Thynninorchis huntiana

elbow orchid

TASMANIAN THREATENED SPECIES LISTING STATEMENT

Image by Phil Collier

Scientific name: ***Thynninorchis huntiana*** (F.Muell.) D.L.Jones & M.A.Clem., *Orchadian* 13(10): 457 (2002)

Common name: elbow orchid (Wapstra et al. 2005)

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

Name history: *Arthrochilus huntianus* subsp. *huntianus*

Status: *Threatened Species Protection Act 1995*: **extinct**

Environment Protection and Biodiversity Conservation Act 1999: **Not listed**

Distribution: Endemic status: **Not endemic to Tasmania**

Tasmanian NRM Region: **North**

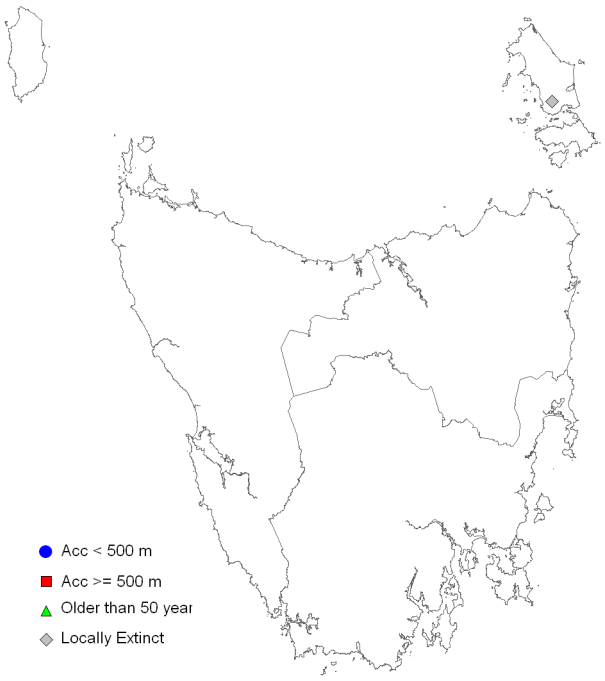

Figure 1. The distribution of *Thynninorchis huntiana* within Tasmania

Plate 1. *Thynninorchis huntiana* flower from Wilsons Promontory in Victoria (image by Phil Collier)

IDENTIFICATION AND ECOLOGY

Thynninorchis is a genus of two species endemic to southeastern Australia. The two species, were once included in the closely related genus *Arthrochilus* though were separated because of the lack of leaves and features of the labellum. *Thynninorchis* species are highly specialised leafless saprophytes that reproduce only from seed in association with mycorrhizal fungi. The tiny (vestigial) protocorm-like irregular tubers are dormant during late winter and spring, with flowering occurring in summer. Plants consist of a wiry greenish or brownish stem and small dull flowers with the sepals and petals hardly noticeable. The key feature of the genus is the spectacular insect-like labellum that is held well clear of the rest of the flower. The labellum is hinged and has a deeply lobed head-like structure and a tail-like body ornamented with long barbed bristles and shiny or glandular warty calli. Male thynnine wasps, attracted to the flowers by a scent resembling that released by their flightless females, attempt to carry off the labellum for mating. In doing so, the labellum pivots on its hinged stalk, with the insect picking up or depositing pollen.

Survey techniques

The flowering period of *Thynninorchis huntiana* on mainland Australia is November to March (Jones et al., 1999, Jones 2006) but in Tasmania its only known collection was on 3 January 1972, so late December to early January is the likely flowering period in this State and the recommended timing for surveys (Wapstra et al. 2008). Individuals of *Thynninorchis* can be very hard to detect as they are inconspicuous and plants are only above ground for a few weeks. The species may not emerge or flower in dry years.

Description

Plants of *Thynninorchis huntiana* have very thin and wiry flower stems 6 to 15 cm tall. The stems are green to reddish with 2 to 4 sheathing bracts near the base. Inflorescences are 1 to 10 flowered and the green to reddish green flowers are insect-like and 9 to 11 mm long and 1.5 mm wide. The perianth segments are reflexed against the ovary, with the dorsal sepal 3 to 4 mm long and 1.5 mm wide, the lateral sepals 5 to 6 mm long and 1.5 mm wide, and the petals 3.5 to 4 mm long and 1 mm wide. The labellum is hinged on a projecting extension of the column foot about 6 mm long. The labellum lamina is 5 to 6 mm long and 0.7 mm wide. The callus is strongly insectiform, consisting of a shiny black false head with 2 projecting antennae-like structures, a solid false thorax fringed with red bristles and 2 long tail-like structures with numerous barbed bristles.

[description from Jones et al. 1999, Jones 2006]

Confusing species

There are no confusing species within similar habitat or within the likely distribution in Tasmania. *Thynninorchis huntiana* can be distinguished from *Thynninorchis nothofagicola*, which is only known from southern Tasmania, by its labellum hinge that is fully functional, and more and larger flowers with a well developed labellum callus with numerous relatively long bristles (Jones et al. 1999).

