KAURI HILL BUSH REMNANTS

Survey no.	P08/026
Survey date	3 April 1998
Grid reference	1698589E 6015346N (AY29)
Area	45.3 ha, 3 remnants
Altitude	20-100 m a.s.l.

Ecological unit

- (a) Totara-kānuka/mānuka forest on moderate hillslope
- (b) Taraire forest on moderate hillslope (25%)
- (c) Kānuka/mānuka forest on moderate hillslope (15%)
- (d) Kahikatea-rimu forest on gentle hillslope (10%)
- (e) Kahikatea-nīkau forest on gentle hillslope (10%)
- (f) Kānuka/mānuka-rimu-tānekaha forest on hillslope (15%)
- (g) Kauri forest on gentle hillslope

Landform/geology

Hillslopes of Mangakahia Complex mudstone.

Vegetation

(a) In the northeastern and southern areas of the northeastern remnant, tôtara is abundant and kānuka/mānuka is common. Rewarewa and taraire are occasional.

(b) Taraire forest occurs in the middle of this remnant, along with frequent totara. Kahikatea, kauri, northern rātā, rewarewa, rimu, mamaku and nīkau are occasional.

(c) Kānuka/mānuka is dominant in the western end of this remnant while tōtara is frequent and tānekaha is occasional.

(d) In the middle remnant on the eastern side of Lusk Road, kahikatea and rimu are common with frequent kānuka/mānuka and taraire. Rewarewa is occasional and tōtara is apparent on the edges.

(e) Abundant kahikatea with common nīkau also occurs in this remnant. Tī kõuka, tõtara, pūriri, pukatea, taraire, rewarewa and mamaku are all occasional.

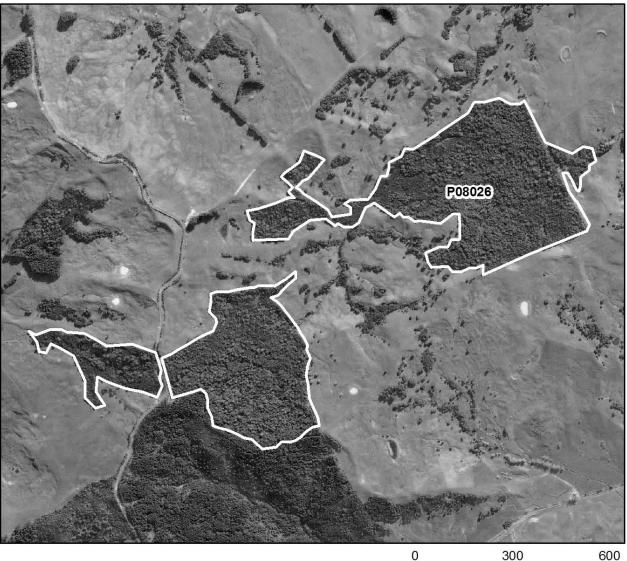
(f) Alongside this, kānuka/mānuka, emergent rimu and emergent tānekaha are common. Emergent kahikatea, tōtara, kauri, nīkau and mamaku occur occasionally.

Dominant kānuka/mānuka (type (c)) occurs in the remaining remnant on the western side of Lusk Road, along with occasional tānekaha, tōtara and emergent rewarewa.

(g) Emergent kauri is abundant behind the vegetation just described. Tānekaha, rimu, tōtara, pūriri and kānuka/mānuka are occasional.

Significant flora

Northern rātā (regionally significant species) was recorded during this survey.

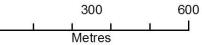


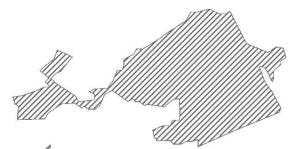
P08/026 Kauri Hill Bush Remnants

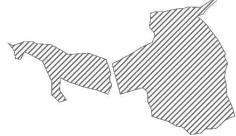
Habitat type



🗴 Shrubland







Fauna

Kauri snail (Gradual Decline)—1999 record by Dr Fred Brook, made during this survey.

Significance

Forested remnants, containing emergent kauri and Threatened and Regionally significant species.

Representative site for type (a) tõtara-kānuka/mānuka, type (d) kahikatearimu forest and type (e) kahikatea-nīkau forest. Sole record of type (d) and (e) in the Tokatoka Ecological District. This site occurs within an 'At Risk' land environment (A6.1b) (Walker et al. 2007).

TOKATOKA ROAD REMNANT

Survey no.	P08/028
Survey date	20 May 1999
Grid reference	1696166E 6013828N (AY29)
Area	20.4 ha
Altitude	< 20-60 m a.s.l.

