

## Mineral Belt Forget-Me-Not

*Myosotis monroi*

Two forget-me-not species are endemic to the Nelson Mineral Belt, and they are found in only two places – here on the Dun Mountain, and on the Red Hills, Mt Richmond Forest Park.

Most forget-me-not species are self-pollinating, but the one photographed here has an additional survival feature – is also scented to attract insects that brush against its protruding male and female spikes, spreading pollen among the plants. The Dun Mountain plants will start their summer flowering in November. Living at a higher altitude, the Red Hills forget-me-nots flower later in the season.

New Zealand has 63 confirmed forget-me-not species, with 23 of them yet to be formally described (named). The combined New Zealand count, including the ones yet to be named, is more than the total number of forget-me-not species growing in the rest of the world.



## Mineral Belt Pincushion

*Colobanthus "serpentine"*

A mat of up to 30cm diameter, with a pincushion-like appearance, this fleshy plant survives in places where seasonal moisture accumulates, such as patches of sand and gravel which have been formed by streams and rivulets of water.



## Mineral Belt Montia

*Montia racemosa*

Imagine being this little plant and having your roots tugged up out of the ground and rearranged. This happens during freeze and thaw conditions.

When water freezes at night, ice crystals form and expand, physically lifting soil and drawing roots up and out of the ground. It is thought the fibrous root network of Montia enables it to survive.

Montia is often overlooked until it breaks into a cluster of finger-nail size blossoms. It is a semi-fleshy plant, favouring eroded, shallow hollows in the ground, or cracks in a rock. These hold moisture and offer some protection from the wind.

The Dun Mountain is a harsh and exposed place. Wind, rain, sun, frost and snow can occur at any time of the year, and even all in the one day.



## Mineral Belt Harebell

*Wahlenbergia albomarginata ssp. olivina*

Like the Montia, this small plant can be easily overlooked, until it flowers. The composition of the soil here brings out the blue colour. The leaves are thick and fleshy, able to survive the extremes of sun, wind and cold.

The Nelson Mineral Belt stretches from D'Urville Island in the north to the Red Hills in the south. There is also an outlier at Station Creek, in the Matakītaki Range. The endemic harebell is not found anywhere on the Belt north of the Dun Mountain.

For pollination and seed dispersal, most of the plants here on the Dun Mountain rely on wind, water, insects and gravity. Self-pollinating plants tend to be solitary and less showy. Fragrance or colour will attract insects. An exception is the spear tussock, the seeds of which are dispersed by birds and lizards.



## Forest Ringlet Butterfly

*Dodonidia helmsii*

Can you imagine a flight life of only a few weeks during mid-summer? This is the lot of the beautiful forest ringlet butterfly. Although not confined to the Nelson Mineral Belt, the specimens observed here are very small in size. It has been suggested that this could be due to the mineralised nature of the sparsely vegetated environment. The larvae need the forested areas of the Mineral Belt, living on cutty grass (*Gahnia*) and bush snowgrass (*Chionochloa*). The larvae are preyed upon by introduced wasps, and over the past 50 years have been reduced in distribution to areas over 600 metres altitude – the limit for the German and common wasps.



## Giant Land Snail

*Powelliphanta hochstetteri consobrina*

Loss of habitat and predation are threatening the endemic snails of the Bryant and Richmond Ranges. This sub species is one of smallest of the giant native land snails, with a shell diameter of around 60mm. The largest reach up to 90mm across.

These nocturnal, carnivorous creatures feed on invertebrates and earthworms, and live within the forest and at its margins. You are more likely to see an empty shell than a live animal. Tempting though it is, please don't collect the shells. Not only do live snails need the calcium within them, it is actually illegal to remove them!



## Ground Beetle

*Mecodema dunense*

Minding their business as scavengers and predators, scurrying along the forest floor and amongst the rocks of the Mineral Belt, ground beetles are mostly ignored by recreationalists. This species is named for the Dun Mountain where it was first found. The beetle has also been found on Mt Richmond, but only one specimen, making this Mecodema a rare model.

