SMITH'S POINT AND MATEOTETAWA CREEK FOREST REMNANTS

Survey no.	Q08/079
Survey date	15 November 2005
Grid reference	Q08 171 616 (4 remnants)
Area	42.7 ha
Altitude	0–40 m asl

Ecological units

(a) Kanuka forest on gentle hillslope (45%)

(b) Totara–kowhai–kahikatea forest on steep coastal margin (40%)

(c) Kowhai–totara forest on steep coastal margin (10%)

(d) Totara–kahikatea forest on moderate hillslope (5%)

Landform/geology

Coastal hillsides and gullies underlain by Oligocene micritic limestone (Mahurangi Limestone, Motatau Complex) and melange (undifferentiated Mangakahia & Motatau Complexes).

Vegetation

The Mateotetawa Creek drains agricultural land at Matakohe West, flowing out to the Arapaoa River (Q08/084) past a prominent, forested headland known as Smith's Point (after the former timber mill in operation from 1881 to 1906). Three other small patches of coastal/riparian forest along the fresh to saltwater transition form part of this site.

(a) The majority of the headland, in particular the summit and the south-facing slope, is covered in kanuka forest with frequent manuka and occasional totara, kauri, tanekaha, ti kouka, lancewood and mamangi. Some local clumps of kauri rickers occur.

(b) Totara–kowhai–kahikatea forest extends from mid-slope down to the coast. Emergent radiata pine are frequent throughout this type, and become almost common on the north-facing coastal margin. Also present in the canopy are occasional kauri, matai, tanekaha, puriri, pukatea, karaka, mamangi, mapou, ti kouka and tree privet.

(c) Two of the smaller remnants next to mangroves on the northern banks of the Arapaoa River have strikingly abundant kowhai with subdominant totara, frequent hawthorn and occasional poplar.

(d) The most inland remnant comprises totara dominant forest with abundant kahikatea, frequent kanuka, ti kouka and hawthorn, and occasional manuka and mamaku.