Ecological unit

- (a) Kānuka/mānuka-tōtara forest on moderate hillslope
- (b) Kōwhai-tōtara forest on alluvium

Landform/geology

Floodplain of Holocene alluvium, and adjoining hillslopes of Mangakahia Complex sandstone and mudstone.

Vegetation

Only a limited view of this site was achieved.

(a) Co-dominant kānuka/mānuka and tōtara occurs in the south with some emergent kauri, kahikatea, tī kōuka and mamaku.

(b) Adjacent to Tokatoka Road, an association of kōwhai and tōtara occurs. Occasional species include mataī, tītoki, mānatu, kahikatea, tī kōuka, harakeke, *Muehlenbeckia australis*, native divaricating shrubs, privet sp. and pampas (edges).

Significant flora

Mānatu (regionally significant species) recorded during this survey.

Fauna

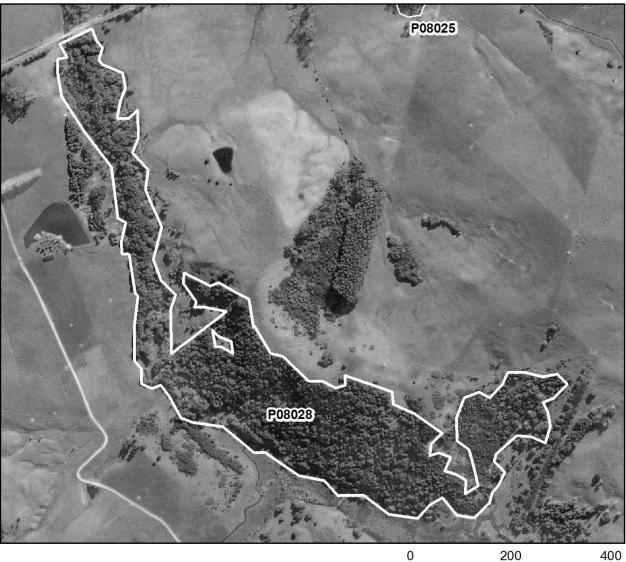
None noted.

Significance

This site contains forest on alluvium which is an under-represented habitat type within the Tokatoka Ecological District and throughout Northland generally. Approximately 8 ha of this site occurs within a 'Chronically Threatened' land environment (G3.1b) and 12.3 ha within an 'At Risk' land environment (A6.1b) (Walker et al. 2007).

1

Metres



P08/028 Tokatoka Road Remnant

Habitat type



Shrubland

Wetland



TOKATOKA ROAD HILLSLOPE FOREST

Survey no.	24 May 1999
Survey date	P08/030
Grid reference	1690875E 6012672N (AY29)
Area	9.5 ha
Altitude	80-140 m a.s.l.

Ecological unit

- (a) Pūriri-kānuka/mānuka forest on moderate hillslope (10%)
- (b) Kauri forest on moderate hillslope (15%)
- (c) Pūriri-taraire forest on hillslope (30%)
- (d) Kahikatea-kānuka/mānuka forest on moderate hillslope (30%)
- (e) Kānuka/mānuka forest on moderate hillslope (15%)

Landform/geology

Hill of Waitakere Group dacite.

Vegetation

(a) Abundant pūriri with common kānuka/mānuka occurs in the north of the site. Tōtara is frequent with occasional emergent kauri and tī kōuka.

(b) Kauri is dominant west of this.

(c) On the southern face, pūriri and taraire are common on the upper slopes. Kauri, rewarewa, tōtara, kānuka/mānuka and nīkau are occasional.

(d) Down slope from here, abundant kahikatea with common kānuka/mānuka occurs. Pūriri is frequent. Taraire, tõtara and nīkau are also present.

