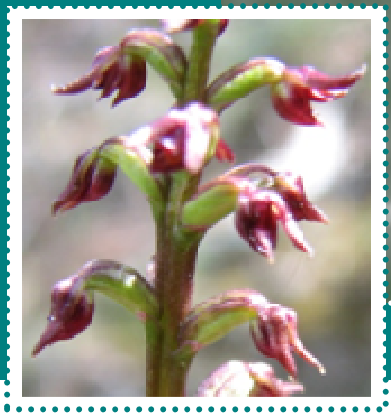

Image by Mark Wapstra

Corunastylis nuda

tiny midge-orchid

TASMANIAN THREATENED SPECIES LISTING STATEMENT

Scientific name: ***Corunastylis nuda*** (Hook.f.) D.L.Jones & M.A.Clem., *Orchadian* 13(10): 461 (2002)

Common name: tiny midge-orchid (Wapstra et al. 2005)

Group: vascular plant, monocotyledon, family **Orchidaceae**

Name history: *Genoplesium nudum, Prasophyllum beaugleholei*

Status: *Threatened Species Protection Act 1995*: **rare**
Environment Protection and Biodiversity Conservation Act 1999: **Not listed**

Distribution: Endemic status: **Not endemic to Tasmania**
Tasmanian NRM Region: **Cradle Coast, North, South**

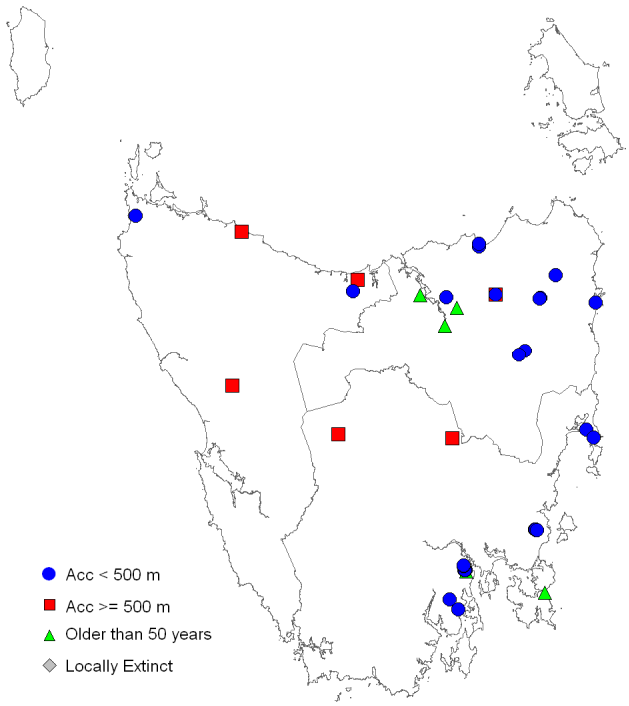

Figure 1. Distribution of *Corunastylis nuda* in Tasmania, showing NRM regions

Plate 1. *Corunastylis nuda* inflorescence (image by Mark Wapstra)

IDENTIFICATION AND ECOLOGY

Corunastylis nuda 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 mostly pollinated by small vinegar flies (drosophilids) attracted to the flowers by fruit perfumes and hairy segments (Jones 2006) but the flowers of *Corunastylis nuda* are self-pollinating. Reproduction is solely from seed, with fertilised plants elongating considerably prior to seed shedding. Like all orchids this species relies on associations with mychorrizal fungi for germination and growth.

Midge orchids are most commonly seen in places that have been recently burnt or spots that are disturbed, regularly mown or slashed, such as areas beside tracks and on road verges. It is unlikely that *Corunastylis nuda* specifically requires fire to stimulate flowering, as several known forest sites have remained unburnt for relatively long periods,. However, the species is probably favoured by disturbance that maintains open patches of bare soil, as evidenced by plants growing close to tracks and on loose soil associated with road verges and rocky ground.

Survey techniques

In Tasmania flowering appears to be mainly in January but continues through to February and occasionally March at higher elevations and colder sites (Wapstra et al. 2008). Mid to late summer is therefore the recommended timing for surveys, while noting that *Corunastylis nuda* can be detected for several months later due to its distinctive elongated fertilised plants (Wapstra et al. 2008). When not flowering, *Corunastylis* specimens are virtually undetectable as 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 nuda* often occurs in relatively low abundance at any particular site, making detection a chance event.

