

### **Significant flora**

During a 1977 NZ Wildlife Service survey, miro (locally uncommon), was recorded here also (SSBI Q08/H042).

### **Fauna**

NI brown kiwi (Serious Decline) were found here as recently as 1977, but a survey in 1992 failed to establish their continued presence, and they are suspected to be extinct in Otamatea ED Northland now. Birds recorded in 1992 include kukupa (Gradual Decline), shining cuckoo, morepork, kingfisher, welcome swallow, fantail, silvereve and tui (SSBI Q08/H042).

### **Significance**

By comparison with reports from three decades ago, this site appears to have become more degraded (species loss, degradation of condition of trees, and forest composition), though it still shows considerable diversity in the canopy layers (at least from a distance). This degradation has probably been caused by continued grazing and browsing (which reduces vegetation health and eliminates sensitive plant species), as well as the likely less visible effects of invasive predators on indigenous fauna (e.g. stoats killing kiwi). Despite this, the site is still representative for four ecological units: (a) totara-kanuka forest on moderate hillslope, (b) kauri-kanuka forest on ridge top, (c) kanuka-manuka shrubland on gentle hillslope, and (e) totara-kahikatea-puriri forest on moderate to steep hillslope. This is reflection of the rarity of larger forest blocks in Otamatea ED, as well as the poor quality of many natural areas. The very bottom end of the totara-kanuka forest in the gully next to the coast (0.1 ha) is within the Raepere Creek Marginal Strip (administered by DOC).

## **TOTARA CREEK FOREST REMNANT**

Survey no.	Q08/095
Survey date	16 November 2005
Grid reference	Q08 181 541
Area	34.9 ha (34.8 ha forest, 0.1 ha wetland)
Altitude	20-116 m asl

### **Ecological units**

- (a) Kanuka forest on moderate to steep hillslope (45%)
- (b) Totara-kanuka forest on moderate hillslope to steep hillslope (35%)
- (c) Kauri-kanuka forest on gentle hillslope (10%)
- (d) Tanekaha-totara forest on moderate hillslope (9.5%)
- (e) Raupo reedland in small depression (0.5%)

### **Landform/geology**

Hillslopes and gullies underlain by Miocene thinly interbedded mudstone and sandstone (Waitemata Group) and Miocene volcanoclastic gravelly sandstone (Waitakere Group), and with a valley floor of Pleistocene alluvium.

### **Vegetation**

This site comprises a smaller example of forest types similar to neighbouring Raepere Creek Forest (Q08/094) and Kirikiri Creek Forest and Wetlands (Q08/091). It is less visible from roads than either of the latter; therefore the



## Q08/095 Totara Creek Forest Remnant

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

0 250 500 1,000 Metres



descriptions here are supplemented by knowledge of what occurs in similar areas nearby, as well as interpretation from aerial photos.

- (a) Kanuka forest is the main forest type.
- (b) Totara-kanuka forest with frequent kahikatea is the next most common forest type. Other species present are ti kouka, kowhai, mamangi and puriri.
- (c) Near the bottom of the remnant there is a small stand of dense kauri ricker and kanuka with a few emergent radiata pine.

(d) A narrow finger of forest extending northwards is dominated by young totara and tanekaha. Ti kouka, mamaku and kanuka were recorded here as occasional.

(e) A very small raupo reedland was identified from the aerial photograph (flown in 2002).

### ***Fauna***

Australasian harrier. Kukupa (Gradual Decline) are known to use this forest frequently.

### ***Significance***

This site is significant as it is habitat for a threatened indigenous bird species (kukupa). The forest covers a relatively large geographic area for Otamatea ED Northland, and is in one continuous tract. Tanekaha-totara forest on moderate hillslope (d) is not found anywhere else in the study area, therefore it is a representative example of its type. The site provides a valuable riparian and catchment protection function for the Totara Creek flowing into the Kirikiri Inlet.

