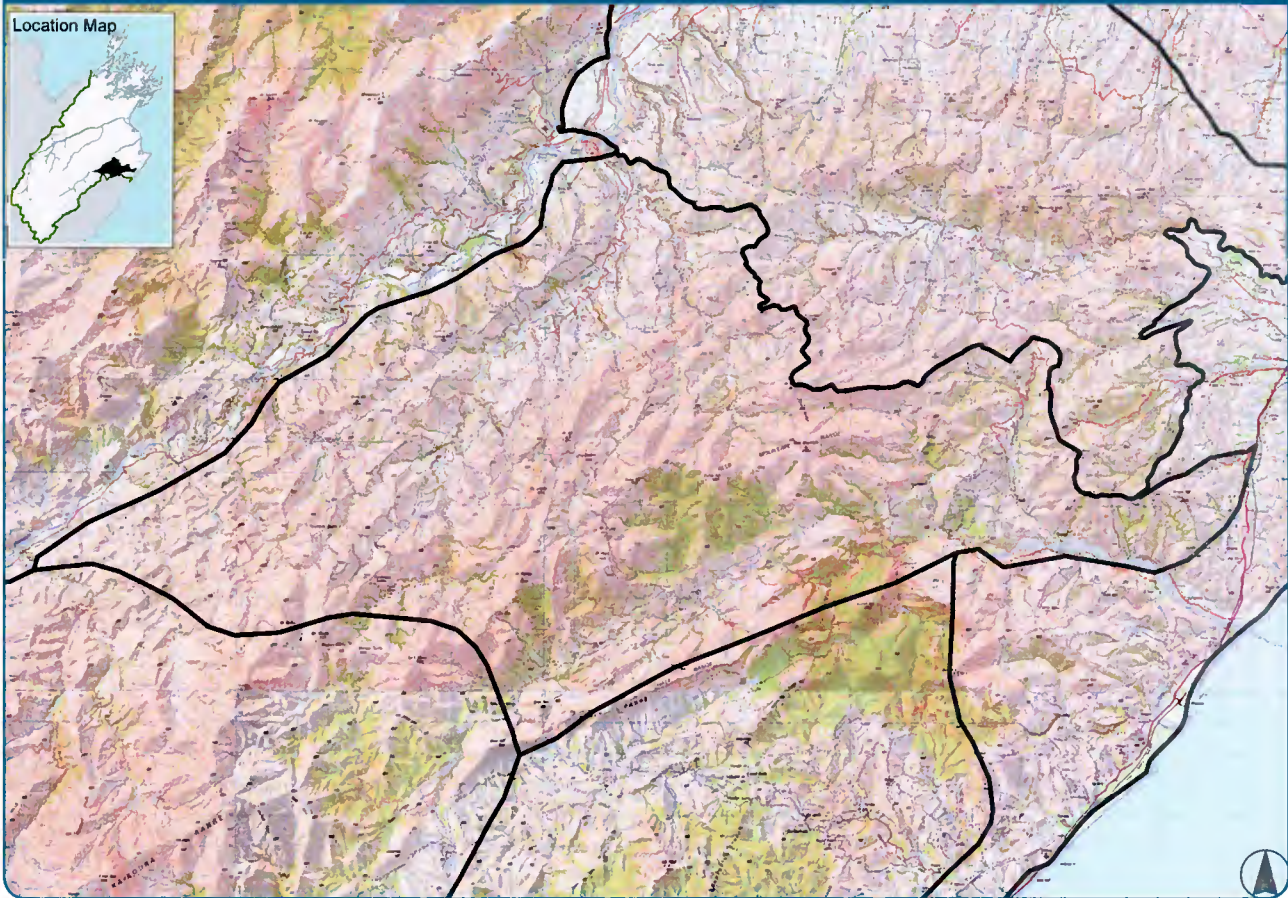




MEDWAY ECOLOGICAL DISTRICT

MAP 4 - MEDWAY ECOLOGICAL DISTRICT



OVERVIEW

The Medway Ecological District is centred on the Medway and Waima catchments that drain the flanks of the northern extremity of the Inland Kaikoura Range, whilst the Awatere River forms the western boundary. There are three main geological components. The core is typical greywacke and argillite, and forms the dominant peaks and ridges, including the Blue Mountain Range in the east, Little Cregan (1080m) and Big Cregan (1015m) centrally, and Mt Malvern (1426m) through to Mt McRae (1438m) in the south. To the south-east there is a large area of younger limestone - the Chalk Range and associated hills - cut through by the Waima River to form spectacular gorges. The north-west part of the ecological district is composed of even younger marine deposits of poorly consolidated conglomerate (known as the 'Great Marlborough Conglomerate') underlain by mudstone (papa). These deposits are readily eroded and the western rivers and streams typically form deep gullies. Associated with these three geological elements are outwash deposits from various glacial events, as well as more recent alluvial terraces and flood plains.

High ranges around much of the district result in a relatively dry climate and the predominantly north-westerly aspect results in hot summers. Snow is occasional but not long lasting, but winters are cold.

Originally nearly the whole of the ecological district would have been forested, with bushline reaching almost to the tops of the highest peaks except on exposed ridges, bluffs and screes. Black, mountain and red beeches would have predominated with broadleaved species (such as hinau) and podocarps (such as totara and matai) entering the forests on limestone in the south-east. Most of the forest was probably burnt in pre-European times. However, the extremely rugged limestone country with large areas of exposed rock has protected large patches of forest in the south-east. Elsewhere, a few



small gully forests of beech remain. Silver tussock is the dominant ground cover over large areas, but where this has been disturbed by fire and grazing, extensive scrub and secondary forest have developed. The secondary forest is typically kanuka, with manuka on the wetter soils formed on papa, and there is also a range of broadleaved species such as five-finger, lancewood, mahoe and kohuhu. The scrub is typical Marlborough “grey scrub” dominated by matagouri, porcupine shrub and *Coprosma propinqua*. The bluffs and escarpments support a range of Marlborough endemic plants such as Marlborough rock daisy (*Pachystegia insignis*), NZ lilac (*Heliohebe hulkeana*) and pink broom (*Carmichaelia glabrescens*). The Jordan catchment at the south-west edge of the district, supports some of the spectacular weeping tree broom, *Carmichaelia stevensonii*, which also occurs in neighbouring Ecological Districts.

