

(a) The main forest type has taraire and puriri as the predominant species but both comprise <20% of the canopy. The other main canopy species are kanuka, kauri, kahikatea, totara and kowhai, with scattered nikau, rewarewa and ti kouka.

(b) At the northern end of the remnant totara-puriri forest occurs with frequent kowhai.

(c) At the southern end, forest dominated by kowhai and puriri occurs.

(d) The extreme eastern side of the site contains stands of maturing kauri rickers (i.e. losing lower branches) mixed with kanuka, and associated with frequent totara and tanekaha, and occasional rewarewa. Some of the kauri is adjacent to mangroves, which is an unusual juxtaposition of forest types.

The quality of the understorey appears to have improved between 1977, when there was a 'grass sward underneath', and 1991, when the understorey was referred to as 'regenerating' (SSBI Q08/H037). The 1991 survey also recorded very high canopy diversity at the site.

Significant flora

Miro (locally uncommon) was recorded in 1991 (SSBI Q08/H037).

Fauna

Kukupu (Gradual Decline) were recorded at the site during the present survey. In 1991 Australasian harrier, fantail and tui were also noted (SSBI Q08/H037).

Significance

This site has a high diversity of forest types for its size, and provides habitat for kukupa, a threatened bird species. It is a representative site for ecological unit (a). A former pa site is present at the high point of the headland, according to DOC records (SSBI Q08/H037). Little is known about the current condition of the understorey or the impacts of animal pests. The forested area is almost entirely encompassed by Te Opu Scenic Reserve, which is administered by the Department of Conservation.

WHAKAPIRAU CREEK COASTAL FOREST

Survey no.	Q08/127
Survey date	28 November 2005
Grid reference	Q08 271 577
Area	7.1 ha
Altitude	0-80 m asl

Ecological unit

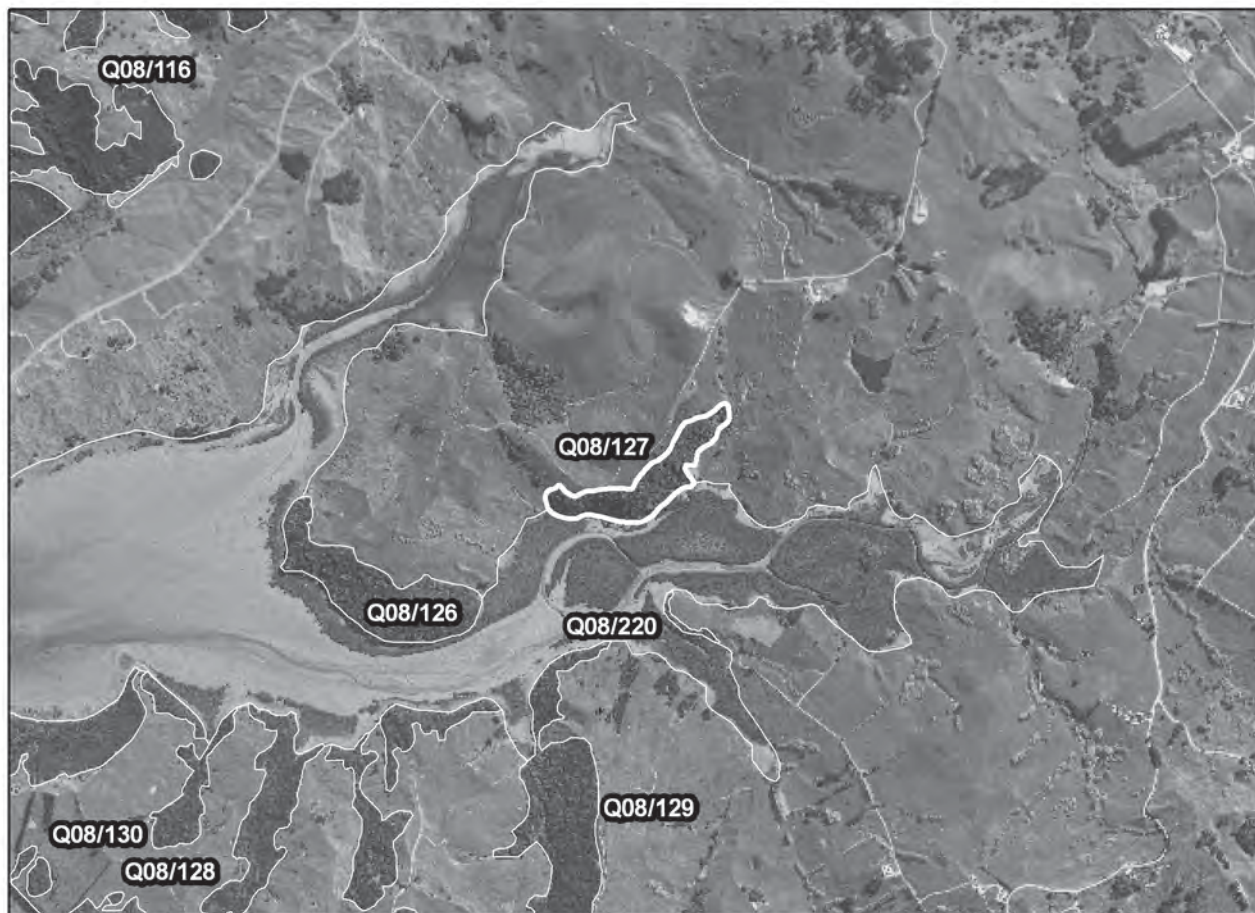
(a) Totara-kowhai-karaka forest on steep coastal margin (100%)

