

Type (a) Kahikatea forest - totara, nikau, rewarewa with occasional puriri, pukatea, northern rata, lacebark and rimu.

Type (b) Taraire-totara forest - putaputaweta, kahikatea, towai, mamangi with occasional hinau, miro, matai and northern rata.

Type (c) Puriri-kowhai forest - kahikatea with occasional totara and kanuka.

Fauna

Not surveyed, but being contiguous with Puketi Forest, may share many of the faunal values associated with the parent block.

Significance

Comprises a continuous environmental gradient from Puketi Ecological District into Kaikohe Ecological District.

Its geomorphological base includes rock types of limited extent in the Kaikohe Ecological District, which contributes to this site being representative of the ecological units present.

Types (a) and (c) are uncommon vegetation types in the Ecological District and Region, with type (c) being the only example of its type in the Ecological District.

Performs a mid-catchment/riparian protection function and helps link forest remnants to the south, to the large block of Puketi.

DONALDSONS ROAD BUSH

Survey no.	P05/010
Survey date	1 June 1994
Grid reference	P05 755 545
Area	71.6 ha
Altitude	40-240 m asl

Ecological unit

- (a) Totara-kahikatea forest on hillslope
- (b) Taraire-puriri-kahikatea forest on hillslope

Landform/geology

Steeply sloping dissected hill country in the upper catchment and more gently sloping hillsides in the lower catchment of Mangakahia Complex sandstone and mudstone, with a small area of Akarana Group calcareous mudstone with sandstone beds in the eastern catchment.

Vegetation

A cluster of fragmented forest remnants ranging in size from 5 ha to 20 ha, some of which are linked by manuka/kanuka shrubland. Associated canopy species include:

MIHI ROAD BUSH

Survey no. P05/011
Survey date 1 June 1994
Grid reference P05 775 535
Area 159.3 ha
Altitude 80-257 m asl

Ecological unit

- (a) Karaka-taraire forest on hillslope
- (b) Totara-kahikatea forest on hillslope

Landform/geology

This moderate sized secondary forest remnant is situated on steeply dissected hill country of Te Kuiti Group plus Akarana Group calcareous mudstone and sandstone lithofacies in the north and Mangakahia Complex sandstone in the south.

Vegetation

The karaka-taraire forest type (a) has frequent puriri, totara and occasional towai.

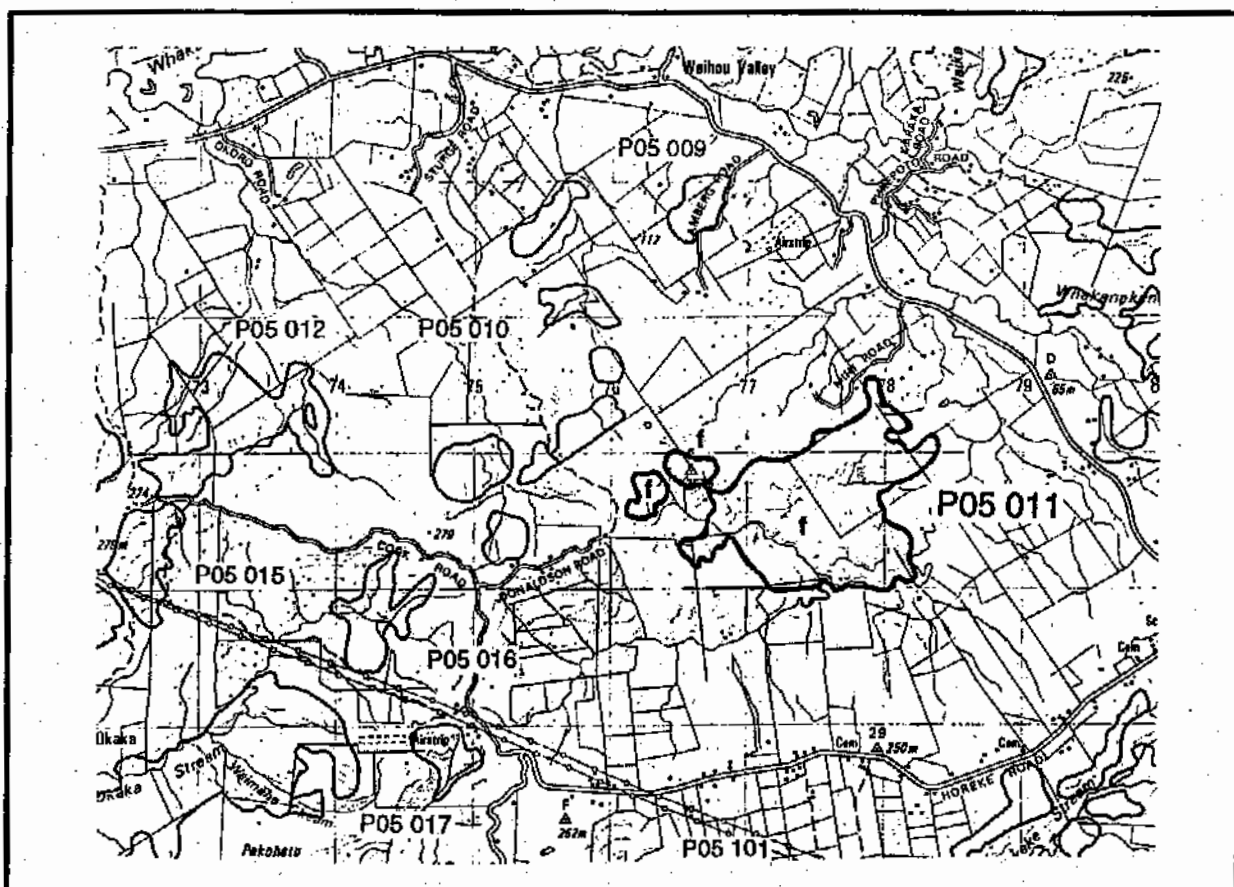


Figure 24. Mihi Road Bush, P05/011
Each grid is 1000 m x 1000 m and equals 100 ha.
f = forest.

Significance

Habitat for threatened fauna.

A linkage, upper catchment and riparian protection function is implied.

