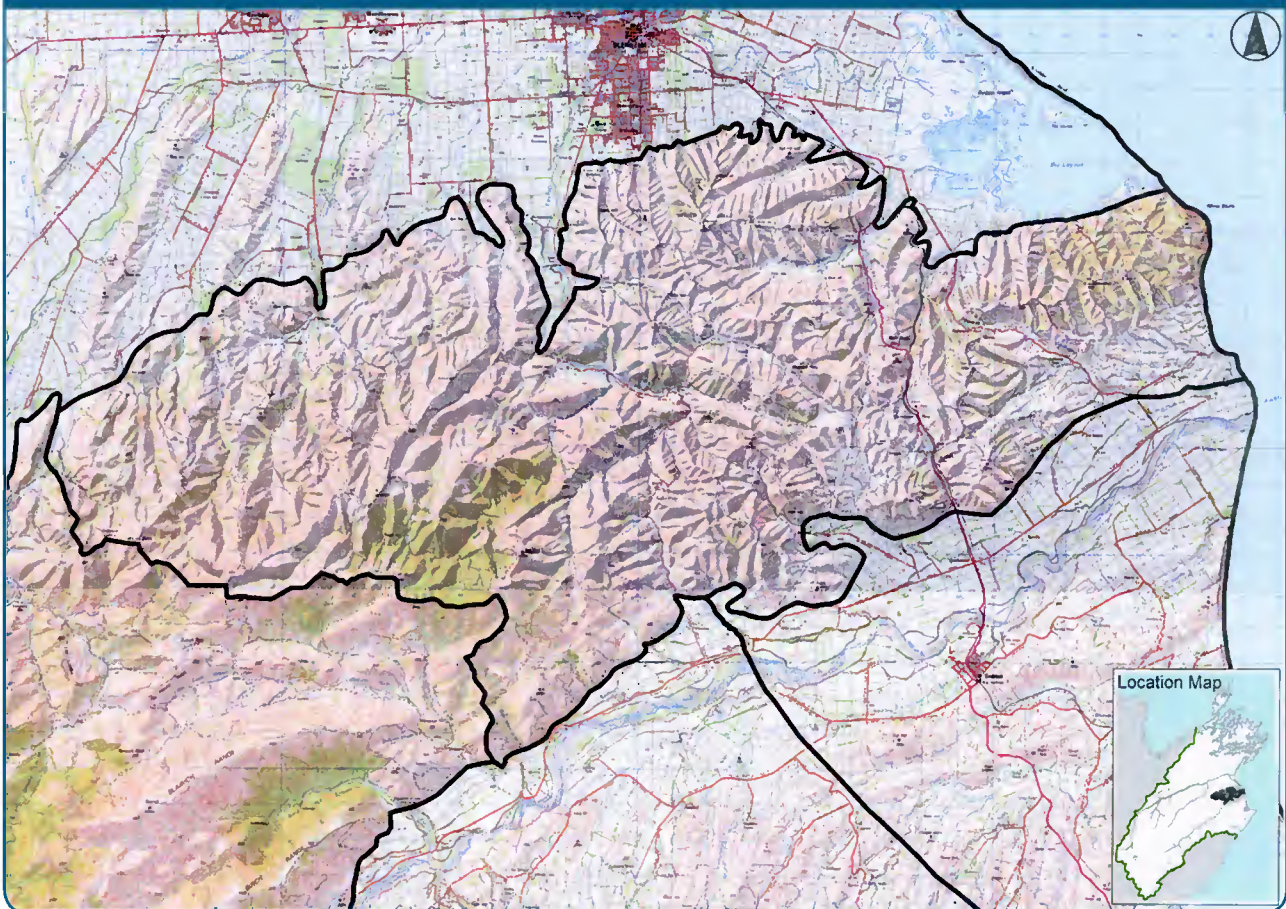


WITHER HILLS ECOLOGICAL DISTRICT

MAP 7 - WITHER HILLS ECOLOGICAL DISTRICT

**OVERVIEW**

The Wither Hills Ecological District contains the north-easterly extension of the Southern Alps, which fall to the sea at the cliffs of Te Parinui o Whiti (White Bluffs). The margins of the lower Wairau and Awatere River valleys define the boundary of the District to the north and south respectively. The northern boundary of the Blairich River catchment, a tributary of the Awatere River, forms the western boundary. The District runs from sea level in the east to 968 metres in the south-west. Apart from a small area of alluvial flats along the Taylor River (the only waterway of any size in the District), the land is comprised of dissected hill country, with generally short, steeply incised gullies and valleys. Taylor Pass and Dashwood Pass cross the Wither Hills approximately on a north-south orientation. The Vernon Hills lie east of Dashwood Pass, and form a short hill range between the pass and the sea. Gullies through these hills are often gorged. The sea cliffs at the Wairau Lagoons and White Bluffs are geological features of note.