## **HUKATERE PENINSULA WEST COAST**

Survey no.	Q08/096
Survey date	Various (December 2005–January 2006)
Grid reference	Q08 163 520
Area	736.5 ha
Altitude	sea level

### ***Ecological units***

- (a) Mangrove shrubland and forest in estuary
- (b) Mudflats and sandflats in estuary

### ***Landform/geology***

Holocene estuaries, beaches, and intertidal rock flats.

### ***Vegetation/habitats***

(a) Very few mangroves occur along the southwest coast of the Hukatere peninsula (an extensive mangrove forest is present on the northwest coast opposite Kohatutahi Conservation Area (Q08/178) and Waihungaru Stream Forest (Q08/083) however this is part of Kaipara Ecological District). The only substantial cluster of mangrove trees is in a sheltered bay behind Owhareao Point Remnants (Q08/179), otherwise only scattered shrubs and trees occur.

(b) Most of the site is either shallow mudflat and sandflat (35%) or estuarine open water (64%). Beaches with sand are more common than anywhere else in Otamatea ED Northland, due to the greater proximity of the site to the Kaipara Harbour mouth. A few scattered saltmarsh plants are present (e.g. bachelor's button, sea primrose, remuremu, oioi, sea rush, *Austrostipa stipoides*, glasswort, sharp rush, saltmarsh ribbonwood).

### ***Fauna***

This site provides habitat for several bird species:

- Reef herons (Nationally Endangered) were known to occur here regularly in low numbers prior to approximately 1976 (Veitch 1978; Bull *et al.*



## Q08/096 Hukatere Peninsula West Coast

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

0 1,250 2,500 5,000 Metres



1985), breeding on Titipu Island (Q08/176). However their continued presence is unconfirmed. They have been sighted occasionally around the Hukatere peninsula coast in recent times (Crockett (comp.) 1992-2004).

- Pied shags (Sparse) occur occasionally.
- Many of the common shorebirds are present including pied stilt, pied oystercatcher, spur-winged plover and white-faced heron (a colony of approximately 30 was observed nesting in macrocarpa trees on the coast just south of Waihungaru Stream Forest (Q08/083)).
- The western Hukatere peninsula coast tends to have fewer waders in general due to less shallow wading habitat compared to other estuarine areas nearby.

### ***Significance***

This site supports at least two threatened bird species (reef heron and pied shag) and a number of common bird species, though data about fauna in this area are lacking. The site has scenic values, as it has the greatest length of sandy beaches in the ED, many of which are fringed by pohutukawa and other coastal forest types. Sixty percent of the adjacent coastline of this site is bordered by indigenous vegetation (see sites, in order from north to south: Waihungaru Stream Forest (Q08/083), Te Ruruku Bay Forest Remnants (Q08/089), Waitieke Creek Forest (Q08/092), Te Kiakia Bay Forest Remnants (Q08/093), Owhareao Point Remnants (Q08/179), Otaiwhata Bay Forest and Shrubland (Q09/049), Bushy Point Forest Remnants (Q09/046)). At the upper intertidal margins of the site, 2 ha of habitat lies within Marginal Strips and a Recreation Reserve (administered by DOC).

### **RAEPERE CREEK COASTAL FOREST**

Survey no.	Q08/098
Survey date	17 November 2005
Grid reference	Q08 204 548 (2 remnants)
Area	28.2 ha
Altitude	0–59 m asl

### ***Ecological units***

- (a) Kowhai–totara–kahikatea forest on gentle coastal margin (70%)
- (b) Puriri–kowhai–kanuka forest on gentle coastal margin (25%)
- (c) Puriri–ti kouka treeland on steep coastal margin (5%)

### ***Landform/geology***

Coastal hillslopes underlain by Oligocene micritic limestone (Mahurangi Limestone, Motatau Complex); melange (undifferentiated Mangakahia & Motatau Complex lithologies); Miocene thinly interbedded mudstone and sandstone, and polymict breccia (Waitemata Group).

