

KAI GOOSE QUARRY BUSH

Survey no. Q07/024
Survey date 28 May 1996
Grid reference Q07 228 034
Area 10 ha
Altitude 60-120 m asl

Ecological unit

- (a) Kahikatea-kanuka/manuka-tanekaha forest on hillslope
- (b) Taraire forest on hillslope

Landform/geology

Mangakahia Complex mudstone and Motatau Complex muddy limestone.

Vegetation

A small forest remnant adjacent to a limestone quarry.

85% of the site is kahikatea-kanuka/manuka-tanekaha forest where kahikatea and tanekaha are emergent. Totara and rewarewa are frequent with emergent rimu. Puriri and kauri are also present.

15% of the site is taraire forest with frequent towai. Puriri, rimu, tawa, kauri and rewarewa are occasional.

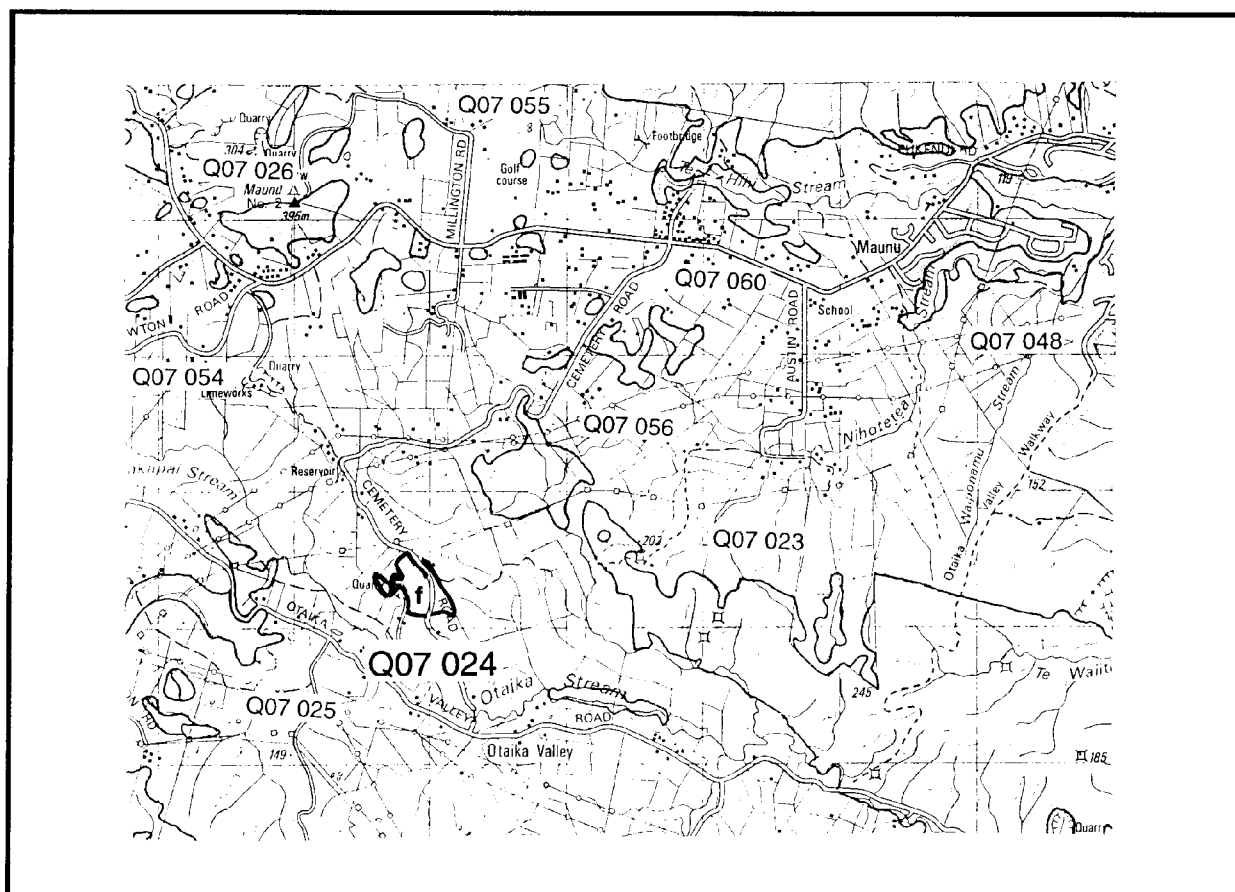


Figure 55. Kai Goose Quarry Bush, Q07 024

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

f = forest.

The area is grazed and lacks an understorey. Ten goats were seen in the forest during the survey.

Fauna

Fantail, silvereye, grey warbler, NZ kingfisher.

Significance

Forest on limestone is an uncommon vegetation type in the Ecological District and it is the only site where kahikatea-kanuka/manuka-tanekaha forest has been recorded in the Ecological District.

JACKSON ROAD BUSH

Survey no.	Q07/025
Survey date	28 May 1996
Grid reference	Q07 210 033
Area	66.7 ha (59.2 ha forest, 7.5 ha shrubland)
Altitude	40-120 m asl

Ecological unit

- (a) **Totara**-kahikatea forest on hillslope
- (b) Puriri-totara forest on hillslope
- (c) Totara forest on hillslope
- (d) Kahikatea-taraire-totara forest on hillslope
- (e) Kahikatea forest on hillslope
- (f) Taraire riverine forest on alluvium
- (g) Kahikatea-rimu-totara forest on hillslope
- (h) **Totara**-gorse-mamaku shrubland on hillslope

Landform/geology

Kerikeri Volcanics basaltic lava flow.

Vegetation

Several forest remnants in the headwaters of the Otaika Stream.

The area to the north of Otaika Valley Road contains three forest types including:

- (a) Totara dominant forest with kahikatea common, found in the eastern part on a moderate hillslope. Tanekaha is frequent and rewarewa and mamaku are rare.
- (b) In the central area the forest is of puriri-totara with frequent karaka and tawa. Other species that are present are taraire, tanekaha, kowhai, titoki, rewarewa, kahikatea, matai and northern rata as an emergent. The epiphyte puka is also present.
- (c) In the western part the forest is dominated by totara.

The area to the south of Otaika Valley Road contains three forest types including:

- (d) Kahikatea-taraire-totara forest in the eastern area. Puriri and rewarewa are frequent while mamaku and cabbage tree are occasional.

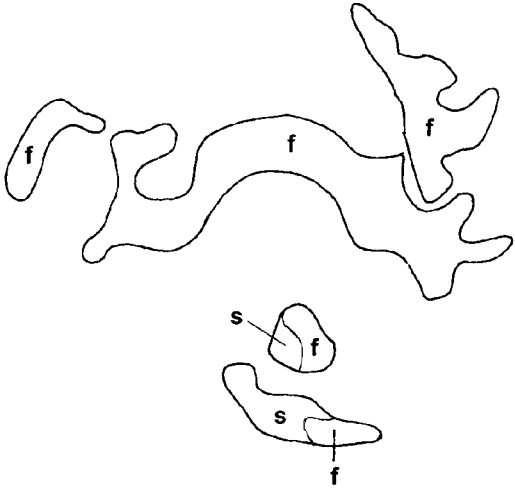
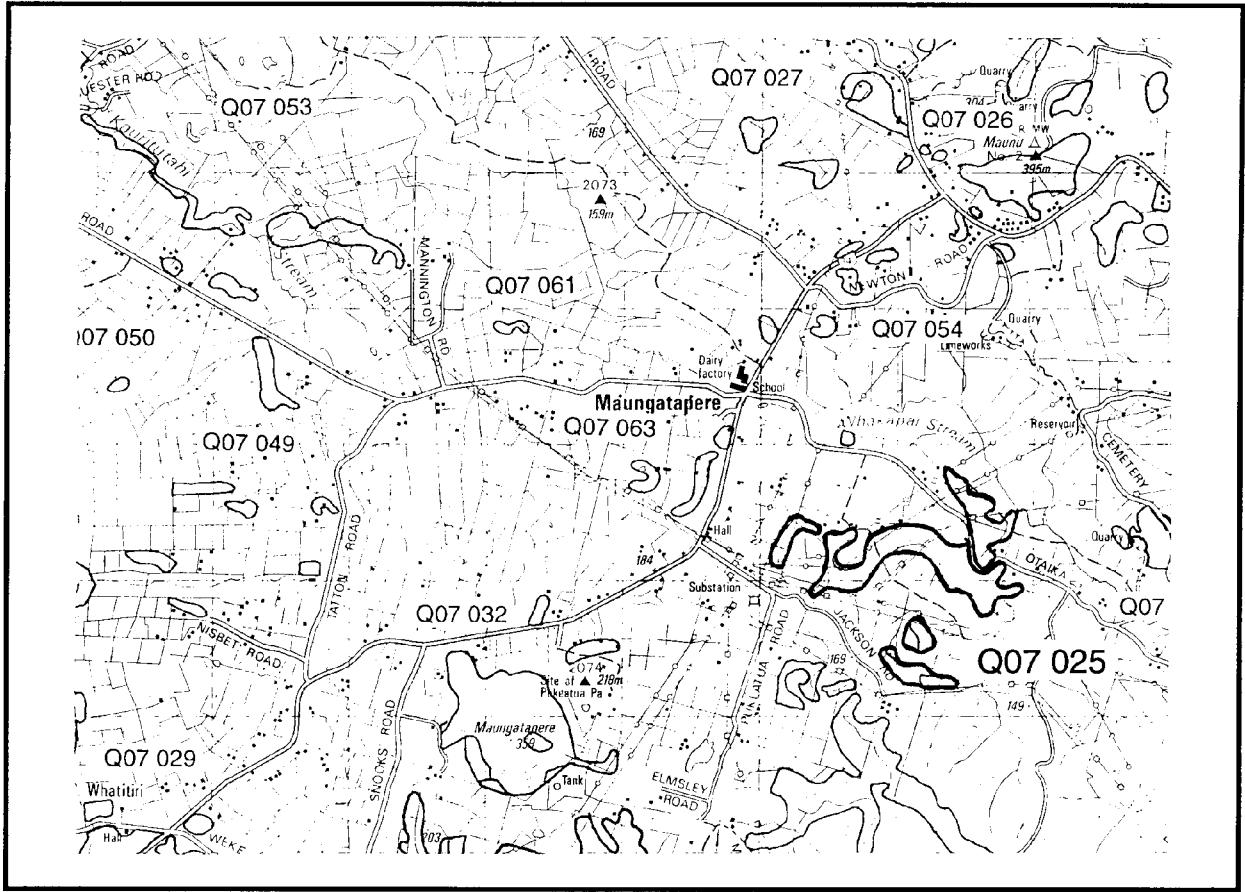


Figure 56. Jackson Road Bush, Q07 025
 Each grid is 1000 m × 1000 m and equals 100 ha.
 f = forest; s = shrubland.

(e) In the central area kahikatea is dominant with occasional rewarewa and taraire.

(f) The western area is taraire riverine forest with frequent tawa, kahikatea, rewarewa and totara. Pukatea and karaka are also present. This forest type also occurs in the separate remnant to the west of here.

The forest remnants at the end of Jackson Road include three vegetation types: Type (e) occurs in the northern remnant. Kahikatea is dominant with occasional puriri and totara.

(g) The last remnant to the south of here consists of kahikatea-rimu-totara forest with occasional puriri.

(h) Adjoining both these forest remnants is an area of totara dominant shrubland. Mamaku and gorse are common and manuka is frequent. Puriri, kahikatea and pine are also present occasionally.

Fauna

Kukupa (Category B threatened species), pukeko, welcome swallow.

Significance

Riverine forest is an uncommon vegetation type in the Ecological District and puriri-totara forest, totara forest, **totara**-kahikatea forest, kahikatea forest and kahikatea-rimu-totara forest are representative examples of their type.

The northern remnant at the end of Jackson Road is a breeding site for kukupa, a threatened species.

MAUNU MOUNTAIN

Survey no.	Q07/026
Survey date	15 May 1996
Grid reference	Q07 220 060
Area	39.2 ha
Altitude	180-395 m asl

Ecological unit

- (a) **Taraire**-tawa forest on steep slope
- (b) **Taraire**-rewarewa forest in gully
- (c) Taraire forest on steep hillslope

Landform/geology

Kerikeri Volcanics basaltic scoria cone.

Vegetation

This site comprises three volcanic broadleaf forest remnants that make up about 35% of the cover on Maunu Mountain. The remaining area consists of pasture and young pines on the slopes of this volcanic cone.

(a) The southern slopes are covered with taraire dominant forest and commonly occurring tawa. Towai and emergent rewarewa are frequent. Other species occasionally present include kahikatea, nikau, mamaku, rimu, totara, puriri, karaka and kohekohe. The rata vine (*Metrosideros fulgens*) was seen flowering in the canopy.

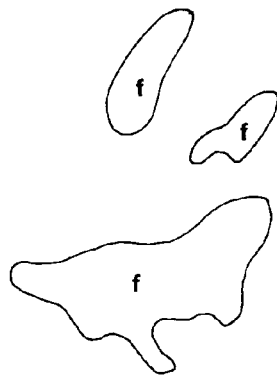
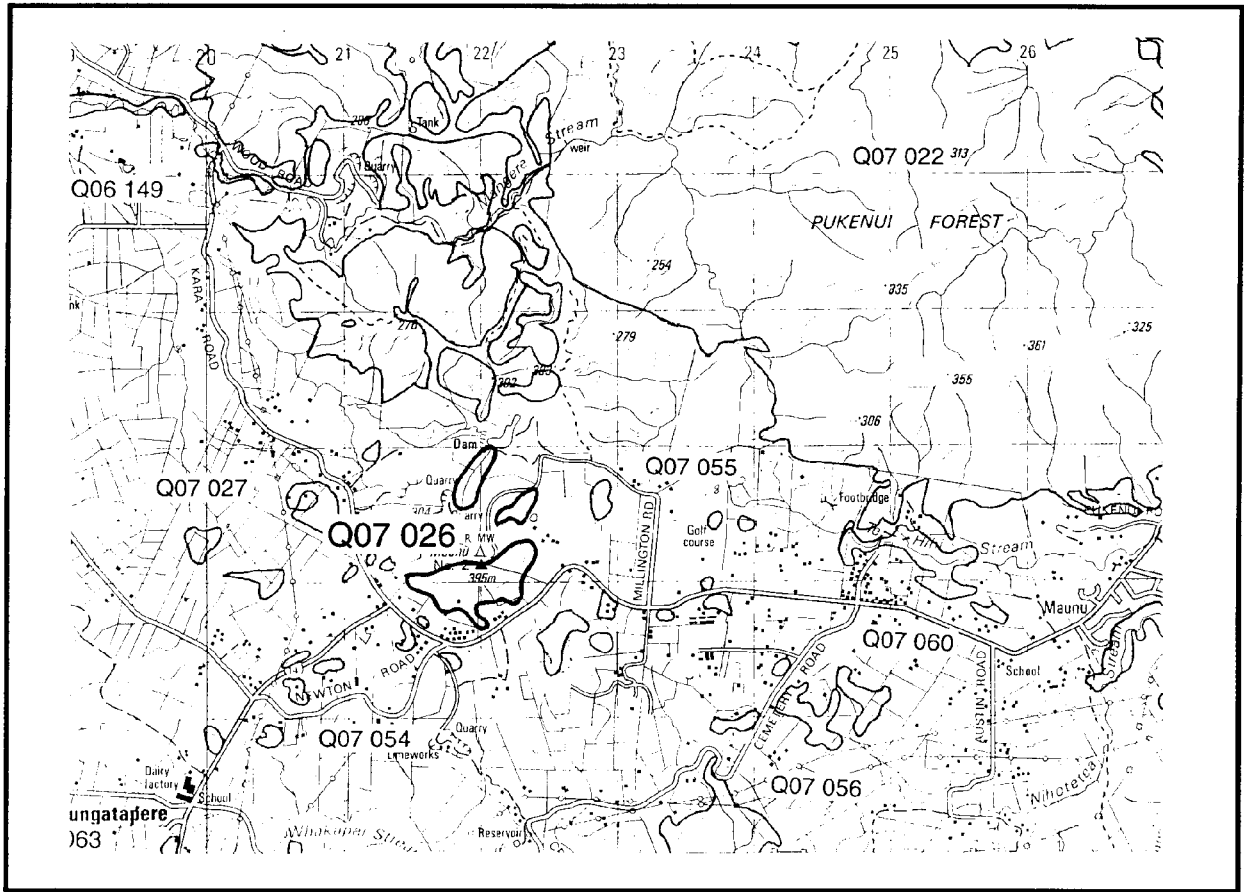


Figure 57. Maunu Mountain, Q07 026
 Each grid is 1000 m × 1000 m and equals 100 ha.
 f = forest.

(b) In the gully remnant on the northern side, the forest is comprised of dominant taraire and common emergent rewarewa. Totara and puriri are frequent while rimu, tawa and karaka are occasional.

(c) On the eastern side there is a remnant of taraire dominant forest. Tawa and emergent rewarewa are frequent while puriri and totara are occasional.

Fauna

Kukupa (Category B threatened species), tui.

Ornate skink (Regionally significant species).

Significance

An example of volcanic broadleaf forest, a nationally rare forest type, supporting the threatened kukupa and the regionally uncommon ornate skink. It is a representative site for taraire forest, **taraire**-tawa forest and **taraire**-rewarewa forest.

A geopreservation site of regional importance, Maunu Mountain is a relatively well preserved cone which has been modified a little by farming, minor quarrying and roading. A crater at the summit was destroyed by the siting of a television transmitter (Kenny & Hayward 1993).

Scenic Reserve of 6.5 ha and Recreation Reserve of 5.95 ha is administered by the Whangarei District Council.

KOKOPU BLOCK ROAD BUSH

Survey no.	Q07/027
Survey date	15 May 1996
Grid reference	Q07 200 063
Area	24.2 ha
Altitude	140-180 m asl

Ecological unit

- (a) **Taraire**-puriri forest on hillslope
- (b) **Taraire**-rewarewa forest on hillslope
- (c) Taraire forest on volcanic flat

Landform/geology

Kerikeri Volcanics basaltic lava flow.

Vegetation

Several volcanic broadleaf forest remnants in the vicinity of Kokopu Block Road and Kara Road.

(a) The most western remnant consists of dominant taraire and common puriri on a moderate slope. Totara is frequent on the edges and karaka, tawa and emergent rewarewa are occasional throughout. The puriri trees have severe crown dieback.

(b) Southeast from here, the next remnant consists of dominant taraire forest with common emergent rewarewa. Puriri is frequent and totara, kohekohe and mamaku are also present.

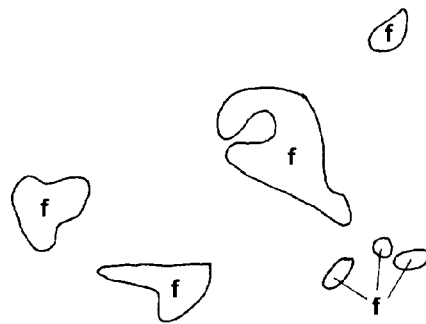
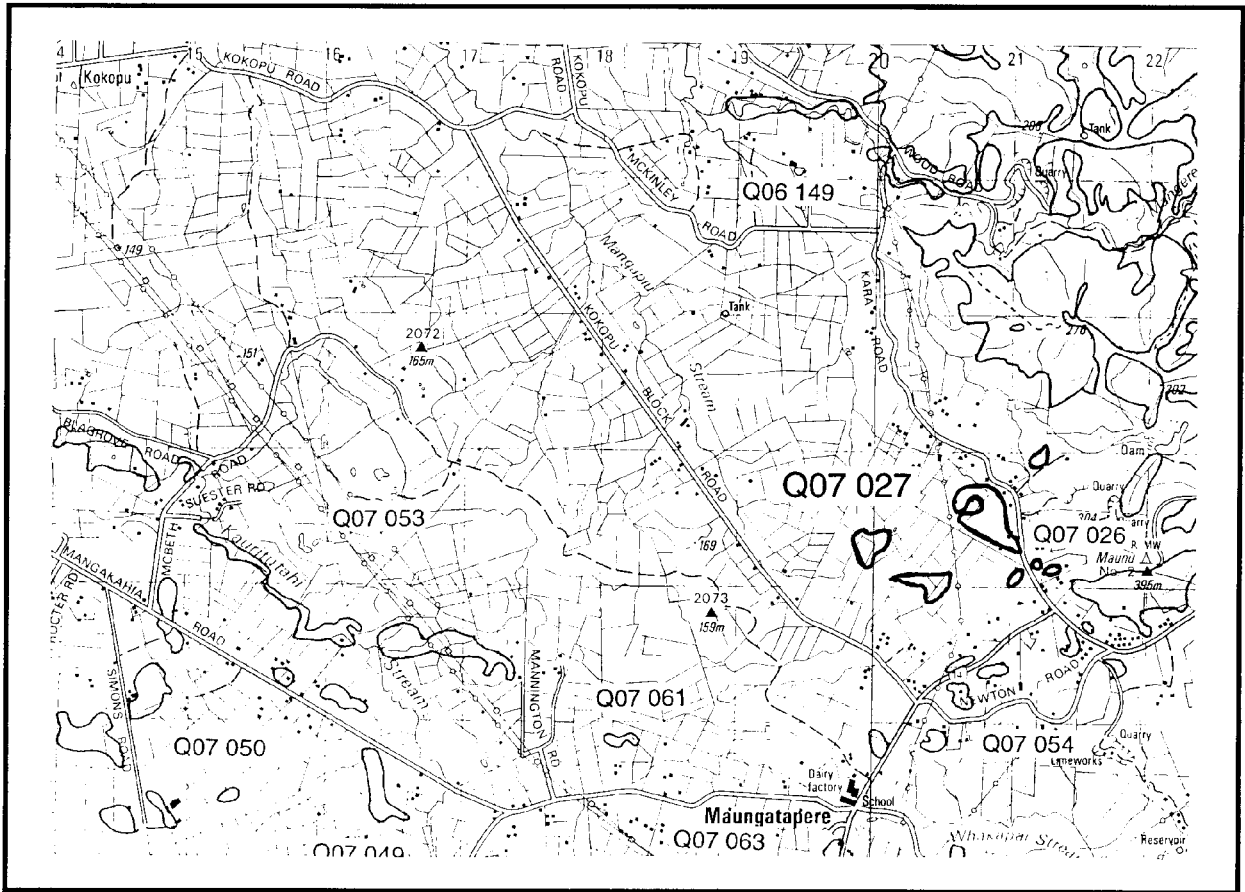


Figure 58. Kokopu Block Road Bush, Q07 027
 Each grid is 1000 m × 1000 m and equals 100 ha.
 f = forest.