Fauna

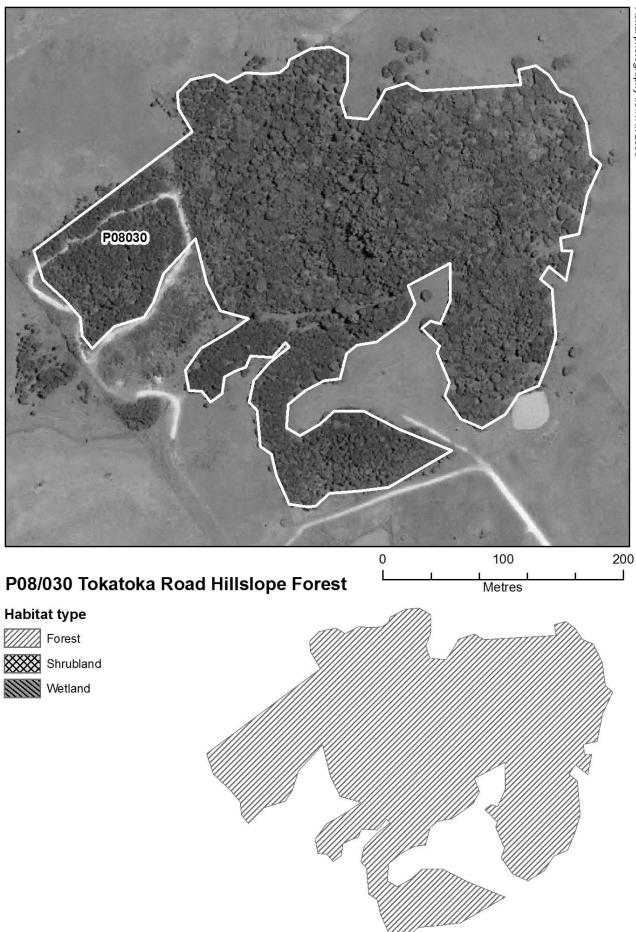
None noted.

Significance

This site is a prominent landmark in the immediate area, containing significant kauri and pūriri and taraire forest. Pūriri and taraire provide a potential year-round food source for the regionally significant kūkupa.

Representative site for type (b) kauri forest, type (c) pūriri-taraire and type (d) kahikatea-kānuka/mānuka forest. Sole record of type (a) pūriri-kānuka/ mānuka forest and type (d) kahikatea-kānuka/mānuka forest.

A Queen Elizabeth II National Trust Open Space covenant protects 5.2 ha of this site. The site occurs within a 'Chronically Threatened' land environment (A6.1d) (Walker et al. 2007).



INCH ROAD REMNANT

Survey no.	P08/032
Survey date	24 May 1999
Grid reference	1689295E 6012833N (AY29)
Area	4.7 ha
Altitude	60-80 m a.s.l.

Ecological unit

- (a) Kahikatea-nīkau-pūriri forest on gentle hillslope (90%)
- (b) Kauri forest on gentle hillslope (10%)

Landform/geology

Hillslopes of Waitakere Group basaltic breccia and Motatau Complex muddy limestone.

Vegetation

(a) A mosaic of kahikatea, nīkau and pūriri that occurs with totara and kānuka/ mānuka. Emergent kauri, and rewarewa, pukatea, taraire and tī kouka are occasional.

(b) Emergent kauri is common in the northern area of the remnant along with occasional totara, pūriri, taraire, and kānuka/mānuka.

Fauna

None noted.

Significance

Lowland forest is an under-represented forest type within the Tokatoka Ecological District and throughout Northland generally. This site also includes kauri forest, which is a rare forest type in this District. Sole record of type (a) kahikatea-nīkau-pūriri forest in this District. This site is covered by a 'Chronically Threatened' land environment (A6.1d) (Walker et al. 2007).

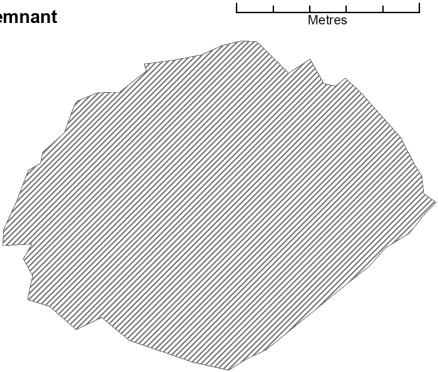


P08/032 Inch Road Remnant

Habitat type



🗴 Shrubland



MAUNGARAHO ROCK SCENIC RESERVE AND SURROUNDS

Survey no.	P08/034
Survey date	24 May 1999
Grid reference	1687935E 6013208N (AY29)
Area	16.6 ha, 2 remnants (6.8 ha forest, 9.8 ha shrubland)
Altitude	60-221 m a.s.l.

Ecological unit

(a) Pūriri-taraire forest on moderate hillslope

- (b) Kauri forest on moderate hillslope
- (c) Kānuka/mānuka shrubland on moderate hillslope
- (d) Kānuka/mānuka-māpou shrubland on moderate hillslope
- (e) Taraire forest on moderate hillslope
- (f) Kahikatea forest on moderate hillslope
- (g) Mamaku-kānuka/mānuka shrubland in gully
- (h) Kānuka/mānuka-tōtara shrubland on moderate hillslope

Landform/geology

Dike of Waitakere Group andesite intruding Mangakahia Complex mudstone and Motatau Complex muddy limestone.

