

VINEGAR HILL BUSH

Survey no.	Q06/153
Survey date	10 April 1996
Grid reference	Q06 288 148
Area	97.2 ha (78 ha forest, 19.2 ha fernland)
Altitude	80-200 m asl

Ecological unit

- (a) Kahikatea forest on gentle hillslope
- (b) Totara forest on hillslope
- (c) Taraire-totara-towai forest on hillslope
- (d) Taraire forest on hillslope
- (e) Taraire-towai forest on hillslope
- (f) Bracken fernland on hillslope
- (g) Mamaku fernland on hillslope
- (h) Taraire-totara forest on hillslope

Landform/geology

Kerikeri Volcanics basaltic lava flows.

Vegetation

This area includes the remnants of forest between Vinegar Hill Road and State Highway One.

(a) A small remnant at the northern end of the site to the south of Saleyards Road, contains dominant kahikatea on a gentle slope. Totara is frequent and rimu is occasional.

(b) Two more remnants to the south of the first consist of dominant totara with occasional taraire, rimu, kahikatea and rewarewa.

(c) Forest fragments to the southeast of the third remnant contain taraire, towai and totara that are common in the canopy and rimu frequently present. Kahikatea and rewarewa also occur.

(d) Towards the southeast, taraire is dominant and towai frequent. There is also occasional rimu, totara, rewarewa, tanekaha and kahikatea in the canopy.

In the next long gully to the east, type (a) occurs. Kahikatea is abundant with occasional rimu and totara.

(e) Further east, taraire and towai are common. Totara and rewarewa are frequent, while rimu, kohekohe, kahikatea, pukatea and tanekaha are occasional.

Further on, in a southeasterly direction, there is a small area of bracken fernland, type (f). This grades into mamaku fernland, type (g). Hangehange is frequent and gorse is occasional.

(h) On the south side of Waitaua Road are two remnants on a south-facing slope consisting of taraire-totara forest. Rimu and rewarewa are frequent while kahikatea, puriri and mamaku are occasional.

Fauna

Kukupu (Category B threatened species).

Peripatus (Regionally significant species).

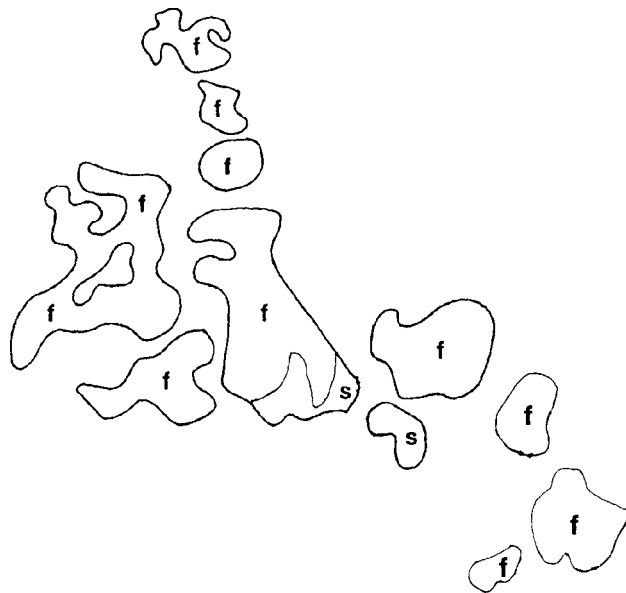
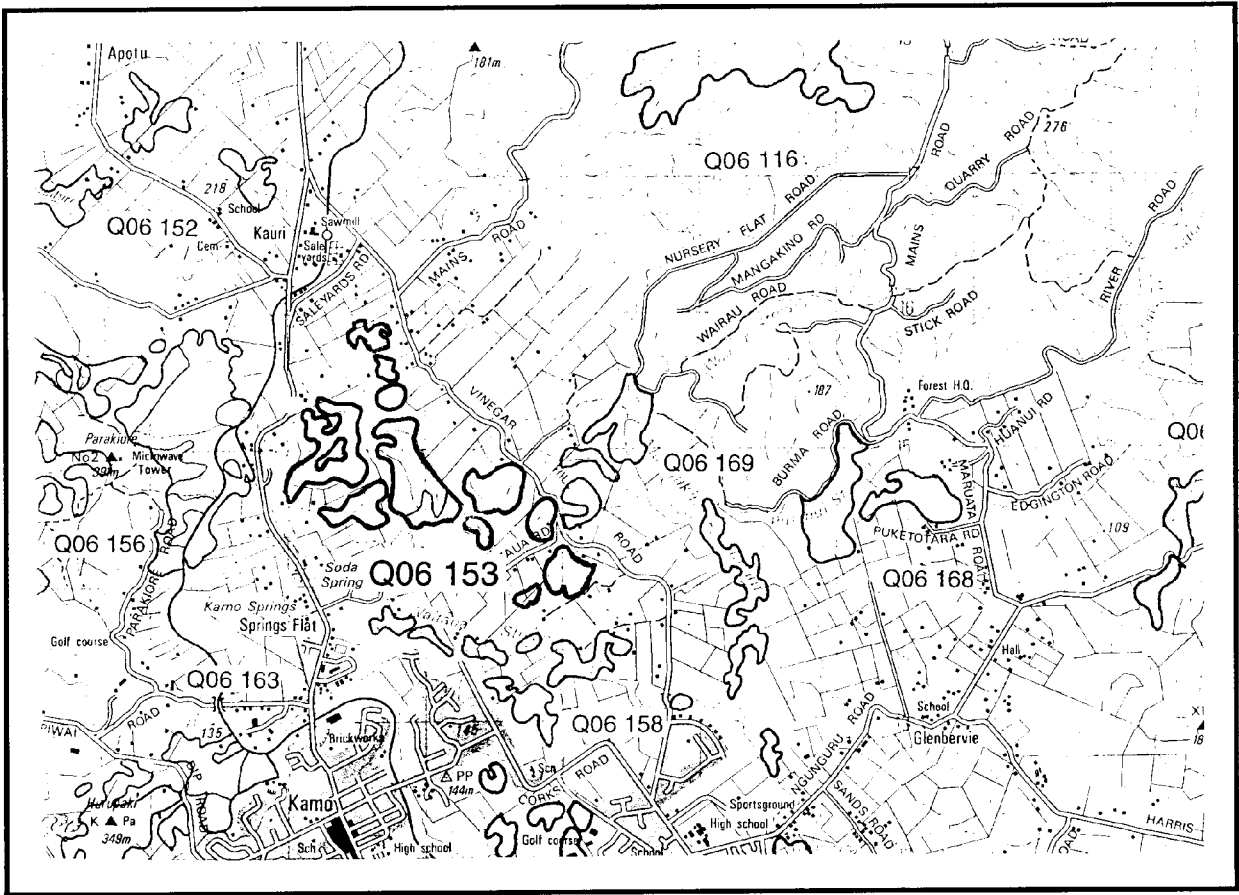


Figure 26. Vinegar Hill Road Bush, Q06 153
 Each grid is 1000 m × 1000 m and equals 100 ha.
 f = forest; s = shrubland.

Significance

Representative site for taraire forest, taraire-towai forest and taraire-totara-towai forest, and the only site recorded in this District for bracken fernland.

Presence of a threatened bird species and regionally significant invertebrate.

JORDAN VALLEY FOREST REMNANTS

Survey no.	Q06/154
Survey date	19 March 1996
Grid reference	Q06 248 199
Area	6.3 ha
Altitude	80 m asl

Ecological unit

- (a) Kahikatea forest on alluvium
- (b) **Kahikatea**-kowhai forest on alluvium

Landform/geology

Quaternary alluvial and swamp deposits in Hikurangi Swamp.

Vegetation

Four small remnants of kahikatea forest located near Jordan Valley Road on the Hikurangi Swamp flood plain.

(a) The first remnant is immediately east of Jordan Valley Road south of Mount Hikurangi. Kahikatea is abundant with frequent cabbage tree and occasional totara.

The second remnant is located north of the junction of Jordan Valley Road and Apotu Road. It also consists of abundant kahikatea with occasional totara and black maire, type (a).

(b) West of here is the third remnant which has abundant kahikatea and kowhai common. Totara and cabbage tree are frequent, while manatu is occasional.

The fourth remnant is further east and has abundant kahikatea. Cabbage tree and kowhai are occasionally present, type (a).

Significant flora

Black maire (Regionally significant species).

Fauna

Not surveyed.

Significance

An example of alluvial forest which is a rare vegetation type in the Ecological District. The only site in the Ecological District where type (b) has been recorded.

Presence of a regionally significant plant.

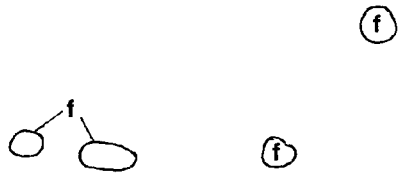
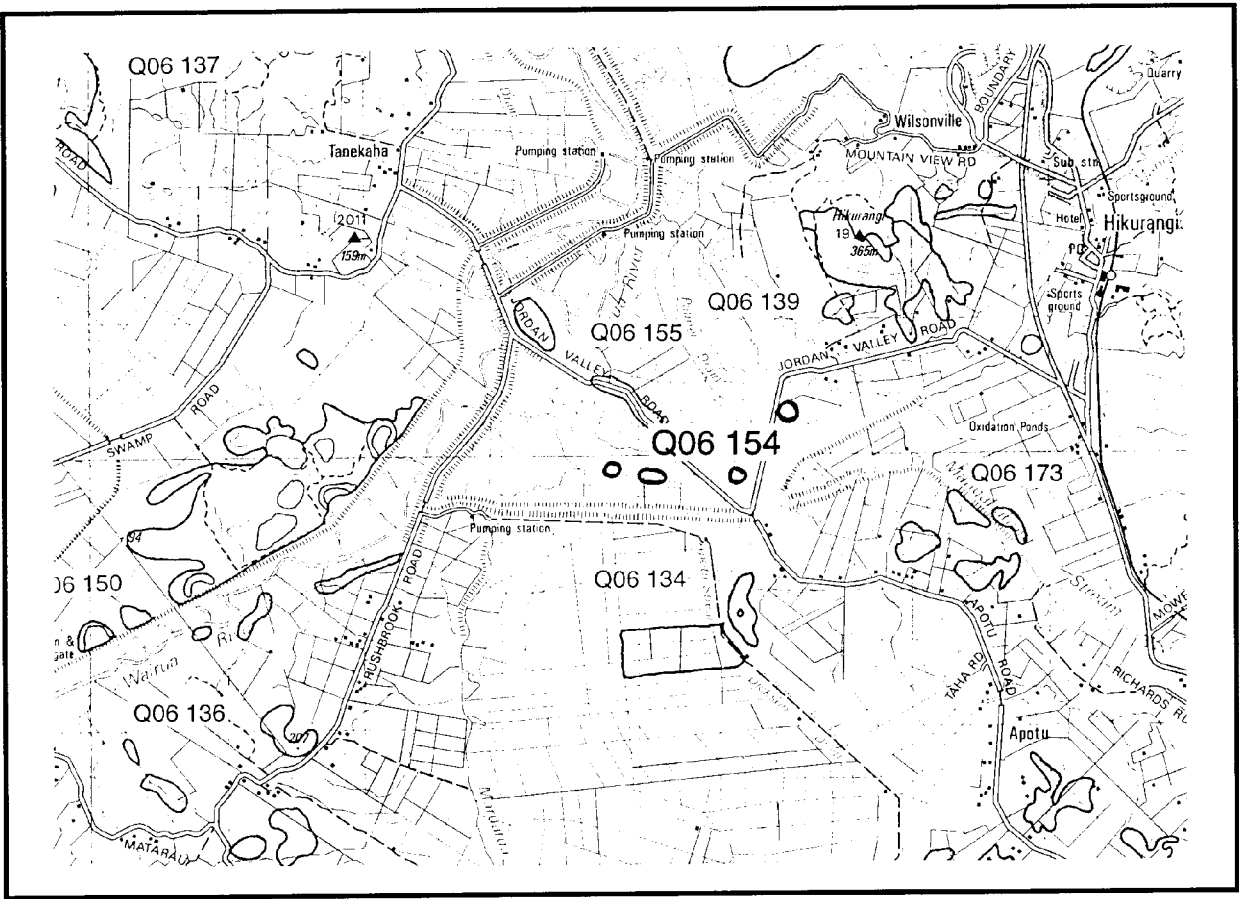


Figure 27. Jordan Valley Forest Remnants, Q06 154
 Each grid is 1000 m × 1000 m and equals 100 ha.
 f = forest.

JORDAN VALLEY SHRUBLAND

Survey no.	Q06/155
Survey date	19 March 1996
Grid reference	Q06 240 204
Area	10 ha
Altitude	80 m asl

Ecological unit

- (a) Cabbage tree-Chinese privet-*Coprosma propinqua*-harakeke swamp shrubland on alluvium
- (b) Manuka swamp shrubland on alluvium

Landform/geology

Quaternary alluvial and swamp deposits in Hikurangi Swamp.

Vegetation

A small area of swamp shrubland on either side of Jordan Valley Road. A separate swamp shrubland area also occurs further north on the bank of the Wairua River.

The southern remnant is a swamp shrubland with a mixture of cabbage tree, Chinese privet, *Coprosma propinqua* and harakeke.

Manuka, blackberry, Japanese honeysuckle, *Calystegia* sp. and *Carex* sp. frequently occur and *Coprosma areolata* is occasional.

The northern remnant consists of low-growing manuka swamp shrubland.

Significant flora

Juncus holoschoenus var. *holoschoenus* (Endangered).

Fauna

Black mudfish (Category C threatened species).

Significance

Habitat for threatened plant species and one of only two sites of black mudfish in the Southern/Eastern Northland Region.

Although Chinese privet is common in association type (a), this type has not been recorded elsewhere in the Ecological District.

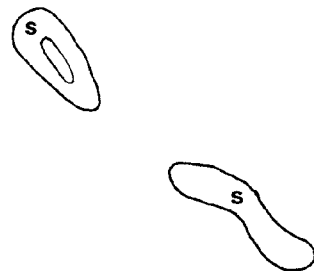
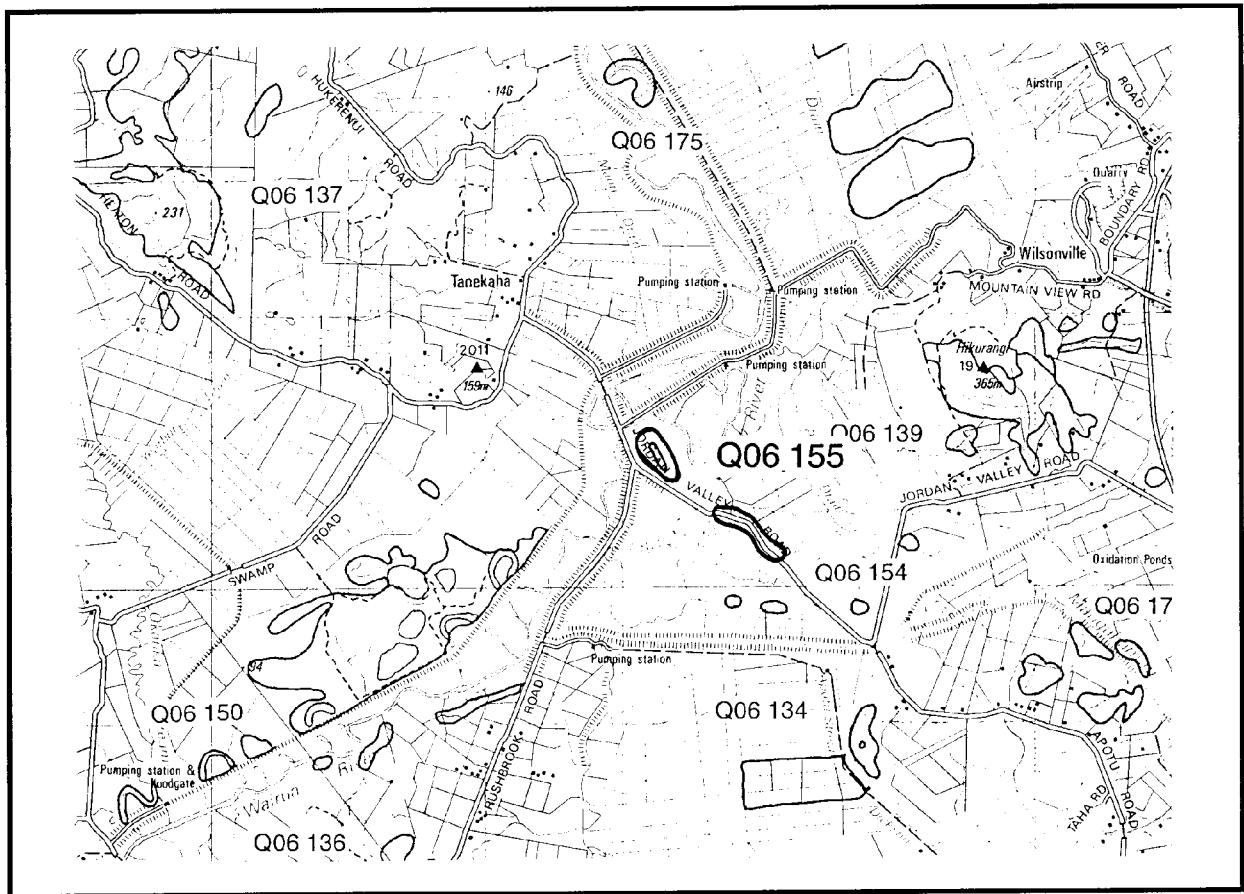


Figure 28. Jordan Valley Shrubland, Q06 155
 Each grid is 1000 m × 1000 m and equals 100 ha.
 s = shrubland.

MOUNT PARAKIORE

Survey no.	Q06/156
Survey date	28 March 1996
Grid reference	Q06 270 152
Area	275.7 ha (195.7 ha forest, 80 ha shrubland)
Altitude	100-390 m asl

Ecological unit

- (a) Mamaku-towai shrubland on hillslope
- (b) Taraire-towai forest on hillslope
- (c) Kahikatea-totara forest on toeslope
- (d) Artificial pond
- (e) **Totara**-tanekaha-towai forest on hillslope
- (f) Mamaku-towai forest on hillslope
- (g) Totara-towai forest on hillslope
- (h) Totara forest on hillslope
- (i) Totara riverine forest on alluvium

Landform/geology

Kerikeri Volcanics dacite dome.

Vegetation

This site includes a large mosaic of partially fragmented shrubland and forest on Mount Parakiore, and adjacent riverine forest at Waikoropupu Stream.

(a) On a steep east-facing slope between the Mount Parakiore Road and the railway line to the west of Springs Flat, shrubland occurs. This consists primarily of mamaku and towai while taraire is frequent. Rewarewa, totara and rimu are occasional.

(b) Further north and contiguous with type (a), type (b) is located mid-slope. Taraire and towai are co-dominant with occasional totara, rewarewa, tawa, nikau, karaka and mamaku.

(c) At the bottom of the slope on the eastern side of the railway line there is kahikatea and totara commonly occurring with frequent karaka and rewarewa.

Type (a) also occurs on the upper slopes of Mount Parakiore westwards around to where the artificial pond is located on Crane Road. The pond is 100% open water with rush species, pastures grasses and a few totara trees on the edge, type (d).

(e) At the midpoint of the hillslope to the south of the pond, totara is abundant and tanekaha and towai are common. There is also occasional mamaku, rimu and gorse.

Further east, type (f) occurs. Mamaku and towai are common while totara and tanekaha are frequent. Rewarewa, cabbage tree, matai, puriri and taraire are also present.

(g) Located on the ridge north of Ngaratunua Stream, towai is concentrated at the top of the slope and totara is concentrated further down. Kauri frequently occurs at the top of the ridge while taraire, tanekaha, rewarewa and mamaku are also present. Rimu is occasional. Kahikatea is common at the base of the slope.

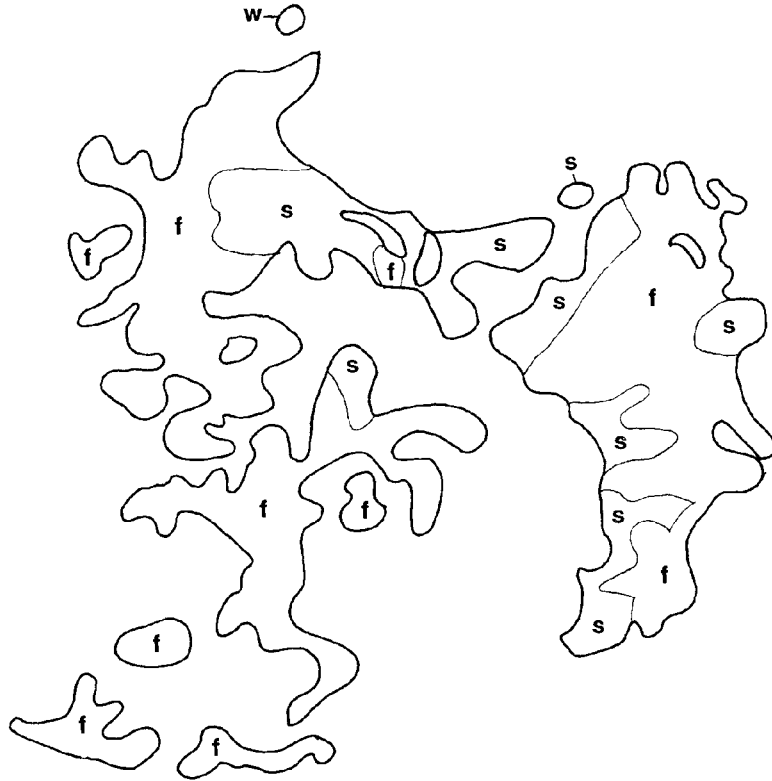
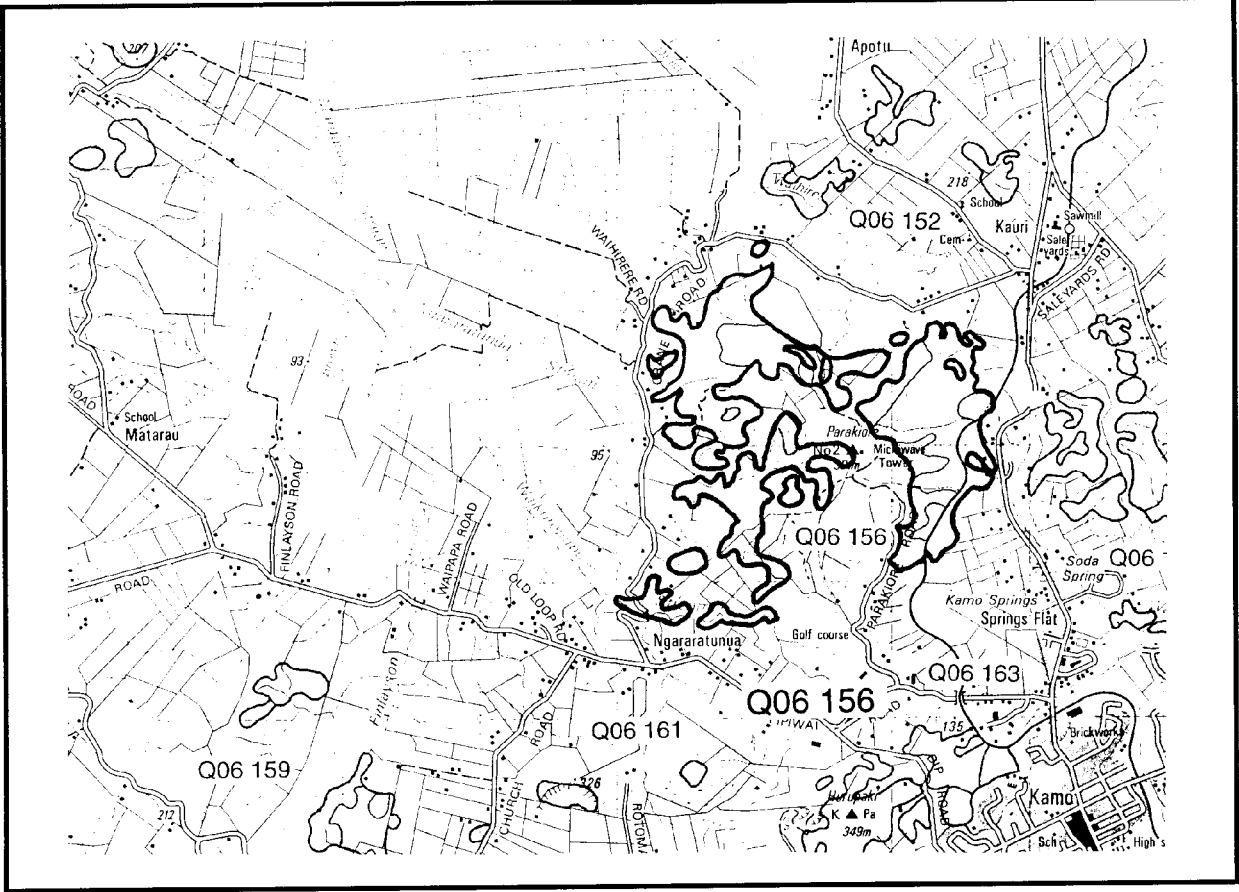


Figure 29. Mount Parakiore, Q06 156
 Each grid is 1000 m × 1000 m and equals 100 ha.
 f = forest; s = shrubland; w = wetland.