(c) The small remnant west of Kara Road is taraire dominant with associated canopy species of frequent emergent rewarewa and occasional totara. Kohekohe is present in the subcanopy.

The remaining remnants are all taraire dominant with varying combinations of other species. Across Kara Road from the last remnant, is another small remnant with associated canopy species of frequent emergent rewarewa and occasional titoki, totara and mangeao. Kohekohe is frequent in the subcanopy.

The remnant next to this has associated canopy species of frequent emergent rewarewa and occasional puriri and totara. Kohekohe is occasional in the subcanopy.

Further north along Kara Road the largest remnant has associated canopy species of tawa, puriri, karaka and emergent rewarewa. Totara and kowhai are present on the edges.

Fauna

Kukupu (Category B threatened species).

Significance

Volcanic broadleaf remnants are a nationally rare forest type. **Taraire**-rewarewa forest is a representative example for the Ecological District.

Presence of a threatened bird species.

WHATITIRI SCIENTIFIC RESERVE & REMNANTS

Survey no.	Q07/028
Survey date	31 July 1996
Grid reference	Q07 150 030
Area	16.7 ha
Altitude	220-350 m asl

Ecological unit

- (a) Taraire forest on gentle hillslope
- (b) Kahikatea forest on gentle hillslope
- (c) **Taraire**-pukatea forest

Landform/geology

Kerikeri Volcanics basaltic shield volcano.

Vegetation

This site includes the Scientific Reserve of Whatitiri volcanic cone and two small remnants surrounding it.

- (a) On the northern side of the cone the forest is dominated by taraire. Emergent rewarewa is frequent and totara, puriri, pukatea are occasional.
- (b) Adjacent to type (a) on the forest edge, is a small area of regenerating kahikatea forest.
- (c) On the eastern side of the cone the forest is dominated by taraire with pukatea common. Kohekohe is common in the subcanopy. Rewarewa is frequent and tawa is occasional.

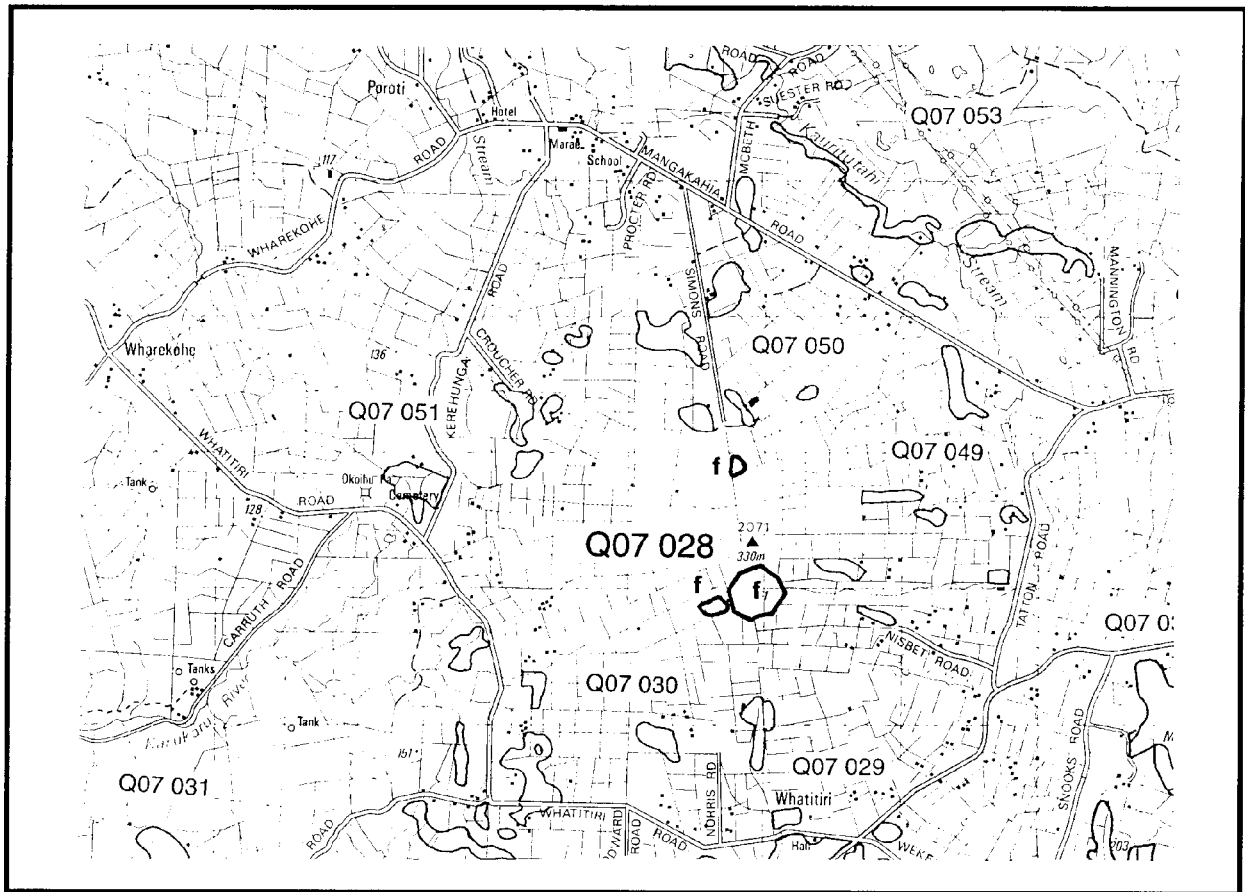


Figure 59. Whatitiri Scientific Reserve and Remnants, Q07 028

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

f = forest.

In the remnant on the west side of the cone, taraire is dominant and rewarewa is frequent. Tawa, nikau, kahikatea, kohekohe and karaka are occasional.

Fauna

Kukupa (Category B threatened species), fantail.

Significance

Volcanic broadleaf forest is a nationally rare forest type and this site is representative for taraire forest and kahikatea forest. It is also the only site for **taraire-pukatea** forest in the Ecological District.

Important habitat for kukupa, a threatened species.

A geopreservation site of regional significance, this is the only example of a large, almost concentric shield volcano with gentle slopes, in Northland (Kenny & Hayward 1993).

It is also a soil site of national importance because: it is the only reserve in New Zealand with both red and brown loams; it is the only example of Whatitiri soils in the soil inventory; and most Whatitiri soils have been developed for dairying and market gardening (Arand et al. 1993).

Most of this site is protected by 11.44 ha of Scientific Reserve administered by the Department of Conservation.

WHATITIRI SCENIC RESERVE & REMNANTS

Survey no. Q07/029
 Survey date 13 June 1996
 Grid reference Q07 155 153
 Area 20 ha forest
 Altitude 120-160 m asl

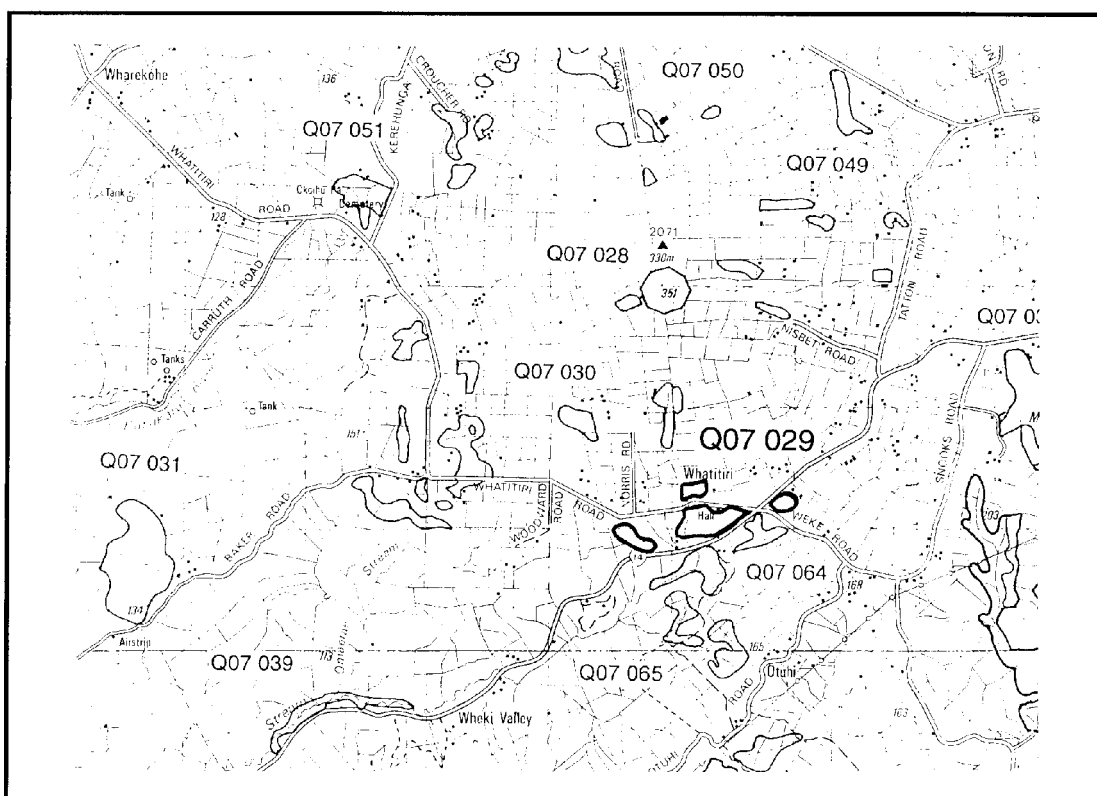


Figure 60. Whatitiri Scenic Reserve and Remnants, Q07 029
 Each grid is 1000 m × 1000 m and equals 100 ha.
 f = forest.

Ecological unit

- (a) Taraire forest on volcanic flat
- (b) **Taraire**-rewarewa forest on volcanic flat
- (c) Kahikatea-rewarewa-taraire-totara-forest on moderate slope

Landform/geology

Kerikeri Volcanics basaltic lava flow.

Vegetation

A group of volcanic broadleaf remnants including Whatitiri Scenic Reserve.

(a) The Whatitiri Scenic Reserve consists of abundant taraire forest with frequent puriri, karaka, totara and emergent rewarewa also occurring. Pukatea, towai, kohekohe, nikau and kahikatea are occasional and puka is also present as an epiphyte.

East from here on the southern side of State Highway 14, type (a) occurs in a small remnant of taraire dominant forest. Emergent rewarewa is frequent with northern rata, karaka and pukatea occasional. Totara and mamaku are present on the edges.

(b) West of here in the small remnant to the north of the Scenic Reserve, taraire is dominant and emergent rewarewa is common. Totara is frequent and karaka and puriri are occasional.

(c) The remnant situated on the western side of the site consists of kahikatea-rewarewa-taraire-totara-forest on a moderate slope. Puriri, karaka, tawa, nikau and pine are occasional and mamaku is frequent on the edges.

Fauna

Kukupa (Category B threatened species), NZ kingfisher, welcome swallow.

Significance

Volcanic broadleaf forest is a nationally rare vegetation type. This site is representative for taraire forest and is the only site recorded for kahikatea-rewarewa-taraire-totara-forest.

Important habitat for kukupa, a threatened bird species.

This site includes 9.6 ha of Whangarei District Council Reserve and 1.7 ha of Scenic Reserve administered by the Department of Conservation.

WHATITIRI ROAD REMNANTS

Survey no.	Q07/030
Survey date	13 June 1996, 28 October 1997
Grid reference	Q07 134 015
Area	52.5 ha
Altitude	80-240 m asl

Ecological unit

- (a) Kahikatea forest in gully
- (b) Taraire forest on volcanic flat
- (c) Totara forest on gentle hillslope
- (d) Puriri-taraire forest on volcanic flat

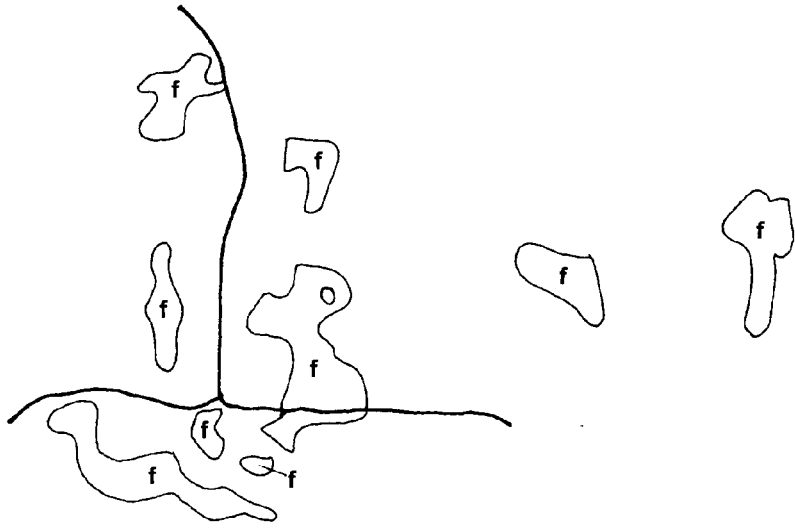
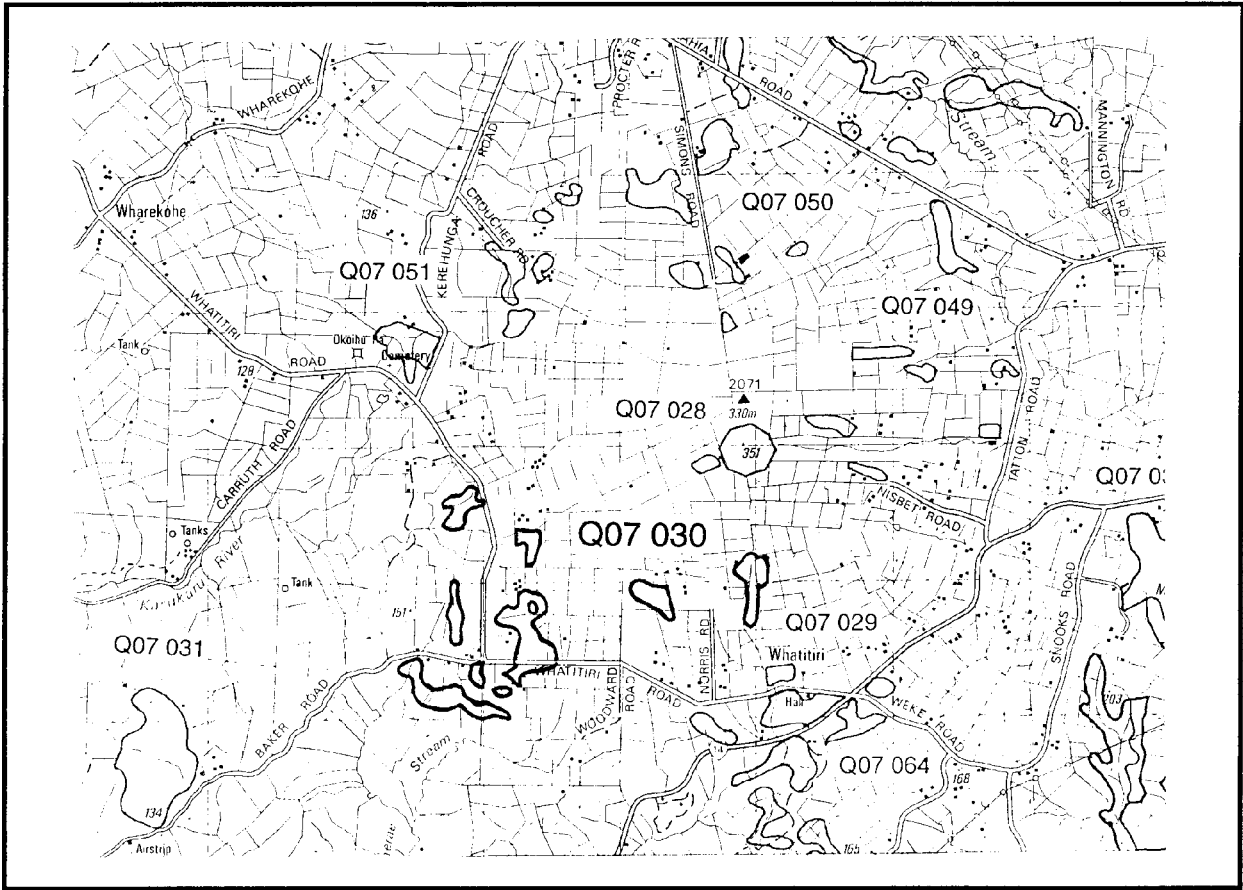


Figure 61. Whaititiri Road Bush, Q07 030
 Each grid is 1000 m × 1000 m and equals 100 ha.
 f = forest.

Landform/geology

Kerikeri Volcanics basaltic lava flow.

Vegetation

A series of volcanic broadleaf remnants in the vicinity of Whatitiri Road.

(a) The northernmost remnant west of Whatitiri Road contains three vegetation types including kahikatea forest in two gullies. Pukatea is frequent and cabbage tree and totara are occasional.

(b) This remnant also contains taraire forest on a gentle hillslope between the gullies. Emergent rewarewa is frequent and puriri is occasional.

(d) On the eastern edge of this remnant totara is abundant.

Moving eastwards across Whatitiri Road, type (b) occurs in a separate remnant on volcanic flats. Associated with taraire forest are occasional puriri, kohekohe and emergent rewarewa.

Further south, in another remnant (which is fenced), taraire is dominant with frequent emergent rewarewa. Puriri, kahikatea and karaka are occasional and kohekohe is frequent in the subcanopy on the margins.

Moving westwards back across Whatitiri Road, there is another remnant on a slight slope that is taraire dominant. Also present occasionally are puriri, kahikatea and emergent rewarewa.

Southwest from here the next remnant is taraire dominant with frequent puriri and occasional titoki, kahikatea, karaka, pukatea and emergent rimu. Puka is present as an epiphyte and totara is frequent on the margins.

(d) Northeast from here are three small remnants that are puriri-taraire forest. Emergent rewarewa is frequent and totara is occasional. The epiphyte puka is present in the most western remnant.

To the west of the end of Norris Road there is another taraire dominant remnant on a gentle slope. Emergent rewarewa is frequent while karaka and puriri are occasionally present, type (b).

To the east of Norris Road the last remnant in a gently sloping gully is taraire dominant with frequent emergent rewarewa. Totara and pukatea are occasional and the epiphyte puka is also present, type (b).

Fauna

Kukupu (Category B threatened species).

Significance

Volcanic broadleaf remnants are a nationally rare forest type and this site is representative for totara forest.

Important habitat for kukupa, a threatened species.

