

SITE NAME	SURVEY NO.	GRID REF.
Otanguru Cliffs	O04/201	O04 526 905
Te Kuihi	O04/202	O04 542 900
Taumarumaru	O04/203	O04 566 900
Coopers Beach	O04/204	O04 578 900
Rangikapiti	O04/205	O04 588 906
Paewhenua	O04/206	O04 607 878
Butler Point	O04/207	O04 598 905
Mangonui Harbour	O04/208	O04 610 900
Taipa Estuary	O04/209	O04 535 885
Whatakau Wetland	O04/234	O04 610 760
Hayes Brothers' Farm	P04/020	P04 740 770
Takakuri Stream	P04/022	P04 715 755
Whakateterekia Stream	P04/023	P04 715 710
Te Rahui	P04/024	P04 735 720
Pupuke-Mangapa	P04/026	P04 720 724
Pakewakewa	P04/028	P04 755 764
Maungaemiemie	P04/032	P04 775 757
Matawherohia Bush	P04/037	P04 805 730
Omaunu	P04/037A	P04 773 717

DIGGERS VALLEY BUSH

Survey no. O05/002
 Survey date 17 November 1994
 Grid reference O05 395 690
 Area 124.7 ha
 Altitude 60-170 m asl

Ecological unit

- (a) Taraire forest on hillslope and alluvial flat
- (b) Secondary totara forest on hillslope
- (c) Secondary kahikatea forest on hillslope
- (d) Puriri-kahikatea forest on hillslope
- (e) Manuka-towai shrubland on hillslope
- (f) Taraire-towai forest on hillslope
- (g) Manuka-kanuka shrubland on hillslope
- (h) Towai shrubland on hillslope
- (i) Raupo reedland in stream gully

Landform/geology

Hill country of Mangakahia Complex sandstone, with Holocene alluvium along Waikawa Stream valley.

Vegetation

Type (a) Taraire forest. Comprises approximately half of the area on the northern side of Diggers Valley Rd with towai and kahikatea. Also present are kohekohe, rewarewa, tawa, pukatea, northern rata, kawaka, rimu (also as an isolated emergent), totara and puriri. Tree ferns and mamangi are common.

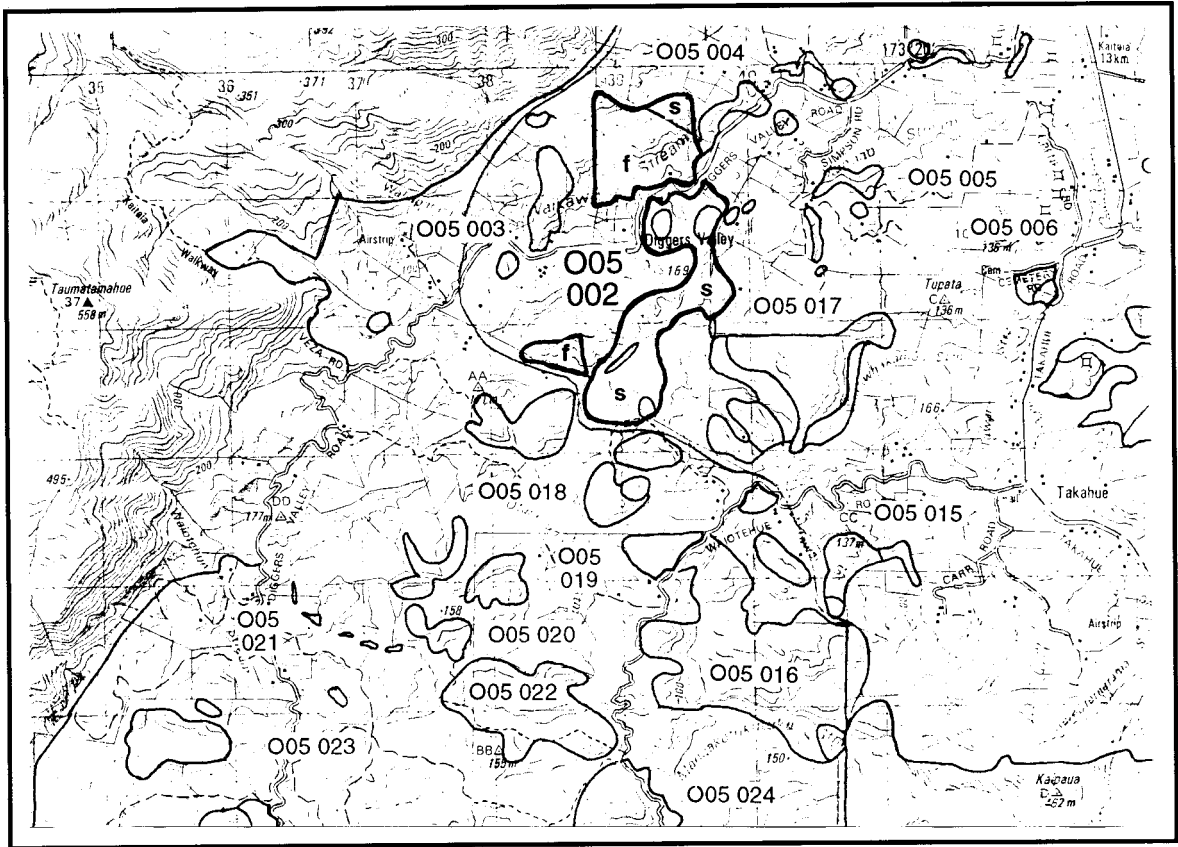
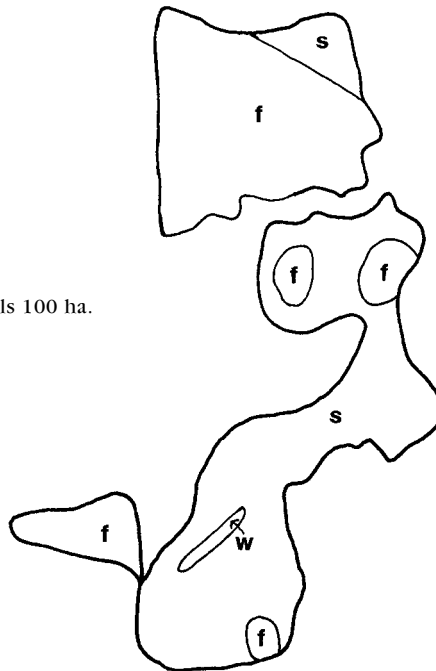


Figure 3. Diggers Valley Bush, O05 002
 Each grid is 1000 m × 1000 m and equals 100 ha.
 f = forest; s = shrubland; w = wetland.



Taraire with totara and kahikatea occurs as a small pocket on the southern side of Diggers Valley Rd.

To the southwest of the site (GR O05 386 677), almost contiguous with the large manuka shrubland area, is a taraire remnant with puriri.

Type (b) Secondary totara forest. Occurs to the north of the main area of Type (a) with kahikatea, kanuka and occasional puriri and cabbage tree.

Type (c) Secondary kahikatea forest. Occurs towards the north of the site.

Type (d) Puriri-kahikatea forest. This type occur as a small pocket (<1%) within Type (e).

Type (e) Manuka-towai shrubland. Shrubland about 3-4 m tall, in which totara is sometimes frequent, and mamaku occasional. It adjoins Type (a) north of Diggers Valley Rd, spreading back towards Herekino Forest.

Type (f) Towai-taraire forest. Occurs in a small pocket within Type (g) on the southern side of Diggers Valley Rd.

Type (g) Manuka-kanuka shrubland. An extensive area on the southern side of Diggers Valley Rd in which ponga, puriri, kahikatea, cabbage tree and towai occur.

Type (h) Towai shrubland. Tall vegetation adjoining Type (g).

Type (i) Raupo reedland. In the southwest a raupo swamp occurs in the stream valley.

Significant flora

Kawaka - a large ridgeline stand - notable in the Ecological District.

Fauna

NI brown kiwi (Category A threatened species); NZ pigeon (Category B threatened species); Northland tusked weta (Category C threatened species); kauri snail (Category C threatened species); NI tomtit, NI fernbird, banded rail (all regionally significant species). Freshwater shrimp and red-finned bully.

Significance

Representative site for taraire forest on alluvium and for towai shrubland.

Habitat for threatened and regionally significant fauna, including kiwi and NZ pigeon.

Partial linkage to Herekino Forest and linked to O05/017 Werawahakamau Stream.

49.63 ha of this site is protected in the Marko Buselich Scenic Reserve.

SPORLE/RENWICK

Survey no.	O05/003
Survey date	17 November 1994
Grid reference	O05 385 690
Area	26.9 ha
Altitude	80-120 m asl

Ecological unit

- (a) Towai-taraire forest on hillslope
- (b) Secondary rimu-kanuka forest on hillslope
- (c) Taraire forest on hillslope
- (d) Secondary totara-kanuka forest on alluvium
- (e) Secondary kahikatea on hillslope and toeslope

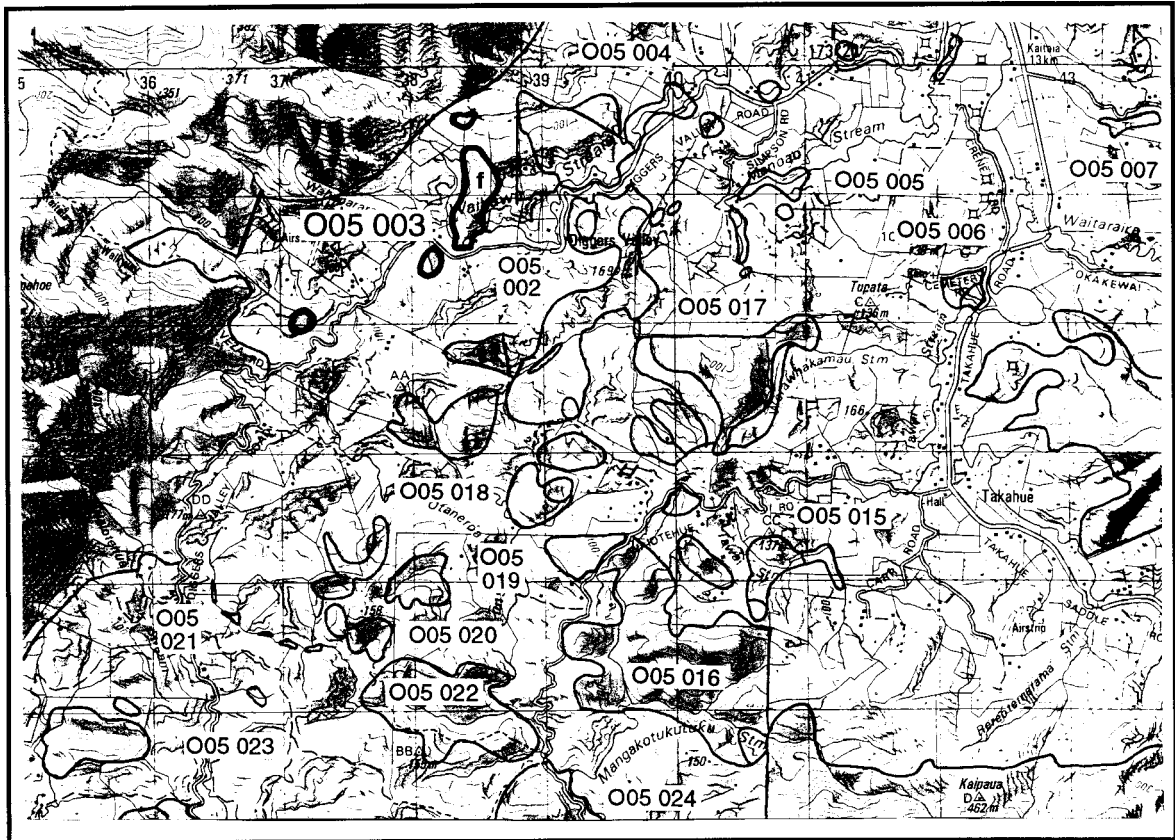


Figure 4. Sporle/Renwick, O05 003

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

f = forest.



Landform/geology

Hill country of Mangakahia Complex sandstone lithofacies.

Vegetation

Type (a) Towai-taraire forest. Comprises most of the main bush area with occasional northern rata, rimu, kahikatea, totara, rewarewa, and puriri.

Across the road to the south is a towai-taraire remnant.

Type (b) Kanuka-rimu forest. Occasional kauri and totara occur in a tiny area on the south-west side of Type (a).

Type (c) Taraire forest. With puriri and kohekohe. A small remnant north of the main block, the eastern portion of which is fenced.

Type (d) Secondary totara-kanuka forest. Along the stream to the north totara is abundant, with kanuka common and frequent puriri. Taraire and kahikatea also occur.

Type (e) Secondary kahikatea. A small area occurs in the towai-taraire remnant across the road.

Further west up the road (GR O05 372 681) is a dense and vigorous stand of secondary kahikatea.

Significant flora

The fern *Loxosoma cunninghamii*, (regionally significant) and the mistletoe *Ileostylus micranthus* (Declining) occur in the main bush area protected by a Queen Elizabeth II National Trust covenant. The *Ileostylus* is the only Northland record of this species growing on a kanuka host (K. Riddell pers. comm. 2001).

Fauna

NI brown kiwi (Category A threatened species), NZ pigeon breeding (Category B threatened species). Long-tailed cuckoo (migrant) - regionally significant species.

Significance

A diverse area with uncommon and threatened species.

The northern part of the site is close to Herekino Forest, and forms a partial linkage between Diggers Valley Bush and Herekino Forest.

Representative site for towai-taraire forest and rimu-kanuka forest. The larger kahikatea remnant, although small and unprotected, is one of the best stands of secondary kahikatea in the Ecological District. This vegetation type is much reduced from its former extent.

13 ha of the largest bush area is protected under a Queen Elizabeth II National Trust covenant and the owners have controlled possums and other pests for many years.

WAIKAWA STREAM

Survey no.	O05/004
Survey date	30 November 1994
Grid reference	O05 410 700
Area	13.5 ha
Altitude	c. 50 m asl

Ecological unit

- (a) Secondary kanuka-totara forest on alluvium
- (b) Puriri-taraire forest on alluvium
- (c) Taraire-kahikatea forest on alluvium

Landform/geology

Holocene alluvial flats along Waikawa Stream valley.

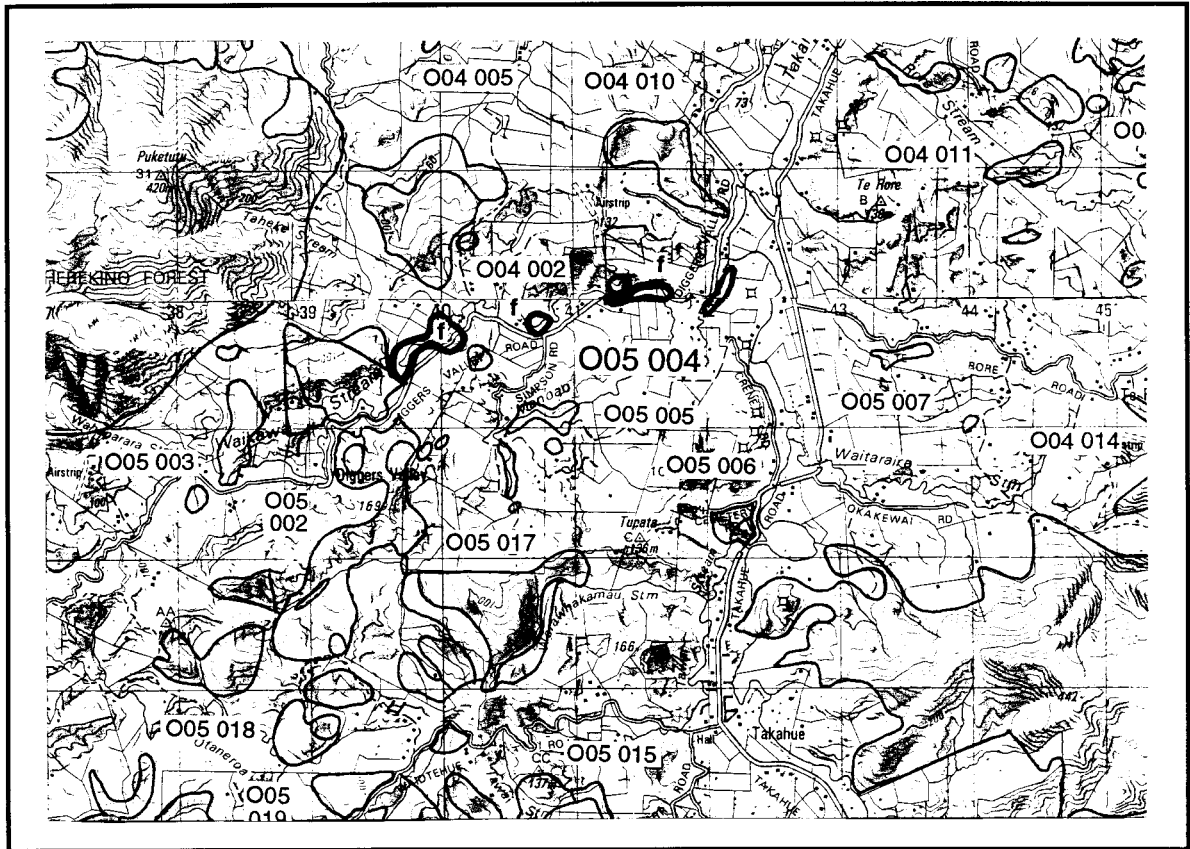
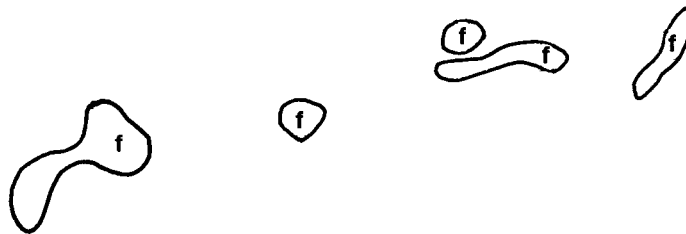


Figure 5. Waikawa Stream, O05 004

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

f = forest.