(h) Occurring on a knoll to the south of Ngaratunua Stream, totara is abundant and tanekaha occasional.

(i) Located further south along Crane Road, where it crosses Waikoropupu Stream, the riverine vegetation consists of common totara and frequent taraire, kahikatea and towai. Matai, tawa, karaka, pukatea and titoki are occasional in the canopy. Sweet grass is present in the stream near the bridge.

Fauna

Remnant population of NI brown kiwi reported (Category A threatened species).

Significance

A large diverse area including a representative site for type (a), (c) and (g). It is also the only site in the Ecological District where type (e) and type (f) have been recorded. Riverine forest, type (i), is an uncommon vegetation type in this District.

Habitat supporting a remnant population of NI brown kiwi.

Approximately 8 hectares of this site is protected under a Queen Elizabeth II National Trust covenant.

TIKIPUNGA GOLF COURSE

Survey no.	Q06/157
Survey date	10 April 1996
Grid reference	Q06 298 123
Area	27.5 ha
Altitude	80-120 m asl

Ecological unit

(a) Totara forest on gentle hillslope

Landform/geology

Kerikeri Volcanics lava flow.

Vegetation

A group of forest remnants in an urban location.

The five northernmost remnants have totara commonly occurring with frequent rimu, kahikatea and puriri. Manuka is occasional.

On the eastern side of Otangarei Stream is another remnant where totara is abundant with frequent mamaku and *Acacia* sp.

The remnant to the south of this also has abundant totara. *Pinus radiata* is frequent and cabbage tree, kahikatea, puriri, manuka and towai are also present.

To the west of Otangarei Stream another two remnants contain abundant totara with occasional kahikatea and cabbage tree.

Fauna

Kukupu (Category B threatened species).

Significance

Volcanic forest remnants in an urban setting utilised by the threatened kukupu.

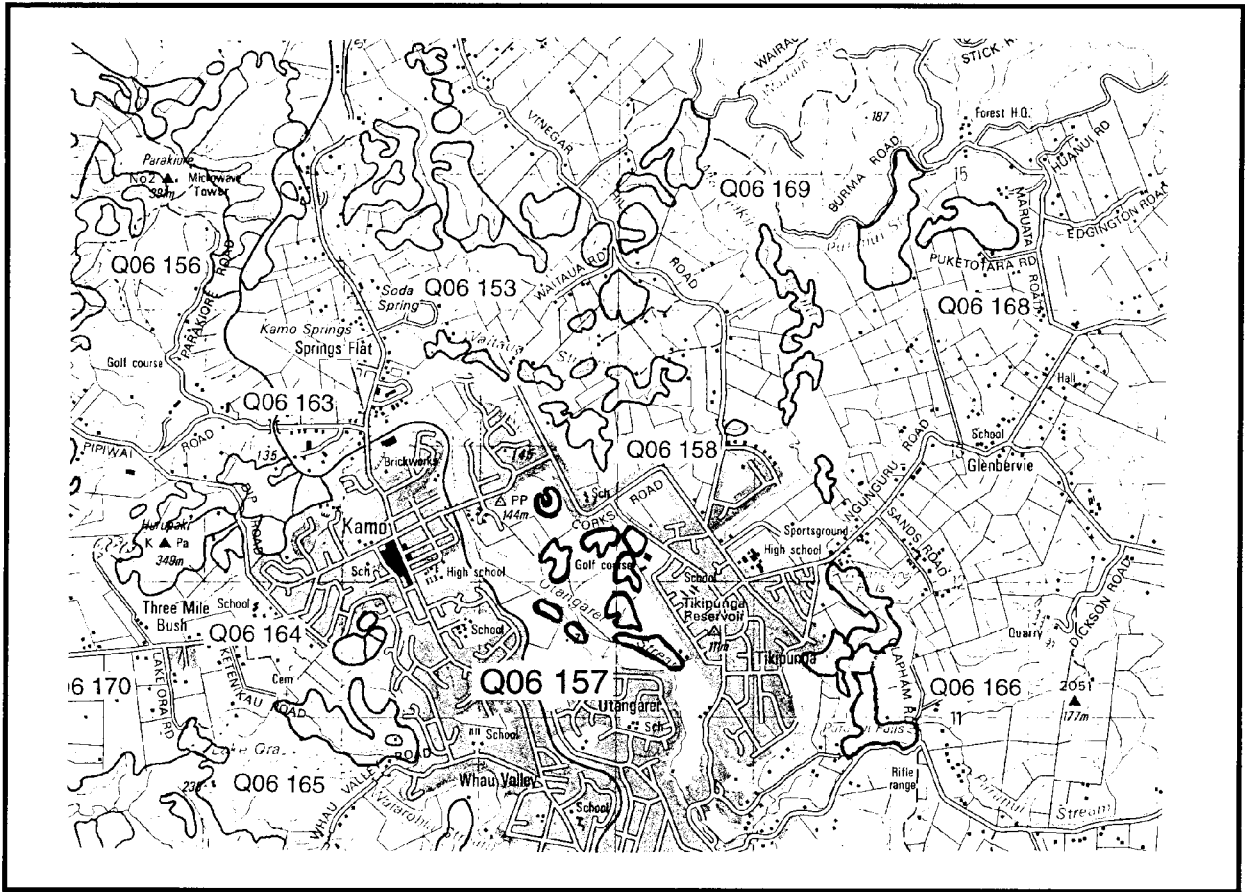
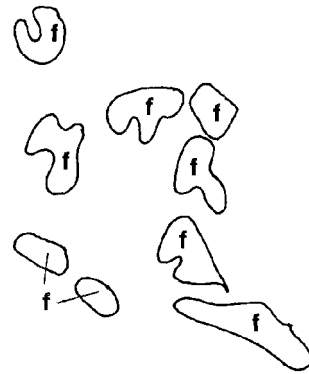


Figure 30. Tikipunga Golf Course, Q06 157
 Each grid is 1000 m × 1000 m and equals 100 ha.
 f = forest.



WAITAUA STREAM

Survey no.	Q06/158
Survey date	10 April 1996
Grid reference	Q06 295 135
Area	64.55 ha (31.3 ha forest, 1.95 ha shrubland)
Altitude	100-120 m asl

Ecological unit

- (a) Cabbage tree-harakeke riverine shrubland on alluvium

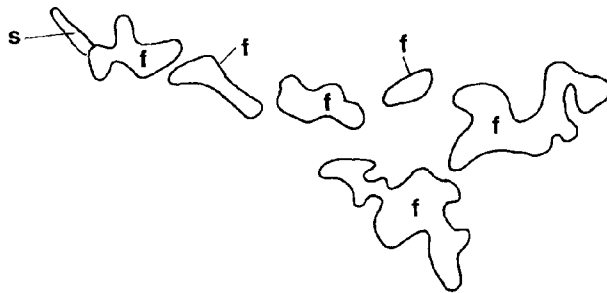
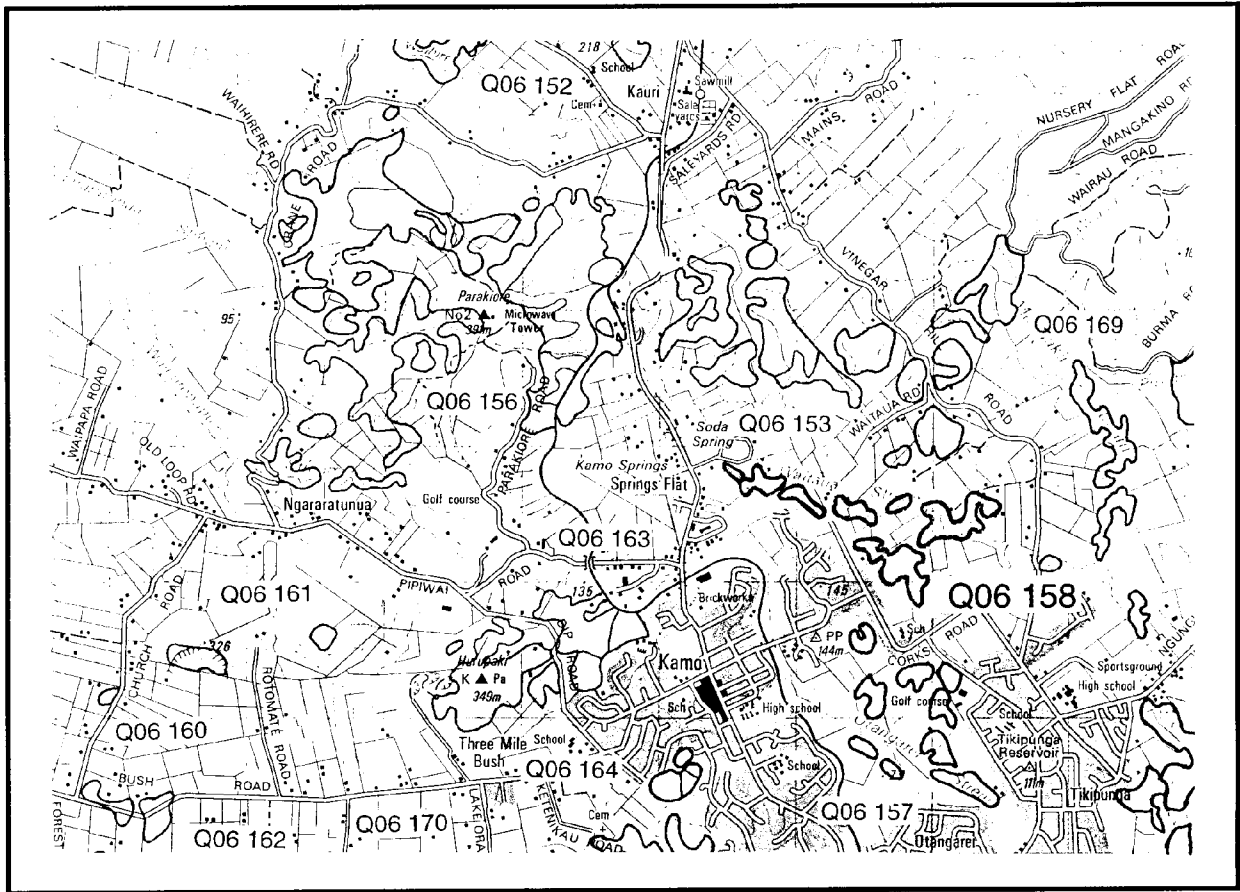


Figure 31. Waitaua Stream, Q06 158
 Each grid is 1000 m x 1000 m and equals 100 ha.
 f = forest; s = shrubland.

- (b) Totara riverine forest on alluvium
- (c) Totara forest on hillslope

Landform/geology

Te Kuiti Group sandstone and a small area of limestone karst-Kamo Limestone Pinnacles at Grid Reference Q06 291 141.

Vegetation

A series of riverine forest remnants on the Waitaua Stream, from Springs Flat south to the Vinegar Hill bridge.

(a) South of Springs Flat, a short stretch of riverine shrubland is situated along the banks of the Waitaua Stream. Cabbage tree and harakeke are common with frequent kahikatea.

(b) Further downstream, totara riverine forest is present. Associated canopy species are titoki, kanuka, karaka, kahikatea, kohekohe, puriri and taraire. This forest type occurs intermittently towards Vinegar Hill bridge.

(c) On the hillslope to the west of the stream, two remnants of totara forest occur. Puriri is frequent and kahikatea occasional.

Fauna

Limestone endemic snail (“*Microlaoma unicolorata*”).

Significance

Excellent example of a relatively unmodified limestone riverine forest association. A representative site for totara riverine forest and the only site in the Ecological District where cabbage tree-harakeke riverine shrubland has been recorded.

The mollusc species is found in only three other limestone areas of Northland. The Kamo Limestone Karst Pinnacles, a geopreservation site of regional importance, are among the best preserved in Northland (Kenny & Hayward 1993).

The geopreservation site, and the forest surrounding it, is protected in a Queen Elizabeth II National Trust covenant of 0.53 ha.

FINLAYSON STREAM

Survey no.	Q06/159
Survey date	13 November 1997
Grid reference	Q06 230 124
Area	38.8 ha (23.8 ha forest, 15 ha shrubland)
Altitude	120-220 m asl

Ecological unit

- (a) Kahikatea-totara forest on hillslope
- (b) Taraire-towai forest on gentle hillslope
- (c) **Totara**-kanuka/manuka shrubland on moderate hillslope
- (d) **Totara**-taraire riverine forest on alluvium
- (e) **Mamaku**-totara shrubland on gentle hillslope
- (f) Taraire-totara forest on moderate hillslope
- (g) Tanekaha-totara forest on ridge

Landform/geology

Torlesse Terrane greywacke and argillite overlain by Te Kuiti Group bioclastic limestone in the vicinity of Q06 231 125 (that overlain by Northland

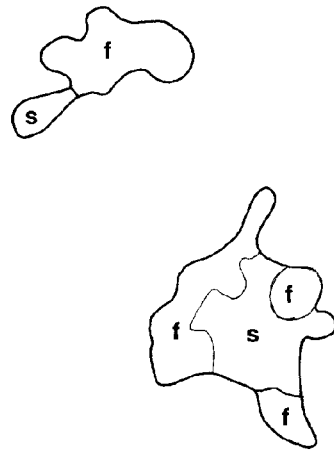
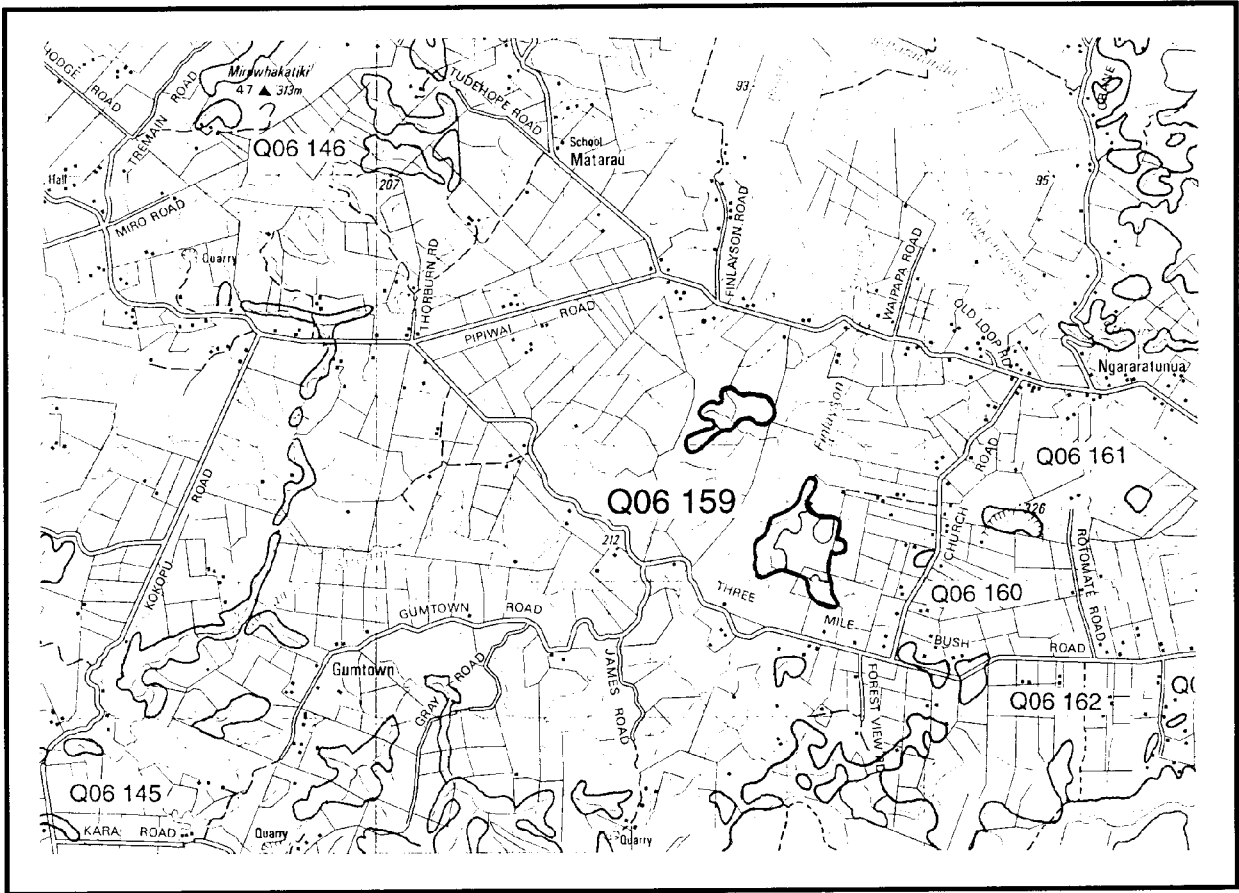


Figure 32. Finlayson Stream, Q06 159
 Each grid is 1000 m × 1000 m and equals 100 ha.
 f = forest; s = shrubland.

Allochthon), and with Kerikeri Volcanics basaltic lava flow to south-east at Q06 232 122.

Vegetation

Two forest and shrubland remnants in the headwaters of Finlayson Stream.

(a) The northern remnant consists of three vegetation types including totara-kahikatea forest where the kahikatea is emergent. There is frequent rimu and rewarewa with occasional kauri, taraire, puriri, pukatea, cabbage tree, tanekaha and towai (70%).

(b) This remnant also contains a small area of taraire-towai forest with frequently occurring kahikatea and rewarewa. Rimu and a few mature kauri are also present (5%).

(c) The remaining area consists of totara dominant shrubland with kanuka/manuka commonly present. There is also occasional tanekaha (25%).

(d) The southern remnant contains four vegetation types in the headwaters of Finlayson Stream. The most northern part of this area consists of riverine forest where totara is dominant and taraire common. Tawa is frequent and pukatea, titoki, nikau and mamaku are occasional.

Type (a) occurs in the small forest patch to the southeast of here on the edge of shrubland. Totara-kahikatea forest is associated with occasional rimu, mamaku and towai.

(e) The surrounding shrubland consists of abundant mamaku with totara less common. Gorse is frequent with scattered hangehange also present.

(f) On the western side of this shrubland there is taraire-totara forest with frequent tanekaha. Kahikatea is present in low numbers.

(g) On the ridge there is tanekaha-totara forest with frequent rimu also present in the canopy.

Fauna

NZ kingfisher, grey warbler, shining cuckoo, white-faced heron.

Eel species.

Significance

Riverine forest is uncommon in the Ecological District. This site contains representative examples of type (b), (d) and (g). It is also the only site in the Ecological District where type (c) and (e) have been recorded.

Also performing water quality protection in catchment headwaters.

CHURCH ROAD WETLAND

Survey no.	Q06/160
Survey date	14 May 1996
Grid reference	Q06 240 122
Area	1.9 ha
Altitude	180 m asl

Ecological unit

(a) Jointed twig-rush sedgeland in wetland

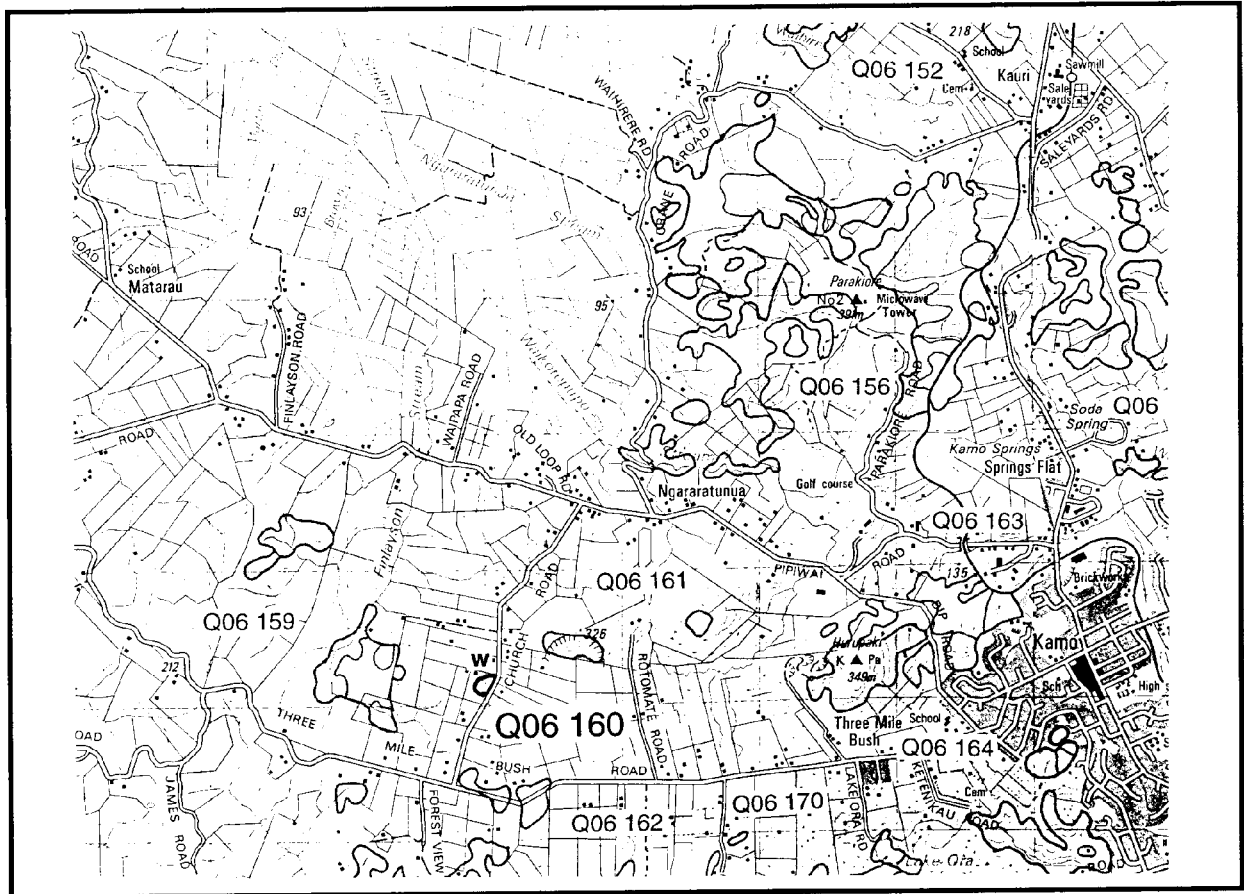


Figure 33. Church Road Wetland, Q06 160
 Each grid is 1000 m × 1000 m and equals 100 ha.
 w = wetland.

Landform/geology

Wetland ponded on surface of Kerikeri Volcanics basaltic lava flow.

Vegetation

A small wetland on Church Road of which 80% is fenced. In the fenced area, jointed twig-rush forms a dense sward with occasional jointed rush, *Juncus gregiflorus* and willow weed sp. Sweet grass borders the eastern edge, which adjoins the road. The water table becomes high and visible in winter. The remaining portion is grazed.

Fauna

Australasian bittern (Category O threatened species).

Significance

Fertile mineralised wetlands are rare in the Ecological District and this is the only site where *Baumea* sedgeland has been recorded.

Habitat for a threatened species.

ROTOMATE ROAD VOLCANIC CONES

Survey no. Q06/161
 Survey date 19 April 1996
 Grid reference Q06 255 126
 Area 25.5 ha (2.5 ha pond, 23 ha forest)
 Altitude 220-320 m asl

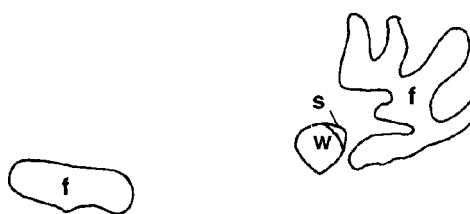
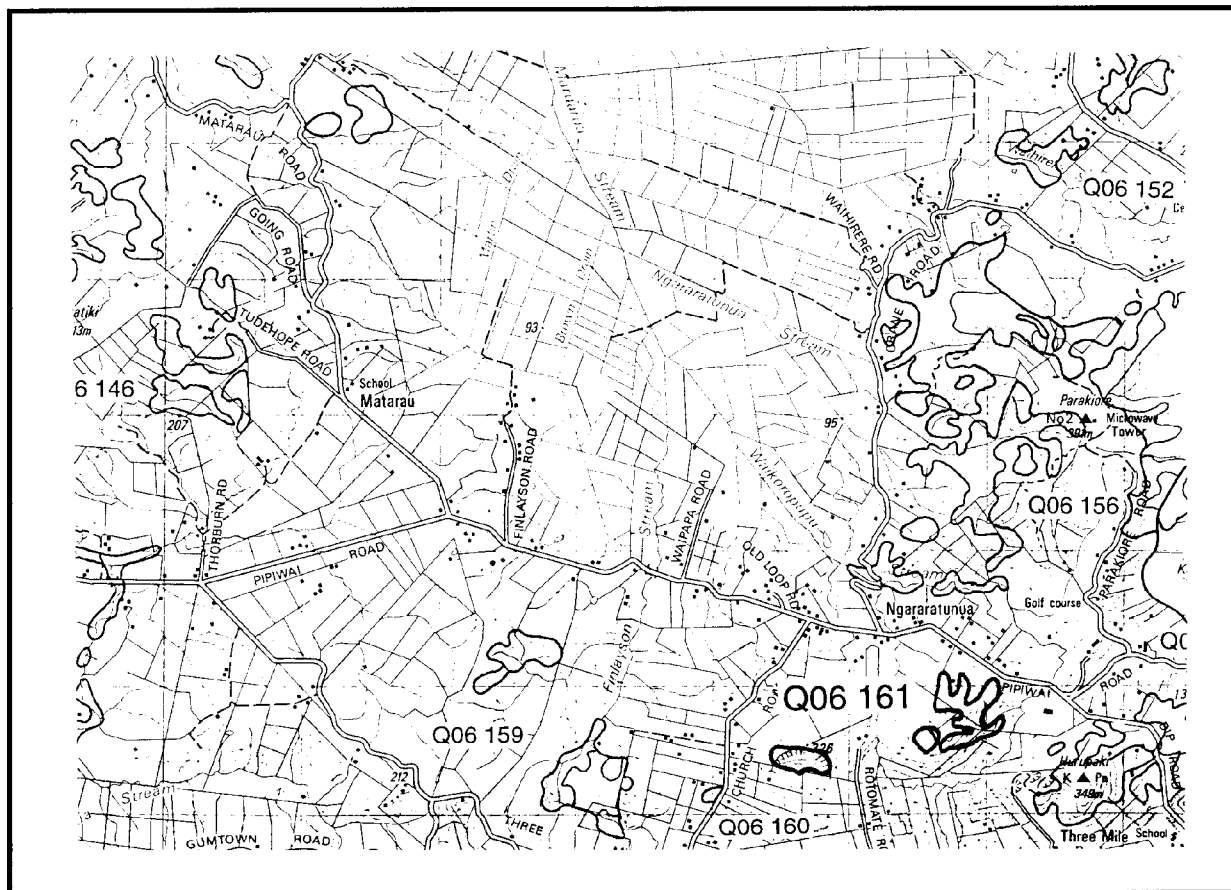


Figure 34. Rotomate Road Volcanic Cones, Q06 161
 Each grid is 1000 m × 1000 m and equals 100 ha.
 f = forest; s = shrubland; w = wetland.