Eyes peeled to the ground!



# DUN MOUNTAIN ECOLOGY

Understanding a unique alpine environment





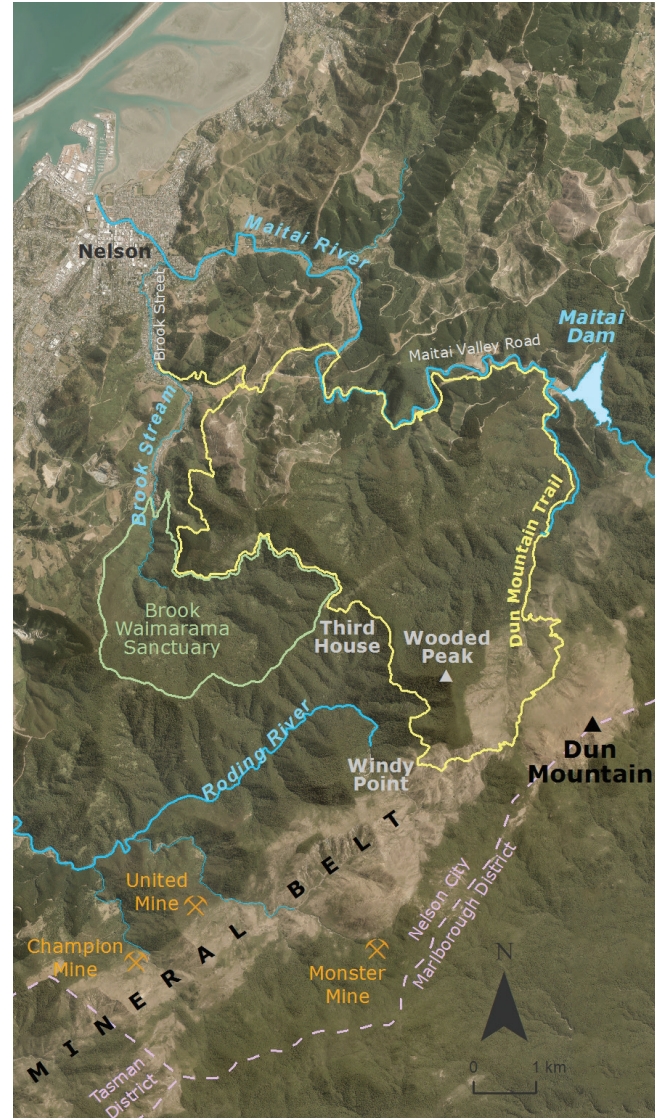
## What's so special about the Dun Mountain?

Deep within the earth, 280 million years ago, molten hot lava oozed its way into the overlying continental crust of Gondwana, creating the conditions to form this unique environment. Commonly called the Nelson Mineral Belt, it extends from D'Urville Island in the north to the Red Hills in the south.

The rocks and soils of the Mineral Belt are high in iron, magnesium, cobalt and nickel. Many native plants and animals usually found living at this altitude will not survive here. However, over millions of years, plant and animal communities have adapted to survive in the toxic, low fertility soils and harsh climate of this unique place, communities that can't be found naturally thriving anywhere else in the world. This unique environment is under threat; if we lose it, it will be gone forever.



## Location Map



Help us grow our knowledge of the Dun Mountain area by recording any observations of plants and animals.