DISTRIBUTION AND HABITAT

Thynninorchis huntiana occurs in Victoria, New South Wales and the Australian Capital Territory, and in northeastern Tasmania. Within Tasmania it is only known with certainty from a single 1972 collection from private property in Bob Smiths Gully on southern Flinders Island (Figure 1, Table 1). The site has now been cleared.

On the mainland, *Thynninorchis huntiana* is widespread and sometimes locally common in lowland and highland areas, where it grows in patches of bare ground covered with accumulations of leaf litter in open eucalypt forest dominated by peppermint and snow gum species (Jones et al. 1999). The Flinders Island subpopulation occurred in a remnant patch of scrub on soils derived from granite and was surrounded by farmland. The patch was dominated by *Leptospermum scoparium*, *Leptospermum glaucescens*, *Epacris impressa*, *Kunzea ambigua*, *Monotoca glauca* and *Aotus ericoides*, and perhaps once supported a stand of *Eucalyptus nitida* or *Eucalyptus viminalis* (Whinray 2007).

Table 1. Population summary for *Thynninorchis huntiana* within Tasmania

	Subpopulation	Tenure	NRM Region	1:25000 Mapsheet	Year last seen	Area occupied (ha)	Number of mature plants
1	Bob Smiths Gully, Flinders Island	private	North	Logan	1972	0.0001	1

NRM region = Natural Resource Management region

POPULATION ESTIMATE

Thynninorchis huntiana has only been recorded once in Tasmania, and Whinray (2007) reported that the site supported a single plant (Table 1). The site has been cleared and the subpopulation is now presumed to be extinct given that extensive searches for the species in surrounding similar habitat have not been successful (Whinray (2007). However, there are potentially 10s of 1000s of hectares of potential habitat for *Thynninorchis huntiana* on Flinders Island with heathy/shrubby forests and woodlands dominated by *Eucalyptus nitida* with a teatree understorey widespread. As noted by Whinray (2007), very little of this potential habitat has been deliberately searched during the flowering period of *Thynninorchis huntiana* and coupled with its inconspicuous appearance, it remains possible that the species still exists in Tasmania and will eventually be rediscovered. The possibility of re-discovering the species cannot be discounted, considering several recent re-discoveries of plant species in Tasmania (e.g. Wapstra et al. 2006, Bonham 2008).

RESERVATION STATUS

The only known subpopulation of *Thynninorchis huntiana* occurred on unreserved private property.

CONSERVATION ASSESSMENT

Thynninorchis huntiana was uplisted to extinct on schedules of the Tasmanian *Threatened Species Protection Act 1995* in 2008. It was first protected as rare in 1995 through the listing of the parent species *Arthrochilus huntianus*. The species was listed as endangered in its own right in 2001 under the name *Arthrochilus huntianus* subsp. *huntianus,* as was the other subspecies *Arthrochilus huntianus* subsp. *nothofagicola* (now *Thynninorchis nothofagicola*).

Having not been observed for less than 50 years, *Thynninorchis huntiana* does not technically qualify as extinct. However, a status of extinct is justified because the only known site supporting the species has been cleared, and the site and surrounding similar habitat has been extensively searched to no avail (Whinray 2007).

THREATS, LIMITING FACTORS AND MANAGEMENT ISSUES

It is possible that the Flinders Island site of *Thynninorchis huntiana* represents the southern limit of the distribution of the species and that it was never widespread and/or common on the island. However, it is possible that there were and perhaps still are other subpopulations elsewhere on Flinders Island in similar habitat. As such it is possible to identify some generic threats, which are probably applicable to many threatened orchid species.

Origin and recruitment issues: Both *Thynninorchis huntiana* and *Thynninorchis nothofagicola* have only been recorded from single subpopulations in Tasmania. The distribution of *Thynninorchis* in Tasmania is suggestive of a long-term decline and contraction in the range of the genus.

Clearing of potential habitat: Clearing of heathy/shrubby eucalypt forest and woodland may result in the further loss of potential habitat for *Thynninorchis huntiana.*

Inappropriate fire regime: The flowering of *Thynninorchis huntiana* is unlikely to be enhanced by fires because it occurs in relatively undisturbed habitats. A frequent low intensity fuel reduction fire regime, as might be practiced throughout extensive areas of potential habitat

in reserves close to the known site, is unlikely to benefit the species and in the long term may reduce habitat quality.

MANAGEMENT STRATEGY

What has been done?

Surveys for the species have been undertaken in the immediate vicinity of the only recorded site for the species (Whinray 2007). *Thynninorchis huntiana* is included in the *Flora Recovery Plan: Threatened Tasmanian Orchids 2006–2010,* with the need for further survey noted (TSU 2006).

Management objectives

The management objective is to maintain potential habitat and to rediscover the species in Tasmania.

What is needed?

- undertake surveys for the species in potential habitat (heathy/shrubby forest and woodland in the Furneaux Group and possibly the northeastern coast of mainland Tasmania) during the predicted flowering period in late December to early January;
- provide information and extension support to relevant Natural Resource Management committees, local councils, Government agencies, development proponents and the local community on areas of potential habitat;
- implement the threatened orchid Recovery Plan (TSU 2006) and include the species in any revision of the plan.

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