### ***Vegetation***

This site comprises coastal forest remnants along the Raepere Creek, which are largely continuous with mangrove forest in the Arapaoa River site (Q08/084). The site is physically linked with Raepere Creek Forest (Q08/094) at a narrow junction where the creek flows out to the inlet.

- (a) The densest and richest areas of forest along the creek (in terms of species numbers and abundances) are at the western end, and have canopies dominated by kowhai with abundant totara and emergent kahikatea. Puriri, karaka and kanuka are frequent. Ti kouka and manuka occur occasionally, mainly around the edges.
- (b) At the southern end of the site a forest dominated by puriri, kowhai and kanuka. Totara, kahikatea and ti kouka are frequent in this mixture.
- (c) At the extreme northern end of the site a small area of puriri–ti kouka treeland with frequent kanuka occurs. This is quite battered and exposed, and appears to be only just surviving.

### ***Fauna***

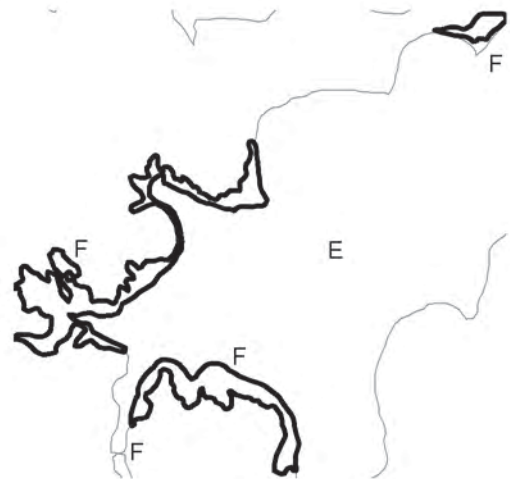
Not surveyed.