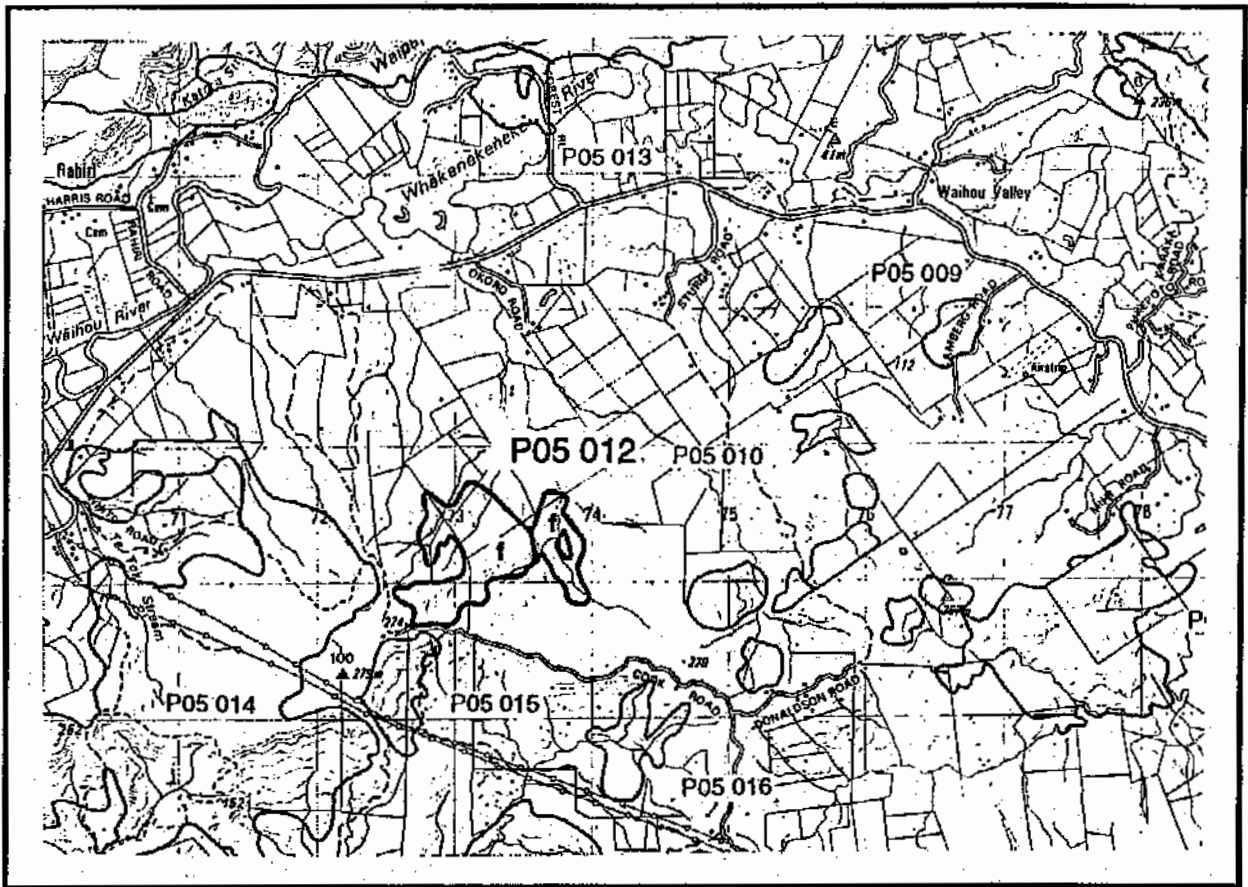


Figure 25. Okoro Stream Bush, P05/012

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

f = forest.

FOREST ROAD BUSH

Survey no.	P05/013
Survey date	2 June 1994
Grid reference	P05 733 577
Area	27.1 ha (forest 25.1 ha; shrubland 2 ha)
Altitude	20-40 m asl

Ecological unit

- (a) Manuka-totara-kahikatea forest on gentle hillslope
- (b) Kahikatea forest on gentle hillslope

Landform/geology

The low relief hills are underlain by Akarana Supergroup alternating sandstone and mudstone north of Forest Road and Mangakahia Complex sheared mudstones to the south.

TE TOKE STREAM SHRUBLAND

Survey no. P05/014
Survey date 2 June 1994
Grid reference P05 715 535
Area 743.2 ha (forest 107.8 ha; shrubland 635.4 ha)
Altitude 40-260 m asl

Ecological unit

- (a) Manuka-totara-tanekaha shrubland on hillslope (35%)
- (b) Totara-kahikatea forest on alluvium (2%)
- (c) Towai-taraire forest on hillslope (5%)
- (d) Totara-taraire forest on hillslope (2%)
- (e) Totara-manuka-towai forest on hillslope (5%)
- (f) Kauri forest on ridge (<1%)
- (g) Manuka shrubland on hillslope (50%)

Landform/geology

In the east a Kerikeri Volcanic basalt plateau remnant dominates with basalt talus downslope. The remainder is underlain by deeply dissected and weathered Mangakahia Complex siliceous mudstone with a small area of alluvium adjacent to White Road.

Vegetation

A mosaic of vegetation types produced by past land clearance patterns and strongly dominated by shrubland.

Associated canopy species include:

Type (a) Manuka-totara-tanekaha shrubland with occasional pockets containing towai, puriri, cabbage tree, kahikatea, taraire, matai, rimu, rewarewa, northern rata, tawa and miro.

Type (b) Totara-kahikatea forest. Very uncommon alluvial forest which includes cabbage tree, kauri, kanuka, pukatea, karaka, tanekaha, rimu, towai, kohuhu and swamp maire.

Type (c) Towai-taraire forest with tanekaha, totara, puriri, mamaku tree fern and nikau and occasional emergent rimu, kauri and northern rata occurs in the upper catchment.

Type (d) Totara-taraire forest with occasional puriri

Type (e) Totara-manuka-towai forest with puriri

Type (f) Kauri forest

Type (g) Manuka shrubland with occasional towai.

Fauna

Further survey work is required, especially regarding faunal values, but NI brown kiwi (Category A threatened species), known from forest less than 3 km to the east, are likely to be present.

Significance

The site may perform a linking function between Pukewharariki Forest to the south and Puketū Forest to the north. An upper catchment and riparian protection function is implied.