Landform/geology

Steep coastal hillside underlain by Oligocene micritic limestone (Mahurangi Limestone, Motatau Complex).

Vegetation

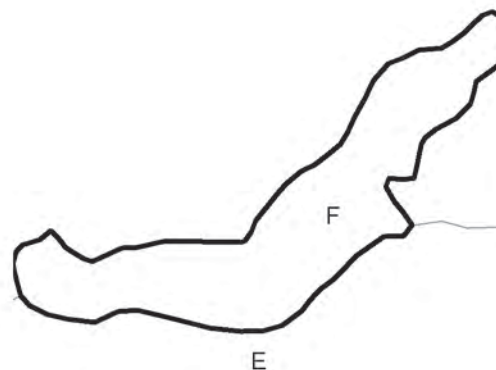
This site comprises a 700 m-long coastal forest remnant on a steep south-facing slope bordering tall mangrove forest in the upper Whakapirau Creek. Surrounding the site is farmland with grazed pasture. The site does not appear to be fenced to exclude livestock.



Q08/127 Whakapirau Creek Coastal Forest

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

0 250 500 1,000 Metres



Totara is abundant in the canopy, in association with kowhai and karaka. Puriri is frequent, with occasional kohekohe, ti kouka and pohutukawa.

Fauna

Not surveyed.

Significance

This site contains one of the best representative examples of totara-kowhai-karaka forest on steep coastal margin in Otamatea ED Northland. It also provides a valuable protective buffer on a steep slope above the Whakapirau Creek, which is part of the Arapaoa River site (Q08/084).

WHAKAPIRAU RIVER SCENIC RESERVE AND NORTH MASSEY ROAD FOREST REMNANTS

Survey no.	Q08/128
Survey date	28 November 2005
Grid reference	Q08 256 568 (6 remnants)
Area	33.9 ha (33.4 ha forest, 0.5 ha shrubland)
Altitude	0–80 m asl

Ecological units

- (a) Totara-kanuka forest on steep coastal margin (70%)
- (b) Kanuka forest on steep coastal margin (18%)
- (c) Kanuka-kahikatea forest on gentle coastal margin (5%)
- (d) Totara-puriri-kanuka forest on steep coastal margin (5%)
- (e) Manuka shrubland on moderate hillslope (2%)

Landform/geology

Coastal hillslopes underlain by Cretaceous sandstone and mudstone (Mangakahia Complex).

Vegetation

This site comprises six remnants of forest on the northern coastal margin of Massey Point, part of which is included within the Whakapirau River Scenic Reserve. The forest remnants adjoin three small stream gullies below Massey Road and cover most of the steep hillslope above a small bay. Pasture separates the remnants. The reserve is partially fenced.