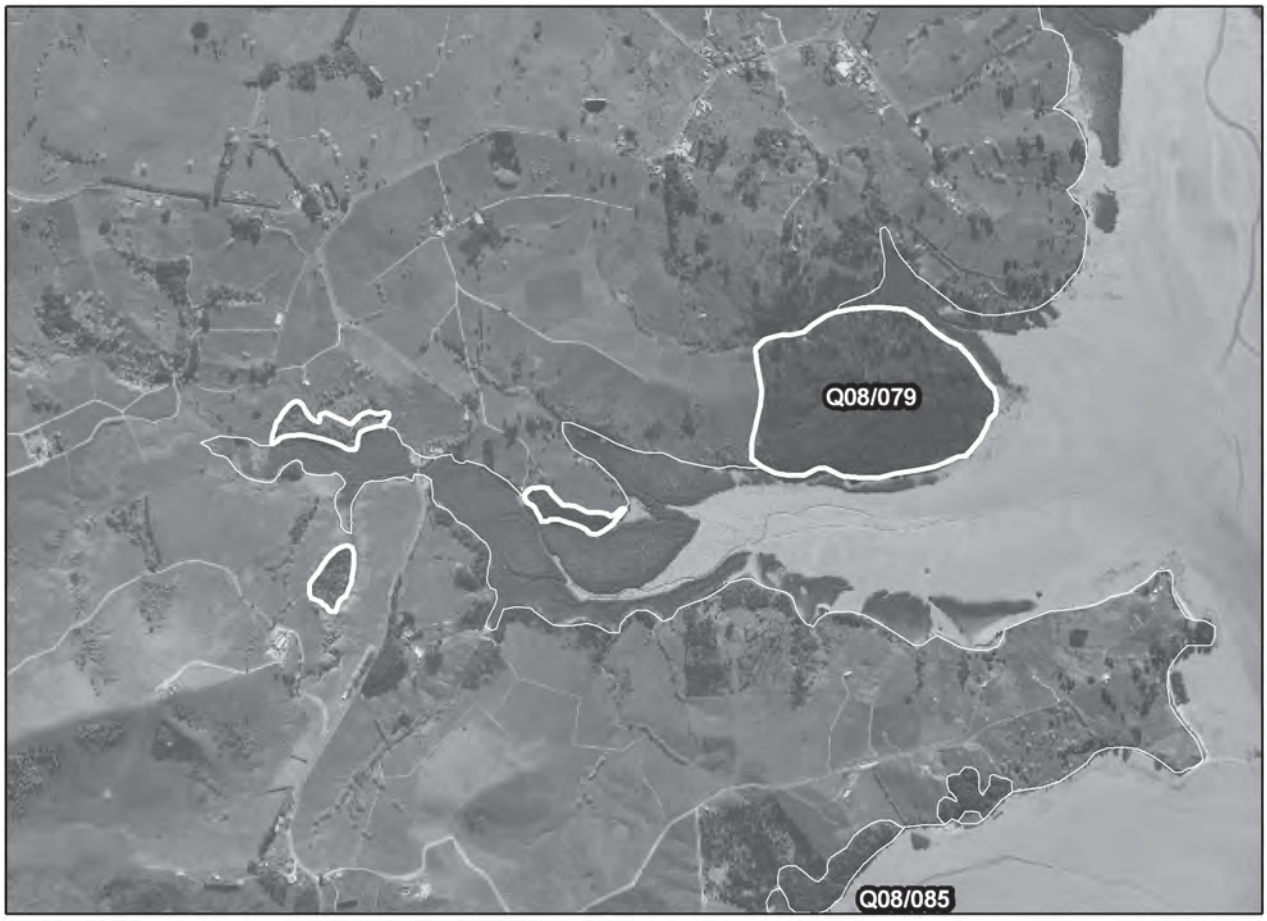
Significant flora

In 2001 *Olearia solandri* (regionally significant) was recorded on the coastal margin at this site (SSBI Q08/H071).

Fauna

Grey warbler, kingfisher, shining cuckoo, white-faced heron, welcome swallow.

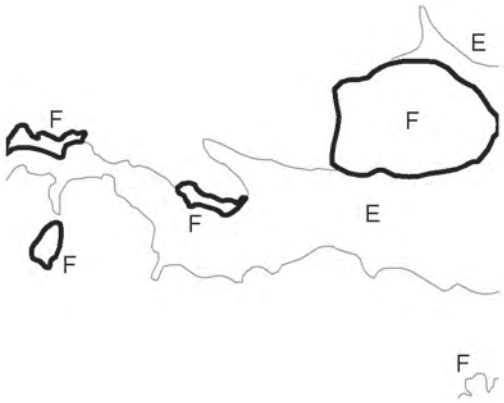
Kukupa (Gradual Decline) were recorded in 2001, as well as the non-threatened Australasian harrier and morepork (SSBI Q08/H071).



Q08/079
Smith's Point and Mateotetawa Creek Forest Remnants

S = Shrubland
F = Forest
W = Wetland
E = Estuarine

0 250 500 1,000 Metres



Significance

This site is significant for the presence of a threatened fauna species (kukupa) and a regionally significant plant species (*Olearia solandri*). It is a representative site for two ecological units: (a) kanuka forest on gentle hillslope and (b) totara–kowhai–kahikatea forest on steep coastal margin. This site is also archaeologically significant for the presence of a pa with well-defined terraces at the highest point (SSBI Q08/H071).

HUKATERE SCENIC RESERVE AND SURROUNDS

Survey no.	Q08/081
Survey date	10 November 2005
Grid reference	Q08 150 563
Area	35.9 ha (32.2 ha forest, 3.5 ha shrubland, 0.2 ha wetland)
Altitude	47–143 m asl

Ecological units

(a) Mature kauri–kahikatea forest on moderate hillslope (80%)

(b) Kanuka forest on moderate hillslope (15%)

(c) Manuka shrubland on ridge top (4%)

(d) Raupo reedland in small depression (1%)

Landform/geology

Hillslope underlain by Miocene thinly interbedded sandstone and mudstone (Waitemata Group).

