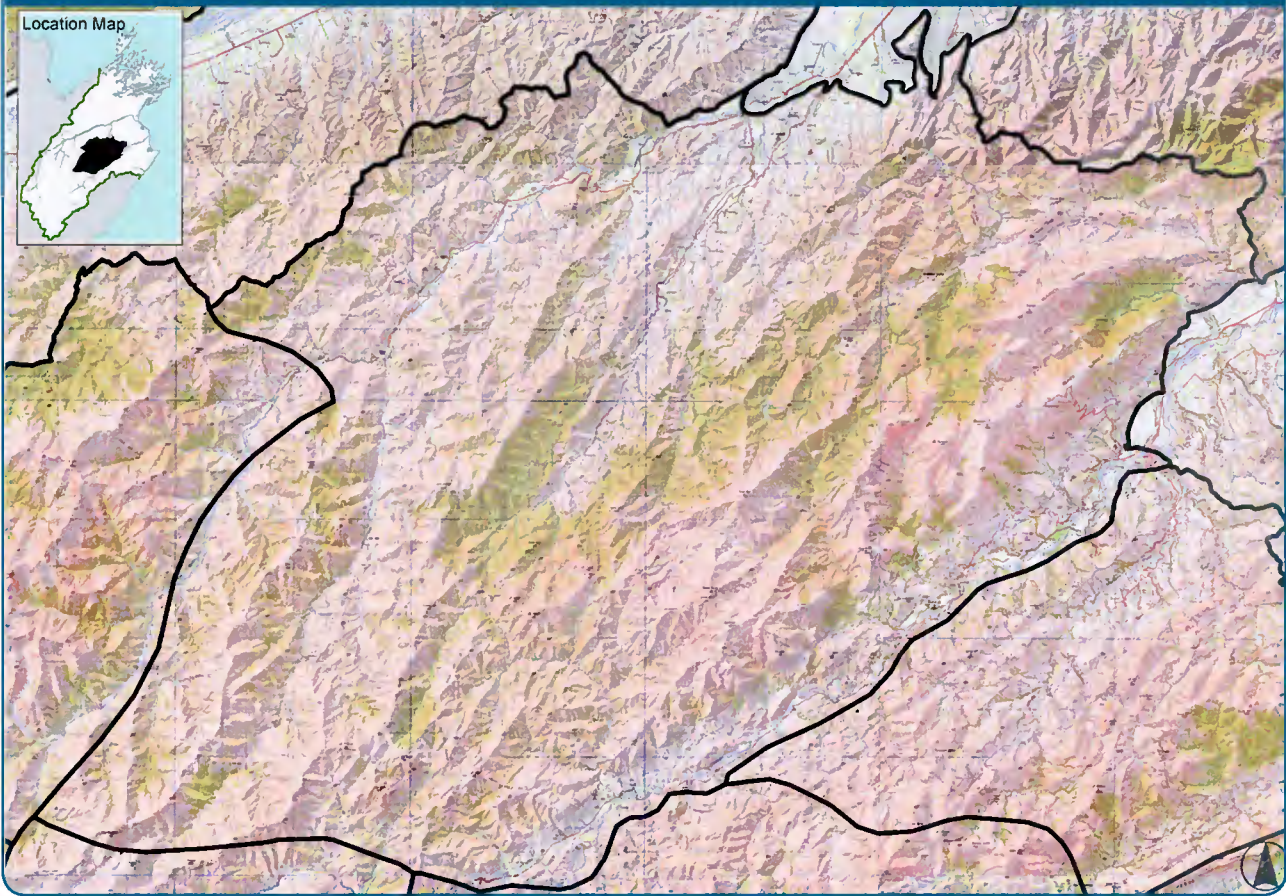


WAIHOPAI ECOLOGICAL DISTRICT

MAP 5 - WAIHOPAI ECOLOGICAL DISTRICT

**Overview**

The Waihopai Ecological District is centrally located in South Marlborough. It is essentially a block of greywacke lying between the Awatere and Wairau faults and tilted from the southeast, where there is a series of high points and ridges that represent the north-eastern extension of the main divide. The main tributaries of the Wairau are the Waihopai, Avon and Omaka Rivers. They follow long, well-defined valleys through the foothills with most slopes exposed to hot, dry north-westerly conditions. The streams draining into the Awatere River on the southerly side of the divide are shorter, steeper and more shaded. The peaks between these two systems are often rugged with bluffs, or are more rounded with extensive screes. From south to north the main peaks along the backbone include Blue Mountain (2051m), The Pinnacles (1719m), Barometer (1780m), Altimarloch (1696m) and Blairich (1504m). The Awatere fault has been active in recent times and has created conspicuous features of the topography of the Awatere Valley. The greywacke core of the district is supplemented by younger marine deposits (papa mudstone, sandstone and conglomerate) along the floor of the Awatere Valley. Where streams exit from the hills spectacular bare cliffs can result.