- (a) The majority of the area is covered in totara-kanuka forest. All other species are occasional, including tarata, kauri, puriri, kowhai, kahikatea, ti kouka, mamaku and mamangi.
- (b) The top of the Scenic Reserve and adjacent upper slopes are covered in kanuka forest with frequent totara. The understorey is quite heavily impacted by stock grazing and trampling.
- (c) The bottom of the Scenic Reserve and adjacent gentle terrain next to the coast has kanuka-kahikatea forest, part of which includes at least some primary forest with old emergent kahikatea. Puriri and totara are frequent in the canopy. Occasional emergent rimu and kauri occur. Other species present include kowhai, ti kouka and rewarewa and epiphytic puka.
- (d) Forest remnants on the sheltered eastern sides of small undulations in the coast comprise totara with lesser amounts of puriri and kanuka, and occasional kowhai and karaka.
- (e) A small area above (but outside) the Scenic Reserve is covered in young manuka shrubland with occasional lancewood.

Significant flora

Coprosma rigida and *C. crassifolia*, both regionally significant plant species, were recorded in the Scenic Reserve in 1996 (SSBI Q08/H038).

Fauna

Grey warbler, tui. Kukupa (Gradual Decline) were recorded in 1996 (SSBI Q08/H038).



Q08/128 Whakapirau River Scenic Reserve and North Massey Road Forest Remnants

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

0 250 500 1,000 Metres



Significance

This site is representative for (a) totara-kanuka forest on steep coastal margin and (c) kanuka-kahikatea forest on gentle coastal margin. The latter is significant in particular for mature kahikatea, which are now very rare in Otamatea ED Northland. Together the remnants in this site comprise a relatively large area (i.e. >30 ha) for the Northland part of the ED, however the site is made up of several parts, which reduces its value somewhat. The site supports two regionally significant plant species (*Coprosma rigida* and *C. crassifolia*) and a threatened bird species (kukupa). 4 ha (12% of the site) is in the DOC-administered Whakapirau River Scenic Reserve (includes ecological units (b), (c) and (e)).

MASSEY CREEK FOREST

Survey no. Q08/129
 Survey date 28 November 2005
 Grid reference Q08 268 565
 Area 23.1 ha
 Altitude 0-80 m asl

Ecological units

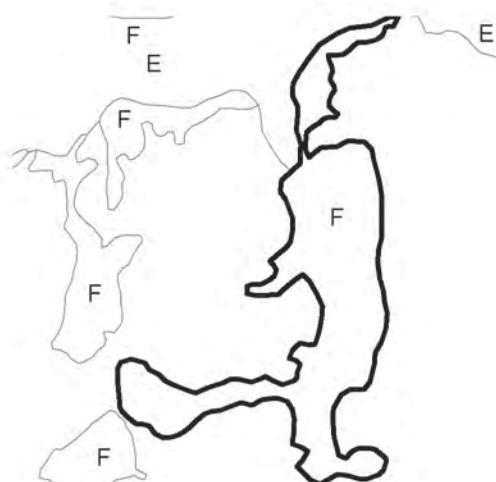
- (a) Totara-puriri-kanuka forest on moderate to steep hillslope (85%)
- (b) Kanuka-kowhai-totara forest on steep coastal margin (15%)



Q08/129 Massey Creek Forest

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

0 250 500 1,000 Metres



Landform/geology

Coastal hillslopes and gullies underlain by Cretaceous sandstone and mudstone (Mangakahia Complex).

Vegetation

This site comprises a relatively large remnant of forest in a steep stream gully flowing out to the Whakapirau Creek. Surrounding land is covered in pasture.

(a) The major slope is west-facing, and is covered in a mixture of totara, puriri and kanuka (in order of relative abundance). Frequent species include karaka, kahikatea, kowhai and macrocarpa. Some of the puriri appear to be suffering from exposure effects.

(b) The coastal margin is very steep (>45°) and has a cover of kanuka forest with canopy associates of totara and kowhai. Karaka is frequent, with occasional titoki, ngaio and woolly nightshade.

Fauna

Not surveyed.