Vegetation

Intermittent stands of broadleaf-podocarp and secondary hardwood-podocarp along the Waikawa Stream.

Type (a) Kanuka-totara forest. Occurs in the eastern-most stand with occasional rimu and kahikatea, and downstream of Type (b).

Type (b) Puriri-taraire forest. Occurs upstream of (a) with frequent kahikatea and totara and scattered cabbage tree and kohekohe.

This is linked by a thin line of kanuka, totara, kahikatea, cabbage tree and taraire to a larger area of Type (b) in which taraire is abundant, puriri is common and kahikatea, kanuka and towai occur frequently. Titoki and pukatea are also present.

Further upstream puriri is abundant with frequent taraire and scattered cabbage tree, totara, kahikatea and pukatea.

Type (c) Taraire-kahikatea forest. In the westernmost area, taraire and kahikatea are common and puriri and towai frequent.

Fauna

NZ pigeon (Category B threatened species); torrentfish.

Significance

A representative site for kanuka-totara and puriri-taraire forest on alluvium and one of the best examples in the Ecological District of a watercourse in a pastoral setting where indigenous vegetation is retained, albeit modified. The vegetation provides shade to the Waikawa Stream which is a tributary of the Awanui River, as well as being a seasonal food source for NZ pigeon.

TE RORE WETLAND

Survey no.	O05/007
Survey date	29 November 1994
Grid reference	O05 435 695
Area	2-3 ha approx.
Altitude	40 m asl

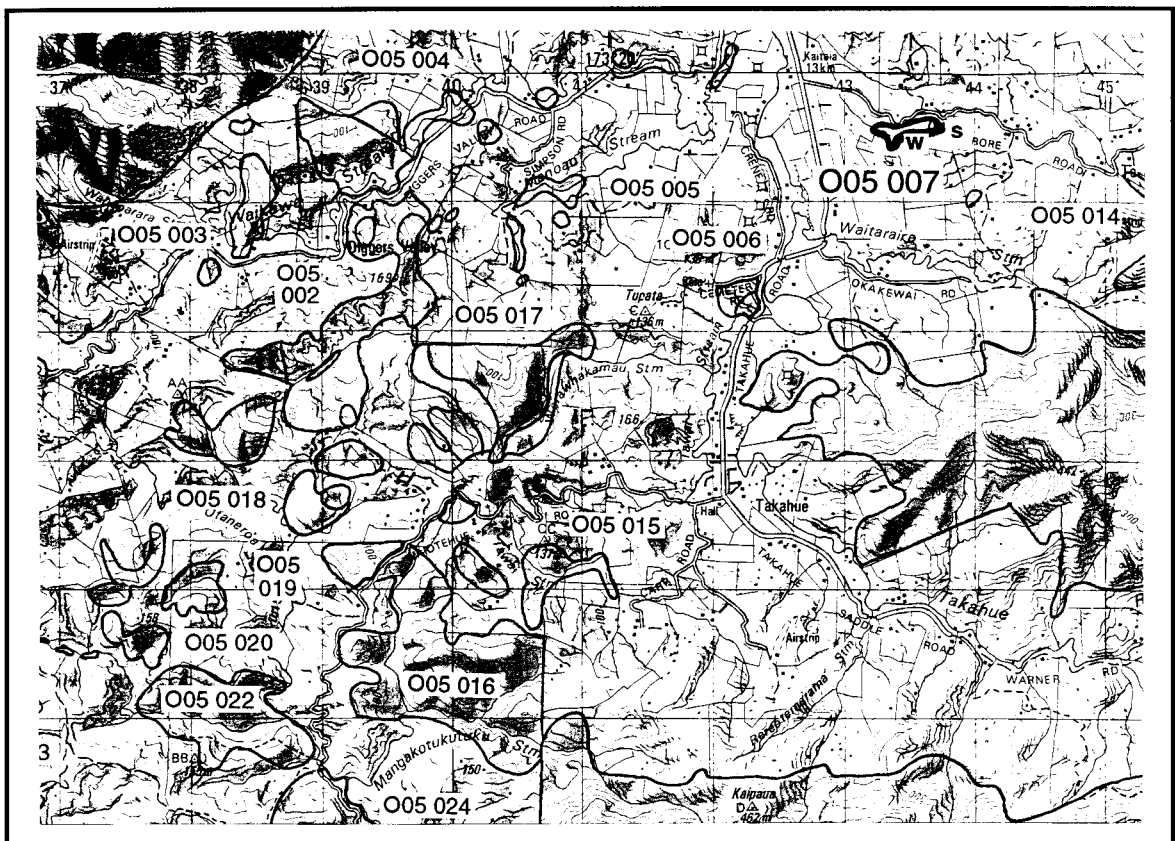


Figure 6. Te Rore Wetland, O05 007
 Each grid is 1000 m x 1000 m and equals 100 ha.
 s = shrubland; w = wetland.



Ecological unit

- (a) Raupo reedland on alluvium
- (b) Flax-cabbage tree shrubland on alluvium

Landform/geology

Wetland in a tributary of the Takahue River. On Holocene alluvium in valley of Mangakahia Complex sandstone lithofacies.

Vegetation

Type (a) Raupo reedland. The wetland is mostly raupo with kiekie, flax, swamp maire, manuka, cabbage tree, pukatea and taraire on the margins.

Type (b) Flax-cabbage tree shrubland. Flax and cabbage tree are common in the remaining area with occasional kiekie, kahikatea and Japanese honeysuckle.

Significant flora

Swamp maire - uncommon in the Ecological District.

Fauna

Not surveyed.

Significance

This is a representative site for both vegetation types with their associated species, even though it is narrow and unfenced. This rare habitat type has been much reduced from its former extent and is uncommon in the Ecological District. Japanese honeysuckle is invading from downstream.

OKAKEWAI RD

Survey no.	O05/008
Survey date	29 November 1994
Grid reference	O05 454 686
Area	18.7 ha
Altitude	220 -320 m asl

Ecological unit

- (a) Towai-taraire forest on hillslope

Landform/geology

Hill country on the margin of a Tangihua Complex igneous massif.

Vegetation

Type (a) Towai-taraire forest with occasional kahikatea, puriri, totara and emergent northern rata.

Fauna

NI brown kiwi (Category A threatened species), NZ pigeon (Category B threatened species).

Significance

Habitat for kiwi and NZ pigeon, and in close proximity to Raetea Forest.

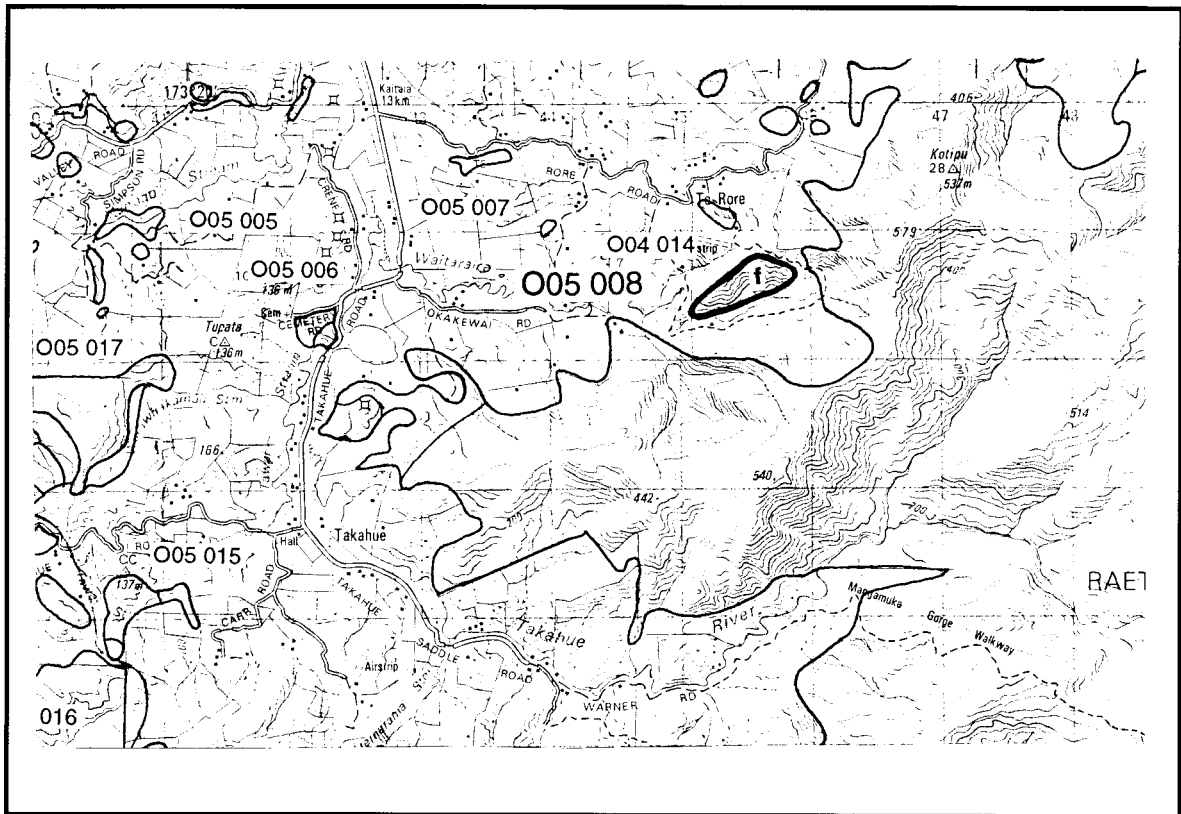


Figure 7. Okakewai Road, O05 008
 Each grid is 1000 m x 1000 m and equals 100 ha. f = forest.

MAUNGATANIWHA FOREST

Survey no. O05/009
 Survey date October-November 1994
 Grid reference O05 515 675, O04 560 700
 Area 13,884 ha [> 50 ha cleared since survey - at Makene Rd and Takahue Saddle Rd]
 Altitude 140-744 m asl

Ecological unit

- (a) Taraire forest on hillslope
- (b) Taraire-towai forest on hillslope
- (c) Towai forest on hillslope
- (d) Towai-totara forest on hillslope
- (e) Puriri-taraire forest on hillslope
- (f) Kahikatea forest on hillslope
- (g) Taraire-nikau forest on hillslope
- (h) Towai-tawa forest on hillslope
- (i) Towai-tawa-taraire forest on hillslope
- (j) Hardwood shrub association on high ridge
- (k) Secondary kanuka forest on hillslope
- (l) Secondary towai forest on hillslope
- (m) Manuka shrubland on hillslope
- (n) Manuka-towai shrubland on hillslope

- (o) Manuka-kanuka shrubland on hillslope
- (p) Towai shrubland on hillslope
- (q) Bracken-ring fern fernland on hillslope
- (r) Tutu shrubland on hillslope
- (s) Swamp maire forest on valley floor
- (t) Kauri forest on ridge

Landform/geology

Hill country of Tangihua Complex igneous rock units.

Vegetation

Information for this site is derived from published reports and reconnaissance survey. However additional vegetation types to those recorded below may be present.

Type (a) Taraire forest. Tall forest is generally widespread on lower slopes:

- Northwest of Takahue it is associated with puriri and kohekohe. Other species present are emergent northern rata and kahikatea, rimu, totara, towai, tawa, karaka, pukatea and titoki.
- In the Mangamuka River catchment, towai and emergent rimu and northern rata are frequent. Other species present are rewarewa, pukatea, rimu, northern rata, kahikatea, tawa, tanekaha, kauri and kawaka. West of the TV transmitter, tawa is also frequent. Also scattered throughout are totara, matai, and puriri.
- At the end of Te Karoa Road towai and puriri are frequent. Other species occurring occasionally are northern rata, emergent rimu, kahikatea, totara, matai, puriri, rewarewa, kauri, tawa, hinau and karaka. On the southern side, (behind Otangaroa Station), puriri, tawa and mamaku are frequent.

Type (b) Towai-taraire forest. Northern rata occurs frequently within this type.

- South of Te Rore, emergent rimu, kahikatea and northern rata are frequent. Also present are totara, puriri, rewarewa, kohekohe and mamaku. Dead northern rata and puriri dieback is apparent.
- East of Waiotehue, the forest is similar but associated species are pukatea, tawa and rewarewa.
- West of Broadwood at higher altitude on the peak Titaha, frequent northern rata and tawa occur.
- North of Broadwood emergent northern rata and kahikatea are frequent. Kauri and rimu emergents also occur occasionally, along with tawa, puriri and rewarewa.
- Between Broadwood and Mangamuka kahikatea is frequent and puriri, rewarewa, totara, northern rata and kauri are occasional. Northern rata is frequent at higher altitudes.
- Midway up the Mangamuka Gorge northern rata is also frequent. Rimu, kahikatea, pukatea and rewarewa are occasional.
- West of the Maungataniwha Trig, a small remnant occurs on the northern face (Tracey Rd) with rewarewa, rimu, totara, kahikatea and tawa scattered throughout.
- Northeast of the Maungataniwha Trig, northern rata and rimu are frequent emergents. Scattered throughout are kauri (on ridge sites), rewarewa, puriri, kahikatea, kohekohe and mamaku.

Type (c) Towai Forest. Taraire occurs frequently in this type.

- At the Mangamuka Gorge summit tawa and taraire are frequent. Rimu and northern rata are emergent and are scattered throughout along with kahikatea and puriri. The understorey is dense and diverse.
- East of Takahue this type is associated with puriri and taraire. Other species present are emergent northern rata and kahikatea, rimu, totara, towai, tawa, karaka, pukatea and titoki.
- The high slopes near the Takahue Saddle. Kawaka is present. To the west northern rata occurs rarely and up to half of it is dead. On the southern side of the Saddle Road northern rata is more frequent and appears healthy. Taraire is frequent. Rimu, northern rata and kahikatea are emergent, and tawa, puriri, mamaku, rewarewa, kohekohe and pukatea are present.
- In the vicinity of the microwave tower, taraire occurs frequently. Other species present are northern rata, totara, kahikatea, rewarewa, matai, kawaka and emergent rimu.

Type (d) Towai-totara forest. Occurs north of Mangamuka with mamaku and kanuka and occasional kahikatea, rimu and puriri.

Type (e) Puriri-taraire forest

- In the valley to the north of Takahue Saddle Rd there is an outlying remnant of puriri-taraire.
- On the lower slopes of the peak Titaha west of Broadwood, puriri is co-dominant with taraire; towai and kohekohe are frequent. Tawa and kowhai also occur in this area.

Type (f) Kahikatea forest. East of Waiotehue is an area of dominant emergent kahikatea with frequent totara and towai and occasional taraire and northern rata. A small stand of secondary kahikatea occurs near the bottom of the hill behind Tracey Rd.

Type (g) Taraire-nikau forest. On the higher slopes above type (f) taraire and nikau are dominant with occasional puriri, northern rata and kahikatea.

Type (h) Towai-tawa forest. At high altitude (>500 m), especially at Raetea, emergent rimu and miro, hinau and heketara are common. Frequently associated species are emergent northern rata, pukatea, towai, and rewarewa. Also occurring are kohekohe, toro and swamp maire. In the sub-canopy Smith's tree fern is abundant and wheki, large-leaved mahoe, five-finger, kohekohe and pigeonwood common in the sub-canopy. Hangehange, kanono and Kirk's tree daisy are common shrubs and at ground level crown fern, *Blechnum fraseri*, bush rice grass and hook sedge are also common. Mosses, filmy ferns and epiphytes are abundant.

Type (i) Towai-tawa-taraire forest. Mid-altitude (300–500 m asl) in Raetea Forest with miro and rimu common emergents over kohekohe and rewarewa. Emergent miro becomes more frequent with altitude, tawa becomes more abundant, taraire less so. Other frequently associated species are emergent kahikatea, northern rata, Hall's totara and pukatea, hinau, rimu, lancewood, kahikatea, heketara and mamaku.

Type (j) High-altitude hardwood shrub association. Above 720 m asl on Reatea summit dense shrubs to 4 m occur including heketara, koromiko, tutu, kiokio, neinei, fuchsia, forest cabbage tree, mountain flax and hangehange. This is the northern limit and only known site in Northland of prickly shield fern.