BAKER ROAD BUSH

Survey no.	Q07/031
Survey date	28 September 1998
Grid reference	Q07 106 005
Area	41.3 ha
Altitude	60-341 m asl

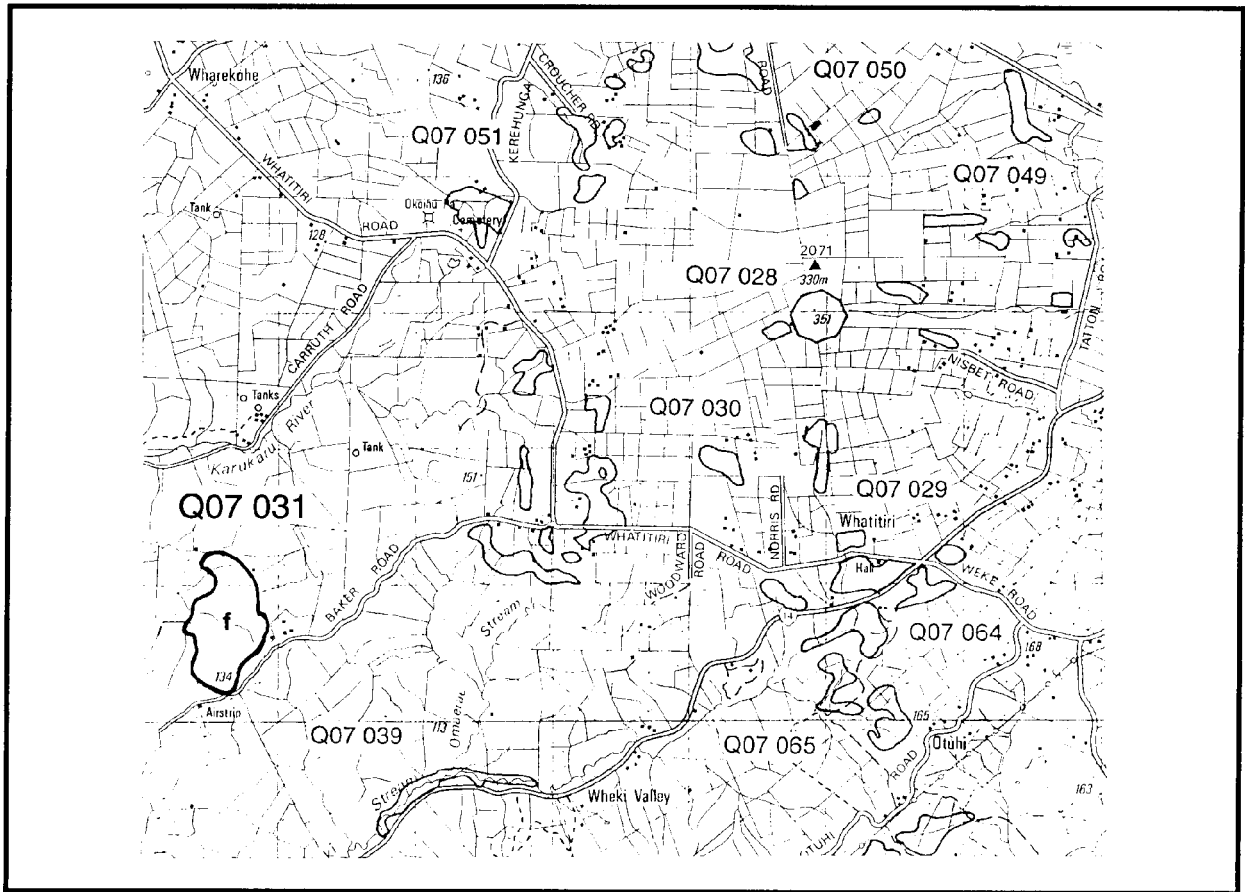


Figure 62. Baker Road Bush, Q07 031

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

f = forest.

Ecological unit

- (a) Totara-towai forest on gentle hillslope
- (b) Kahikatea-totara forest on moderate hillslope
- (c) Kahikatea forest on moderate hillslope
- (d) Taraire forest on moderate hillslope
- (e) Rimu forest on moderate hillslope
- (f) **Totara**-kahikatea forest on moderate hillslope
- (g) Totara forest on moderate hillslope

Landform/geology

Mangakahia Complex sandstone and mudstone.

Vegetation

A large forest remnant containing stands of old growth kahikatea and rimu.

- (a) At the southernmost edge of the forest next to the road, there is a small area of totara-towai forest on a gentle hillslope.
- (b) Northwest from here there is an area of kahikatea-totara forest. Northern rata, rimu, puriri and towai are also present in the canopy.
- (c) North from here there is a stand of mature emergent kahikatea with frequent totara. There is also occasional rimu, puriri, taraire, rewarewa and towai.

(d) West from here taraire is dominant with frequent towai and occasional rimu, rewarewa, puriri and kahikatea.

(e) North from here there is a stand of mature emergent rimu. Also present occasionally are northern rata, kahikatea, puriri and taraire. The epiphyte puka is present in the canopy.

(f) Moving eastwards, totara forest becomes dominant with kahikatea commonly occurring. Taraire and nikau are also present.

(g) North from here, totara is dominant with occasional kanuka and manuka on a moderate hillslope.

Continuing northwards, totara forest occurs on a gentle hillslope. Associated canopy species are towai, kahikatea, rimu and puriri.

Type (b) occurs in between the two streams that flow through the forest. Also present in the canopy are rewarewa and kauri.

Fauna

Kukupa (Category B threatened species), grey warbler.

Significance

Examples of old growth kahikatea and rimu forests are rare in the Ecological District. It is a representative site for kahikatea forest, kahikatea-totara forest, taraire forest, totara-towai forest and rimu forest.

Habitat for a threatened species.

MAUNGATAPERE MOUNTAIN

Survey no.	Q07/032
Survey date	28 May 1996
Grid reference	Q07 183 020
Area	71.7 ha (65 ha forest, 6.7 ha shrubland)
Altitude	140-360 m asl

Ecological unit

- (a) Totara shrubland on steep hillslope
- (b) **Towai**-mamaku-totara forest on steep hillslope
- (c) Mamaku-towai shrubland on steep hillslope
- (d) **Taraire**-tawa forest on steep hillslope
- (e) Taraire forest on toeslope
- (f) **Mapou**-karamu shrubland on steep hillslope
- (g) Mamaku fernland on steep hillslope
- (h) Taraire-totara-towai forest on summit
- (i) **Maire tawake**-pukatea swamp forest in crater
- (j) Taraire-totara forest on gentle hillslope

Landform/geology

Kerikeri Volcanics basaltic scoria cone.

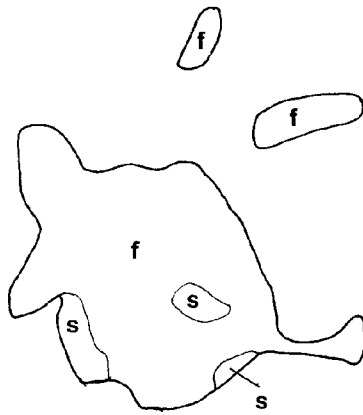
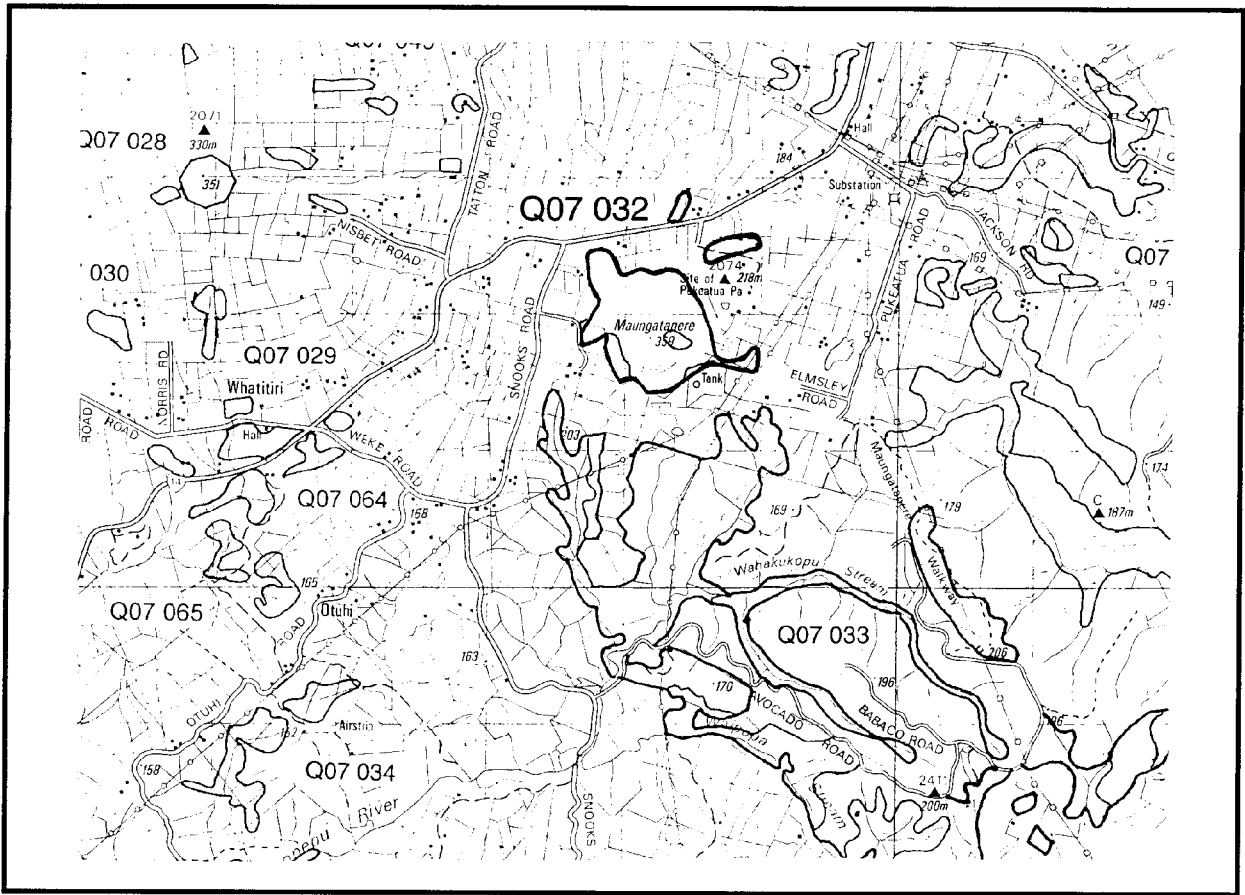


Figure 63. Maungatapere Mountain, Q07 032
 Each grid is 1000 m x 1000 m and equals 100 ha.
 f = forest; s = shrubland.

Vegetation

This site includes the forested volcanic cone of Maungatapere Mountain and two small volcanic broadleaf remnants to the north of it.

(a) At the base of the mountain on the eastern side there is an area of totara shrubland with frequent mamaku.

(b) On the steep hillslope above this, there is forest with towai abundant and totara and mamaku common.

(c) Near the top of the slope there is an area of mamaku-towai shrubland with frequent hangehange. Tawa is also present in low numbers.

(d) The northeastern side of the mountain has abundant taraire with common tawa. Rewarewa and towai are frequent while puriri, karaka, mamaku and totara are occasional. There are a few emergent rimu and epiphytic puka.

Type (d) continues around to the northern side, where kohekohe as well as rewarewa and towai are frequent. There are the same occasional species as well as nikau, titoki and northern rata.

(e) On the eastern side there is a thin strip of forest extending westwards from the base of the mountain. It is taraire dominant with frequent rewarewa and occasional puriri, rimu and kahikatea.

(f) On the western side of the mountain there is an area of shrubland with mapou abundant and karamu common. Frequently present species are hangehange, bracken, fivefinger, cabbage tree, lancewood, mingimingi and gorse. Manuka is occasional.

(g) This shrubland also has an area of fernland where mamaku is common and manuka is frequent.

(h) On the summit there is an area of taraire-totara-towai forest near some archaeological pits. Other canopy species include hinau, rewarewa, kahikatea and mahoe.

Adjacent to this, taraire dominant forest occurs, type (e). Totara is frequent with towai, karaka, rewarewa and mamangi.

(i) In the crater of the mountain there is swamp forest growing in a boggy, shallow crater lake. The predominant species is the swamp-tolerant maire tawake, while pukatea is common. Occasionally present are tawa, taraire, kahikatea, rimu, miro and towai.

On the rim of the crater taraire dominant forest occurs, type (e). Tawa is frequent with occasional nikau, pigeonwood, and miro. Kohekohe is abundant in the subcanopy.

(j) On the northeastern side of the mountain there is a separate remnant of volcanic broadleaf forest where taraire and totara are common. Puriri is frequent but has severe crown dieback, and titoki, rimu and rewarewa are also present.

In the remaining remnant, type (e) occurs on a moderate slope with dominant taraire and frequent puriri and rewarewa. Karaka and totara are also present with mamaku and cabbage tree found on the edges.

Significant flora

This site has a very large specimen of the uncommon vine *Metrosideros carminea* (Regionally significant species).

Fauna

Kukupa (Category B threatened species), NI tomtit (Regionally significant species), tui, pukeko, silvereye.

Gecko (*Hoplodactylus* sp.).

Land snails: *Liarea t turriculata*, *Fectola charopiformis*.

Significance

Volcanic broadleaf forest and swamp forest are nationally rare forest types and Maungatapere Mountain is the only volcanic cone in this Ecological District and Region that has complete forest cover.

It is a representative site for totara shrubland, mamaku-towai shrubland, mamaku fernland, taraire-totara forest, **taraire**-tawa forest, taraire-totara-towai forest and taraire forest. It is also the only site in the Ecological District where **towai**-mamaku-totara forest, **mapou**-karamu shrubland and **maire tawake**-pukatea swamp forest have been recorded.

Important habitat for the threatened kukupa as well as the regionally uncommon NI tomtit.

Presence of a regionally significant plant species.

A site of regional geopreservation importance, Maungatapere Mountain is an almost perfect, steep-sided volcanic cone, not farmed or quarried (Kenny & Hayward 1993).

Also listed as a soil site of regional importance, this area is a good example of Papakauri red loam (Arand et al. 1993)

This site is partially protected by an 8.5 ha Queen Elizabeth II National Trust covenant and 21 ha of Scenic Reserve administered by the Department of Conservation.

MAUNGATAPERE WALKWAY

Survey no.	Q07/033
Survey date	28 May 1996
Grid reference	Q07 203 000
Area	553.8 ha (401.3 ha forest, 152.5 ha shrubland)
Altitude	140-200 m asl

Ecological unit

- (a) Taraire-totara forest on alluvium
- (b) Totara riverine forest on alluvium
- (c) Kanuka/manuka-totara riverine forest on alluvium
- (d) Kanuka/manuka-tanekaha-totara forest on hillslope
- (e) **Manuka**-totara forest on hillslope
- (f) **Manuka**-bracken-gorse shrubland on hillslope
- (g) **Totara**-tanekaha forest on gentle hillslope
- (h) Kauri forest on steep ridge
- (i) Manuka shrubland on steep hillslope

- (j) Kanuka/manuka forest on hillslope
- (k) Kahikatea riverine forest on alluvium
- (l) Totara-towai forest on steep hillslope
- (m) Towai forest on steep ridge
- (n) **Mamaku**-totara shrubland on ridge
- (o) Kanuka/manuka-kauri-tanekaha forest on hillslope
- (p) **Totara**-kanuka/manuka riverine forest on alluvium
- (q) Tanekaha-totara forest on moderate hillslope
- (r) **Kahikatea**-kanuka/manuka forest on toeslope

Landform/geology

Mangakahia Complex mudstone.

Vegetation

A large diverse area of fragmented shrubland and forest surrounding Maungatapere Walkway, including native enclaves within plantation forest.

(a) In the northernmost part of the site east of Pukeatua Road, there is a remnant consisting mainly of taraire-totara forest. Rimu is frequent with occasional puriri, karaka, rewarewa and kahikatea (70%).

(b) The eastern part of this remnant consists of totara riverine forest. Rimu and kahikatea are frequent while pukatea is occasional (30%).

(c) East of here is another small riverine remnant of kanuka/manuka-totara forest. Tanekaha and mamaku are frequent while kauri and rimu are occasional.

(d) Southeast from here is an area of forest which extends into the pine forest. It consists of mainly kanuka/manuka, tanekaha and totara. Rimu and rewarewa are frequent while kauri is occasional.

(e) Southwest from here is an area of forest on a south-facing hillslope protruding westwards into pasture. It consists of dominant manuka with common emergent totara. Tanekaha is frequently emergent together with occasional rewarewa.

(f) Along the Maungatapere Walkway there is low manuka shrubland with common gorse and bracken on either side of the track. There is frequent *Hakea* sp., mingimingi and *Pomaderris ericifolia*. *Dracophyllum lessonianum* and emergent pine are occasional.

(g) At the most western part of the site adjacent to Snooks Road, the northern end is dominated by totara with tanekaha common. Manuka is frequent and kauri is occasional.

(h) South from here is a small area of kauri forest on a ridge. Other species present include frequent tanekaha and manuka with occasional rewarewa.

(i) Further south on steep west facing hillslopes, there is manuka shrubland with frequently occurring towai and gorse. Mamaku is also present.

Continuing south, type (i) occurs with frequent tanekaha and emergent kauri as well as occasional gorse.

(j) The area to the north of Avocado Road consists partly of abundant kanuka/manuka with frequent totara. Tanekaha, rimu, kauri and kahikatea are also present.

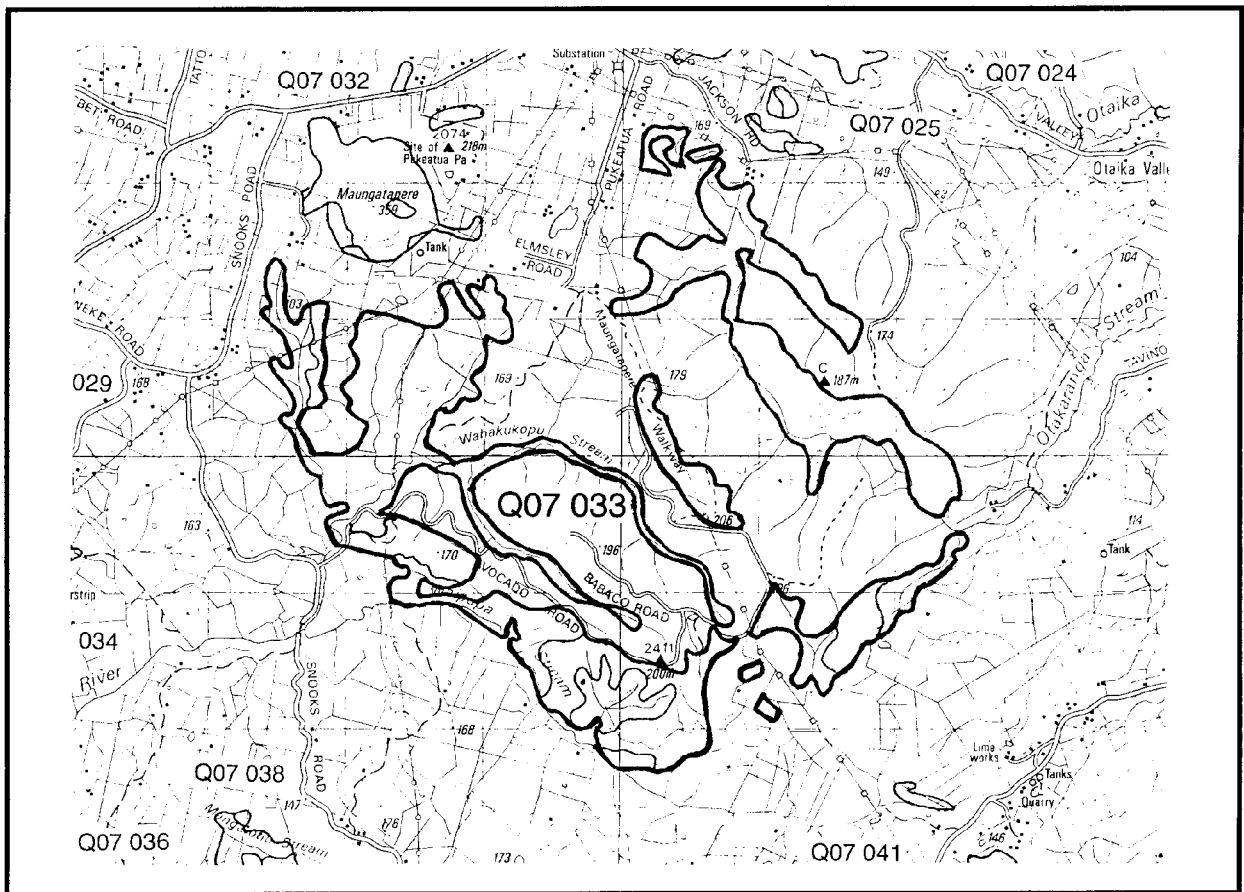


Figure 64. Maungatapere Walkway, Q07 033
 Each grid is 1000 m × 1000 m and equals 100 ha.
 f = forest; s = shrubland.

In this area there is also taraire-totara forest with frequent puriri and rewarewa. There is occasional tawa, mamaku, nikau, rimu, pukatea, kohekohe and tanekaha also present, type (a).

South of Avocado Road on a gentle north-facing slope, type (d) occurs. Kanuka/manuka, tanekaha and totara are common with occasional rimu, kahikatea, rewarewa and kauri.

(k) Southeast from here Waipapa Stream has riverine forest of abundant kahikatea and frequent totara and kohuhu. Other canopy species that are present are rimu, kauri, matai, kanuka, cabbage tree and pukatea.

(l) On the steep hillslope to the north of the stream there is totara-towai forest with frequent rewarewa. Manuka, tanekaha, mamaku and tawa also occur.