Owing to the dry climate, high sunshine hours and generally sunny aspects, bushline along the main range is among the highest in New Zealand, about 1500m. However, geology and land-use have combined to limit the amount of bush remaining. Much of the area was burnt centuries ago. The original beech forest remains in some of the upper catchments but has largely been replaced by grassland (mainly silver tussock), kanuka forest and scrub (matagouri and coprosma). At higher levels *Dracophyllum* scrub and snow tussock occur. Repeated burning and grazing has resulted in fellfield vegetation in some areas, composed of hard tussock (*Rytidosperma setifolium*) and mountain daisy (*Celmisia spectabilis*).



Little native vegetation remains in most of the low-lying hills. However, in the Avon catchment small areas of lowland bush remain, where species more typical of the Marlborough Sounds survive, for instance kahikatea, NZ passion vine and titoki. The combination of moist lowland valleys (sometimes with a coastal influence), dry hills, mudstone and sandstone cliffs, inland beech forest and alpine ecosystems give the Waihopai Ecological District an important degree of diversity. Marlborough rock daisy (*Pachystegia insignis*) is the most conspicuous of the endemic Marlborough plants in the district and can be found on many bluffs, rock outcrops and steep rocky river banks.

Much of the district has been extensively grazed in the past. Sheep grazing is still the dominant land-use in the district, with cattle on the lower country. There are also increasing amounts of land being planted in exotic production forest. Much of the higher ground is now administered by the DoC. The removal of stock and suppression of fire has resulted in widespread colonisation of the former grassland with native trees and shrubs so that the appearance of this ecological district is rapidly changing. It is relatively weed free except for local concentrations of old mans beard, wilding pines and exotic broom.

Survey results

Of the 33 properties where the owners were approached, 18 were surveyed. A total of 55 significant sites were identified. These have a combined area of 5274 ha and make up approximately 5% of the total land area of the ecological district. They are classified into nine basic ecosystem categories or types (see Table 4). The majority of sites are found in gullies, probably reflecting the value of these pockets of natural biodiversity as fire sanctuaries. Most of the rest are hillslopes, and a few are rocky and precipitous or are wetlands or riverbanks. Most sites fall into the category of high value for significance, indicating how distinctive and special they are.

TABLE 4 - SITES IDENTIFIED IN THE WAIHOPAI ECOLOGICAL DISTRICT

Ecosystem type	Total number of sites	Total area (ha)	% area of Ecological District
Inland wetlands	5	59	
Riparian communities	15	400	
Rock outcrop, scarp and cliff communities	7	338	
Dry shrublands and silver tussock grasslands	3	1069	
Beech forests	6	1583	
Broadleaved forests (inland gullies/faces)	3	109	
Kanuka forests	13	1370	
Manuka forests	2	21	
Montane and subalpine shrublands	1	325	
Total	55	5274	5%

ECOSYSTEMS FOUND

The original vegetation cover of the Waihopai Ecological District has been considerably modified since human arrival. However, indigenous ecosystems remain, providing good opportunities for protection and enhancement. Substantial areas of the higher land are in public ownership and managed for conservation. Prior to this survey, two landowners already had existing protected areas. Several others are now in the process of protecting natural areas on their land as a direct outcome of the survey. The main ecosystems found were:

INLAND WETLANDS

A few good examples left (swamps and ponds), with restoration potential.



RIPARIAN COMMUNITIES

There are a number of rocky riverbanks and stream-sides where distinctive riparian tree-shrublands, Marlborough endemic plants and unusual species such as fierce lancewood and weeping broom occur.

ROCK OUTCROP, SCARP AND CLIFF COMMUNITIES

Widespread and containing Marlborough endemic plants (rock daisies, pink broom and NZ lilac).

SILVER TUSSOCK GRASSLANDS

Fairly widespread. Recognised as having value to pastoral production (stock shelter, pasture growth) so generally conserved by farm practice.

DRY SHRUBLANDS (“GREY SCRUB”)

Widespread in the hill country. Recognised as having value to pastoral production (stock shelter, pasture growth) so generally conserved by farm practice.

BEECH FORESTS

Extensive mountain beech forests in the heads of the inland valleys, with red beech and Halls totara. Smaller remnants of red beech with black-mountain beech in gullies in the Avon River and Musgrave Brook catchments, with formal protection over one area.

