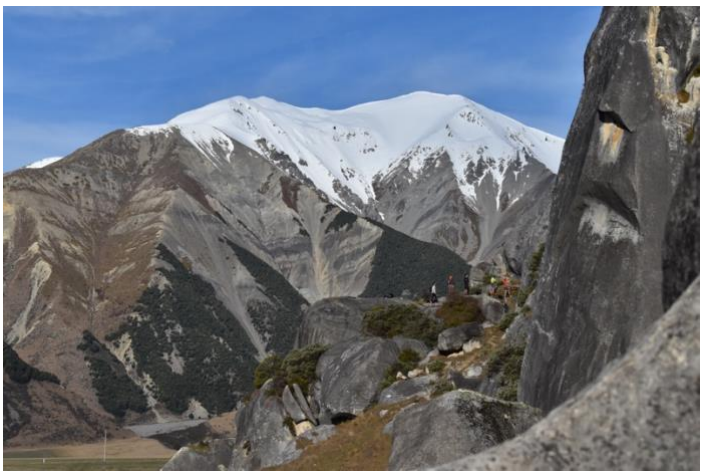
A Climber's Guide to Native Plant Conservation

- Castle Hill Basin

Introduction



Castle Hill Basin is home to many unique and threatened plants. Many are small and inconspicuous, yet they are a huge part of what makes this area a unique and special place to climb. Losing any of these plants means losing a part of Aotearoa's deep heritage and history. As frequent visitors to Castle Hill Basin, climbers have an impact on the area's plant life. Limiting our damage benefits both the plants and us. The Department of Conservation could prohibit climbing at Kura Tāwhiti at any time. Likewise, our access to Flock Hill is a privilege that the farmer could remove. Imagine the headline: *Rock climbers trample last known individual of a critically endangered plant species*. Our access wouldn't last long.

It's hard to protect a plant when you don't even know it's there. How many of the little plants that grow at the base of the boulders could you refer to by name? The aim of this booklet is to introduce the everyday climber to some of the native plants with which we share the boulder fields. The *Threats and how you can help* section details some ways to protect and minimise your impact on these plants, safeguarding both the plants themselves, and our own access privileges.

The threats and how you can help

Oblivious climbers can trample plants. We put our pads right up against the rocks, where many native plants particularly like to grow. We wander around, looking up at the rocks more often than we look down at the plants beneath our feet. Next time you place a pad, consider the plants underneath it. Don't place it unnecessarily close to the rock (unless it's a slab you won't fall there anyway). If you see one of the plants featured in this booklet, consider climbing a different problem instead. There are lots of rocks, but some plant species in the basin have only a handful of individuals remaining.

Many small plants rely on the shade and moisture provided by larger shrubs. As shrubs have been removed, the habitat suitability for such plants has declined. Although many of the shrubs around the basin (eg. Broadleaf) are not threatened species themselves, they are essential for protecting other threatened species. Avoid placing your pad on top of bushes, regardless of whether or not the bush is a threatened species itself.

Another threat to native plants is invasive weeds, which displace native plants and alter habitat characteristics. This includes the obvious pine trees, as well as the less obvious invasive grasses and herbs. If you see a pine tree, pull it out. Carry a pocket knife with a small saw to cut down the bigger ones, and make sure to cut it off below the lowest green needles. If you notice that your socks are full of grass seeds, remove them before travelling to climb in another location in order to avoid spreading devastating weeds.

Browsing by sheep, hares, and rabbits is also a major threat. Make sure to close gates behind you to keep sheep where they belong. The few remaining fields where sheep are not permitted, such as Kura Tāwhiti, are especially important places to respect.

The plants

Castle Hill forget-me-not (*Myosotis colensoi*)

What it looks like:

Forms a flat rosette of hairy brown or green leaves, up to about 4 cm long and 1 cm wide. Low growing and inconspicuous when not flowering. From October to January, you may see cute wee flowers with 5 white petals and a yellow centre.

Where it grows:

Only found in Castle Hill Basin and the Chalk Range in Marlborough. Usually grows in areas where the ground consists of flakes of limestone.

Conservation status:

Critically endangered, with fewer than 250 individual plants left.

Castle Hill bittercress (*Cardamine magnifica*)

What it looks like:

Leaves are divided into lobes, and grow in a small rosette, up to 16 cm diameter. Flowers, which occur from October – December, have four white petals and a yellow center, and are about 1-2 cm diameter. Individual plants usually have several to many flowers at once.

Where it grows:

Found only in Castle Hill Basin. Grows on limestone scree and the edges of limestone boulders and outcrops.

Conservation status:

Nationally critical, with fewer than 250 remaining plants, all found within an area of less than 1 hectare.