Vegetation

(a) The northern remnant alongside Maungaraho Road is predominantly common pūriri and taraire. Kānuka/mānuka is frequent, while rimu, karaka, kahikatea, pukatea, puka, tī kõuka and nīkau are occasional.

(b) A small area of abundant kauri occurs here.

Eight vegetation types were identified around Maungaraho Rock:

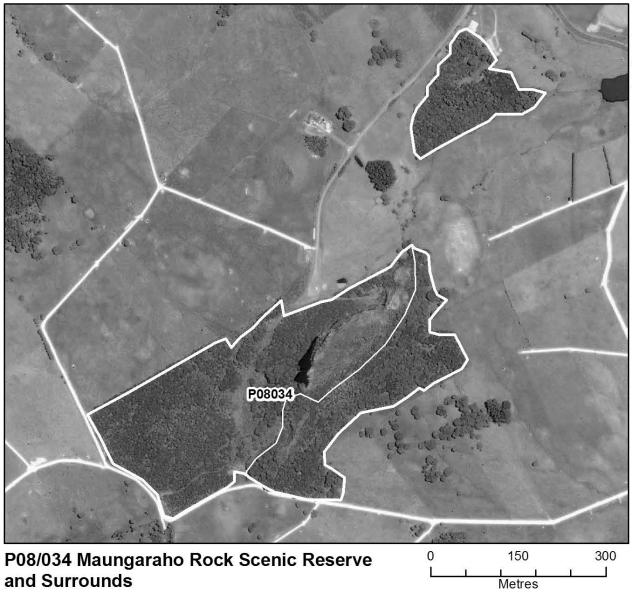
(c) abundant kānuka/mānuka occurs in the west of Maungaraho Rock along with frequent tōtara and tī kōuka. Māpou and *Coprosma* sp. occur occasionally. Colonies of pampas are present in this area.

A small area of type (a) co-dominant pūriri and taraire occurs east of this, along with frequent karaka and occasional tawa, pukatea, rewarewa, tī kōuka, mamaku and kānuka/mānuka.

(d) At the end of Maungaraho Road around the entrance of the reserve, abundant kānuka/mānuka occurs along with common māpou. *Coprosma* sp. is frequent. Occasional species include hangehange, tōtara, nīkau, tī kōuka and pampas.

(e) In the southwest, a small area of commonly occurring taraire is present along with frequent pūriri and karaka. Other species present include emergent kauri, pukatea, kahikatea, rewarewa, tōtara, nīkau and kānuka/mānuka.

(f) Downslope from this a small stand of kahikatea occurs along with occasional karaka, tī kõuka, tõtara and kānuka/mānuka (< 1%).

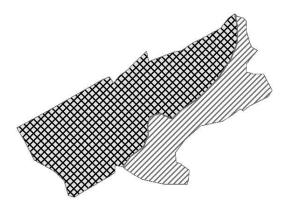


Habitat type



Shrubland





(g) Abundant mamaku with common kānuka/mānuka occurs in a gully east of this, with some rewarewa, tōtara, tī kōuka and māpou.

Type (c) kānuka/mānuka shrubland occurs in this area along with frequent tōtara. Lancewood, māpou, mamaku and tī kōuka are occasional.

(h) Co-dominant kānuka/mānuka and tōtara also occurs in this southern shrubland area, along with the odd kahikatea and tī kōuka.

Type (a), common pūriri and taraire occur in a small area to the east of Maungaraho Rock. Occasional species include rewarewa, karaka, puka, tõtara, lancewood, nīkau and kānuka/mānuka.

Type (b) common kauri also occurs here, along with rimu, kahikatea, pūriri and occasional karaka and nīkau.

Significant flora

Threatened and At Risk species

Hebe saxicola (Nationally Critical) (2007, AK 301052), *Daucus glochidiatus* (Nationally Critical) (Stanley 1997), *Senecio scaberulus* (Nationally Critical) (1997, AK 233091), *Picris burbidgeae* (Nationally Endangered (1997, AK 232960), and *Korthalsella salicornoides* (Naturally Uncommon) (1997, AK 232713).

Regionally significant species

Phebalium nudum, Uncinia distans (Stanley 1997), *Elymus multiflorus* (1997, AK 232713), *Grammitis billardierei* (2008, AK 302263) *Grammitis ciliata* (2008, AK 302262) and *Hebe macrocarpa* var. *macrocarpa* (2008, AK 302259).

Fauna

1992 record SSBI P08/H027 only of common forest birds, shining cuckoo, NZ kingfisher, grey warbler and NI fantail.