BROADLEAVED FORESTS (INLAND GULLIES/FACES)

Several substantial secondary areas remain in the lowlands.

PODOCARP-BROADLEAVED/BEECH FORESTS

Functionally extinct in the lowlands, though a few podocarp trees remain, such as the isolated matai and totara in the Omaka catchment. In the uplands are remnants of Halls totara, with broadleaf, lancewood, mountain lacebark, mountain beech and other associated trees.

KANUKA FORESTS

Formerly widespread, now mainly occurring as remnants (some quite large) in gullies and on faces. Some protected in conservation land, and formal protection is being pursued for at least one of the best sites in private ownership.

MANUKA FORESTS

Never common, now confined to several sites only.

MONTANE AND SUBALPINE SHRUBLANDS

One area of high altitude shrubland survives.

UPLAND COMMUNITIES

Interesting assemblages of native tussocks, shrubs, speargrasses, cushion plants and herbaceous plants, including local endemics. Mostly in conservation land.

SPECIAL FEATURES

There are many special biological features in the Waihopai Ecological District. That is because of its complex geology, varied climate and diversity of topography. Its history of human settlement and land-use, extensive more than intensive and with a sense of stewardship, has ensured that these special features remain. They fall into several categories of flora and fauna.

NATIVE FLORA

- Marlborough endemics (plants found only in Marlborough) are quite common, particularly in steep rocky places. They include Marlborough rock daisy (*Pachystegia insignis*), NZ lilac (*Heliohebe hulkeana* subsp. *hulkeana*), pink broom (*Carmichaelia carmichaeliae*) and the shrub daisies *Olearia coriacea* and *Brachyglottis monroi*.



- Localised endemics (plants found only in local areas) are also present. They include the daisy *Celmisia insignis*, virtually confined to this ecological district, and weeping broom (*Carmichaelia stevensonii*, growing in just one tiny site in the Avon Valley, with pink broom nearby).
- Nationally threatened plants found in the ecological district during the survey include weeping broom, *Celmisia insignis*, the mistletoe *Tupeia antarctica*, fierce lancewood (*Pseudopanax ferox*), pink tree broom (*Carmichaelia carmichaeliae*) and *Muehlenbeckia ephedroides* (surprisingly found on a lowland rocky riverbank).
- Geographical distribution limits and isolated populations have been discovered for several plants, due largely to the strong climatic drought and frost gradient. Titoki, ngaio and NZ passion vine reach inland distribution limits in the north of the ecological district. Black beech occurs locally in sheltered valleys, giving way to red beech and mountain beech further inland. Lowland podocarps are almost absent, but there are remnant totara and matai trees in the lower Omaka catchment and kahikatea remained in the Avon until recently. Scrambling fuchsia (*Fuchsia perscandens*), leafless clematis (*Clematis afoliata*) and the shield fern *Polystichum silvaticum* are localised in lowland refuges and mountain lacebark (*Hoheria lyallii*) occurs in some upland gullies. Scented daisy (*Olearia odorata*) was found in two isolated valley localities. The inland limits of Marlborough rock daisy and NZ lilac occur within this ecological district.
- Alpine plants of note include true main range plants such as penwiper (*Notothlaspi rosulatum*), coral shrub, snow tussock (*Chionochloa flavescens*) and narrow-leaved mountain daisy (*Celmisia armstrongii*).

NATIVE FAUNA

- Bush birds are prevalent, probably because of the remaining forest cover. The forest areas and even shrublands support strong populations of bellbird, NZ robin, kereru, tui, brown creeper, silvereye, fantail and grey warbler. Of note are the local occurrences of rifleman and NZ falcon (karearea or sparrowhawk). NZ pipit is common in riverbeds and upland open places.
- Lizards (skinks and geckos) are common, especially in rock screes and mature shrubland. These habitats are also good for native invertebrates such as weta, ground beetles, moths and spiders.
- Six species of native freshwater fish have been recorded in the district. Dwarf galaxias and long fin eel are listed as nationally threatened.



WAIHOPAI ECOLOGICAL DISTRICT - PHOTO ESSAY



QUEEN ELIZABETH II NATIONAL TRUST COVENANTS -

An area of bush in the Waihopai Ecological District formally protected by the private landowners as a QEII National Trust Open Space Covenant. Ownership, control and management still reside with the owners, but the Trust will ensure the bush remains in perpetuity. An increasing number of South Marlborough landowners are choosing to use covenants to provide long term protection of special natural areas on their properties.