Ecological unit

- (a) *Baumea rubiginosa*-*Juncus* sp.-willow weed-sphagnum association in wetland
- (b) Open water
- (c) Manuka swamp shrubland on margin
- (d) Totara forest on hillslope
- (e) Mamaku-taraire-totara forest on hillslope

Landform/geology

Two Kerikeri Volcanics basaltic scoria cones, with the eastern one having a pond in its crater.

Vegetation

This site includes two volcanic cones which are partly forested.

(a) and (b) The crater lake in the eastern corner comprises 85% wetland vegetation and 15% open water. Commonly occurring species include *Baumea rubiginosa*, *Juncus* sp., willow weed and sphagnum moss. Jointed rush and beggars' ticks are frequent and *Carex ovalis* is occasional.

(c) A small area of manuka shrubland forms a fringe along the eastern margin of the lake.

(d) The northwestern slopes of this volcanic cone are clothed in a remnant of totara forest.

(e) West of here a small area of forest is situated on a bluff. Mamaku, taraire and totara are common with frequent puriri and rewarewa. Tawa is occasional in the canopy.

Fauna

Welcome swallow, pukeko.

Significance

An unusual wetland situated in the crater of a volcanic cone, which is the only example of this type within the Ecological District, and rare within the Ecological Region.

It is also a representative site for manuka swamp shrubland and the only site in the Ecological District where type (a) and (e) have been recorded.

The western cone, a geopreservation site of regional importance, is a young tholeiitic centre with a distinct volcanic cone (Kenny & Hayward 1993).

CHURCH ROAD REMNANTS

Survey no.	Q06/162
Survey date	28 March 1996
Grid reference	Q06 244 114
Area	10 ha
Altitude	160-180 m asl

Ecological unit

- (a) Taraire forest on volcanic flat

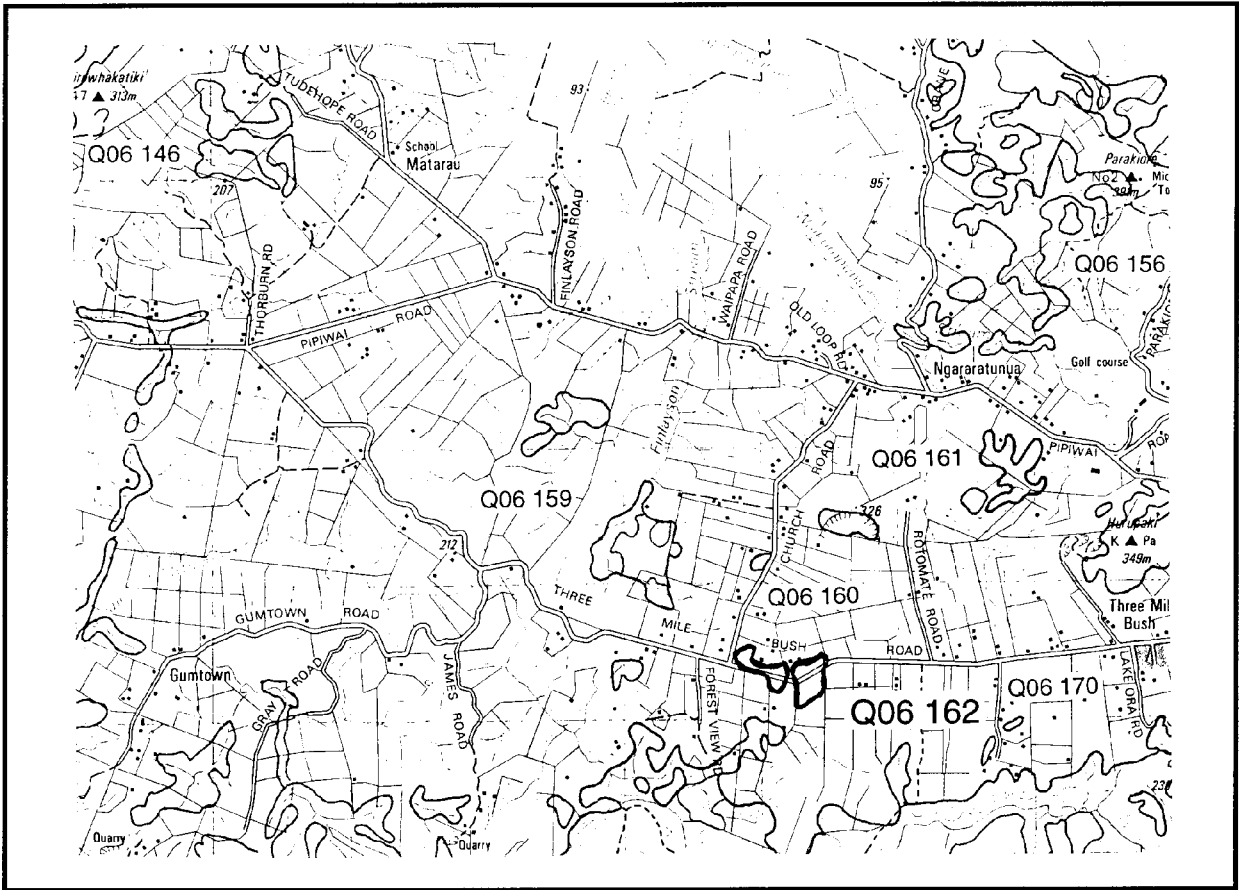


Figure 35. Church Road Remnants, Q06 162
 Each grid is 1000 m × 1000 m and equals 100 ha.
 f = forest.

Landform/geology

Kerikeri Volcanics basaltic lava flow.

Vegetation

Four small volcanic broadleaf remnants on the corner of Church Road and Three Mile Bush Road.

In all of the remnants taraire is abundant with frequent rewarewa and totara. Titoki and kahikatea are occasional in the canopy.

Fauna

Not surveyed.

Significance

An example of a nationally rare vegetation type.

HURUPAKI CONE

Survey no.	Q06/163
Survey date	28 March 1996
Grid reference	Q06 268 123
Area	72.3 ha (62.3 ha forest, 10 ha shrubland)
Altitude	100-350 m asl

Ecological unit

- (a) Totara forest on hillslope
- (b) Taraire-totara forest on hillslope
- (c) **Mamaku**-hangehange shrubland on hillslope

Landform/geology

Kerikeri Volcanics basaltic scoria cone.

Vegetation

Includes the forest on Hurupaki Cone and in the Onoke Scenic Reserve to the east of Dip Road.

- (a) On the southern side of Hurupaki Cone totara forest is present on the upper slopes. Taraire, towai, rewarewa and mamaku are occasional.

A separate remnant at the base of the slope on the eastern side has abundant totara with frequent taraire and puriri, type (a). Rimu and kohekohe are also present.

- (b) Towards the base of the southern slope taraire-totara forest is present. Towai, rewarewa, karaka and mamaku are frequent while tawa, nikau, rimu and puriri are occasional.

Onoke Scenic Reserve is situated on a northwest-facing slope and mainly consists of taraire-totara forest, type (b). Rewarewa, mamaku and puriri are frequent with occasional kahikatea.

- (c) On the southern edges are two areas of mamaku-hangehange shrubland, constituting about 40 % of the reserve.

Fauna

Kukupu (Category B threatened species).

Auckland green gecko (Regionally significant species).

Significance

A representative site for type (a) and (b) and contains the only example of type (c) in the Ecological District.

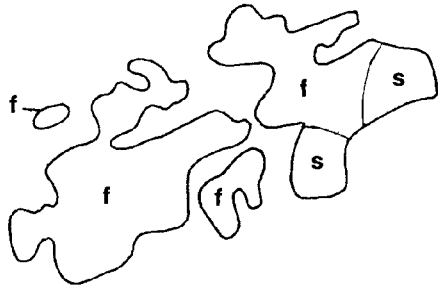
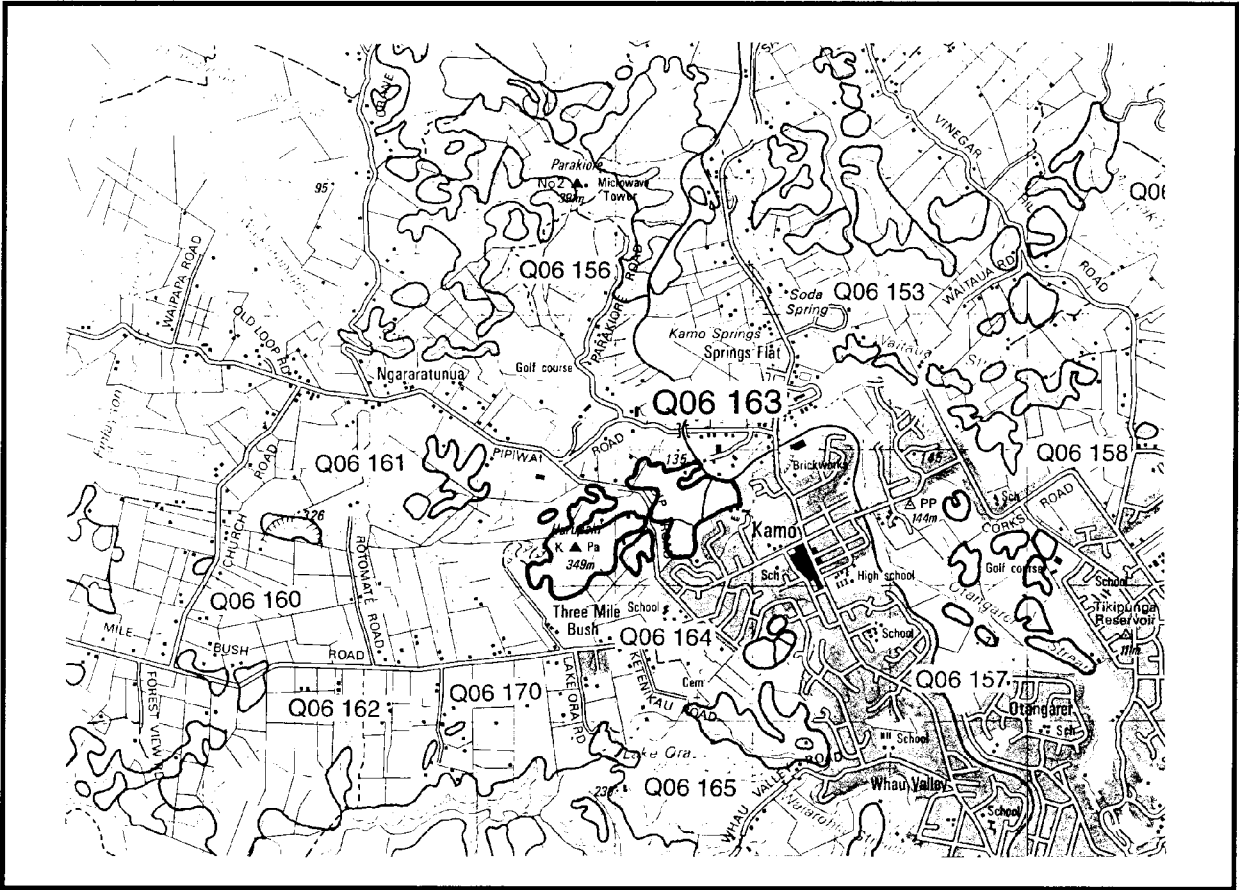


Figure 36. Hurupaki Cone, Q06 163
 Each grid is 1000 m × 1000 m and equals 100 ha.
 f = forest; s = shrubland.

Presence of a threatened bird species and report of a regionally significant gecko species.

Hurupaki Cone is a geopreservation site of regional importance: the quarry on the western side exposes an eruption sequence showing that magma variation occurred during the eruption (Kenny & Hayward 1993).

Within this site 52 ha is formally protected. Onoke Scenic Reserve, 19.3 ha, is administered by the Department of Conservation. The Whangarei District Council administers 16.34 ha of recreation reserve at Hurupaki Cone and 16.4 ha of scenic reserve on the western side of Dip Road.

LOWER WHAU VALLEY FOREST

Survey no.	Q06/164
Survey date	27 March 1996
Grid reference	Q06 281 113
Area	42.3 ha (39.8 ha forest, 2.5 ha shrubland)
Altitude	100-160 m asl

Ecological unit

- (a) Kanuka/manuka-tanekaha-totara forest on hillslope
- (b) Taraire forest on hillslope
- (c) Puriri-taraire forest on hillslope
- (d) Mamaku fernland on hillslope
- (e) Totara forest on hillslope

Landform/geology

Southern area: Torlesse Terrane greywacke and argillite.

Northern area: Kerikeri Volcanics basaltic lava flow.

Vegetation

Two forest remnants in the vicinity of lower Whau Valley.

(a) The first remnant is an area of forest in the headwaters of the Waiarohia Stream. On the eastern slopes kanuka, manuka, tanekaha and totara are common in the canopy. Rimu, rewarewa and towai are frequent with occasional matai, tawa and taraire.

(b) On the northern slopes of the remnant, taraire is common. Towai, rimu, totara and rewarewa are frequent while puriri, kahikatea, miro, manuka, kanuka, nikau and mamaku are occasional.

(c) Further west, puriri-taraire forest is present. Totara and rewarewa are frequent in the canopy, with occasional titoki and tawa.

The second remnant is located to the north of the first remnant and west of Fairview Drive. It contains about 50% puriri-taraire forest with frequent kohekohe, karaka and rewarewa. Totara and towai are occasional, type (c).

(d) Mamaku makes up about 20% of the area.

(e) Totara is abundant in about 10% of the area.

The remaining 20% contains puriri-taraire forest with frequent totara, karaka and titoki. Matai and kohekohe are also present, type (c).

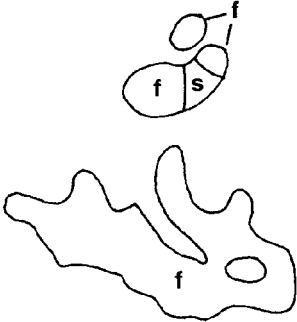
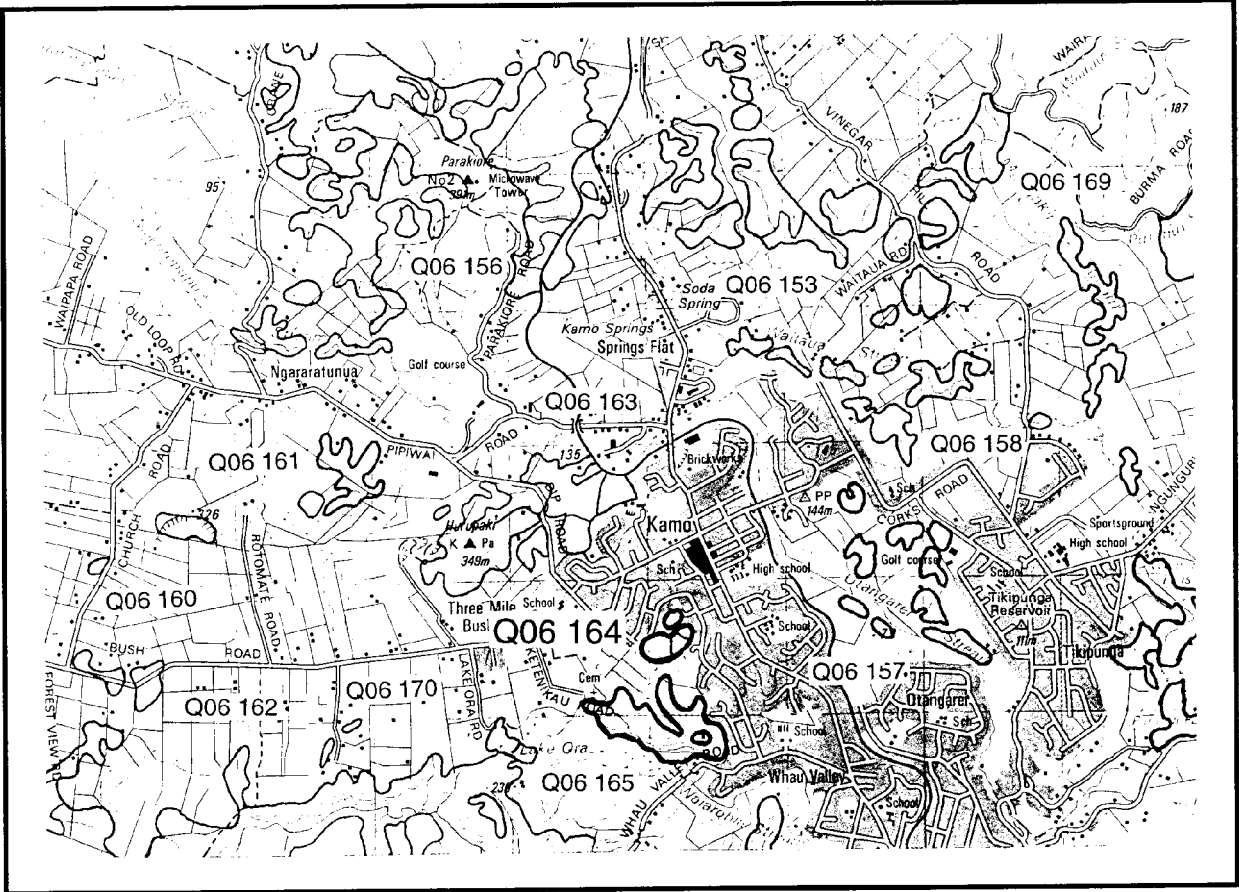


Figure 37. Lower Whau Valley Forest, Q06 164
 Each grid is 1000 m × 1000 m and equals 100 ha.
 f = forest; s = shrubland.

Fauna

Kukupa (Category B threatened species).

Significance

Representative site for mamaku fernland and puriri-taraire forest.

Presence of a threatened species.

LAKE ORA

Survey no.	Q06/165
Survey date	25 March 1996
Grid reference	Q06 270 108
Area	6.25 ha (3.25 ha wetland, 2 ha forest, 1 ha shrubland)
Altitude	80 m asl

Ecological unit

- (a) Bamboo spike-sedgeland on lake margins
- (b) Open water in lake
- (c) Kanuka/manuka-totara forest on hillslope
- (d) Mamaku-manuka-tobacco weed shrubland on hillslope

Landform/geology

Lake ponded at edge of Kerikeri Volcanics basaltic lava flow.

Vegetation

A small lake with a fringe of wetland vegetation and an area of forest at the southern end.

- (a) and (b) The lake consists of 90% open water and 10% vegetation. On the margins bamboo spike-sedge is common and willow weed is frequent.
- (c) At the southern end of the lake is an area of kanuka/manuka-totara forest. Rimu, taraire, kahikatea and mamaku are frequent with occasional towai, kohekohe, matai and tarata (75%).
- (d) At both northern and southern ends of the lake there are small areas of shrubland comprising mamaku, manuka and tobacco weed. Gorse is frequent and pate, mahoe, karamu, hangehange, pigeonwood and wheki are occasional (25%).

Fauna

Kukupa (Category B threatened species), NZ kingfisher, welcome swallow, pukeko, mallard, paradise shelduck.

Significance

Wetland habitat is rare in the Ecological District and Lake Ora is an important habitat for waterfowl. It is also a representative site for kanuka/manuka-totara forest and the only site in the Ecological District where bamboo spike-sedgeland has been recorded.

Presence of a threatened species.

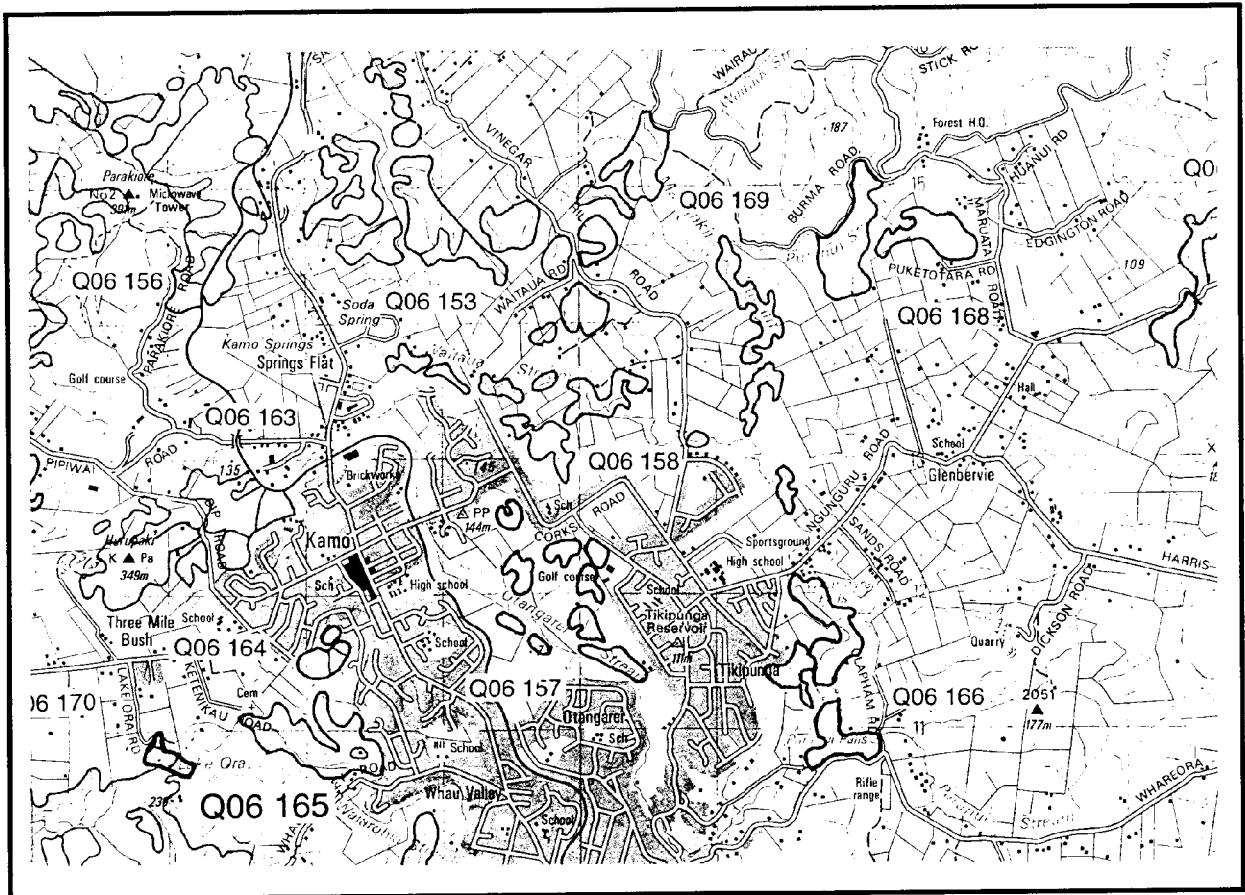


Figure 38. Lake Ora, Q06 165

Each grid is 1000 m × 1000 m and equals 100 ha.

f = forest; s = shrubland; w = wetland.

WHANGAREI FALLS

Survey no.	Q06/166
Survey date	23 April 1996
Grid reference	Q06 317 119
Area	37.1 ha
Altitude	20-60 m asl

Ecological unit

- (a) Totara riverine forest on alluvium
- (b) **Totara**-puriri forest on hillslope
- (c) Kanuka/manuka-tanekaha-totara forest on alluvial terrace
- (d) Kauri-totara forest on alluvium
- (e) Totara forest on hillslope

Landform/geology

Waterfalls and gorge cut in a Kerikeri Volcanics basaltic lava flow.

