



Caladenia australis

southern spider-orchid

TASMANIAN THREATENED SPECIES LISTING STATEMENT

Image by Jeff Jeanes

- Scientific name:** *Caladenia australis* G.W.Carr, *Indig. Flora & Fauna Assn. Misc. Pap.* 1: 2 (1991)
- Common name:** southern spider-orchid (Wapstra et al. 2005)
- Group:** vascular plant, monocotyledon, family **Orchidaceae**
- Name history:** *Arachnorchis australis*
- 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**

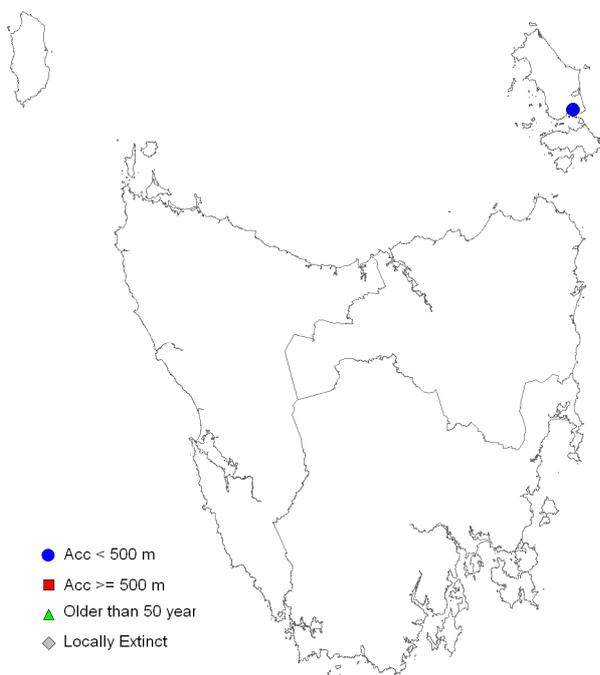


Figure 1. Distribution of *Caladenia australis* within Tasmania, showing NRM regions



Plate 1. *Caladenia australis* flower from Victoria (image by Jeff Jeanes)

IDENTIFICATION AND ECOLOGY

Caladenia australis belongs to the large-flowered section of the genus *Caladenia*, sometimes included in the genus *Arachnorchis* literally meaning ‘spider-orchid’ (Jones et al. 2001). Spider-orchids have large flowers with long tapered or filamentous segments. They are mostly pollinated by male thynnine wasps that attempt to mate with the labellum. The wasps are attracted by scents resembling pheromones of the female wasps. These scents are produced by glands on the flowers. A few spider-orchids may also be pollinated by native bees.

All *Caladenia* species are deciduous and die back after flowering to small subterranean tubers enclosed by a fibrous sheath or tunic. Plants have a single narrow basal leaf that appears above ground in late autumn or early winter following rains. The flowers have a labellum (lip) which is hinged at the base and bears rows of conspicuous, variously shaped and coloured calli on the upper surface. The labellum margins often also bear calli or may be deeply lobed or toothed. Members of this genus have hairs on most above-ground organs.

The flowering period of *Caladenia australis* on mainland Australia is September to November (Jones 2006) but in Tasmania its only known collection was on 9 November 1968, so late October to early November is the likely flowering period in this State and the recommended timing for surveys (Wapstra et al. 2008).

The response of species of *Caladenia* to fire varies but most species respond vigorously to high intensity fires during the preceding summer (Jones et al. 1999). The habitat of *Caladenia australis* is fire-prone and in Victoria the flowering response of the species is strongly enhanced by summer fires (Jones 2006).

Description

Caladenia australis plants are 12 to 30 cm tall with a hairy stalk usually bearing a single flower (occasionally two). The leaf is sparsely hairy, and is 5 to 8 cm long and 6 to 10 mm wide. The flower is 50 to 60 mm across, and creamy yellow often with red streaks. The dorsal (upper) and lateral (lowermost) sepals are 50 to 60 mm long and 3 to 4 mm wide, and the petals

are 30 to 40 mm long and about 3 mm wide. The sepals end in dark red osmophores (fleshy club-like swellings). The lateral sepals and petals are divergent, spreading stiffly or drooping. The labellum is shiny and yellowish with a maroon apex, dark red calli and the column behind the labellum is green with red markings. The lateral lobes of the labellum are obscure with numerous marginal teeth to 2 mm long and the mid-lobe is recurved with numerous marginal teeth to the apex. The calli on the lamina of the labellum are in 4 or 6 rows extending to the base of the mid-lobe.