Description

Corunastylis nuda is a relatively tall midge-orchid, about 18 to 35 cm tall. It has a very slender green leaf, which is about 15 to 30 cm long. The leaf is closely sheathing and ends well below the flower spike. The free apical portion is 10 to 20 mm long. The usually green scape ends in a moderately dense spike of flowers that is 25 to 35 mm long. The flower spike has between 5 and 40 flowers. The flowers are nodding and about 4.5 mm long and 3 mm wide. The flowers are variable in colour, mainly green and red or wholly reddish purple. As they are self-pollinating, the flowers often do not open widely. The dorsal sepal is 2 mm long and 1.6 mm wide with hairless margins and a pointed apex. The lateral sepals are deflexed and divergent, 3.5 mm long and 1 mm wide, and the apex often has a small gland. The petals are 1.6 mm long and 0.8 mm wide with hairless margins and a pointed apex. The labellum is stiffly hinged and ovate, 1.5 mm long and 1 mm wide. The labellum is thick and fleshy, with margins that are irregularly and finely toothed or minutely ciliate, and, a pointed apex.

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

Confusing species

Corunastylis nuda is unlikely to be confused with any other species because of its tiny nodding flowers (often dark reddish), which usually do not open widely, and the ovate labellum with irregularly toothed or minutely ciliate margins.

DISTRIBUTION AND HABITAT

Corunastylis nuda occurs in Victoria, New South Wales, the Australian Capital Territory and Tasmania (Jones et al. 1999). Within Tasmania the species is widely distributed across the State, excluding the offshore islands (Figure 1).

Corunastylis nuda occurs in a wide range of habitats in Tasmania, including scrub, subalpine

grassland, heathy open forest, open rock plates among forest, shrubby dry sclerophyll forest and open wet sclerophyll forest, from near sea level to 1000 m elevation on a range of different soil types and parent geologies (Jones et al. 1999).

POPULATION ESTIMATE

Corunastylis nuda is known from at least 26 subpopulations (Table 1). Only a few subpopulations have reliable estimates of abundance and extent. The species appears to occur in low numbers in localised patches (generally less than 10 individuals) that at times are spread across several hundreds of metres. This makes the area occupied by the species and the size of the total population difficult to estimate. It is unlikely that the total population numbers in the thousands, though it is likely on further examination that some subpopulations will prove to be more extensive and that more subpopulations will be discovered with further survey.

RESERVATION STATUS

Corunastylis nuda is known from Mount Victoria Forest Reserve, Mount Maurice Forest Reserve, Blue Tiers Forest Reserve and Snug Tiers Nature Recreation Area.

Some subpopulations on State Forest have been managed under provisions of the Tasmanian *Forest Practices Code* and are now located in informal reserves under Forestry Tasmania's Management Decision Classification mapping system (Orr and Gerrand 1998).

CONSERVATION ASSESSMENT

Corunastylis nuda was listed (as *Genoplesium nudum*) in 1995 as rare on schedules of the Tasmanian *Threatened Species Protection Act 1995*, at a time when its distribution was poorly understood. While the species is now known from a number of additional locations, the species typically occurs in low numbers and technically meets criterion B1 for the rare category as the total population consists of fewer than 10,000 mature individuals with no more than 2,500 occurring on land that is free from sudden processes capable of causing largely irreversible loss of individuals or habitat.

THREATS, LIMITING FACTORS AND MANAGEMENT ISSUES

While the highly localised and disjunct distribution of *Corunastylis nuda* renders patches of the species susceptible to stochastic events and accidental destruction, the widespread distribution of the species and some subpopulations lessens the risk of extinction.

Land clearing: The impact on subpopulations of historical clearing of potential habitat is unknown but is unlikely to wholly explain the disjunct distribution pattern, which is more likely a reflection of a widespread species that occurs in low abundance. Contemporary clearing for activities such as residential developments is having a localised impact on some subpopulations.

Forestry activities: Large areas of potential habitat of *Corunastylis nuda* have been, and continue to be, commercially harvested. There is strong anecdotal evidence that some forms of native forest silviculture may be beneficial to the species, based on the collection of the species from selectively harvested forests at several sites in Tasmania (e.g. Wielangta, Storys Creek). It is also noted that large areas of known and potential habitat in State forest are protected in an extensive formal and informal reserve system.

Inadvertent destruction/disturbance: A number of subpopulations occur on disturbed sites such as edges of tracks. While the presence of the species at such sites is probably a direct result of the initial disturbance event (e.g. establishing the track in the first place), ongoing activities have the potential to eliminate smaller subpopulations or parts of subpopulations (e.g. road widening could destroy tubers through burial). On the other hand, low intensity maintenance activities (e.g. occasional scraping of a track) may ultimately benefit the species and assist in maintaining the subpopulation by creating recruitment niches.