Vegetation

The site includes the area of forest between Whangarei Falls and Paranui Falls, along the Hatea and Paranui Rivers.

- (a) At Whangarei Falls there is abundant totara with frequent taraire and puriri. Also present are rimu, rewarewa, karaka, tawa, towai, titoki, kauri, kowhai and kahikatea.
- (b) Further downstream, west of Clapham Road, there is abundant totara with puriri common. There is also occasional kauri, kahikatea, karaka, rewarewa, mamaku, manuka and tanekaha.
- (c) To the east of the junction of Paranui River and Hatea River on a sloping river terrace, kanuka, manuka, tanekaha and totara are common with frequent rimu and mamaku. Kahikatea and rewarewa are also present. Between here and Paranui Falls there are several large emergent kauris.
- (d) At Paranui Falls there is mature kauri-totara forest with frequent tawa. Karaka, manuka, titoki, kahikatea, tanekaha, towai, rimu and mamaku are also present.
- (e) The western portion of the site contains totara forest. Kahikatea is frequent and kauri, kanuka, puriri, rewarewa, tanekaha and towai are occasional.

Fauna

Kukupa (Category B threatened species), NI kaka reported, (Category B threatened species), grey duck, mallard, little shag.

Auckland green gecko (Regionally significant species), copper skink.

Significance

The best example of large mature kauri in the Ecological District. Representative site for type (b), (c), (d), and (e). Presence of threatened bird species and a regionally significant gecko.

Part of this site is protected in the Whangarei District Councils Whangarei Falls Scenic Reserve (6.8 ha) and A.H. Reed Memorial Reserve (8.1 ha) at Paranui Falls.

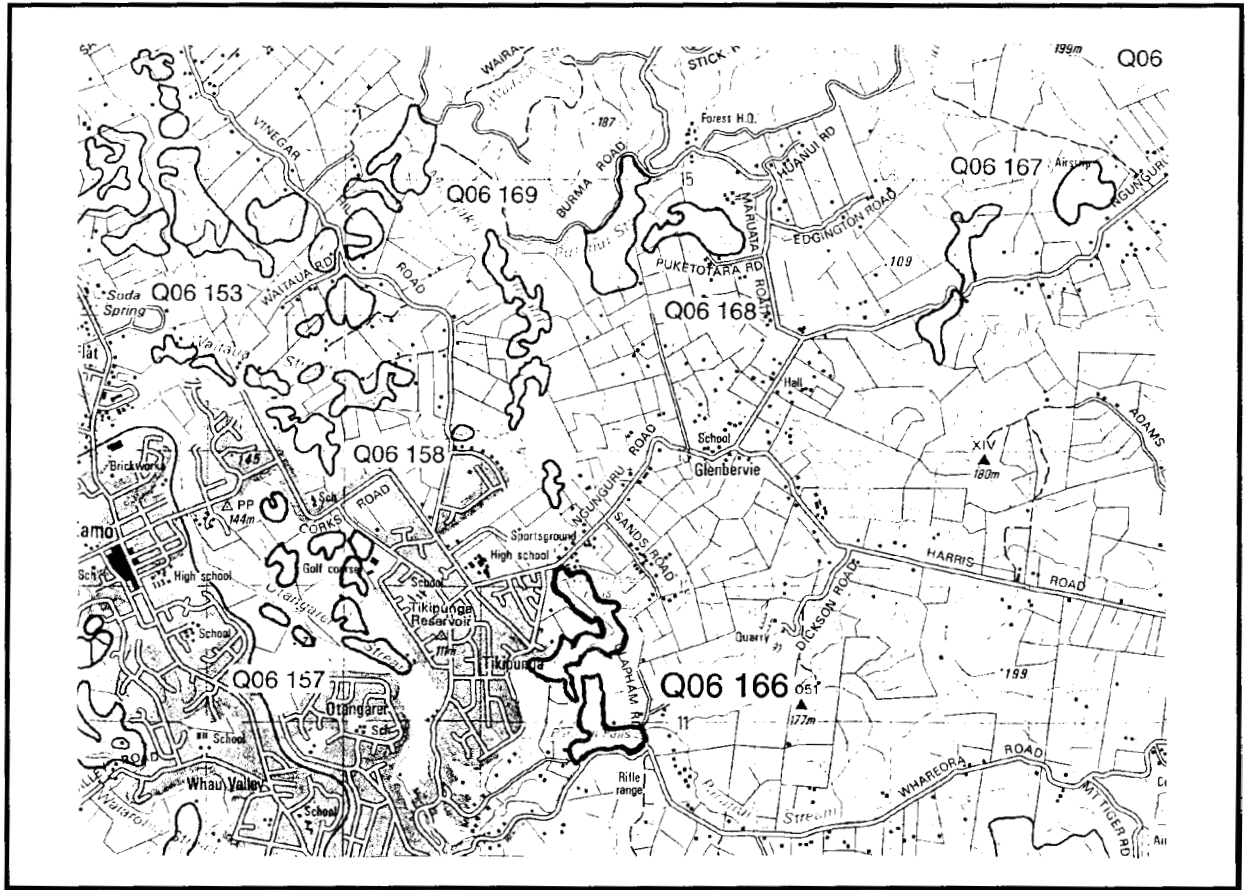


Figure 39. Whangarei Falls, Q06 166
 Each grid is 1000 m × 1000 m and equals 100 ha.
 f = forest.

Whangarei Falls is a geopreservation site of regional significance that shows the Hatea River plunging over the eroding edge of a columnar jointed Horeke basalt flow originating from Vinegar Hill. It is one of the few natural exposures of a basalt flow sequence in the Whangarei area and it is an example of an easily accessible waterfall formed by a resistant lava flow (Kenny & Hayward 1993).

A.H. Reed Memorial Park contains a soil site of national importance and exhibits a good example of the sharp boundary between very podzolised yellow-brown earths and strongly structured red loams developed on geologically young basalt. It is also the only example of Tikipunga brown loam and a good example of Whangaripo yellow-brown earth (Arand et al. 1993).

NGUNGURU VOLCANIC HILL RESERVE

Survey no.	Q06/167
Survey date	17 April 1996
Grid reference	Q06 354 150
Area	35.6 ha
Altitude	100-200 m asl

Ecological unit

- (a) Totara forest on hillslope
- (b) Taraire forest on hillslope
- (c) Taraire-totara riverine forest on alluvium
- (d) **Totara**-taraire forest on hillslope

Landform/geology

Kerikeri Volcanics breached basaltic scoria cone and lava flow.

Vegetation

Two forest remnants including riverine vegetation on the Waitangi River and broadleaf forest on a volcanic cone.

- (a) The northern slopes of the volcanic cone are dominated by old growth totara forest with frequent puriri, towai and taraire. Rewarewa is occasional.
- (b) On the southern slopes of the cone, taraire is dominant with frequent puriri, totara and rewarewa. Karaka, towai, tawa, kohekohe, mamaku and nikau are occasional.
- (c) West of here the Waitangi River has riverine forest containing commonly occurring taraire and totara with frequent towai and karaka. Tawa, mamaku, rewarewa, kahikatea and cabbage tree are occasional (30%).
- (d) Adjacent to this is forest with abundant totara and common taraire. There is also occasional karaka, tawa, rewarewa, nikau, kahikatea, rimu, towai and mamaku (70%).

Fauna

Kukupu (Category B threatened species).

Land snail: *Amborbytida dunni*ae (Declining).

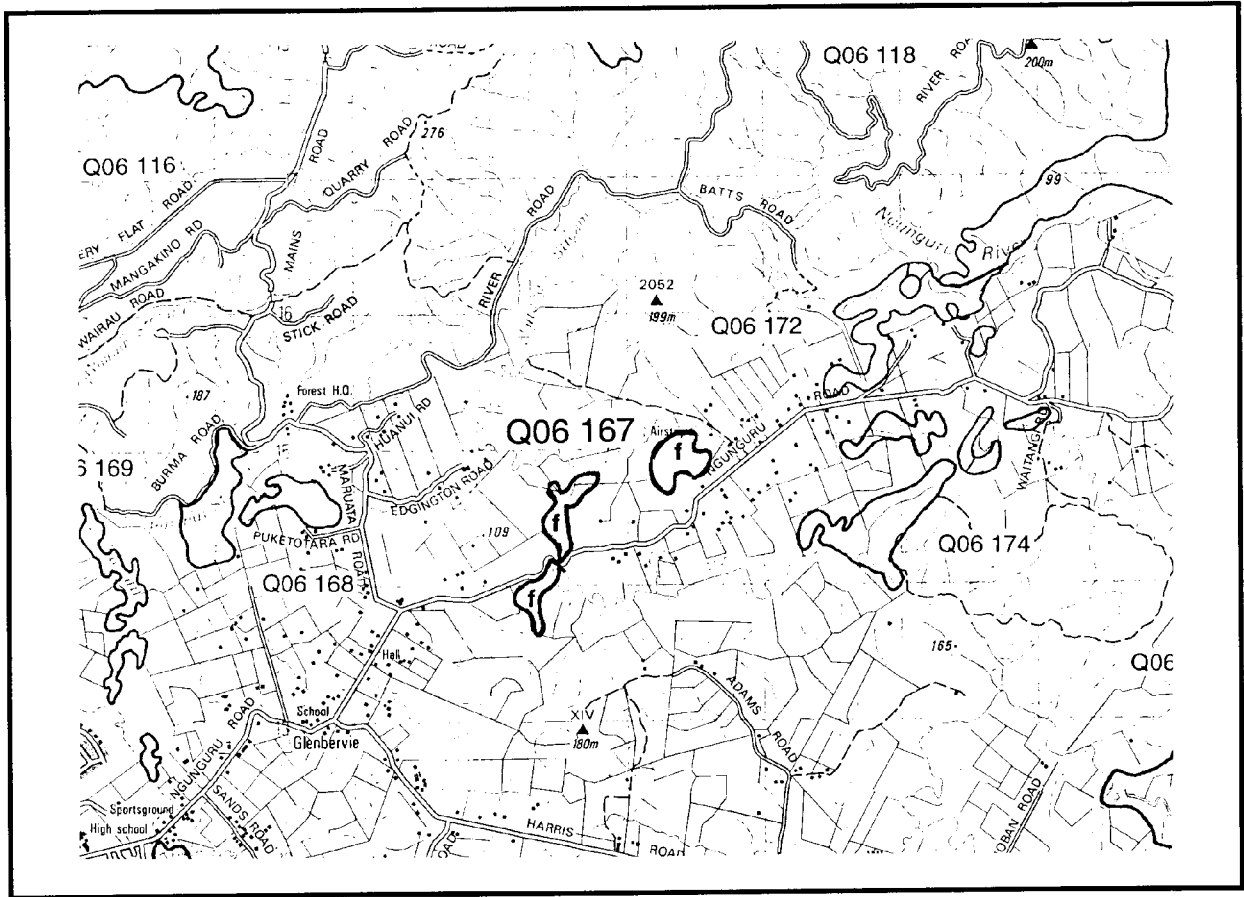


Figure 40. Ngunguru Volcanic Hill Reserve, Q06 167
 Each grid is 1000 m × 1000 m and equals 100 ha.
 f = forest.

Significance

Old growth totara forest and volcanic broadleaf forest are rare vegetation types within the Ecological District. The volcanic cone is fenced with a good understorey.

It is a representative site for type (a) and (b).

Presence of a threatened species.

The basaltic cone, a geopreservation site of regional importance, is a young centre with a breached, multivented cone showing good volcanic landform (Kenny & Hayward 1993).

PUKETOTARA HILL BUSH

Survey no.	Q06/168
Survey date	12 April 1996
Grid reference	Q06 319 144
Area	35.8 ha
Altitude	100-210 m asl

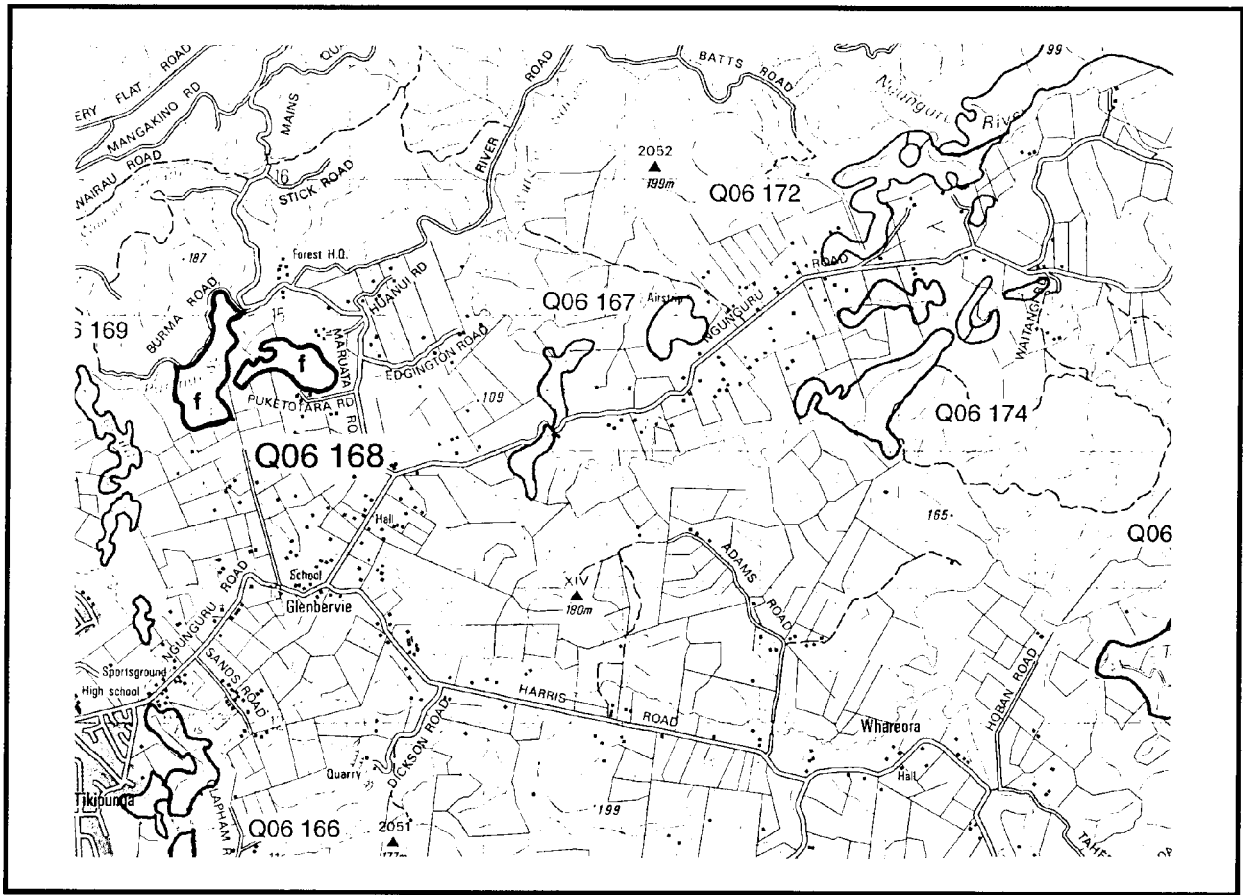


Figure 41. Puketotara Hill Bush, Q06 168
 Each grid is 1000 m × 1000 m and equals 100 ha.
 f = forest.

Ecological unit

- (a) Taraire-totara forest on hillslope
- (b) Taraire-totara-towai forest on hillslope
- (c) Taraire-towai riverine forest on alluvium

Landform/geology

Kerikeri Volcanics breached basaltic scoria cone and lava flow.

Vegetation

Two volcanic cones partly covered with forest; the western remnant is contiguous with riverine forest on Putanui Stream.

(a) The first volcanic hill is north of Puketotara Road and its fenced slopes contain taraire-totara forest. Puriri, rewarewa and tawa are frequent while kahikatea, mamaku, towai, rimu, cabbage tree and kohekohe are occasional. This area is fenced.

(b) To the west of here the second volcanic hill has taraire-totara-towai forest on its southern slopes. Tawa, rewarewa and puriri are frequent with occasional karaka, mamaku, nikau and kohekohe.

The northern slopes consist of taraire-totara forest with frequent tanekaha, type (a). Puriri, rewarewa, mamaku, kauri, rimu and towai are also present.

(c) This area is contiguous with riverine forest at Putanui Stream. Here, taraire and towai are common with frequent tawa, mamaku, karaka, rewarewa, mahoe and pate. Rimu and totara are also present.

Fauna

Tui, fantail, silvereye, Australasian harrier.

Significance

An example of volcanic broadleaf forest and riverine forest, both uncommon habitat types within the Ecological District. Representative site for taraire-towai riverine forest, taraire-totara-towai forest and taraire-totara forest.

A geopreservation site of regional importance, this area is an example of a well preserved young volcanic centre. The western cone shows two eruption points and the eastern cone has a distinct volcanic form (Kenny & Hayward 1993).

MANGAKINO STREAM

Survey no.	Q06/169
Survey date	10 April 1996
Grid reference	Q06 314 140
Area	58.3 ha
Altitude	80-160 m asl

Ecological unit

- (a) **Totara**-kahikatea riverine forest on alluvium
- (b) Taraire-totara forest on hillslope
- (c) Kahikatea riverine forest on alluvium
- (d) **Towai**-totara forest on hillslope
- (e) Totara forest on hillslope
- (f) Totara riverine forest on alluvium
- (g) Puriri riverine forest on alluvium

Landform/geology

Kerikeri Volcanics basaltic lava flow and Quaternary swamp and alluvial deposits.

Vegetation

This site contains riverine remnants along the Mangakino Stream.

- (a) On the western branch of the Mangakino headwaters totara is abundant and kahikatea is common. There is also frequent taraire present.
- (b) On the hillslope above type (a), taraire and totara are common with frequent towai and rewarewa. Rimu and puriri are occasional.
- (c) In the middle branch of the Mangakino Stream headwaters, there is a fenced area of abundant kahikatea with occasional rimu and totara.
- (d) On the top of a hillslope above the eastern branch of the Mangakino River, towai is abundant with totara common. There is frequent tanekaha and occasional puriri, taraire and mamaku.

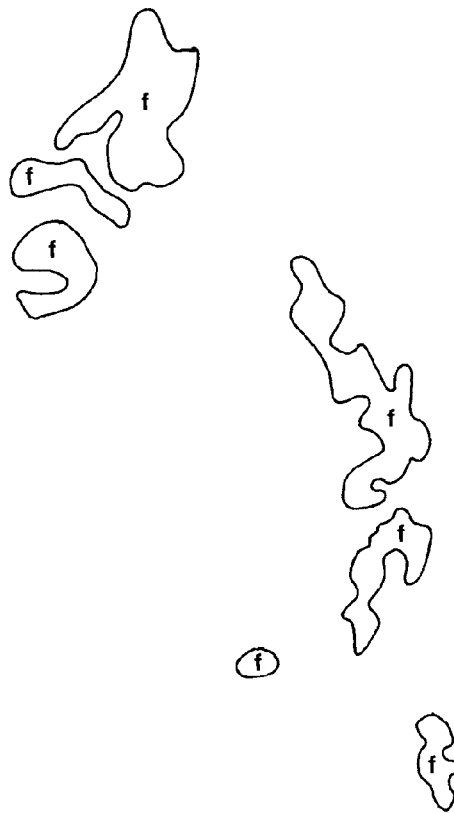
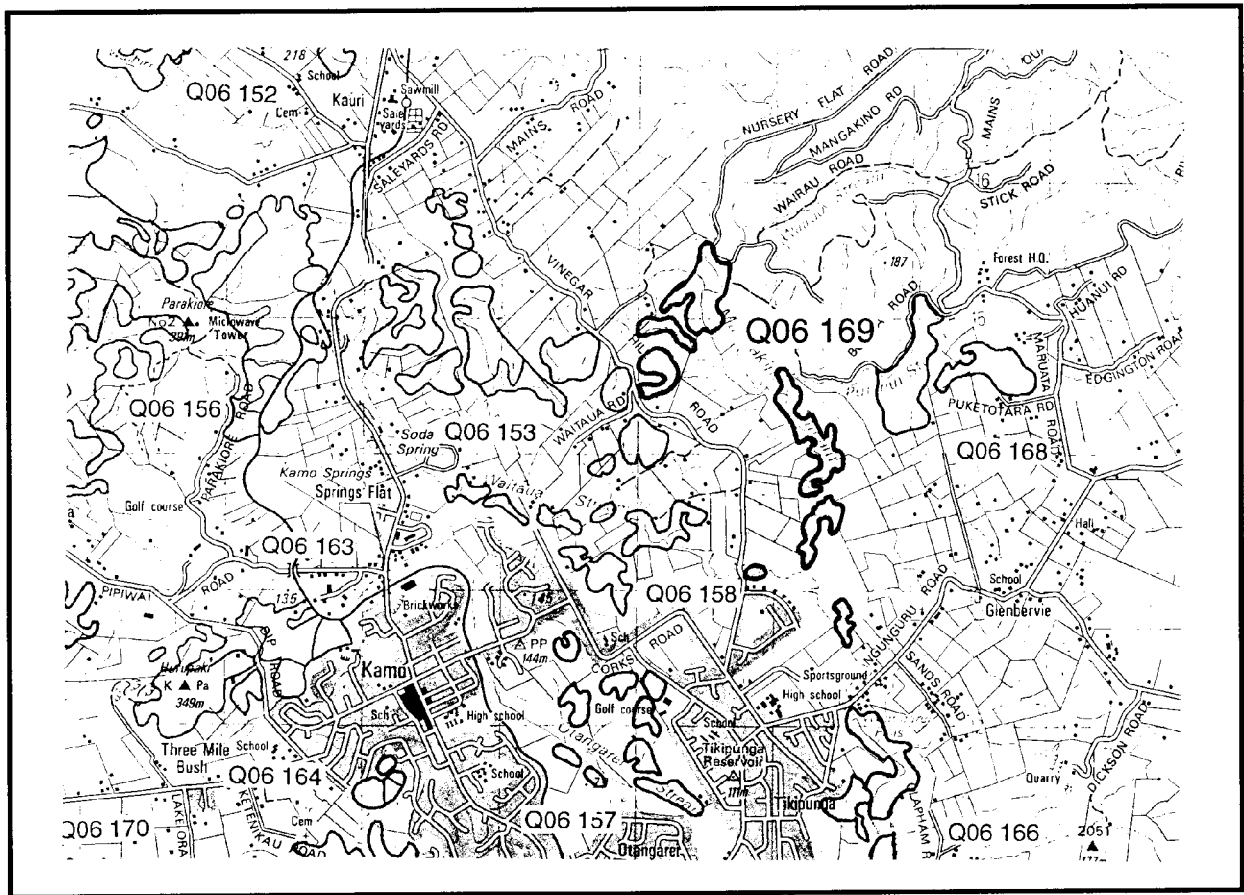


Figure 42. Mangakino Stream, Q06 169

Each grid is 1000 m × 1000 m and equals 100 ha.

f = forest.

(e) Lower down the hillslope totara is abundant. There is also occasional towai and tanekaha.

(f) Further downstream, totara is abundant in riverine forest and associated species are occasional rimu and kahikatea. Continuing downstream, totara is still abundant on the riverbanks but taraire and puriri are frequent. Matai and kahikatea are occasional.

(g) Further downstream, puriri riverine forest is common. The puriri has severe crown dieback. Totara occurs frequently.

At Vinegar Hill Bridge on the Waitaua Stream branch, there is a threatened species of mistletoe, *Ileostylus micranthus*, growing in a totara tree.

Returning to the Mangakino Stream, and moving further downstream, there is a separate riverine remnant where totara is common, type (f).

Significant flora

Ileostylus micranthus (Declining).

Fauna

Not surveyed.

Significance

Riverine forest is an uncommon habitat type within the Ecological District and this site is representative for kahikatea riverine forest, type (c).

Presence of a threatened mistletoe species.

SMITHVILLE ROAD REMNANTS

Survey no.	Q06/170
Survey date	30 April 1996
Grid reference	Q06 256 107
Area	5 ha
Altitude	140 m asl

Ecological unit

(a) Kahikatea forest on alluvium

Landform/geology

Kerikeri Volcanics basaltic lava flow.

Vegetation

Three small remnants of pure kahikatea forest. The western pair of remnants, which are fenced, were originally contiguous.

Fauna

Not surveyed.

Significance

Kahikatea alluvial forest is an uncommon forest type within this Ecological District.

