



Corunastylis morrisii

bearded midge-orchid

TASMANIAN THREATENED SPECIES LISTING STATEMENT

Image by Peter Fehre

- Scientific name:** *Corunastylis morrisii* (Nicholls) D.L.Jones & M.A.Clem., *Orchadian* 13(10): 461 (2002)
- Common name:** bearded midge-orchid (Wapstra et al. 2005)
- Group:** vascular plant, monocotyledon, family **Orchidaceae**
- Name history:** *Genoplesium morrisii*, *Prasophyllum morrisii*
- Status:** *Threatened Species Protection Act 1995*: **endangered**
Environment Protection and Biodiversity Conservation Act 1999: **Not listed**
- Distribution:** Endemic status: **Not endemic to Tasmania**
Tasmanian NRM Region: **North, South**

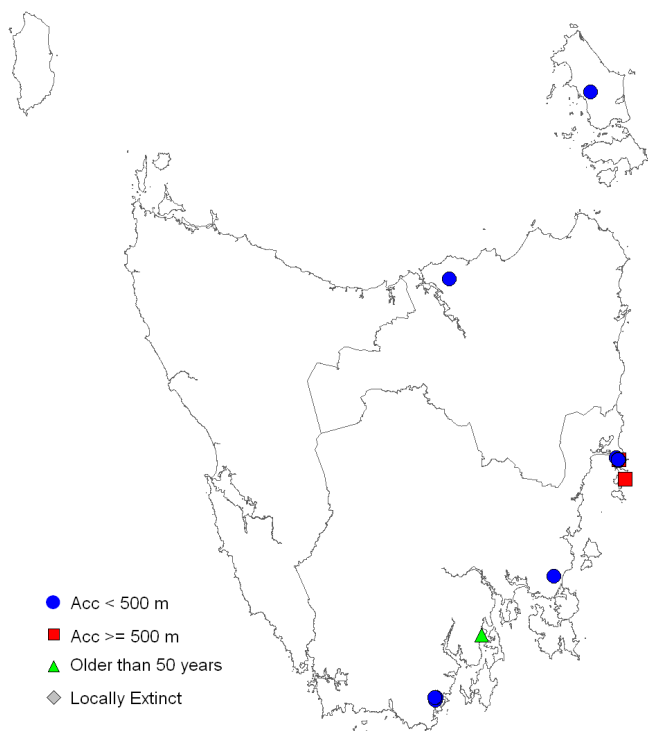


Figure 1. Distribution of *Corunastylis morrisii* in Tasmania, showing NRM regions



Plate 1. *Corunastylis morrisii* inflorescence (image by Malcolm Wells)

IDENTIFICATION AND ECOLOGY

Corunastylis morrisii belongs to a group of orchids commonly known as midge orchids because of their insect-like appearance. *Corunastylis* species are deciduous terrestrials with a round, fleshy tuber partly enclosed by a persistent fibrous sheath, and a single thin cylindrical leaf. The leaf is solid in the basal part, with a short free apical part, and is inseparable from the stalk supporting the inflorescence as they are fused and emerge from the soil together. The upside-down flowers of *Corunastylis* species are crowded in a dense terminal spike.

Species of *Corunastylis* are mainly pollinated by small vinegar flies (drosophilids) which are attracted to the flowers by fruit perfumes and hairy segments (Jones 2006). The pollinators of *Corunastylis morrisii*, at least in Victoria, are believed to be the vinegar flies *Claviceps flavipes* and *Oscinosoma subpilosa* (Garnet 1940). Reproduction is solely from seed.

When not flowering, *Corunastylis* specimens are virtually undetectable because their single thin leaf is often hidden amongst grasses and sedges. Even in flower, their short stature and colour makes them hard to detect in their surrounds. *Corunastylis morrisii* often occurs in relatively low abundance at any particular site, making detection a chance event. In Tasmania, flowering appears to be mainly from late January through to late February and occasionally into March (Wapstra et al. 2012); late summer is the recommended timing for surveys.

When in flower midge, orchids are most commonly seen in places that have been recently burnt or spots that are regularly mown or slashed such as areas beside tracks and on road verges. *Corunastylis morrisii* is strongly fire-responsive and is most abundant in the one to three flowering seasons after a fire. The species may not emerge in drought years.