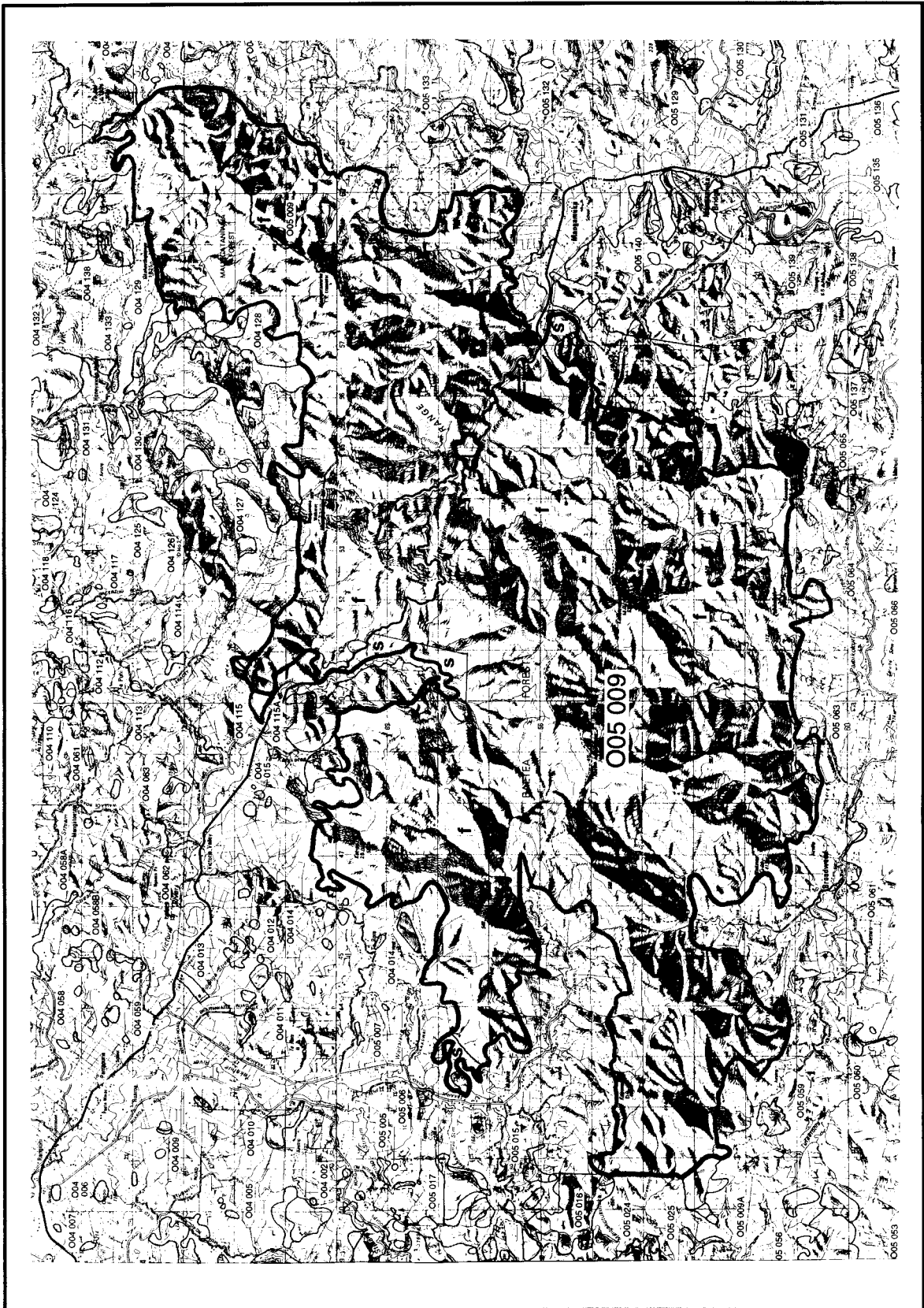
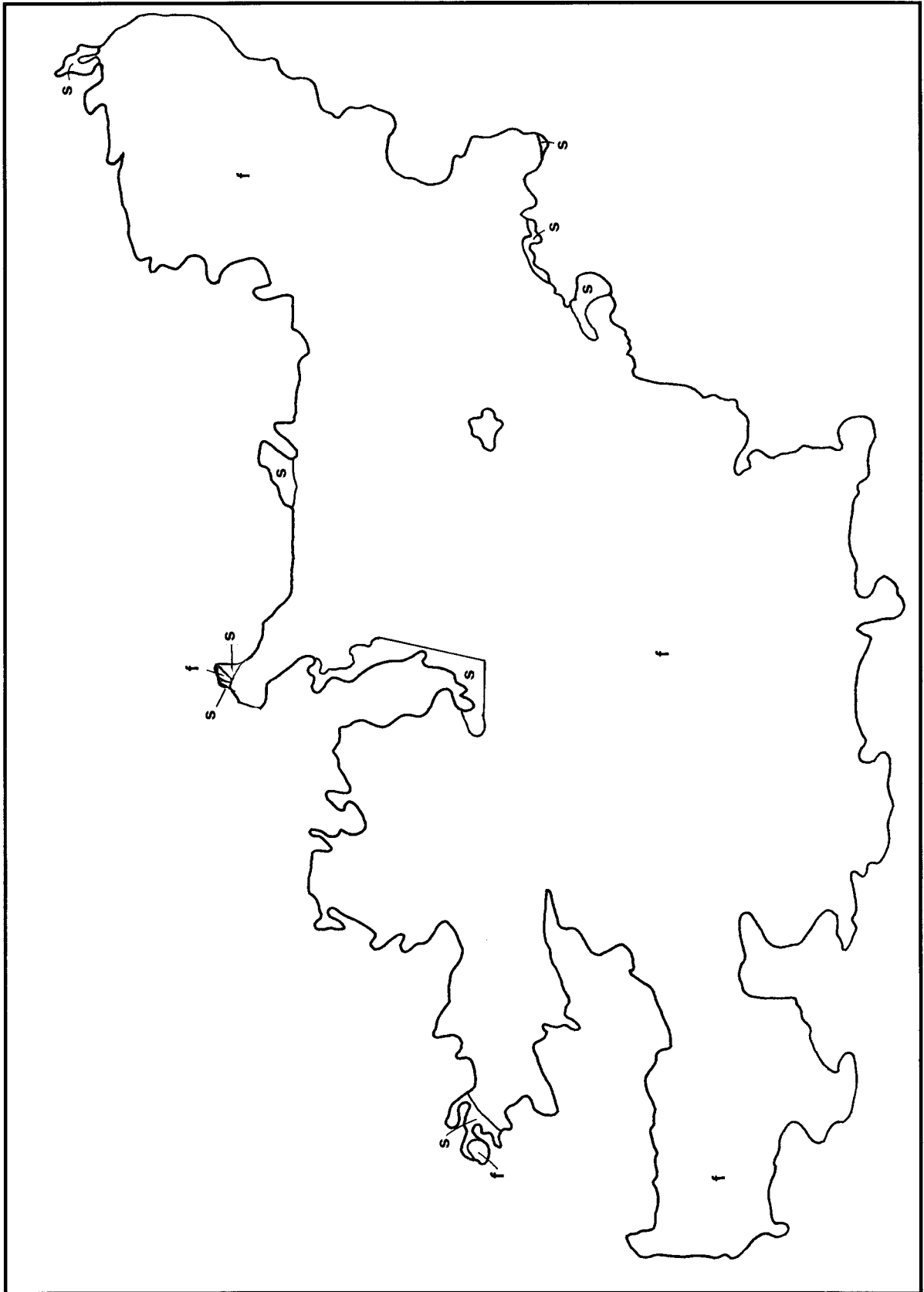


Figure 8 (above and opposite). Maungataniwha Forest, O05 009
 Each grid is 1000 m x 1000 m and equals 100 ha.
 f = forest; s = shrubland.



Type (k) Secondary kanuka forest.

- East of Takahue there is a small area of kanuka forest with scattered kauri, rimu and kahikatea.
- East of Broadwood scattered kahikatea, totara, towai, rewarewa and mamaku are present in second growth near forest margins.

Type (l) Secondary towai forest.

- At the end of Te Karoa Rd, towai dominant secondary forest occurs with rewarewa, five-finger, mamaku and sometimes rimu.
- In the upper Victoria Valley there is a mosaic of regeneration. Much is secondary towai with occasional mamaku, kahikatea, kohuhu, mamangi, puriri and rewarewa. Sometimes kahikatea and mamaku are frequent. The understorey contains wheki, mingimingi, heketara, kiokio, ring fern, ponga and totara seedlings. *Loxsoma cunninghamii* is present.

Type (m) Manuka shrubland.

- At Victoria Valley “managed” stands of kauri occur amongst manuka, and near the highway mahoe, pate, tutu, mapou, mamangi and kohuhu are found scattered within the manuka. Further up the highway rimu and wattle are present.
- On the southern fringes of the forest north of the Mangamuka marae the shrubland is low with emergent pole totara, kauri and kahikatea.
- West of Te Karoa Rd a small amount of low manuka with emergent rewarewa occurs.

Type (n) Manuka-towai shrubland.

- In the vicinity of Kauaepepe (north west of Mangamuka Bridge) on the southern fringe of the forest is towai-manuka with frequent mamaku and tutu and occasional totara, puriri and titoki.
- In the gullies running north below the microwave tower (GR O04 541 704), is towai-manuka shrubland of mixed height with various proportions of ring fern. Totara appears occasionally.
- At Makene Rd, opposite the picnic area and soda spring on SH1 and west of Te Karoa Rd the shrubland is tall. Associated species are rewarewa, kahikatea, mamaku, cabbage tree, mahoe, pate, puriri, and five-finger.

Type (o) Manuka-kanuka shrubland. At Victoria Valley there are extensive areas of lower manuka-kanuka shrubland between 3 and 6 m with a semi-closed canopy. Towai may constitute up to 10% of the canopy with occasional rimu, rewarewa, kahikatea and mamaku. In the understorey tutsan and ring fern are common, and sometimes locally abundant. Wheki, white rata vine and bush lawyer are also frequent. The ground orchid *Chiloglottis cornuta* is present.

- At Takahue there is an extensive area of manuka-kanuka shrubland with occasional totara, puriri and tree fern.
- On the forest edge east of Broadwood, low manuka-kanuka with occasional towai and mamaku occurs.
- Opposite the picnic area and soda spring on SH 1, beneath the high tension lines, there is tall manuka-kanuka shrubland with scattered rimu, tanekaha and rewarewa.
- On the forest edge northeast of Mangamuka there is both tall manuka-kanuka shrubland with occasional totara and mamaku, and low manuka-kanuka shrubland with scattered totara, kauri and kahikatea.

Type (p) Towai shrubland.

- On the margins south of Te Rore, is low towai shrubland with tutu, mahoe, flax and tree fern.
- At the head of Takahue Saddle Rd, is an extensive area of tall towai shrubland with frequent mamaku.
- East of Waiotehue, the forest edge is tall towai shrubland.
- In the gullies running north below the microwave tower, is towai shrubland between 3 and 6 m tall. Behind Tracey Rd, it contains manuka, mamaku, tutu, bracken and Mexican devilweed. There is the occasional puriri.

Type (q) Bracken-ring fern fernland.

- In the upper Victoria Valley there are extensive areas of bracken and ring fern with scattered manuka, towai, totara, puriri and white rata vine, which have yet to form a closed canopy.
- East of Waiotehue, an area of bracken and ring fern links a remnant of towai-taraire to the main forest.

Type (r) Tutu shrubland. Tutu shrubland occurs near the forest boundary between Te Karoa and Shepherd Roads. Manuka, mamaku and towai are frequent, with scattered rewarewa and *Gabnia* sp.

Type (s) Swamp maire. Small areas on swampy ground with scattered emergent rimu and kahikatea. Parataniwha is abundant in the understorey.

Type (t) Kauri forest. Two small knolls in the Manganuiowae Ecological Area dominated by a large mature kauri with several pole and sapling kauri. Emergent rimu are common with kahikatea, northern rata, Hall's totara and miro frequent, and kawaka also present (Willettts 1985).

Significant flora

King fern - Declining.

Prickly shield fern - northern limit and only Northland record.

Northern limit of pokaka, tawari, kaikomako, *Raukaua anomalus*, *Astelia* cf. *nervosa*.

Carmine rata, makamaka, *Loxsoma cunninghamii*, *Hymenophyllum armstrongii*, *H. lyallii* - all regionally significant.

Kawaka notable and swamp maire uncommon in the Ecological District.

Fauna

NI brown kiwi (Category A threatened species), NZ pigeon (Category B threatened species), NI kokako (Category B threatened species) possibly present, NI tomtit (regionally significant), migrant long-tailed cuckoo (regionally significant); kauri snail (Category C threatened species); short-jawed kokopu (Category A threatened species), banded kokopu, koaro (both Category C threatened species); bats reported (species unconfirmed - both threatened).

Significance

A very large habitat, including the northernmost area in New Zealand of unmodified forest and an area of dominant emergent kahikatea forest, which is rare in Northland. Frequent northern rata is a feature of this forest, which contains a wide diversity of species including regionally and nationally threatened species, and it is a very important site for the long-term maintenance

of NI brown kiwi and NZ pigeon populations. It is one of only a few sites in Northland where the threatened freshwater fish, short-jawed kokopu, has been recorded.

It is a representative site for taraire forest, taraire-towai forest, taraire-nikau forest, puriri-taraire forest, primary and secondary towai forest, towai-taraire-tawa forest, towai-tawa forest, puriri forest, towai-totara forest, kahikatea forest, kauri forest, swamp maire forest, manuka shrubland, manuka-towai shrubland and towai shrubland, and is the only site of a high-altitude hardwood shrub association in the Ecological District.

The Department of Conservation administers 7793.6 ha of this site as Raetea Forest Conservation Park (3237.3 ha including 1760 ha of the Manganuiowae Ecological Area), Mangamuka Scenic Reserve (2944.5 ha) and Addition (160.4 ha), Pukemiro Block Scenic Reserve (191.8 ha), Waitawa Scenic Reserve (43.1 ha), and Maungataniwha Forest Conservation Park (1216.5 ha).

WERAWHAKAMAU STREAM

Survey no.	O05/017
Survey date	30 November, 20 December 1994
Grid reference	O05 405 675
Area	87.6 ha
Altitude	70-160 m asl

Ecological unit

- (a) Raupo reedland on alluvium
- (b) Secondary kahikatea on alluvium
- (c) Manuka-kanuka shrubland on hillslope
- (d) Towai-kanuka shrubland on hillslope
- (e) Taraire forest on hillslope
- (f) Taraire-towai forest on hillslope

Landform/geology

Hillslope in Mangakahia Complex mudstone.

Vegetation

Type (a) Raupo reedland. In the north-west corner is a raupo wetland in the valley bottom which joins this site to O05/002 Diggers Valley.

Type (b) Secondary kahikatea forest (not mapped). A small stand occurs near Type (a).

More than three-quarters of the site comprises shrubland:

Type (c) Manuka-kanuka shrubland. Shrubland between 2 and 4 m in height occurs on the southern fringe with occasional puriri, kahikatea, cabbage tree and towai. Taller shrubland with occasional cabbage tree and totara also occurs.

Type (d) Towai-kanuka shrubland. With scattered cabbage tree, rimu, mamaku, rewarewa, kahikatea and kauri or with occasional puriri, kahikatea and totara occurs in the central area.

About 20% of the site comprises forest:

Type (e) Taraire forest. Occurs in the east. Puriri is frequent and northern rata, kahikatea and rewarewa occasional.

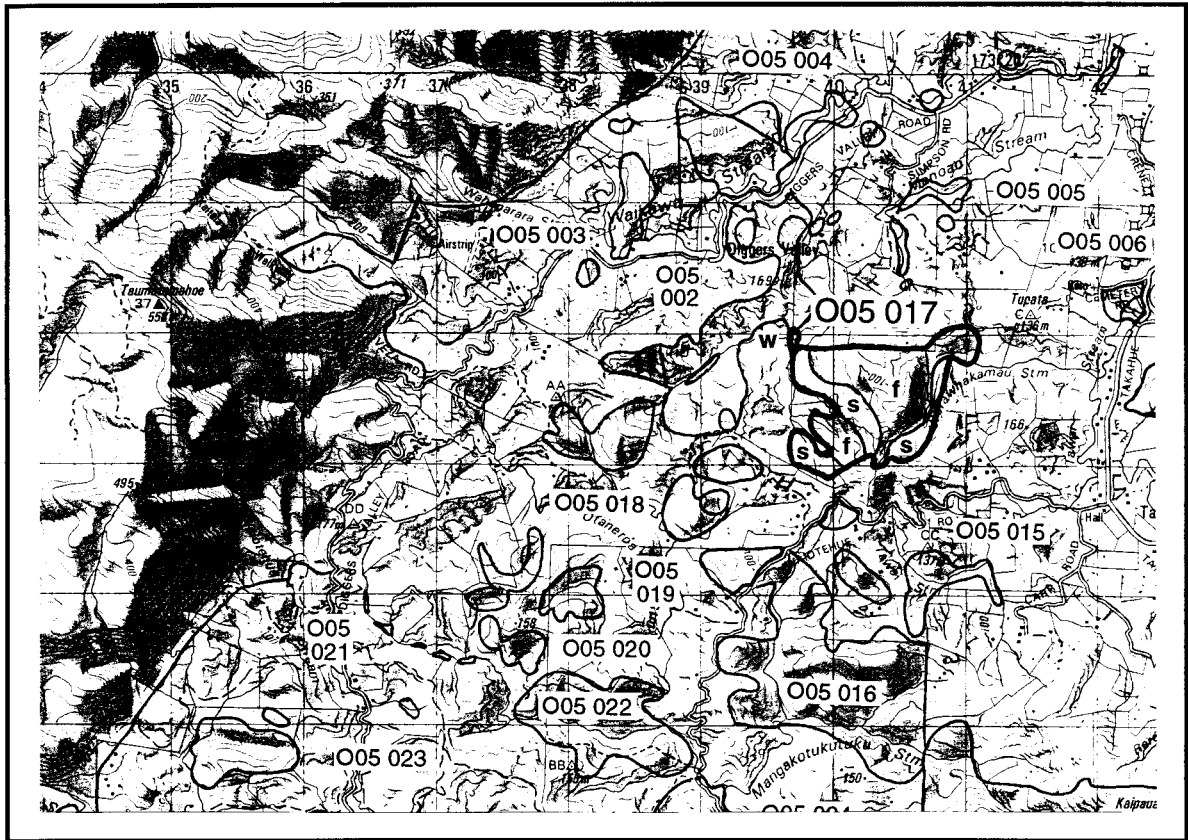
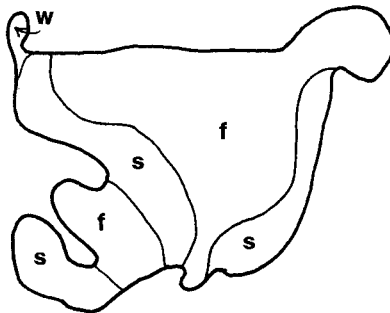


Figure 9. Werawhakamau Stream, O05 017
 Each grid is 1000 m x 1000 m and equals 100 ha.
 f = forest; s = shrubland; w = wetland.



Type (f) Towai-taraire forest. Occurs in a small pocket in the south west with frequent kahikatea and puriri.

Fauna

NI brown kiwi (Category A threatened species).

Significance

A large area containing several vegetation types with good examples of advanced regeneration. A representative site for manuka-kanuka and towai-kanuka shrubland.

Habitat for kiwi.

ORAWAU

Survey no.	O05/065
Survey date	27 February 1995
Grid reference	O05 542 600
Area	31.6 ha
Altitude	120-300 m asl

Ecological unit

- (a) Secondary towai forest on hillslope
- (b) Puriri forest on hillslope
- (c) Tutu shrubland on steep hillslope

Landform/geology

Hill country on margin of igneous massif of Tangihua Complex.

Vegetation

Type (a) Secondary towai forest. About half of the area is towai dominant with frequent puriri and taraire. Also present are rimu, rata, tawa, rewarewa and lancewood.