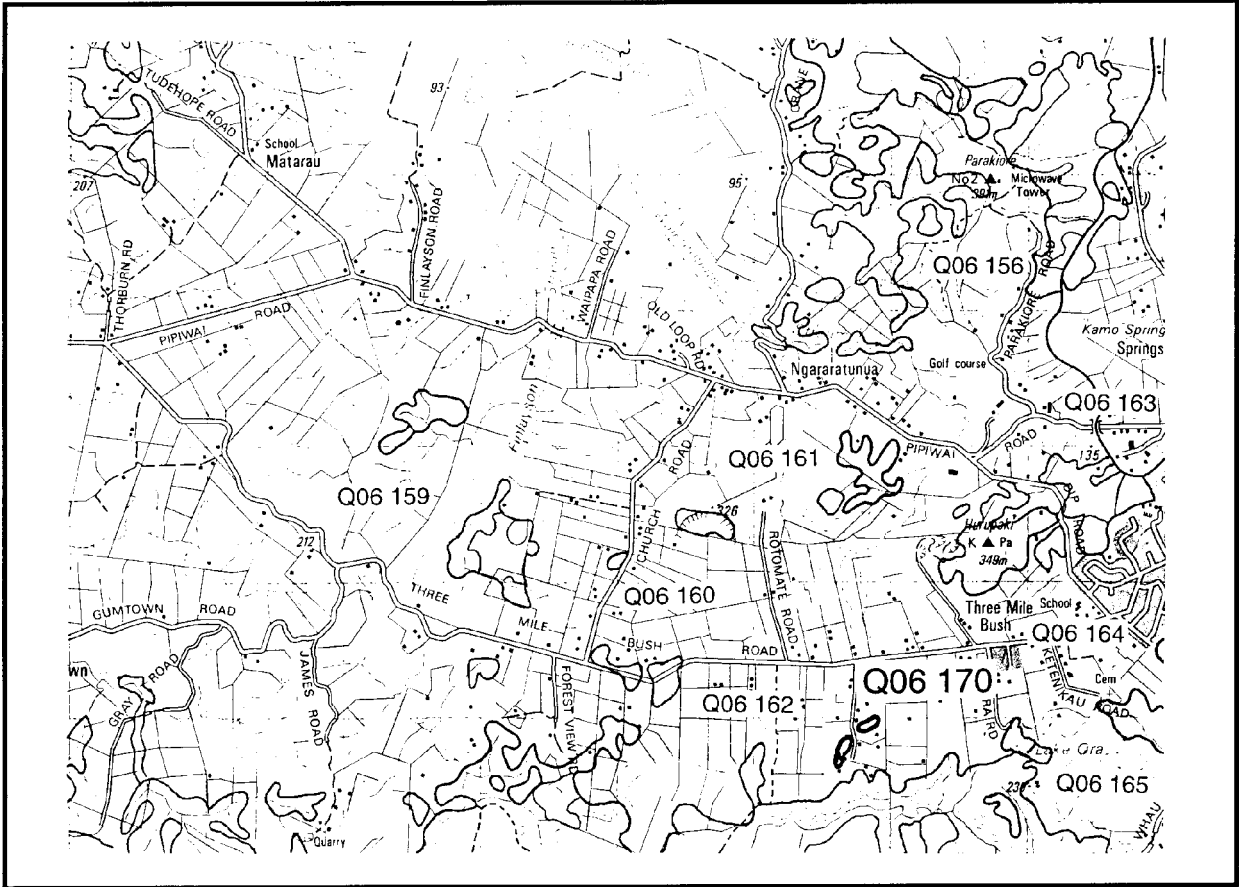


Figure 43. Smithville Road Remnants, Q06 170
 Each grid is 1000 m x 1000 m and equals 100 ha.
 f = forest.

HUKERENUI ROAD SHRUBLANDS

Survey no.	Q06/171
Survey date	5 August 1996
Grid reference	Q06 195 285
Area	258.3 ha (57.5 ha forest, 200.8 ha shrubland)
Altitude	80-247 m asl

Ecological unit

- (a) Totara shrubland on steep hillslope
- (b) Mamaku-totara shrubland in steep gully
- (c) Totara forest on hillslope
- (d) Kauri-tanekaha forest on steep ridge
- (e) Towai forest on steep hillslope
- (f) Kanuka/manuka shrubland on steep hillslope
- (g) Totara-towai forest on steep ridge
- (h) Kanuka/manuka-totara shrubland on hillslope
- (i) Kanuka/manuka-towai forest on hillslope

Landform/geology

Torlesse Terrane greywacke and argillite, locally overlain by Mangakahia Complex mudstone.

Vegetation

A large area of dissected shrubland and secondary forest on hill country.

(a) On the hills south of Crows Nest Road totara shrubland is the main vegetation type. Kanuka, manuka and *Hakea* sp. are frequent and mamaku is occasional.

(b) In the gullies mamaku-totara shrubland predominates. Towai is frequent and kanuka, manuka, rewarewa, gorse and *Pinus* sp. are also present.

(c) The next vegetation type is on a south-facing hillslope in the eastern branch of the Mangaiti Stream and visible from Hukerenui Road. Totara is abundant and towai is frequent. Rimu, kahikatea, rewarewa and mamaku are also present.

Further east type (c) occurs but tanekaha is frequent and kahikatea and mamaku are occasional.

(d) Located on a ridge north of type (c), kauri and tanekaha are common and rewarewa, rimu and totara are frequent. Towai and mamaku are occasional.

Further east, type (e) is located on a steep face. Towai is abundant and totara and rewarewa are frequent. Taraire, tanekaha, mamaku and cabbage tree are also present.

Further east and adjacent to Hukerenui Road type (c) occurs in a gully. Totara remains abundant but rewarewa and towai are frequent. Kahikatea, pukatea, kauri and Chinese privet are also present in low numbers.

(e) Adjacent to this on a steep hillslope, kanuka and manuka are abundant in shrubland that also contains frequent mamaku and occasional totara.

(f) Further east on a steep ridge, totara and towai are common with frequent tanekaha, kanuka and manuka. Rimu, kahikatea and rewarewa are occasional.

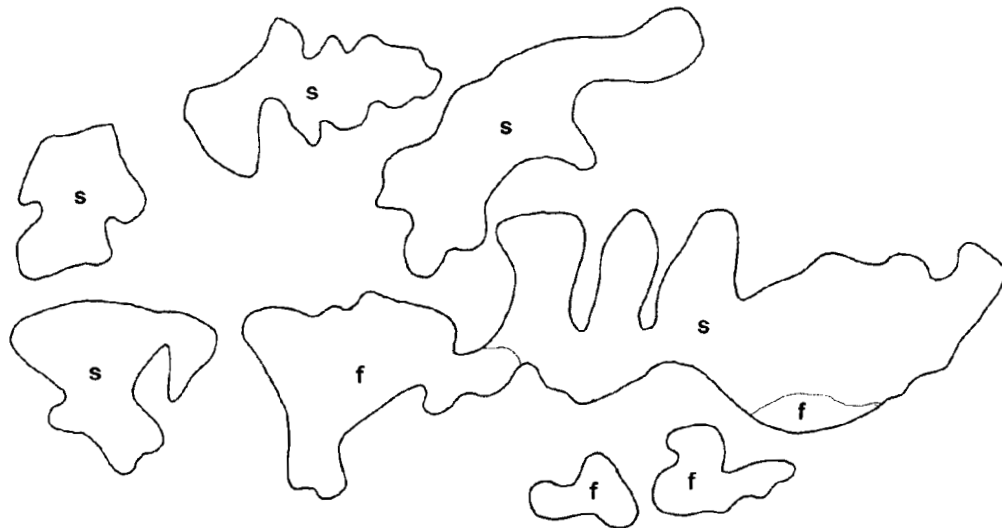
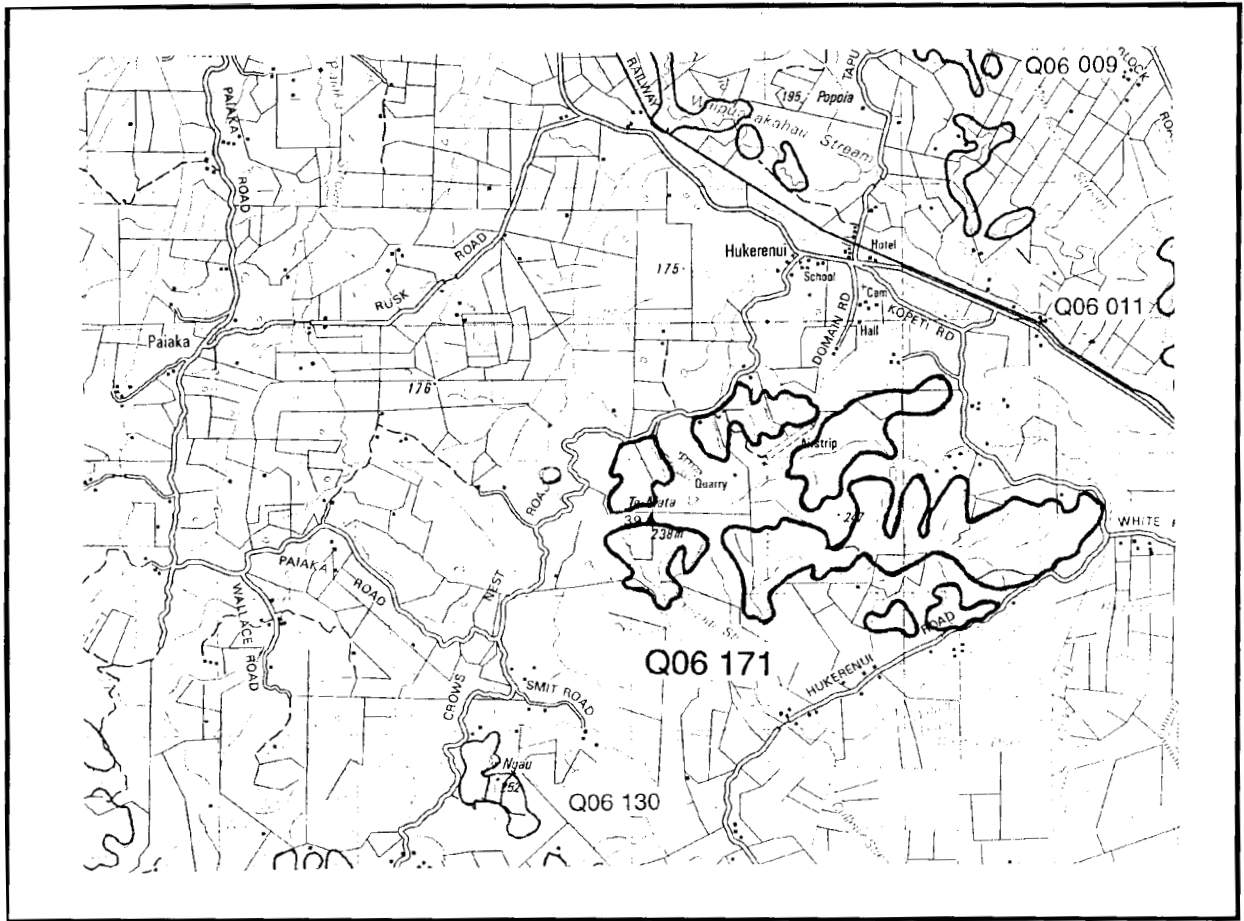


Figure 44. Hukerenui Road Shrublands, Q06 171
 Each grid is 1000 m × 1000 m and equals 100 ha.
 f = forest; s = shrubland.

(g) North of here on a north facing hillslope, kanuka/manuka-totara shrubland occurs with frequent mamaku. Occasionally present are emergent kauri, rewarewa and cabbage tree.

(h) Located on a southeast facing hillslope opposite White Road, kanuka, manuka and towai are common with frequent totara. Tanekaha, rewarewa and rimu are also present.

Type (i) occurs on a north facing hillslope viewed from Kopeti Road. Kanuka/manuka and totara are common with frequent mamaku and occasional cabbage tree, rewarewa and kauri.

Fauna

Tui.

Significance

The largest representative example of shrubland in the Ecological District. Contains a diverse range of shrubland and secondary forest species. Representative site for all ecological units.

Listed as a geopreservation site of regional significance (Kenny & Hayward 1993).

NGUNGURU ROAD BUSH

Survey no.	Q06/172
Survey date	17 April 1996
Grid reference	Q06 370 161
Area	39.2 ha (36.7 ha forest, 2.5 ha shrubland)
Altitude	20-100 m asl

Ecological unit

- (a) Taraire forest on volcanic flats
- (b) Kahikatea forest on gentle hillslope
- (c) Totara forest on moderate hillslope
- (d) Taraire riverine forest on alluvium
- (e) Totara shrubland on moderate hillslope
- (f) Puriri-taraire forest on moderate hillslope

Landform/geology

Kerikeri Volcanics basaltic lava flow.

Vegetation

Two remnants of volcanic broadleaf forest, the larger of which extends north in a continuous sequence to riverine forest on the Ngunguru River.

(a) The small separate remnant consists mainly of commonly occurring taraire with frequent puriri and occasional karaka, totara, titoki, and rimu. Rewarewa is present as an emergent in low numbers.

(b) This remnant also contains a small area of kahikatea dominant forest with occasional karaka and totara.

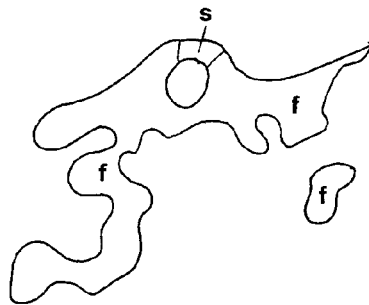
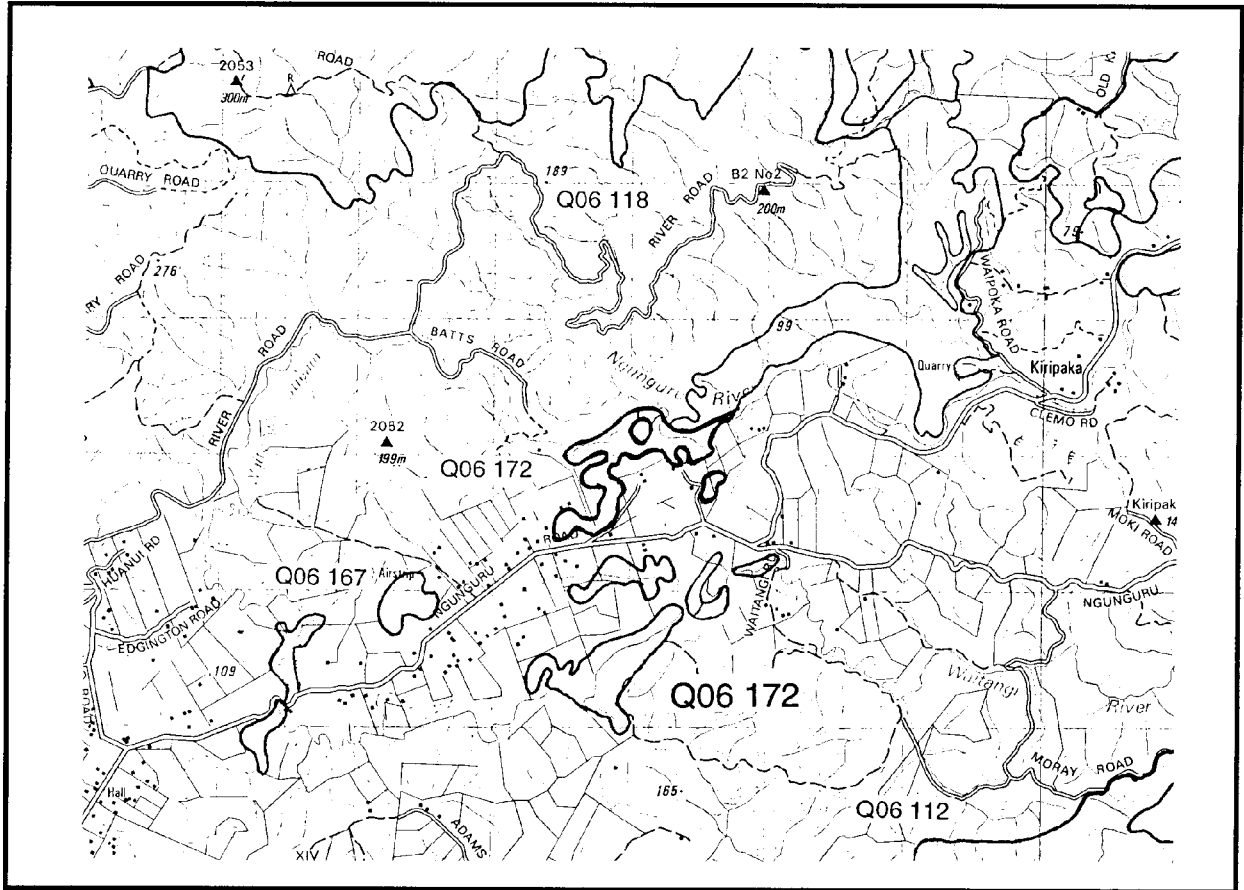


Figure 45. Ngunguru Road Bush, Q06 172
 Each grid is 1000 m × 1000 m and equals 100 ha.
 f = forest; s = shrubland.

(c) Moving north from here the second remnant has totara dominant forest on its eastern edge. Taraire is present frequently and puriri is present occasionally.

(d) West from here on the southern bank of the Ngunguru River there is taraire riverine forest. Totara and karaka are frequent while titoki, puriri and mahoe are present occasionally.

(e) Further west from here there is a small area of shrubland that begins at the river's edge and finishes at the small clearing in the middle of the remnant. Abundant totara forms a broken canopy with frequent kanuka and manuka. Tanekaha, cabbage tree and mamaku are present in low numbers.

(f) On the southern side of the clearing there is an area of puriri-taraire forest on a moderate north facing slope. Totara is frequent while tawa, karaka and rewarewa are occasional.

This remnant extends southwards as far as the edge of Ngunguru Road where taraire is dominant on volcanic flats. Puriri is present frequently while tawa, titoki, totara, karaka, kohekohe and emergent rewarewa are occasional, type (a).

Fauna

Kukupa (Category B threatened species), tui, NZ kingfisher.

Long-tailed bat (Category B threatened species).

Significance

Volcanic broadleaf forest and riverine forest are uncommon vegetation types within this Ecological District. Representative site for taraire forest, totara forest, puriri-taraire forest and kahikatea forest.

Habitat for threatened bird and mammal species including the long-tailed bat, which is rare in the Ecological District and Region.

WAITANGI RIVER

Survey no.	Q06/174
Survey date	13 October 1997
Grid reference	Q06 370 146
Area	68.3 ha (60.8 ha forest, 7.5 ha wetland)
Altitude	40-100 m asl

Ecological unit

- (a) Kahikatea-taraire-totara riverine forest on alluvium
- (b) **Totara**-crack willow riverine forest on alluvium
- (c) **Crack willow**-totara riverine forest on alluvium
- (d) **Raupo-Juncus** reedland in wetland
- (e) **Taraire**-karaka-totara riverine forest on alluvium
- (f) **Kahikatea**-taraire riverine forest
- (g) Taraire-totara riverine forest on alluvium
- (h) Kanuka/manuka riverine forest on alluvium
- (i) Taraire forest on volcanic flats
- (h) **Totara**-taraire riverine forest on alluvium

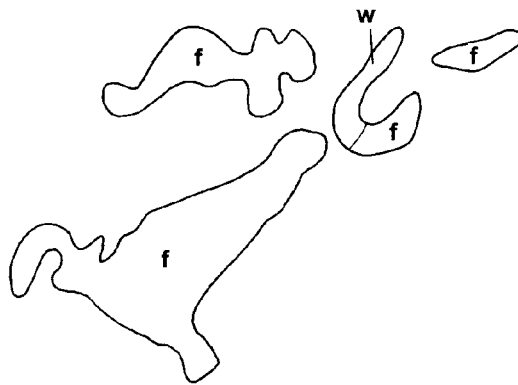
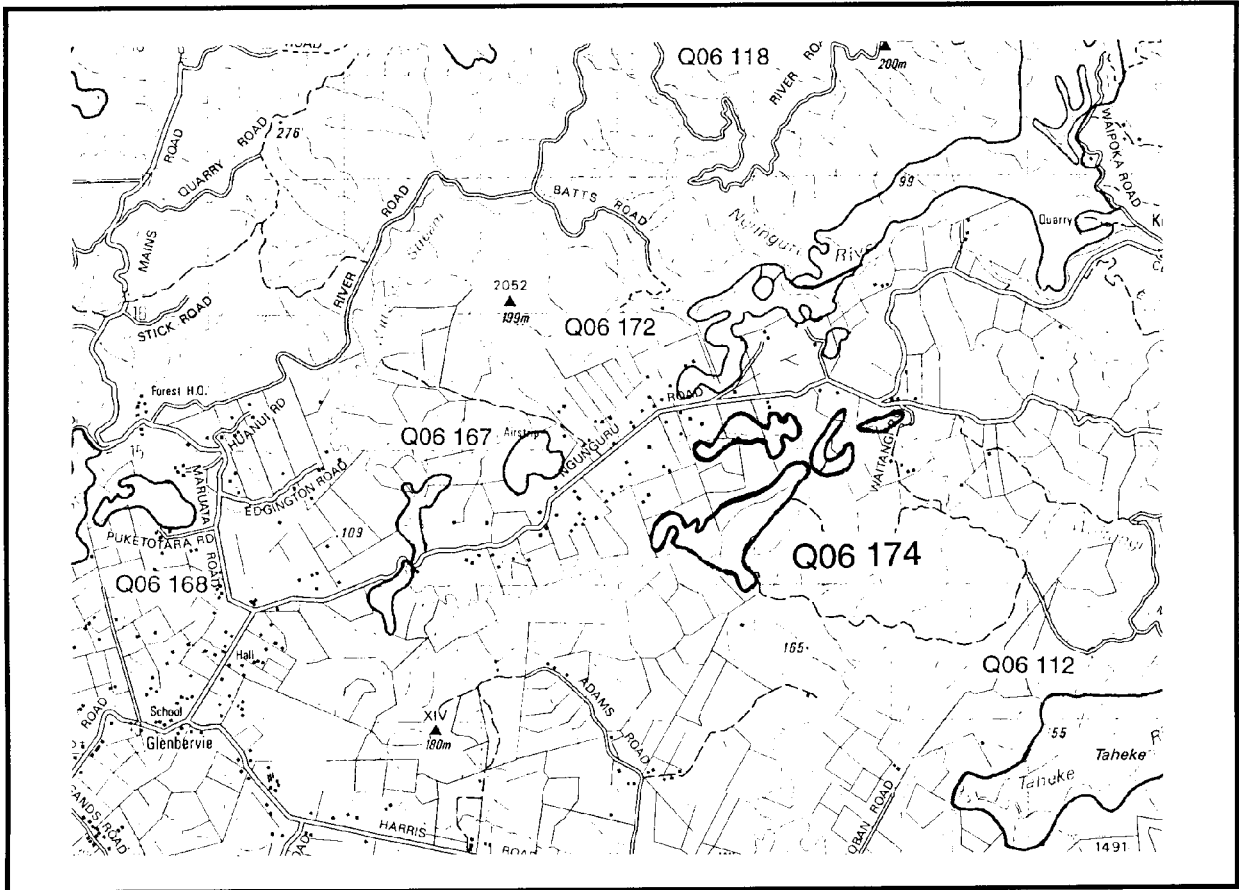


Figure 46. Waitangi River, Q06 174
 Each grid is 1000 m × 1000 m and equals 100 ha.
 f = forest; w = wetland.

Landform/geology

Kerikeri Volcanics basaltic lava flow, with minor Te Kuiti Group coal measures and Torlesse Terrane greywacke in the vicinity of Q06 369 144.

Vegetation

Several riverine forest remnants and a raupo wetland on the Waitangi River.

(a) The riverine remnant upstream from Waitangi Road is kahikatea-taraire-totara forest with frequent karaka. Cabbage tree, rimu, titoki, puriri and nikau are also occasionally present.

(b) Further upstream but contiguous with type (a), totara is dominant with crack willow common. Mahoe is frequently present with rewarewa, taraire, pukatea, kahikatea, karaka, kanuka and manuka occasional. Small-leaved milk tree is present in the subcanopy.

(c) A separate remnant further upstream is dominated by crack willow with totara common. Matai, kahikatea, puriri, taraire, titoki, kanuka and manuka are also present.

(d) The wetland to the north of here is 95% vegetation and 5% water. Raupo is dominant with soft rush common. *Oplismenus imbecillis*, giant umbrella sedge, *Carex* sp. and *Hypolepis* sp. are frequent with kanuka, manuka, cabbage tree and wheki occasionally present. Totara is frequent on the edges.

(e) Upstream from here, the largest riverine remnant is dominated by taraire at the north-eastern end. Karaka is common while puriri and kohekohe are frequent. Tawa, rewarewa and rimu are also present. Totara is common and kahikatea is frequent at the edges.

(f) Further upstream, there is a small grove of abundant kahikatea with taraire common. Totara is frequent with nikau and rimu occasional.

(g) On the southern side of the river, taraire-totara forest is associated with frequent kanuka and manuka. Kauri and cabbage tree are also present.

(h) Returning to the northern side of the river, most of the forest is dominated by kanuka and manuka. Totara is frequent while kahikatea and mamaku are occasional.

(i) At the most western point of the remnant, the riverine forest grades into volcanic broadleaf forest on flats above the river. Taraire is abundant, rewarewa is frequent as an emergent and puriri, tawa, karaka, kahikatea and kohekohe are occasional. Totara is frequent on the edges.

In the remnant to the north of the site, taraire is also dominant with frequent puriri and occasional tawa, titoki, totara, karaka, and kohekohe. Rewarewa is also present as an emergent, type (i).

(h) Around the small stream that flows through the remnant, there is riverine forest dominated by totara with taraire common. Rewarewa is frequent as an emergent and northern rata and kahikatea are occasional.

Fauna

Kukupu (Category B threatened species), NI fernbird (Regionally significant species), tui, fantail, grey warbler, NZ kingfisher, pied stilt, pukeko, paradise duck.

Significance

Examples of a freshwater wetland and riverine forest, both of which are rare habitat types in the Ecological District. Representative site for type (f), (g), and (h). It is also the only site in the Ecological District where type (d) and (e) have been recorded.