Significance

Maungaraho Rock, its rock outcrop and ridge are a distinctive and nationally significant landform in the area. The Maungaraho andesitic dike is the largest dike in the Tokatoka area. The landform contains examples of the unusual mineral harmotome and is a geopreservation site of national importance (Kenny & Hayward 1996).

Presence of four nationally Threatened, one At Risk and six Regionally significant plant species. The Nationally Critical *Hebe saxicola* is only known from Maungaraho Rock Scenic Reserve and is a new hebe species that has recently been described. It was previously thought to be *Hebe perbella*, a hebe restricted to the west coast of Northland (de Lange & Rolfe 2008).

A representative site for several shrubland types—(c), (d), (g) and (h) with type (d) and (g) unrecorded elsewhere in the Tokatoka Ecological District.

The Maungaraho Rock Scenic Reserve (13.59 ha) is administered by the Kaipara District Council. Approximately 1.5 ha of this site occurs within a 'Chronically Threatened' land environment (A6.1d), 1.9 ha within an 'At Risk' land environment (A6.1b) and 13.2 ha within a 'Critically Underprotected' land environment (A6.1c) (Walker et al. 2007).

MONTGOMERIES MEMORIAL BUSH SCENIC RESERVE AND SURROUNDS

Survey no.	P08/036
Survey date	24 May 1999
Grid reference	1686634E 6013662N (AY29)
Area	28.7 ha, 2 remnants
Altitude	20-130 m a.s.l.

Ecological unit

- (a) Kauri forest on moderate hillslope and ridge
- (b) Kānuka/mānuka forest on moderate hillslope
- (c) Kānuka/mānuka-pūriri-tōtara forest on gentle hillslope
- (d) Taraire forest on moderate hillslope
- (e) Kowhai-pūriri forest on moderate hillslope
- (f) Pinus sp.-kānuka/mānuka forest on moderate hillslope
- (g) Kauri-kānuka/mānuka forest on ridge

Landform/geology

Hills of Motatau Complex muddy limestone and Mangakahia Complex mudstone.

Vegetation

The southern remnant reduced in size sometime between 2002 and 2008 aerial photography.

(a) Kauri stands occupy about 50% of the Montgomeries Memorial Bush Scenic Reserve (the northern remnant).

On the ridge in the northern area of the reserve, abundant kauri occurs with frequent tānekaha and kānuka/mānuka, and some rimu.

(b) Downslope from this, a canopy of abundant kānuka/mānuka is pierced by frequent emergent kauri (20%) and tānekaha (20%). Emergent rimu, tōtara and tī kōuka occur occasionally.

(c) On the lower slopes, an association of kānuka/mānuka, tōtara and pūriri occurs, along with frequent kahikatea. Emergent kauri, karaka, mataī, rimu, taraire, tī kōuka and nīkau are also present.

(d) Abundant taraire occurs in the southwest. Frequent species include pūriri, kohekohe and nīkau. Occasional species include tawa, rewarewa, karaka, kahikatea, kauri, pukatea and tī kõuka.

(e) Adjacent to this, abundant kõwhai occurs along with common pūriri. Kohekohe is frequent. Karaka, pukatea, nīkau and kānuka/mānuka are also present.

Type (a) abundant kauri occurs here along with frequent kānuka/mānuka and occasional tānekaha.

(f) The remaining remnant, south of the scenic reserve, contains abundant *Pinus* sp. along with common kānuka/mānuka in the north. Frequent kauri rickers and tōtara also occur (this ecological unit may no longer exist, as 2008 aerial photography shows clearance in an area in the northwest of this remnant).



P08/036 Montgomeries Memorial Bush Scenic Reserve and Surrounds

Habitat type





1

Metres

(g) Above this remnant, on the ridge, abundant emergent kauri occurs along with common kānuka/mānuka. Tānekaha is occasional.

On the western side of this remnant, abundant kauri, type (a) occurs with frequent kānuka/mānuka and some tānekaha and tōtara.

Dominant kānuka/mānuka, type (b), also occurs here. Rimu and tānekaha are frequent while emergent kauri, pūriri, tōtara and tī kōuka are occasional.

Fauna

1989 records from SSBI P08/H002:

kūkupa (regionally significant species), grey warbler, silvereye, NI fantail, tūī, and NZ kingfisher.

Significance

This site contains a diverse range of forest types, including very good stands of kauri, which is rare within the Tokatoka Ecological District. The site also provides habitat for the regionally significant kūkupa.