COOKS TV BLOCK

Survey no. P05/015
Survey date 1 June 1994
Grid reference P05 725 535
Area 27 ha
Altitude 160-274 m asl

Ecological unit

- (a) Totara-taraire forest on hillslope (40%)
- (b) Kahikatea-tanekaha-totara forest on hillslope (60%)

Landform/geology

Underlain by Kerikeri volcanics forming a basalt plateau remnant on the western margin with basalt talus downslope. Mangakahia Complex siliceous mudstone underlies steep hillslopes to the east.

Vegetation

Cutover and secondary forest. It is unfenced and the understorey/regeneration has been suppressed as a result.

Canopy species associated with type (a) above include puriri and towai, with occasional northern rata, rimu, tanekaha, tawa, kohekohe and pukatea.

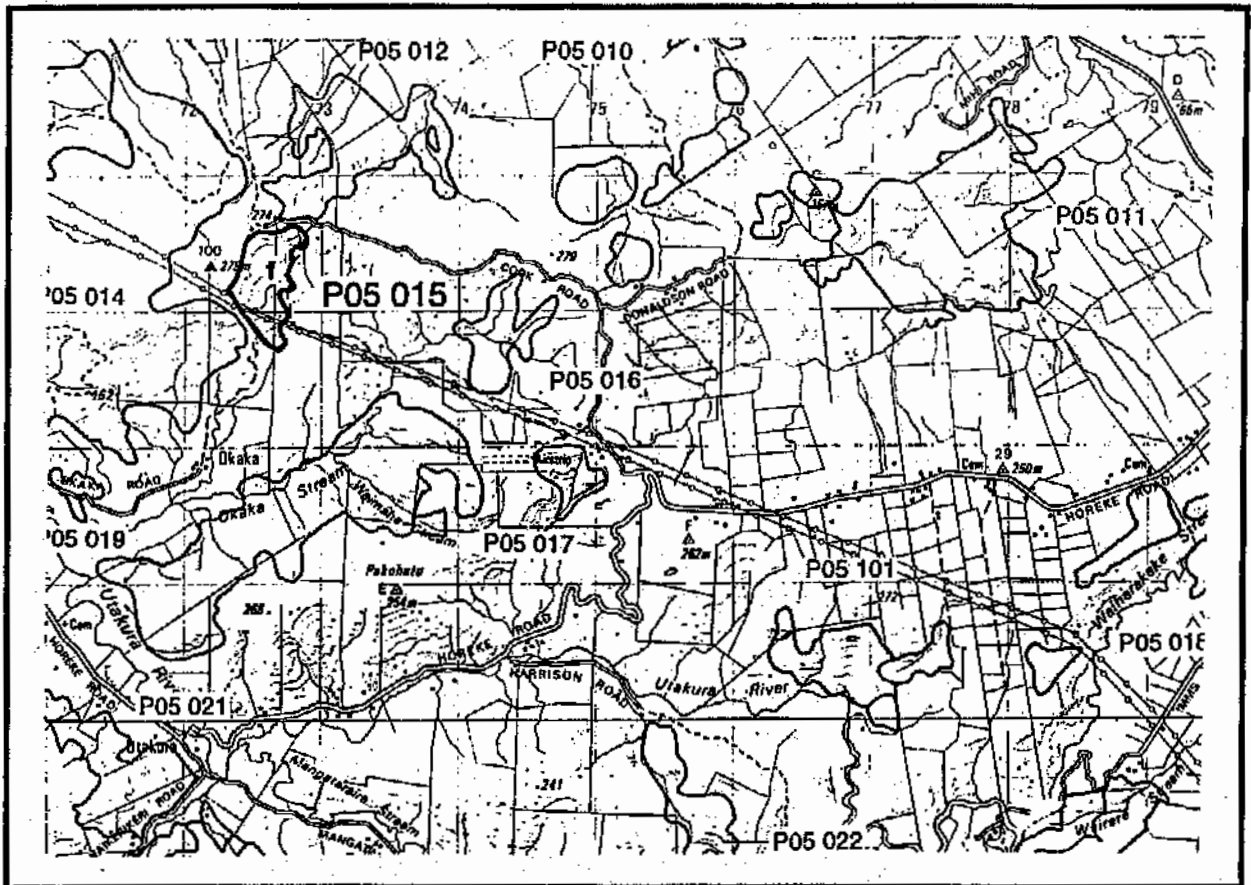


Figure 28. Cooks TV Block, P05/015

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

f = forest.

Vegetation

Tall secondary and cutover forest.

Canopy species associated with forest type (a) above include nikau, kahikatea, totara, *Griselinia lucida* and occasional tawa, northern rata, pukatea, emergent rimu and matai, kowhai, tanekaha, titoki and towai.

Associated with the kahikatea dominant type (b) are occasional puriri and nikau.

Possum and stock damage to this unfenced remnant are severe and may result in canopy collapse if not addressed.

Fauna

Kukupa (Category B threatened species) and NI brown kiwi (Category A threatened species).

Significance

Habitat for threatened fauna.

A linkage, upper catchment and riparian protection function is implied.