Significance

This site is quite large and intact, and forms an important linkage between nearby forest remnants of high conservation value, e.g. Te Opu Scenic Reserve (Q08/126), Whakapirau River Scenic Reserve and North Massey Road Forest Remnants (Q08/128), Arapaoa River Scenic Reserve and Surrounds (Q08/131) and Te Kowhai Creek Scenic Reserve and Surrounds (Q08/132). The site is representative for both ecological units, which are both the best examples of their types. Stock grazing appears to be threatening the integrity of the understorey in places.

SOUTH MASSEY ROAD FOREST REMNANTS

Survey no.	Q08/130
Survey date	28 November 2005
Grid reference	Q08 254 562
Area	5.2 ha (5.0 ha forest, 0.2 ha wetland)
Altitude	6–53 m asl

Ecological units

(a) Totara–puriri forest on moderate to steep hillslope (96%)

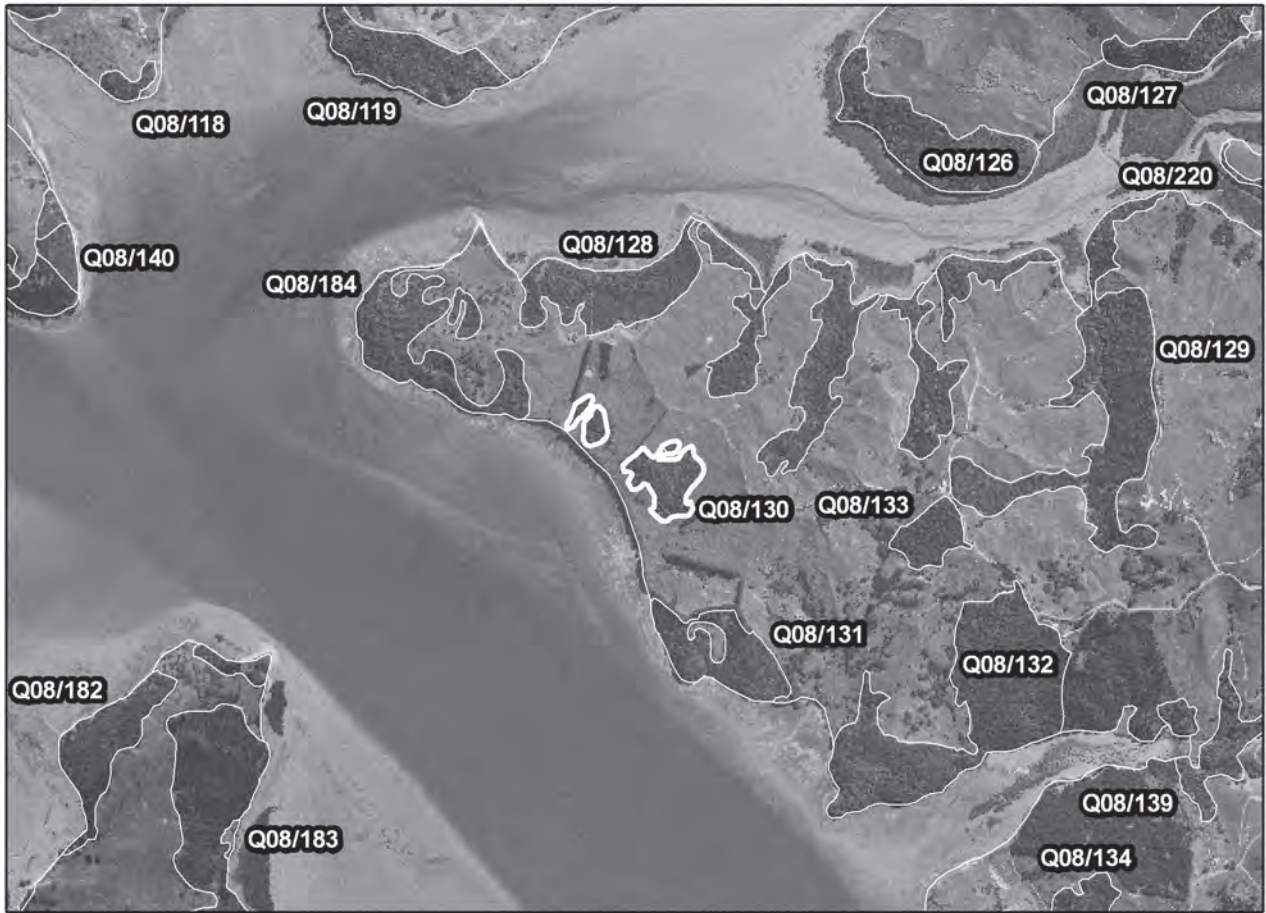
(b) Open water (constructed freshwater farm pond) (4%)

Landform/geology

Coastal hillslopes underlain by Cretaceous sandstone and mudstone (Mangakahia Complex).