Representative site for type (a) kauri forest, type (b) kānuka/mānuka forest, and type (g) kauri-kānuka/mānuka forest.

Three vegetation types are unrecorded elsewhere in the District—types (c), (e) and (g).

Montgomeries Memorial Bush Scenic Reserve is a soil site of regional importance for:

- (i) presence of Rockvale soils. The only record in 'Inventory of New Zealand Soil Sites of international, national and regional importance'.
- (ii) Rockvale soils have mostly been developed for dairying
- (iii) contains good examples of Waikare soils.

(Arand et al. 1993)

The Scenic Reserve comprises 10.5 ha and is administered by DOC.

This site occurs within an 'At Risk' land environment (A6.1b) (Walker et al. 2007).

TOKATOKA ROAD RIVERINE REMNANT

Survey no.	P08/038
Survey date	19 October 1999
Grid reference	1692226E 6012987N (AY29)
Area	5.5 ha
Altitude	0-20 m a.s.l.

Ecological unit

(a) Kānuka/mānuka-kōwhai-tōtara forest on alluvium

Landform/geology

Holocene alluvial deposits.

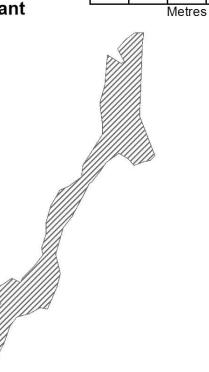


P08/038 Tokatoka Road Riverine Remnant

Habitat type



Shrubland Wetland



1

1

Vegetation

(a) Kānuka/mānuka, kōwhai and tōtara are associated as common species with frequent kahikatea. Kauri, rimu, pukatea, tī kōuka and *Muehlenbeckia australis* are occasional.

Fauna

None noted.

Significance

This site is narrow and elongated. However, forest on alluvium is an under-represented forest type within the Tokatoka Ecological District and throughout Northland generally, and it is located within a very modified Ecological District. The site occurs within a 'Chronically Threatened' land environment (A6.1d) (Walker et al. 2007).

TE WHIRO BUSH AND SURROUNDS

Survey no.	P08/039
Survey date	25 May 1999
Grid reference	1691244E 6016727N (AY29)
Area	34.2 ha, 5 remnants
Altitude	20-117 m a.s.l.

Ecological unit

- (a) Taraire forest on moderate hillslope
- (b) Tōtara-kānuka forest on gentle hillslope

Landform/geology

Hillslopes of Mangakahia Complex sandstone and mudstone.

Vegetation

In 2002, a sixth remnant (7.3 ha) was present in the south of this site next to what appears to be an artificial pond. 2008 aerial photography shows that this remnant has been almost completely cleared and it is now not included in the site.

The following ecological unit descriptions have been labelled (1), (2), (3) etc. with the site map labelled accordingly to show where the described areas occur.

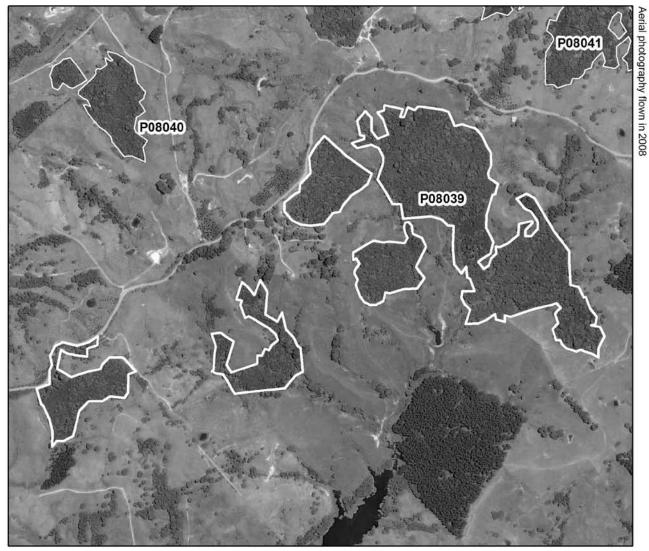
A collection of 5 remnants.

(1)

(a) The northeastern remnant is taraire dominant. A range of species occur occasionally including kahikatea (including one old-growth kahikatea), pukatea, pūriri, rewarewa, rimu, tītoki, tōwai, kohekohe, tōtara, tī kōuka, mamaku and nīkau.

(2)

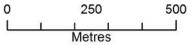
Taraire (type (a)) is abundant in the small remnant west of this, adjacent to Hoyle Road. Rewarewa and pūriri are frequent; kauri, kahikatea, tōtara, kohekohe, tī kōuka and nīkau are occasional.