Description

Corunastylis morrisii is about 20 to 30 cm tall. It has a slender purplish leaf, 20 to 25 cm long. The leaf is closely sheathing and ends well below the flower spike. The free apical portion is 20 to 25 mm long. The scape ends in a

moderately dense spike of flowers, 35 to 50 mm long, with 3 to 15 flowers. The flowers project laterally and are about 11 mm long and 9 mm wide, making them the largest of any Tasmanian *Corunastylis* species. The flowers are usually wholly dark purple, but sometimes green and purple. The dorsal sepal is about 5 mm long and 2.5 mm wide, with coarsely hairy margins and a sharply pointed apex. The lateral sepals are divergent and 7 mm long and 1.5 mm wide. The petals are 4 mm long and 1.4 mm wide, with hairy margins and a sharply pointed apex. The labellum is tremulous, oblong-elliptical, 5 mm long and 1.5 mm wide. It is thin-textured with densely hairy margins, and a sharply pointed apex.

[description based on Jones 1998, Jones et al. 1999, Jones 2006]

Confusing species

Corunastylis morrisii is unlikely to be confused with the other *Corunastylis* species in Tasmania due to its distinctive large purple flowers, with long dark hairs (cilia) fringing the labellum and also the petals and dorsal sepal (Jones et al. 1999). It is superficially similar to *Corunastylis archeri* but this species tends to be smaller, and the petals and dorsal sepal lack long hairs.

DISTRIBUTION AND HABITAT

Corunastylis morrisii occurs in Victoria and Tasmania, and possibly the far southeast of New South Wales (Jones 2006). In Tasmania the species has generally been associated with near-coastal lowland habitats in buttongrass moorland and sedgy open eucalypt woodland on moderately drained sites, including raised clay pans in poorly drained peaty sedgeland (Jones et al. 1999), though recent observations indicate that it may also occur on damp mossy skeletal soils on granite rock slabs at elevations up to 300 m above sea level.

The species' habitat preferences are not clearly understood, especially in relation to drainage and soil characteristics. Some sites are in dry, very sandy, coastal heath and others in damp, often waterlogged, peaty loam in buttongrass moorland.

Table 1. Population summary for *Corunastylis morrisii* within Tasmania

	Subpopulation	Tenure	NRM Region *	1:25000 Mapsheet	Year last (first) seen	Area occupied (ha)	Number of plants
1	Pats River near Memana Road	Brougham Sugarloaf Conservation Area	North	Leventhorpe	1993	unknown	unknown
2	Lefroy	Public Reserve	North	Retreat	1986	unknown	unknown
3	Coles Bay – old caravan park	Private land	South	Coles Bay	2002 (2000)	unknown	unknown
4	Coles Bay – ‘Recreation Ground’	Public Reserve	South	Coles Bay	2013 2011 2005 1997 1993 (1979)	0.40 0.15 c. 1.0	15–20 15 1 1 c. 25
5	Mt Parsons (The Hazards)	Freycinet National Park	South	Coles Bay	2013	0.0001	10–15
6	Gates Bluff	Freycinet National Park	South	Graham	1976	unknown	unknown
7	Kellevie	Private land	South	Kellevie	2011	0.0003	12
8	Oyster Cove	Unknown	South	Barnes Bay	1850	unknown	unknown
9	Leprena Track near Ida Bay	Southport Lagoon Conservation Area	South	Leprena	1993 (1979)	c. 1.0	c. 25

* NRM region = Natural Resource Management region



Plate 2. *Corunastylis morrisii*: sedge heath habitat at Coles Bay (image by Richard Schahinger)

POPULATION PARAMETERS

Corunastylis morrisii has been recorded from nine subpopulations in Tasmania, these from widely separated locations (Table 1, Figure 1). Most database and herbarium records do not have population information reported, with only a few subpopulations having reliable estimates of abundance and extent. It appears the species is usually highly localised and occurs in relatively low numbers (often less than 25 individuals). The total population is likely to be less than 100

mature individuals and the species is likely to occupy less than 10 hectares.

Several subpopulations have not been seen since they were first recorded, largely due to imprecise location details and non- or poor emergence in between disturbance events or in drought years. Several attempts have been made to relocate the Lefroy subpopulation but without success. Similarly, the Leprena Track subpopulation has not been observed since 1993, with its habitat becoming overgrown due to lack of fire, and surveys of potential habitat in the general Southport–Ida Bay area following fire have also been unsuccessful.

Habitat that potentially supports *Corunastylis morrisii* (i.e. lowland near-coastal heathland, heathy woodland, and moorland, especially on poorly drained terrain) is widespread in Tasmania. However, such areas are well surveyed by botanists and orchid enthusiasts alike because of their tendency to be floristically rich and support orchids. In particular, recently burnt swampy sites in near-coastal areas are often targeted, and several sites on the Freycinet Peninsula have been assessed over many decades. The discovery of two new sites

in recent years — Kellevie in 2011 and Mt Parsons and 2013 (Plate 3), reinforces the belief that any new subpopulations are likely to be a result of good fortune rather than targeted surveys, and that such subpopulations are likely to be localised and support few plants.