Vegetation

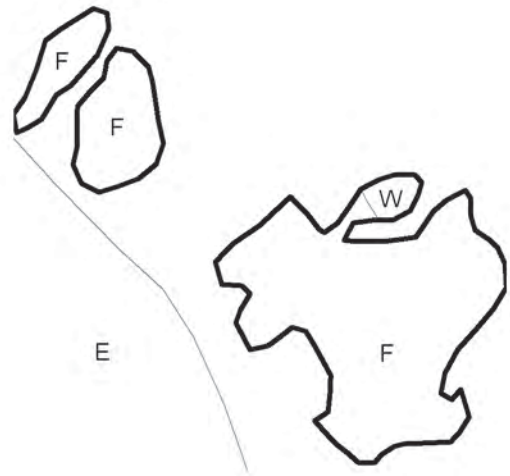
A small remnant of indigenous forest occurs next to a constructed farm pond with little marginal vegetation. Floating aquatic vegetation comprises the introduced water fern *Azolla pinnata* and an introduced willow weed (*Polygonum* sp.). The dominant forest canopy species are totara and puriri. These are associated with frequent kanuka and kahikatea, and occasional nikau, mamaku, rewarewa, tanekaha and manuka. The remnant is entirely surrounded



Q08/130 South Massey Road Forest Remnants

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

0 250 500 1,000 Metres



by pasture, but is within close proximity of numerous other forest remnants on the peninsula.

Fauna

Welcome swallow and grey duck (Serious Decline) on pond. Hybridism with mallard duck cannot be excluded.

Significance

This is a small site, but it forms an important linkage between nearby larger forest remnants of higher conservation value, e.g. Te Opu Scenic Reserve (Q08/

126), Whakapirau River Scenic Reserve and North Massey Road Forest Remnants (Q08/128), Arapaoa River Scenic Reserve and Surrounds (Q08/131) and Te Kowhai Creek Scenic Reserve and Surrounds (Q08/132). It is also habitat for a threatened species (grey duck).

ARAPAOA RIVER SCENIC RESERVE AND SURROUNDS

Survey no.	Q08/131
Survey date	8 December 2005
Grid reference	Q08 256 556
Area	9.3 ha
Altitude	0–60 m asl

Ecological units

- (a) Kanuka–totara forest on gentle coastal margin (45%)
- (b) Totara–taraire–puriri forest on steep coastal margin (40%)
- (c) Totara–kowhai forest on ridge top (15%)

Landform/geology

Coastal hillslopes underlain by Cretaceous sandstone and mudstone (Mangakahia Complex).

Vegetation

Arapaoa River Scenic Reserve and adjacent indigenous forest to the north is a particularly dense and diverse, small, coastal indigenous forest remnant. It lies opposite the main channel of the Arapaoa River (Q08/084) in a relatively exposed position to a northwest air stream which often blows over the Hukatere peninsula and down the river. A row of tall pines divides the indigenous forest from adjacent farmland.