(m) On the ridge east of here towai is abundant. There is also occasional totara, tanekaha, rewarewa, mamaku, kanuka and cabbage tree present.

East of here is an area of manuka shrubland, type (i), 2–4 metres in height on a moderate west-facing slope.

(n) Further down the slope mamaku-totara shrubland is present. Kanuka, manuka and hangehange are frequent while towai and gorse are occasional.

(o) East of here is an area of forest comprising kanuka, manuka, kauri and tanekaha on a moderate east-facing slope.

(p) Adjacent to this, the Waipapa Stream has dominant totara and common kanuka/manuka. Harakeke is frequent with occasional matai, kahikatea and cabbage tree.

Moving around to the eastern side of the site (access via Tavinor Road), there are native forest and shrubland areas on the edge of the pine forest and extending into it.

(q) North of the small farm pond is an area of tanekaha-totara forest on a moderate east-facing hillslope. Puriri, rimu, kanuka and manuka frequently occur while taraire is occasional.

Further north type (j) occurs with kanuka/manuka abundant and towai frequent. Mamaku, tanekaha and totara are present in low numbers.

In a small remnant adjacent to Otakaranga Stream, there is type (h) with kauri commonly occurring. Frequently present species are tanekaha, totara, kanuka and manuka. Kahikatea and rimu are also present.

Further upstream on a south-facing slope, type (o) occurs. Kanuka/manuka-kauri-tanekaha forest is associated with frequent rewarewa and occasional puriri.

(r) Continuing upstream, the toeslope on the northern side has abundant kahikatea with common kanuka/manuka. There is frequent tanekaha and totara with occasional mamaku.

Fauna

Kukupu (Category B threatened species), NI fernbird (Regionally significant species).

Significance

This large site contains a diverse range of vegetation types including native forest enclaves within pine forest. It is a representative site for manuka shrubland, **mamaku**-totara shrubland, kauri forest, kanuka/manuka forest,

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

Habitat for a threatened species and a regionally significant species.

This site includes a Conservation Covenant of 63 ha, administered by the Department of Conservation.

OTUHI ROAD BUSH

Survey no.	Q07/034
Survey date	7 June 1996
Grid reference	Q07 153 988
Area	34.2 ha
Altitude	60-120 m asl

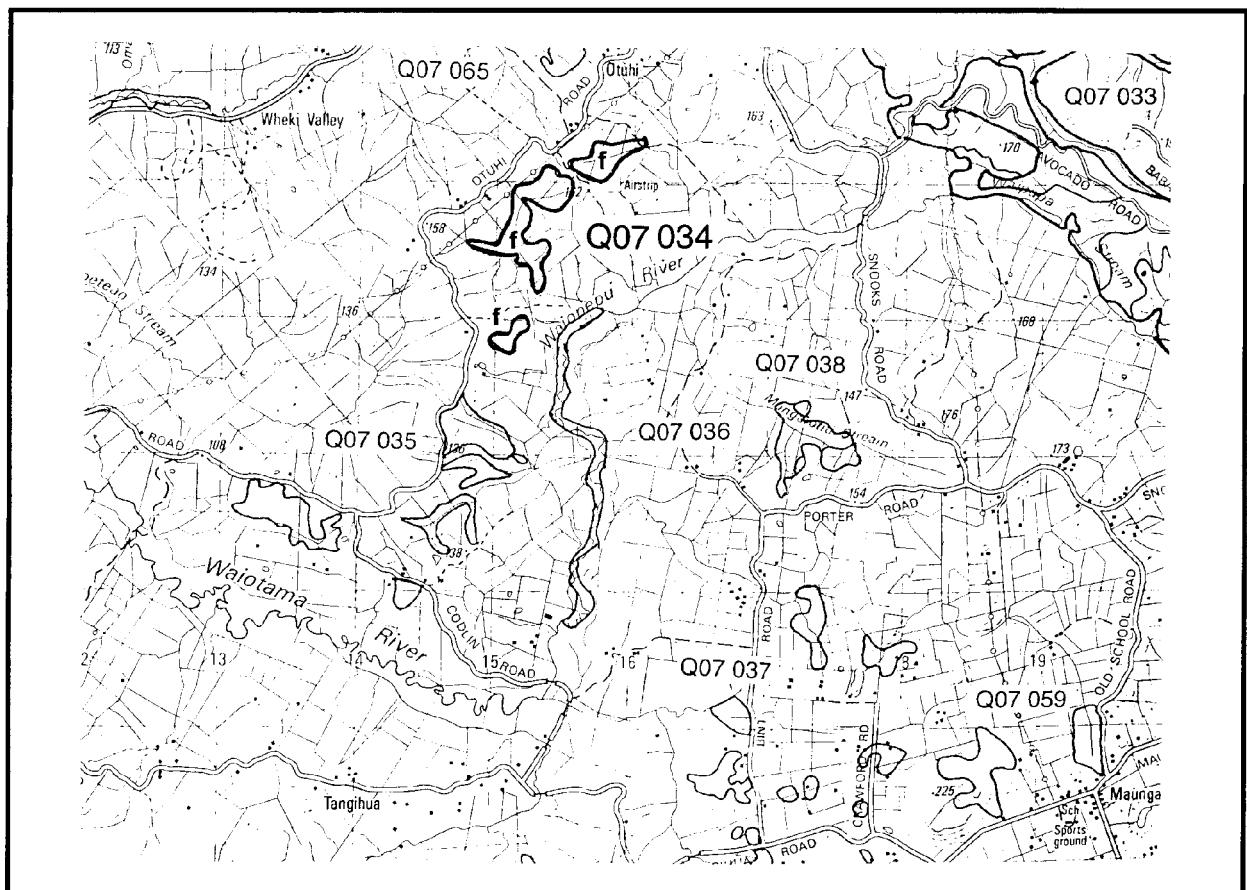


Figure 65. Otuhi Road Bush, Q07 034

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

f = forest.

Ecological unit

- (a) **Taraire**-puriri forest on moderate hillslope
- (b) **Totara**-kahikatea forest on moderate hillslope
- (c) **Taraire**-puriri-tawa forest in gully
- (d) Totara forest on gentle hillslope
- (e) Totara-kahikatea forest on moderate hillslope

Landform/geology

Mangakahia Complex sandstone and mudstone.

Vegetation

Three forest remnants in the upper headwaters of the Waionepe River and to the east of Otuhi Road.

- (a) The most northern remnant contains abundant taraire with puriri common. Totara, kahikatea and rewarewa are frequent while pukatea and tawa are occasional. The epiphyte puka is also present.
- (b) On the western edge of this remnant there is abundant totara with kahikatea common. Also present in the canopy are manuka and mamaku.
- (c) The second remnant is taraire dominant with puriri and tawa common. Pukatea, totara and kahikatea are frequent throughout while towai, rewarewa, matai, nikau and emergent rimu are occasional. Puka is present as an epiphyte in low numbers.
- (d) Bordering the southern edge of this remnant is totara dominant forest with frequent kahikatea and occasional towai
- (e) The third remnant is small but fenced. Kahikatea and totara are common with frequently occurring taraire, kohekohe and nikau. Puriri and pukatea are also present in the canopy.

Fauna

Kukupa (Category B threatened species), Australasian harrier.

Significance

Representative site for taraire-puriri forest and the only site in the Ecological District where **taraire**-puriri-tawa forest has been recorded. Also provides riparian protection.

Habitat for a threatened species.

CODLIN ROAD BUSH

Survey no.	Q07/035
Survey date	20 June 1996
Grid reference	Q07 144 960
Area	48.4 ha (40 ha forest, 8.4 ha shrubland)
Altitude	40-120 m asl

Ecological unit

- (a) Totara forest on steep hillslope
- (b) Kanuka/manuka-totara shrubland on steep hillslope
- (c) Manuka-totara shrubland in gully

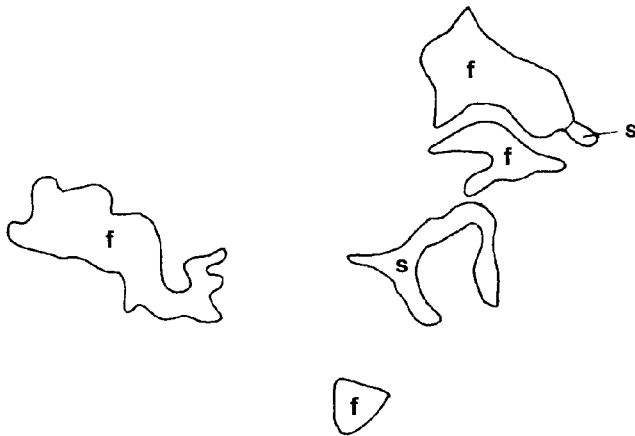
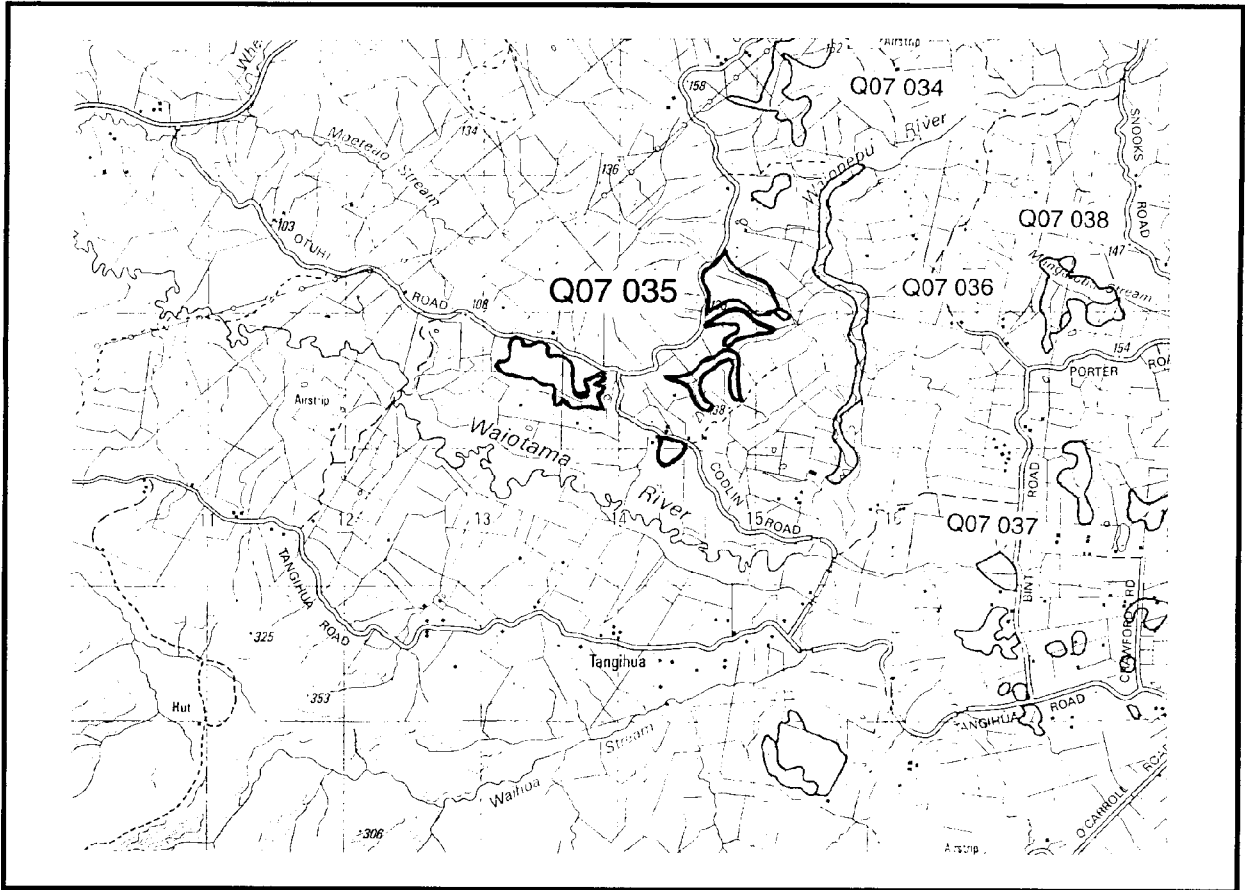


Figure 66. Codlin Road Bush, Q07 035
 Each grid is 1000 m × 1000 m and equals 100 ha.
 f = forest; s = shrubland.

- (d) Kahikatea forest on moderate hillslope
- (e) Kahikatea-totara forest on steep hillslope

Landform/geology

Mangakahia Complex sandstone and mudstone.

Vegetation

Several forest and shrubland remnants in the vicinity of Codlin and Otuhi Roads.

(a) The northern most remnant has totara dominant forest on steep hillslopes on either side of a gully. Kahikatea and rewarewa are frequent while kauri, puriri, manuka, towai, mamaku and rimu are occasional.

(b) At the eastern end of the first remnant there is a small area of manuka/kanuka-totara shrubland. Mamaku is also present occasionally.

The next remnant to the south also consists of type (a) vegetation.

(c) The gully to the south of here consists of totara-manuka shrubland. The vegetation has recently been cleared back to the gully and pasture has been sown on the hillslopes.

(d) The small remnant on the south side of Codlin Road is fenced. It contains abundant emergent regenerating kahikatea with frequent totara. There is occasional puriri, pukatea, taraire, rewarewa, nikau and emergent rimu.

(e) West of here is another remnant with gullies of emergent old growth kahikatea over totara. Puriri and emergent rimu are frequent with occasional tawa and nikau. The epiphyte puka is also present.

The hillslopes of this remnant contain dominant totara with frequent taraire and emergent kahikatea. Rewarewa, towai, pukatea and cabbage tree are occasional.

Fauna

Kukupu (Category B threatened species), kauri snail (Category C threatened species).

Significance

Representative site for kahikatea forest. Habitat for threatened bird and snail species.

WAIONEPU RIVER

Survey no.	Q07/036
Survey date	20 June 1996
Grid reference	Q07 157 970
Area	17.5 ha
Altitude	20-60 m asl

Ecological unit

(a) **Kanuka/manuka**-totara riverine forest

Landform/geology

Quaternary alluvial deposits.

Vegetation

The Waionepu River is forested continuously along approximately half its length. Kanuka and manuka are abundant and totara is common. Kahikatea and

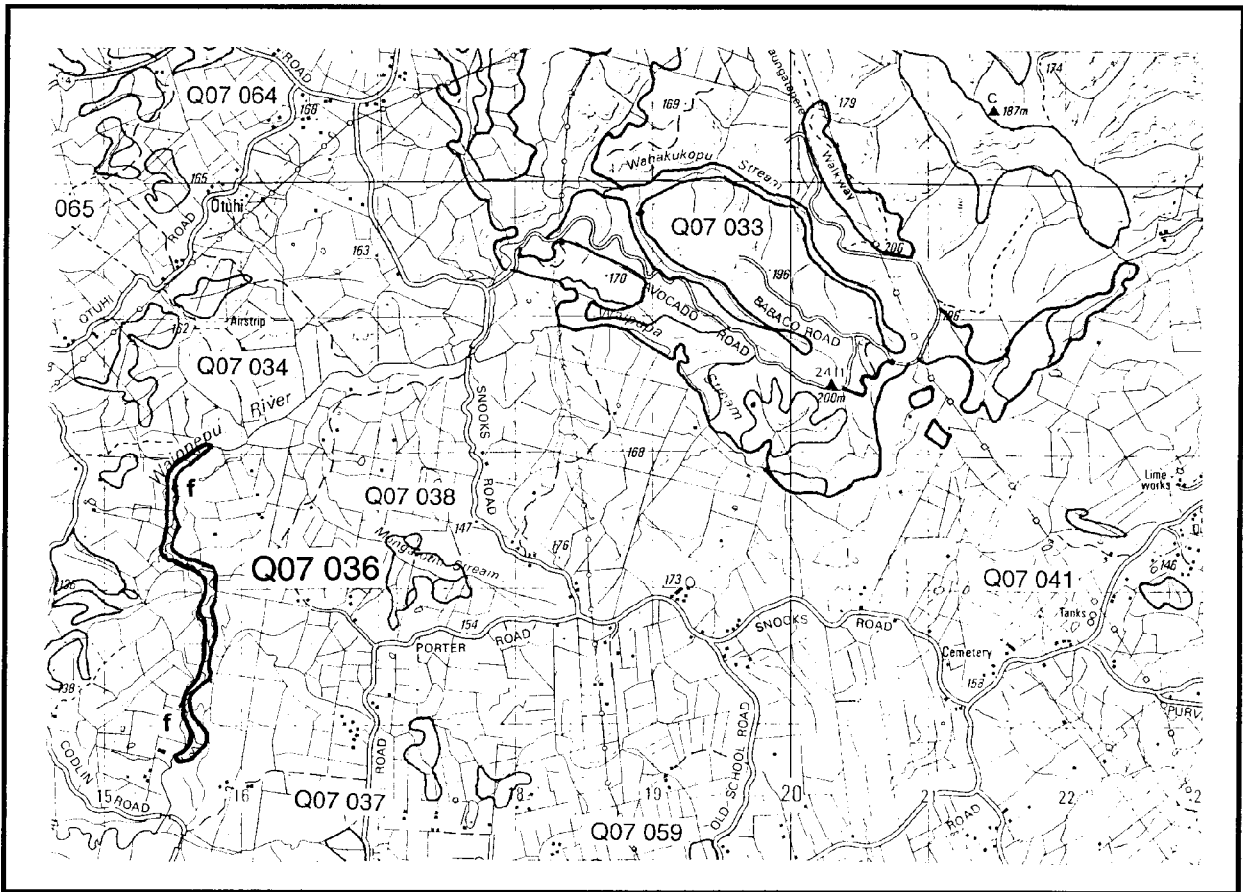


Figure 67. Waionepe River, Q07 036

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

f = forest.

crack willow are frequent while titoki, karaka, kowhai and cabbage tree are also present.

Fauna

Not surveyed.

Significance

An example of riverine vegetation that is uncommon and also a representative forest type in the Ecological District.

BINT ROAD BUSH

Survey no.	Q07/037
Survey date	12 August 1996
Grid reference	Q07 168 953
Area	40.8 ha
Altitude	60-120 m asl

Ecological unit

- (a) Taraire forest on volcanic flats
- (b) Totara riverine forest on alluvium

- (c) Taraire-totara forest on hillslope and volcanic flat
- (d) Totara forest on hillslope
- (e) Pukatea-maire tawake swamp forest on alluvium

Landform/geology

Kerikeri Volcanics basaltic lava flow.

Vegetation

Several remnants in the vicinity of Bint Road including riverine forest and volcanic broadleaf forest.

(a) At the northern end of the site and east of Bint Road there is a volcanic broadleaf remnant with taraire dominant. Also present are occasional puriri and emergent rewarewa.

(b) This forest is contiguous with an area of totara riverine forest to the north. Kahikatea is frequent and towai, kanuka and manuka are occasional. Crack willow separates this from another area of totara riverine forest further upstream.

(c) The riverine forest is contiguous with an area of taraire and totara forest with occasional kahikatea.

Type (c) occurs in a separate fenced remnant on a moderate hillslope on the western side of Bint Road. Taraire and totara are common with frequent karaka, kahikatea and kohekohe. Pukatea, rimu, tawa and nikau are also present in low numbers (75%).

(d) This remnant also has an area of totara dominant forest with occasional taraire, kahikatea and puriri (25%).

Type (d) occurs in another remnant to the south of here. Associated canopy species are frequent taraire and karaka and occasional puriri, pukatea and emergent kahikatea (75%).

This remnant also has type (a). Taraire is dominant with frequent puriri and totara. Rewarewa and karaka are also present (25%).

On the corner of Bint Road and Tangihua Road type (a) occurs in a small remnant on a gentle slope. On the edge totara and emergent kahikatea are frequent. Towai, rewarewa and the epiphyte puka are occasional throughout.

On the south side of Tangihua Road type (a) occurs in a small remnant on volcanic flats. Other species present include occasional totara and kahikatea.

On the north side of Tangihua Road there are two small volcanic broadleaf remnants in a paddock, type (a). The western remnant is taraire dominant with occasional titoki, karaka and totara with emergent rimu.

The eastern remnant is also taraire dominant with occasional karaka.

(e) East of here on the western edge of Crawford Road there is a small fenced remnant of swamp forest. Maire tawake and pukatea are common with frequent kahikatea and towai. Also present occasionally are cabbage tree, mamaku, wheki and totara. There is a small raupo fringe on the northern side.

Further north along Crawford Road there is a small remnant which the road bisects, type (c). Taraire and totara are common with occasional puriri, karaka, rewarewa, titoki and mangeao.