## Q08/098 Raepere Creek Coastal Forest

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

0 250 500 1,000 Metres



### *Significance*

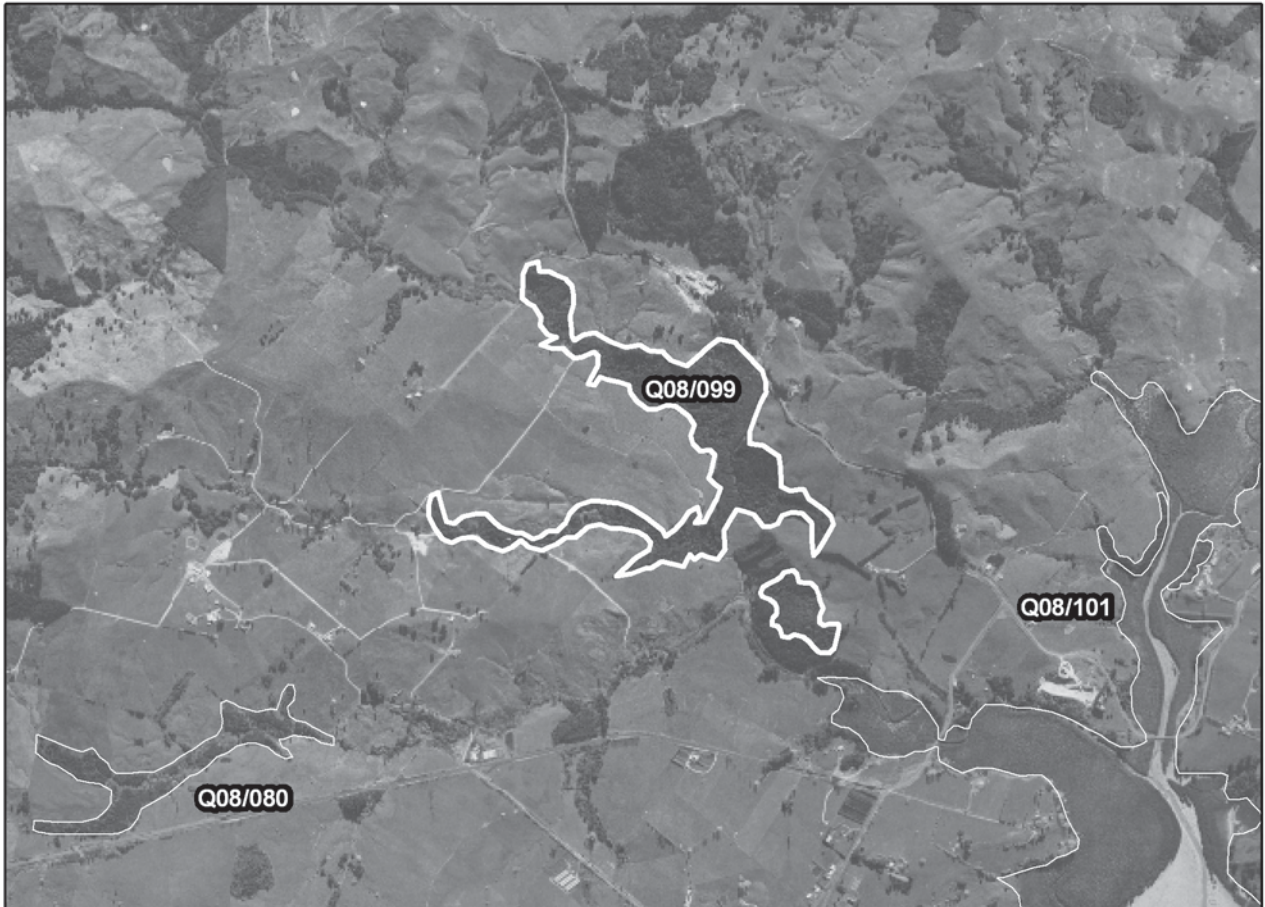
This site provides an important vegetation buffer and erosion control to the Arapaoa River (Q08/084). It is a representative site for two ecological units: (a) kowhai-totara-kahikatea forest on gentle coastal margin, and (b) puriri-kowhai-kanuka forest on gentle coastal margin, which are the best examples of their type in Otamatea ED Northland. 2.3 ha of the site (mainly ecological unit (b)) is within a Marginal Strip (administered by DOC).

## ARARUA ROAD FOREST REMNANTS

Survey no. Q08/099  
Survey date 17 November 2005  
Grid reference Q08 168 644 (2 remnants)  
Area 35.0 ha  
Altitude 20-40 m asl

### *Ecological units*

- (a) Kanuka forest in gully (75%)
- (b) Totara-puriri forest on ridge top (25%)



## Q08/099 Ararua Road Forest Remnants

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

0 250 500 1,000 Metres



### ***Landform/geology***

Hillslopes underlain by Cretaceous sandstone and mudstone (Mangakahia Complex), and valley flats on Pleistocene alluvium.

### ***Vegetation***

The vegetation of this site falls mostly within the boundary of Otamatea ED, but partially occurs in Tokatoka ED in the north. The site comprises two corridors of riparian forest which meet at a stream junction, and one hill top remnant along the main stream flowing into the Arapaoa River (Q08/084).

(a) The riparian forest is predominantly kanuka, with frequent totara, manuka and mamaku. Other species present at low percentage cover are kowhai, tanekaha, mamangi, karaka, kauri, kahikatea, rewarewa, mahoe and black wattle.

(b) The hill top remnant comprises totara (abundant) and puriri (common), with frequent rewarewa and kanuka, and occasional rimu, taraire and emergent radiata pine. Wilding pines (radiata pine) are a problem for the integrity of this hill top remnant.

### ***Fauna***

Grey warbler.

### ***Significance***

Although black wattle is quite common, this site contains the best representative example of successional kanuka forest in a stream gully system

(a).