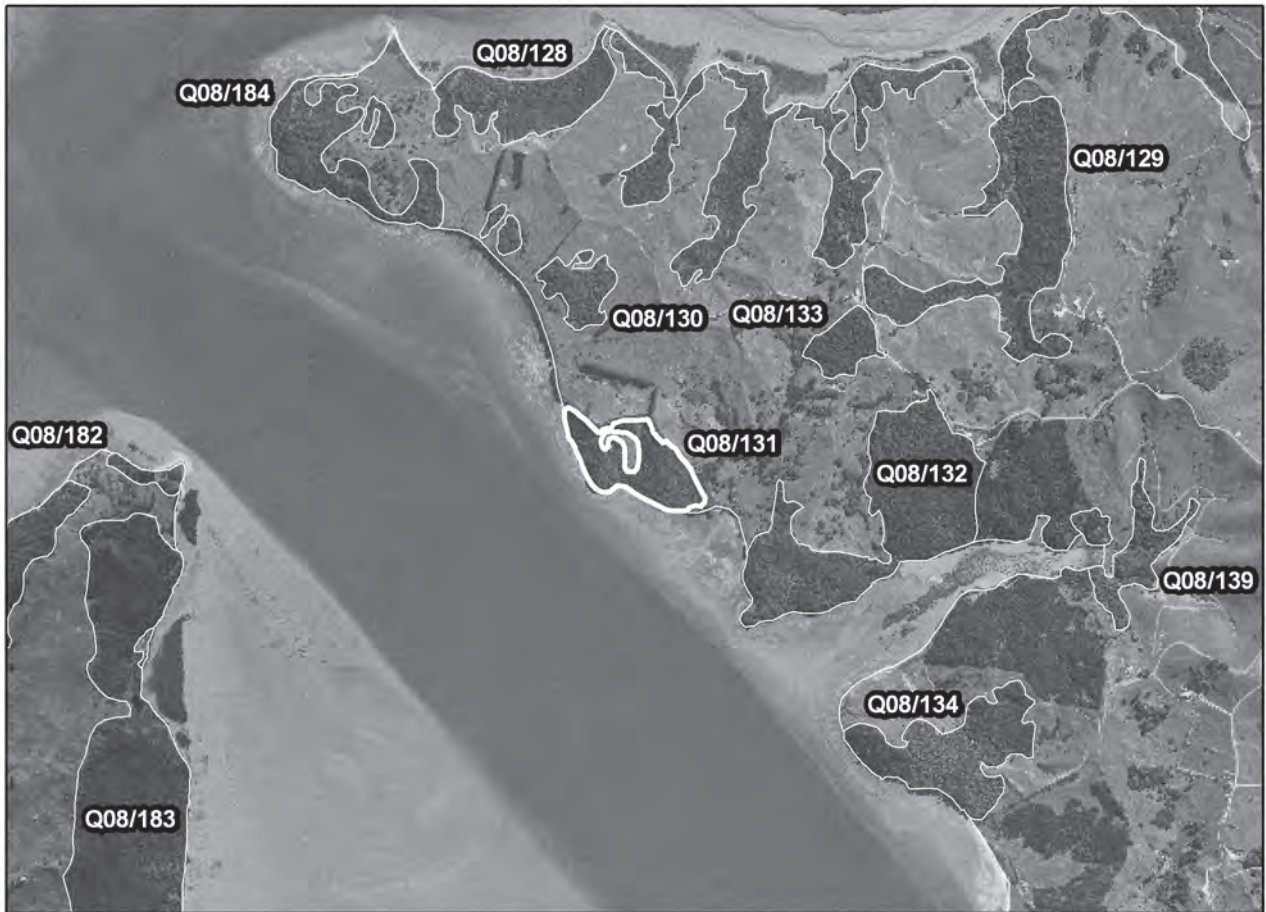
- (a) The middle section of the remnant, which is gently sloping, is dominated by kanuka with subdominant totara and frequent puriri. Ti kouka, karaka and mamaku are occasional.
- (b) The northern section is very steep (>45°), and also has totara as the main canopy species, though taraire and puriri are also common. Karaka and rewarewa are frequent, and ti kouka, lancewood and hangehange are occasional. Pampas and gorse are invasive around the coastal fringe just above the sandy beach.
- (c) Totara–kowhai forest with frequent kahikatea occurs in the southern part of the site (in an area roughly corresponding to Arapaoa Scenic Reserve). This reserve was surveyed in 1996 and found to be in good condition, with good regeneration (SSBI Q08/H038).

Fauna

A kukupa (Gradual Decline) nest was seen within the Scenic Reserve in 1996 (SSBI Q08/H038).