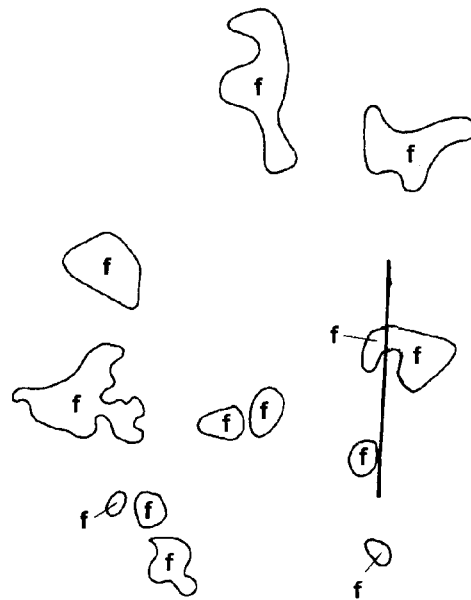
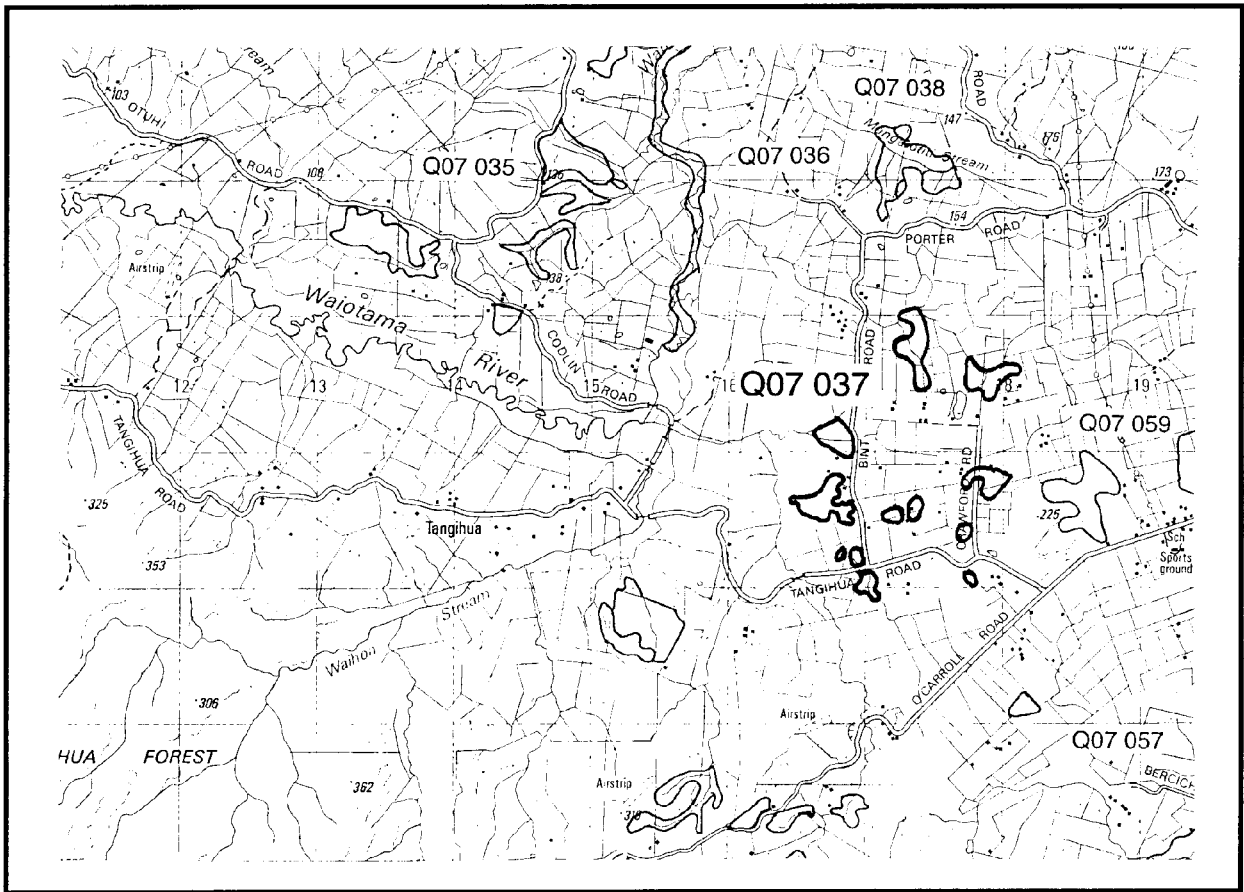


Figure 68. Bint Road Bush, Q07 037

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

f = forest.

Fauna

Kukupa (Category B threatened species), spotless crane (Regionally significant species), Australasian bittern (Category O threatened species), tui, grey warbler.

Significance

Volcanic broadleaf forest remnants are a nationally rare forest type. Riverine forest is an uncommon vegetation type and swamp forest is a rare forest type within the Ecological District. This is a representative site for taraire-totara forest and the only site in the Ecological District where pukatea-maire tawake forest has been recorded.

Habitat for threatened and regionally significant fauna species.

MANGAROTITI STREAM

Survey no.	Q07/038
Survey date	12 August 1996
Grid reference	Q07 175 972
Area	22.1 ha (15.8 ha forest, 6.3 ha shrubland)
Altitude	60-120 m asl

Ecological unit

- (a) Mahoe-mamaku-pate shrubland in gully
- (b) Kanuka/manuka-towai forest on steep hillslope
- (c) Kahikatea forest in gully
- (d) Kanuka/manuka forest on moderate hillslope
- (e) Kanuka/manuka-totara forest in gully

Landform/geology

Mangakahia Complex sandstone and mudstone.

Vegetation

A forest gully remnant in the Mangarotiti catchment.

- (a) The southeastern side gully is made up of mahoe-mamaku-pate shrubland. Totara, kanuka and manuka are frequent while towai and barberry are occasional.
- (b) The steep hillslope on the opposite side of Mangarotiti Stream consists of kanuka/manuka-towai forest. Frequently occurring species are totara and mamaku while kahikatea and pine are occasional.
- (c) The southwestern side gully has three vegetation types including a small area of kahikatea dominant forest with frequent totara, occurring in the head of the gully.
- (d) The moderate hillslopes above the gully are dominated by kanuka/manuka with frequent towai.
- (e) The lower end of the side gully has totara-kanuka/manuka forest with frequent rewarewa. Taraire, rimu, kahikatea and tanekaha are occasional. Barberry is present on the edges.

This forest is suffering from dieback on the margins.

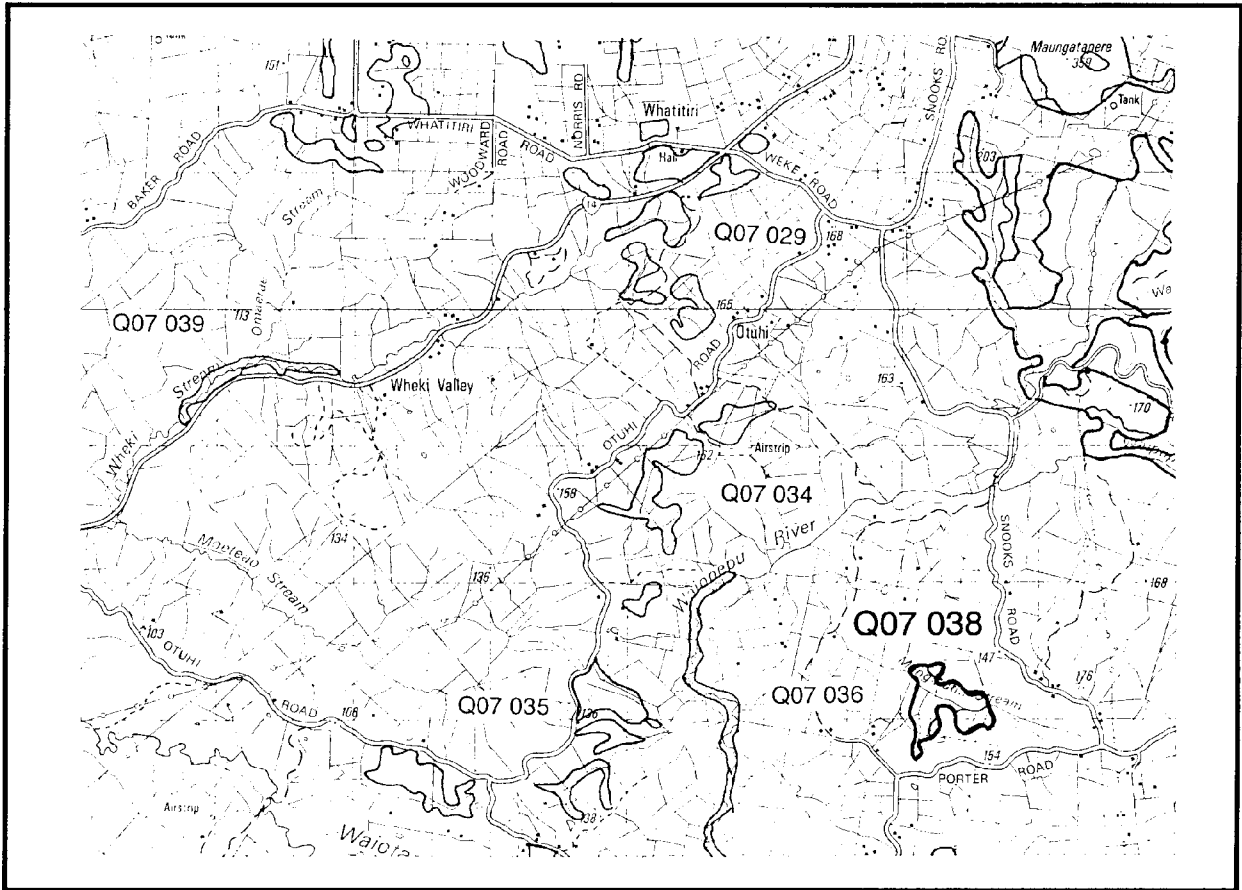


Figure 69. Mangarotiti Stream, Q07 038
 Each grid is 1000 m × 1000 m and equals 100 ha.
 f = forest; s = shrubland.

Fauna

Not surveyed.

Significance

Representative site for kanuka/manuka-towai forest and kanuka/manuka forest, and the only site in the Ecological District where mahoe-mamaku-pate shrubland has been recorded. This site also provides riparian/catchment protection.

WHEKI STREAM BUSH

Survey no.	Q07/039
Survey date	13 June 1996
Grid reference	Q07 126 993
Area	11.7 ha
Altitude	20-80 m asl

Ecological unit

- (a) Totara riverine forest
- (b) Totara-kanuka/manuka riverine forest

Landform/geology

Quaternary alluvial deposits.

Vegetation

A riverine remnant on Wheki Stream.

(a) Wheki Stream has native riverine forest for part of its length starting at Wheki Valley opposite the pine plantation. Totara is abundant with frequent kanuka, manuka and manatu. Other species present include kahikatea, cabbage tree and crack willow, with harakeke and Chinese privet occurring in the understorey.

Type (a) continues downstream with frequent kanuka and manuka and occasional kowhai, karaka, taraire, pukatea, matai, cabbage tree, manatu, kahikatea and wheki. Pohuehue is common as a scrambling vine.

(b) At the point where Omarae Stream enters Wheki Stream the forest changes to totara-kanuka/manuka with kahikatea occasionally present.

Further downstream totara is the only species present and this becomes scattered.

Fauna

Kukupa (Category B threatened species), banded rail (Regionally significant species).

Inanga.

Significance

Riverine forest is under represented in the Ecological District and Region and this is the only site where totara-kanuka/manuka riverine forest has been recorded.

Habitat for a threatened species and a regionally significant species.

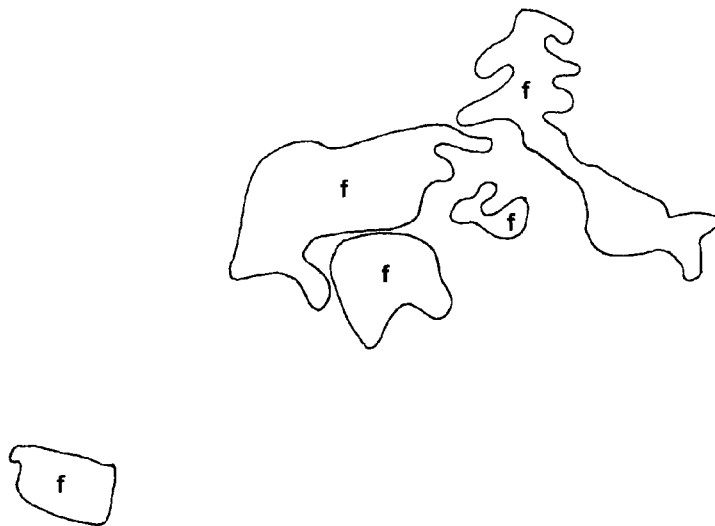
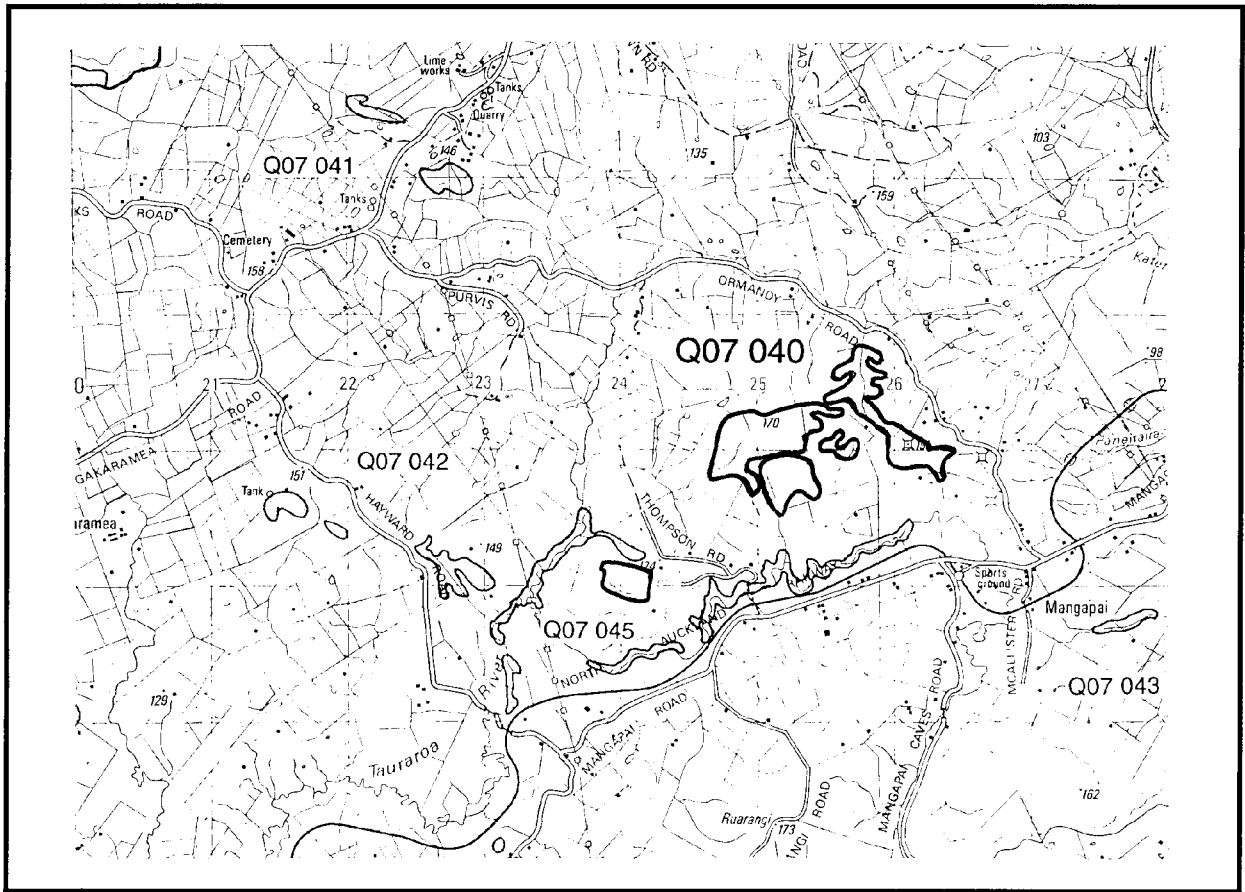


Figure 71. Pukehinau Bush, Q07 040

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

f = forest.

Vegetation

Several forest remnants between Ormandy Road and Mangapai Road.

(a) The remnant west of Ormandy Road contains taraire-totara forest on a steep south-facing hillslope. Rewarewa and puriri are frequent while tawa, manuka and mamaku are occasional.

(b) This remnant also contains totara dominant forest in a gully at the northern end. Species present frequently are puriri and manuka while rimu and kahikatea are occasional.

(c) The remnant to the west of here consists of kahikatea-puriri forest with frequent rewarewa, taraire, towai and totara. Also present are rimu, pukatea, tawa, mamaku and nikau.

(d) The remnant south of here consists of kanuka/manuka-totara forest with frequent kahikatea and rimu. Puriri and cabbage tree are also present.

(e) The remnant west of Thompson Road contains totara dominant forest with kahikatea common. Rewarewa and puriri are frequent while kauri, pukatea, taraire, tanekaha and karaka are occasional.

Fauna

Kukupu (Category B threatened species).

Significance

This is a representative site for taraire-totara forest and contains one of two examples of kahikatea-puriri forest in the Ecological District. Part of the area is fenced and shows good regeneration.

Habitat for a threatened species.

LIMEWORKS BUSH REMNANTS

Survey no.	Q07/041
Survey date	14 June 1996
Grid reference	Q07 228 970
Area	11.6 ha
Altitude	60-120 m asl

Ecological unit

(a) Kahikatea-totara forest on gentle hillslope

(b) Kanuka/manuka-rimu-totara forest on moderate hillslope

Landform/geology

Mangakahia Complex mudstone.

Vegetation

Two small remnants in the vicinity of Ormandy Road and Maungakamea Road.

(a) The first remnant north of Ormandy Road contains totara-kahikatea forest with frequent rewarewa, tanekaha and kanuka. Puriri, towai, *Acacia* sp. and *Pinus* sp. are occasional.

(b) The next remnant is northwest from here on the opposite side of Maungakamea Road. Rimu and totara are emergent over kanuka/manuka with

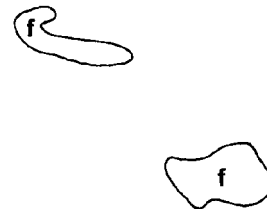
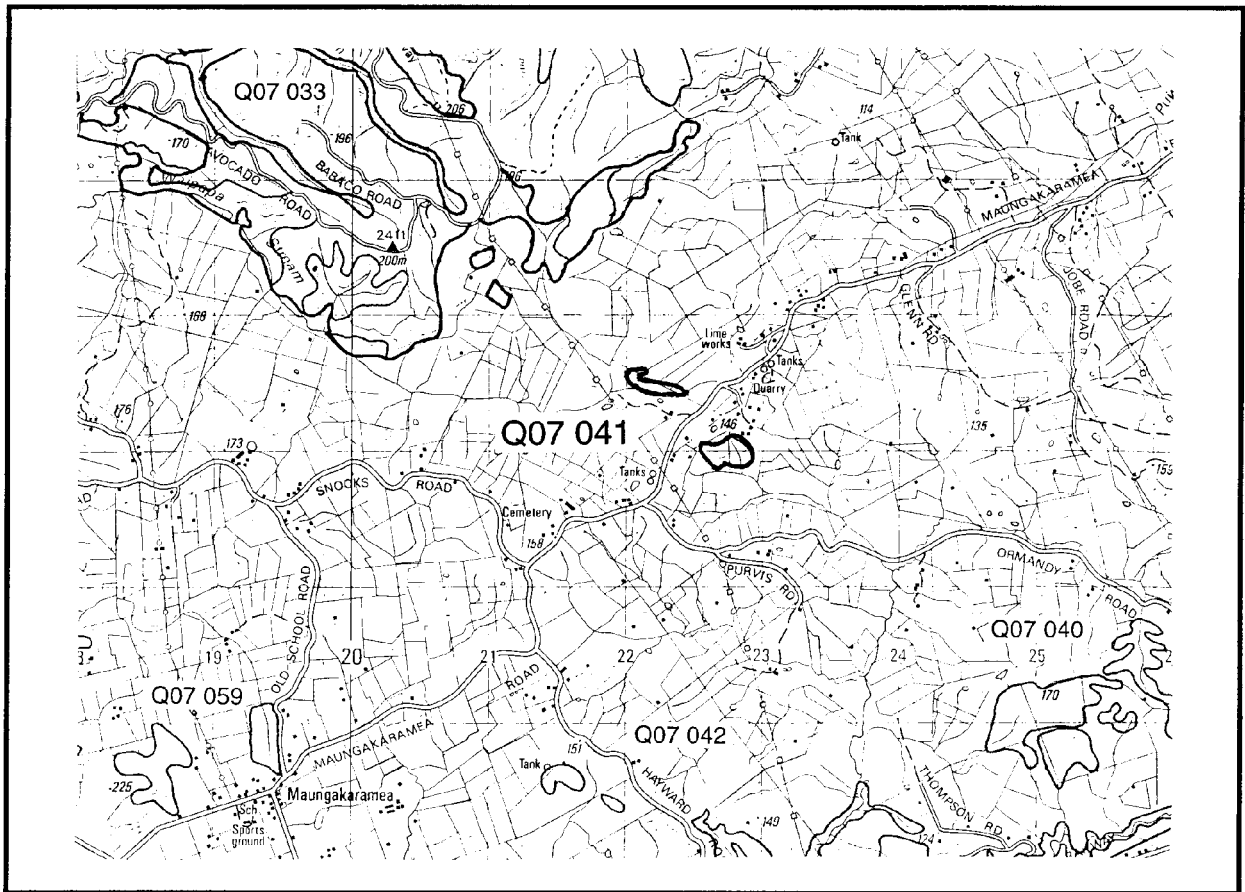


Figure 72. Limeworks Bush Remnants, Q07 041
 Each grid is 1000 m × 1000 m and equals 100 ha.
 f = forest.

frequent kahikatea. Other species present include titoki, rewarewa, kauri, towai, cabbage tree, mamaku, miro, tanekaha and *Pinus* sp.

