strip (administered by DOC) protect a small portion of this site.	57.54

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36	250405	Taipa Estuary	N	Maungataniwha	142.3	Representative site for oioi saltmarsh and mangrove forest.	2	Ecological sequence from tidal flats to mangroves to saltmarsh. Contiguous with freshwater wetland and coastal forest.	3	Upper reaches modified by causeways, drainage, and grazing. Saltmarsh formerly much more extensive.	3	4	At Risk	1.00	Estuarine wetland with complete ecological sequences from estuary (mangroves and saltmarsh) to freshwater wetlands and coastal forest. Representative site for oioi saltmarsh and mangrove forest, and habitat for two "Threatened" and two "At Risk" bird species. Historical loss of saltmarsh in upper reaches due to drainage, with ongoing decline of some areas due to grazing.	56.54
37	250488	Waimamaku Estuary Shrubland and Rushland	Y	Kaipara	102	Good quality example of mangrove shrubland, sea rush rushland and manuka shrubland within the ED.	2	Complete sequence of estuarine vegetation types from intertidal flats to mangroves to saltmarsh to manuka shrubland on alluvium.	3	Drainage and land development has occurred on the western margins. Some forestry and farming occurs on the boundaries.	2	3	Acutely Threatened	2.08	A large area of estuarine habitat within the context of the Kaipara ED. Despite former drainage, land development, weed invasion, and grazing this site retains good examples of wetland vegetation types and provides habitat for three "Threatened" and seven "At Risk" species.	56.41
38	250486	Tangitiki Estuary Wetland and Shrubland	N	Kaipara	166	Good quality example of mangrove shrubland on estuarine alluvium, and manuka shrubland on alluvium.	2	Contains wetland vegetation types within a sequence from mangrove saltmarsh to oioi rushland to freshwater wetland dominated by manuka with occasional raupo.	3	Some buffering, but bisected by roads and modified by drainage in the past.	3	3	Acutely Threatened	1.92	A large estuarine wetland within the context of the Kaipara ED, that despite former partial drainage, is still in moderately good condition. Habitat for three "Threatened" and five "At Risk" species. This site is partially protected by three reserves administered by DOC.	56.24
39	250591	Topuni Saltmarsh	N	Rodney	115.2	Good quality examples of saltmarsh and freshwater associations.	2	Two saltmarsh vegetation types (mangrove forest and saltmarsh ribbonwood shrubland) grading into raupo- <i>Baumea</i> association. Some sections form an ecological sequence with terrestrial indigenous forest (Topuni Scenic Reserve).	3	Upper estuarine areas impacted by stock. No evidence of man-made structures.	4	3	At Risk	0.08	The site comprises a relatively large area of saltmarsh along the Topuni River. The vegetation is dominated by mangrove forest, with good examples of saltmarsh ribbonwood shrubland grading into raupo- <i>Baumea</i> sp. reedland. Saltwater paspalum has spread throughout the reedland but does not seem to be having a noticeable impact. Wetland vegetation is contiguous with indigenous forest north of SH1. Provides good potential habitat for spotless crane (At Risk-Relict), North Island fernbird (At Risk-Declining), and banded rail (At Risk-Naturally Uncommon). Hydrological integrity is largely intact, despite cattle having access to both sides of the river further upstream. The site is used recreationally by jet skiers, which may disturb breeding wetland birds.	56.13
40	250094	Takou Bay Estuary and Environs	N	Kerikeri	53	Representative site for two estuarine and two freshwater wetland vegetation types.	2	Four wetland vegetation types that grade from estuarine to freshwater environments. Several areas of wetland form complete ecological sequences with secondary forest and scrub on adjacent hillslopes.	3	A large proportion of the catchment is covered in indigenous forest. Some margins of the wetland affected by drainage on adjacent alluvial flats.	4	4	Better Protected and Less Reduced	1.58	Small estuarine wetland that grades into freshwater wetlands and indigenous forest and scrub. Size of wetland component estimated from PNAP map. Representative for four wetland vegetation types, and contiguous with the best area of duneland vegetation in the Kerikeri ED. Largely unmodified catchment with good water quality, but some drainage of margins. Habitat for at least four "Threatened" or "At Risk" wetland bird species.	54.67
41	250464	Ngunguru Sandspit	N	Whangaruru	4	Good example of saltmeadow on dunes.	2	Saltmarsh on dunes contiguous with tidal channel and indigenous dune vegetation.	3	Unmodified. No evidence of drainage and buffered by indigenous duneland vegetation.	5	5	At Risk	2.42	Two small areas of saltmarsh within a much larger site of high wildlife value. Four "Threatened" and four "At Risk" species recorded within the larger site are likely to utilise the saltmarsh habitat. Little modified and contiguous with estuary and dunelands. The sandspit on which the wetlands occur is of regional geological significance.	53.15
42	250514	Ongange Creek Wetland Shrubland and Forest	Y	Kaipara	35.8	Good quality estuarine sequence from the coast inland. Recently retired from farming and has vegetation dominated by indigenous species.	2	Contains three wetland vegetation types within a sequence extending from the estuarine and freshwater wetlands to manuka shrubland and kanuka forest.	3	Historically drained and grazed. Wetlands mostly buffered by indigenous dominant plant communities.	3	3	Acutely Threatened	0.33	Estuarine and freshwater wetlands, which despite a history of drainage and grazing, still contains ecological sequences of coastal vegetation. The retirement of this site from grazing has increased its ecological importance. The site is habitat for North Island fernbird "At Risk-Declining".	51.76
43	250156	Classens / Duddys Bush	N	Hokianga	23	Good quality example of raupo reedland in swamp and oioi saltmarsh in estuary.	2	Two vegetation types which form part of a complete mangrove-saltmarsh-freshwater wetland-terrestrial vegetation ecological sequence.	3	Partially buffered by indigenous forest and shrubland, although drainage and grazing are likely to affect hydrology.	3	4	At Risk	0.42	A small area of saltmarsh grading into freshwater raupo reedland on the margins of the Waima River. The site is representative for both vegetation types and is part of a very good altitudinal sequence. Supports one "Threatened" bird (NZ dabchick) and one regionally significant fish (banded kokopu). Surrounding forest and shrubland supports NI brown kiwi (Nationally Vulnerable), kukupa, and NI tomtit (both regionally significant). The pest fish <i>Gambusia</i> is present. Although buffered in parts, the	51.62

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															wetland is likely to be affected by farm drainage and grazing.	