Significance

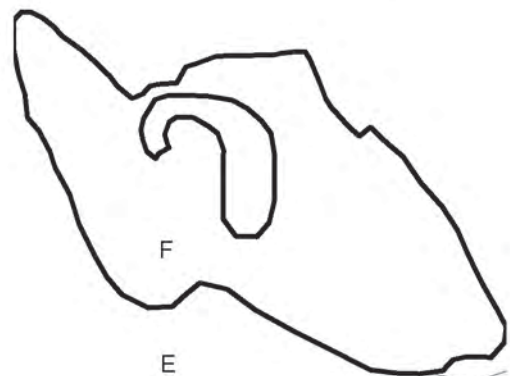
This site is representative for (b) totara–taraire–puriri forest on steep coastal margin, which was not recorded anywhere else in the Northland part of the ED. It has a high diversity of forest types for its small size. It is also significant for supporting a threatened fauna species (kukupa). It is not clear whether the site



Q08/131 Arapaoa River Scenic Reserve and Surrounds

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

0 250 500 1,000 Metres



is grazed or not. Recent information suggests that it has a healthy understorey, at least in the reserve area (SSBI Q08/H038). The Arapaoa Scenic Reserve, which is administered by the Department of Conservation, covers 0.7 ha of totara-kowhai forest on ridge top. This site is also important as a protective vegetation buffer to the estuarine habitats of the Arapaoa River (Q08/084). It is very close to Te Kowhai Creek Scenic Reserve and Surrounds (Q08/132), and other forest remnants to the north.

TE KOWHAI CREEK SCENIC RESERVE AND SURROUNDS

Survey no. Q08/132
 Survey date 28 November 2005
 Grid reference Q08 264 554
 Area 26.3 ha
 Altitude 0-80 m asl

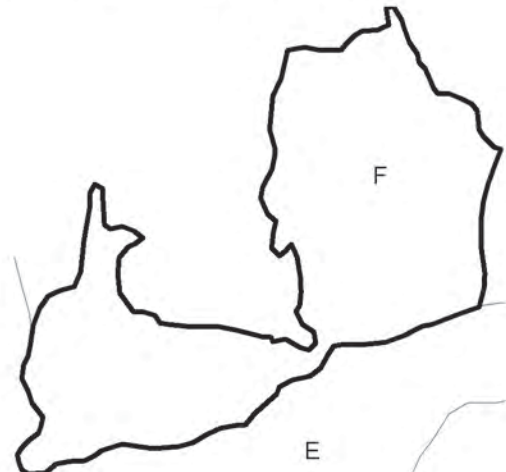
Ecological unit

(a) Totara-puriri forest on steep coastal margin (100%)



Q08/132 Te Kowhai Creek Scenic Reserve and Surrounds

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



Landform/geology

Coastal hillslopes and gullies underlain by Cretaceous sandstone and mudstone (Mangakahia Complex).

Vegetation

This site comprises a dense indigenous forest remnant on the northern side of Te Kowhai Creek, which is partially sheltered from northwest winds funnelling down the Arapaoa River (Q08/084) on its western side. The main canopy species is totara, which is abundant, and this is associated with a lesser amount of puriri. Kowhai and kahikatea are frequent. Occasional species include rewarewa, ti kouka, radiata pine and eucalyptus. Harakeke and gorse are common on the coastal fringe. The indigenous forest is contiguous with radiata pine and eucalyptus plantations on its eastern side. Some of the emergent eucalyptus in the indigenous forest are unlikely to be naturalised, and therefore may have been planted.

Significant flora

Kaikomako (regionally significant) was recorded in the Scenic Reserve in 1996 (SSBI Q08/H038).

Fauna

Kukupu (Gradual Decline) were recorded in 1996 (SSBI Q08/H038).

Significance

This site is a relatively large and continuous coastal forest remnant which supports a regionally significant plant species (kaikomako) and a threatened bird species (kukupu). It represents the best example of coastal totara-puriri forest in the Northland Conservancy part of the ED. Te Kowhai Creek Scenic Reserve (DOC-administered) covers 0.5 ha of the site (only 2 %). This site is important as a protective vegetation buffer to the estuarine habitats of the Te Kowhai Creek, and is very near to two other natural areas (Arapaoa River Scenic Reserve and Surrounds (Q08/131) and Te Kowhai Creek Forest Remnant (Q08/139)).