Type (b) Puriri forest. A slightly smaller area has abundant puriri with frequent towai and occasional kahikatea, kowhai, taraire, titoki, kohekohe, totara, rewarewa, tawa, swamp maire, kohuhu, small-leaved milk tree, fuchsia, mapou and mahoe.

The understorey contains a variety of shrubs including fuchsia, kawakawa, and kowhai seedlings.

Type (c) Tutu shrubland (not mapped).

The remainder (about 5% around the quarry face) is tutu.

Significant flora

Swamp maire - uncommon in the Ecological District.

Fauna

NI brown kiwi (Category A threatened species) in low numbers; NZ pigeon (Category B threatened species); kauri snail (Category C threatened species).

Significance

One of the largest areas (approximately 15 ha) of puriri dominance (an uncommon vegetation type) in the Ecological District, including some very large specimens. The site also contains a wider diversity of other species than is found in association with puriri at other sites.

Habitat for threatened fauna species. Puriri is particularly important as a summer food for NZ pigeon.

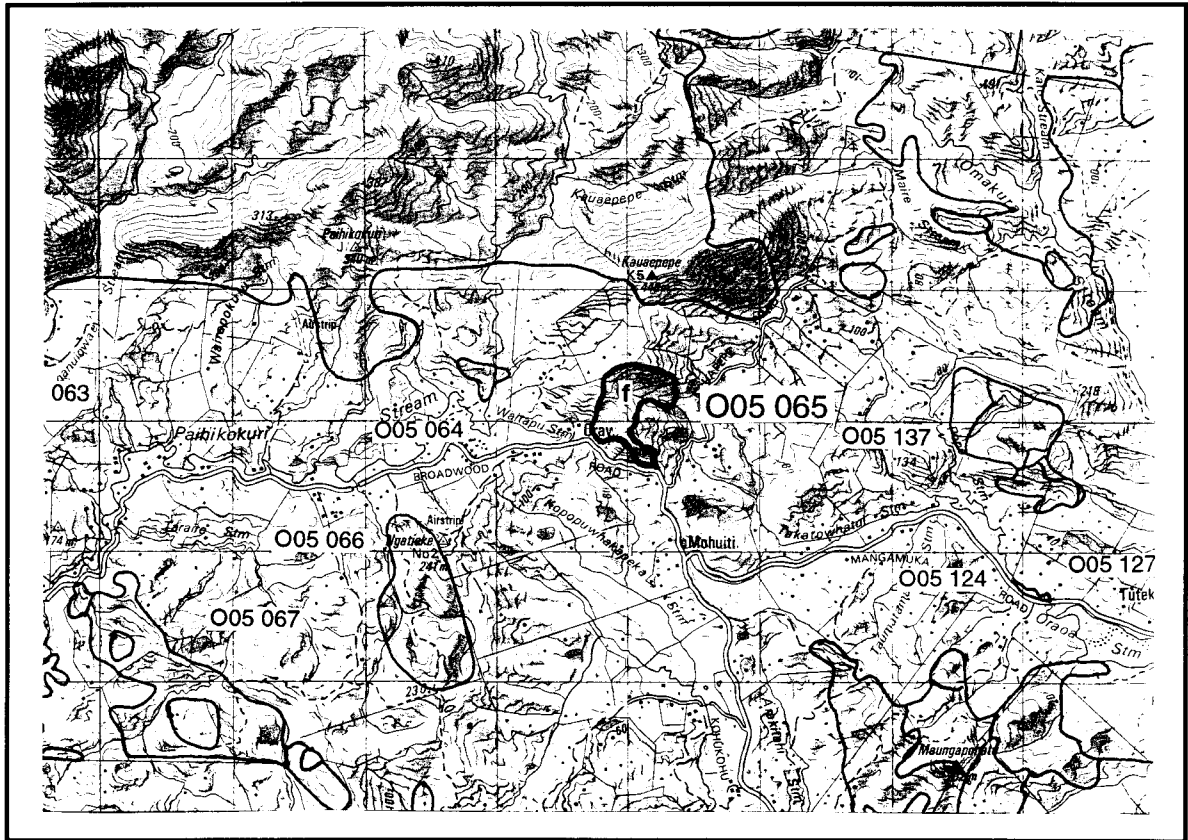


Figure 10. Orawau, O05 065

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

f = forest.



TUTEKEHUA BUSH

Survey no. O05/127
 Survey date 23 June 1994
 Grid reference O05 585 588
 Area 5.9 ha
 Altitude 0-30 m asl

Ecological unit

(a) Puriri-totara-tairare forest on limestone knoll and hillslope

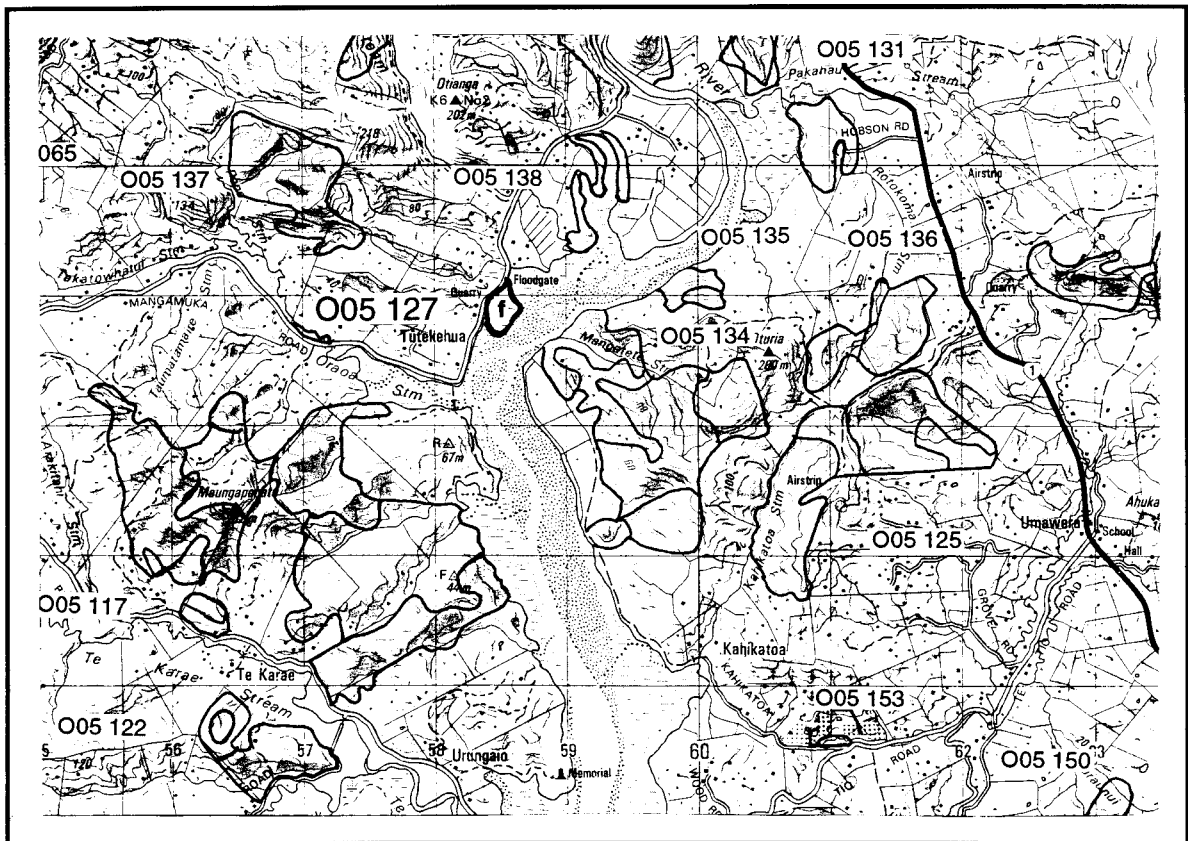


Figure 11. Tutekehau Bush, O05 127
 Each grid is 1000 m x 1000 m and equals 100 ha. f = forest.

Landform/geology

Knoll of Motatau Complex limestone and fringing Quarternary estuarine deposits on the banks of the Mangamuka River.

Vegetation

Coastal riparian forest dominated by puriri, totara and taraire with common kanuka, nikau, kahikatea and kohekohe and occasional rimu, tanekaha, white maire, pukatea, kohuhu, rewarewa, karaka, titoki and kauri.

Fauna

Not surveyed.

Significance

A mature riparian forest with a diverse assemblage of forest tree species bordering mangrove forest which is uncommon in the Ecological District, Region and nationally. This is the only site of its type in the Ecological District.

TURANGAHOU TRIG BUSH

Survey no.	O05/129
Survey date	15 June 1994
Grid reference	O05 624 634
Area	19.9 ha
Altitude	20-190 m asl

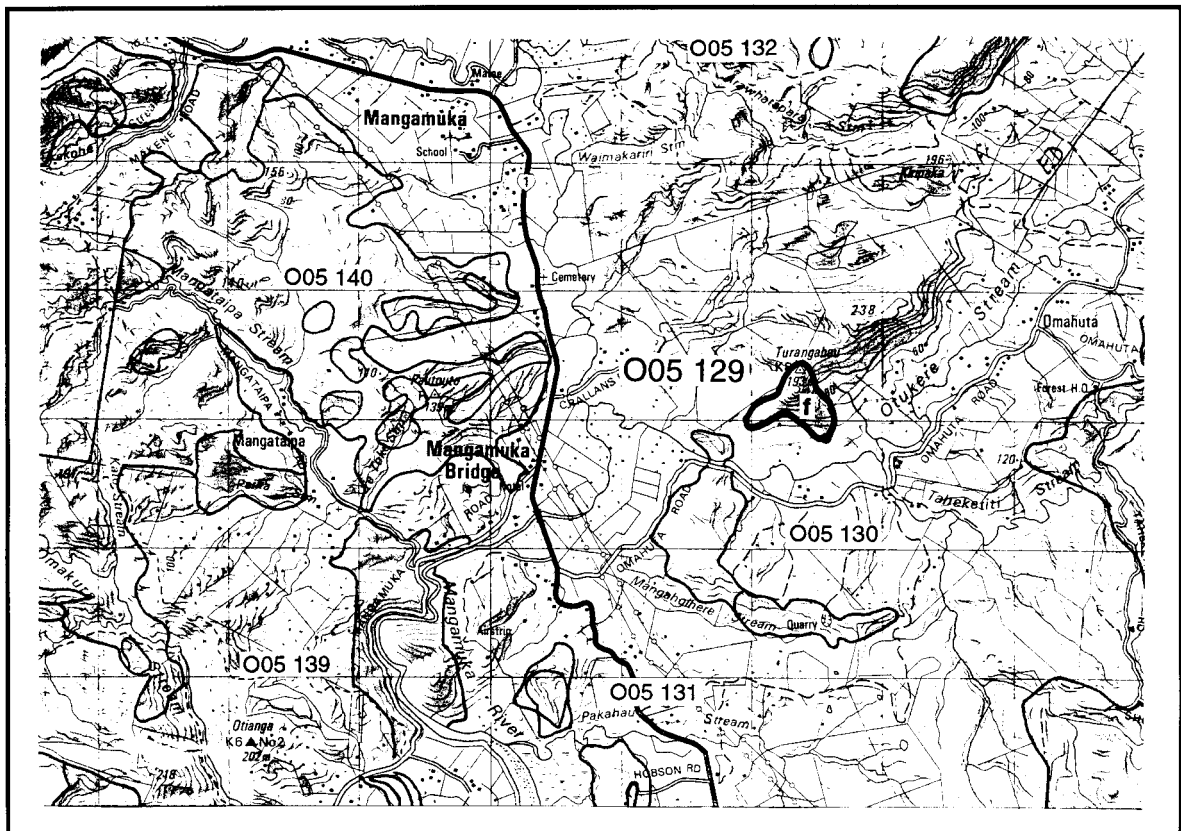


Figure 12. Turangahou Trig Bush, O05 129
 Each grid is 1000 m x 1000 m and equals 100 ha. f = forest.

Ecological unit

- (a) Taraire-karaka forest on moderate hillslope and steep scarp
- (b) Taraire-nikau forest on steep hillslope

Landform/geology

Bluff of Motatau Complex glauconitic sandstone and an area of rock talus downslope.

Vegetation

The steeper sites are dominated by taraire and karaka with smaller amounts of puriri, kahikatea and mahoe. Other species present are tawa, nikau, towai, tanekaha, *Griselinia lucida*, mamaku, northern rata, pukatea, rewarewa and titoki.

Fauna

Not surveyed but presence of NI brown kiwi (Category A threatened species) likely as present in adjacent area.

Significance

Steep sedimentary bluffs with uncommon forest types and associated underlying geomorphology, being a representative site for both vegetation types.

The site provides a partial linkage between Puketi/Omahuta and Raetea Forest to the west.

MANGAHOIHERE STREAM BUSH

Survey no. O05/130
 Survey date 15 June 1994
 Grid reference O05 617 618
 Area 81.5 ha
 Altitude 20-120 m asl

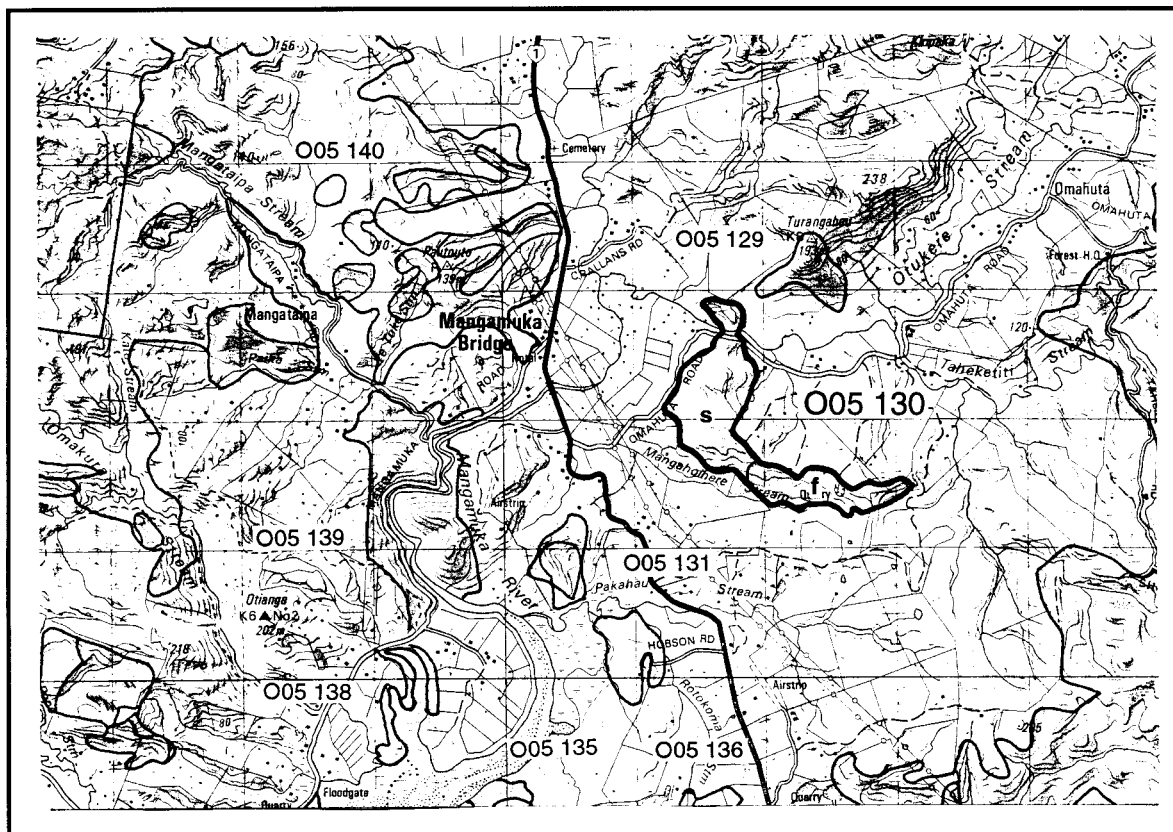
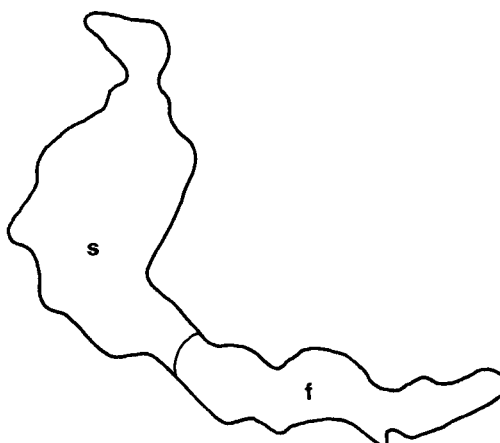


Figure 13. Mangahoihere Stream Bush, O05 130

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

f = forest; s = shrubland.



Landform/geology

Ridge of Motatau Complex Limestone, glauconitic sandstone and calcareous mudstone, and Mangakahia complex siliceous and neo-siliceous mudstone.

Ecological unit

- (a) Secondary kahikatea-kanuka-totara forest on moderate rolling slope
- (b) Towai-kanuka forest on steep hillslope
- (c) Kanuka shrubland on moderate hillslope
- (d) Secondary kanuka-totara-towai forest on moderate hillslope

Vegetation

Type (a) Secondary kahikatea-kanuka-totara forest. Comprises 25% of the area with frequent towai and occasional puriri, taraire, tanekaha and cabbage tree.

Type (b) Towai-kanuka forest. About one-third of the area with occasional rewarewa, tanekaha, mamaku, taraire and tawa.

Type (c) Kanuka shrubland. Cabbage tree and towai are occasional. Comprises about 10% of the area.

Type (d) Secondary kanuka-totara-towai forest. Comprises 35% of the area. Tanekaha is frequent and cabbage tree and mamaku occasional.

Fauna

Kauri snail (Category C threatened species) (Kingett-Mitchell 1997). Presence of NI brown kiwi (Category A threatened species) likely as present in adjacent area.