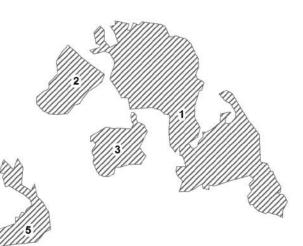


P08/039 Te Whiro Bush and Surrounds

Habitat type

Forest
Korest
Ko







The small remnant south of this (3) was not surveyed.

(4)

Type (a) taraire-dominant forest occurs in the southwest remnant adjoining Hoyle Road. Pūriri and rewarewa are frequent and emergent kauri, kahikatea, rimu and tõtara are occasional.

(5)

The remnant adjacent to this on its eastern boundary was not surveyed.

Fauna

1989 records from SSBI P08/H003:

NI brown kiwi (Nationally Vulnerable). However, a 1992/93 DOC Northland kiwi survey did not record kiwi. Kūkupa (regionally significant species), grey warbler, silvereye, NI fantail, tūī, and NZ kingfisher. *Peripatus* sp. (regionally significant species). Possible record for forest gecko (regionally significant species).

Significance

A collection of stepping stone habitats within a very modified Ecological District. Threatened and Regionally significant species have been recorded in the past. Approximately 8.3 ha of this site is covered by a 'Chronically Threatened' land environment (A6.1d) and 25.9 ha by a 'Critically Threatened' land environment (A6.1c) (Walker et al. 2007).

PASLEY ROAD REMNANTS

Survey no.	Q08/042
Survey date	12 April 1999
Grid reference	1707105E 6004113N (AY29)
Area	31.6 ha, 10 remnants
Altitude	<40-80 m a.s.l.

Ecological unit

(a) Taraire-pūriri forest on moderate hillslope

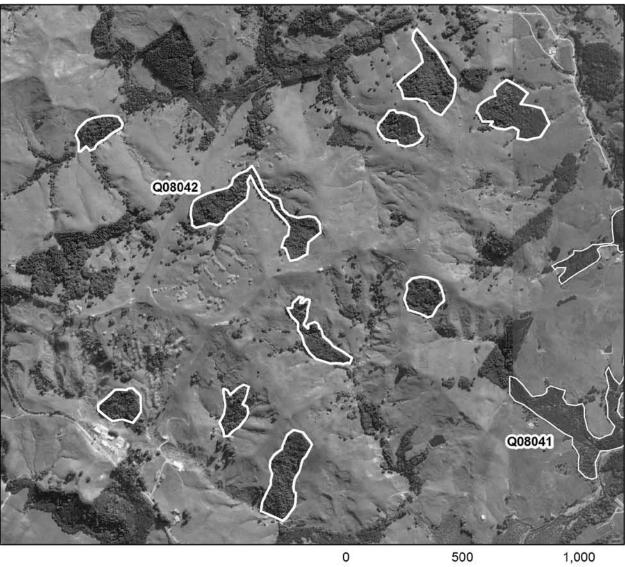
Landform/geology

Hillslopes of Mangakahia Complex sandstone and mudstone.

Vegetation

The 1999 survey recorded a 7.4-ha remnant in the north of this site which was confirmed by 2002 aerial photography. This remnant was described as being kānuka-mānuka and kauri-rimu forest. 2008 aerial photography shows that this remnant has been almost completely cleared and, as a result, has been removed from the site.

A collection of 10 small remnants with only two remnants described in this survey. The following ecological unit descriptions have been labelled (1), (2) with the site map labelled accordingly to show where the described areas occur.



т

Q08/042 Pasley Road Remnants

Habitat type



🕈 Shrubland



1

(1)

(a) Taraire and pūriri are found in this small remnant, with frequent kahikatea and some rimu.

(2)

The boomerang-shaped remnant south of this contains type (a) abundant taraire with common pūriri (95%). Kauri, rimu, kahikatea, tõtara, rewarewa and kānuka/mānuka (edges) are present.

The remaining 8 small remnants were not surveyed. From aerial photography it appears they contain a similar range of species.

Fauna

None noted.

Significance

A collection of 10 small forest remnants providing stepping stone habitat including a potential seasonal food source (taraire and pūriri) for the regionally significant kūkupa, within a very modified Ecological District. Although these remnants are small, this site is rated as Level 1 because of the paucity of this habitat type in the area. Fencing is progressing around some of these remnants. Approximately 0.6 ha of this site is within an 'At Risk' land environment (A6.1b) and 31 ha within a 'Critically Underprotected' land environment (A6.1a and A6.1b) (Walker et al. 2007).