Vegetation

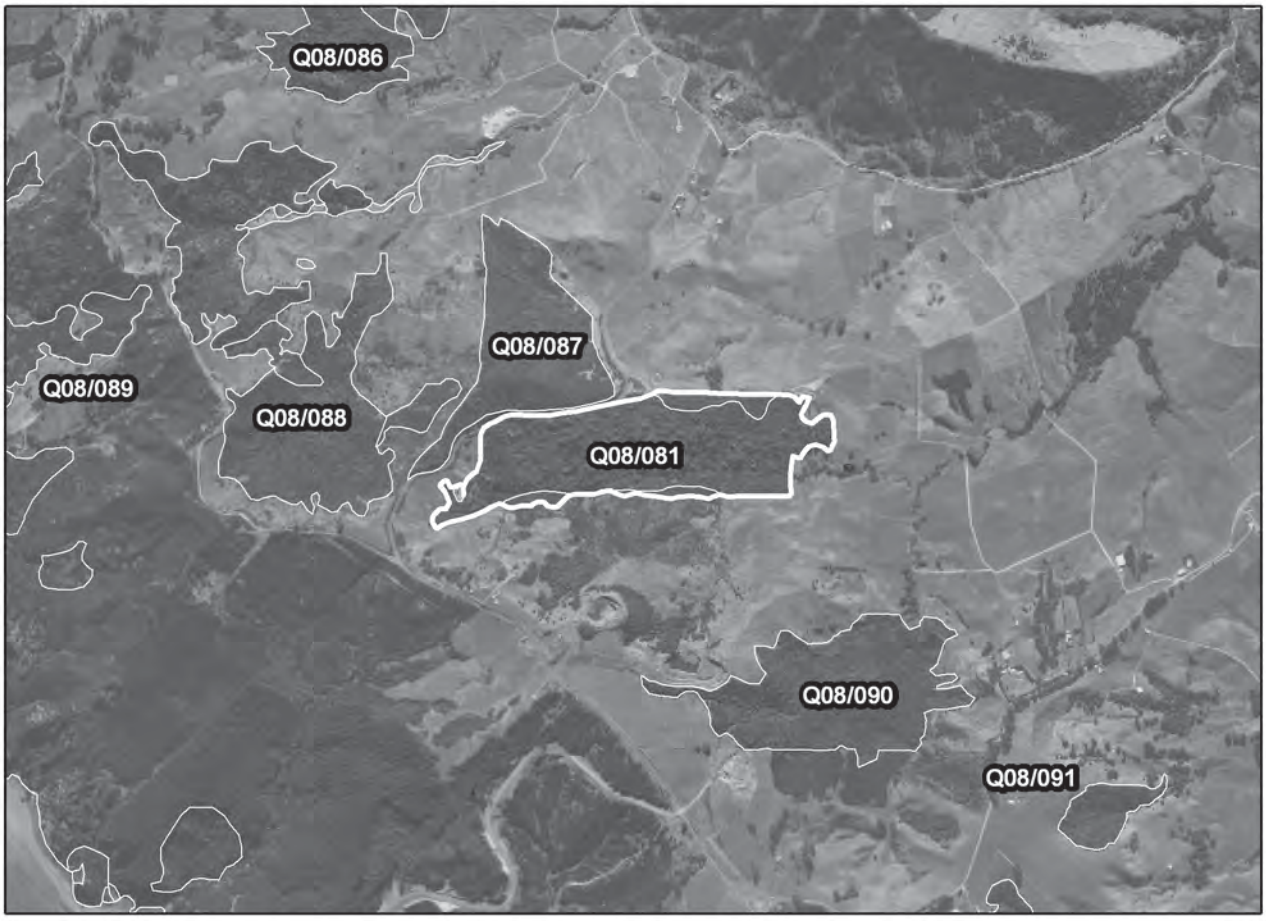
This site encompasses the last remaining area of tall forest with stands of mature kauri left in the whole of Otamatea Ecological District. Even so, research by Dr Nigel Clunie of the former Department of Scientific and Industrial Research, shows that most of the area was selectively logged in early times (presumably late 1800s), and subsequently browsed by cattle which have sporadically breached fences into the reserve (Wright & Beever 1990). In the present day, a lush and diverse indigenous forest survives with only occasional weed incursions on road edges and stream margins. Fencing appears to be adequate. The Scenic Reserve is approximately 1 km long by approximately 300 m wide, extending west–east on a south-facing, moderately sloping hillside. A small, contiguous area of forest outside the reserve is included in the site, part of which is a QEII Open Space covenant. A similar sized area of forest, Hukatere North Forest (Q08/087), is situated directly across Tinopai Rd to the north. Full vascular plant and moss species lists for the reserve are published in Wright & Beever (1990) and Beever (1990), respectively. Here follows a brief description of the main forest types based on canopy composition.

(a) Large emergent kauri and kahikatea and younger poles of both species are the most prominent features of the canopy. Of the great diversity of other trees in the forest matrix four cover more than 5% of the total area (taraire, puriri, nikau and mamangi), while the others all occur at less than 5% and are often patchily distributed (matai, miro, totara, rimu, tanekaha, pukatea, white maire, mahoe (*Melicytus ramiflorus* and *M. macrophyllus*), kowhai, kohekohe and rewarewa).