Habitat for a threatened species and a regionally significant species.

Approximately 7 hectares of this site, including forest and wetland vegetation types, are protected under a Queen Elizabeth II National Trust covenant.

WHAKAPARA RIVER REMNANTS

Survey no.	Q06/176
Survey date	20 November 1997
Grid reference	Q06 231 265
Area	35.7 ha (26.3 ha forest, 9.4 ha shrubland)
Altitude	80 m asl

Ecological unit

- (a) Kowhai-matai riverine forest on alluvium
- (b) Matai-totara riverine forest on alluvium
- (c) *Carex*-willow weed wetland in oxbow
- (d) Totara riverine forest on alluvium
- (e) Kanuka/manuka riverine forest on alluvium
- (f) Kanuka/manuka-totara riverine forest on alluvium
- (g) Kowhai-totara riverine forest on alluvium
- (h) **Matai**-totara riverine forest on alluvium
- (i) Manuka riverine shrubland on alluvium
- (j) Kanuka/manuka riverine shrubland on alluvium

Landform/geology

Quaternary alluvial and swamp deposits in Hikurangi Swamp.

Vegetation

This site includes several riverine forest and shrubland remnants associated with oxbows adjacent to the Whakapara River.

- (a) The northernmost oxbow in this site has kowhai-matai forest along its edge. Associated species include frequent kahikatea and occasional manatu, kanuka and manuka.
- (b) This grades into totara-matai forest with frequent kahikatea. Black maire and white maire are also present occasionally.
- (c) The oxbow contains commonly occurring *Carex* sp. and willow weed with frequent *Juncus* sp. Jointed twig-rush is also present.
- (d) The next oxbow to the southwest has a small remnant of totara forest adjacent to it. Kahikatea is frequent with occasional kowhai, manatu, kanuka and manuka.

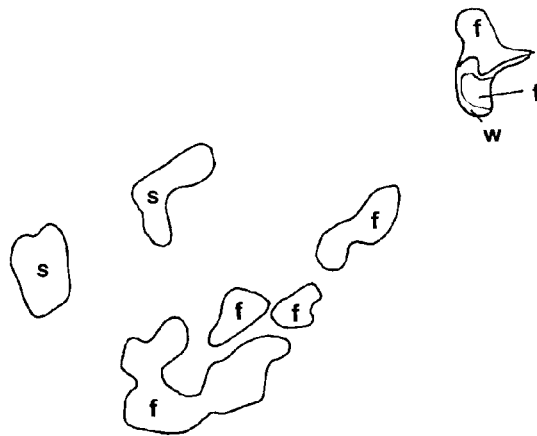
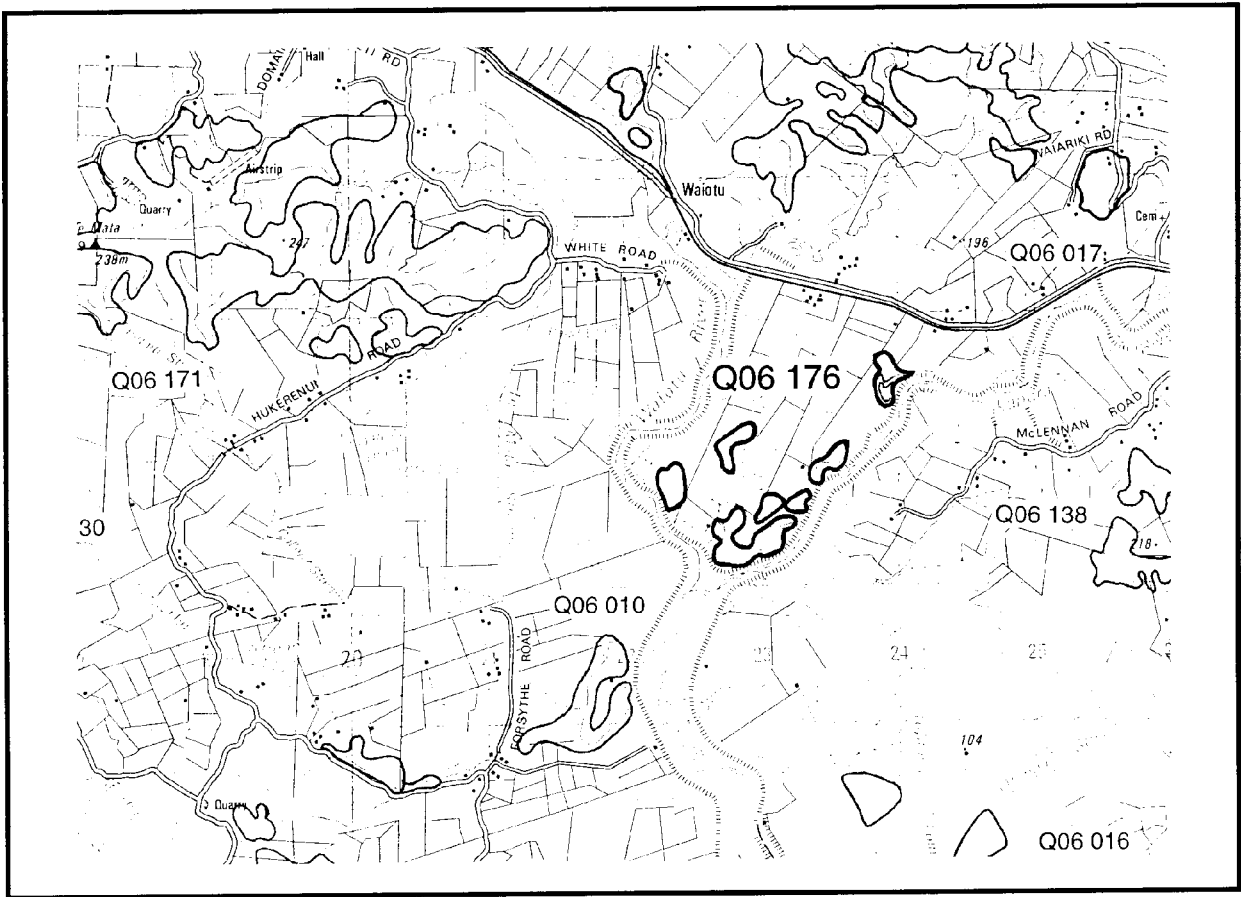


Figure 47. Whakapara River Remnants, Q06 176
 Each grid is 1000 m × 1000 m and equals 100 ha.
 f = forest; s = shrubland; w = wetland.

(e) This grades into kanuka/manuka forest with an incomplete canopy at the oxbow edge. Other species present include manatu, kowhai and totara.

(f) Continuing southwest, the next oxbow is edged with kanuka/manuka-totara forest. Manatu is also present occasionally.

(g) The next oxbow to the southwest has two types of forest associated with it. The first is kowhai-totara forest with frequently occurring kahikatea, kanuka and manuka. Also present in the canopy are matai, rimu, karaka, black maire, manatu and cabbage tree.

The second is type (b) where totara and matai are common. Other species include frequent kanuka and manuka with occasional black maire, kahikatea, rewarewa, kowhai and manatu.

(h) Towards the west, the next oxbow is associated with forest of abundant matai with totara common.

(i) Moving northwest there is a remnant of manuka riverine shrubland next to the Waiotu River. Emerging from the 4-6 m canopy are scattered kahikatea, totara and matai.

(j) Northeast from here and in between the Waiotu River and the Whakapara River there is a remnant of kanuka/manuka riverine shrubland.

Significant flora

Black maire (Regionally significant species).

Fauna

Australasian bittern (Category O threatened species), black shag, NZ kingfisher, welcome swallow, Australasian harrier and fantail.

Significance

Good examples of riverine forest, a vegetation type that is uncommon in the Ecological District and Region.

Representative site for type (e) and (j). Also the only site in the Ecological District where type (a), (c), (g) and (h). have been recorded.

Habitat for a threatened bird species and regionally significant plant species.

CROWS NEST ROAD POND

Survey no.	Q06/177
Survey date	5 August 1996
Grid reference	Q06 289 174
Area	1.25 ha
Altitude	160 m asl

Ecological unit

(a) Raupo reedland in pond

(b) Open water

Landform/geology

Torlesse Terrane greywacke and argillite, locally overlain by Mangakahia Complex mudstone.

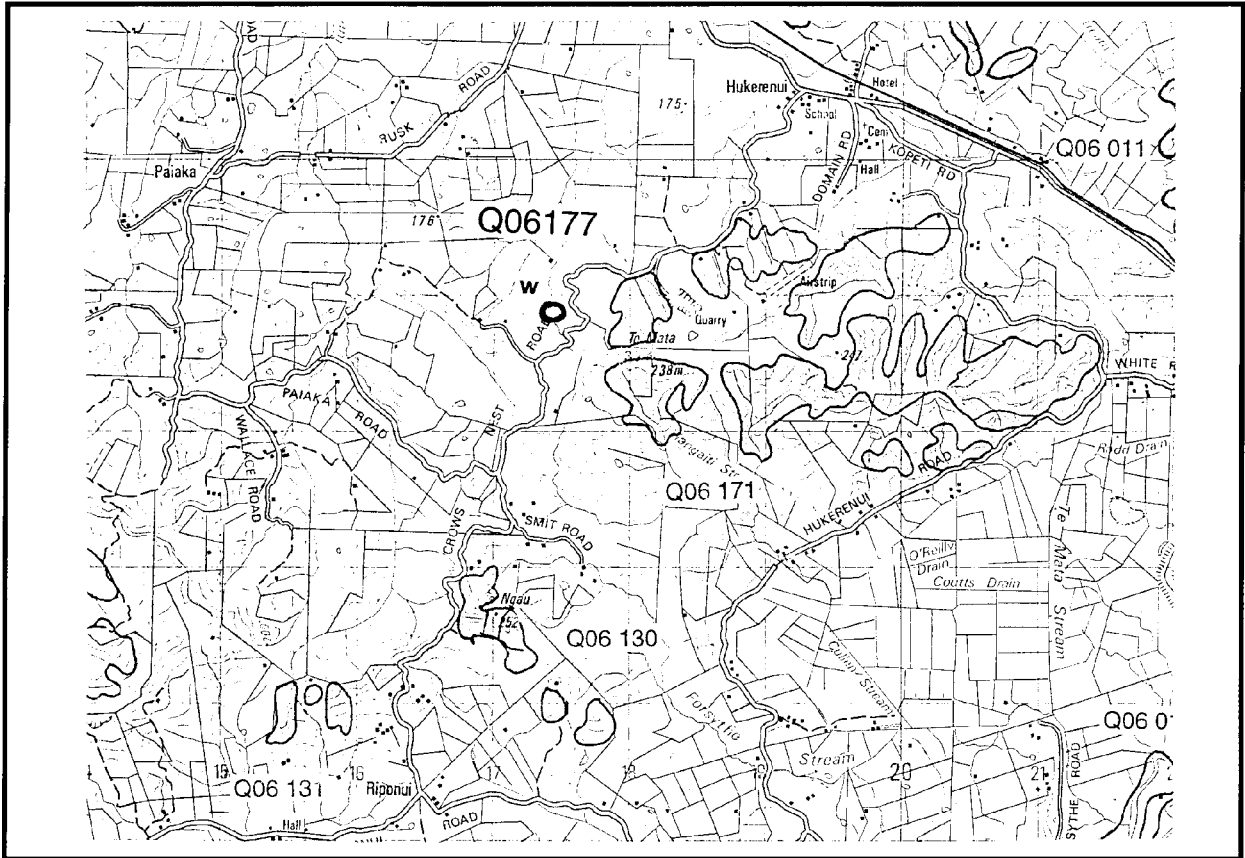


Figure 48. Crows Nest Road Pond, Q06 177
 Each grid is 1000 m × 1000 m and equals 100 ha.
 w = wetland.

Vegetation

(a) A small pond located amongst pine forest. Raupo makes up 60% of the pond and open water makes up the remainder, type (b).

Fauna

Australasian bittern (Category O threatened species), spotless crane (Regionally significant species).

Significance

The pond is habitat for a threatened species and a regionally significant species.

PARAHAKI

Survey no.	Q07/018
Survey date	18 July 1996
Grid reference	Q07 315 090
Area	190.2 ha (179.4 ha forest, 10.8 ha shrubland)
Altitude	0-240 m asl

Ecological unit

- (a) **Kanuka/manuka**-tanekaha shrubland on hillslope
- (b) Tanekaha forest on hillslope
- (c) Kauri-rimu forest on toeslope
- (d) Tanekaha-pine forest on ridge
- (e) Kauri-tanekaha forest on ridge
- (f) Kanuka/manuka-tanekaha-totara riverine forest on alluvium
- (g) Karaka-totara riverine forest on alluvium
- (h) **Tanekaha**-kanuka/manuka forest on hillslope
- (i) Kauri forest on ridge
- (j) Kanuka/manuka-tanekaha-towai forest on hillslope
- (k) Manuka-towai shrubland on hillslope
- (l) Manuka shrubland on ridge
- (m) **Tanekaha**-kanuka/manuka-rewarewa forest on hillslope

Landform/geology

Parahaki Subgroup rhyolite dome.

Vegetation

A large area of steep hill forest in an urban setting.

- (a) On the upper northern slopes of Parahaki there is kanuka/manuka dominant shrubland with common emergent tanekaha. Mamaku, towai, hangehange and kohuhu are frequent while forest cabbage tree is occasional.
- (b) On the mid-northern slopes there is tanekaha dominant forest with frequent manuka and rewarewa. Rimu, kauri and towai are also present.
- (c) At the base of the slope emergent rimu and kauri are common with frequent tanekaha. There is occasional kahikatea, puriri, totara and towai.
- (d) The ridge to the west of here has tanekaha dominant forest with pine commonly occurring. There is also occasional rimu and kauri.
- (e) On the upper west facing slopes kauri-tanekaha forest is present. It contains both kauri ridders and mature trees. Kanuka and manuka are frequent with occasional rimu, rewarewa and toru.
- (f) On the Hatea riverbank opposite Mair Park, there is riverine forest composed of kanuka, manuka, tanekaha and totara. Also present are rimu, towai, tawa and mamaku.
- (g) Upstream from this on the opposite riverbank there is karaka-totara riverine forest. Tawa, taraire and rewarewa are frequent while puriri, kowhai and kanuka are occasional.

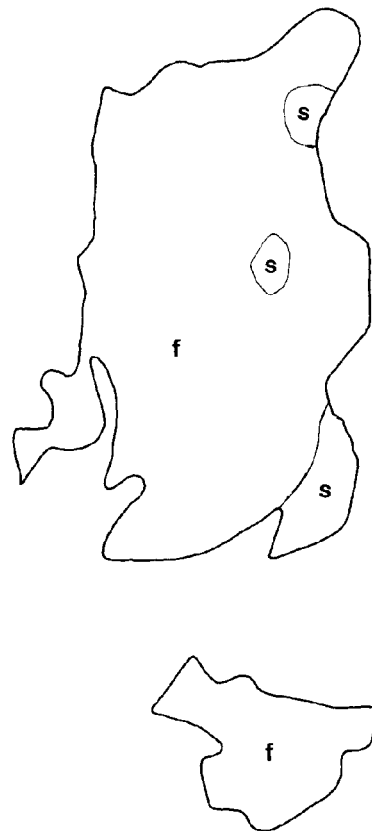
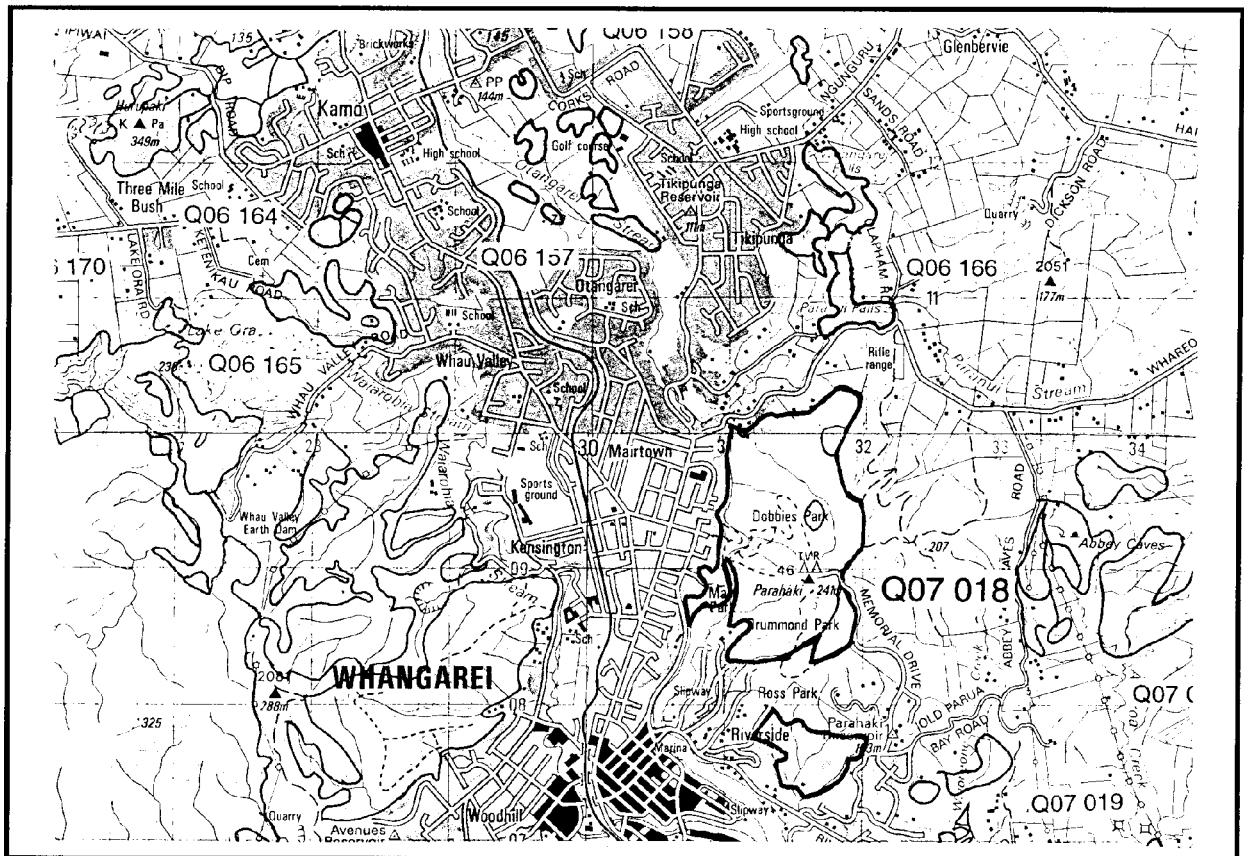


Figure 49. Parahaki, Q07 018

Each grid is 1000 m × 1000 m and equals 100 ha.

f = forest; s = shrubland.

(h) On the upper slopes above type (f) is an area dominated by tanekaha with kanuka and manuka common. Rewarewa is frequent with occasional rimu and kauri.

(i) South of here on a south-facing ridge is an area of mature kauri forest. Tanekaha and rewarewa are frequent while totara and rimu are occasional.

(j) On a steep slope above this there is forest composed of kanuka, manuka, tanekaha and towai. Rewarewa is frequent and totara and toru are occasional.

(k) South of here on a slope below Memorial Drive is an area of manuka-towai shrubland of three to five metres height. Toru and tanekaha are frequent with occasional rewarewa and mamaku.

(l) The ridge to the west of here was burnt in 1993 and has regenerated into low manuka shrubland of one to three metres height. *Dracophyllum lessonianum* is frequent with occasional toru and hangehange.

(m) South of here an area of pines separates the last vegetation types on the southern edge of the site from the rest of the site. Adjacent to housing west of Memorial Drive, type (m) occurs on a hillslope above a gully. Tanekaha is dominant while kanuka, manuka and rewarewa are common. There is also occasional rimu and kauri present.

Type (c) also occurs in the gully below here. Large emergent kauri and rimu are common while tanekaha and kahikatea are frequent. There is also occasional tawa, towai and rewarewa.

Significant flora

The king fern *Marattia salicina* (Declining) and fern *Loxsonia cunninghamii* (Regionally significant species) are also present at this site. There is an historical record (1898) of *Metrosideros carminea* (Regionally significant species).

1999 collection of orchids from Parahaki:

Caladenia bartletti, *C. chlorostyla*, *Microtis parviflora*, *M. unifolia*, *Orthoceras novae-zelandiae*, *Pterostylis alobula*, *P. banksii*, *P. agathicola*, *P. trullifolia*, *Thelymitra carnea*, *T. x dentata*, *T. longifolia*, *T. aff. longifolia*, *T. pauciflora*, *T. pulchella*.

Fauna

Remnant population of NI brown kiwi (Category A threatened species). Kukupa (Category B threatened species) and NI tomtit (Regionally significant species).

Auckland green gecko (Regionally significant species).

Banded kokopu (Category C threatened species), inanga, long-finned eel and koura are present in the streams.

Forest ringlet butterfly (Regionally significant species).

Significance

A large forested area containing mature kauri-rimu forest, a vegetation type that is rare in this Ecological District.

This site is representative for all the vegetation types and the only site in the Ecological District for type (a), (g), (k), and (m).

The only geological example of a rhyolite dome in the Ecological District.

Habitat for threatened bird, fish and plant species.

This site includes approximately 129 ha of Whangarei District Council Reserve.

OLD PARUA BAY ROAD BUSH

Survey no.	Q07/019
Survey date	19 July 1996
Grid reference	Q07 330 076
Area	36.3 ha
Altitude	0-60 m asl

Ecological unit

- (a) Totara-towai forest on hillslope
- (b) Kauri-totara forest on hillslope
- (c) Tanekaha-totara forest on hillslope
- (d) Puriri-rewarewa-totara forest on hillslope
- (e) Kauri-rimu forest on ridge
- (f) Puriri-totara forest on toeslope
- (g) **Kanuka/manuka**-totara forest on hillslope

Landform/geology

Kerikeri Volcanics basalt flow overlying Mangakahia Complex sandstone and mudstone.

Vegetation

Two areas of forest adjacent to tidal inlets in the upper Whangarei Harbour. The northern forest was originally one contiguous area but recent development has reduced this to three separate remnants.

- (a) The two northern remnants consist of towai-totara forest with frequent puriri. Rewarewa, karaka, kauri and mamaku are also present.
- (b) The third remnant has kauri-totara forest on the northern side. Rimu, kahikatea and tanekaha are frequent while puriri, mamaku and pine are occasional.
- (c) On the southern side of the third remnant tanekaha-totara forest is located on the hillslope above the mangrove inlet.
- (d) In the southern part of the site, a small area of rewarewa-puriri-totara forest is located next to Mackesy Road. Kohekohe and manuka are frequent while tarata, towai and kowhai are occasional.

The remaining area of forest contains four vegetation types:

- (e) Kauri-rimu forest occurs on the ridges, where tanekaha is frequent and totara and rewarewa are occasional.

Type (c) occurs on the south facing hillslopes. Frequently occurring species are rewarewa and manuka while rimu is occasional.

- (f) On the toeslopes, puriri-totara forest occurs. Kahikatea is frequent and kowhai, rewarewa, manuka and towai are occasional.

- (g) An area of kanuka/manuka dominant forest where totara is common is located on the eastern fringes of the forest.

Fauna

Kukupa (Category B threatened species), pukeko.

