



2022 NZPCN Conference: Drylands Field Trip - Cromwell Chafer Beetle Reserve



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Cromwell Chafer Beetle Reserve (CCBR)

Geoff Rogers

The 81-ha CCBR was established in 1979 (gazetted 1984) and is the only reserve in the world created solely for the protection of an invertebrate, in this case a Chafer Beetle (*Prodontria lewisii*). The Reserve occupies a once, extensive sand plain formed at the confluence of the Kawarau River and Clutha River/Mata Au.

The beetle emerges nocturnally from underground hides in spring and summer to feed on plants such as *Raoulia australis*, sorrel and lichens. Rabbits and redback spiders command most conservation attention, the former facilitates habitat for the latter that preys on the beetle.

From a landscape ecology perspective, the Reserve is one of the few protected, inland sand dune ecosystems. However, the previously mobile sand and loess is now artificially stabilised by pine plantations and industrial and residential land uses (marram was used early on, also). In the early 20th Century, much mobile sand, interspersed with short tussock grassland, covered most of the Cromwell basin, which raises the question of what retrogressive successional pathway in the 800-years of human settlement led to today's more or less homogeneous exotic grass sward?

Carex albula

COMMON NAME

white sedge

SYNONYMS

Carex comans var *stricta* Cheeseman

FAMILY

Cyperaceae

AUTHORITY

Carex albula Allan

FLORA CATEGORY

Vascular – Native

ENDEMIC TAXON

Yes

ENDEMIC GENUS

No

ENDEMIC FAMILY

No

STRUCTURAL CLASS

Sedges

NVS CODE

CARALB

CHROMOSOME NUMBER

2n = c.60

CURRENT CONSERVATION STATUS

2018 | Threatened – Nationally Vulnerable

PREVIOUS CONSERVATION STATUSES

2012 | At Risk – Declining | Qualifiers: DP, Sp

2009 | Data Deficient

2004 | Range Restricted

DISTRIBUTION

Endemic. South Island in a narrow area from the Mackenzie Basin, Waitaki and Central Otago

HABITAT

A species of mainly alluvial terraces, colluvial slopes and river flats. It prefers free draining soils and is often a local component of grey scrub communities. Seemingly unpalatable it often persists in paddocks alongside cattle and sheep.

FEATURES

Stiffly erect to drooping, buff-coloured to almost bleached white, green or red, densely caespitose sedge, 250–350 mm tall. Culms 50–200 x 0.5 mm smooth, often with a deep groove; basal sheaths dark brown to purple-red. Leaves numerous, much > culms, 0.8–0.9(–1) mm wide, plano-convex, rigid, grooved, margins scabrid. Spikes 3–6(–8); terminal spike male; remaining spikes female, 5–20 x 3–5 mm, distant, upper spikes sessile to sub-sessile, lower spikes narrower, flattened, with scabrid peduncles. Glumes (excluding awn) slightly < utricle length, broadly ovate, acute, pale cream with a few to many scattered fine brown striae, chartaceous, nerves beside midrib usually indistinct, awn long and narrow, finely scabrid. Utricles 2.5–3 x 1.5 mm, plano-convex to subtrigonal, elliptic-ovoid, pale brown, nerved on the convex face towards margin; beak 0.5 mm, deeply bidentate with spreading crura, margins and crura scabrid. Stigmas 3. Nut 1.5 mm, light grey-brown, trigonal, oblong-ovoid.

SIMILAR TAXA

In the field most similar to either hard tussock *Festuca novaezelandiae* (which often has spikes visible above the leaves) or silver tussock *Poa cita* (which is usually a larger plant with typical grass flowers). Within the sedges most like *Carex comans* Bergg., *C. albula* is best distinguished from that species by the usually stiffly erect growth habit, pale foliage colour, and pale cream glumes. However some plants can also appear green or red and can only be distinguished from *C. comans* by the pale glume with small red flecks and by the obvious ven towards the margin of the outer face of the utricle. The peculiar bleached-white colour implied by the specific name is only apparent in some plants and is often imparted by the dead foliage (which is retained).

FLOWERING

October - December

FRUITING

October - September

LIFE CYCLE

Nuts surrounded by inflated utricles are dispersed by granivory and wind (Thorsen et al., 2009).

PROPAGATION TECHNIQUE

Easily grown from the division of whole plants and from fresh seed. Best suited for a well drained, sunny site in dry climates. This species dislikes humidity and soon dies if kept too moist. An unusual sedge well worth cultivating.