## **UPPER PAPAROA CREEK SCENIC RESERVE AND SHERWIN QEII COVENANT**

Survey no.	Q08/100
Survey date	17 November 2005
Grid reference	Q08 217 653
Area	16.1 ha
Altitude	17-60 m asl

### ***Ecological units***

- (a) Kauri forest on moderate to steep hillslope (50%)
- (b) Totara-kanuka forest on moderate hillslope (30%)
- (c) Kanuka-rimu forest on moderate to steep hillslope (10%)
- (d) Totara-kahikatea forest on moderate to steep hillslope (10%)

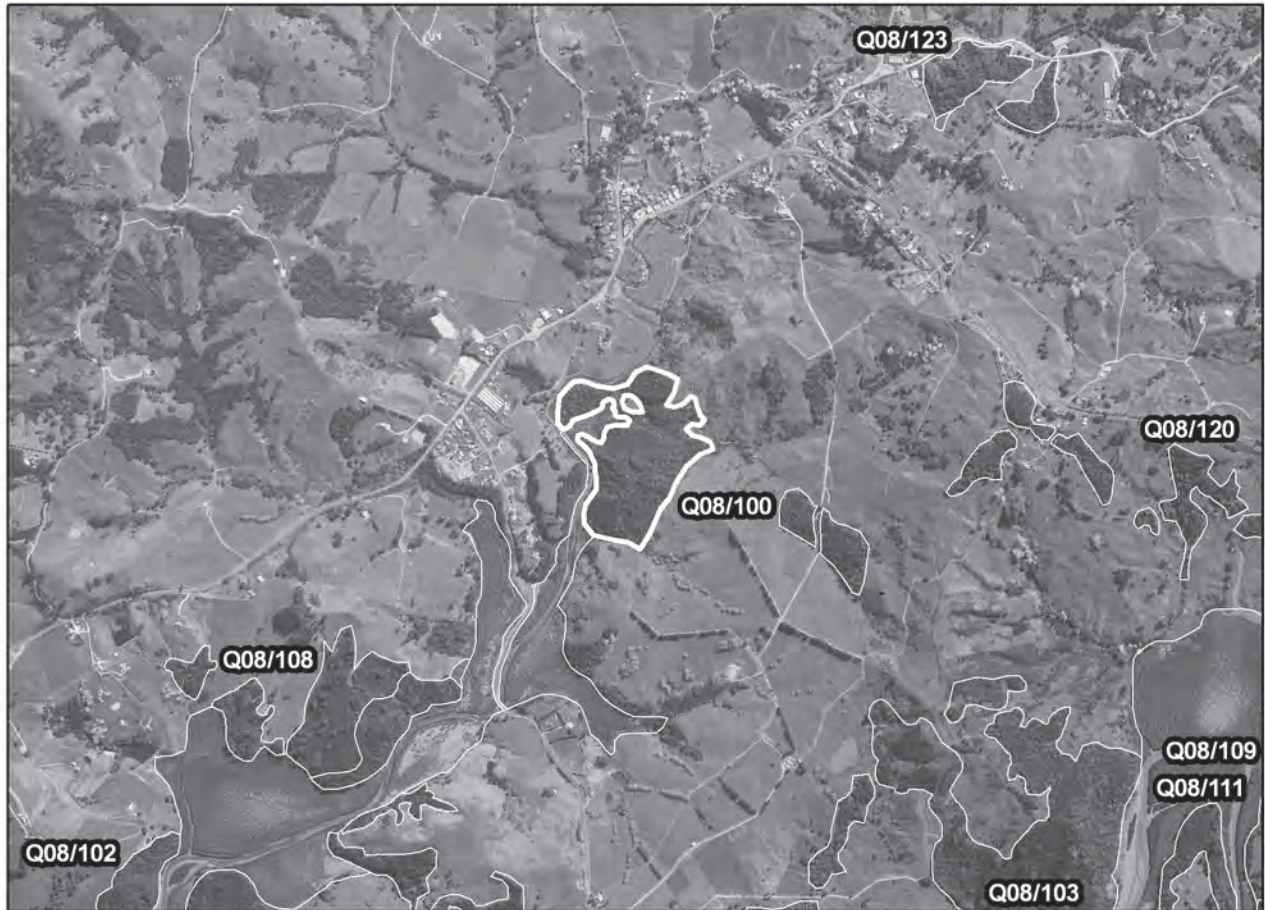
### ***Landform/geology***

Hillslopes and gullies underlain by Cretaceous sandstone and mudstone (Mangakahia Complex), and valley flats on Holocene alluvium.