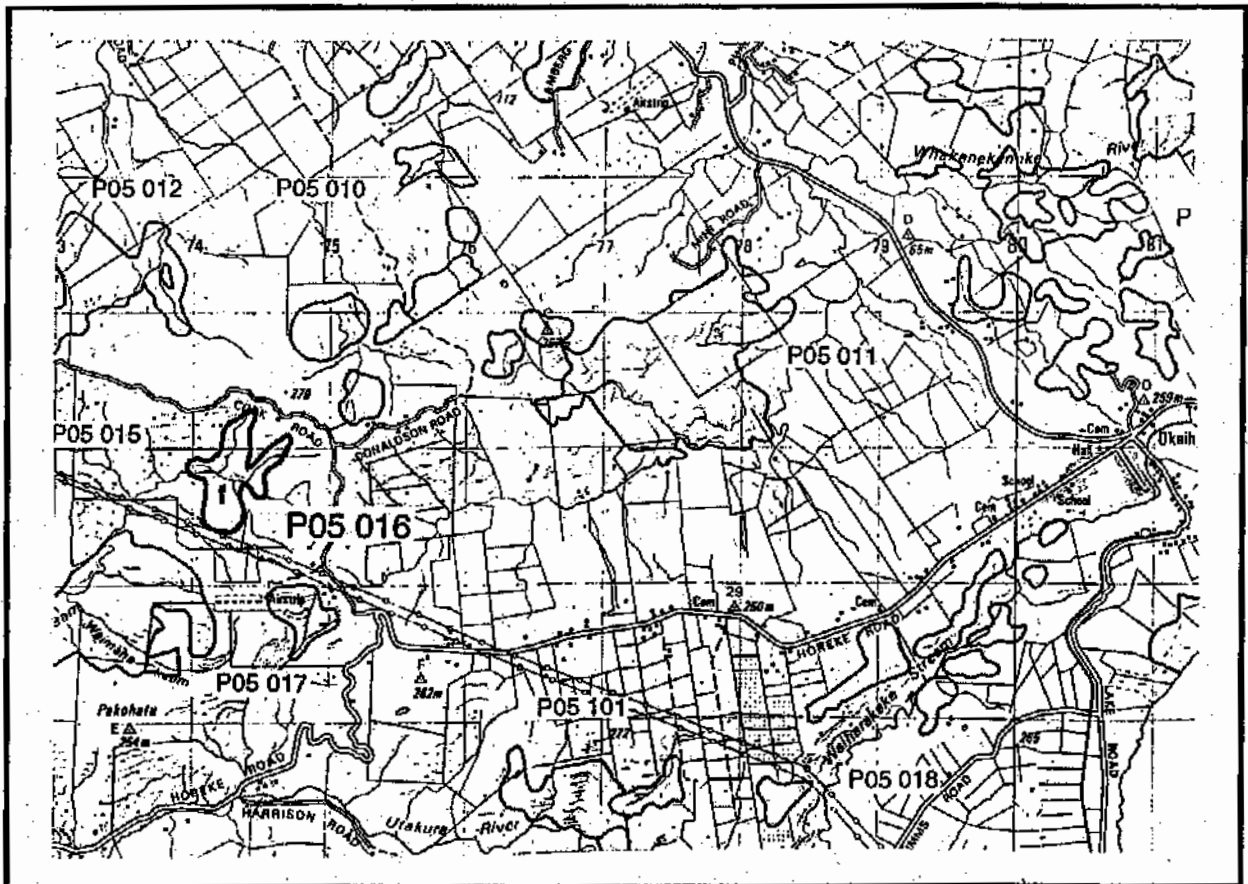


Figure 29. Cooks Road Bush No. B, P05/016

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

f = forest.

Significance

A representative site with a diversity of vegetation types, including the only site for type (f), and exhibiting a diverse matrix of canopy species.

Contains an excellent old growth podocarp element (very large totara present) which is uncommon in the Ecological District and Region.

Habitat for threatened species.

A linkage, upper catchment and riparian protection function is implied.

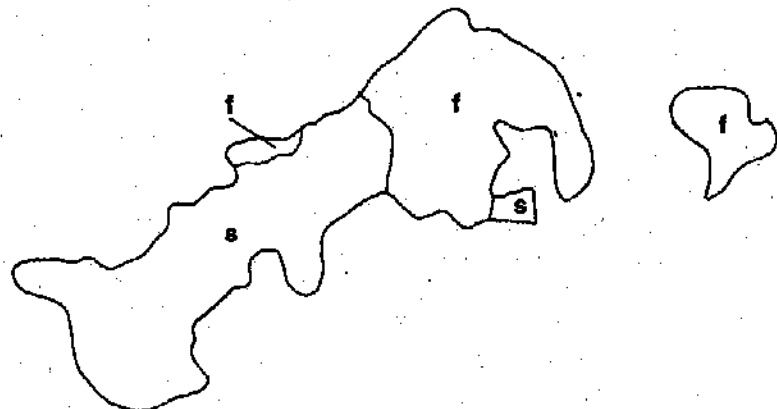
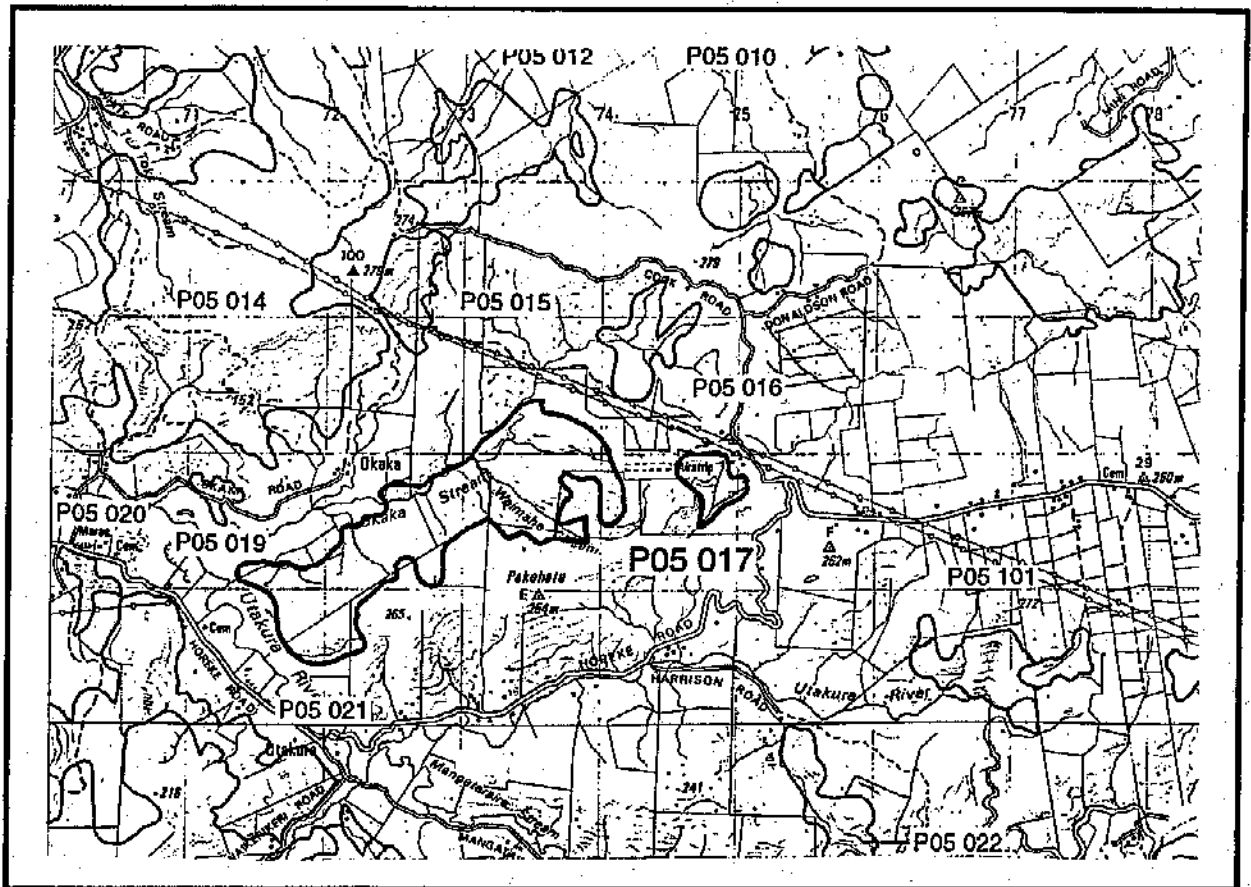