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

	Subpopulation	Tenure	NRM Region	1:25000 Mapsheet	Years recorded	Area occupied (ha)	Number of plants
1	2.5 km E of Red Marsh, Woolnorth area	unknown	Cradle Coast	Mawbanna	2011	0.00001	2
2	Sisters Beach nr Rocky Cape National Park	unknown	Cradle Coast	Mawbanna	1970	unknown	unknown
3	Track to Ringville	State forest	Cradle Coast	Dundas	1969	unknown	unknown
4	Near Wesley Vale	unknown	Cradle Coast	Latrobe	1973 1974	unknown	unknown
5	Henry Somerset Orchid Conservation Area	private sanctuary	Cradle Coast	Latrobe	1975	unknown	unknown
6	Bridport	private property	North	Bridport	1980 1986	unknown	unknown
7	Nr Brid River, Bridport	private property	North	Bowood	1986	unknown	unknown
8	Winkleigh Road	private property	North	Exeter	1946	unknown	unknown
9	Mount Leslie Road, Prospect	unknown	North	Prospect	1945	unknown	unknown
10	Pipers River Road	private property	North	Dilston	1966	unknown	unknown
11	Prossers Forest area	State forest	North	Dilston	1945	unknown	unknown
12	Mount Scott	Mount Maurice Forest Reserve	North	Maurice	1990 1991 1993	unknown	unknown
13	Wyniford River	Blue Tier Forest Reserve	North	Spurrs Rivulet	2009	0.0001	1
14	Cottons Plain	Mount Victoria Forest Reserve	North	Victoria	1997	0.0001	3
15	Storys Creek area	State forest	North	Mangana	2008	0.0001	1
16	Egan Creek, South of Stacks Bluff	State forest	North	Stanhope	2011	0.001	10
17	Penguin Street, Stieglitz	private property	North	St Helens	1993	unknown	unknown
18	Coles Bay Road nr Wattle Grove	private property	South	Friendly	1993	unknown	unknown
19	Coles Bay	private property	South	Coles Bay	1980	unknown	unknown
20	Lake Crescent	unknown	South	Interlaken	1989	unknown	unknown
21	North of Lake Highway	State forest	South	Bronte	1974	unknown	unknown
22	Wielangta Hill	State forest	South	Sandspit	2005 2008 2011	in 2 sites 6 0.4	6 42 10
23	Nr Eaglehawk Neck	unknown	South	Taranna	1917	unknown	unknown
24.1	Above Pottery Road	private property *	South	Hobart	2011	150m apart	2
24.2	Old Farm Road, South Hobart	private property *	South	Hobart, Taroona	2011	4	19
24.3	Huon Road, lower, South Hobart	private property *	South	Taroona	2011	7.5	20
24.4	Huon Road, upper, South Hobart	HCC Bushland Reserve	South	Taroona	2006 2008 2011	0.0001 0.0001 0.0001	4 c. 10 1
24.5	Waterworks	unknown	South	Taroona	1901	unknown	unknown
25	Snug Tiers	Snug Tiers Nature Recreation Area	South	Huonville	1997 2009	unknown 0.0001	unknown c. 10
26	Groombridges Road, Kettering	private property	South	Cygnet	2005	0.1	c. 80

* partnered with Hobart City Council for management; NRM region = Natural Resource Management region

Inappropriate fire regime: As evidenced by the lack of fire for several years at many of the known sites, *Corunastylis nuda* is unlikely to specifically require fire to promote flowering. However, an extended absence of fire may result in the understorey becoming densely shrubby and ultimately unsuitable for the species.

MANAGEMENT STRATEGY

What has been done?

- While there have been no targeted surveys for *Corunastylis nuda* in Tasmania, the South Hobart area has been well surveyed for midge orchids following the rediscovery of *Corunastylis nudiscapa* in the area in 2008.
- *Corunastylis nuda* was included in the *Flora Recovery Plan: Threatened Tasmanian Orchids 2006–2010* (Threatened Species Unit 2006).

Management objectives

The main objectives for the management of *Corunastylis nuda* are to prevent the decline of existing subpopulations, and to promote conditions for successful recruitment.

What is needed?

- determine the full extent and condition of known subpopulations to inform the development of an appropriate management strategy for each site;
- implement the threatened orchid recovery plan (Threatened Species Unit 2006) and if the species remains listed, include the species in any revision of the plan;
- support the Private Land Conservation Program (DPIPWE) with the establishment of conservation covenants for private land supporting *Corunastylis nuda*, and ensure that current priorities for the species are incorporated into the program's reservation strategies;
- provide information and extension support to relevant Natural Resource Management committees, local councils, government agencies, the local community and development proponents on the locality, significance and management of known subpopulations and potential habitat.

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View:
www.dpipwe.tas.gov.au/threatenedspecieslists

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Permit: It is an offence to collect, disturb, damage or destroy this species unless under permit.