Significance

Contains a range of secondary vegetation types on a diversity of rock types and is a representative site for towai-kanuka forest, kahikatea-kanuka-totara forest and kanuka shrubland.

The site's close proximity to the large Puketi-Omahuta Forest complex, which is being intensively managed, gives it strategic importance for species such as kiwi and NZ pigeon which may be dispersing. It performs a partial linkage function to forests in the west.

HOBSON RD BUSH

Survey no.	O05/131
Survey date	15 June 1994
Grid reference	O05 608 606
Area	41.6 ha
Altitude	0-100 m asl

Ecological unit

- (a) Kanuka forest on rolling and steep hillslope
- (b) Kanuka-cabbage tree-kahikatea-manuka shrubland on estuarine margin

Landform/geology

Coastal hills of Mangakahia Complex siliceous and non-siliceous mudstone.

Vegetation

Type (a) Kanuka forest. Secondary hill country forest dominated by kanuka. Additional species associated with the hill country forest include tanekaha,

cabbage tree, towai, kohuhu, mamangi, kowhai, puriri, tawa, rimu, kauri, rewarewa and mamaku.

Type (b) Kanuka-cabbage tree-kahikatea-manuka shrubland. Strong representation of cabbage tree, kahikatea and manuka on the flat saltmarsh margins.

Fauna

Not surveyed.

Significance

A sequence from saltmarsh to forest and a representative site for both vegetation types. Sequences of this nature are rare in Northland and nationally.

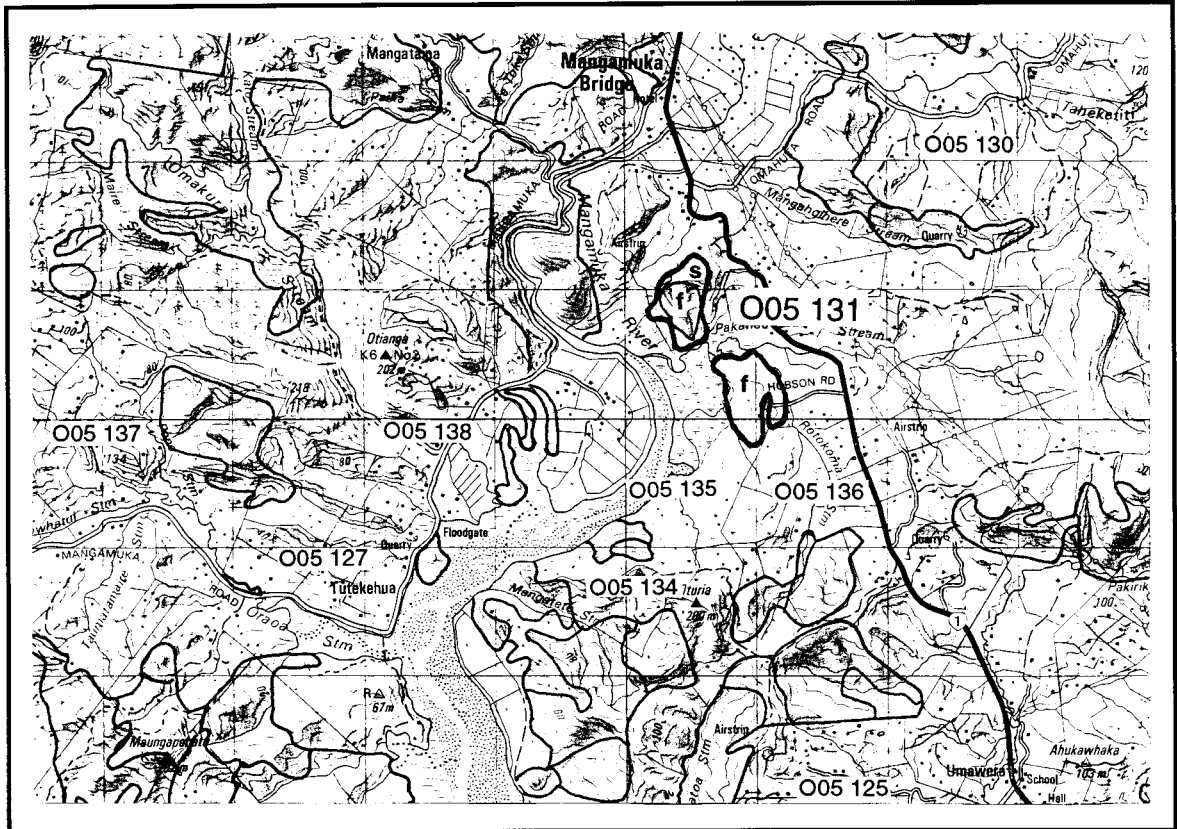
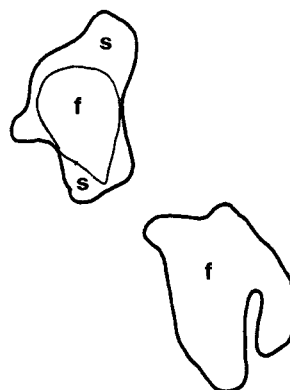


Figure 14. Hobson Road Bush, O05 131

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

f = forest; s = shrubland.



The saltmarsh proper is more closely linked with the Hokianga Ecological District and is covered by that report under the general Hokianga Harbour site description. However, saltmarsh of this size and quality is now rare within the Hokianga Harbour and this site is one of the few, and probably the best, representations of its type within the Maungataniwha Ecological District therefore it warrants mention of its values here as well.

RATAKAMARU

Survey no. O05/132
Survey date 24 November 1994
Grid reference O05 620 665
Area 1500 ha [> 200 ha of this site has been cleared since 1995]
Altitude 20-290 m asl

Ecological unit

- (a) Manuka shrubland on hillslope
- (b) Taraire-towai forest on hillslope
- (c) Taraire forest on hillslope
- (d) Taraire-kahikatea forest on hillslope
- (e) Secondary totara forest on hillslope

Landform/geology

Hill country with a prominent north-east trending ridge system. Much of this area is underlain by Motatau Complex calcareous mudstone, but limestone is present in the southwest, and Mangakahia Complex mudstones (siliceous and non-siliceous) overlap in a belt between Ratakamaru and Kauri Pa Rd.

Vegetation

Type (a) Manuka shrubland. Occurs on the margin above the Te Horu Stream. The shrubland is between 2 and 6 m tall with scattered ponga, kahikatea, totara and wattle.

Type (b) Taraire-towai forest. Occurs in the west with occasional rimu, kahikatea, rewarewa, totara and northern rata.

Type (c) Taraire forest. Occurs on the southern side of the range with towai, tawa and puriri all occurring frequently. Kauri, rimu, northern rata, totara and kahikatea are all occasional emergents.

Type (d) Taraire-kahikatea forest. An outlying remnant to the south is largely taraire and kahikatea with occasional nikau and puriri.

Type (e) Secondary totara forest. Comprises about one-third of the small remnant to the south.

Fauna

NI brown kiwi (Category A threatened species). NZ pigeon (Category B threatened species) likely, as the site is contiguous with Omahuta Forest.

Significance

A large area of tall forest in which the emergent structural level is retained, and a representative site for taraire forest, towai-taraire forest and manuka shrubland.

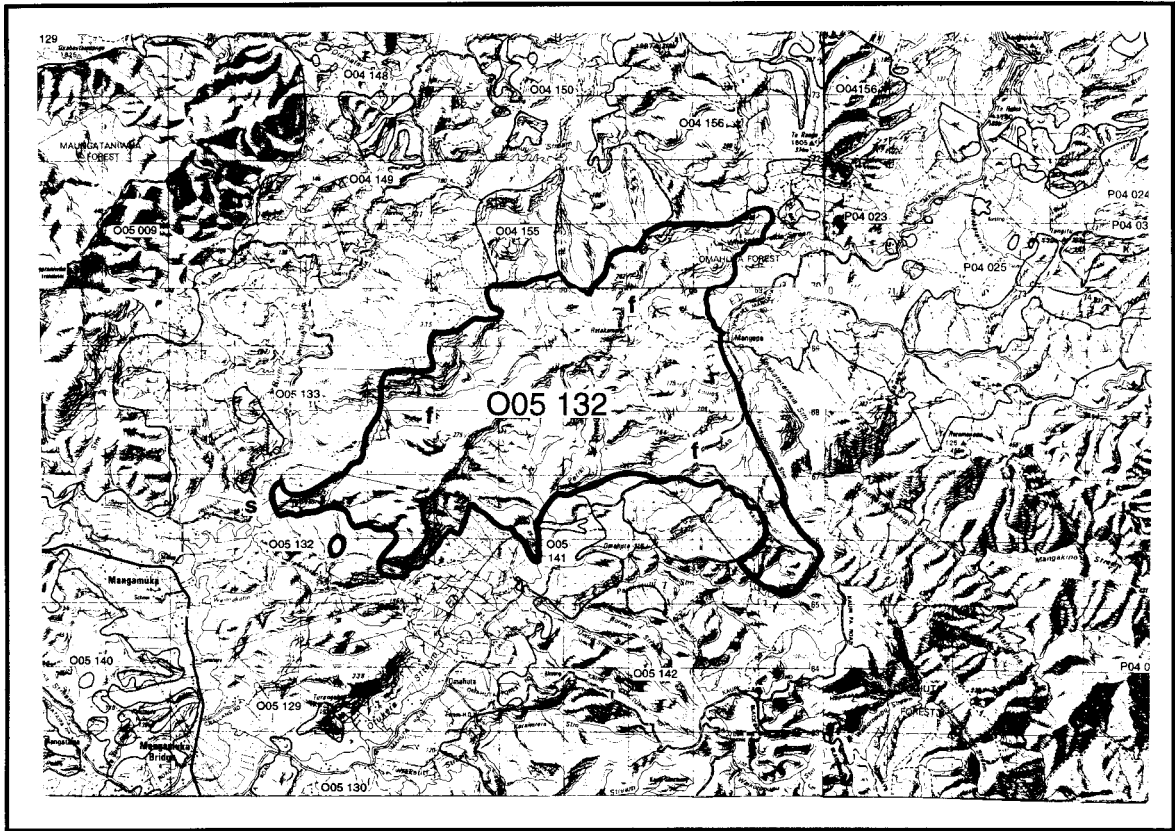
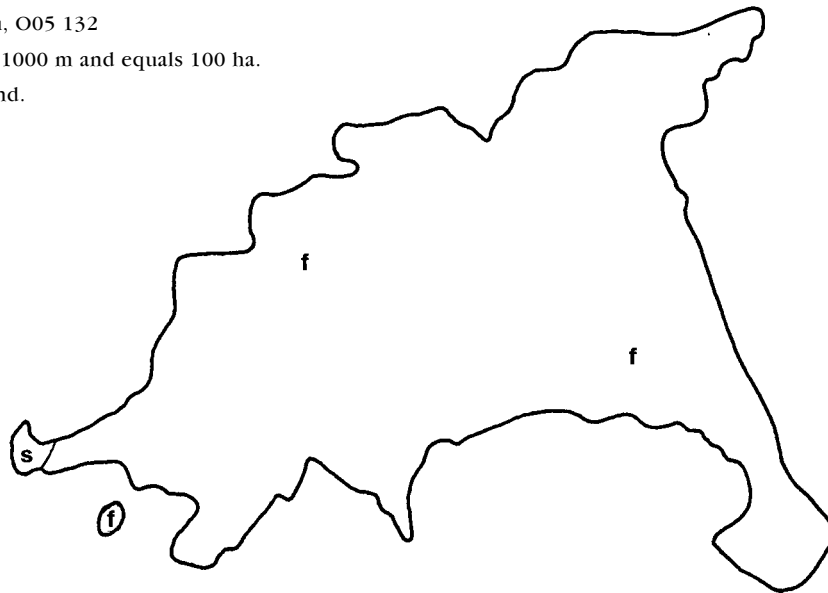


Figure 15. Ratakamaru, O05 132

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

f = forest; s = shrubland.



It is contiguous with Omahuta Forest in the Puketi Ecological District and the linkage augments the values of both sites, including threatened species dispersal.

OPUREHU RIVER

Survey no. O05/133
Survey date 24 November 1994
Grid reference O05 615 680
Area 34.1 ha
Altitude c. 40-120 m asl

Ecological unit

- (a) Secondary totara forest on river bank
- (b) Tanekaha-kauri-kanuka forest on hillslope

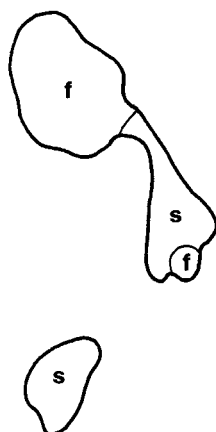
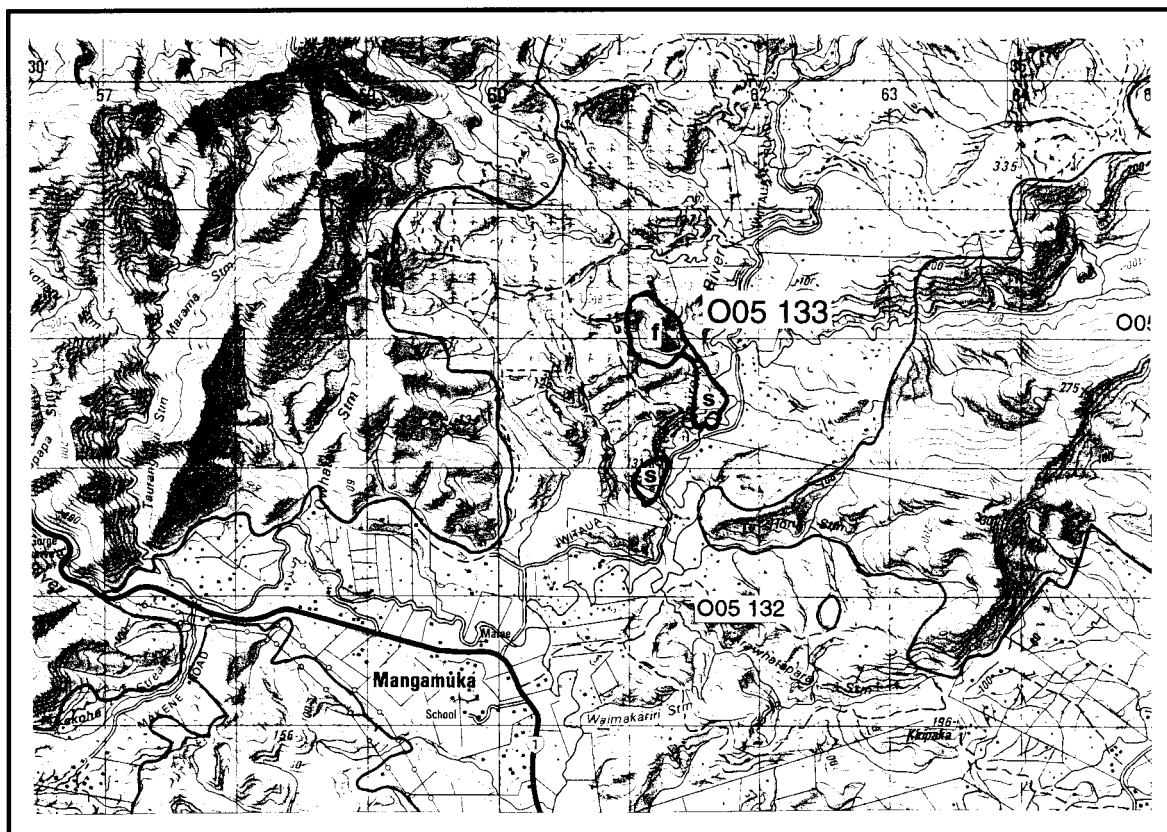


Figure 16. Opurehu River, O05 133

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

f = forest; s = shrubland.

- (c) Manuka shrubland on hillslope
- (d) Manuka-tanekaha shrubland on hillslope
- (e) Taraire forest on hillslope
- (f) Towai shrubland on hillslope

Landform/geology

Hill country on Mangakahia Complex siliceous mudstone.

Vegetation

Type (a) Secondary totara forest (not mapped). Along the banks of the Opurehu River, totara is abundant with occasional kahikatea, titoki, taraire and northern rata.

Type (b) Tanekaha-kanuka-kauri secondary forest. Occurs to the west on the edge of the pine forest. Totara, rimu, tawa and rewarewa also occur.

Type (c) Manuka shrubland. Shrubland between 4 and 6 m tall with frequent kauri and tanekaha and scattered totara, rewarewa, tawa, mamaku, rimu, kahikatea, taraire and northern rata adjoins type (b). On the margin of the farmland is some lower manuka.

The southern area of vegetation is mainly manuka shrubland about 4-6 m tall. Totara is frequent and tanekaha and kauri occasional.

Type (d) Manuka-tanekaha shrubland. In the southwestern part of Type (c) tanekaha is common and rewarewa, totara and towai also occur.

Type (e) Taraire forest. Near the river is a rather senescent remnant of frost damaged taraire with occasional rimu, kahikatea, kauri, tanekaha, rewarewa, cabbage tree, totara and pukatea.

Type (f) Towai shrubland. Further away from the road, abutting the south of the pine plantation, is tall towai shrubland in which manuka is common, bracken frequent, and mamaku occasional.

Fauna

NI brown kiwi (Category A threatened species) are likely to be present as the site is contiguous through pines to Raetea Forest.

Significance

The site is contiguous through the pine plantation with Raetea Forest.

It is a representative site containing small but vigorous stands of manuka shrubland and manuka-tanekaha shrubland and is the only example in the Ecological District of secondary tanekaha-kauri-kanuka forest.