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

Confusing species

Caladenia australis is not likely to be confused with other Tasmanian spider-orchids (Jones et al. 1999).

DISTRIBUTION AND HABITAT

Caladenia australis occurs in southern Victoria and in northeastern Tasmania. Within Tasmania it is known with certainty only from a single 1968 collection from Flinders Island labelled ‘Lady Barron’, a township near the southern coast of the island (Figure 1).

In Victoria *Caladenia australis* is a widespread species of southern coastal and sub-coastal heathy woodlands and coastal scrubs on sandy loams below 50 m elevation (Carr 1991, Jones 1998). While there is no detailed information on the Flinders Island collection, the habitat is likely to be consistent with the Victorian sites.

POPULATION ESTIMATE

There is no reliable population estimate available for *Caladenia australis* in Tasmania. The only formal recording is from 1968, represented by a single collection of a single plant (Table 1). The exact collection site at Lady Barron is unknown but it is likely to have been in the public reserve fringing the coast.

There are large areas of lowland near-coastal heathy forest, woodland and scrub over much of the Furneaux group (and perhaps other Bass Strait islands) and along the north, northeast and east coast of mainland Tasmania that would appear suitable for the species.

Table 1. Population summary for *Caladenia australis* within Tasmania

| | Subpopulation | Tenure | NRM Region * | 1:25000 Mapsheet | Year last seen | Area occupied (ha) | Number of mature plants |
|---|------------------------------|-----------------|--------------|------------------|----------------|--------------------|-------------------------|
| 1 | Lady Barron, Flinders Island | Public Reserve? | North | Fisher | 1968 | 0.00001 | 1 |

* NRM region = Natural Resource Management region

The species is unlikely to be represented by many undetected subpopulations as it is a distinctive species and much of the suitable coastal strip habitat has been well surveyed by orchid enthusiasts.

RESERVATION STATUS

The most likely site of the only known collection for the species in Tasmania is the Public Reserve fringing the coast.

CONSERVATION ASSESSMENT

Caladenia australis was listed in 2001 as endangered on schedules of the Tasmanian *Threatened Species Protection Act 1995*. It meets criterion D, viz., total population estimated to number fewer than 250 mature individuals. If the species is not re-discovered in the next five years, it would qualify as presumed extinct as it will not have been observed in the wild in Tasmania for 50 years.

THREATS, LIMITING FACTORS AND MANAGEMENT ISSUES

With only one site known, now possibly extinct, it is difficult to identify specific threats and limiting factors to *Caladenia australis*.

It is possible that the Flinders Island site 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 (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.

Clearing of potential habitat: Clearing of near-coastal native vegetation may result in the further loss of potential habitat for *Caladenia australis*. Recent walking track upgrading in the coastal reserve was identified as a threat but no

specific abatement action was practical (M. Larcombe, pers. comm.).

Inappropriate fire regime: The flowering of *Caladenia australis* is strongly enhanced by summer fires (Jones 2006). Fire management in potential habitat for *Caladenia australis* is usually directed towards preventing the type of high intensity broad-scale 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.

MANAGEMENT STRATEGY

What has been done?

Surveys of the suspected site at Lady Barron have been undertaken by orchid specialists and enthusiasts on several occasions, though the species has not been detected since 1968 and the subpopulation may be extinct.

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

Management objectives

The development of a management strategy for *Caladenia australis* is limited by the imprecise location details of the only known site and the likely extinct status of the species in Tasmania.

While the available evidence suggests that *Caladenia australis* may be extinct in Tasmania, the possibility of re-discovering the species should not be discounted, considering the recent re-discoveries of several plant species in Tasmania (e.g. Wapstra et al. 2006, Bonham 2008).

What is needed?

The following general guidelines may improve the opportunities for detecting further subpopulations:

- undertake surveys for the species in potential habitat (near-coastal heathy forest, woodland and scrub on sandy loams in the Furneaux Group and possibly the northeastern coast of mainland Tasmania) during the predicted flowering period (September to November on mainland Australia but only known from a single collection in Tasmania from 9 November 1968);
- continue to assess the original site of collection and nearby similar habitat during the week or two either side of 9 November;
- consider undertaking extension surveys of potential habitat one to three flowering seasons after high intensity summer fires.

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