Fauna

Not surveyed.

Significance

The only site in the Ecological District where kanuka/manuka-rimu-totara forest has been recorded. The remnants are small but have a good diversity of species.

HAYWARD ROAD BUSH

Survey no. Q07/042
Survey date 14 June 1996
Grid reference Q07 229 941
Area 17.5 ha
Altitude 60-140 m asl

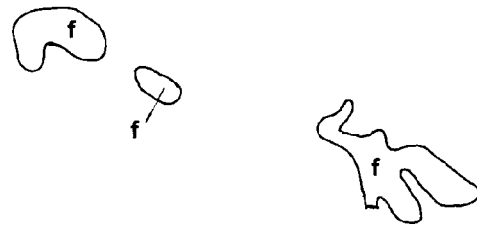
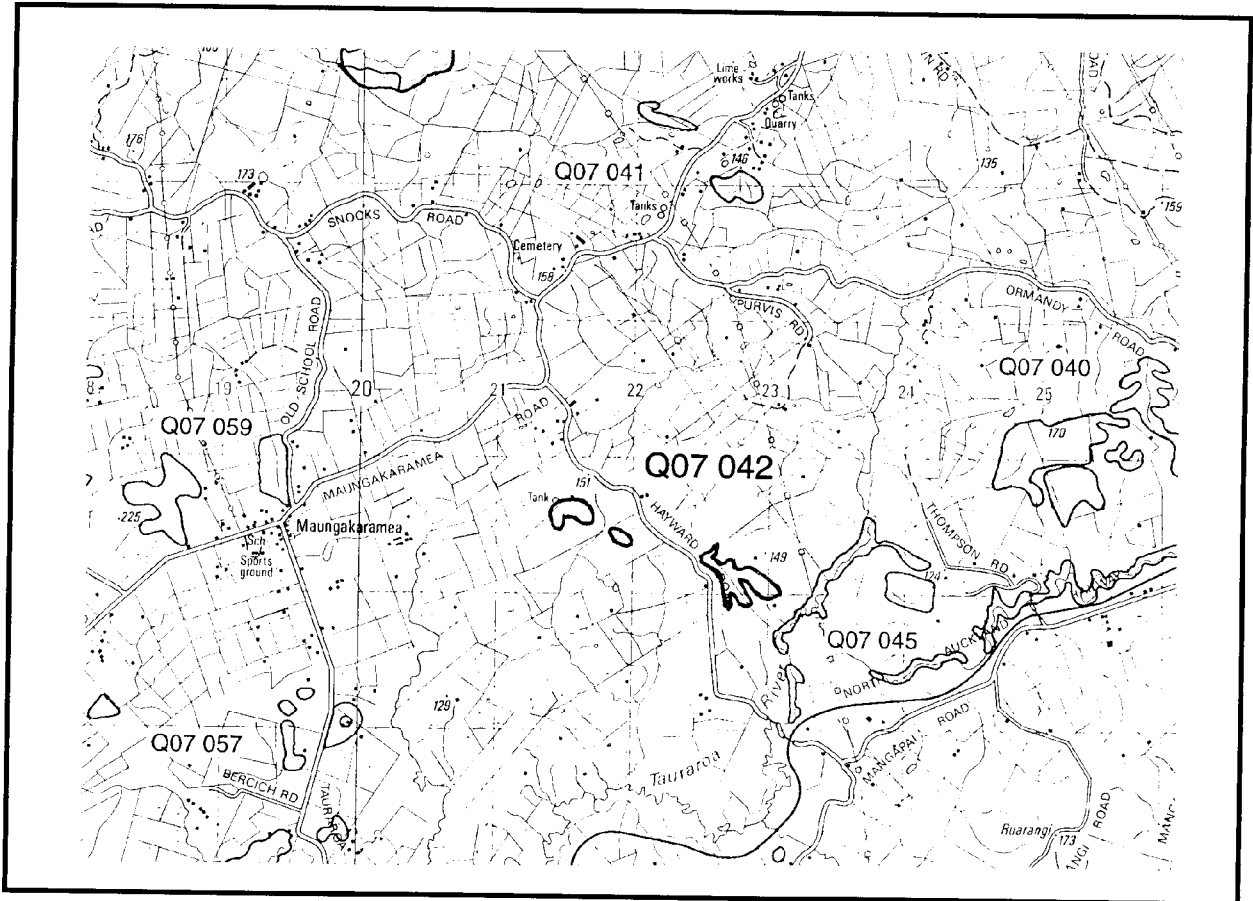


Figure 73. Hayward Road Bush Q07 042

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

f = forest.

Ecological unit

- (a) **Taraire**-totara forest on moderate hillslope
- (b) **Kahikatea**-taraire forest in gully
- (c) Puriri-taraire-totara forest on moderate hillslope

Landform/geology

Mangakahia Complex sandstone and mudstone.

Vegetation

Three small forest remnants near Hayward Road.

- (a) On the west side of Hayward Road the northern most remnant is taraire dominant with totara common. Kahikatea is frequent while puriri, rewarewa, nikau, mamaku and rimu are occasional.
- (b) Southeast of here there is a small gully remnant that is dominated by emergent kahikatea over commonly occurring taraire. There is occasional totara, puriri, karaka, nikau mamaku and emergent rimu. The epiphyte puka is also present in the canopy.
- (c) The third remnant is puriri-taraire-totara forest with frequent rewarewa and kahikatea. Rimu and nikau occur in low numbers.

Fauna

Kukupu (Category B threatened species), welcome swallow.

Significance

The second remnant, although small, is one of only two examples of kahikatea-taraire forest in the Ecological District.

Habitat for a threatened species.

McCULLOUGH ROAD BUSH

Survey no.	Q07/043
Survey date	22 July 1996
Grid reference	Q07 284 940
Area	25 ha
Altitude	0-40 m asl

Ecological unit

- (a) Kanuka/manuka-totara forest on alluvium

Landform/geology

Mangakahia Complex mudstone.

Vegetation

Alluvial forest remnants on the corner of McCullough and Monk Roads.

Totara is emergent over kanuka/manuka with frequently emergent kauri and kahikatea. Occasional species are puriri, titoki, cabbage tree, kohuhu, *Acacia* sp., *Pinus* sp. and emergent rimu.

The site is partly fenced but there is some grazing.

Fauna

Kukupu (Category B threatened species).

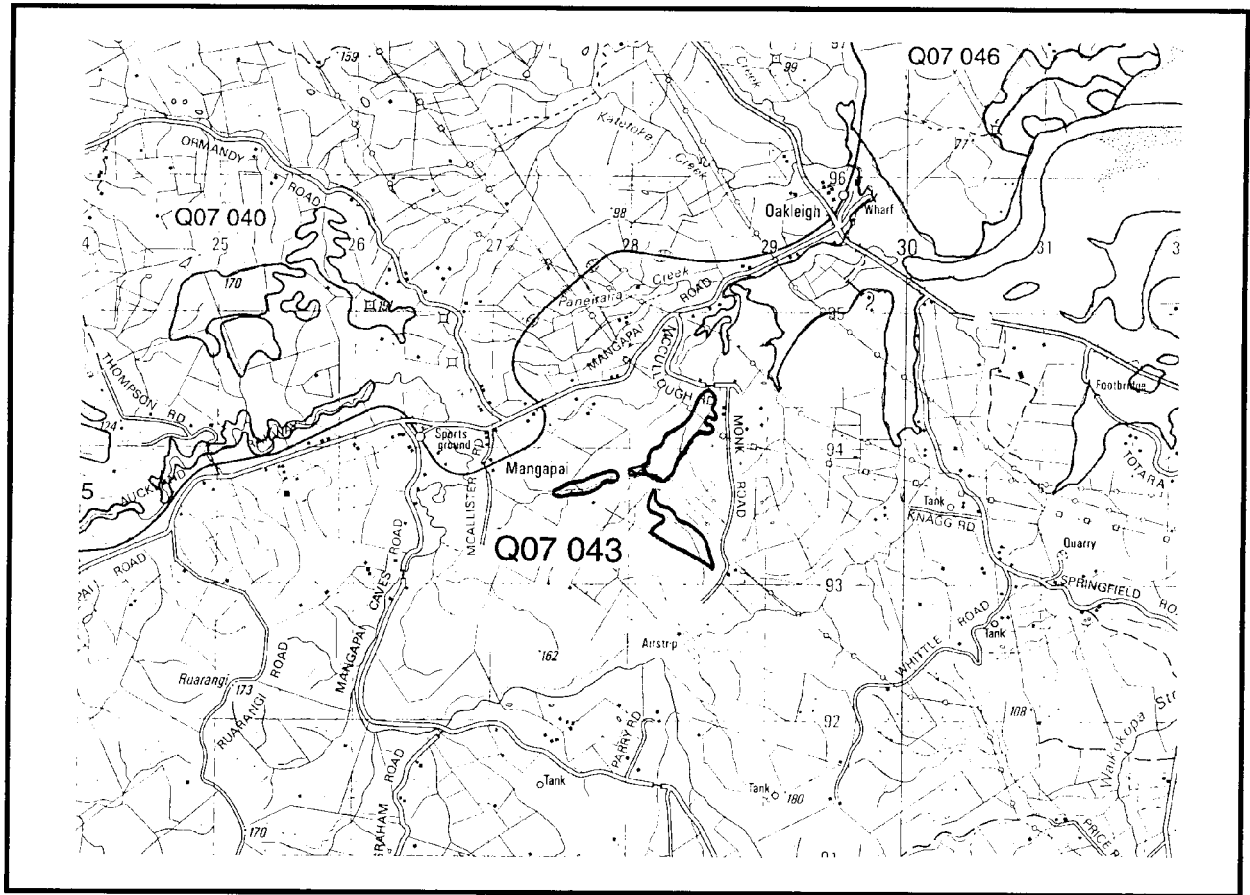


Figure 74. McCullough Road Bush, Q07 043
 Each grid is 1000 m × 1000 m and equals 100 ha.
 f = forest.

Significance

An example of alluvial forest which is under-represented in the Ecological District.

Habitat for a threatened species.

PORTLAND QUARRY BUSH

Survey no. Q07/044
Survey date 22 July 1996
Grid reference Q07 285 985
Area 24.2 ha
Altitude 20-120 m asl

Ecological unit

(a) Kahikatea-puriri forest on steep hillslope and in gully

Landform/geology

Motatau Complex muddy limestone.

Vegetation

Two forest remnants situated on a steep limestone hillslope and in gullies adjacent to Portland quarry. Both the remnants are kahikatea-puriri forest with frequent totara, kanuka and manuka. Cabbage tree is also present. In the eastern remnant there are gaps in the canopy.

Fauna

Not surveyed.

Significance

This forest type is a representative example and occurs in only one other site in the Ecological District.

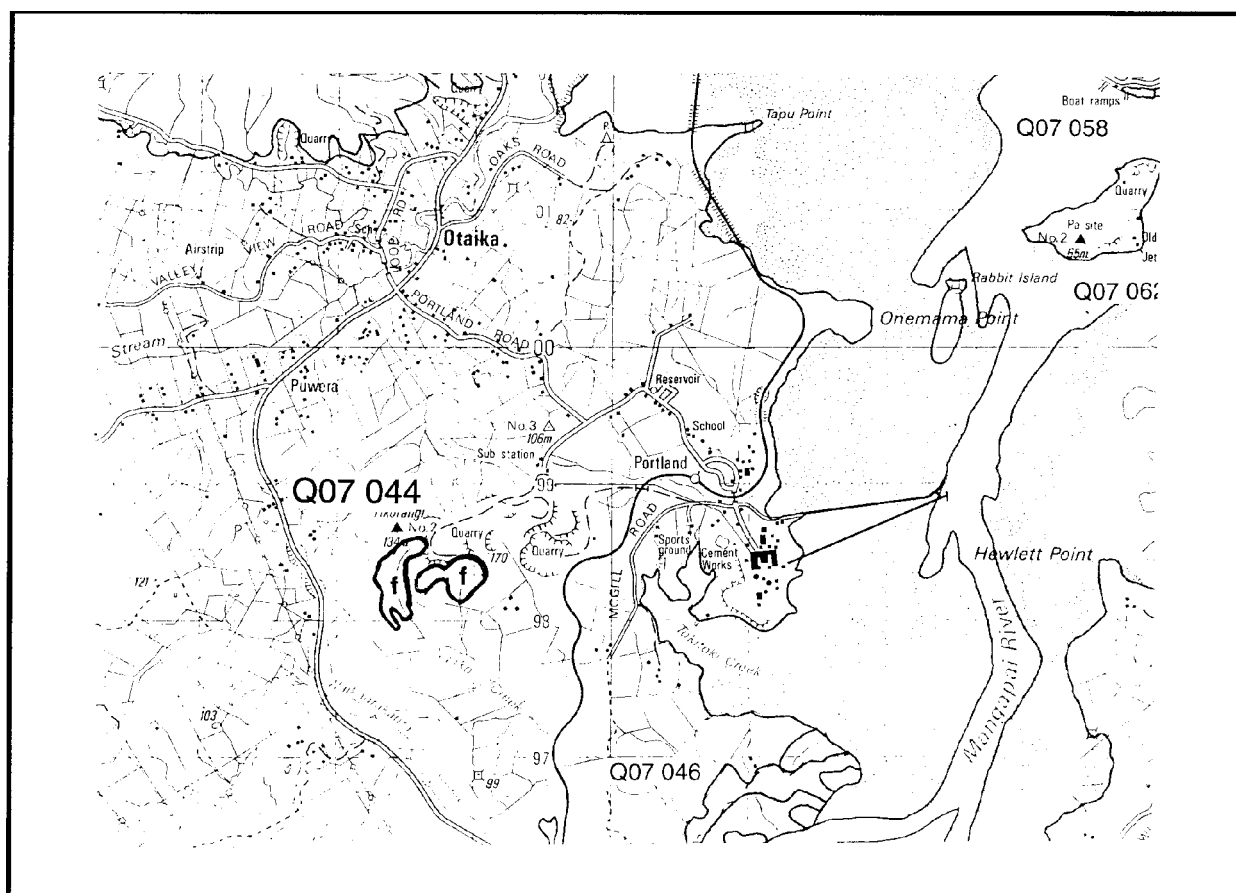


Figure 75. Portland Quarry Bush, Q07 044

Each grid is 1000 m × 1000 m and equals 100 ha. f = forest.

TAURAROA RIVER

Survey no.	Q07/045
Survey date	14 June 1996
Grid reference	Q07 235 953
Area	64 ha
Altitude	60-120 m asl

Ecological unit

- (a) **Totara**-kahikatea riverine forest on alluvium
- (b) **Totara**-titoki riverine forest on alluvium
- (c) Totara riverine forest on alluvium

Landform/geology

Quaternary alluvial deposits.

Vegetation

Riverine forest of the two main tributaries of Tauraroa River which flows through Whangarei and Waipu Ecological Districts.

- (a) The western branch of the Tauraroa River is dominated by totara with kahikatea common. Manuka occurs frequently. About two-thirds of this riverine forest is located in the Whangarei Ecological District and one-third is located in Waipu Ecological District.
- (b) Further downstream there is a separate riverine remnant with totara dominant and titoki common. Kowhai occurs frequently while karaka, cabbage tree, manuka, manatu, harakeke and poplar are occasional. This is located in the Waipu Ecological District.
- (c) The eastern branch of the Tauraroa River (in the area to the north of Mangapai Road) consists of totara dominant forest with frequent kowhai, titoki, kanuka and manuka. Kahikatea, karaka and manatu are also present. About 50% of this vegetation type occurs in Whangarei Ecological District and 50% in Waipu Ecological District.

Fauna

NZ kingfisher, pukeko.

Significance

An example of riverine vegetation which is uncommon in the Ecological District and Region and a representative example of totara forest and **totara**-kahikatea riverine forest. It is also the only site in the Ecological District where **totara**-titoki riverine forest has been recorded.

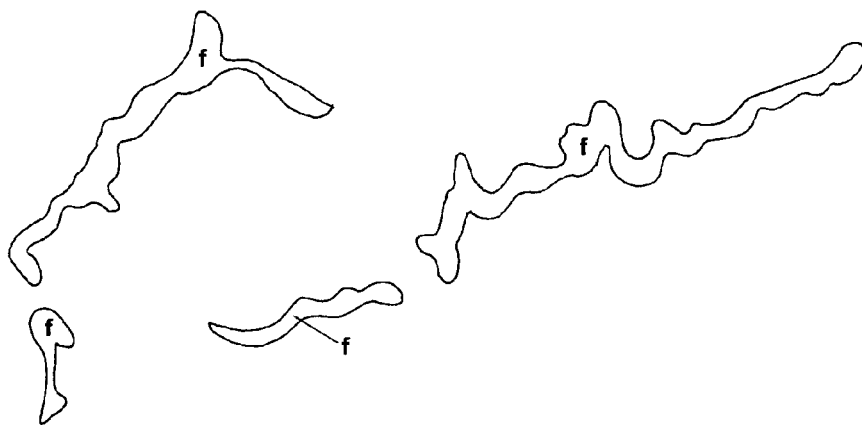
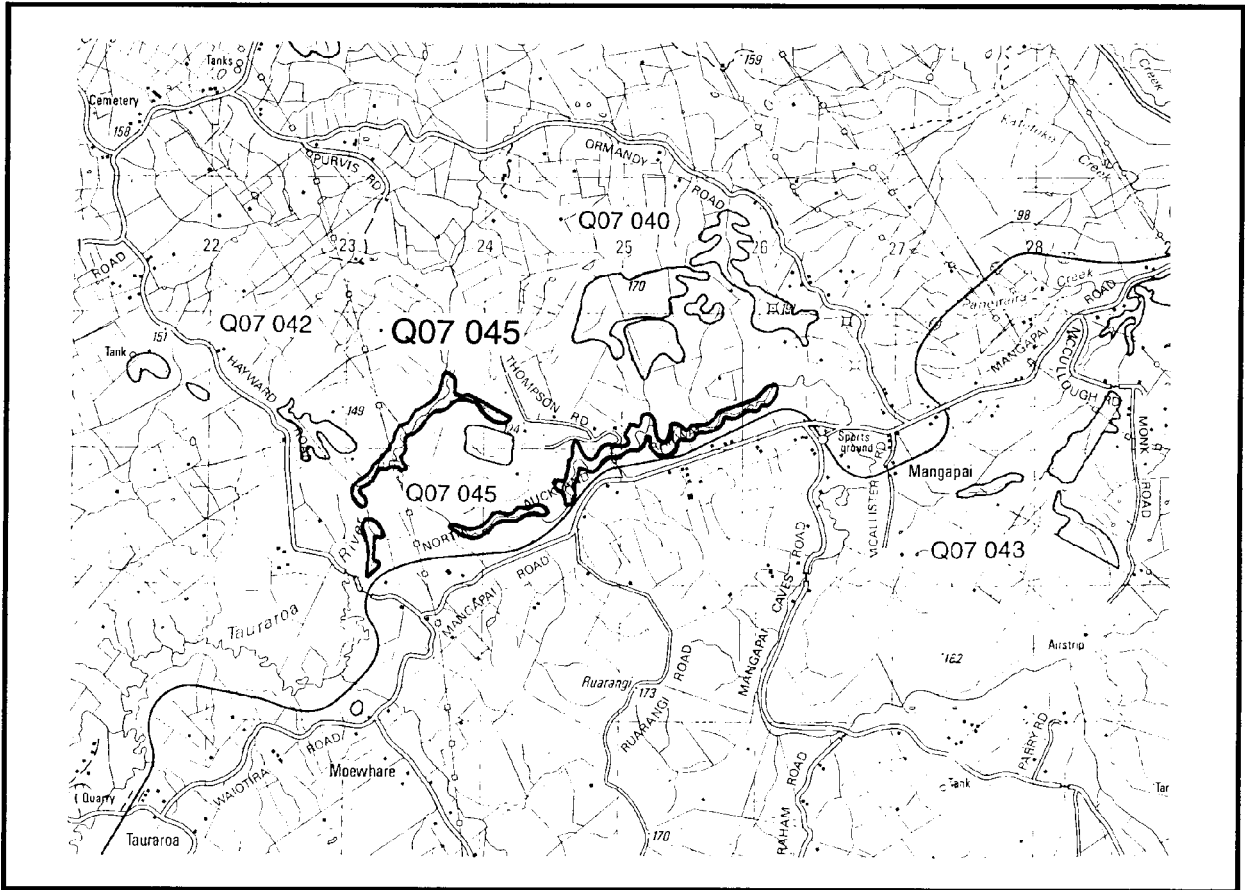


Figure 76. Tauraroa River, Q07 045
 Each grid is 1000 m × 1000 m and equals 100 ha.
 f = forest.