44	250412	Tauranga Bay Estuary	N	Whangaroa	4	Small but good quality example of estuarine habitat in Whangaroa ED.	2	Mangrove forest grading into saltmarsh dominated by oioi in the upper estuary. Separated from indigenous forest and shrubland by Tauranga Bay Road.	3	Crossed by road on causeway, with drainage of upper saltmarsh reaches.	4	5	Acutely Threatened	0.42	Small good quality example of a stream mouth estuary in the Whangaroa ED. Two estuarine vegetation types (mangroves and oioi saltmarsh, contiguous with sand dunes. Upper reaches crossed by causeway, and some areas of saltmarsh degraded by drainage and grazing. Habitat for one "Threatened" and one "At Risk" bird species. Area of wetland estimated from aerial photography.	51.14
45	250038	Takahiwai Stream Estuary	N	Waipu	9.1	Representative site for sea rush-oioi rushland and mangrove shrubland in the Waipu ED.	2	Good example of ecological sequence from manuka shrubland to saltmarsh to mangroves.	3	Landward edge highly modified by causeway, drainage, and grazing. Formerly much greater in extent.	2	4	Acutely Threatened	0.33	Small estuarine wetland that is contiguous with the extensive estuarine habitats at Takahiwai, Whangarei Harbour. Representative for two estuarine vegetation types, which form an ecological sequence with manuka shrubland. Historically modified by causeway construction and drainage, and terrestrial margins increasingly invaded by weed species. Site is habitat for banded rail and possibly supports the only population of North Island fernbird in the Waipu ED.	51.13
46	250161	Rangi Point Remnants	N	Hokianga	26	Good quality example of raupo reedland and mangrove forest in Hokianga ED.	2	Contains two wetland vegetation types, with a sequence from estuarine saltmarsh/mangrove association to raupo-dominant freshwater wetland to coastal shrubland, although estuarine areas have been damaged by stock.	2	Good buffering from pine plantation, but stock damage, drainage and causeway have reduced hydrological integrity.	2	5	Acutely Threatened	0.17	The site is situated on the margins of the Hokianga Harbour and comprises a small raupo-dominant freshwater wetland grading into an estuarine saltmarsh/mangrove association. Representative for two vegetation types. The wetland is likely to support several "Threatened" or "At Risk" wetland bird species, although further survey is required to determine the current ecological values of the site. Surrounding forest supports at least one "At Risk" species (Northland green gecko). Parts of the site are threatened by stock incursions. One hectare of the site is protected (DOC-administered).	50.53
47	250510	Tauhara Creek Estuary Sandfield, Wetland and Shrubland	Y	Kaipara	23.8	Diverse but fragmented and degraded estuarine wetland.	1	Contains three estuarine vegetation types as part of a greater sequence extending from sandfield to kanuka forest.	2	History of cattle intrusion. Formerly more extensive, with areas of fringing saltmarsh lost through drainage and grazing.	3	4	Chronically Threatened	0.83	Estuarine habitat within the Kaipara Harbour that despite weed invasion and grazing, supports a range of estuarine vegetation types and is habitat for four "At Risk" and two regionally significant species.	42.57
48	250469	Mokau Bay	N	Whangaruru	5	Saltmarsh that has been highly modified by drainage and grazing.	1	Only one wetland vegetation type present. Surrounded by pasture.	1	Extensively drained and now broken by pasture into about seven small areas.	1	4	Critically Under-protected	1.08	Small and highly modified estuarine wetland. Possibly smaller than extent mapped in 1997, due to ongoing loss from drainage and grazing. Surrounded by pasture. Habitat for two "Threatened" and two "At Risk" bird species.	29.98
49	250415	Taupo Bay Estuary	Y	Whangaroa	1.4	Small stream-mouth estuary with a narrow fringe of indigenous saltmarsh and reedland. Lawns or rank exotic grassland or gorse scrub extend to the waters edge in most places.	1	Narrow patches of saltmarsh and freshwater reedland form a broken band along the waters edge. No intact sequences with terrestrial vegetation remain.	2	Some of the adjacent alluvial flats have been drained, and the narrow wetland fringe would have formerly been more extensive.	4	3	No Threat Category	0.50	Small stream mouth estuary in the Whangaroa ED with a narrow and broken band of saltmarsh vegetation. Estuary margins very modified (lawns, rank grass, gorse scrub) and areas of weed invasion (sharp rush). Habitat, at least periodically, for pied stilt and Caspian tern.	29.88