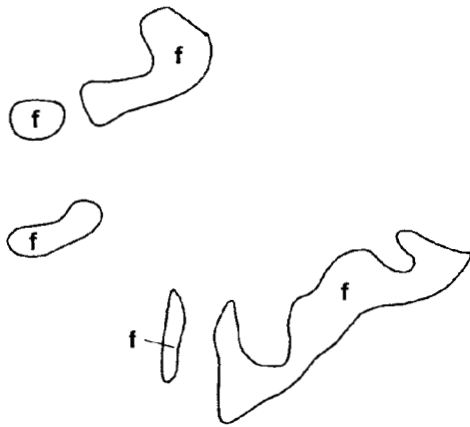
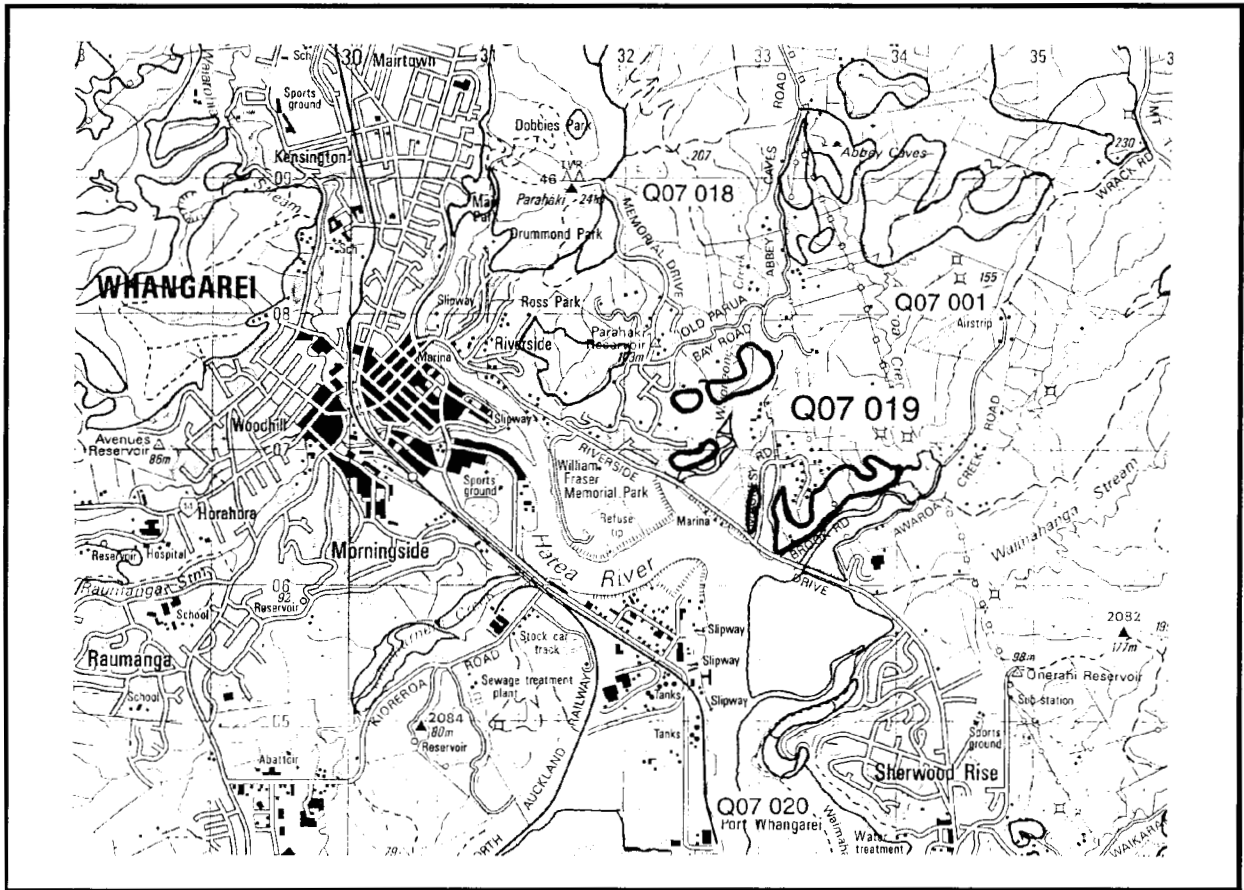


Figure 50. Old Parua Bay Road Bush, Q07 019
 Each grid is 1000 m × 1000 m and equals 100 ha.
 f = forest.

Significance

Representative site for type (b), (e), and (f) and the only site for type (d) in the Ecological District. These forest areas also form a buffer to the mangrove forest in the tidal inlets.

Habitat for a threatened species.

An area of scenic reserve, 5.6 ha, adjacent to the estuary, is administered by the Whangarei District Council.

WAIMAHANGA WALKWAY

Survey no.	Q07/020
Survey date	18 July 1996
Grid reference	Q07 331 047
Area	13.3 ha (5 ha forest, 8.3 ha shrubland)
Altitude	0-40 m asl

Ecological unit

- (a) Hangehange-mahoe-mapou coastal shrubland on steep hillslope
- (b) Kanuka coastal forest on steep hillslope

Landform/geology

Kerikeri Volcanics basaltic lava flow and colluvium.

Vegetation

A small, narrow site on a steep westerly cliff face of a headland east of the main channel of Whangarei Harbour. There is a public walkway through this area and the adjacent mangrove forest.

The site contains two areas of hangehange-mahoe-mapou coastal shrubland with frequent karamu, mamaku and pampas. There is also scattered emergent towai, totara, manuka, karaka and cabbage tree.

There are also two areas of coastal kanuka forest where kanuka is abundant but has a broken canopy. Totara and manuka are frequent with occasional puriri. The site contains a heavy infestation of weeds including pampas, kahili ginger, Mexican devil, climbing asparagus and gorse.

Fauna

Not surveyed.

Significance

Coastal forest and coastal shrubland are rare vegetation types within this Ecological District. This is the only site in the Ecological District where hangehange-mahoe-mapou coastal shrubland and kanuka coastal forest have been recorded.

Two hectares of this site is protected Scenic Reserve, administered by the Department of Conservation.

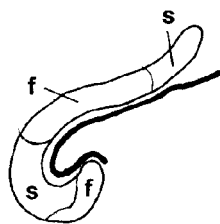
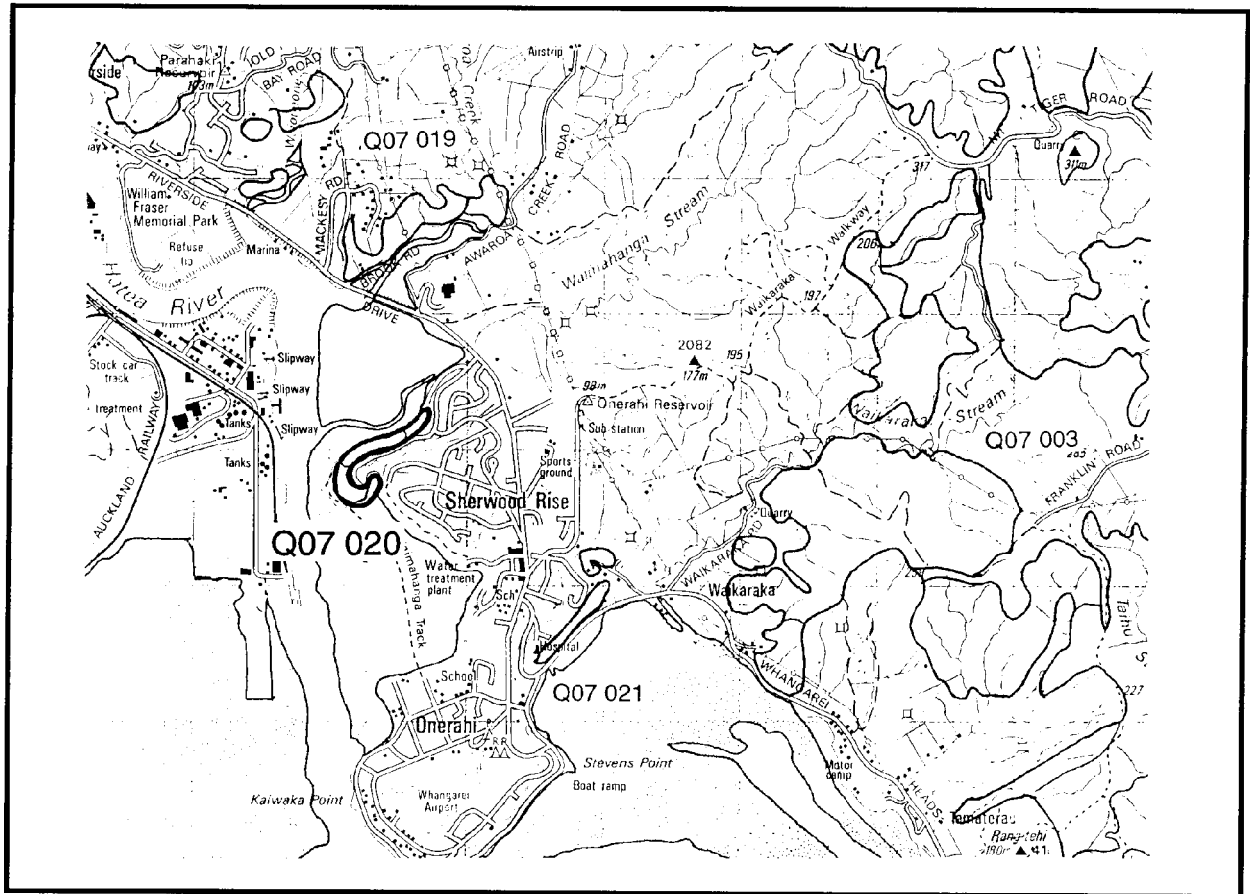


Figure 51. Waimahanga Walkway, Q07 020
 Each grid is 1000 m × 1000 m and equals 100 ha.
 f = forest; s = shrubland.

Ecological unit

- (a) Kahikatea coastal forest on toeslope
- (b) Towai coastal forest on steep hillslope

Landform/geology

Kerikeri Volcanics basalt lava flow and colluvium.

Vegetation

A narrow strip of coastal forest on a steep escarpment face of a marine terrace next to Whangarei Harbour.

(a) On the toeslope of the escarpment face kahikatea coastal forest predominates. Frequently occurring species include cabbage tree and puriri and occasional species include tawa, kohekohe, tawaroa and karaka.

(b) On the upper slopes towai coastal forest is present with frequent puriri, totara and tawa. Taraire, kohekohe, rimu, rewarewa and kanuka are also present.

Significant flora

Hebe diosmifolia and tawaroa (Regionally significant species).

Fauna

Kukupu (Category B threatened species);

Banded kokopu (Category C threatened species).

Significance

An example of coastal forest which is a rare vegetation type in the Ecological District. This is the only site in the Ecological District where these vegetation types have been recorded.

It is also the only site in the Ecological District where tawaroa occurs and one of two sites where the uncommon *Hebe diosmifolia* occurs.

Habitat for threatened bird and fish species.

Three hectares of this site is protected Scenic Reserve, administered by the Department of Conservation.

PUKENUI FOREST

Survey no.	Q07/022
Survey date	30 April 1996
Grid reference	Q07 250 090
Area	2033 ha (1955 ha forest, 50 ha shrubland, 3 ha wetland, 25 ha dam reservoir)
Altitude	40-355 m asl

Ecological unit

- (i) Mamaku fernland on toeslope
- (ii) Totara forest on hillslope
- (iii) Taraire-towai forest on hillslope
- (iv) Mahoe-mamaku-tobacco weed shrubland on hillslope
- (v) Kanuka/manuka shrubland on hillslope

- (vi) Tanekaha-totara-towai forest on hillslope
- (vii) Kanuka/manuka-towai forest on hillslope
- (viii) Tanekaha-totara forest on hillslope
- (ix) Kauri forest on hillslope
- (x) Rimu forest on hillslope
- (xi) Tanekaha forest on ridge
- (xii) **Totara**-kahikatea riverine forest on alluvium
- (xiii) Taraire forest on hillslope
- (xiv) Totara-towai forest on hillslope
- (xv) Taraire-kahikatea forest on alluvial flat
- (xvi) **Kanuka/manuka**-totara forest on hillslope
- (xvii) **Tanekaha**-kanuka/manuka-rimu forest on hillslope
- (xviii) **Kanuka/manuka**-mamaku shrubland on hillslope
- (xix) **Taraire**-towai forest on hillslope
- (xx) Kanuka forest on hillslope
- (xxi) **Kanuka/manuka**-totara shrubland on hillslope
- (xxii) **Rimu**-kauri forest on ridge top
- (xxiii) Kahikatea riverine forest on alluvium
- (xxiv) **Towai**-rewarewa-taraire forest on hillslope
- (xxv) Towai forest on hillslope
- (xxvi) Raupo-willow weed wetland
- (xxvii) Totara riverine forest on alluvium
- (xxviii) Taraire-totara forest on hillslope
- (xxix) Kahikatea-taraire-totara forest on hillslope
- (xxx) Kahikatea forest on volcanic flat
- (xxxi) Kanuka/manuka forest on hillslope
- (xxxii) Taraire riverine forest on alluvium
- (xxxiii) Puriri-taraire-totara forest on hillslope

Landform/geology

Dissected fault block of Torlesse Terrane greywacke and argillite.

Vegetation

Pukenui Forest is a large area of forest containing a high diversity of vegetation types including some unmodified areas. It forms the catchment for Whau Valley dam and provides a native forest backdrop to Whangarei City. It is located on two topographical maps, Q07 (Whangarei) and Q06 (Hukerenui).

Whau Valley Dam Area

- (i) North-west of the dam outlet is an area of mamaku fernland on a southeast-facing toeslope. Kahikatea is frequent with occasional puriri, totara and nikau.
- (ii) On the moderately steep hillslope above this, totara is abundant with occasional kanuka and towai.
- (iii) West of here and adjacent to the dam wall, taraire-towai forest is present. There is frequent rimu and emergent rewarewa with scattered tawa, kanuka and nikau.

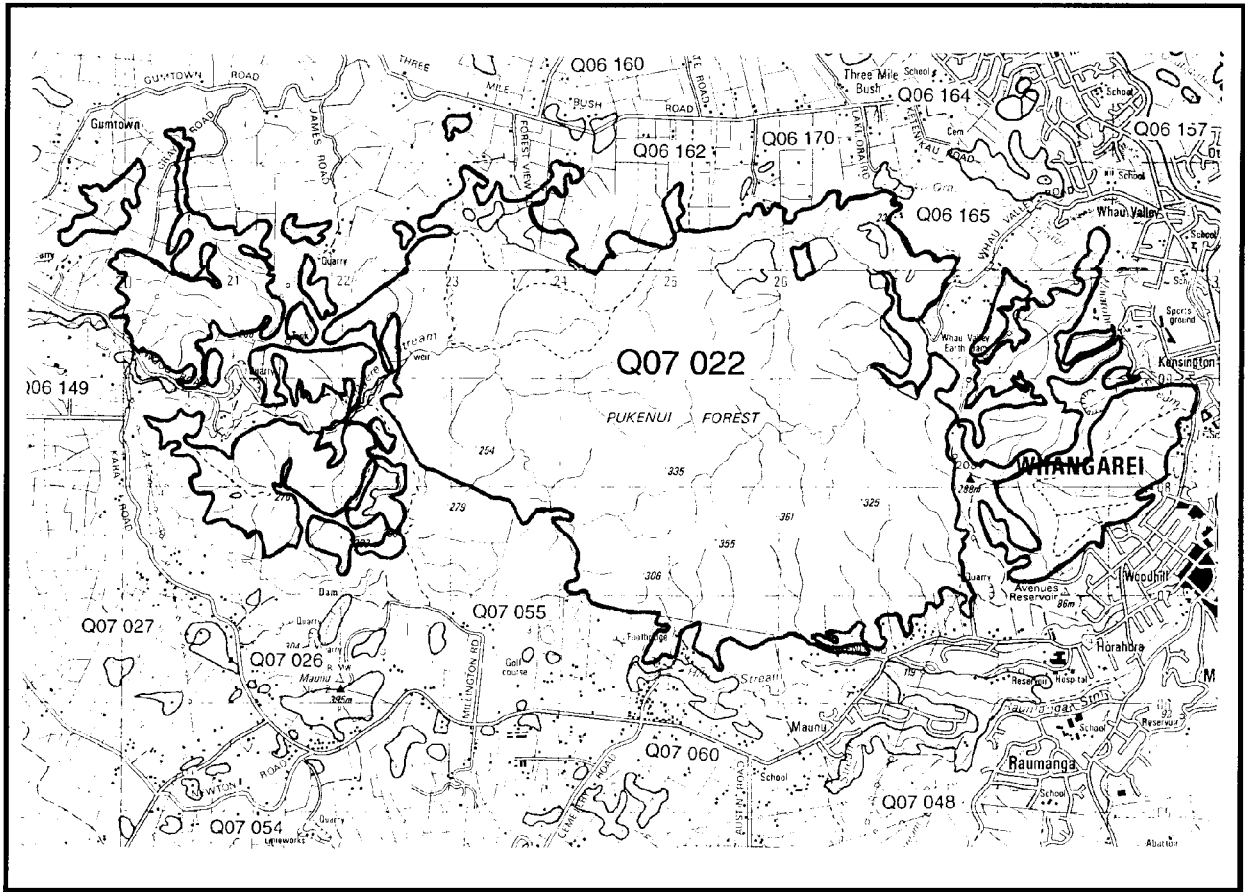


Figure 53. Pukenui Forest, Q07 022

Each grid is 1000 m × 1000 m and equals 100 ha.

f = forest; s = shrubland.

Type (iii) occurs on the western side of the dam on east facing hillslopes. Other species include frequent emergent rewarewa and occasional miro, puriri, karaka, nikau, mamaku and emergent northern rata and rimu.

(iv) Bordering the western side of the dam is an area of shrubland containing mamaku, mahoe and tobacco weed. Gorse and hangehange are frequent while cabbage tree and kahikatea are occasional.

(v) Adjacent to this is an area of kanuka/manuka shrubland with occasional mamaku, cabbage tree and pampas. Emergent rimu, totara and kauri are also present in low numbers. An area of this shrubland also occurs on the southern edge of the dam.

(vi) On the north-facing hillslopes to the south of the southern arm of the dam there is an area of tanekaha-totara-towai forest. Rimu and emergent rewarewa are frequent with occasional tawa, nikau and kanuka.

(vii) Southeast of here on a northeast facing hillslope, kanuka/manuka-towai forest is associated with frequent rimu, taraire and emergent rewarewa. Puriri is also present in low numbers.

(viii) On the steep east-facing hillslope on the western side of the stream that drains into the southern end of the lake, there is an area of tanekaha-totara forest. Emergent rewarewa is frequent while puriri, rimu, tawa, kanuka and mamaku are occasionally present.

(ix) On a ridge south of here there is a small area of mature kauri forest. Tanekaha and rimu are frequently present.

(x) Further south on a ridge top, rimu is abundant with kauri, taraire, rewarewa and tanekaha present in low numbers.

(xi) Moving around to the southeastern edge of Pukenui Forest adjacent to the suburb of Woodhill, the ridges are of tanekaha forest with frequent totara and rewarewa. Also present are kanuka, rimu, tawa and towai.

(xii) Moving westwards to Pukenui Road, the stream that flows out of Pukenui Forest here has riverine forest of dominant totara and common kahikatea. Kanuka is frequent while kowhai, puriri, karaka, pukatea and taraire are occasional.

Type (iii), taraire-towai forest occurs on east facing hillslopes in this area. Taraire-towai forest has frequent puriri and rewarewa with occasional tanekaha, tawa, nikau, kahikatea, rimu, karaka, and pukatea. Emergent kauri and tanekaha are present on the ridges while totara is concentrated on the forest margins. The epiphyte puka is also present.

Moving to the southwestern corner of Pukenui Forest (to the north of Maunu Mountain), the forest is no longer contiguous and pasture extends into the area.

Type (iii) occurs east of Kara Road on west-facing hillslopes. Taraire-towai forest is associated with frequent rewarewa and tawa with occasional totara, lancewood, tanekaha, rimu, kahikatea and mamaku.

Further northeast, type (ii) occurs on west-facing hillslopes and hilltops. Associated species are frequent taraire and occasional rewarewa, towai, puriri, kahikatea, mamaku and emergent rimu.

(xiii) In the forest area east of McKinley Road, the lower slopes are dominated by taraire with frequent totara and rewarewa. Also present are kahikatea, titoki, puriri, tawa, rimu, pukatea and nikau.

(xiv) The upper slopes are covered with totara-towai forest with frequent kanuka. Puriri, rewarewa, cabbage and mamaku are occasional.

East of here and on the south side of Wood Road and Mangere Stream, the steep hillslopes are totara dominant with frequently occurring kanuka, taraire and towai. Occasional species include kahikatea, tawa, tanekaha and rewarewa (type ii).

(xv) Along the Mangere Stream just west of the weir (Q07 090 230), taraire forest with emergent kahikatea occurs.

(xvi) Further east the steep, north-facing forest is dominated by kanuka and manuka with totara common. Towai and mamaku are frequent with occasional puriri, taraire, rewarewa, pigeonwood and *Pinus* sp.

(xvii) Continuing eastwards, the forest on the northeast facing ridges is dominated by tanekaha with kanuka/manuka and emergent rimu common. Rewarewa, towai, mamaku and emergent kauri are also present.

On the opposite side of the gully on a steep west-facing hillslope there is a small area of type (v) shrubland. Kanuka and manuka are dominant with occasional towai and mamaku.

(xviii) Adjacent to this and further north, kanuka/manuka with common mamaku occurs. Totara and towai are present occasionally.

(xviii) This grades into forest of abundant taraire with towai common on a north-facing slope. Also present are frequent totara and rewarewa with occasional puriri, kauri, tawa and kanuka.

(xx) Moving eastwards to the opposite side of the hill, kanuka is dominant with frequent mamaku and occasional *Acacia* sp. and totara.

(xxi) Moving southwards up the valley, there is another area of steep shrubland that has recolonised pasture. Three metre high kanuka/manuka is dominant with totara common. Mamaku is also present occasionally.

(xxii) On the other side of the valley the forest is contiguous with the main part of Pukenui Forest. On the ridge tops rimu is dominant with kauri rickers common. Frequently occurring species are rewarewa, totara and miro with occasional kanuka and towai.

(xxiii) At the weir on Mangere stream, the surrounding riverine forest is kahikatea dominant with occasional rimu and totara.

(xxiiii) Moving downstream, the south-facing hillslopes on the northern side of Mangere Stream are towai dominant with taraire and rewarewa common. Rimu, pukatea, mamaku, karaka, and tawa are occasional.

(xxv) West of the quarry on Wood Road, towai is common on south facing hillslopes with frequent totara and tanekaha. Rewarewa, kahikatea and mamaku are also present.

Continuing westward, type (xiv) occurs on a southwest-facing hillslope. Totara and towai are common with kanuka, manuka and *Pinus* sp. frequent. There is also occasional cabbage tree and mamaku.

Type (xxv) occurs at the top of the hill. Towai is abundant with taraire and totara frequent. Other species in the canopy are rimu, puriri, kahikatea, rewarewa, miro, kauri and tanekaha.

On the other side of the hill (north-facing), type (iii) occurs. Taraire-towai forest is associated with frequent rewarewa and rimu. There is also occasional tanekaha, totara, kauri, puriri and mamaku.

On the northwestern side of Pukenui Forest and to the west of Gray Road, there is a separate valley remnant of tanekaha-totara forest. Rimu is present frequently with occasional kauri, towai, taraire, mamaku, *Pinus* sp. and macrocarpa, type (viii).

(xxvi) A stream which flows out of Pukenui Forest, forms a wetland which is crossed by Gray Road. It consists of 100% vegetation comprising predominantly raupo and willow weed. Harakeke and *Juncus* sp. are frequent and cabbage tree is present occasionally.

(xxvii) Bordering the wetland is a small area of totara riverine forest where kahikatea is frequent.

Southeast from here, type (viii) occurs on a north-facing hillslope. Tanekaha-totara forest has frequent kanuka and manuka with occasional kahikatea, mamaku and towai.

(xxviii) The separate remnant to the east and at the end of James Road has taraire-totara forest with frequent puriri and kahikatea. Rewarewa and rimu are also present occasionally.

Moving eastwards there is another separate remnant on a moderate hillslope, type (ii). Totara is dominant with frequent kahikatea and manuka and occasional taraire and rimu.

To the east of this, in the main part of Pukenui Forest, type (xiii) occurs. Taraire is abundant with frequent towai and rimu and occasional puriri, northern rata and rewarewa.

North of here on the edge of the forest, type (xiii) continues on a gentle hillslope. Associated species are frequent puriri and rewarewa while totara, karaka and kahikatea are occasional.

(xxvix) Further north and on the south side of Three Mile Bush Road, there is a small separate remnant of kahikatea-taraire-totara forest on a moderate west-facing slope. Occasional species include puriri, karaka, tawa and titoki.

The Pukenui track, which begins on Three Mile Bush Road and extends as far as Mangere Stream, passes through several forest types. It starts on map Q06 (Hukerenui) and crosses on to map Q07 (Whangarei).

(Q06) The track begins in farmland and passes close to an area of forest on volcanic flats, which extends northwards into pasture. This consists of 70% taraire forest, type (xiii), and 30% kahikatea forest, type (xxx).

(Q07) To the east of where the track passes onto map Q07 there is type (xxxi) forest on a gentle slope which has abundant kanuka and manuka. Totara and cabbage tree are occasionally present in the canopy and mamangi is frequent in the subcanopy.

Further east from here, on a moderately sloped north facing hillslope, type (xiii) occurs. Taraire is abundant with frequent rewarewa, towai and emergent rimu. Puriri is present in occasionally.

Further along the southern branch of the track type (xxxi) occurs on a gentle slope. Kanuka and manuka are common with frequent towai and emergent rimu

and kahikatea. Taraire, rewarewa, cabbage tree and miro are also present occasionally.

Further along on the southern side of the track taraire forest is common on moderate south-facing slopes (type xiii). Associated canopy species are frequent totara and towai and occasional tawa, tanekaha, rimu, miro and puriri.

(xxxii) Where the track turns north to follow the northern branch of Mangere Stream, there is riverine forest made up of taraire with frequent rimu, kahikatea and towai. Tawa, miro and kauri are also present. Old growth taraire forest on alluvial flats with emergent kahikatea occurs in the Mangere Stream area by Woods Road.

Further north on a moderate north-facing slope, type (viii) occurs. Tanekaha-totara forest has frequently occurring taraire and rimu. Miro and emergent kauri are also present in low numbers.

(xxxiii) Moving back to the eastern edge of Pukenui Forest there is an area of forest on a moderate north-facing slope in between Whau Valley dam and Waiarohia Stream. Puriri, taraire and totara are common with frequent kohekohe and tawa. Karaka, towai, rewarewa, mamaku and nikau are occasional.

Significant flora

Pukenui Forest is one of two sites in the Ecological District where king fern (Declining) has been recorded.

It contains regionally significant plant species such as hard beech, kawaka, *Metrosideros carminea* and the fern *Loxosoma cunninghamii*.

The Northland endemic tree makamaka is near its southern limit at this site.