### ***Vegetation***

This site comprises a dense area of indigenous forest on two small knobs on the true left bank of the upper Paparoa Creek. Freshwater and saltmarsh habitat meet near the point where the site juts out into the creek. A tributary flowing westwards bisects the site, joining with the estuary at a small saltmarsh which is almost fully enclosed by the forest in this site.





**Q08/100 Upper Paparoa Creek Scenic Reserve  
and Sherwin QEII Covenant**

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



(a) Most of the site is covered by dense kauri ricker forest with frequent kanuka and occasional kahikatea.

(b) The northern side, and areas beside the water, have abundant totara in the canopy, with a lesser amount of kanuka. Young rimu and kahikatea are frequently emergent above the canopy. Occasional species include ti kouka, rewarewa, kowhai, matai, karaka and puriri.

(c) An uncommon forest type of limited extent, kanuka with abundant emergent rimu, is present on the north-facing slope of the southernmost knob.

(d) Totara-kahikatea forest occurs in some parts of the Upper Paparoa Creek Scenic Reserve. Other parts have a similar forest type but are younger. A least one very large kahikatea overhangs the water from the Scenic Reserve and some large emergent matai are also present. Rewarewa, puriri, titoki and tanekaha occur occasionally.

Three plant species lists were compiled in 1996 for the Scenic Reserve, the northern part of the QEII Open Space Covenant (type b), and the southern part of the QEII Open Space Covenant (types a & c) (SSBI Q08/H062). Of interest was the occurrence of *Alseuosmia quercifolia*, manatu and miro which are all locally uncommon in the Otamatea ED Northland. The reserve showed good regeneration at that time, however several weeds were found invading the edges and understorey, e.g. periwinkle, Japanese honeysuckle, tradescantia, elaeagnus, tree privet and climbing asparagus. *Leptinella tenella* (Sparse) was collected on the edge of the saltmarsh under the shade of forest in this site in 1997 (AK 233971).

#### **Significant flora**

*Leptinella tenella* (Sparse), *Alseuosmia quercifolia* (locally uncommon), manatu (locally uncommon), miro (locally uncommon).

#### **Fauna**

Tui, fantail, Australasian harrier and kukupa (Gradual Decline) were observed using the area in 1996.

#### **Significance**

This site contains representative examples of two ecological units: (a) kauri forest on moderate to steep hillslope and (d) totara-kahikatea forest on moderate to steep hillslope. The latter is the only example of its type identified in Otamatea ED Northland. An area of 1.6 ha is within the Upper Paparoa Scenic Reserve (administered by the Department of Conservation, ecological units (a) and (d)), and a further 9.8 ha (ecological units (a), (b) and (c)) are within a QEII Open Space Covenant. The biodiversity values of this natural area are known to be threatened by possums, goats and weed invasion (SSBI Q08/H062).