MANGAPAI ESTUARY BUSH

Survey no. Q07/046
 Survey date 22 July 1996
 Grid reference Q07 310 965
 Area 61.6 ha (33.3 ha forest, 28.3 ha shrubland)
 Altitude 0-80 m asl

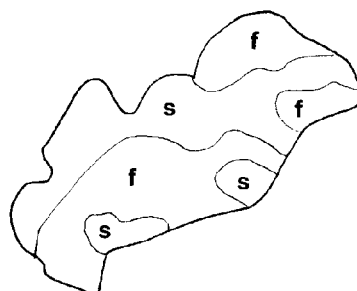
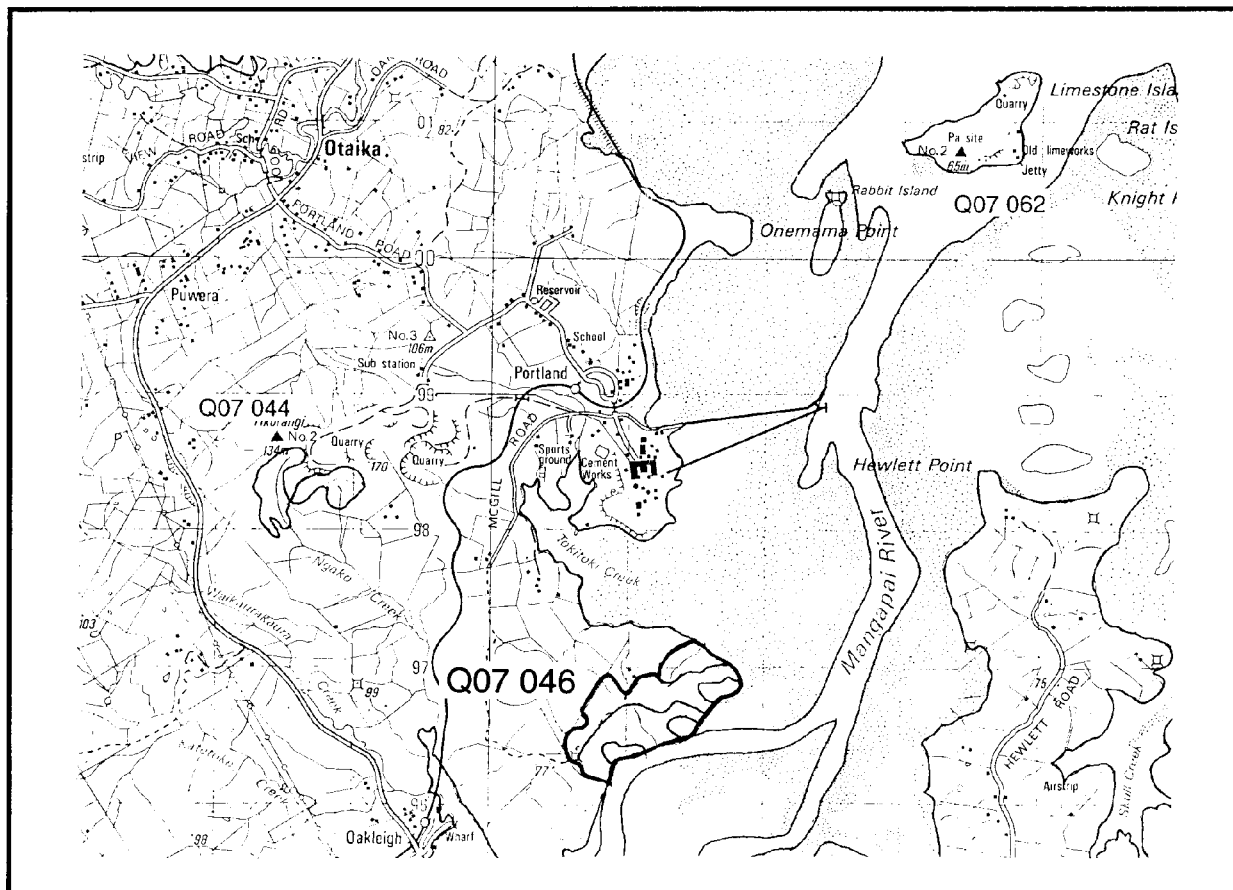


Figure 77. Mangapai Bush, Q07 046
 Each grid is 1000 m × 1000 m and equals 100 ha.
 f = forest; s = shrubland.

Ecological unit

- (a) **Kanuka/manuka**-totara coastal forest on moderate hillslope
- (b) **Kanuka/manuka**-mamaku-totara coastal shrubland on moderate hillslope
- (c) **Kanuka/manuka**-totara coastal shrubland on moderate hillslope

Landform/geology

Coastal hillslopes of Mangakahia Complex mudstone and sandstone.

Vegetation

A mosaic of coastal forest and shrubland adjacent to the Mangapai estuary.

(a) On the point there is an area of kanuka/manuka dominant coastal forest with emergent totara common and puriri frequent.

The remaining forest areas are also type (a) in which emergent tanekaha is frequent and cabbage tree, rewarewa, mamaku and pampas are occasional.

(b) The shrubland areas on the coastal side are dominated by kanuka/manuka with mamaku and totara common. Mapou is frequent with scattered cabbage tree.

(c) The shrubland area on the inland side is kanuka/manuka dominant with emergent totara common. There is also occasional mamaku, gorse, pampas and emergent *Pinus* sp. present.

Fauna

Not surveyed.

Significance

An example of coastal forest and shrubland, which are rare vegetation types within the Ecological District, and the only site where these vegetation types have been recorded.

WAIKOKOPA STREAM

Survey no.	Q07/047
Survey date	22 July 1996
Grid reference	Q07 330 931
Area	30 ha
Altitude	0-40 m asl

Ecological unit

- (a) Kanuka/manuka-totara riverine forest on alluvium
- (b) Totara riverine forest on alluvium

Landform/geology

Quaternary alluvial and estuarine deposits.

Vegetation

Waikokopa Stream begins in Waipu Ecological District then flows into Whangarei Ecological District. It then flows into the Waipu Ecological District again where it becomes the Ruakaka River. The part of Waikokopa Stream described here is in the Whangarei Ecological District and makes up about 40% of the stream.

(a) Riverine forest consisting of kanuka/manuka and totara is present east of Springfield Road to as far as Cotton Road Bridge. Titoki is frequent and karaka,

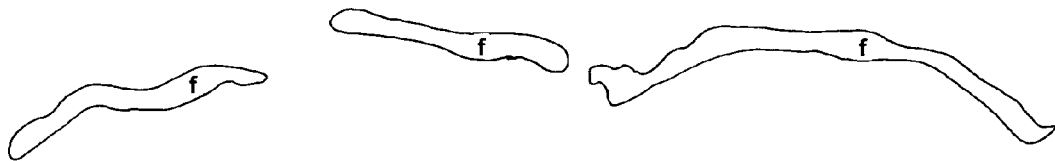
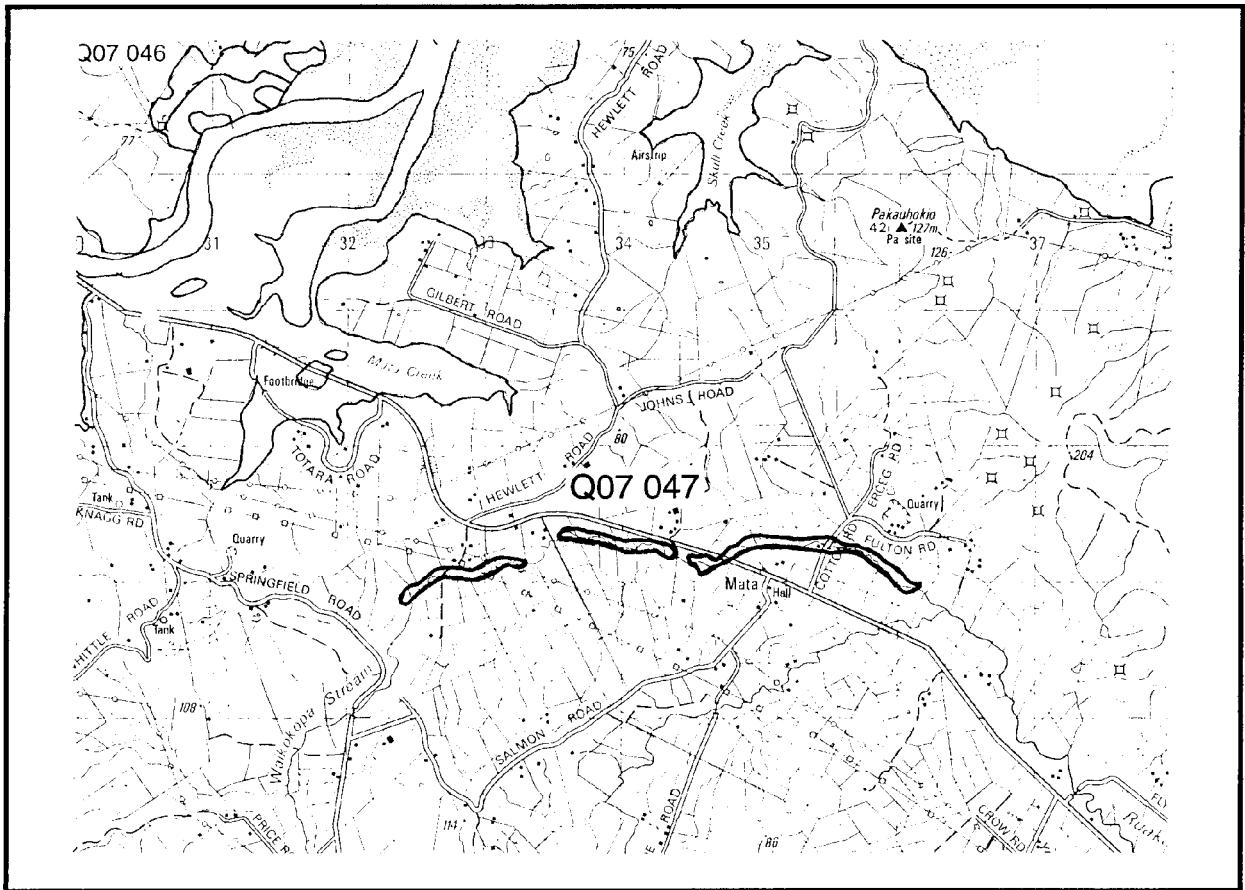


Figure 78. Waikokopa Stream, Q07 047
 Each grid is 1000 m × 1000 m and equals 100 ha.
 f = forest.

kowhai and manatu are also present. There are two breaks in the forest where the trees become sparse.

(b) Further downstream to the point where Waipapa Stream joins, the vegetation is dominated by totara with frequent karaka, titoki, kowhai and crack willow. Occasional species include matai, kahikatea, manatu, manuka, kanuka, rewarewa and cabbage tree.

Fauna

Not surveyed.

Significance

An example of riverine vegetation which is uncommon in the Ecological District and Region. Both the forest types are representative examples and form a link between other forests in the area. It is mostly unfenced but the areas that are fenced have greater diversity.

RAUMANGA VALLEY

Survey no.	Q07/048
Survey date	9 October 1997
Grid reference	Q07 280 063
Area	72.5 ha
Altitude	0-120 m asl

Ecological unit

- (a) Taraire riverine forest on alluvium
- (b) Puriri-totara forest on steep hillslope
- (c) Kahikatea forest on river terrace
- (d) **Kowhai**-karaka forest on steep hillslope
- (e) **Totara**-taraire forest on steep hillslope
- (f) Totara forest on steep hillslope

Landform/geology

Northern ridge formed of Te Kuiti Group glauconite sandstone and overlying bioclastic limestone karst, southern ridge formed of Kerikeri Volcanics basaltic lava flow.

Vegetation

This site includes forest areas in the Raumanga Stream Valley and the Nihotea Stream catchment.

(a) At Raumanga Falls there is riverine forest that is dominated by taraire. Also occurring are frequent tawa and totara with occasional rimu, houhere, karaka, puriri, kowhai, titoki, tarata, hard beech and rewarewa.

(b) On the steep northern hillslope above the falls there is puriri-totara forest with frequent kowhai and karaka. Kanuka, kahikatea, cabbage tree and kohekohe are occasional.

(c) Downstream from here there is a small grove of kahikatea on a river terrace on the northern side of the river. Pukatea and kowhai are also present in low numbers.

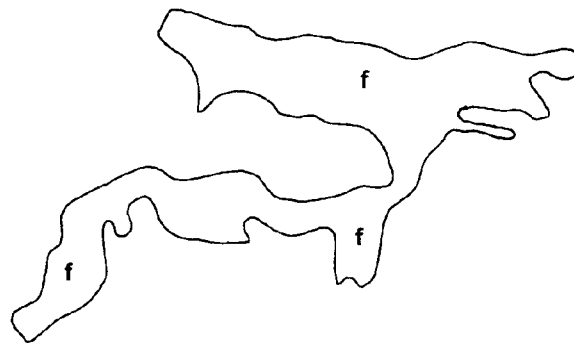
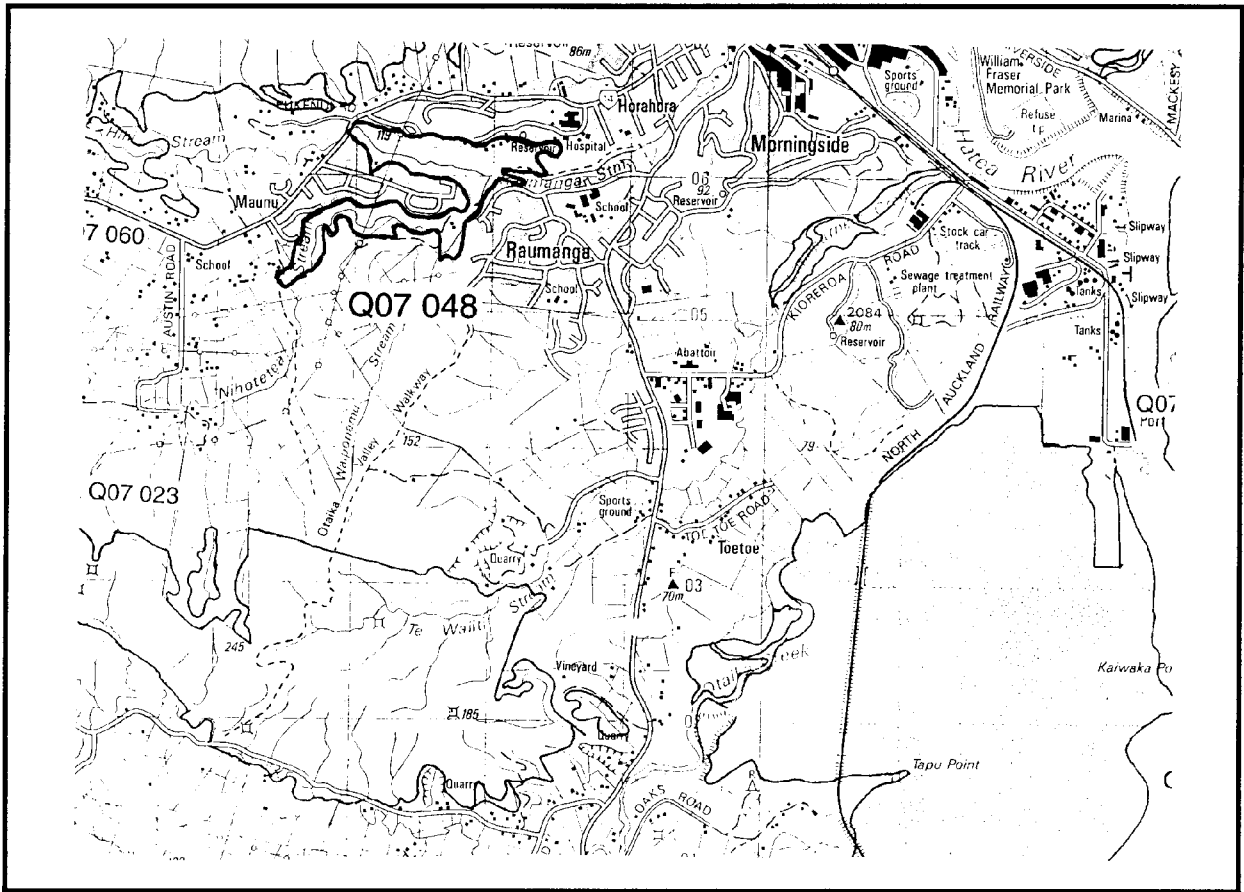


Figure 79. Raumanga Valley, Q07 048
 Each grid is 1000 m × 1000 m and equals 100 ha.
 f = forest.

(d) Further east on a steep hillslope above the river, there is abundant kowhai with karaka common. Puriri and taraire are frequent with occasional totara and cabbage tree.

(e) Above this, further up the slope, totara is dominant with taraire common. Frequent species include puriri and kowhai while kohekohe, cabbage tree and mamaku are occasional.

(f) The forest on the eastern side of Nihotea Stream is totara dominant with occasional mamaku, kowhai, manuka, kanuka and *Pinus* sp.

Significant flora

Hard beech (Regionally significant species).

Fauna

Kukupu (Category B threatened species), tui, long-finned eel.

Significance

Riverine vegetation is uncommon in the Ecological District and Region. All the forest types are representative including **kowhai**-karaka forest which is the only site where it has been recorded in the Ecological District. Hard beech is very rare in Northland and this is one of two sites in the Ecological District where it has been recorded.

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

This site includes two hectares of Whangarei District Council Reserve.

TATTON ROAD REMNANTS

Survey no.	Q07/049
Survey date	28 October 1997
Grid reference	Q07 160 037
Area	85 ha
Altitude	120-180 m asl

Ecological unit

- (a) Taraire forest on gentle hillslope
- (b) Rewarewa-taraire forest on gentle hillslope
- (c) Karaka-taraire forest on gentle hillslope
- (d) **Taraire**-totara forest on volcanic flats

Landform/geology

Kerikeri Volcanics Basaltic lava flow.

Vegetation

Several volcanic broadleaf remnants on the eastern slope of Whatitiri Mountain.

(a) At the end of Nisbet Road there is a taraire dominant forest remnant with frequent rewarewa. Karaka and kohekohe are also present.

The second remnant to the northwest also consists of type (a) forest.

(b) Moving east from here the third remnant is located next to Tatton Road. Taraire and emergent rewarewa are common with frequent tawa. Karaka is occasional and totara is present on the edges. There is also kohekohe in the subcanopy.