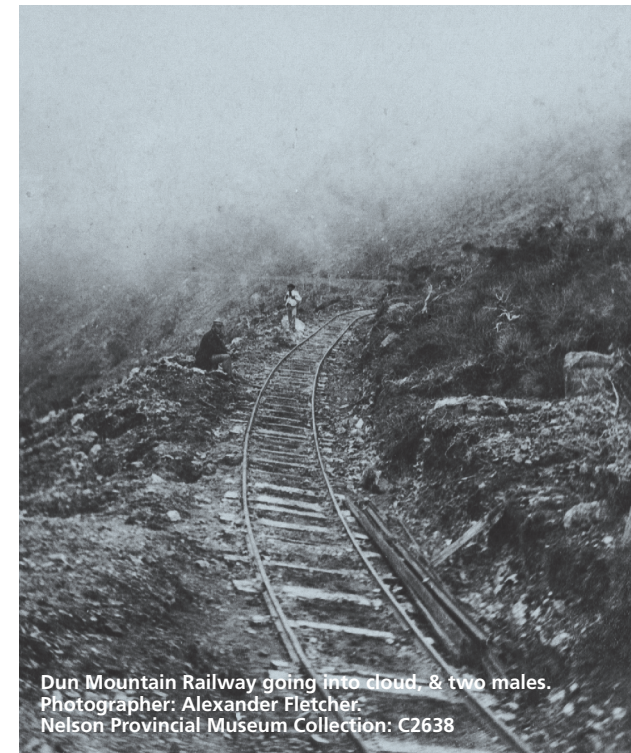
Go to [inaturalist.org](https://inaturalist.org) or use the NatureWatch NZ app to record your findings and see what other people have spotted in this area.

## A unique geological area

The Dun Mountain mineral belt is a unique geological area of high country located south east of Nelson City, with Dun Mountain itself reaching a peak of 1129m. It is unique for its high mineral content rocks, toxic low fertility soils and its harsh climate.

The area has a long history of human activity, as early Maori quarried argillite or pakohe from the Rush Pool area, using traditional techniques that involved fire and water to force the rock faces to crack, and hammer stones to break up smaller boulders. The quarried stone was used for adzes and tools; sharp flint-like fillets were excellent tools for carving wood and preparing food.

European settlers formed the Dun Mountain Copper Mining Company to extract chromite ore found at Wooded Peak, just north of Dun Mountain, and built the Dun Mountain Railway to transport the ore to Port Nelson for export. The route opened in February 1862 but the ore was soon exhausted and the mine was closed in 1866. The Dun Mountain Railway route remains as a historic memorial to colonial industry, and is much enjoyed today by walkers and mountain bikers exploring this unique landscape.



Dun Mountain Railway going into cloud & two males.  
Photographer: Alexander Fletcher.  
Nelson Provincial Museum Collection: C2638

## Threats to this unique place

Weeds, animal pests and yes, even people, threaten the environment of the Nelson Mineral Belt

### Weeds

Weeds compete with native plants for space and nutrients. Introduced plants can change soil fertility and create shade, which, over time if new plants dominate, could irreversibly change the plant and animal communities of the area.

Nelson Nature is working to control wilding pines, gorse, and Spanish heath. Douglas fir, one of the most virulent seed spreaders of all the wilding pines, is being retired from Council's plantation forestry plantings.

### Animal pests

Animals pests such as deer, goats, pigs, hares and possums, threaten the natural ecosystem of the Mineral Belt. Browsing animals eat the palatable plants and alter the leaf litter composition that the snails live in; the pigs eat the tasty earthworms that are essential snail food; while rats, pigs and possums eat the snails. The snails really "draw the short end of the straw"!

The Nelson City Council has habitat restoration and pest control programmes in place to protect the native plants and animals of the mineral belt. Nelson Tasman Forest and Bird have established a partnership with Nelson City Council to support this area and have been able to provide additional funding for this work.

### People

People are also weed spreaders, bringing in seeds on shoes, backpacks and clothing.

## How you can help

- Don't bring new plant seeds into the area.
- Pull out any small wilding pines you see.
- Support habitat restoration and pest control programmes.
- Take only photographs.
- Do not collect snail shells – leave them where they are to allow the calcium within the shells to return back to the land for other snails to use.

Note that all *Powelliphanta* snails are fully protected under the Wildlife Act 1953, so neither live snails nor empty shells can be collected/removed.

Live snails or shells can be reported along with a photograph, date and location, through [naturewatch.org.nz](https://naturewatch.org.nz). This adds to knowledge of their distribution.

For more information visit [nelsonnature.nz](https://nelsonnature.nz)