THREATS

A local regional endemic. Though it does not seem to be particularly palatable as it is often found in some abundance within pasture otherwise heavily cropped by sheep and/or cattle, plants have been lost to spraying and cultivation. It also does not seem to tolerate competition from taller species

ETYMOLOGY

carex: Latin name for a species of sedge, now applied to the whole group.

ATTRIBUTION

Description adapted from Moore and Edgar (1970)

REFERENCES AND FURTHER READING

Moore, L.B.; Edgar, E. 1970: Flora of New Zealand. Vol. II. Government Printer, Wellington.

Thorsen, M. J.; Dickinson, K. J. M.; Seddon, P. J. 2009. Seed dispersal systems in the New Zealand flora.

Perspectives in Plant Ecology, Evolution and Systematics 2009 Vol. 11 No. 4 pp. 285-309

MORE INFORMATION

<https://www.nzpcn.org.nz/flora/species/carex-albula/>

Luzula celata

COMMON NAME

dwarf woodrush

SYNONYMS

None

FAMILY

Juncaceae

AUTHORITY

Luzula celata Edgar

FLORA CATEGORY

Vascular – Native

ENDEMIC TAXON

Yes

ENDEMIC GENUS

No

ENDEMIC FAMILY

No

STRUCTURAL CLASS

Rushes & Allied Plants

NVS CODE

LUZCEL

CHROMOSOME NUMBER

2n = 12

CURRENT CONSERVATION STATUS

2012 | At Risk – Declining | Qualifiers: RR

PREVIOUS CONSERVATION STATUSES

2009 | At Risk – Declining

2004 | Serious Decline

DISTRIBUTION

Endemic. South and Stewart Islands. In the South Island found east of the main divide from Marlborough to Southland.

HABITAT

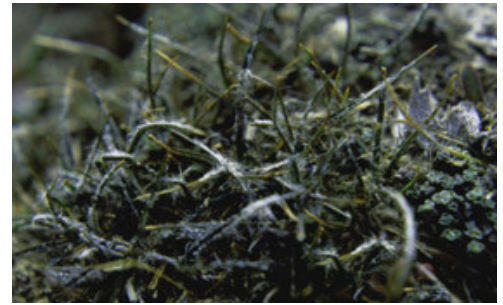
Coastal to montane. Usually in shingly ground, sandy hollows, river terraces, tarn margins, often found growing within Raoulia mats.

FEATURES

An inconspicuous, creeping woodrush, forming grey-green to brownish cushion-like tufts, usually less than 4cm diameter. Sometime half buried in sand, so that only leaf tips and flowers are visible. Leaves 1-3cm long, 0.5-1mm wide, folded inwards towards base, tips pointed; margins clad in long, thickly clustered, soft white hairs. Flowering stems much shorter than leaves, scarcely elongating as fruit matures. Flowers 2mm long, 6-16 in a single cluster, with minimal stalk.

SIMILAR TAXA

Luzula ulophylla. Luzula celata has hairy leaf margins and flower hidden amongst leaves. L. ulophylla has woolly hairs on back of leaves as well as margins and flowering stems much taller than its leaves.



Luzula celata. Photographer: Cathy Jones



Photo of habitat. Photographer: Cathy Jones

FLOWERING

October to December

FLOWER COLOURS

Brown, White

FRUITING

December to April (but seedheads long persistent)

PROPAGATION TECHNIQUE

Easily grown from fresh seed and division of whole plants.

THREATS

The main threat throughout this species range is loss of habitat, caused by land development, weed invasion and general habitat degradation, especially erosion. Overstocking of paddocks containing this species has been a problem in some locations.

ETYMOLOGY

luzula: Latinized form of the Italian vernacular name (lucciola) for this plant

celata: Hidden

WHERE TO BUY

Not commercially available.

ATTRIBUTION

Fact Sheet by P.J. de Lange (1 September 2003). Description based on Moore & Edgar (1970).

REFERENCES AND FURTHER READING

Moore, L.B.; Edgar, E. 1970: Flora of New Zealand. Vol. II, Wellington, Government Printer.

NZPCN FACT SHEET CITATION

Please cite as: de Lange, P.J. (Year at time of access): *Luzula celata* Fact Sheet (content continuously updated). New Zealand Plant Conservation Network. <https://www.nzpcn.org.nz/flora/species/luzula-celata/> (Date website was queried)

MORE INFORMATION

<https://www.nzpcn.org.nz/flora/species/luzula-celata/>