OTURIA BUSH

Survey no.	O05/134
Survey date	14 June 1994
Grid reference	O05 595 580
Area	157.7 ha
Altitude	0-160 m asl

Ecological unit

- (a) Kanuka shrubland on hillslope
- (b) Secondary totara-kahikatea-kanuka forest on rolling slope
- (c) Puriri-kowhai forest on rolling slope

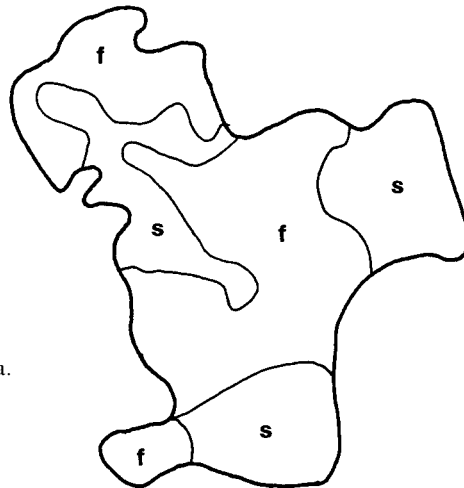
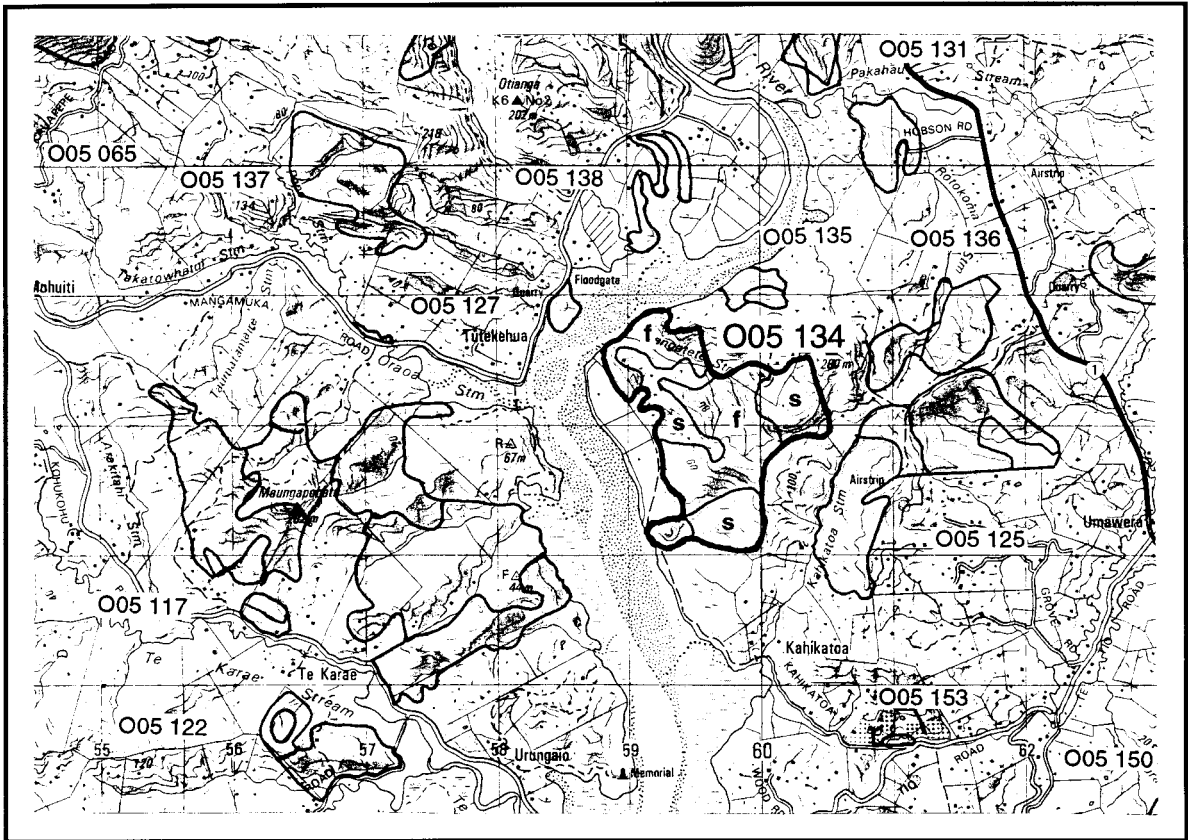


Figure 17. Oturia Bush, O05 134
 Each grid is 1000 m × 1000 m and equals 100 ha.
 f = forest; s = shrubland.

Landform/geology

Coastal hills of predominantly Motatau Complex limestone with an area of Mangakahia Complex sandstone in the south.

Vegetation

Type (a) Tall kanuka shrubland. Kahikatea and totara are frequently occurring with occasional towai, tanekaha, puriri, mamaku and matai comprises about half of the site.

Type (b), secondary forest dominated by kanuka, totara and kahikatea comprises over one-third of the site. Puriri is occasional.

Type (c) Puriri-kowhai forest. The remaining 15% is puriri and kowhai dominant with common kahikatea and karaka and occasional kauri, nikau, titoki, tanekaha, tawa, taraire, cabbage tree, totara and matai.

Fauna

NI brown kiwi (Category A threatened species).

Significance

Partly fenced and of a large size, this forest remnant is closely associated with several other similar remnants both within the Maungataniwha and adjoining Hokianga Ecological Districts. It exhibits altitudinal sequences and some riparian values. It is an important element in the chain of forest remnants extending from Omahuta to Tapuwae forests.

It is the only site of puriri-kowhai forest in the Ecological District, and is a representative site for totara-kahikatea-kanuka forest and kanuka shrubland.

OTURIA WAHI TAPU BUSH

Survey no. O05/135
Survey date 15 June 1994
Grid reference O05 600 591
Area 10.8 ha
Altitude 0-100 m asl

Ecological unit

(a) Kanuka forest on steep hillslope

Landform/geology

Coastal hillslope of Motatau Complex limestone.

Vegetation

Mainly dominated by kanuka, this secondary forest remnant has as associated canopy species kahikatea, totara and puriri commonly occurring, with occasional tawa, cabbage tree, nikau and kowhai.

Fauna

Not surveyed.

Significance

Steep coastal riparian face which is a representative site of kanuka forest on limestone. The site also has cultural significance to the tangata whenua.

ROTOKOMA STREAM BUSH

Survey no. O05/136
Survey date 15 June 1994
Grid reference O05 615 588
Area 48 ha
Altitude 30-100 m asl

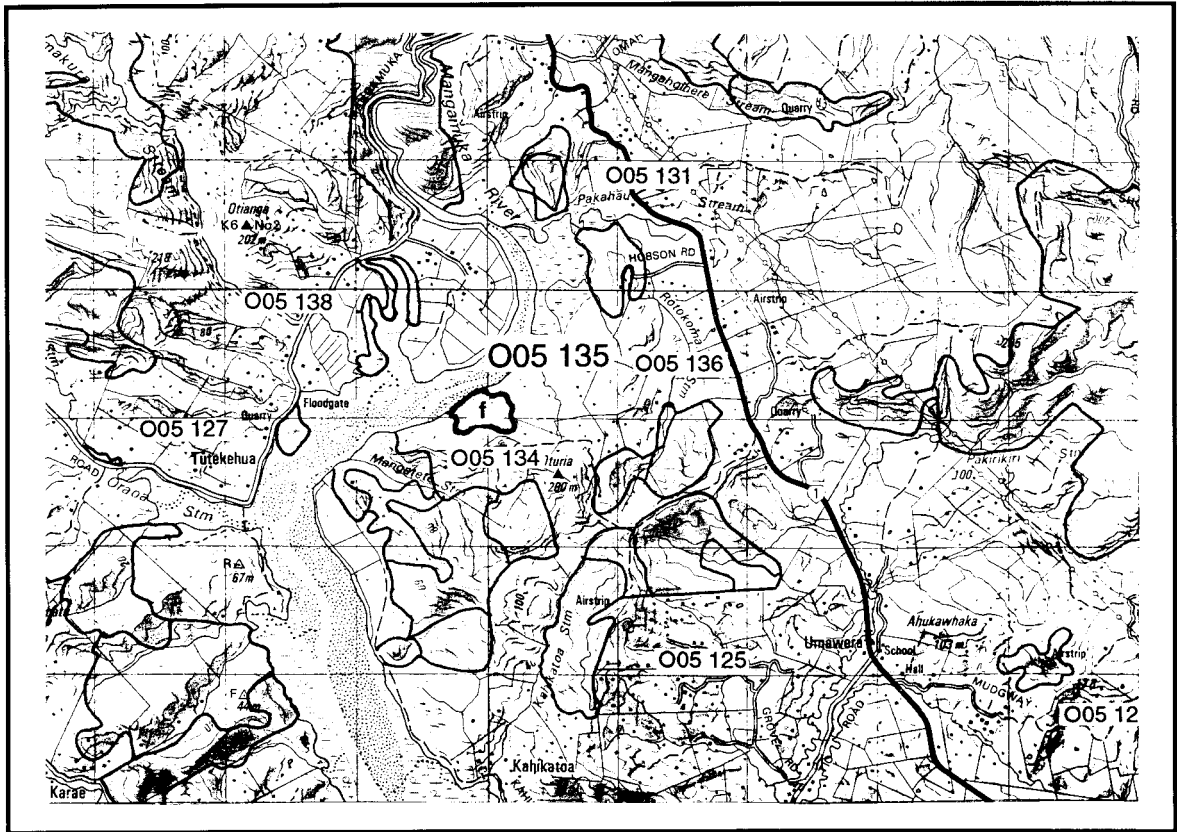


Figure 18. Oturia Wahi Tapu Bush, O05 135
 Each grid is 1000 m x 1000 m and equals 100 ha.
 f = forest.



Ecological unit

- (a) Secondary kanuka-totara forest on moderate hillslope
- (b) Raupo reedland in stream valley

Landform/geology

Valley of Mangakahia Complex mudstone and sandstone lithofacies, with a freshwater wetland along Rotokoma Stream.

Vegetation

A kanuka and totara dominated secondary forest remnant running into a raupo dominant freshwater wetland.

Type (a) Secondary kanuka-totara forest. Associated hillslope canopy species include kahikatea, tanekaha, tawa, mahoe, towai, and mamaku.

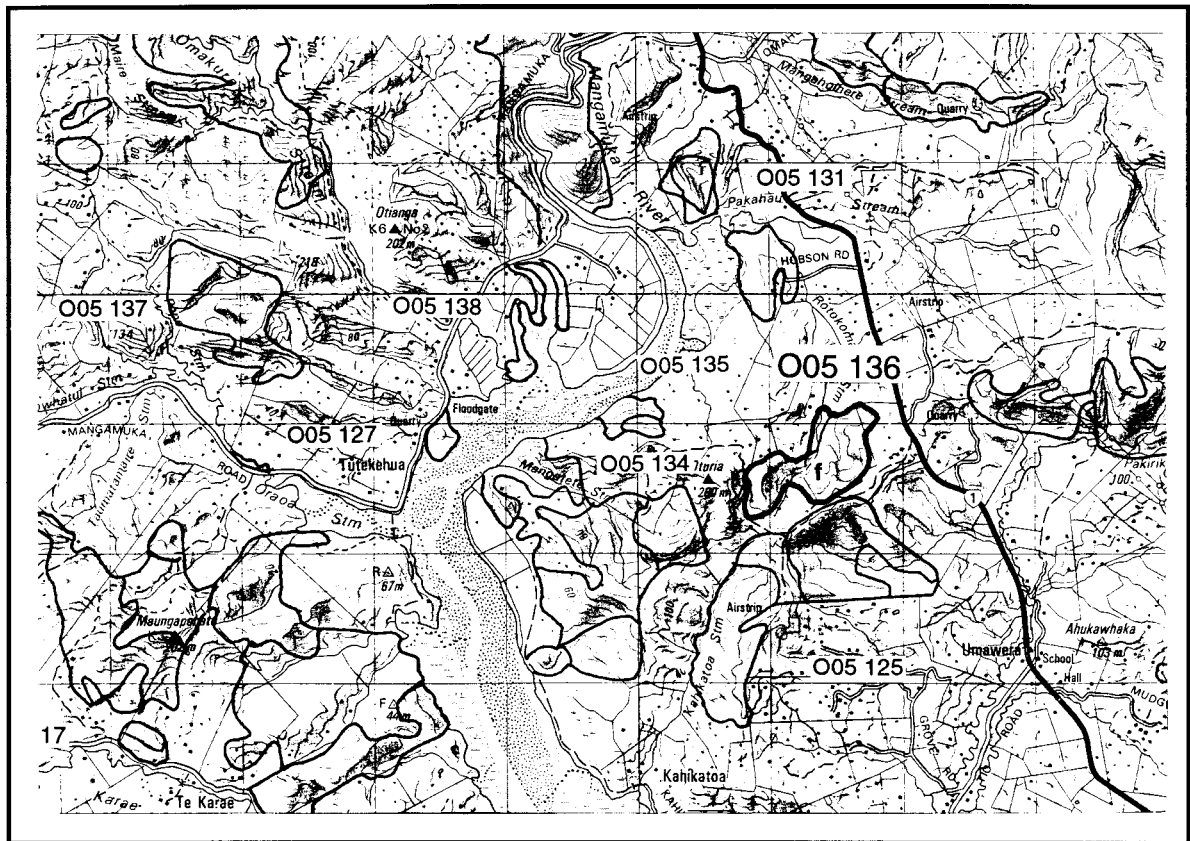
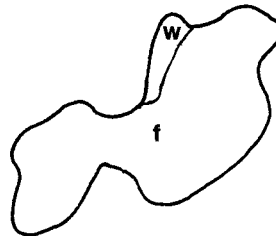


Figure 19. Rotokoma Stream Bush, O05 136
 Each grid is 1000 m x 1000 m and equals 100 ha.
 f = forest; w = wetland.



Type (b) Raupo reedland. Swamp forest species include swamp maire, cabbage tree, kohuhu, kahikatea and putaputaweta occur on the periphery.

Significant flora

Swamp maire - uncommon in the Ecological District.

Fauna

NI brown kiwi (Category A threatened species) reported in high numbers.

Significance

A sequence of wetland to forest in the upper catchment, and a buffer to Rotokoma Stream, this site is also representative of both kanuka-totara forest and raupo swamp.

It is closely associated with Umawera Bush and well placed to perform a linking role between Omahuta Forest and the chain of forest remnants extending to the west.

Presence of a threatened species.

POPO STREAM BUSH

Survey no. 005/137
Survey date 23 June 1994
Grid reference 005 570 600
Area 58.1 ha
Altitude 40-190 m asl

Ecological unit

- (a) Secondary manuka-kanuka-totara forest on moderate hillslope
- (b) Totara-taraire-towai forest on moderate hillslope
- (c) Karaka-puriri forest on steep hillslope
- (d) Manuka-kanuka shrubland on hillslope

Landform/geology

Hill country of Motatau Complex limestone and glauconitic sandstone.

Vegetation

Type (a) Manuka-kanuka-totara secondary forest. This type comprises most of the site. Kahikatea and puriri are frequent and mamaku, towai, karaka and titoki occasional.

Type (b) Totara-taraire-towai forest. Occurs on the steeper sites and gullies. Puriri, karaka and nikau are frequent with occasional kowhai and rewarewa.

Type (c) Karaka-puriri forest. Dominant on the steepest slopes with frequent kohekohe, titoki, nikau and kahikatea. Totara, taraire and mamaku are occasional.

Type (d) Manuka-kanuka shrubland. Comprises about 20% of the site. Mamaku is occasional.

Fauna

Not surveyed but presence of NI brown kiwi (Category A threatened species) likely as present in adjacent area.

Significance

Part of a chain of forest remnants which link Raetea Forest to Tapuwae Forest in the south.

Forest on limestone is uncommon in this Ecological District. This is a representative site for manuka-kanuka-totara forest and the only site in the Ecological District of karaka-puriri forest.

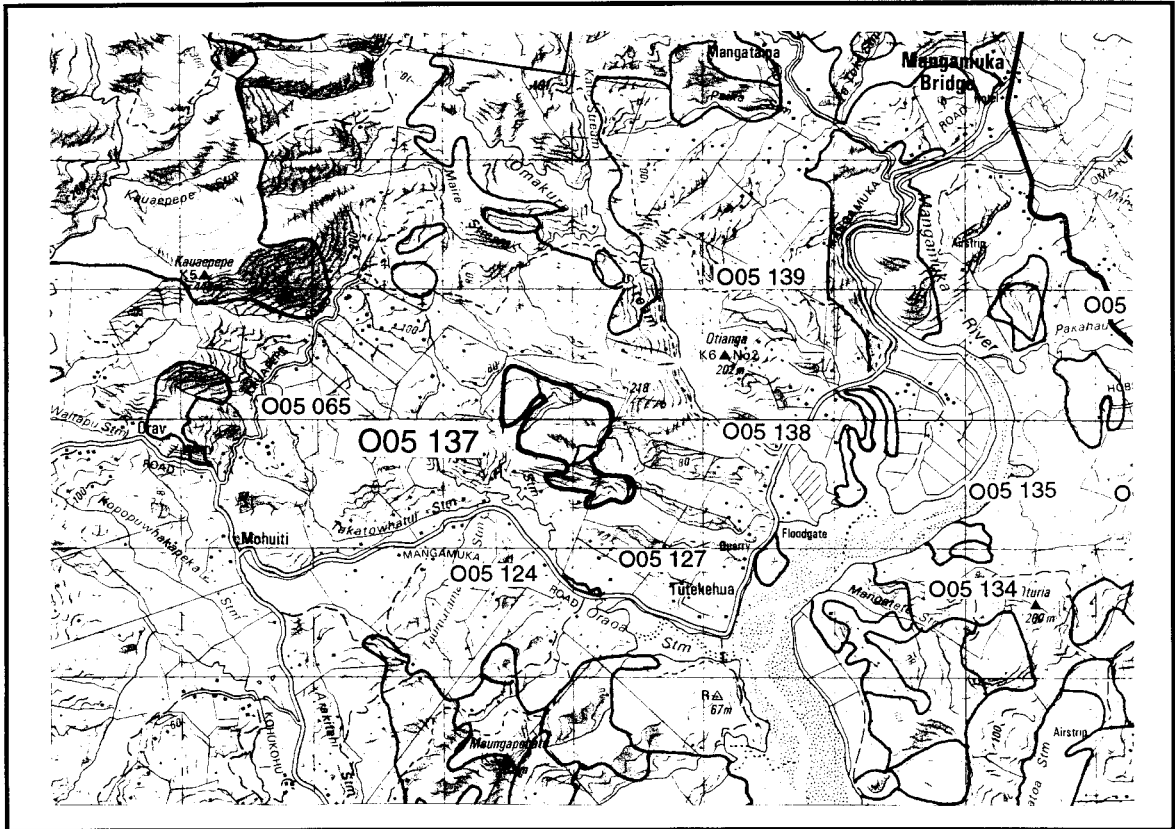
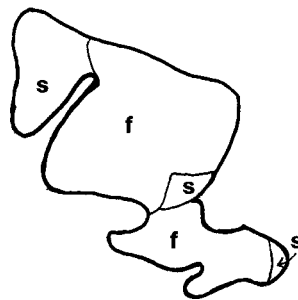


Figure 20. Popo Stream Bush, O05 137
 Each grid is 1000 m x 1000 m and equals 100 ha.
 f = forest; s = shrubland.