(b) Kanuka forest occurs on the north-facing true right bank of the creek and at the gully head on private land. Emergent conifers (rimu, kauri and matai) and occasional mamangi add texture to the otherwise quite uniform canopy.

(c) Manuka shrubland is present at the north–eastern edge of the reserve on a broad ridge. This has probably regenerated after burning or clearance.

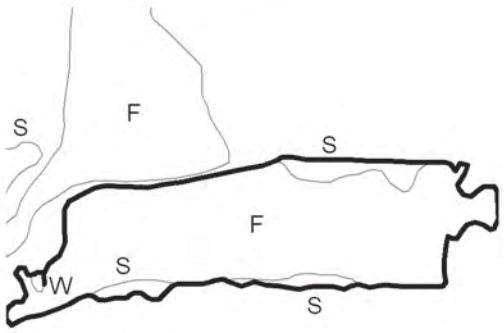
(d) A tiny depression in the head of the catchment nestled amongst kanuka forest contains raupo reedland.



Q08/081 Hukatere Scenic Reserve and Surrounds

S = Shrubland
F = Forest
W = Wetland
E = Estuarine

0 250 500 1,000 Metres



Significant flora

Mida (Gradual Decline), *Coprosma crassifolia* (regionally significant), *Luzula picta* var. *picta* (regionally significant), miro (locally uncommon) and swamp maire (locally uncommon) were recorded by Wright & Beever (1990).

Fauna

Not surveyed during the present study. NI brown kiwi (Serious Decline) were reported as occurring here in 1977 by the NZ Wildlife Service (though even then the reports were not confirmed), but a subsequent survey in 1992 found

no kiwi (SSBI Q08/H040). This species is probably locally extinct in Otamatea ED Northland.

Species recorded in 1992 include kukupa (Gradual Decline), morepork, kingfisher, grey warbler and fantail (SSBI Q08/H040), all of which probably still occur.

Significance

This site is significant for the maturity and diversity of the remaining forest (representative for ecological unit (a) mature kauri–kahikatea forest on moderate hillslope), and the presence of one threatened, two regionally significant and two locally uncommon plant species. It still supports a good population of common forest birds, as well as one threatened bird species (kukupa). It was one of the last sites where NI brown kiwi occurred in Otamatea ED Northland, and is a potential site for their reintroduction, if threats are managed. This site is part of an important group of large indigenous forest remnants on the Hukatere peninsula formed by adjacent Hukatere North Forest (Q08/087), and nearby Hautakima South Forest (Q08/088). The Hukatere Scenic Reserve is administered by the Department of Conservation and covers 31 ha of this site, mainly corresponding to the mature forest type (a), as well as parts of (b) kanuka forest and (c) manuka shrubland. 1.6 ha of a QEII Open Space Covenant encompasses type (b) kanuka forest and the small raupo reedland (d).

ARAPAOA RIVER

Survey no.	Q08/084
Survey date	Various (December 2005–January 2006)
Grid reference	Q08 226 576
Area	4957.5 ha
Altitude	sea level