TOKATOKA/OKAHU STREAM REMNANTS (PART OF THE MANGANUI RIVER COMPLEX)

Survey no.	P08/043
Survey date	25 May 1999
Grid reference	1694855E 6017435N (AY29)
Area	10.5 ha, 5 remnants
Altitude	< 20-40 m a.s.l.

Ecological unit

- (a) Tī kouka forest on alluvium
- (b) Kahikatea forest on alluvium
- (c) Kānuka/mānuka-kauri forest on gentle hillslope
- (d) Totara forest on gentle hillslope
- (e) Taraire forest on gentle hillslope

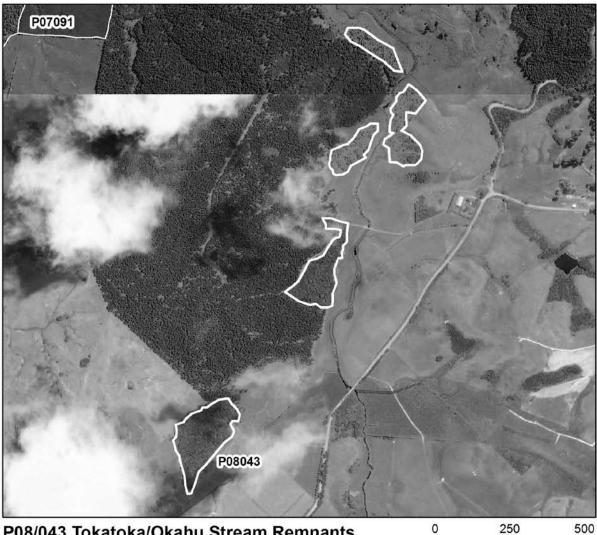
Landform/geology

Floodplain of Holocene alluvium, and adjoining hillslopes of Mangakahia Complex sandstone and mudstone.

Vegetation

The view of the northern remnants was not very clear; it appears harakeke was a prevalent ground cover.

The very northern remnant was not viewed on the day of the survey but looks to be consistent with the adjacent remnants and is likely to include $t\bar{t}$ kouka and kahikatea.



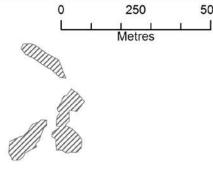
P08/043 Tokatoka/Okahu Stream Remnants (Part of Manganui River Complex)

Habitat type

Forest

Shrubland

Wetland







(a) To the south, the two remnants alongside Okahu Stream are defined by a very open canopy of abundant $t\bar{t}$ kõuka over approximately 50% of the area, along with frequent kahikatea.

(b) Dominant kahikatea occurs in the remaining area with frequent $t\bar{\imath}\,k\bar{o}uka.$

(c) The middle remnant is 100% kānuka/mānuka and emergent kauri. Tōtara is frequent. Occasional species include rewarewa, rimu, kahikatea, tānekaha, kōwhai, and nīkau.

(d) Abundant tõtara occurs in 50% of the remaining southern remnant, along with frequent tītoki. Kauri, rimu, rewarewa, pūriri, kahikatea, kōwhai, and kānuka/mānuka are occasional.

(e) The remaining 50% of this remnant is taraire dominant with frequent pūriri. Tawa, kauri, tānekaha, pukatea, rimu, rewarewa, pukatea and tōtara are occasional.

Fauna

None noted.

Significance

This site includes lowland and alluvial forest types which are underrepresented habitat types within the Tokatoka Ecological District and throughout Northland generally. They occur next to the Okahu Stream which is part of the Manganui River Complex. Representative site for type (a) $t\bar{t}$ kõuka forest; dominant $t\bar{t}$ kõuka alluvial forest is particularly rare throughout Northland. Approximately 4.5 ha of this site occurs within a 'Chronically Threatened' land environment (A5.2a and G3.1b) and 5.9 ha within a 'Critically Underprotected' land environment (A6.1c) (Walker et al. 2007).

OKAHU BUSH

Survey no.	P08/044
Survey date	25 May 1999
Grid reference	1697142E 6017596N (AY29)
Area	9.8 ha
Altitude	40-100 m a.s.l.

Ecological unit

- (a) Taraire forest on moderate hillslope (50%)
- (b) Kahikatea forest on moderate hillslope (50%)

Landform/geology

Hillslopes of Mangakahia Complex sandstone and mudstone.

Vegetation

(a) Approximately 50% of the site is forest containing common taraire with frequent kahikatea and pūriri. A range of species are occasional including emergent kauri, rimu, mataī, pukatea, rewarewa, tōwai, tōtara, nīkau and kānuka/mānuka.