LINTON ROAD WEST FOREST

Survey no.	Q08/134
Survey date	8 December 2005
Grid reference	Q08 265 547 (2 remnants)
Area	13.3 ha (12.3 ha forest, 1.0 ha shrubland)
Altitude	0–60 m asl

Ecological units

- (a) Puriri-kowhai forest on gentle coastal margin (50%)
- (b) Totara forest on moderate hillslope (15%)
- (c) Kahikatea forest on moderate hillslope (14%)
- (d) Pohutukawa forest on steep coastal margin (13.5%)
- (e) Kanuka-manuka shrubland on steep coastal margin (7.5%)

Landform/geology

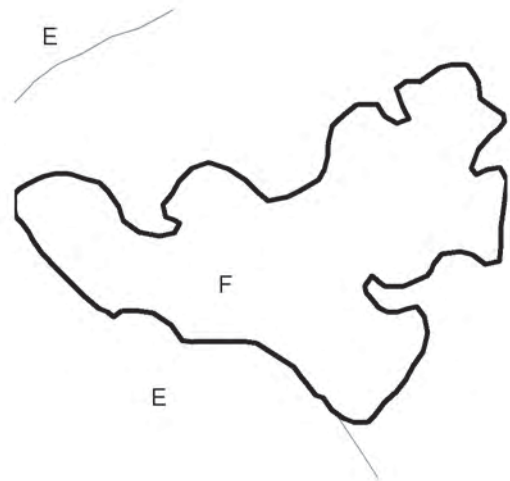
Coastal hillslopes and gullies underlain by Cretaceous sandstone and mudstone (Mangakahia Complex).



Q08/134 Linton Road West Forest

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

0 250 500 1,000 Metres



Vegetation

This site comprises two indigenous forest remnants on a stretch of inner Kaipara Harbour coastline bordering the Arapaoa River channel (Q08/084). The site is relatively exposed due to its position in the line of northwest winds rushing down the main channel of the river. On adjacent land to the east there is a mixture of pastoral land and small radiata pine plantations. The two remnants are divided by a farm track, and do not appear to be fenced from livestock.

(a) The major forest type on the coastal margin is puriri-kowhai forest. Other species appear occasionally in the canopy, including pukatea, kauri, kanuka, rewarewa, kahikatea, karaka and taraire.

(b) The inland part of the remnant comprises totara forest. This is not easily visible from public roads or from the coast, hence this type has been interpreted from aerial photography (flown in 2002) and brief glimpses from the river.

(c) An area of kahikatea forest occurs on a steep slope at the top end of the remnant in the south. Also present in the canopy are five finger, rewarewa and puriri.

(d) Pohutukawa forest is present on the point opposite Te Kowhai Creek, which bears the brunt of the weather.

(e) Kanuka-manuka shrubland is also on the headland. Occasional mingimingi and bracken are present.

Fauna

Not surveyed.

Significance

This site represents the best example of coastal puriri-kowhai forest in Otamatea ED Northland even though it appears to be grazed. It has quite a high diversity of vegetation types for its size, and forms a valuable indigenous forest and shrubland buffer to the Arapaoa River (Q08/084), which is otherwise mostly bordered by pasture.

WHAKAPIRAU/ROCKY POINT FOREST AND SHRUBLAND

Survey no.	Q08/135
Survey date	8 December 2005
Grid reference	Q08 272 538 (2 remnants)
Area	11.7 ha (11.6 ha forest, 0.1 ha shrubland)
Altitude	0–40 m asl

Ecological units

- (a) Totara-kanuka forest on steep coastal margin (45%)
- (b) Puriri forest on steep coastal margin (30%)
- (c) Puriri-taraire forest on steep coastal margin (20%)
- (d) Pohutukawa treeland on steep coastal margin (4%)
- (e) Mapou-karamu-hangehange shrubland on steep coastal margin (1%)

Landform/geology

Coastal headland underlain by Cretaceous sandstone and mudstone (Mangakahia Complex).

Vegetation

Whakapirau/Rocky Point is a headland next to the main channel of the Arapaoa River (Q08/084). The western side of the point is more exposed to strong winds blowing down the river than the eastern side. The coastal forest in this site is divided into two remnants, the major one being on the end of the point and the minor one on the eastern side. Scattered coastal broadleaved trees (e.g. puriri, karaka, taraire) are present in adjacent exotic grassland, but these are excluded from the site. They do, however, provide a role in linking the two remaining remnants of forest.