Figure 30. Cooks Airstrip Block, P05/017

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

s = shrubland; f = forest.

Ecological unit

(a) Puriri-taraire-totara forest on volcanic flats (95%)

(b) Kahikatea forest on hillslope (5%)

Landform/geology

Kerikeri Volcanic basalt flow remnant, with basalt talus towards the valley of the Waiharakeke Stream and dissected Mangakahia Complex sandstone in the valley.

Vegetation

Scattered secondary podocarp/broadleaf forest strongly dominated by the puriri, taraire and totara. In about 25% of the area, totara is completely replaced by the broadleaf species suggestive of the more pure volcanic broadleaf forest to the east of Lake Omapere.

The canopy of type (a) has very few other associated species, but northern rata, towai, rimu and rewarewa occur infrequently.

Associated with type (b) are frequent rimu, totara, and occasional rewarewa and puriri.

Fauna

High numbers of kukupa (Category B threatened species).

Significance

Habitat for threatened species.

The site contains mature broadleaf and podocarp/broadleaf forest on volcanic flats - two uncommon assemblages in the Ecological District and nationally a lowland forest type much reduced from its former extent.

Some riparian protection and linkage functions are implied.

OKAKA ROAD WETLAND

Survey no. P05/019

Survey date 2 June 1994

Grid reference P05 712 517

Area 6.9 ha

Altitude 20 m asl

Ecological unit

(a) Manuka-cabbage tree-*Carex* association in swamp

(b) Raupo-*Carex* association in swamp

Landform/geology

A small freshwater wetland on Holocene Valley alluvium.

HOREKE ROAD SWAMP

Survey no. P05/020
Survey date 19 May 1994
Grid reference P05 703 512
Area 8 ha
Altitude <20 m

Ecological unit

(a) Raupo-*Baumea* association in swamp

Landform/geology

A small mineralised freshwater wetland occurring on Holocene Valley alluvium.

Vegetation

This small swamp remnant also contains frequent cabbage tree, *Carex* sp. and occasional crack willow and flax.

Fauna

Not surveyed.

Significance

Further survey work is required for this site before its full significance can be determined, but much of its significance lies in its representation of an ecosystem which has largely been removed from this Ecological District, and this is one of only two examples of this type in the Ecological District.

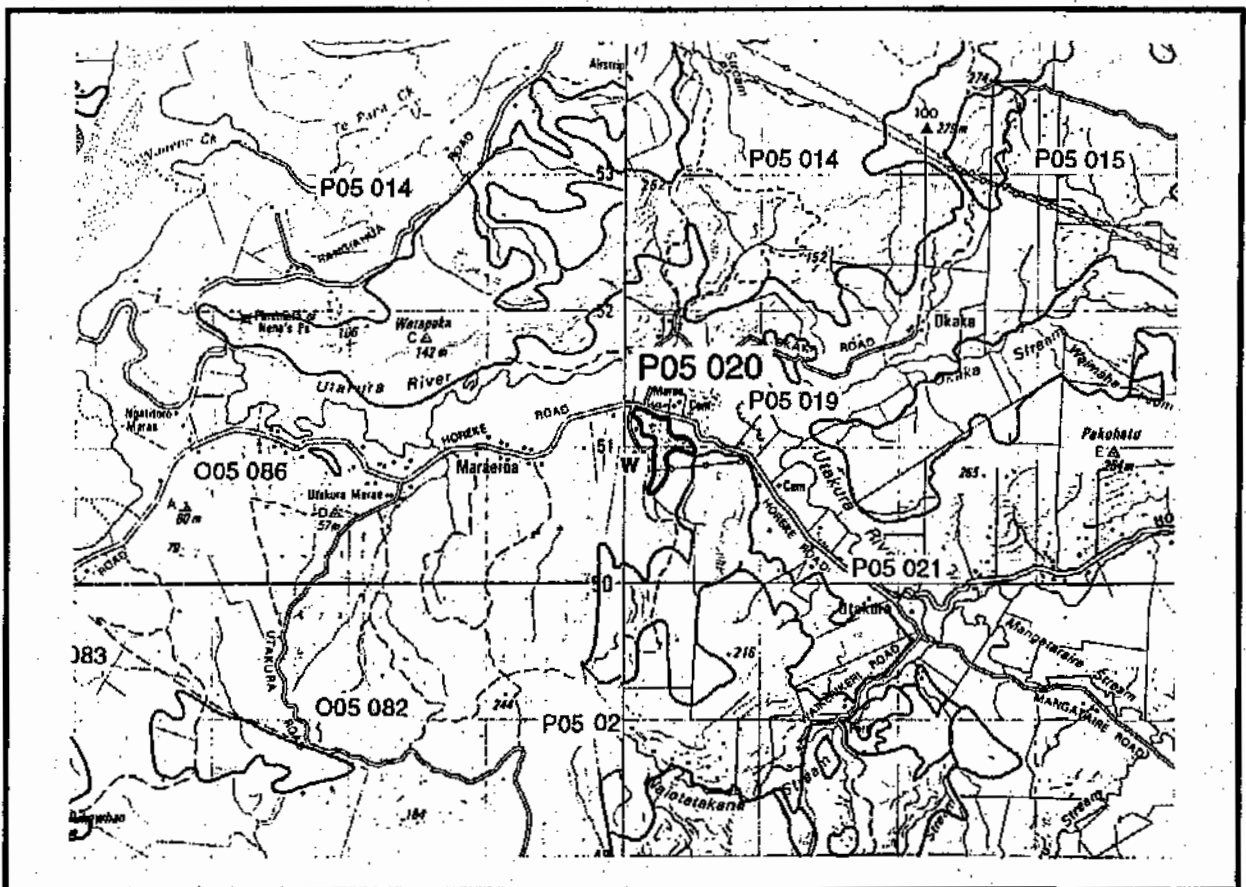


Figure 33. Horeke Road Swamp, P05/020

Each grid is 1000 m x 1000 m and equals 100 ha. w = wetland.