The bulk of the western and central hills are comprised of Mesozoic greywacke, with basic igneous dykes and extrusions, and very local limestone bands. Northern, eastern and south-eastern hills are underlain by Tertiary mudstones and sandstones, grading into basal conglomerates that often form the surface geology. Early Quaternary glacial outwash deposits make up an area on the south side of the Vernon Hills in the extreme south-east. There is also a small area of low-lying late Quaternary moraine/glacial outwash deposits, on the edge of the Awatere plain. Small areas of recent alluvium are dotted along the northern margin associated with streams that run into the Wairau Plain. The soils are very prone to gully erosion, forming the “badlands” topography visible near Blenheim.



The area has a warm dry climate with high solar radiation and frequent extreme drought. Frosts occur in winter and winds are generally light to moderate.

The original vegetation cover, as suggested by recent research and the survey findings, was probably forest dominated by lowland totara, matai and black beech in the lowlands, with Halls totara and red beech on the higher ground. Other plant associates are likely to have included broadleaf, putaputaweta, akiraho, mahoe, kanuka, five-finger, kowhai and titoki, with ngaio abundant in more eastern parts of the District. Xeric (dry) shrubland would have been confined to bluffs and rocky ground. Wetlands were naturally uncommon. By the time of the first European pastoral endeavours in the early 1850s, the District had been largely deforested by Polynesian fire. Buick (1900) describes how emigrants on the 'Will Watch' en route to Nelson in 1839 "got a glimpse of the Vernon Hills, whose slopes were then covered with long wavy grass" (probably silver tussock). It is interesting to note that these are now largely clad in kanuka, with a lack of burning allowing the forest to return to even the driest margins of the area.

The Wither Hills Ecological District is almost entirely hill country, and is largely managed for merino sheep, with some cattle. Exotic forestry is established in places. Very little of the former pre-human forest cover, and also of the formerly extensive silver tussock grasslands at the time of European arrival, remains in this pastoral landscape. Lower pastoral lands are almost entirely composed of exotic species. Woody weeds such as gorse, broom, barberry, hawthorn, sweet brier, buddleia, willows and boxthorn are widespread and well established.

The only currently protected natural area is a private conservation covenant of dry coastal forest and treeland at White Bluffs, amounting to a mere 0.3% of the area of the ecological district.

SURVEY RESULTS

Of the 25 properties where the owners were approached, 18 were surveyed. A total of 13 significant sites were identified. These have a combined area of 4905ha and make up approximately 16% of the total area of the ecological district. The sites are classified into five basic ecosystem categories or types although almost all sites contain mosaics of vegetation of different types (see Table 6). The majority of sites are kanuka forest, "grey scrub" or silver tussock, or a mixture of these vegetation types, reflecting the long history of modification of the original forest cover and pastoral farming. Among them are small pockets of broadleaved and beech forest. All of the sites are distinctive and special.

TABLE 6 - SITES IDENTIFIED IN THE WITHER HILLS ECOLOGICAL DISTRICT

Ecosystem type	Total number of sites on private land	Total area (ha)	% area of Ecological District
Riparian communities/river bed	1	3	
Kanuka forest & shrubland	6	3795	
Dry shrublands & silver tussock	3	1050	
Rocklands, dry shrublands & silver tussock	1	42	
Inland broadleaved forest	2	15	
Total	13	4905	16 %

ECOSYSTEMS FOUND

Apart from several large sites of kanuka forest and silver tussock, only small remnant indigenous ecosystems remain. The main remaining ecosystem patterns are briefly described below. In many instances vegetation types are mixed and occur within a mosaic. The main types are listed first (as set out in Table 6), followed by several other ecosystem types which occur in very small pockets within other sites.



RIVER BED / RIPARIAN COMMUNITIES

The Taylor River braided riverbed has scattered native shrubs and some mat plants. Riparian margins under forest have native ferns, sedges and herbs, and where they are more open and flood-prone there are often carpets of mosses and low herbs.

KANUKA FORESTS

Extensive tracts of kanuka forest remain in the Vernon Hills to the east, and in the upper Taylor River catchment in the mid-west of the District. Numerous smaller patches in the east of the District were destroyed by fire in late 2000.

ROCK OUTCROP, SCARP AND CLIFF COMMUNITIES

Large bluffs dominate the coastal margin, where there are distinctive coastal shrublands nearby. Lowland rocklands are scattered through the pastoral hill country landscape in numerous smaller outcrops. Montane rocklands are confined to the Ned and outcrops in the far west, with a very large suite of plants associated with them.