Canterbury limestone wheat grass (*Australopyrum calcis subsp. optatum*)

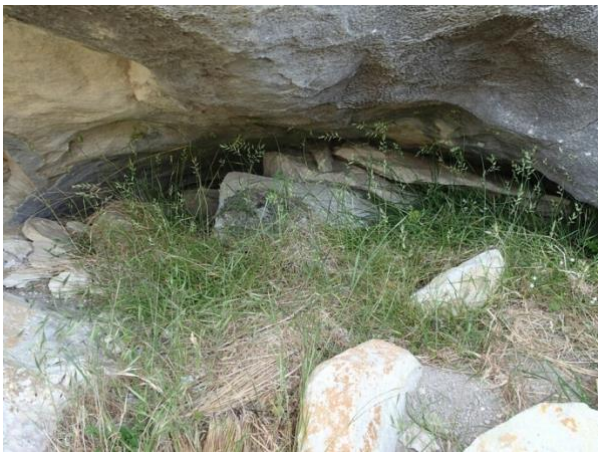
What it looks like:

A slender-leaved little grass, with finely hairy leaves and a white midrib on the underside of the leaf. The flowerhead or seedhead is wheat-like, on a stalk 17-60 cm long. The so-called 'nodes' of the stalk (think of these as the 'elbows') are swollen and darkened. The sections between nodes are hairless, except for the last section, which is finely hairy.

Where it grows:

Found in only a handful of areas of Canterbury with limestone soils, including Castle Hill Basin. Tends to grow in shaded areas, under overhangs or shrubs.

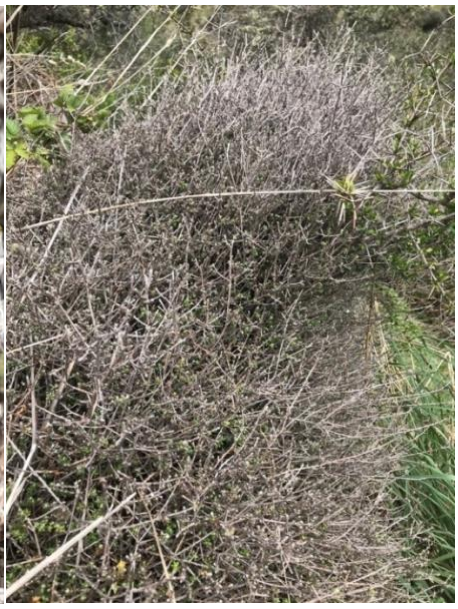
Conservation status:



Nationally endangered, with a total of around 2000 plants remaining. Its limited range makes it particularly vulnerable to further decline. Threatened by browsing animals and trampling. You'd be forgiven for finding this one a bit tricky to distinguish from all the other grasses around, many of which are exotic. Grasses are tricky to identify, but general principles of not placing your pad too close to the rock and not damaging shrubs, will help conserve this species and many others, even if you remain unaware of their presence.

Climbing everlasting (*Helichrysum dimorphum*)

What it looks like:



A dense, twiggy shrub usually about a meter tall and wide. Appears half-dead, even when thriving and healthy. Has a few tiny green leaves at the ends of intertangled grey branches. The rest of the branches are covered in grey leaves that lie flat against the branch like scales.

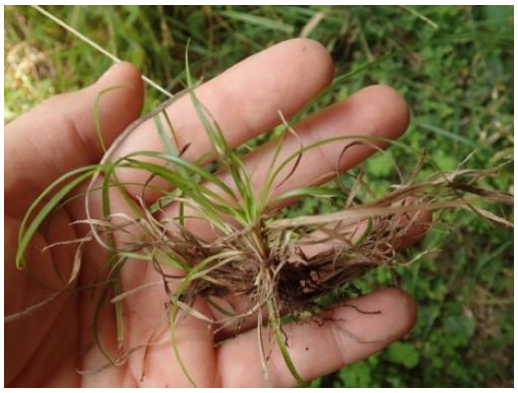
Where it grows:

You're most likely to see this species at the Cave Stream boulders, as this is one of its largest populations, however it is scattered throughout the basin and other parts of the Waimakariri catchment. It usually grows near streams, often in combination with matagouri.

Conservation status:

Nationally endangered, threatened by clearance of scrub for pasture improvement.

Grassy mat sedge (*Carex inopinata*)



What it looks like:

Looks a bit like grass, but actually a sedge (not a grass). Leaves are narrow and twisty, usually about 10 cm long. Plants form clumps that spread by underground stems. Flowers, occurring from October – January, consist of 2-3 little spike structures, buried in the leaves.