Vegetation

Associated canopy species of type (a) above include frequent tanekaha with occasional puriri, rimu, rewarewa, taraire and the regionally uncommon kawaka.

Frequent gorse is associated with the manuka dominant shrubland, approximately 10 ha of which was cleared in 1997.

Significant flora

Kawaka (regionally significant).

Fauna

Not surveyed.

Significance

Representative example of type (a), arising from its size and the diversity of other species present.

The significance of the site also lies in its role as a forest linkage between the highly valued forest of Pukewharariki and the large Puketiti tract to the north.

Further survey work will help to further define its significance.

WAIHOANGA BUSH

Survey no. P05/023
Survey date 18 May 1994
Grid reference P05 785 490
Area 100.4 ha (forest 84.5 ha; shrubland 15.9 ha)
Altitude 140-220 m asl

Ecological unit

- (a) Taraire-puriri forest on steep hillslope
- (b) Kahikatea forest on toeslope
- (c) Manuka-totara shrubland on hillslope

Landform/geology

A Kerikeri volcanic basalt escarpment with boulder talus overlying Mangakahia Complex siliceous mudstone hillsides and Mangakahia Complex sandstone valley.

Vegetation

A moderately large broadleaf dominant forest remnant.

Associated canopy species:

Type (a) includes frequent totara, kohekohe and towai, with occasional kahikatea, rewarewa, rimu and emergent kauri.

Type (b) includes totara and occasional puriri.

Type (c) includes frequent mamaku and locally frequent mahoe. Gorse is locally common. Mapou, mamangi, hangehange and pate are also present.

Possums, stock and goats are severely impacting upon the site's biological integrity with at least one species, northern rata, reported present in 1978, now apparently gone.

PUKEWHARARIKI FOREST

Survey no.	P05/024
Survey date	18 May 1994
Grid reference	P05 740 460
Area	2292.4 ha (forest 1525.6; shrubland 758.6 ha; wetland 8.2 ha)
Altitude	30-359 m asl

Ecological unit

- (a) Towai-rewarewa forest on hillslope
- (b) Cabbage tree-manuka forest on hillslope
- (c) Kahikatea forest on alluvium
- (d) Towai-taraire forest on hillslope
- (e) Totara-manuka forest on hillslope
- (f) Taraire forest on hillslope
- (g) Kauri-kawaka forest on ridge
- (h) Rimu-totara-miro-kahikatea forest on ridge and hillslope
- (i) Raupo reedland in swamp

Landform/geology

The most extensive forest within the Kaikohe Ecological District, Pukewharariki is almost exclusively underlain by Mangakahia Complex sandstone.

Vegetation

The site contains areas of low-altitude unmodified podocarp/broadleaf forest which is suffering from the effects of browsing animals such as goats, pigs, possums and stock.

Associated canopy species include:

Type (a) Towai-rewarewa forest includes frequent kahikatea with occasional pukatea, northern rata, puriri, tawa, kanuka and taraire.

Type (b) Cabbage tree-manuka forest includes frequent towai and nikau.

Type (c) Kahikatea forest constitutes <5% of the site and includes occasional pukatea and totara.

Type (d) Towai-taraire forest includes kanuka, puriri, kohekohe, emergent northern rata and rimu, tanekaha, totara, kahikatea, rewarewa, and the regionally significant kawaka and monoao.

Type (e) Totara-manuka forest includes kahikatea.

Type (f) Taraire forest includes totara, tawa, rewarewa and tanekaha with occasional towai, rimu, puriri, kohekohe, kahikatea and nikau.

Type (g) Kauri-kawaka forest - only a small area but some large trees including kawaka >25 m tall of 1 m diameter and totara >2 m diameter.

Type (h) Rimu-totara-miro-kahikatea forest - rimu is abundant with totara, miro and kahikatea common, all emergent over taraire and towai. Kauri, kawaka, matai, monoao, northern rata, tawa, rewarewa and puriri are occasional.

Type (i) Raupo reedland includes occasional manuka.

Significant flora

Within the least modified portions, species uncommon in the Ecological District such as black maire, kotukutuku (*Fuchsia excorticata*), *Metrosideros carminea*, as well as the rare yellow-flowered form of *Metrosideros fulgens* survive under a canopy containing ten species of gymnosperm including kawaka and monoao (regionally significant).

Fauna

NI brown kiwi (Category A threatened species), kukupa (Category B threatened species) and kauri snail (Category C threatened species), the regionally significant pied tit, the Northland endemic snails *Liarea turriculata waipoua*, and *Rytida dunniae*, as well as the uncommon *Peripatus* sp. The ornate skink (*Cyclodina ornata*) (regionally significant) is also present.

Significance

Outstanding representative values containing the best example of mature podocarp forest in Northland outside of Puketi Forest, with some of the largest and most dense stands of kawaka in Northland. It is the only site in the Ecological District for types (g) and (h), as well as one of only two examples of type (a) and one of only three examples of type (b), as well as including examples of alluvial podocarp forest and mineralised freshwater wetland.

Habitat for several threatened, endemic and regionally significant fauna.

Site of botanical diversity.

The largest forest area remaining with the Kaikohe Ecological District, Pukewharariki is central to any flow of species which may occur between the large forests of Waima/Mataraua and Puketi. Its large size and upper catchment/riparian protection functions also add to its significance.

It is a regionally important soil site, containing uncommon examples of Waikare and Whirlnaki yellow-brown earths (Arand et al. 1993).

The site includes approximately 25 ha of stewardship land of the Mangatooa Block and 792 ha of the Pukewharariki Forest, comprising 3 separate blocks.