Ecological units

(a) Mangrove shrubland and forest in estuary

(b) Sea rush rushland in estuary

(c) Mangrove–sea rush shrubland in estuary

(d) Oioi–sea rush rushland in estuary

(e) Sea primrose–remuremu–saltwater paspalum–sharp rush herbfield in estuary

(f) Sharp rushland on estuarine shellbank

(g) Saltmarsh ribbonwood shrubland in estuary

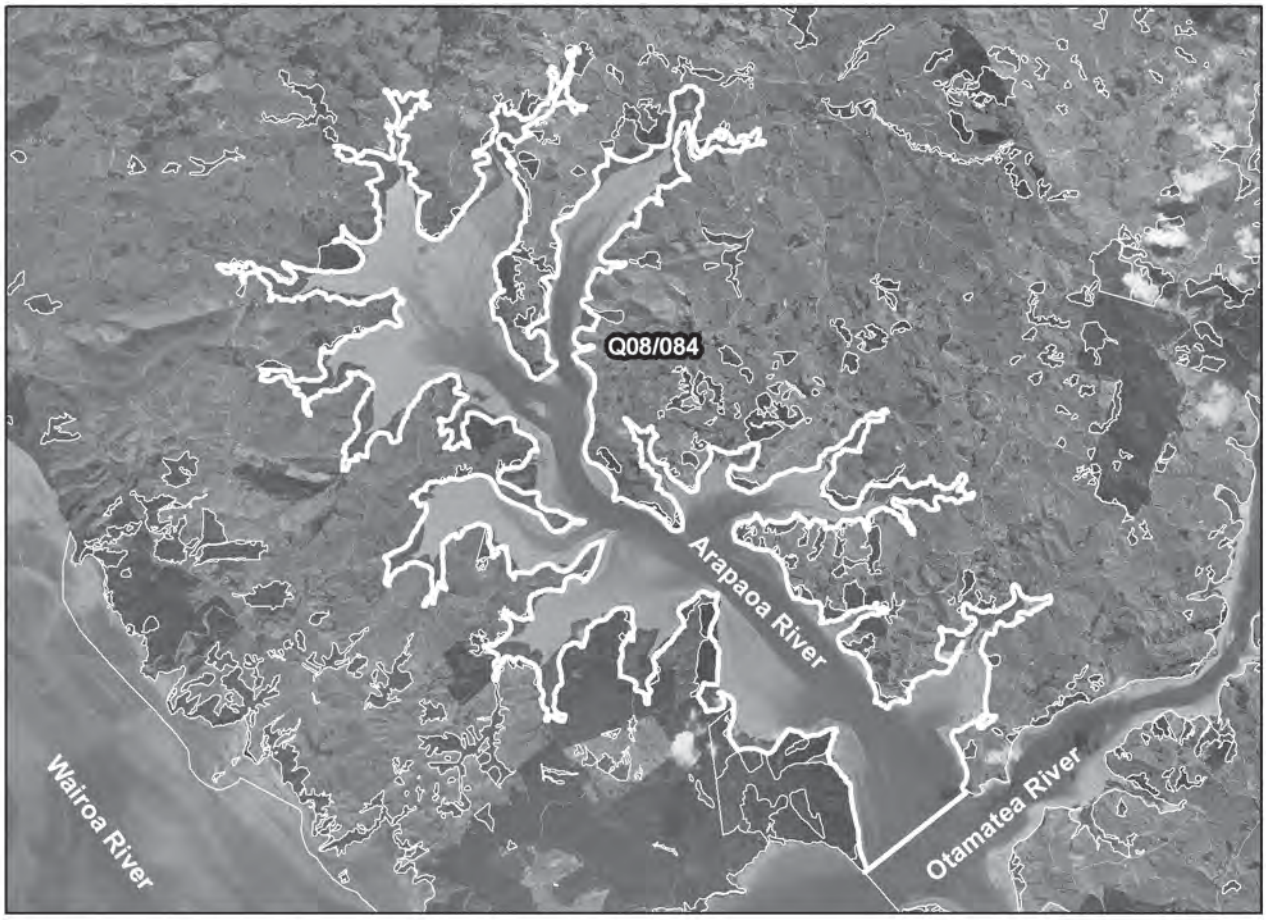
(h) Saltwater paspalum grassland in estuary

(i) *Spartina alterniflora* grassland in estuary

(j) Mudflats and sandflats in estuary

Landform/geology

Holocene estuaries, beaches, and intertidal rock flats. The shore platforms on the west coast of the Pahi Peninsula are regionally significant geological sequences including turbidite greensand, shelly shelf greensand and bathyal argillaceous limestone (Kenny & Hayward 1996).



Q08/084 Arapaoa River

S = Shrubland
F = Forest
W = Wetland
E = Estuarine

0 1,250 2,500 5,000 Metres

Vegetation/habitats

(a) The Arapaoa River contains more than half the mangrove forest and shrubland found in Otamatea ED Northland, a total of 997 ha.

(b) Areas of pure sea rush are the most common type of saltmarsh.

(c) Where mangrove shrubland and sea rush rushland meet there is often a mingling of the two over several metres of upper-tidal mudflat, creating habitat for species such as banded rail which may be present in the estuarine margins.

(d) Large areas of oioi and sea rush are equally abundant at Whakapirau Creek.

(e) Amongst herbfields of sea primrose, remuremu and occasional bachelor's button, sharp rush and saltwater paspalum are also common.

(f) Sharp rush forms a continuous sward on a shellbank in the Whakapirau Creek.