Few obvious signs of the first human inhabitants are visible now, although the extensive tussock grasslands probably owe their origin to the clearance of forest cover by centuries of Maori fires. Today, sheep grazing is the dominant land use, with cattle on the lower country. The district is relatively weed free except for local concentrations of old man’s beard. Feral goats and pigs are common.

SURVEY RESULTS

Of the 16 properties where the owners were approached, 13 were surveyed. A total of 70 significant sites were identified. These have a combined site area of 4656 ha and make up approximately 14.6 % of the total land area of the ecological district. They are classified into 11 basic ecosystem types (see Table 3). The majority of sites are found within gullies, probably reflecting the value of these pockets of natural biodiversity as fire sanctuaries. An appreciable number are rugged and rocky. Most sites fall into the category of medium and high value for significance, indicating how distinctive and special they are.

TABLE 3 - SITES IDENTIFIED IN THE MEDWAY ECOLOGICAL DISTRICT

Ecosystem type	Total number of sites	Total area (ha)	% area of Ecological District
Riparian communities	23	746	
Rock outcrop, scarp and cliff communities	13	203	
Limestone communities	1	613	
Silver tussock grasslands	1	260	
Dry shrublands (“grey scrub”)	5	125	
Beech forests	5	1432	
Broadleaved forests (inland gullies/faces)	2	45	
Kanuka forests	16	1090	
Manuka forests	2	17	
Montane and subalpine shrublands	1	123	
Cabbage tree treelands	1	2	
Total	70	4656	14.6%

ECOSYSTEMS FOUND

The original vegetation cover of the Medway Ecological District has been thoroughly disturbed and modified since human arrival. However, there are several indigenous ecosystems that remain, providing opportunities for protection and enhancement. Most are now mere remnants of their original extent, so every one is valuable. There is only one substantial area of public land protected for conservation purposes: Isolated Hill Scenic Reserve at the south end of the ecological district. Prior to this survey, three 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 small examples left (swamps and ponds), none of sufficient quality to define as significant but with restoration potential.