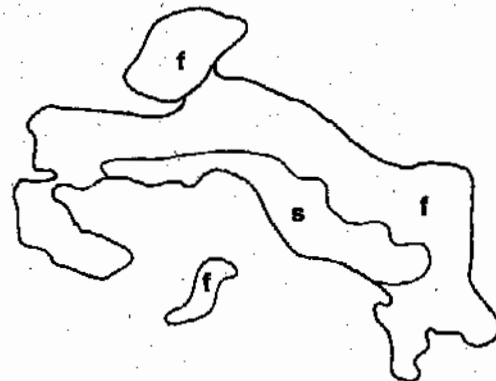
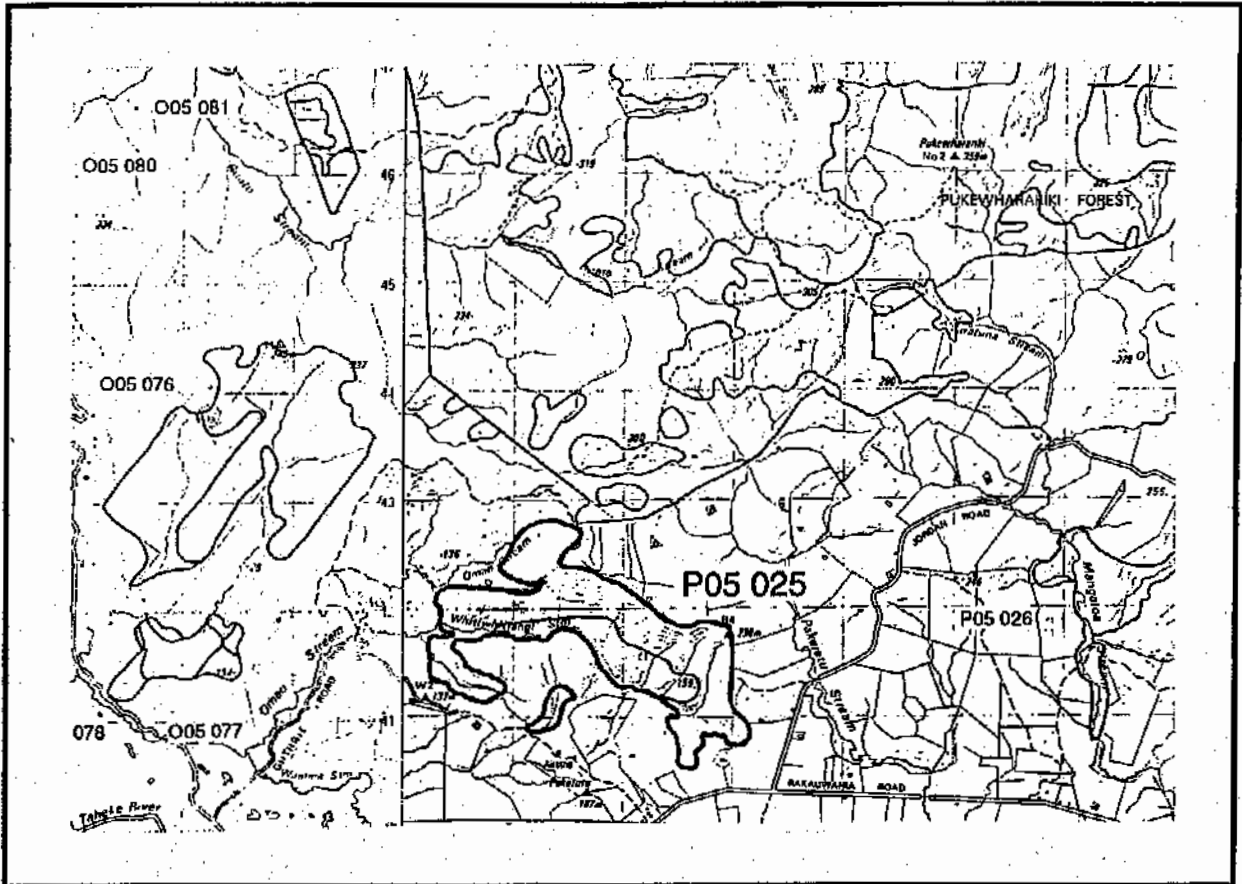


Figure 37. Guthries Block, P05/025

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

s = shrubland; f = forest.

Ecological unit

- (a) Towai forest on hillslope
- (b) Totara-tanckaha-manuka forest on hillslope
- (c) Tarairé forest on hillslope

Landform/geology

The site is underlain by Kerikeri volcanic basalt flow on the western side of the valley; Mangakahia Complex sandstone on the eastern side of the valley, and some alluvium in the valley floor.

Vegetation

A secondary and cutover forest remnant in a steeply dissected valley catchment of the Punakitere River.

Associated canopy species of forest type (a) include frequent tarairé, rewarewa, kahikatea and tanckaha with occasional totara, puriri, tawa and manuka. Kauri is locally common.

In type (b), *Hakea salicifolia* is locally common.

Associated with type (c) are frequent puriri and towai with occasional emergent northern rata, with kohekohe, nikau and rimu. Emergent kauri is locally common.

Fauna

Not surveyed, but NI brown kiwi are known from other forest remnants in the area.

Significance

A representative site for types (a) and (c) due to the conspicuous kauri component, uncommon in this Ecological District.

A mid-catchment and riparian protection function is implied. Further survey work is required before the full significance of this site can be assessed.

This site is part of the Mangatoa Stewardship Block administered by the Department of Conservation.

MONUMENT BUSH

Survey no. P05/027
Survey date 18 May 1994
Grid reference P05 809 435
Area 62.2 ha (forest 45 ha; shrubland 17.2 ha)
Altitude 180-260 m asl

Ecological unit

- (a) Towai forest on hillslope (25%)

- (b) Taraire forest on hillslope (30%)
- (c) Manuka shrubland on hillslope (20%)
- (d) Kahikatea forest on alluvium (15%)
- (e) Cabbage tree-manuka forest on alluvium (5%)
- (f) Totara shrubland on gentle slope (5%)

Landform/geology

The site is underlain by Mangakahia Complex sandstone with pockets of alluvium on the eastern edge.