Fauna

NI brown kiwi (Category A threatened species), NI kaka (Category B threatened species), kukupa (Category B threatened species), kakariki (red-crowned parakeet) (Regionally significant species), NI tomtit (Regionally significant species), tui, morepork, shining cuckoo, fantail, silvereye, grey warbler, Australasian shoveler, NZ scaup, grey teal, grey duck, mallard, paradise duck, little shag.

Long-tailed bat (Category B threatened species).

Banded kokopu (Category C threatened species), common bully, long-finned eel.

Significance

A very large, contiguous area with a high diversity of vegetation types, supporting several threatened species. This site has 32 different vegetation types, the second highest diversity in the Ecological District. There are large areas of mature, unmodified forest and the logged areas are showing vigorous regeneration with a high density of podocarps. It is the largest remaining area of forest left in the Whangarei Ecological District. It also forms a water catchment for the Whau Valley Dam that supplies water to Whangarei City.

It is the representative site for mamaku fernland, kanuka/manuka shrubland, kanuka/manuka-totara shrubland, kauri forest, **kanuka/manuka**-totara forest, taraire-towai forest, totara forest, totara-towai forest, **totara**-kahikatea forest, kahikatea forest, kahikatea-taraire-totara forest, rimu forest, taraire forest, taraire-kahikatea forest, and puriri-taraire-totara forest.

It is also the only site in the Ecological District where type (viii), (xvi), (xvii), (xix), (xxi), and (xxiii) have been recorded.

Habitat for several threatened and regionally significant bird, bat, fish and plant species. Whau Valley Dam provides habitat for waterfowl.

This site forms the forested catchment of the headwaters of Mangere River, one of the last remaining examples of riverine old growth forest habitat in this Ecological District.

It is a soil site of regional importance, containing a moderate range of little-modified soil/vegetation associations. It also contains good examples of Kara soils which are uncommon because most have been developed for dairying (Arand et al. 1993).

This site includes 593 ha of Conservation Park administered by Department of Conservation, 12 ha protected by a Queen Elizabeth II National Trust covenant and 920 ha of Whangarei District Council Reserve.

OTAIKA VALLEY BUSH

Survey no.	Q07/023
Survey date	21 September 1998
Grid reference	Q07 275 025
Area	558.3 ha (548.3 ha forest, 10 ha shrubland)
Altitude	0-245 m asl

Ecological unit

- (i) Kanuka/manuka forest on moderate hillslope
- (ii) Tanekaha forest on moderate ridge
- (iii) Kanuka/manuka-tanekaha-totara forest on moderate slope
- (iv) Taraire forest on moderate hillslope
- (v) Kanuka/manuka-tanekaha forest on moderate hillslope
- (vi) Puriri-taraire forest on moderate hillslope
- (vii) Kanuka/manuka-totara forest on moderate hillslope
- (viii) Kanuka/manuka-mamaku shrubland on moderate hillslope
- (ix) Rewarewa-taraire forest on moderate hillslope
- (x) Towai forest on steep hillslope
- (xi) Kanuka/manuka-tanekaha-towai forest on moderate hillslope
- (xii) Puriri-towai forest on steep hillslope
- (xiii) Kahikatea riverine forest on alluvium
- (xiv) Taraire riverine forest on alluvium
- (xv) Totara riverine forest on alluvium
- (xvi) Matai-taraire-totara riverine forest on alluvium
- (xvii) Rimu-tanekaha forest on steep hillslope
- (xviii) Kahikatea-towai forest on steep hillslope
- (xix) Puriri forest on steep hillslope
- (xx) Taraire-tarata-towai forest on steep hillslope

- (xxi) Rimu forest on steep ridge and gentle hillslope
- (xxii) Karaka-puriri forest on steep slope
- (xxiii) Kanuka/manuka-towai forest on ridge top
- (xxiv) Kauri forest on steep hillslope
- (xxv) Kanuka/manuka-puriri forest on gentle hillslope
- (xxvi) **Tanekaha**-kauri forest on gentle hillslope
- (xxvii) **Tanekaha**-kanuka/manuka forest on moderate hillslope
- (xxviii) Manuka-tanekaha shrubland on gentle hillslope
- (xxix) Kahikatea-totara forest on moderate hillslope
- (xxx) Tanekaha-totara forest on steep hillslope
- (xxxi) Kauri-tanekaha forest on ridge
- (xxxii) Puriri-totara forest in steep gully
- (xxxiii) Taraire-totara forest on steep hillslope
- (xxxiv) Puriri-tanekaha-taraire forest on steep hillslope
- (xxxv) **Kanuka/manuka**-tanekaha forest on steep hillslope
- (xxxvi) Totara forest on steep hillslope
- (xxxvii) **Kanuka/manuka**-totara forest on moderate hillslope
- (xxxviii) Kanuka/manuka shrubland on moderate hillslope
- (xxxix) **Tanekaha**-totara forest on moderate hillslope

Landform/geology

Fault block of Torlesse Terrane greywacke and argillite capped by (unknown-probably Te Kuiti Group and Northland Allochthon), and Kerikeri Volcanics basaltic lava flows in the vicinity of Cemetery Road.

Vegetation

A large, diverse area of forest which contains the Otaika Valley Scenic Reserve and Walkway.

- (i) The slopes of the southeastern corner of the site have abundant kanuka/manuka forest. Totara is frequent with occasional tanekaha, cabbage tree, puriri, rimu, rewarewa, nikau, mapou, lancewood, mamaku and emergent kauri.
- (ii) On a ridge to the west of here, tanekaha is abundant with frequent rimu. Kanuka, manuka and rewarewa are also present.
- (iii) At the bottom of the ridge there is kanuka/manuka-tanekaha-totara forest with occasional puriri, rewarewa and kauri.
- (iv) Westward from type (ii) at the top of the ridge, taraire forest is dominant. There is also frequent rewarewa and occasional puriri, kahikatea, mamaku, nikau, kanuka and manuka.
- (v) Downslope from type (iv), there is kanuka/manuka-tanekaha forest. Occasionally present are rimu, towai, lancewood, taraire, mamaku, cabbage tree and kowhai.
- (vi) Downslope from here there is puriri-taraire forest. Kahikatea is frequent while tarata, tawa, kanuka, manuka, rimu, tanekaha and totara are occasional.
- (vii) Slightly east of here on the same contour there is kanuka/manuka-totara forest on a moderate hillslope. Also present are occasional rimu, towai, rewarewa, puriri and tanekaha.

(viii) At the bottom of this slope there is an area of kanuka/manuka-mamaku shrubland. Totara is frequent with occasional towai, rewarewa and gorse.

(ix) West of here, rewarewa-taraire forest is common. Towai is frequent with occasional tarata, tawa, puriri, kanuka, manuka, rimu, tanekaha and totara.

West of here, type (i) also occurs. Kanuka/manuka forest is dominant with occasional totara present.

(x) West of the quarry on Otaika Valley Road, towai forest is abundant at the bottom of the slope. Totara and tanekaha are frequent with occasional tawa, tarata, mamaku, kanuka, manuka, miro, karaka and mahoe.

(xi) West of here, kanuka/manuka-tanekaha-towai forest is common. Mamaku is frequent with occasional rimu, karaka, tarata, puriri, taraire, rewarewa, nikau, tawa and mapou.

(xii) Further west, puriri-towai forest is common. Taraire is frequent with occasional matai, miro, kohekohe, mahoe, karaka, rewarewa, mamaku, kanuka, manuka, tawa, tanekaha, rimu, akeake, mapou and cabbage tree.

The Otaika Stream flows eastwards at the base of the hills on the south side of Otaika Valley Road and is described as follows.

(xiii) On the opposite side of the road to type (xii), kahikatea riverine forest is abundant with occasional kowhai, pukatea, karaka, puriri, taraire, matai, miro and tarata.

(xiv) Upstream from here taraire riverine forest is common. Kahikatea is frequent with matai, kowhai, titoki, tawa, puriri, and totara also present.

(xv) Further upstream totara is abundant with frequent kahikatea. Also present are kowhai, tawa, titoki, kanuka, manuka, matai, taraire and mahoe.

On the opposite side of the road type (xiii) occurs. Kahikatea riverine forest is abundant with occasional putaputaweta, towai, mahoe, cabbage tree, tawa and kowhai.

(xvi) West of here there is riverine forest of matai-taraire-totara. Also present are occasional pate, towai, titoki and kahikatea.

Upstream from here to the start of the walkway is type (xv). Totara riverine forest is abundant with occasional kahikatea, kowhai, matai, titoki, nikau, small-leaved milk tree, pigeonwood and taraire.

(xvii) On the hills west of type (xii), rimu-tanekaha forest is common. Towai is frequently present, while totara, kauri, rewarewa, kanuka and manuka are occasional.

Further west is type (xii). Towai-puriri forest is common with frequent tanekaha and rewarewa. Rimu, kauri and karaka are also present.

(xviii) Further down the slope from here towai-kahikatea forest is common. Totara and rewarewa are frequent with occasional puriri, taraire, tanekaha, kowhai, tawa and cabbage tree.

(xix) Continuing down the slope there is puriri forest with frequent rewarewa. Also present are towai, karaka and tawa.

(xx) Near the base of the slope there is taraire-tarata-towai forest. Rewarewa is frequent with occasional puriri, karaka, miro, tanekaha, kanuka and manuka.

On the ridge to the west of here type (ii) occurs. Tanekaha is abundant with frequent rewarewa. Totara, rimu and matai are occasional.

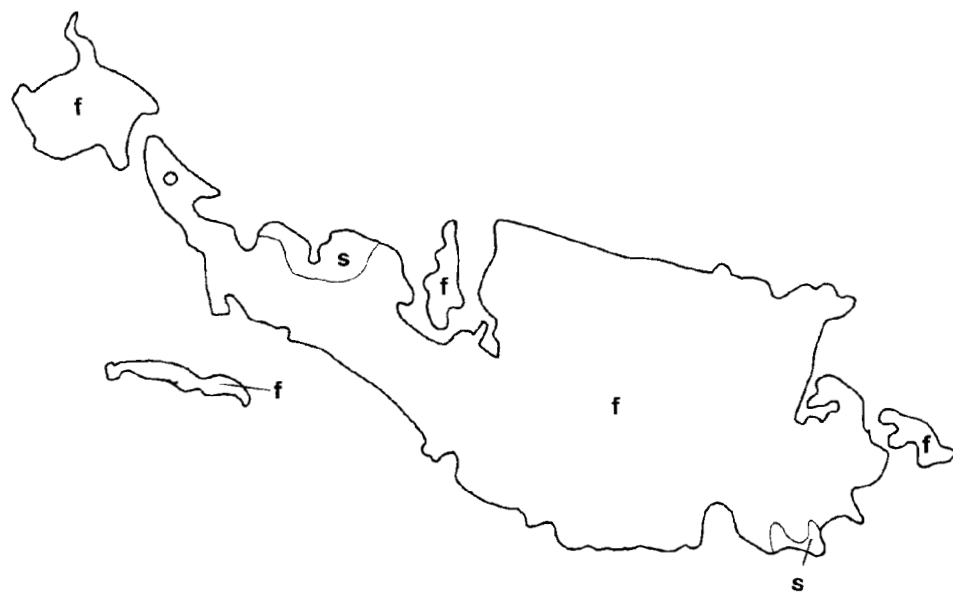
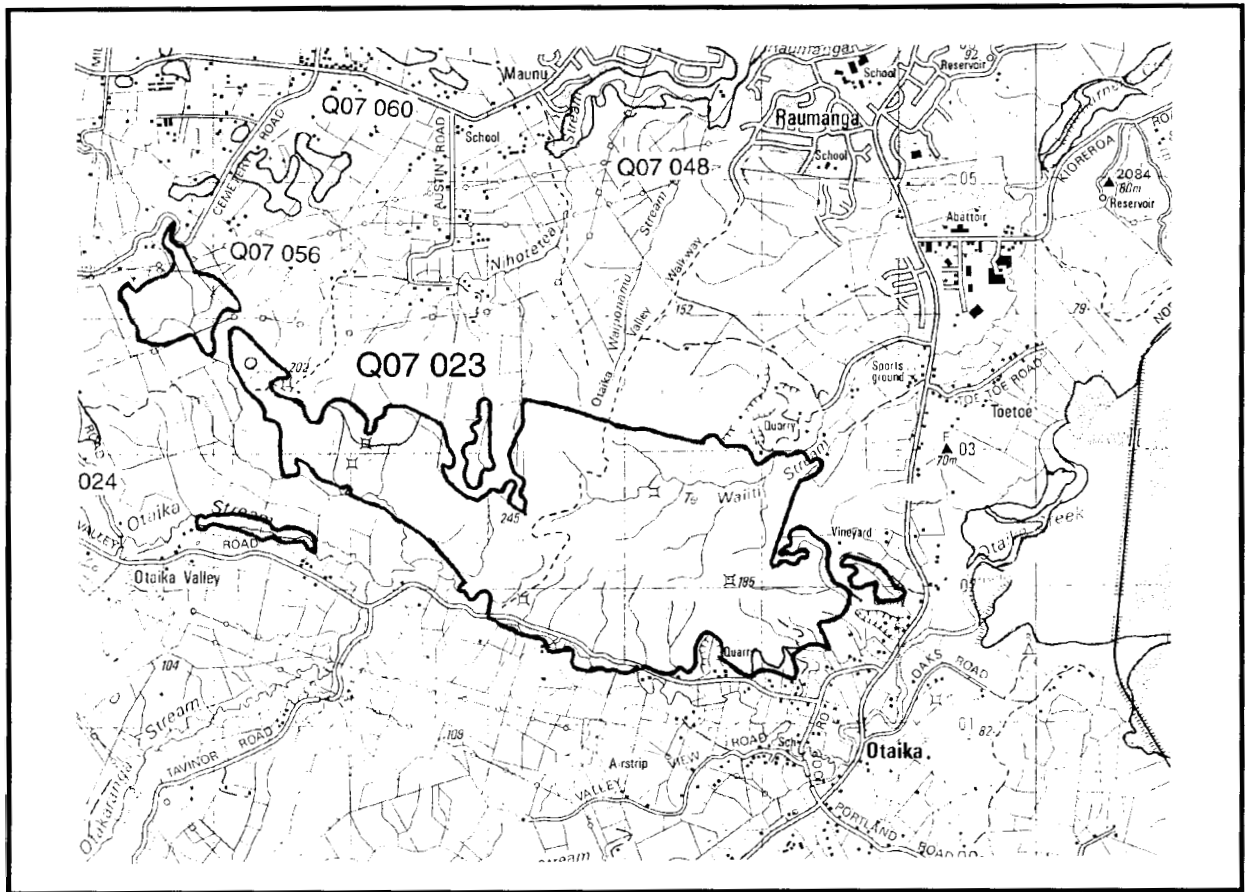


Figure 54. Otaika Valley Bush, Q07 023
 Each grid is 1000 m × 1000 m and equals 100 ha.
 f = forest; s = shrubland.

(xxi) Further up the ridge rimu is dominant with occasional totara and tanekaha.

The walkway begins on the next ridge to the west. Near the base of the slope type (ii) occurs. Tanekaha is dominant with frequent kanuka and manuka. Rimu, towai, rewarewa and totara are occasional.

Further up the slope, type (v) occurs. Tanekaha and kanuka/manuka are common while towai and rewarewa are frequent.

(xxii) Continuing up the slope, a steep side gully has puriri and karaka commonly occurring. Also present are nikau, tawa, titoki, kohekohe, mamaku and rewarewa.

Further up the slope, type (ii) occurs where tanekaha is dominant and rewarewa is frequent. Rimu, kauri, kanuka and manuka are occasional.

In a steep side gully type (vi) occurs where taraire-puriri forest is common. Tanekaha is frequent and rimu, nikau, totara, rewarewa, tawa, kohekohe, kanuka and manuka are occasional.

Further up the slope type (xix) occurs on a moderate hillslope. Puriri is abundant with frequent tanekaha. Also present are nikau, rewarewa, silver fern, taraire, pigeonwood, kohekohe and kiekie.

Continuing upwards, type (vi) occurs on a moderate ridge. Puriri-taraire forest is associated with frequent karaka and occasional kohekohe, nikau, lancewood, towai and rewarewa. Rimu is emergent.

(xxiii) At the top of the ridge there is kanuka/manuka-towai forest with frequent totara and rewarewa. Taraire, kahikatea and nikau are occasional.

(xxiv) A steep slope to the southeast has an area of dominant emergent kauri forest with occasional tanekaha.

(xxv) Moving westwards along the ridge top there is kanuka/manuka-puriri forest. Associated species are rimu, taraire, totara, mamangi, nikau, karaka and matai.

Further west, type (xxi) occurs on a gentle hillslope. Rimu is abundant with frequent rewarewa and kahikatea. Miro, kahikatea, lancewood, towai, kanuka, manuka, tanekaha, karaka and puriri are scattered throughout.

Moving northwards along the track, type (xvii) occurs on a gentle hillslope. Rimu-tanekaha forest is associated with frequent kanuka and manuka. Rewarewa and northern rata are also present.

(xxvi) Moving in a northwesterly direction along the track, tanekaha is dominant and kauri common. Rimu is frequent with occasional rewarewa, toru, kanuka, manuka and lancewood.

Continuing along the track and descending into a stream gully, type (iv) occurs. Taraire is abundant with occasional tanekaha, rewarewa, karaka, nikau and lancewood.

(xxvii) On the other side of the stream on a moderate hillslope there is forest of abundant tanekaha and common kanuka/manuka. Occasional rewarewa is also present.

(xxviii) Continuing along the track, the vegetation opens out into manuka-tanekaha shrubland on a gentle slope. Other species occasionally present are lancewood, mingimingi, toru, *Dracophyllum lessonianum* and emergent pine.

Further along, forest vegetation resumes. Type (xxiii) occurs and consists of towai-kanuka/manuka forest with occasional tanekaha.

Further north, type (iv) occurs in a stream gully. Taraire is dominant with frequent towai and occasional miro and tanekaha.

Further north, type (xxi) occurs on a slight slope. Rimu is dominant with frequent tanekaha, kanuka and manuka. Also present are towai and lancewood.

Adjacent to this, type (i) occurs on a slight slope. Kanuka/manuka forest is dominant with frequently occurring rimu. Hinau, tanekaha, towai, lancewood and silver fern are also present.

Further along, type (ii) occurs in a gully. Tanekaha is common with frequent rewarewa and occasional northern rata, towai, taraire, kauri, kanuka and manuka.

(xxix) 500 m west of the track, there is an area of kahikatea-totara forest with frequent kanuka and manuka. Also present are rimu, cabbage tree and mamaku.

(xxx) Returning to the Otaika Valley Road side and west of the start of the track, there is tanekaha-totara forest on a steep hillslope. Rimu and rewarewa are frequent with occasional matai and kahikatea.

Up the slope type (vi) occurs on a steep hillslope. Puriri-taraire forest is associated with occasional totara, kowhai, tawa, nikau, mamaku, matai, tanekaha, miro and rimu.

(xxxi) Further up the slope on a ridge there is kauri-tanekaha forest with frequent rewarewa.

On a steep slope to the east of here, type (vi) occurs. Puriri-taraire forest occurs with frequent towai and rewarewa. Also present are tawa, nikau, totara and miro.

(xxxii) In a steep gully east of here puriri-totara forest occurs. Occasionally present are tarata, kauri, miro, taraire, rewarewa and nikau. The epiphyte puka is also present.

To the west of here and back at the Otaika Stream, totara riverine occurs, type (xv). Occasional species present are tawa, kowhai, kahikatea and taraire.

On the steep hillslope above, type (i) occurs. Kanuka/manuka forest dominates and totara and tanekaha are frequent. Rewarewa is also present.

West of and adjacent to this, type (xxxi) occurs. Kauri-tanekaha forest features on a steep hillslope. Rewarewa is frequent with kanuka and manuka occasional.

(xxxiii) Further up the slope, there is taraire-totara forest with frequent rewarewa. Puriri, tanekaha, nikau, kanuka, manuka, karaka, rimu, kahikatea and mamaku are occasional.

In the gully to the east of here, type (vi) occurs. Puriri-taraire forest is associated with frequent rewarewa. Also present are tawa and mamaku.

At the head of the gully on a moderate slope, type (xxiv) occurs. Kauri forest is dominant with frequent tanekaha and occasional rewarewa.

(xxxiv) Continuing westwards to the base of the next ridge, there is an area of puriri-tanekaha-taraire forest. Rewarewa is frequent with occasional totara, karaka, kahikatea and mamaku.

Further up the ridge, type (xxxi) occurs. Kauri-tanekaha forest also has occasional rewarewa and rimu present.

At the top of the ridge kauri forest is abundant, type (xxiv). Tanekaha is also present occasionally.

In a gully to the west of here, type (vi) occurs. Puriri-taraire forest occurs with frequent tanekaha and rewarewa. Karaka, kauri, tawa, kowhai and mamaku are also present.

(xxxv) Continuing westwards, there is forest dominated by kanuka/manuka with tanekaha common. Rewarewa is frequent and totara and rimu occasional.

In the gully west of here, puriri-taraire forest occurs, type (vi). Other species present include rewarewa, rimu, karaka and nikau.

(xxxvi) The steep slope west of here has abundant totara with occasional rimu, tanekaha, kanuka, manuka, rewarewa, kauri and kahikatea.

This type of forest continues westwards but the totara is less common. Tanekaha, rewarewa, kanuka and manuka are frequent with occasional rimu, kauri, puriri, and taraire.

Continuing westwards to a wide gully, puriri-taraire forest occurs, type (vi). Also present are frequent rewarewa and occasional totara, rimu, kauri, mamaku, towai and tawa.

Continuing westwards and moving to the top of the slope, there is kanuka/manuka-tanekaha-totara forest, type (iii). Also present are kauri, cabbage tree and pine.

Further westwards, puriri-taraire forest occurs on a steep hillslope, type (vi). Associated canopy species include tawa, rimu, kauri, rewarewa and mamaku.

Further west there is taraire-totara forest on a steep slope, type (xxxiii). Rimu is frequent with occasional puriri, tawa and mamaku. The epiphyte puka is also present.

Continuing westwards the slope decreases and kanuka/manuka forest dominates, type (i). Associated species include frequent totara and occasional mamaku and emergent pine.

On the eastern side of the stream tributary there is a gully of dominant totara, type (xxxvi). Occasional species include kanuka, manuka, northern rata, rewarewa, tawa, puriri and cabbage tree.

Further northwest towards the edge of Cemetery Road, totara continues to dominate, type (xxxvi), but the associated canopy species are taraire, karaka, mangeao and puriri.

On the western side of the tributary there is dominant totara on a moderate hillslope, type (xxxvi). Tawa is frequent with occasional taraire, puriri, rewarewa, kauri, kawaka and pine.

Further west totara forest continues but has occasional tanekaha, tawa and puriri, type (xxxvi).

Northern side of Otaika Valley Forest as viewed from Austin Road:

To the west of the walkway there is a separate forest remnant.

In the gully at the northern end of the remnant there is kanuka/manuka-totara forest, type (vii). Tanekaha, kauri, mamaku, rewarewa, kahikatea and cabbage tree are occasional.

(xxxvii) In the centre of the remnant there is dominant kanuka/manuka with totara common. Kauri is frequently emergent with rimu and rewarewa occasional.

The southern part of the remnant has kanuka/manuka-tanekaha -totara forest with frequent rewarewa, type (iii). Puriri, taraire and emergent kauri are occasional.

West of here and rejoining the main part of the forest, kauri forest is dominant on a moderate hillslope, type (xxiv). Frequent tanekaha, kanuka and manuka are also present.

On the slope below this, rimu is dominant, type (xxi). Kauri is frequent with occasional rewarewa, kanuka and manuka.

(xxviii) West of here is an area of shrubland where kanuka/manuka is dominant. Also present are occasional kauri, tanekaha and mamaku.

(xxxix) On the west side of this, tanekaha is dominant and totara common. Rewarewa is also present.

Significant flora

Kawaka (Regionally significant species).

Fauna

NI brown kiwi (Category A threatened species) (a relict population which may be extinct), kukupa (Category B threatened species), kakariki species (Regionally significant species), tui, shining cuckoo, fantail, grey warbler, silvereve, NZ kingfisher, white-faced heron, welcome swallow.

Banded kokopu (Category C threatened species), common bully, long-finned eel, koura.

Significance

A large area of forest with a high diversity of vegetation types. This site contains 39 ecological units; the highest recorded in the Whangarei Ecological District.

It is a representative site for kauri forest, kanuka/manuka-tanekaha-towai forest, kanuka/manuka forest, taraire-totara forest, puriri forest, rewarewa-taraire forest, puriri-taraire forest, **kanuka/manuka**-totara forest, tanekaha forest, tanekaha-totara forest, towai forest, kahikatea forest, kahikatea-totara forest, kauri-tanekaha forest and puriri-totara forest.

It is also the only site in the Ecological District where kanuka/manuka-towai forest, puriri-towai forest, matai-taraire-totara riverine forest, rimu-tanekaha forest, kahikatea-towai forest, taraire-tarata-towai forest, karaka-puriri forest, kanuka/manuka-puriri forest, **tanekaha**-kauri forest, manuka-tanekaha shrubland, puriri-tanekaha-taraire forest, and **kanuka/manuka**-tanekaha forest have been recorded.

This site includes 333 ha of Scenic Reserve administered by the Department of Conservation.

Habitat for threatened and regionally significant species.