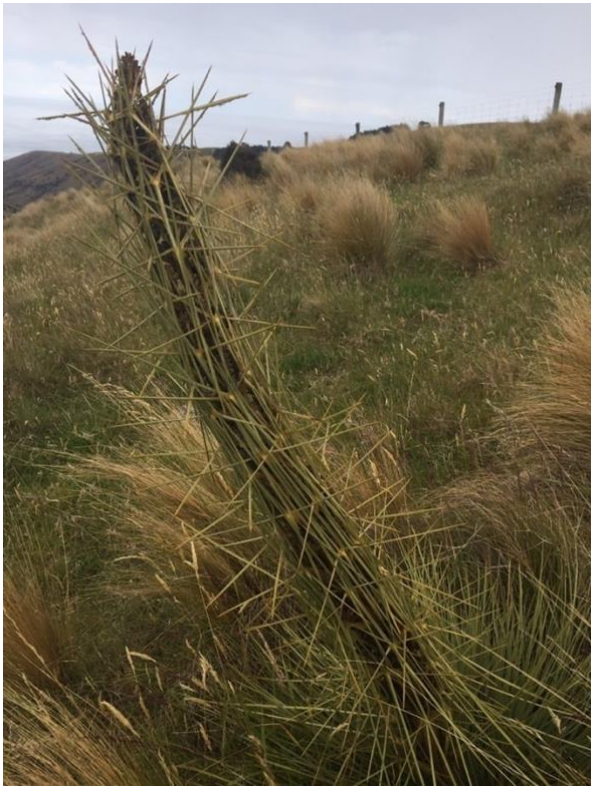
Where it grows:

Found in the Eastern South Island, in shaded areas in forest or under overhangs. Occurs in the basin under the boulders at Prebble Hill (The Teapot), and formerly grew in other fields in the basin, but appears to now be restricted to Prebble Hill, where the impacts of trampling have been less.

Conservation status:

Classified in 2017 as nationally vulnerable. A rare case where botanists have specifically mentioned rock climbers as a threat to the population in Castle Hill Basin. Be particularly careful in shaded spots close to the boulders, where the mat of invasive grasses is less dense, and plants like this sedge thrive.

Speargrass (*Aciphylla subflabellata*)



What it looks like:

A rosette of narrow, dagger-like leaves with extremely pointy tips, forming a clump of 20-50 cm diameter. Flowers from December – February, with a spiky flower stalk up to about a metre long. Several other related species, also commonly referred to as speargrass or spaniard, grow in the region. *Aciphylla subflabellata* can be distinguished from most similar species by its narrower leaves, around 3 mm wide.

Where it grows:

Found in the South Island, east of the main divide only, mostly in subalpine habitat amongst tussocks. You may see this species scattered around any of the boulderfields in the basin.

Conservation status:

Classified as at risk – declining. Has a broader range than many of the other species featured in this booklet, but occurs sparsely throughout its range. Threatened by animal browsing, invasive weeds, and other habitat modification.

Dryland sow thistle (*Sonchus novae-zelandiae*)

What it looks like:

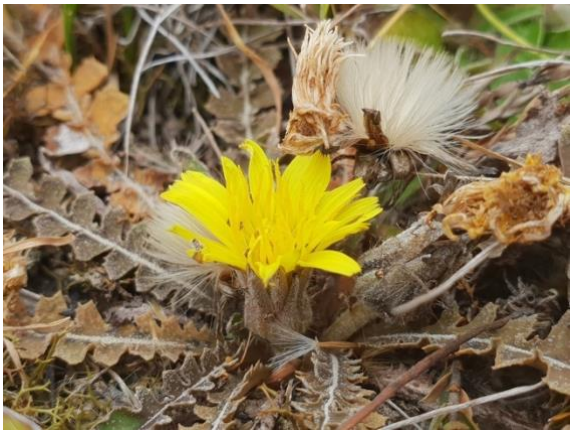
Forms a flat rosette of leaves, quite variable in colour and shape. Leaves are 2-15 cm long, hairless, and often lobed at the base. Flowers may be seen from November – April, and are yellow and dandelion-like.

Where it grows:

Often confined to cliffs and rock outcrops, mostly because there are fewer invasive weeds in these spots, rather than because it actually prefers such conditions.

Conservation status:

Nationally vulnerable, and declining. Threatened by the spread of invasive weeds, particularly those that are closely related to itself, as they compete most strongly for space and resources.



Limestone Epilobium (*Epilobium gracilipes*)

What it looks like:

A low-growing herb with red stems and thick, waxy green leaves. Flowers are raised on red stalks, and have four white petals, each with a distinctive notch in the end. Flowers from November – March. After flowering, the plant produces elongated seedpods that split open as they dry to release the seeds.

Where it grows:

Found on both the North and South Islands, but uncommon in the North. Only grows in areas of limestone, marble, and similar rocks, and as such is found in scattered patches within its range. You may see this species growing right against the base of the boulders anywhere in the basin.