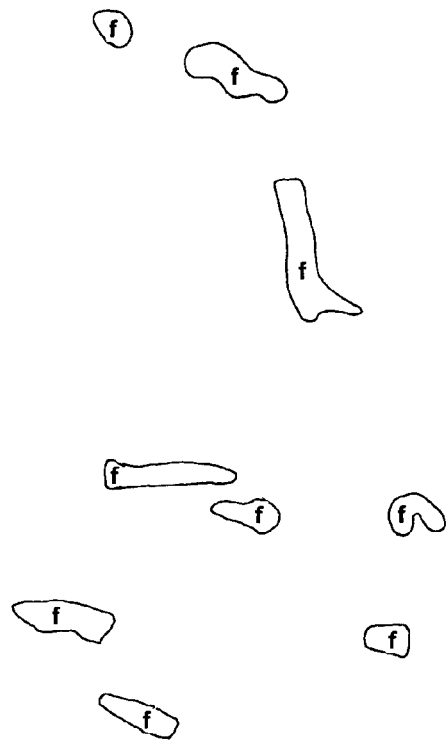
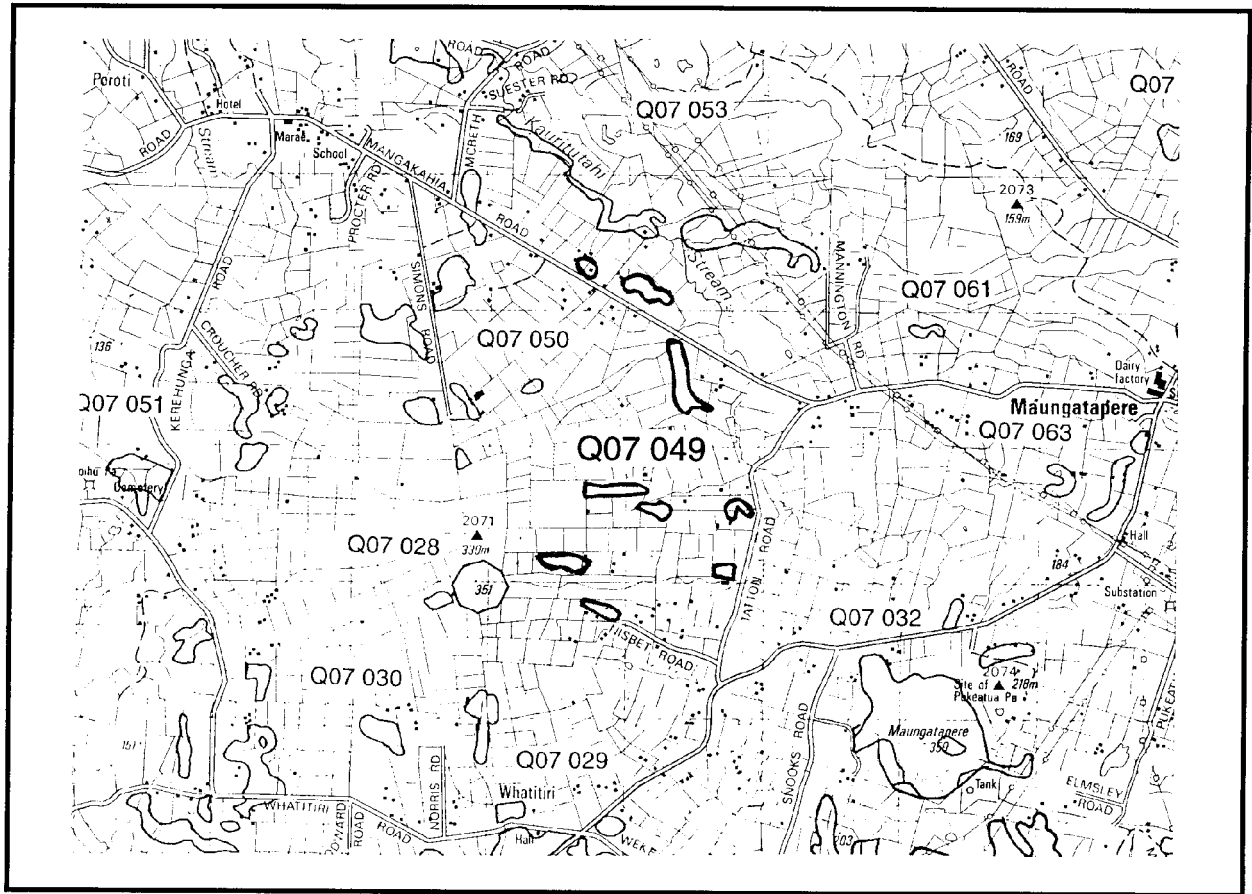


Figure 80. Tatton Road Remnants, Q07 049
 Each grid is 1000 m × 1000 m and equals 100 ha. f = forest.

(c) North of here the next remnant is karaka-taraire forest with occasional totara and emergent rewarewa. Kohekohe is present in the subcanopy.

The two remnants west of here both contain type (a) forest with frequent emergent rewarewa. The western remnant also contains occasional karaka and tawa while the eastern one has pukatea, karaka and puriri present.

To the north of here and adjacent to Mangakahia Road the next remnant also consists of type (a) forest. Emergent rewarewa is frequent and there is occasional puriri, karaka, tawa and kohekohe. Totara is present on the edges.

(d) North of Mangakahia Road there is a forest remnant that is taraire dominant with totara common. Emergent rewarewa is frequent with occasional kahikatea, tawa, kohekohe and puriri.

Type (a) occurs in the last remnant west of here. Other species occasionally present are titoki, karaka and puriri. A road divides this remnant in two, with both sides of the forest fenced. The eastern portion has a well developed understorey.

Fauna

Kukupu (Category B threatened species), tui.

Significance

Volcanic broadleaf forest is a nationally rare forest type. This is a representative site for rewarewa-taraire forest and the only site in the Ecological District where karaka-taraire forest has been recorded. This forest type is also uncommon in the Ecological Region.

Habitat for a threatened species.

Four hectares of the remnants are protected in a Queen Elizabeth II National Trust covenant.

SIMONS ROAD REMNANTS

Survey no.	Q07/050
Survey date	28 October 1997
Grid reference	Q07 149 056
Area	39.1 ha
Altitude	80-220 m asl

Ecological unit

- (a) Taraire forest on volcanic flats or gentle hillslope
- (b) Puriri-taraire forest on gentle hillslope

Landform/geology

Kerikeri Volcanics basaltic lava flow.

Vegetation

Several volcanic broadleaf remnants on the northern slopes of Whatitiri Mountain.

(a) On the corner of Mangakahia and McBeth Roads there is a fenced taraire dominant forest remnant on flat ground with frequent emergent rewarewa. Puriri, kahikatea, titoki and kohekohe are occasional.

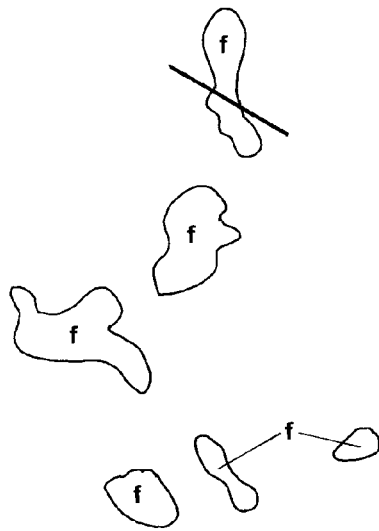
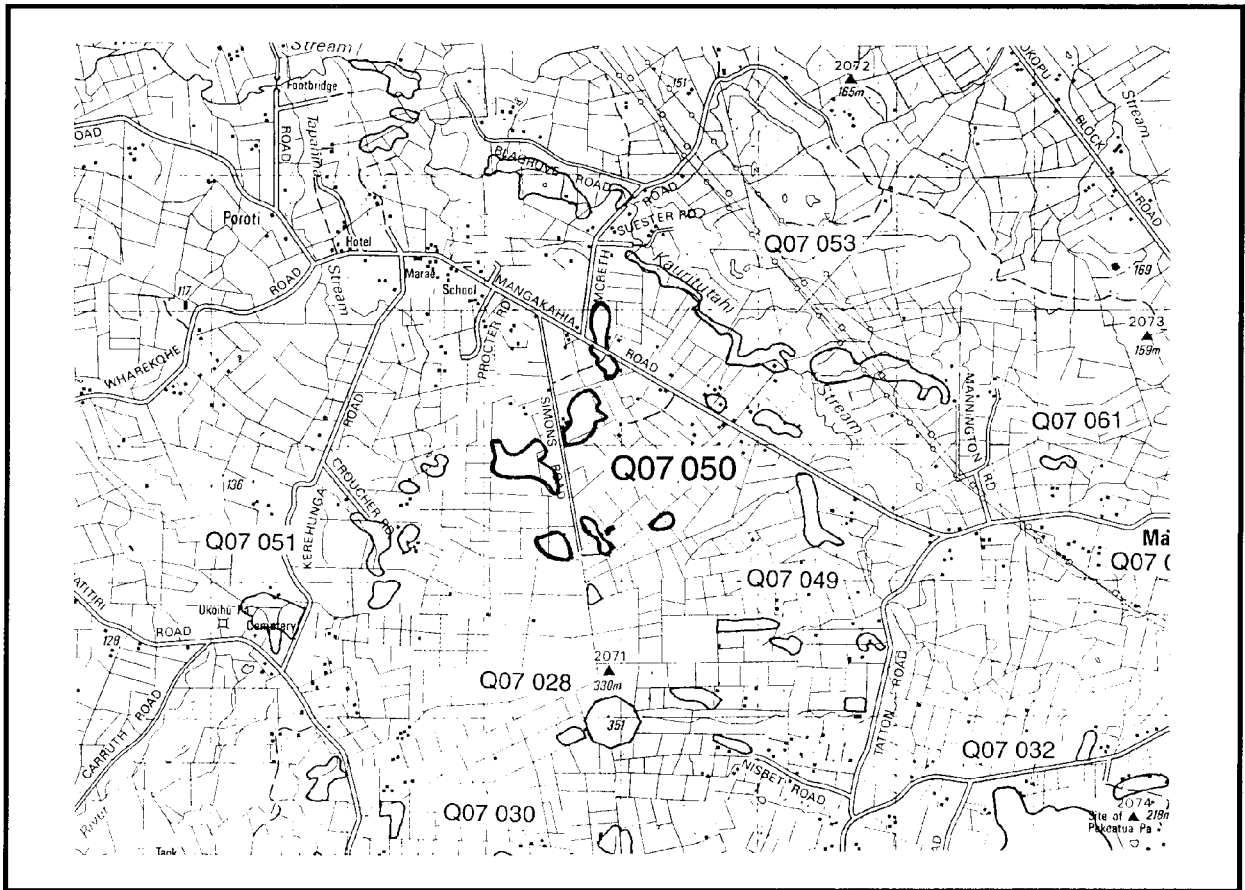


Figure 81. Simons Road Remnants, Q07 050
 Each grid is 1000 m × 1000 m and equals 100 ha.
 f = forest.

Type (a) occurs on the southern side of Mangakahia Road in a fenced remnant on a gentle slope. Puriri and emergent rewarewa are frequent with occasional karaka and kohekohe.

The remaining remnants are all situated on gentle hillslopes.

(b) On the eastern side of Simons Road a puriri-taraire remnant has frequent emergent rewarewa. Titoki is occasional and kohekohe is present in the subcanopy.

The remnant to the east of the end of Simons Road also is taraire dominant but has an incomplete canopy. Karaka and pukatea are also present in the canopy.

The remnant east from here also has type (a) forest with occasional karaka, puriri and emergent rewarewa.

On the west side of Simons Road there is another taraire dominant remnant, type (a). Puriri and emergent puriri are frequent while titoki, tawa, karaka and kohekohe are present occasionally.

North from here type (b) occurs where puriri and taraire are common with occasional tawa, kahikatea, totara, kohekohe and emergent rewarewa.

Fauna

Kukupu (Category B threatened species).

Significance

Volcanic broadleaf forest is a nationally rare forest type. Representative site for taraire forest and puriri-taraire forest.

Habitat for a threatened bird species.

Two hectares of this site are protected by a Queen Elizabeth II National Trust covenant.

KEREHUNGA ROAD REMNANTS

Survey no.	Q07/051
Survey date	3 November 1997
Grid reference	Q07 133 042
Area	25.2 ha (1.9 ha wetland, 23.3 ha forest)
Altitude	60-160 m asl

Ecological unit

- (a) Puriri forest on gentle hillslope
- (b) Puriri-taraire forest on gentle hillslope
- (c) Kahikatea forest on gentle hillslope
- (d) Raupo reedland on alluvium

Landform/geology

Kerikeri Volcanics basaltic lava flow.

Vegetation

Several volcanic broadleaf remnants and a raupo wetland near Kerehunga Road.

(a) The northernmost remnant is puriri dominant with frequent kahikatea. Taraire and totara are occasionally present.

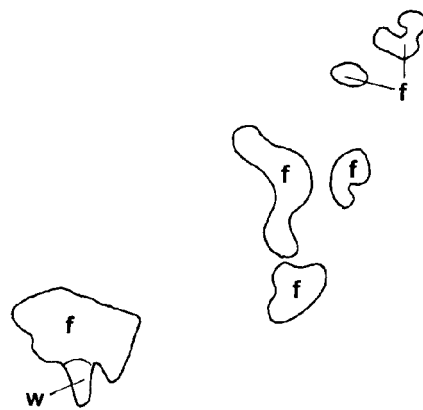
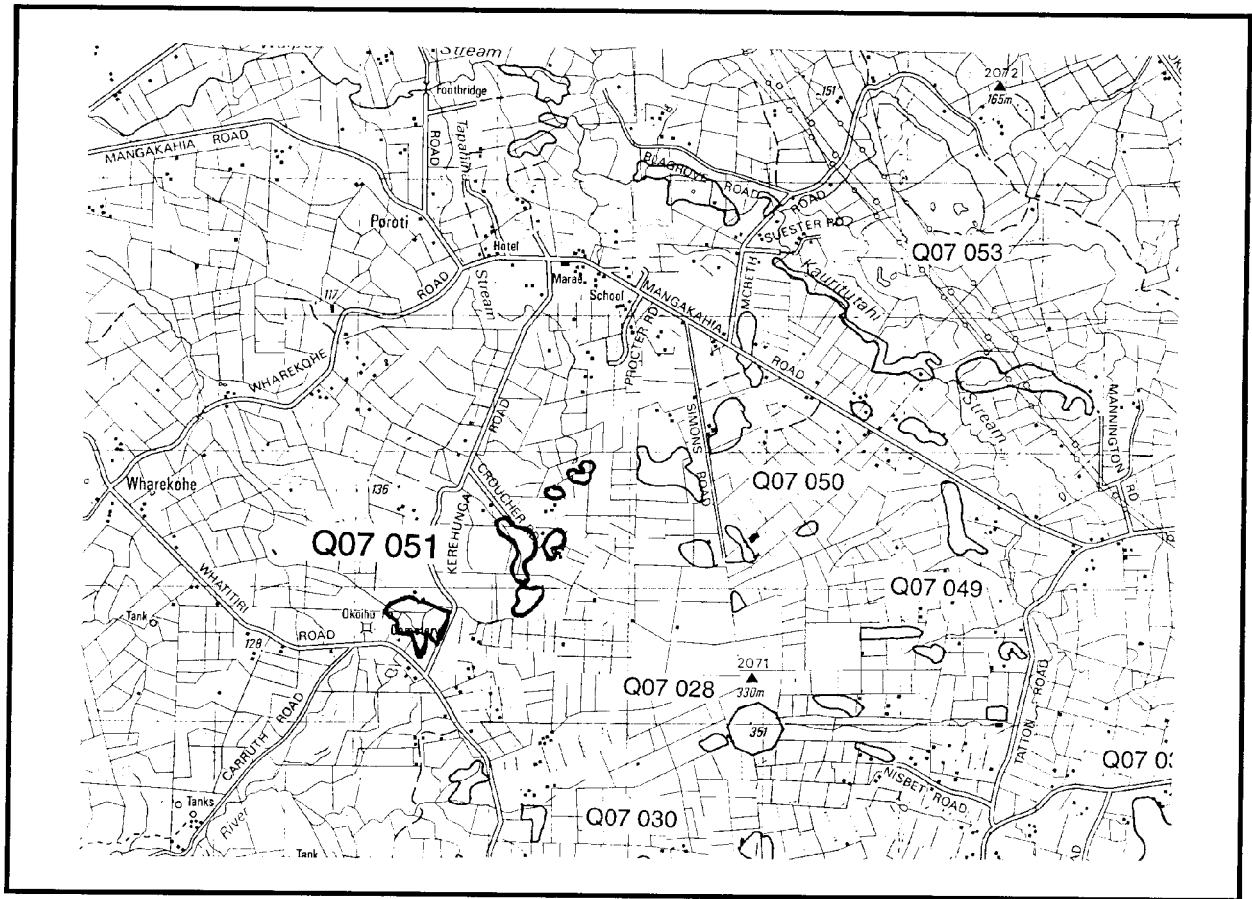


Figure 82. Kerehunga Road Remnants, Q07 051
 Each grid is 1000 m x 1000 m and equals 100 ha.
 f = forest; w = wetland.

(b) The second remnant southwest of here is puriri-taraire forest with occasional pukatea and emergent rewarewa. The epiphyte puka is also present in the canopy.

The group of three remnants at the end of Croucher Road are also puriri-taraire forest. Totara, pukatea, kahikatea and emergent rewarewa are occasional.

On the corner of Kerehunga and Whatitiri Roads there is a volcanic broadleaf remnant adjacent to a raupo wetland. Puriri-taraire forest, type (b), also has occasional kahikatea with totara and kanuka on the edges (70%).

(c) There is a small area of kahikatea forest adjacent to the wetland. Also present are frequent puriri and occasional taraire and mamaku (10%).

(d) The wetland has 100% vegetation consisting of dominant raupo with frequent emergent manuka. Kahikatea is also present (20%).

Fauna

Not surveyed.

Significance

Volcanic broadleaf remnants are a nationally rare forest type and raupo wetlands are rare in the Ecological District. This is a representative site for puriri forest, kahikatea forest and raupo reedland.

WAIPAO STREAM

Survey no.	Q07/052
Survey date	3 November 1997
Grid reference	Q07 134 076
Area	10.8 ha
Altitude	80-100 m asl

Ecological unit

- (a) Totara riverine forest on alluvium
- (b) Kahikatea riverine forest on alluvium
- (c) Totara forest on moderate hillslope
- (d) Kahikatea forest on moderate hillslope

Landform/geology

Quaternary alluvial deposits with Kerikeri Volcanics lava flow forming a low ridge.

Vegetation

Three riverine and forest remnants on Waipao Stream.

(a) The northernmost remnant consists of riverine totara forest with occasional kahikatea, titoki, matai, kanuka and manuka.

(b) The remnant to the south of here contains two forest types including kahikatea riverine forest (60%).

There is also totara riverine forest present with occasional kowhai, kahikatea, kanuka and manuka (40%).

The third remnant is situated on a moderate hillslope and contains two forest types:

(c) Totara dominant forest with occasional kahikatea (50%).

(d) Kahikatea dominant forest with frequent totara (50%).

Fauna

Not surveyed.

Significance

An example of riverine forest which is uncommon in the Ecological District and a representative site for kahikatea riverine forest.

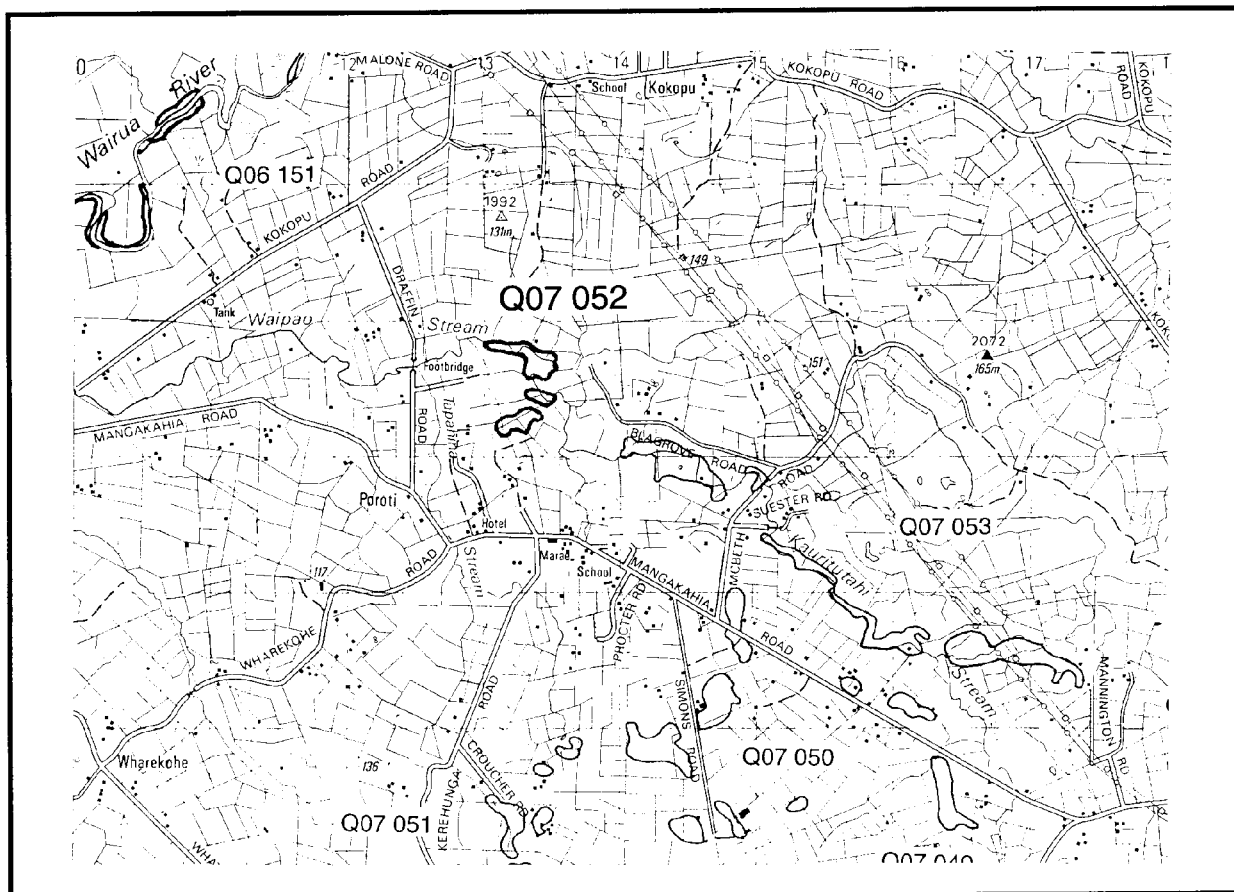


Figure 83. Waipao Stream, Q06 016

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

f = forest.