SPECIAL SOUTH MARLBOROUGH PLANTS -

Marlborough rock daisies (*Pachystegia insignis*) on a rocky bluff, safe from stock and feral animals. This sort of endemic plant community is characteristic of the region.





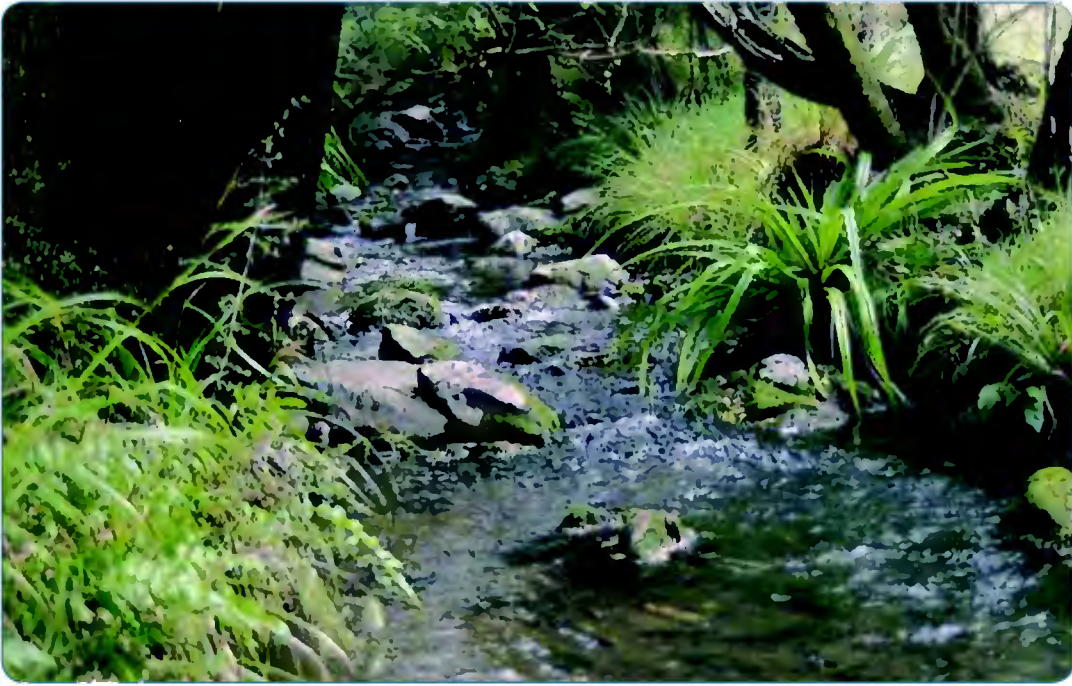
FORESTRY AND PROTECTION OF NATIVE VEGETATION -

A Waihopai bush remnant surrounded by exotic forestry. The remnant is undoubtedly in better ecological health than it would be if stock were still present, but it is at risk during the harvesting and replanting phases. Wilding pines are becoming widespread in the area, especially on rocky sites, and their management is an issue that requires a regional strategy.



RIPARIAN AREAS ALONG WATERWAYS -

Streams are ecologically important and precious. They are places for special riparian vegetation, such as these tree daisies (*Olearia aviceniifolia*). They also provide valuable habitat for native freshwater fish and invertebrates.



RIPARIAN AREAS ALONG WATERWAYS -

A section of stream protected within an Open Space Covenant. Because stock are excluded and the bush retained, the stream is excellent habitat for native fish and riparian plants.



FIERCE LANCEWOOD (*Pseudopanax ferox*) ON THE BANKS OF THE WAIHOPAI RIVER -

This nationally uncommon plant persists in a few such places out of stock reach. This particular population is being protected and enhanced by the landowner.



EXTENSIVE KANUKA FOREST AND SHRUBLANDS OF VARIOUS AGES -

Occur in the upper Waihopai and Spray catchments. These areas are host to a large population of the coral mistletoe *Korthalsella salicornioides*. While some areas are periodically cleared by fire for grazing, other areas, such as riparian forest along the rivers are left to mature. Patches of beech remain on some higher slopes along with extensive areas of secondary native shrubland.



THE HEADWATERS OF THE MAIN WAIHOPAI VALLEY -

An area of picturesque, formerly glaciated, valleys with scree, bluffs, beech forest and native shrubland and grassland. Flats along the river have many small wetlands and the riverbed itself is a habitat for birds and many native plants.

MATAGOURI IN A FARMED LANDSCAPE -

Gravel fans in the upper part of the Waihopai Valley often carry patches of mature matagouri, adapted to drought and extremes of temperature. The open canopy allows grass to grow beneath and the woodland offers shelter to stock in winter.