Vegetation

A diverse mosaic of cutover and secondary forest with shrubland linking the forest remnants.

Type (a) Towai forest includes frequent taraire, totara, tanekaha and rewarewa with occasional rimu, puriri, tawa, pukatea and northern rata. Kauri is locally common on the ridge.

Type (b) Taraire forest includes frequent towai, rewarewa, tanekaha with occasional tawa, kahikatea, emergent kauri and rimu.

Type (c) Manuka shrubland includes occasional *Dracophyllum*, and links riparian vegetation in two catchments.

Type (d) Kahikatea forest includes frequent pukatea with occasional totara and puriri.

Type (e) Cabbage tree-manuka forest includes frequent putaputaweta and occasional swamp maire.

Type (f) Totara shrubland - manuka is locally common, and towai and mamaku frequent.

Mamaku, gorse and tobacco weed are abundant on the margins.

Fauna

Not surveyed.

Significance

Type (a) is a representative site due to the conspicuous kauri component, a representative site for types (c) and (d), and type (f) is one of only three examples recorded in the Ecological District.

This site requires further survey work before its full value can be assessed, but its diversity of forest/shrubland types and presence of alluvial forest in close proximity to the highly valued Pukewharariki Forest makes it of considerable representative value.

Upper catchment and riparian protection values are implied.

Fauna

Not surveyed.

Significance

A representative site due to its conspicuous kauri component which is uncommon in the Ecological District.

An upper catchment/riparian protection function is implied.

RESERVOIR BUSH

Survey no. P05/029
Survey date 17 May 1994
Grid reference P05 826 457
Area 112.6 ha (forest 66.6 ha; shrubland 46 ha)
Altitude 210-373 m asl

Ecological unit

- (a) Towai-taraire forest on hillslope (90%)
- (b) Totara-kahikatea-towai forest on hillslope (10%)

Landform/geology

Situated on the eroded remnant of an old Kerikeri volcanic (Horeke) basaltic volcano.

Vegetation

A moderate sized secondary forest remnant.

Canopy species associated with forest type (a) include puriri, rewarewa and occasional totara.

Puriri is associated with type (b).

Threats to the site include possums, goats, stock and weed invasion.

Significant flora

Coprosma rotundifolia is common in the understorey. Although it is a wide-spread species, it is not common in Northland.

Fauna

Kukupu (Category B threatened species), kauri snail (Category C threatened species), and probably NI brown kiwi (Category A threatened species).

HOW ROAD BUSH

Survey no. P05/030
Survey date 17 May 1994
Grid reference P05 840 410
Area 30.2 ha
Altitude 160-180 m asl

Ecological unit

- (a) Totara forest on volcanic flats
- (b) Kahikatea-totara forest on volcanic flats

Landform/geology

Surface of an old Kerikeri volcanic basalt flow dissected by streams.

Vegetation

Four small secondary podocarp dominant forest remnants.

Canopy species associated with forest type (a) include frequent taraire, rewarewa and occasional rimu, kahikatea, northern rata, kauri and titoki.

Fauna

Kauri snail (Category C threatened species).

Significance

Representative of an uncommon association of podocarp dominance on volcanic flats, with type (a) exhibiting a variety of canopy species.

Habitat for threatened fauna.

Some riparian buffering functions.

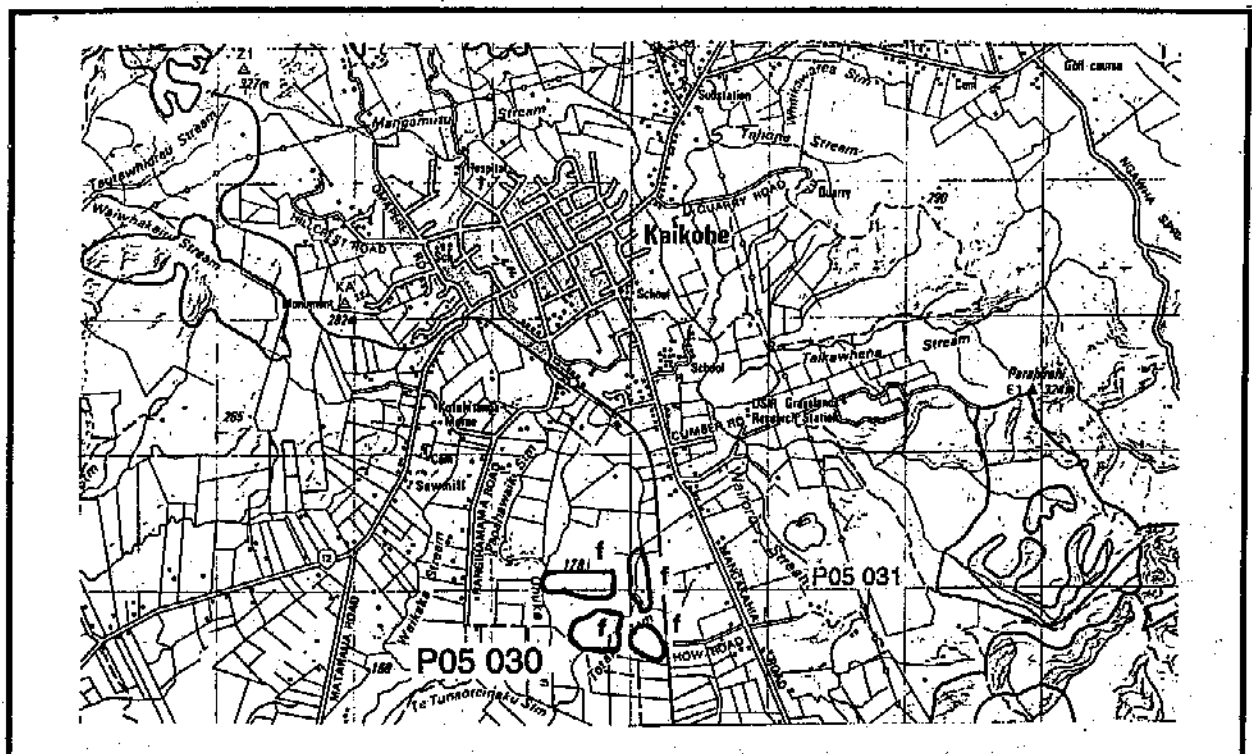


Figure 42. How Road Bush, P05/030

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