SILVER TUSSOCK GRASSLANDS

Only one large tract of silver tussockland remains, centred around Dumgree in the middle of the District, with scattered smaller areas nearby. It is also a component of the largely exotic shrubby pastures in the higher country in the west.

DRY SHRUBLANDS (“GREY SCRUB”)

Shrublands and scrub, which are remarkably extensive in the head of the Branch River, are largely composed of *Coprosma propinqua*, *C. crassifolia*, matagouri, tauhinu (both species) and *Melicytus* aff. *alpinus* “Waipapa”, with *Coprosma* “taylorae” at higher elevations. These merge into the grasslands over wide areas. There are localised pockets of manuka scrub.

BROADLEAVED FORESTS

Broadleaved forests are rare, being confined to conglomerate gorges in the Vernon Hills, and small gully and hill-slope pockets elsewhere. Species mainly include mahoe, five finger and akiraho. Mapou, kowhai and kohuhu are more scattered, with kaikomako and titoki very localised. Scattered matai are associated with these in the lower Branch River.

INLAND WETLANDS

There are a few very small wetlands containing harakeke (lowland flax), raupo and sedges.

BEECH FORESTS AND MONTANE PODOCARP-BEECH FORESTS

Very small remnants of black beech and red beech are scattered through the middle and west of the ecological district, usually amongst kanuka forest. Hall’s totara is confined to the highest ground in the west, as scattered wind-shorn trees near ridgelines, and as two areas of forest, treeland and shrubland in the upper Branch River catchment.

SPECIAL FEATURES

Despite the history of great modification by people, there are several features to celebrate.

NATIVE FLORA

- Nationally threatened plants found during the survey include coastal tree broom (*Carmichaelia muritai*), which is confined to White Bluffs in this ecological district, pink broom (*Carmichaelia carmichaeliae*), coastal mat daisy (*Raoulia* aff. *hookeri*), another mat daisy (*Raoulia monroi*), the local mountain daisies *Celmisia cockayneana* and *C. insignis*, white fuzzweed (*Vittadinia australis*) and the coastal groundsel *Senecio hauwai*.



- Eleven species reach their national northern limit within the Wither Hills Ecological District. These are pink broom (*Carmichaelia carmichaeliae*), coastal tree broom (*C. muritai*), *Celmisia cockayneana*, *Craspedia* "Marfells", NZ lilac (*Heliohebe hulkeana*), *H. pentasepala*, Marlborough rock daisy (*Pachystegia insignis*), *Raoulia monroi*, leafless lawyer (*Rubus squarrosus*), *Senecio hauwai*, and prostrate kowhai (*Sophora prostrata*).

NATIVE FAUNA

- The only birds listed as nationally threatened that are found in the ecological district are grey duck, black shag and NZ falcon (karearea or sparrowhawk). Black-billed gull and black-fronted tern possibly use the braided riverbeds.
- Native bird species commonly recorded in forest areas include bellbird, brown creeper and silvereye, with fantail and grey warbler uncommon but usually present. Shining cuckoo was heard occasionally. South Island tomtit was recorded in only three forest blocks, South Island robin in two and rifleman in one. Ruru (morepork) was not recorded, although given its nocturnal nature it may still be present. Kingfisher was noted along one forest stream.
- A shearwater species was heard one night during the survey, flying across the face of the sea cliffs at White Bluffs.
- There are records of three lizard species in the District, namely common gecko (*Hoplodactylus maculatus*), common skink (*Oligosoma nigriplantare polychroma*) and forest gecko (*Hoplodactylus granulatus*). This is the eastern limit of the forest gecko.
- Five species of native freshwater fish have been recorded in the District. The only one listed as nationally threatened is longfin eel. Two of the other species - northern galaxias and upland bully - may have locally distinct populations because they are non-migratory. Koura (freshwater crayfish) are common in places.



WITHER HILLS ECOLOGICAL DISTRICT - PHOTO ESSAY

**DUNGREE –**

The only remaining extensive area of silver tussock grassland in the Ecological District. Such grasslands were present before human settlement and became widespread following early fires which removed forest cover. They are now severely reduced.

BRANCH RIVER –

The largest area of native vegetation in the Ecological District showing a mosaic of regenerating kanuka forest, native shrublands and silver tussock, with remnant forest species such as black beech, matai and Hall's totara. These forest species would have once characterised the forested landscape in this area.





TE PARINUI O WHITI/WHITE BLUFFS AND VERNON HILLS –

The second largest tract of native forest vegetation in the Ecological District. It includes a range of vegetation including coastal shrublands, broadleaved forests in moist gullies and gorges and extensive kanuka forest.



BRANCH RIVER –

An example of black beech scattered amongst kanuka in one of the last remaining remnants of once common forest.