OTIANGA WETLAND AND RIPARIAN FOREST

Survey no.	O05/138
Survey date	16 June 1994
Grid reference	O05 593 600
Area	20.2 ha
Altitude	0-30 m asl

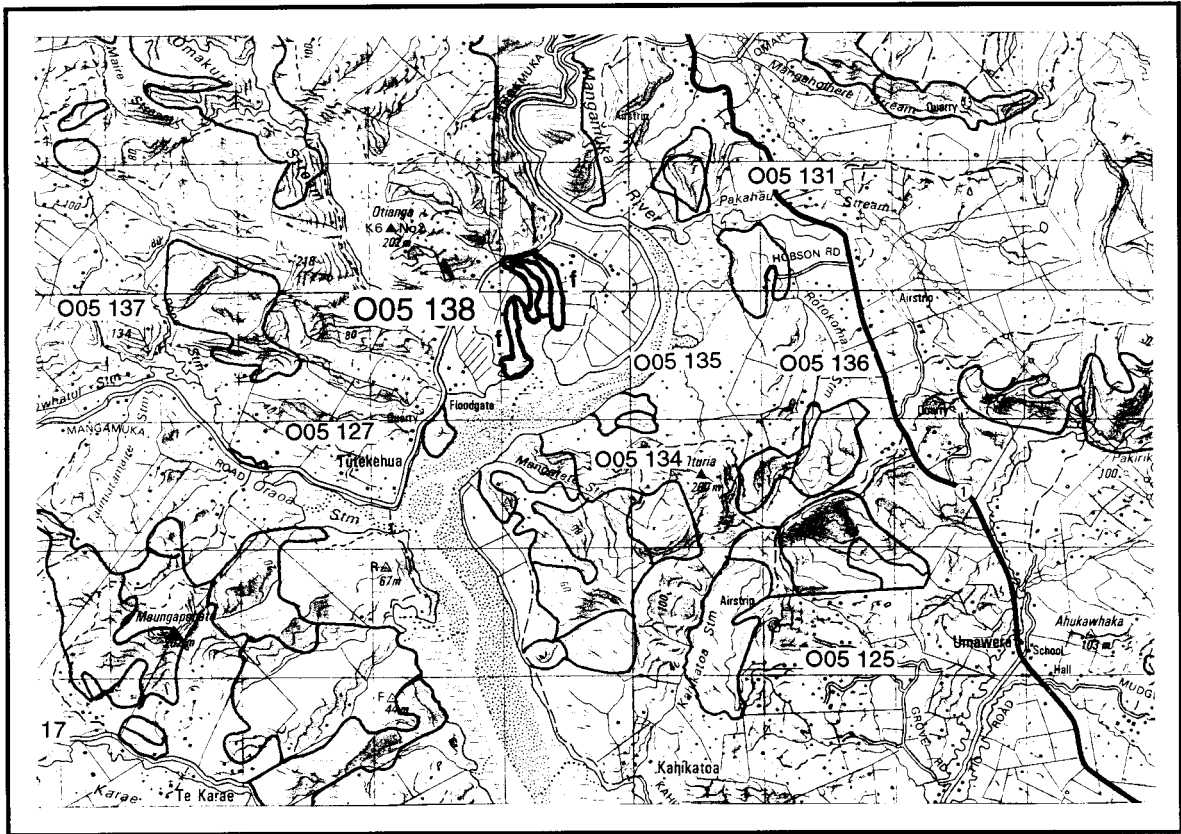


Figure 21. Otianga Wetland and Riparian Forest, O05 138
 Each grid is 1000 m x 1000 m and equals 100 ha.
 f = forest; w = wetland.



Ecological unit

- (a) Manuka-kanuka forest on marine terrace
- (b) Manuka-kanuka-kahikatea-totara forest on marine terrace
- (c) Raupo reedland on estuary margin

Landform/geology

Quaternary estuarine deposits forming low terraces abutting an estuarine arm of the Mangamuka River.

Vegetation

Types (a) and (b) Secondary riparian forest dominated by kanuka and/or kahikatea and totara

The canopy is shared by frequent kauri, tanekaha, rimu, puriri and wattle and occasional kowhai, taraire, white maire and cabbage tree.

Type (b) Raupo reedland. This riparian forest borders a freshwater wetland dominated by raupo with marginal *Coprosma propinqua*, pampas and flax. Japanese honeysuckle is well established in this wetland. Further downstream the forest borders estuarine mangrove forest.

Fauna

Not surveyed.

Significance

A representative site. The sequence occurring at this site of upper saltmarsh (brackish) merging into freshwater wetland adjoining riparian forest on estuarine deposits is nationally uncommon.

MANGATAIPA SCENIC RESERVE

Survey no.	O05/139
Survey date	15 June 1994
Grid reference	O05 595 613
Area	104.6 ha
Altitude	0-100 m asl

Ecological unit

- (a) Karaka-kowhai-titoki-taraire forest on steep coastal hillslope
- (b) Kauri-rimu forest on ridge
- (c) Manuka-kanuka-kowhai forest on coastal hillslope

Landform/geology

Coastal hills of Motatau Complex limestone and glauconitic sandstone forming a gorge spanning estuarine-freshwater transition along the Mangamuka River.

Vegetation

Type (a) Karaka-kowhai-titoki-taraire forest. Old growth forest on the steeper sites, it has as associated species puriri, kahikatea, nikau and mamaku with occasional tawa, totara, cabbage tree, lancewood, matai, kanuka, kawaka and pukatea.

Type (b) Kauri-rimu forest. Ridgetop forest with lesser tanekaha, kahikatea and northern rata.

Type (c) Manuka-kanuka-kowhai riparian forest. Adjoins a raupo-flax margin.

Significant flora

Kawaka - notable in the Ecological District.

Fauna

NZ pigeon (Category B threatened species).

Significance

Representative site for old growth coastal/riparian forest on limestone which is a nationally rare vegetation type. It is the only site of its type in the Ecological District, and the only site of mature kauri-rimu association.

Habitat for threatened species.

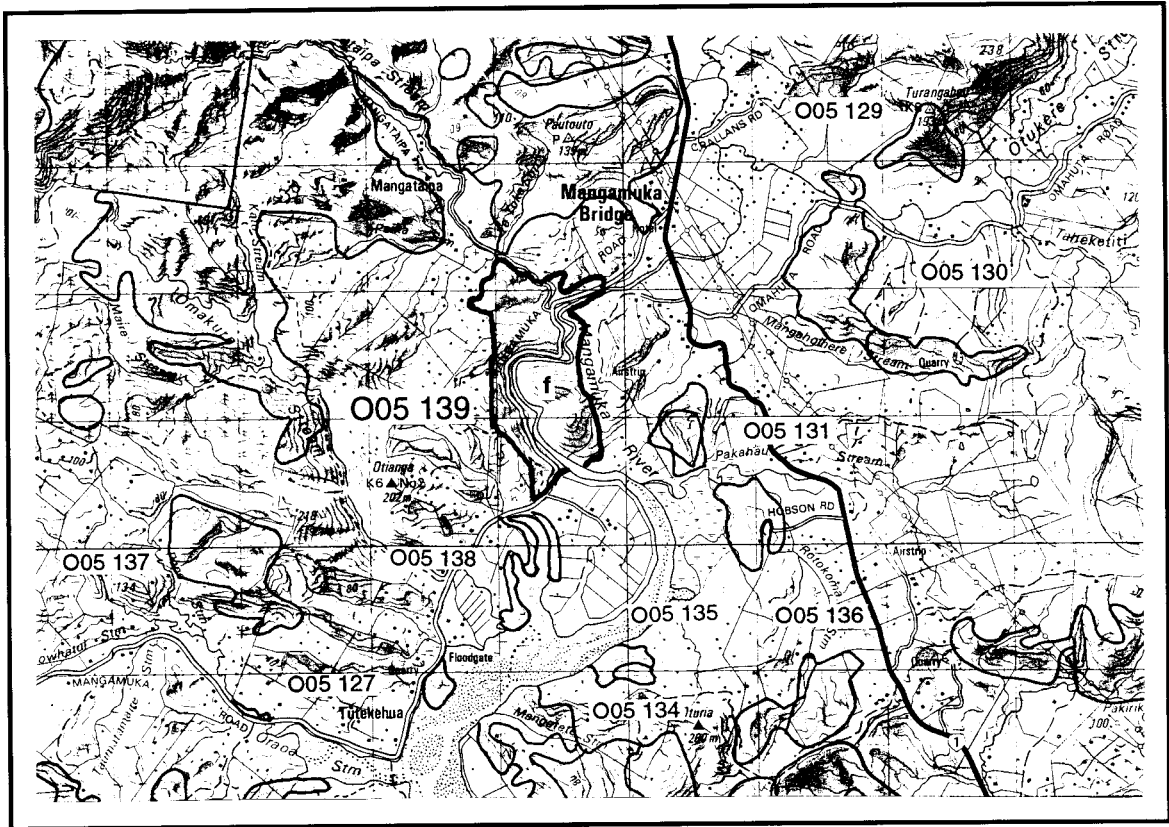


Figure 22. Mangataipa Scenic Reserve, O05 139
 Each grid is 1000 m x 1000 m and equals 100 ha. f = forest.

The site includes 75.7 ha of Scenic Reserve administered by the Department of Conservation.

It is also a nationally significant soils site:

- (i) outstanding example of soils occurring under a rare forest type
- (ii) rendzinas under indigenous forest are uncommon in New Zealand
- (iii) good examples of Motatau and Konoti soils are uncommon
- (iv) most Konoti and Motatau soils have been developed for agriculture (Arand et al. 1993).

MANGAMUKA-MANGATAIPA MOSAIC

Survey no.	O05/140
Survey date	15 June 1994
Grid reference	O05 580 630
Area	889.8 ha
Altitude	10-190 m asl

Ecological unit

- (a) Manuka-kanuka-towai shrubland on moderate hillslope
- (b) Kahikatea-totara-kanuka-tanekaha forest on rolling hillslope
- (c) Towai forest on rolling hillslope

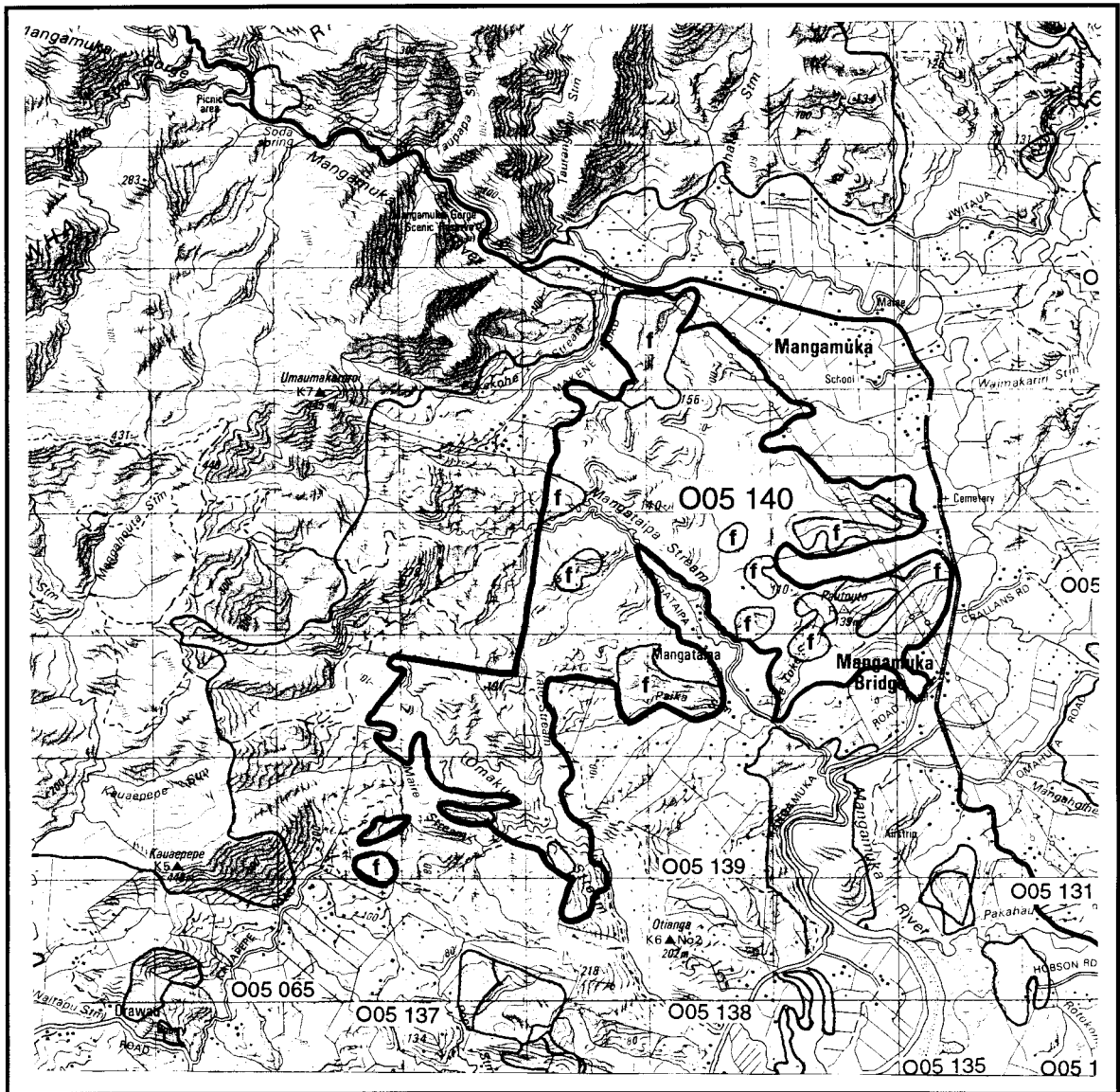


Figure 23. Mangamuka-Mangataipa Mosaic, O05 140
 Each grid is 1000 m x 1000 m and equals 100 ha.
 f = forest; s = shrubland.



Landform/geology

Hill country of Mangakahia Complex siliceous mudstone and minor sandstone in the north-east, and Motatau Complex limestone, glauconitic sandstone and calcareous mudstone in the south-west.

Vegetation

Type (a) Manuka-kanuka-towai shrubland comprises the vast majority of the site. Associated with these species are tanekaha, totara, mamaku, rewarewa, kahikatea and cabbage tree.

Type (b) Kahikatea-totara-tanekaha-kanuka forest. In some sites these species replace towai as co-dominants.

Type (c) Towai forest. Some of the more intact gullies, which have escaped the worst effects of fire, are dominated by towai and to a lesser degree, taraire, with associated canopy species including kauri, tawa, matai, miro, karaka, rewarewa, pukatea, kanuka, northern rata and rimu. This type constitutes c. 1% of the site.

Fauna

NI brown kiwi (Category A threatened species) likely as present in adjoining Raetea Forest; NZ pigeon (Category B threatened species).

Significance

A large outlier of a large forest block forming part of a remnant forest link which extends south towards Tapuwae Forest, east towards Omahuta Forest and more locally, links the Mangataipa Scenic Reserve to Raetea Forest giving near complete sequential gradients from sea level to 744 m asl.

It is a representative site for towai forest and secondary manuka-kanuka-towai forest, and the only site in the Ecological District where kahikatea-totara-tanekaha-kanuka forest has been recorded.

Habitat for threatened species.

WAIKAWA BUSH

Survey no.	O04/002
Survey date	6 December 1994
Grid reference	O04 398 706
Area	73.6 ha
Altitude	60-120 m asl

Ecological unit

- (a) Taraire-kahikatea forest on hillslope
- (b) Kanuka forest on hillslope
- (c) Secondary kahikatea forest on hillslope
- (d) Manuka shrubland on hillslope
- (e) Gorse scrub on hillslope

Landform/geology

Dissected hill country and headwater catchment in area of Mangakahia Complex sandstone rock units.