(g) Saltmarsh ribbonwood shrublands are sparsely distributed around the shores of the estuary, however at the upper Paparoa Creek, adjacent to Pahi Road, there is an extensive patch (approximately 1.5 ha) of this type (grid ref. Q08 215 650). Harakeke, ngaio, mapou and pohuehue are all frequent components, while *Coprosma propinqua*, *C. propinqua* × *robusta*, tanekaha, totara, manuka, sharp rush, oioi and remuremu are occasional (SSBI Q08/H068). *Leptinella tenella* (Sparse) was collected on the edge of the saltmarsh in a tidal muddy seepage in 1997 (AK 233971). *Olearia solandri* (regionally significant) was also collected in this saltmarsh around the same time (AK 233985).

(h) Saltwater paspalum is present in most saltmarsh areas of the Arapaoa River, and can form extensive grasslands, through which indigenous salt meadow herbs often grow, e.g. sea primrose, bachelor's button, remuremu. It does not tend to occur on more exposed, sandy beaches. The preferred habitat is in quiet tidal inlets above mangrove forests and shrublands.

(i) This site contains the greatest area of infestation of *Spartina alterniflora* in Otamatea ED Northland, with nine extant infestations and six recently eradicated infestations (Peter Joynt, Northland Regional Council, pers. comm.). These infestations are concentrated around the upper estuary at Whakapirau, Pahi River, Paparoa Creek, Matakohe River, Mateotetawa Creek, Te Taumataka Creek and Okorako Creek, where they are around the fringes of mangrove forest, occupying potential indigenous saltmarsh habitat.

(j) Intertidal mudflats and sandflats cover approximately 48% (2389 ha) of the surface area of this site. These calm, shallow, productive, saltwater habitats are vital as feeding grounds to both NZ-breeding waders (particularly in winter) and Arctic migrant waders (particularly in summer) (Sagar *et al.* 1999). Included within the figure quoted above (area measured as being exposed at low tide), are all of the saltmarsh types (b, d, e, g), saltwater paspalum grasslands (h) and *Spartina alterniflora* grasslands (i) and colonies of the introduced Pacific oyster (*Crassostrea gigas*), which occur frequently around the coast either in natural beds or on constructed racks of small-scale oyster farms.

Significant flora

Leptinella tenella (Sparse), *Olearia solandri* (regionally significant).

Fauna

A wide variety of bird species uses this site. Some of these are listed below, based on records from Crockett (1992–2004), in which counts for 'Pahi–Whakapirau' apply to the mid-upper Arapaoa River. Frequency of encounter and the range of numbers of individuals over the period are stated in brackets.

- White heron (1997– 5 recorded, 2000 – 3 recorded) (Nationally Critical)
- Caspian tern (regular, 2–29), wrybill (sporadic, 16–42) (both Nationally Vulnerable)
- Wrybills mostly roost at Raepere Creek, which is the most important site for this species in Otamatea ED Northland, and indeed in the Kaipara Harbour (Veitch 1979).
- Bar-tailed godwit (sporadic, up to 580 in summer), lesser knot (sporadic, up to 134 in summer) (Migrant)
- Pied shag (regular, 1–10) (Sparse)

- Variable oystercatcher (1–2 occasionally recorded) (regionally significant)
- Pied stilt (regular, up to 549 in winter), pied oystercatcher (regular, up to 681 in winter), white-faced heron (regular, 1–10), little shag (1992 – 1 recorded, and one was seen during the present survey), spur-winged plover (sporadic, 2–4), black-backed gull (sporadic, 1–4), red-billed gull (sporadic, 13–55) (all not threatened).

In addition to these records, 10–15 white-fronted terns (Gradual Decline) were observed feeding off the wharf at Pahi in January 2006.

Significance

The Arapaoa River has 1,729 km of coastline and 4,958 ha of estuarine habitat, of which approximately 48% is open mudflat or sandflat (2,389 ha), and 20% is mangrove forest or shrubland (997 ha). The full extent of saltmarsh habitats (i.e. types (b), (d), (e), (f) and (i)) was not measured, but these occupy a very low percentage of the overall area (collectively <1%).

A recent review of indigenous shorebird habitat networks deemed the Kaipara Harbour to be a 'site of particular importance', as it is within the top five non-breeding sites for seven species of indigenous-breeding shorebirds, and is also used by 1000+ Arctic migrants during summer months (Dowding & Moore 2006). This site contains almost half the wading habitat in Otamatea ED Northland, including a very important winter roost for wrybills (Raepere Creek). Five threatened and one regionally significant bird species use this site.