Conservation status:

Classified as at risk – naturally uncommon. Its preference for particular rock types naturally restricts its distribution to isolated areas, making it particularly vulnerable to threats.

Matagouri (*Discaria toumatou*)

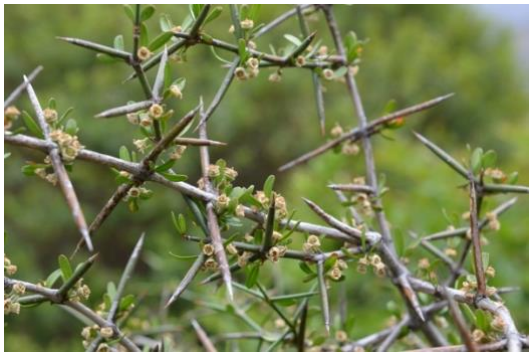
What it looks like:

Spiky shrub, grows up to 6 m tall, but usually around a metre tall in Castle Hill Basin. Has small, oval leaves tucked in amongst the spines. Flowers from October to December, with clusters of tiny white flowers. From January to March, if you look closely amongst the spines, you may see little three-lobed fruits.

Where it grows:

Formerly common throughout New Zealand. Now rare in the North, but still common in alpine shrublands of the South Island. Prominent on the approach to Flock, and scattered around all the fields in the basin.

Conservation status:



Although it may appear common, matagouri was classified in 2017 as At Risk – Declining. This is an increase in threat status from previous assessments, where it was considered not threatened. Although South Island populations appear stable, the species has become rare in the North Island. Matagouri is often intentionally removed or burnt to maintain good pasture, with little regard to its value as a species. It's time we showed our native plants a little more love – even the spiky ones.

Broadleaf (*Griselinia littoralis*)

What it looks like:

This shrub or small tree is distinctive for its bright green leaves that stand out from across the field. Many climbers use these trees as landmarks to navigate the maze of Flock Hill boulders.

Where it grows:

Found throughout New Zealand. Common in the boulderfields of Castle Hill Basin, especially Flock. Often found growing against boulders or even in soil-filled buckets in the rocks, as this is where it is best protected from browsing animals.

Conservation status:

Not threatened, but that doesn't mean not important! May play a key role in providing shade, moisture, and improving habitat quality for threatened species.

Kopoti (*Anisotome aromatica*)

What it looks like:

Related to carrots, the flower of this species will likely remind you of a carrot flower if you've ever seen one. It flowers from October – February. Its leaves have a central stalk with tiny leaflets coming off this stalk. Can look similar to *Gingidia enysii,* but *Gingidia* can be distinguished by a strong aniseed smell when its leaves are crushed.

Where it grows:

Found throughout most of New Zealand, common in subalpine areas of the South Island, including Castle Hill Basin. Like many of these plants, often found around the base of boulders, as this is where it best escapes trampling and browsing.

Conservation status:

Not threatened, but still a beautiful native plant that deserves protecting lest it become threatened in the future.

Colenso's mingimingi (*Acrothamnus colensoi*)

What it looks like:

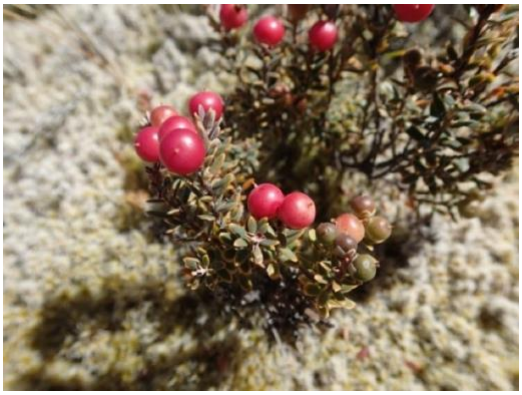
Low-growing shrub. Small, bronze-green leaves with distinctive parallel lines on the underside. Flowers are small and tube-shaped, with five white petals. Flowering occurs from September – February. The fruits are red berries, and may be seen from Novemeber – June.

Where it grows:

Broad distribution range, found from the central North Island southward. Occurs in subalpine shrubland and grassland, scattered plants are common throughout the basin.

Conservation status:

Not threatened, but still an important species to protect and conserve. The berries are important food for native birds, reptiles, and invertebrates.



Acknowledgements and image credits:

Jane Gosden, for guidance on content, and for images of *Australopyrum calcis subsp. optatum, Cardamine magnifica, Acrothamnus colensoi, Sonchus novae-zelandiae, Discaria toumatou,* and *Myosotis colensoi*

Melissa Hutchinson, for images of *Carex inopinata*

Chris Close, for image of *Epilobium gracilipes*

Murray Dawson, for image of *Griselinia littoralis*

Ben Thompson, for title page image