RIPARIAN COMMUNITIES

A number of riparian communities are present in naturally protected gorges and along streams and gullies.

ROCK OUTCROP, SCARP AND CLIFF COMMUNITIES

Widespread and containing Marlborough endemic plants (rock daisies, pink broom and NZ lilac). In higher altitude communities there are interesting assemblages of native shrubs, speargrasses, cushion plants and herbaceous plants, including local endemics.

LIMESTONE COMMUNITIES

Localised and containing plants distinct to the limestone.

SILVER TUSSOCK GRASSLANDS

Fairly widespread although only one area is identified as significant. 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. Habitat for native shrubs, climbers, small birds, lizards and invertebrates. 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 south, with some Halls totara present. Small remnants of black beech in gullies in the Waima catchment, and a few remnant trees in the lower Medway in the proposed Broom Reserve. A small remnant of red beech in a gully in the Blue Mountain Range.

BROADLEAVED FORESTS (GULLIES/ FACES)

Several small modified pockets remain.

PODOCARP-BROADLEAVED FORESTS

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

KANUKA FORESTS

Formerly widespread, now mainly occurring as remnants (some quite large) in gullies.

MANUKA FORESTS

Never very common, now rather rare and confined to poorly drained mudstone.

MONTANE AND SUBALPINE SHRUBLANDS

One area of high altitude shrubland survives.

KOWHAI TREELANDS

A good example remains in the lower Waima Valley.

SPECIAL FEATURES

There are many special biological features in the Medway 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 glabrescens*), the shrub daisies *Olearia coriacea* and *Brachyglottis monroi* and local forms of the alpine daisy *Celmisia monroi*.
- Localised endemics (plants found only in local areas) are also present. They include *Heliohebe hulkeana* subsp. *evestita*, which is more or less confined to the Waima Valley, limestone endemics (such as the harebell *Wahlenbergia matthewsii*, the dwarf broom *Carmichaelia astonii* and the gentian *Gentianella astonii*), coral shrub (*Helichrysum coralloides*) and last but not least weeping broom (*Carmichaelia stevensonii*), almost confined to the ecological district, and growing in one site with pink broom.
- Nationally threatened plants found in the ecological district during the survey include weeping broom, *Convolvulus verecundus*, the mountain forget-me-not *Myosotis arnoldii*, the mistletoe *Tupeia antarctica* and fierce lancewood (*Pseudopanax ferox*).
- Geographical distribution limits and isolated populations have been discovered for several plants, due largely to the strong climatic drought gradient. Tree hebe (*Hebe parviflora*), titoki, ngaio and red beech reach distribution limits in the south-eastern part of the ecological district. Black beech occurs locally in the Waima and Medway catchments. Lowland totara is almost absent, but there are remnant trees in the lower Awatere Valley and young plants in the lower Waima catchment. Scrambling fuchsia (*Fuchsia perscandens*) and narrow-leaved lacebark are localised in lowland refuges and mountain lacebark (*Hoheria lyallii*) occurs in some upland gullies. Scented daisy (*Olearia odorata*) was found in two isolated localities. Lowland species such as mahoe were found growing at the extreme limits of their tolerance to altitude. The highest Marlborough rock daisy (*Pachystegia insignis*) yet recorded was found at 1350m on Mt Malvern.
- Alpine plants of note include true main range plants such as penwiper (*Notothlaspi rosulatum*), coral shrub, snow tussock (*Chionochoa flavescens*) and narrow-leaved mountain daisy (*Celmisia armstrongii*).
- Plants typical of the alpine or subalpine zone occur in the lowlands. They include the daisy *Celmisia monroi* and the speargrasses *Aciphylla aurea* and *A. glaucescens*.

NATIVE FAUNA

- Bush birds are surprisingly prevalent, despite the lack of general forest cover. The forest remnants and even shrublands support strong populations of bellbird, NZ robin, 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.
- Five species of native freshwater fish have been recorded in the district. Two of which, long fin eel and Dwarf galaxias, are listed as nationally threatened.