This site contains the best representative example of saltmarsh ribbonwood shrubland (g) in Otamatea ED Northland, which includes one threatened and one regionally significant plant species (*Leptinella tenella* and *Olearia solandri*).

The Pahi Peninsula greensand–limestone sequence is a regionally significant geological feature (Kenny & Hayward 1996).

Tiny, narrow areas (totalling 4.2 ha) of upper intertidal habitats within the Arapaoa River site are in reserves: 0.2 ha of the site is within an area of Stewardship Land (DOC-administered), 1.3 ha is within Scenic Reserves (DOC-administered), 1.7 ha is within Marginal Strips (DOC-administered) and 1.0 ha is within QEII Open Space Covenants.

HUKATERE NORTH FOREST

Survey no.	Q08/087
Survey date	16 November 2005
Grid reference	Q08 150 568
Area	21.7 ha
Altitude	59–160 m asl

Ecological unit

(a) Kanuka forest on moderate to steep hillslope (100%)

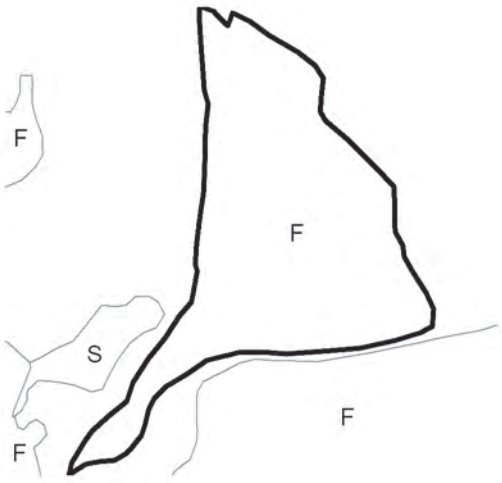
Landform/geology

Hillslopes and gullies underlain by micritic limestone (Mahurangi Limestone, Motatau Complex) and thinly interbedded sandstone and mudstone (Waitemata Group).

Q08/087 Hukatere North Forest

S = Shrubland
F = Forest
W = Wetland
E = Estuarine

0 250 500 1,000 Metres



Vegetation

This site comprises kanuka forest north of Tinopai Road, directly opposite Hukatere Scenic Reserve and Surrounds (Q08/081). There is a large diversity of associated species in the canopy. Only kahikatea and totara are frequent. The following species were recorded as occasional: kowhai, kauri, ti kouka, rewarewa, rimu, tarata, nikau, matai, tanekaha, puriri, mamangi, puka, five finger, karamu, akepiro and mahoe.

Fauna

Grey warbler, kingfisher, shining cuckoo.

Significance

This is a particularly good quality example of kanuka forest, with diverse associated species, and is representative of this ecological unit in the Northland Conservancy part of the ED. This site is of similar value to neighbouring Hukatere Scenic Reserve and Surrounds (Q08/081), and provides a significant buffer to the reserve on its northern side (though the road is a source of disturbance and weed invasion for both sites). Hukatere North Forest differs mainly in its maturity (it is younger forest) and in not being fully fenced or formally protected. Together with Hukatere Scenic Reserve and Surrounds and Hautakima South Forest (Q08/088), it forms part of an important area of indigenous forest on the Hukatere peninsula.

HAUTAKIMA SOUTH FOREST

Survey no.	Q08/088
Survey date	16 November 2005
Grid reference	Q08 144 570
Area	55.6 ha (48.8 ha forest, 4.8 ha shrubland, 2.0 ha wetland)
Altitude	40–197 m asl

Ecological units

(a) Kanuka forest on moderate to steep hillslope (45%)

(b) Taraire forest in gully (20%)

(c) Tanekaha–rewarewa–kanuka forest on ridge top (12%)

(d) Kanuka–manuka shrubland on moderate hillslope (9%)

(e) Kauri–kanuka forest on ridge top (5%)

(f) Kowhai–puriri forest in gully (5%)

(g) Raupo reedland in small depression (4%)

Landform/geology

Hillslopes and gullies underlain by Miocene thinly interbedded mudstone and sandstone (Waitemata Group), and Miocene volcaniclastic gravelly sandstone (Waitakere Group).