Plate 3. *Corunastylis morrisii* habitat at Mt Parsons (image by Richard Schahinger)

RESERVATION STATUS

Corunastylis morrisii has been recorded from Brougham Sugarloaf Conservation Area, Freycinet National Park and Southport Lagoon Conservation Area.

CONSERVATION ASSESSMENT

Corunastylis morrisii was listed as rare on the schedules of the Tasmanian *Threatened Species Protection Act 1995* in 1995 (as *Genoplesium morrisii*), and uplisted to endangered in 2001. It meets criterion D of the endangered category as the total population is estimated to number fewer than 250 mature individuals.

THREATS, LIMITING FACTORS AND MANAGEMENT ISSUES

The highly localised distribution of subpopulations of *Corunastylis morrisii*, combined with their usually low abundance, makes the species subject to stochastic risk at all of its

known sites. The precise location and extent of most subpopulations is unknown so disturbance from activities in their vicinity has the potential to impact the sites supporting the species.

Land clearing: Any clearing activities in the vicinity of subpopulations of *Corunastylis morrisii* have the potential to deleteriously affect the subpopulations. Poor planning, combined with the low precision of some of the database records, may result in the inadvertent disturbance and even local elimination of recorded or as yet undetected subpopulations. This risk is exacerbated by the non-emergence or low number of individuals flowering in between disturbance events or in drought years, hampering detection.

Inappropriate fire regime: The flowering of *Corunastylis morrisii* is enhanced by summer fires. However, fire management at the known sites and in potential habitat for *Corunastylis morrisii* is usually directed towards preventing the type of fires considered ideal to stimulate flowering. A more frequent lower intensity fuel reduction fire regime is unlikely to benefit the species and in the long term may reduce habitat quality. Lack of fire for long periods of time is likely to render habitat unsuitable and is believed to have been the cause of the failure to detect plants in the seasons after a fire in the vicinity of the Leprena Track subpopulation. Other factors such as drought or inappropriate disturbance may prevent emergence and flowering following fire.

Inappropriate disturbance regime: *Corunastylis morrisii* is likely to benefit from periodic disturbance such as slashing, which may mimic a fire event by reducing the density of the overtopping shrubs and creating areas of bare ground for recruitment. While the species is likely to tolerate and possibly benefit from disturbance that occurs outside of flowering and seed set and which does not disturb the tubers, intensive soil disturbance and persistent removal of fertile plants is likely to result in declines. One of the known colonies at the 'recreation ground' at Coles Bay was intensively disturbed by recreational horse riding within a fenced area. As a result of the continual trampling and deposition of horse manure and feed, the colony of about 25 plants declined to

only one plant (recorded just outside the fence), and a flowering response was not triggered by what seem to be a suitable fire event.

Climate change: Climate change has the potential to further exacerbate the precarious position of *Corunastylis morrisii*, particularly if the rainfall pattern changes leading to alterations in fire regime and soil moisture levels.

MANAGEMENT STRATEGY

What has been done?

Known sites for *Corunastylis morrisii* in Tasmania have received much attention from orchid specialists and enthusiasts, particularly after suitable fire events, in attempts to relocate poorly documented subpopulations and to monitor known sites over time. Targeted surveys of the Coles Bay area were undertaken in 2011 and 2013 by volunteers with Wildcare's Threatened Plants Tasmania.

Corunastylis morrisii is included in the *Flora Recovery Plan: Threatened Tasmanian Orchids 2006–2010* (Threatened Species Section 2006).

Management objectives

The main objectives for the recovery of *Corunastylis morrisii* are to maintain the viability of the existing subpopulations, promote conditions for the species' successful recruitment at known sites and, if possible, increase the number of subpopulations through survey.

What is needed?

- determine the precise extent and condition of all known subpopulations;
- include ecological requirements of *Corunastylis morrisii* in any management plans for the Coles Bay area and Southport Lagoon Conservation Area;
- conduct ecological burns appropriate to stimulate flowering and recruitment at and in the vicinity of sites supporting the species;
- undertake extension surveys of potential habitat close to known sites during the flowering period of the species, especially in the years after fire events;

- provide information and extension support to relevant Natural Resource Management Committees, local councils, government agencies, development proponents and the local community on the locality, significance and management of the known subpopulations and potential habitat;
- collect seed and lodge for long-term conservation storage at the Tasmanian Seed Conservation Centre (Royal Tasmanian Botanical Gardens);
- include the species in any revisions of the Tasmanian orchid Recovery Plan.

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View:

www.dpipwe.tas.gov.au/threatenedspecieslists

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