### **PAPAROA CREEK MARGINAL STRIP NO. 2 AND SURROUNDS**

Survey no.	Q08/102
Survey date	17 November 2005
Grid reference	Q08 206 638 (7 remnants)
Area	38.0 ha (33.8 ha forest, 4.2 ha shrubland)
Altitude	0–60 m asl

#### **Ecological units**

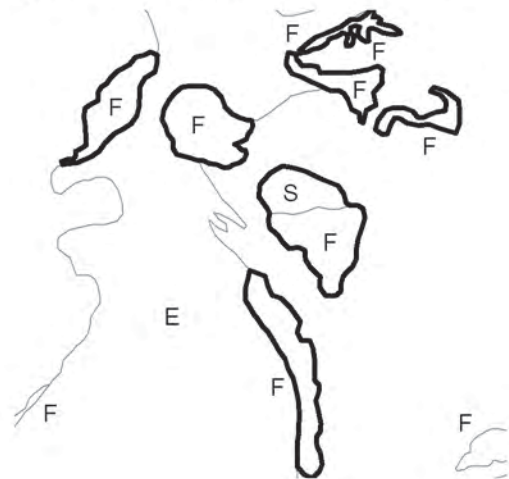
- (a) Totara-kanuka forest on gentle coastal margin (65%)
- (b) Totara-kowhai forest on gentle coastal margin (20%)
- (c) Manuka shrubland on moderate hillslope (15%)



## Q08/102 Paparoa Creek Marginal Strip No. 2 and Surrounds

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

0 250 500 1,000 Metres



### ***Landform/geology***

Coastal hillslopes on Oligocene micritic limestone (Mahurangi Limestone, Motatau Complex) and melange (undifferentiated Mangakahia & Motatau Complex lithologies).

### ***Vegetation***

This site comprises coastal forest and shrubland remnants on both sides of the Paparoa Creek. The centre of the site is a low-relief, forested headland extending westwards out into the creek, which has associated forest on the

shore opposite, as well as further north and south along the same coast. The surrounding landscape is pasture/gorse and mangrove forest.

(a) The majority of the forest canopy comprises totara and kanuka in equal proportions with frequent emergent kauri and kahikatea. There are occasional puriri, kowhai, ti kouka and kawaka, as well as mature emergent macrocarpa and radiata pine. There are some stands of senescent manuka with a groundcover of tangle fern (Julia Walker pers. comm.).

(b) Forest on the true right bank comprises totara (abundant) and kowhai (common) with occasional ti kouka.

(c) One large area of recently regenerating shrubland is dominated by manuka, with frequent kanuka and occasional ti kouka.

#### **Significant flora**

According to 2005 ground-based survey, this site contains two threatened plant species, mida (Gradual Decline) and kawaka (Sparse), a regionally significant plant species, *Coprosma crassifolia*, and two locally uncommon plant species, mangeao and tawa (Julia Walker, pers. comm.)<sup>11</sup>.

#### **Fauna**

Not surveyed.

#### **Significance**

The site contains the best representative example of manuka shrubland (c) in Otamatea ED Northland, and is also significant for the presence of threatened, regionally significant and locally uncommon plant species. 1 ha of the site is within the Paparoa Creek Marginal Strip No. 2 (administered by DOC).

### **LOWER PAHI RIVER FOREST REMNANTS**

Survey no.	Q08/103
Survey date	18 November 2005
Grid reference	Q08 228 641 (6 remnants)
Area	49.4ha
Altitude	0–100 m asl

#### **Ecological units**

- (a) Totara-kanuka forest on moderate to steep hillslope (50%)
- (b) Totara-kanuka-kahikatea forest on moderate to steep hillslope (35%)
- (c) Totara-puriri-kowhai forest on gentle coastal margin (10%)
- (d) Karaka-kowhai-tree privet forest on steep coastal margin (5%)

#### **Landform/geology**

Hillslopes and gullies underlain by undifferentiated Eocene–Oligocene mudstone, sandstone and bioclastic limestone (Motatau Complex), and melange (undifferentiated Mangakahia & Motatau Complex lithologies).

---

<sup>11</sup> Kawaka was recorded at grid reference Q08 208 635. Seedlings and saplings were abundant, but concentrated in one small area of the forest. *Coprosma crassifolia* was recorded at grid reference Q08 204 637 (on the southwestern side of the headland), on the edge of the older forest in the Marginal Strip (Julia Walker 2005, pers. comm.).