Vegetation

This site encompasses moderate to steep forested hillslopes falling away to the east of Summer Road, and to the south of Hautakima peak. Two small stream gullies extending eastward towards Arapaoa River are present, joining at the bottom of the remnant.

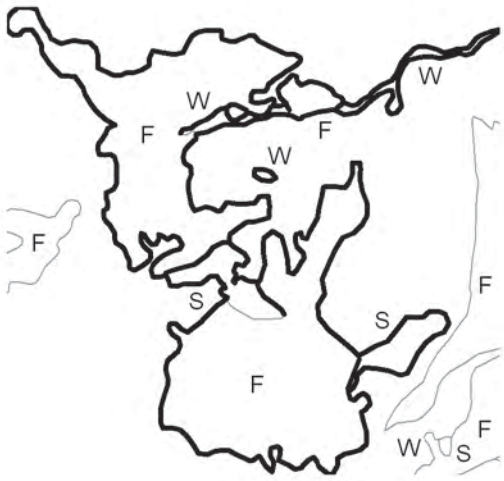
(a) The uniting feature of the remnant is tall kanuka, which dominates the forest throughout almost half the area, especially around upper slopes. Rewarewa and tanekaha are frequently associated with this type, with occasional ti kouka, lancewood, rimu, rimu, kauri, tarata, mamaku and ponga.

(b) The wide gully bottoms support taraire forest with frequent puriri. Occasional species present include kohekohe, matai, kahikatea, titoki, lancewood, nikau and pukatea.

Q08/088 Hautakima South Forest

S = Shrubland
F = Forest
W = Wetland
E = Estuarine

0 250 500 1,000 Metres



(c) A ridge to the north of the main gully is covered with tanekaha–rewarewa–kanuka forest with frequent totara and occasional kauri rickers.

(d) Two separate areas of younger regeneration are present. These are mixed kanuka–manuka shrublands with frequent ti kouka and mapou, and occasional hangehange, akepiro and five finger. The gorse-dominated fringes around the indigenous shrublands are excluded from the site. These indicate that the indigenous shrublands have probably regenerated after a reduction in grazing of the upper paddocks.

(e) Kauri–kanuka forest, with all kauri as rickers is present in the extreme northwestern part of the remnant.

(f) The upper parts of the gullies have kowhai–puriri forest, with frequent mamaku and occasional ti kouka.

(g) Along the northern gully, and where the two streams meet, there is a string of raupo-dominant wetlands.

Fauna

Kingfisher, tui, kukupa (Gradual Decline).

Significance

With 48.8 ha of indigenous forest, Hautakima South Forest is the sixth largest single remnant of indigenous forest in Otamatea ED Northland, as well as having a high diversity of habitat types. Of the seven ecological units present, three are representative. Tanekaha–rewarewa–kanuka forest on ridge top (c) is the only example of its type in Otamatea ED Northland and kanuka–manuka shrubland on moderate hillslope (d) is the best example of its type. Despite being very small, the raupo reedlands (g) are the sixth largest freshwater wetland complex recorded in Otamatea ED Northland and are one of the best representative examples of their type. The diversity of vegetation types enhances the ecological significance of this site. Not far away, within 200 m, are two other significant, large forested areas: Hukatere Scenic Reserve (Q08/081) and Hukatere North Forest (Q08/087). Together, these sites form a particularly important group of large forest remnants on the Hukatere peninsula. A threatened bird species (kukupa) uses the area.

TE RURUKU BAY FOREST REMNANT

Survey no.	Q08/089
Survey date	16 November 2005
Grid reference	Q08 133 562 (8 remnants)
Area	46.5 ha (29.5 ha forest, 16.9 ha shrubland, 0.1 ha wetland)
Altitude	0–152 m asl

Ecological units

(a) Kanuka shrubland on gentle coastal margin (36%)

(b) Kanuka treeland on moderate hillslope (33%)

(c) Kanuka forest on gentle coastal margin (15%)

(d) Kowhai–puriri forest on gentle coastal margin (10%)

(e) Puriri–taraire forest on moderate to steep hillslope (5%)

(f) Raupo–lake clubrush reedland in small depression (1%)

Landform/geology

Steep coastal hillsides and gullies underlain by thinly interbedded mudstone and sandstone (Waitemata Group), and volcaniclastic gravelly sandstones and basaltic lava flows (Waitakere Group).

Vegetation

This site comprises eight separate remnants dispersed across a landscape of pasture and radiata pine forest which is drained by two small streams. The link