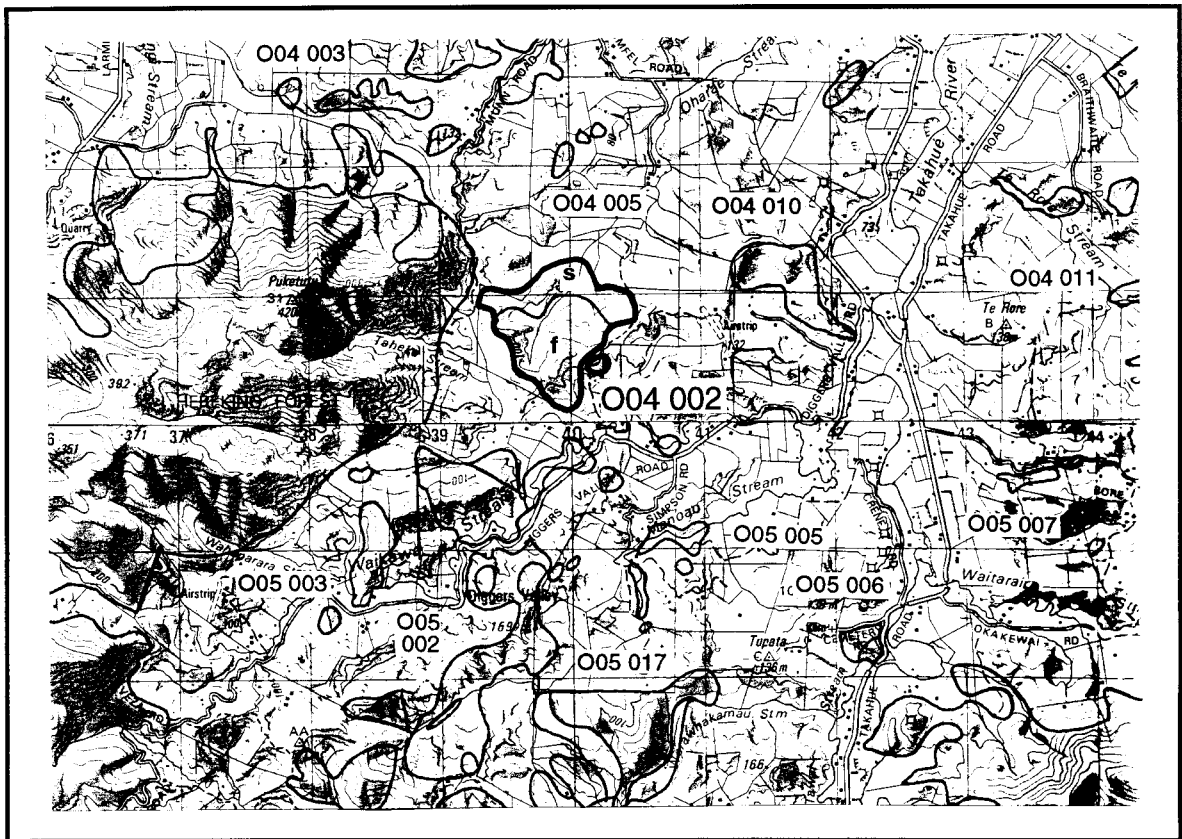
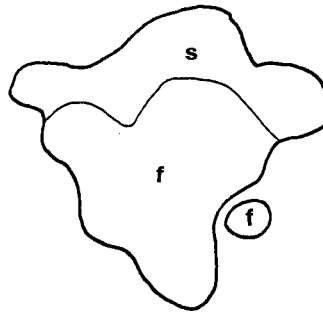


Figure 24. Waikawa Bush, O04 002

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

f = forest; s = shrubland.



Vegetation

Type (a) Taraire-kahikatea forest. Comprises the main bush area with totara and also containing puriri, rewarewa, rimu, northern rata and nikau.

Type (b) Kanuka forest. Comprises about 25% of the area with totara and rimu, kauri, kahikatea and mamaku scattered throughout.

Type (c) Kahikatea forest. A small area with puriri.

Type (d) Manuka shrubland. The remainder of the area is low shrubland with mamaku, totara and cabbage tree.

Type (e) Gorse scrub. Comprises about 5% of the site in the north-eastern corner.

Fauna

NZ pigeon (Category B threatened species). NI brown kiwi (Category A threatened species).

Significance

A large area with vigorous regeneration, a diversity of vegetation types, and threatened species, almost contiguous with Herekino Forest. Part of this area (40 ha) is protected under a Queen Elizabeth II National Trust covenant.

It is a representative site for kanuka forest, taraire-kahikatea forest and manuka shrubland.

OTEPO

Survey no.	O04/006
Survey date	17 November 1994
Grid reference	O04 404 750
Area	12.4 ha
Altitude	20-120 m asl

Ecological unit

- (a) Taraire forest on hillslope
- (b) Secondary rimu-kanuka forest on hillslope
- (c) Secondary manuka-towai forest on hillslope
- (d) Taraire-kahikatea forest on hillslope
- (e) Secondary kahikatea forest on toeslope

Landform/geology

Headwater catchments in Motatau Complex calcareous mudstone. Some alluvial flats south of the Ruaroa Rd quarry.

Vegetation

Otepo Bush

Type (a) Taraire forest. Almost all of Otepo Bush is taraire forest with frequent kanuka and scattered puriri, totara, rimu, kahikatea, kohekohe, and mamaku.

Type (b) Secondary rimu-kanuka forest. Approximately 5% of Otepo Bush.

Type (c) Secondary manuka-towai forest. Secondary forest of lower stature, constituting about 5% of Otepo Bush and located on the margins.

Quarry Bush

Type (d) Taraire-kahikatea forest. Most of the Quarry Bush is taraire-kahikatea with kanuka and puriri, and isolated towai.

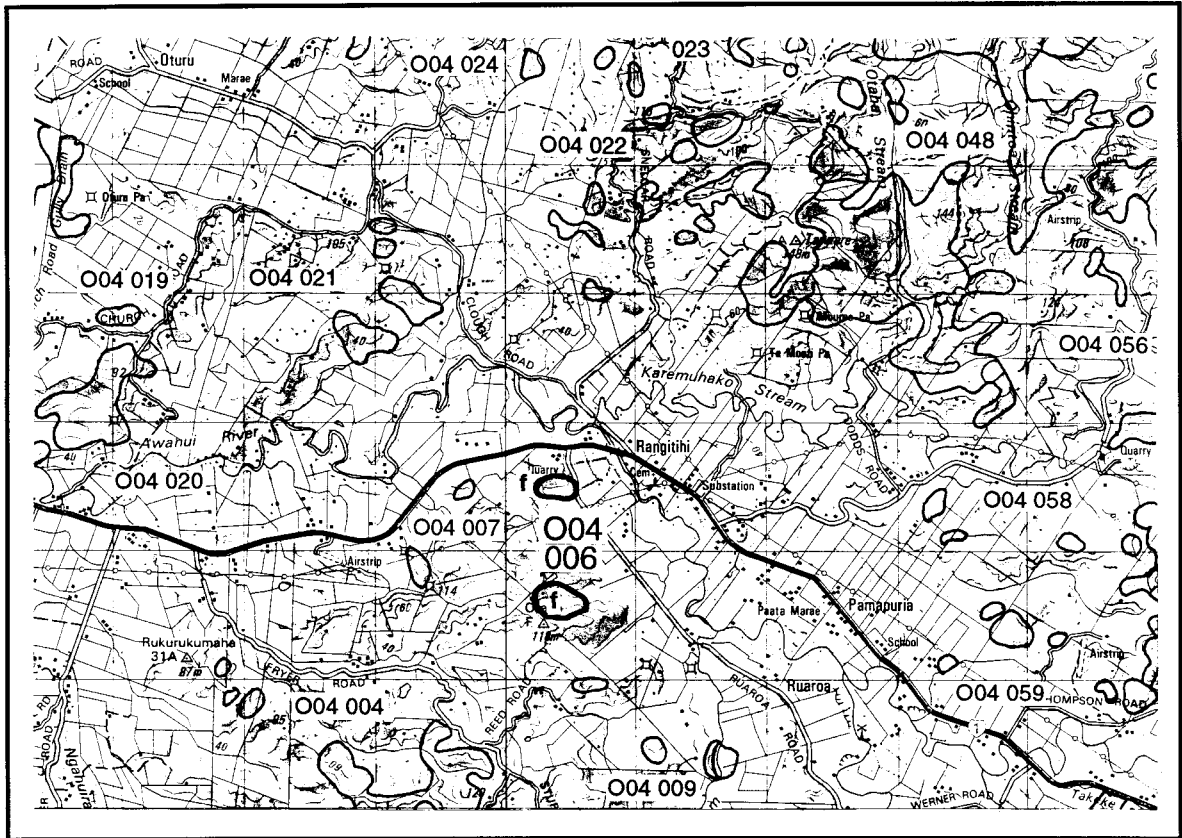
Type (e) Secondary kahikatea. Comprises about one-third of the Quarry Bush with occasional cabbage tree.

Fauna

Not surveyed but likely to be important habitat for NZ pigeon (Category B threatened species).

Significance

A representative site for taraire-kahikatea forest, kahikatea forest (Quarry Bush), and rimu-kanuka forest (one of only two examples) in the Ecological District.





 Quarry bush

Figure 25. Otepo, O04 006

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

f = forest.

 Otepo bush

OHARAE STREAM

Survey no.	O04/009A
Survey date	17 November 1994
Grid reference	O04 416 734
Area	4.5 ha
Altitude	c.40 m asl

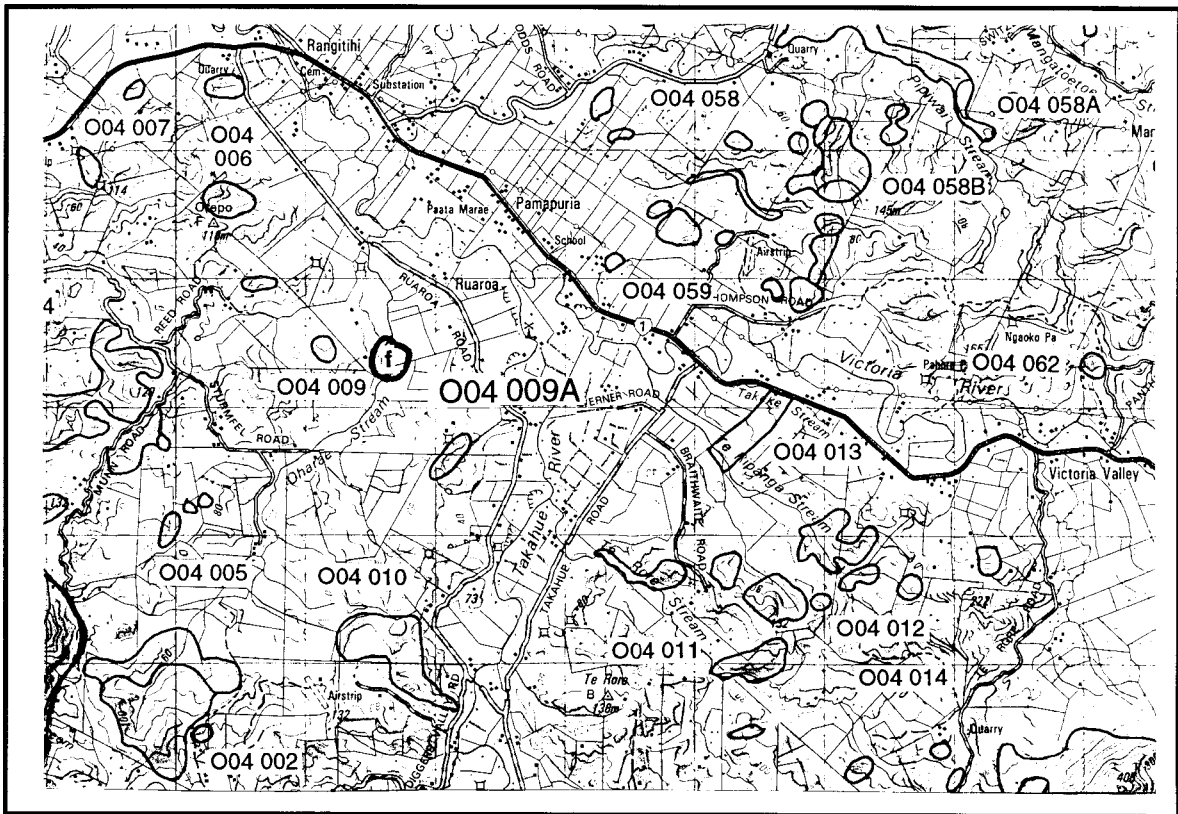


Figure 26. Oharae Stream, O04 009A

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

Ecological unit

- (a) Secondary kahikatea forest on alluvium
- (b) Manuka shrubland on alluvium

Landform/geology

Alluvium in the Oharae Stream valley.

Vegetation

Type (a) Secondary kahikatea forest. Straddling the Oharae Stream is an area that is 50% kahikatea with occasional cabbage tree.

Type (b) Manuka shrubland. Comprises 50% of the block at Oharae Stream.

Fauna

Not surveyed.

Significance

Kahikatea and manuka on alluvium are uncommon vegetation types in the Ecological District, and this site is the best representative example of manuka shrubland on alluvium in the Ecological District.

BRAITHWAITE'S BUSH

Survey no. O04/012
Survey date 14 September 1994
Grid reference O04 450 715
Area 40.3 ha
Altitude 40-120 m asl

Ecological unit

- (a) Taraire forest on hillslope
- (b) Tanekaha forest on ridge
- (c) Secondary kahikatea-kanuka forest on hillslope
- (d) Secondary towai-kanuka-kahikatea forest on hillslope

Landform/geology

Dissected hill country in Mangakahia Complex sandstone.

Vegetation

Type (a) Taraire forest. The main, most southerly block is tall forest with a fairly dense, closed canopy consisting mainly of taraire with a broad range of other trees including emergent rimu and northern rata, puriri, kahikatea, kohekohe, rewarewa, kanuka, miro as well as less common trees such as pukatea, and in the gully, swamp maire.

Type (a) also occurs in a smaller block nearby to the northwest, where puriri and kahikatea are more frequent.

To the northeast are two smaller taraire remnants, one containing, amongst other things, some gorse and tobacco weed, and the other containing swamp maire. These gullies are almost contiguous, and are linked with intermittent manuka-kanuka.

Type (b) Tanekaha forest. On the ridges of the main bush, tanekaha is dominant, with rimu, tawa and isolated kawaka, narrow-leaf maire, and kauri.

In the two larger fenced areas, there is a varied understorey, including a number of orchids. Kidney fern is abundant. Of particular interest is the presence of *Pittosporum virgatum*, a threatened species of limited distribution, and known from only a few areas in the north and east of the North Island. Fan fern, *Schizaea dichotoma*, is also uncommon in this Ecological District.

Another notable feature is the frequent occurrence of miro seedlings, miro being an important species for NZ pigeon.

Type (c) Secondary kahikatea-kanuka forest. Across the valley to the north (GR O04 450 718), is a larger area, mostly of secondary kanuka-kahikatea forest with taraire and towai.

Type (d) Secondary towai-kanuka-kahikatea forest. To the east of (c) is an area of secondary towai-kanuka-kahikatea with occasional rimu, pukatea, cabbage tree and puriri.

Significant flora

Pittosporum virgatum - Naturally Uncommon - Sparse

Fan fern and swamp maire - uncommon species in the Ecological District.

Kawaka - notable in the Ecological District.

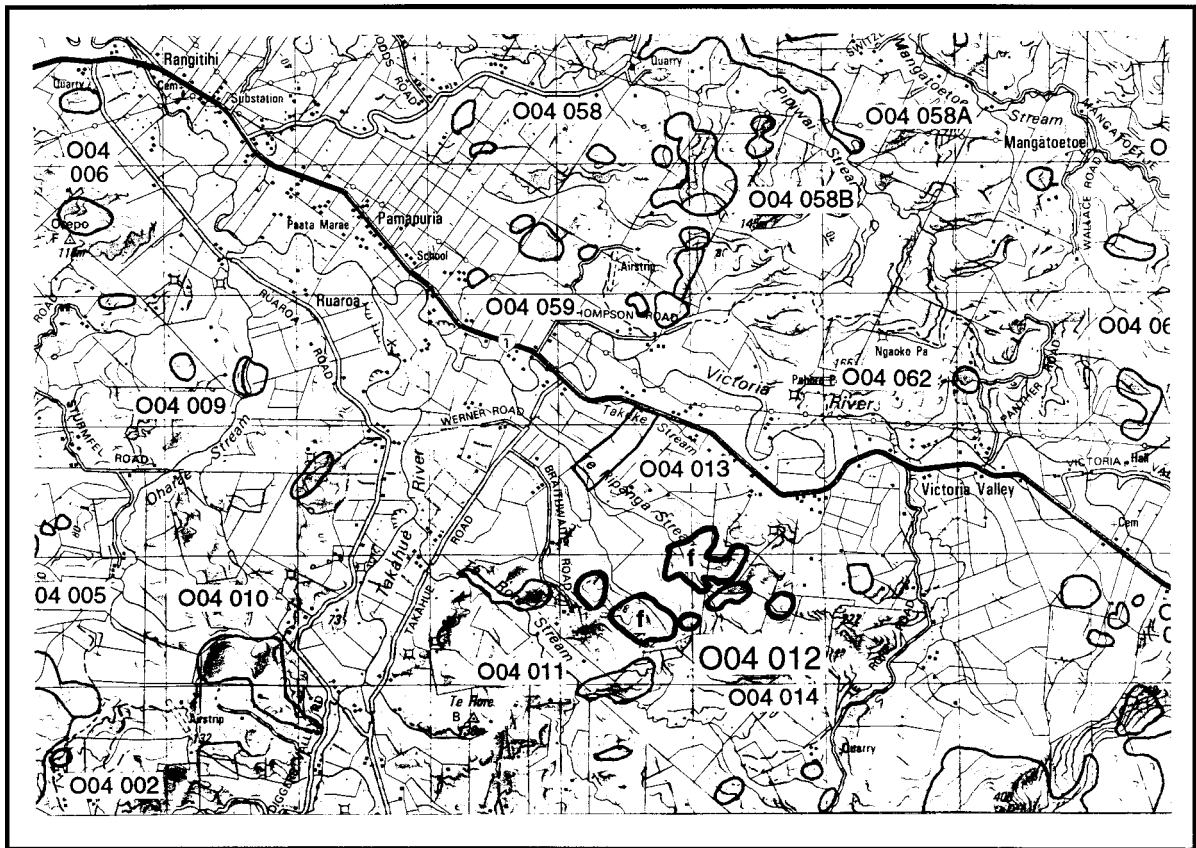
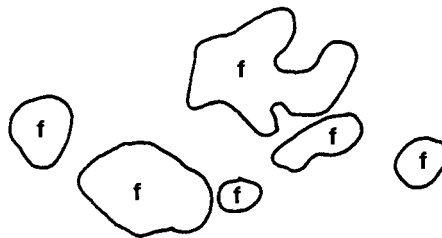


Figure 27. Brathwaite's Bush, O04 013

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

f = forest.



Fauna

NZ pigeon (Category B threatened species), kauri snail (Category C threatened species).

Significance

A representative site for tanekaha forest and kanuka-kahikatea forest, and the only site of kanuka-towai-kahikatea forest recorded in the Ecological District.

The fenced areas in particular contain high-quality habitat and includes a diverse assemblage of uncommon and threatened species.