Image by Matthew Larcombe

Prasophyllum incorrectum

golfers leek-orchid

TASMANIAN THREATENED FLORA LISTING STATEMENT

Scientific name:	***Prasophyllum incorrectum*** D.L.Jones, *Muelleria* 18: 107 (2003)
Common name:	golfers leek-orchid (Wapstra et al. 2005)
Group:	vascular plant, monocotyledon, family **Orchidaceae**
Name history:	*Prasophyllum correctum* D.L.Jones (gaping leek orchid)
Status:	*Threatened Species Protection Act 1995*: **endangered** *Environment Protection and Biodiversity Conservation Act 1999*: **Critically Endangered**
Distribution:	Endemic status: **Endemic to Tasmania** Tasmanian NRM Region: **North**

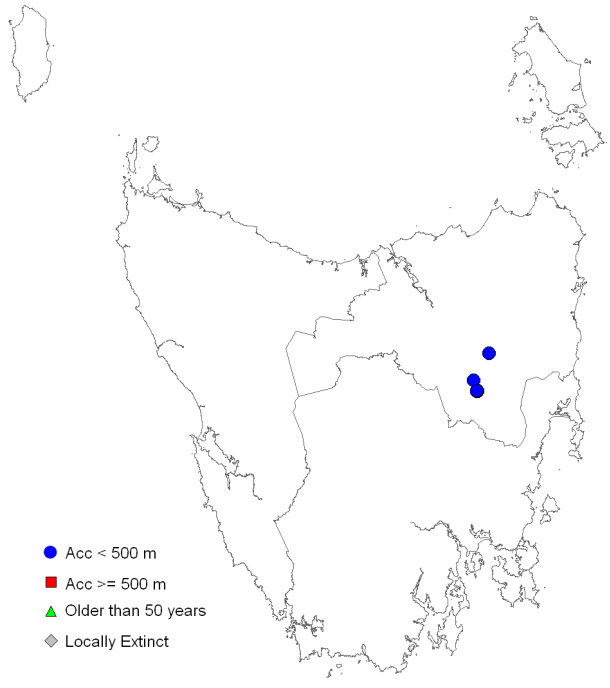

Figure 1. Distribution of *Prasophyllum incorrectum*

Plate 1. *Prasophyllum incorrectum* (image by Matthew Larcombe)

IDENTIFICATION AND ECOLOGY

Prasophyllum incorrectum is a small fleshy terrestrial orchid with a single erect green onion-like leaf up to 30 cm (Jones 2003). The flowering stem has a spike of widely opening reddish-brown, fragrant flowers (Plate 1). The species is endemic to Tasmania's Northern Midlands, were it grows in native grasslands and grassy woodlands. It flowers freely in the absence of fire.

Prasophyllum incorrectum belongs to a group of orchids commonly known as leek orchids because the erect hollow leaf has some resemblance to that of a leek. *Prasophyllum* species are deciduous terrestrials with small, fleshy, round or oval tubers and a few fleshy, irregular roots (Plate 2). Most species are dormant over summer and autumn and begin growth in early winter. The single leaf is reddish at the base, as opposed to green in onion orchids (*Microtis* spp.). The flower spike emerges through the side of the leaf above the middle, with the portion of leaf above the point of emergence being free and often withered by the time the flowers open. The flower spike bears many flowers that are held upside-down. The labellum, often with prominent wavy or frilly margins, produces quantities of nectar on which a wide range of insects feed. Some of these, particularly native bees, wasps and beetles, are effective pollinators (Jones et al. 1999).

Survey techniques

Surveys for *Prasophyllum incorrectum* should be undertaken during its peak flowering period, late October to early November (Wapstra et al. 2012).

Description

Prasophyllum incorrectum has a single green leaf 12 to 30 cm long with a red to purple base, the free part 8 to 15 cm long. In flower the plants are 15 to 40 cm tall. They have 10 to 20 flowers in a narrow uncrowded spike 5 to 10 cm long. The ovary is bright green or rarely dark red. Flowers are fragrant, opening widely, 12 to 15 mm long and 7 to 9 mm wide and are generally light reddish-brown, rarely dark red. The lateral sepals are partly joined throughout or are free. The petals are 7 to 9 mm long and 1 to 1.2 mm wide, and are upswept to widely spreading. The labellum is shortly stalked and abruptly recurved at right angles near the middle, the apex reaching the lateral sepals or protruding through them. It has entire or slightly irregular margins. The fleshy, green or rarely red callus on the labellum extends nearly to the tip of the labellum. (Description from Jones et al. 1999 and Jones 2003).

Prasophyllum incorrectum was previously known in Tasmanian as *Prasophyllum correctum,* the gaping leek orchid (Jones et al. 1999). However, differences between the Tasmanian and Victorian occurrences led to Tasmanian plants being described as a separate species (Jones 2003, Orthia et al. 2003).

Confusing Species

Prasophyllum incorrectum and the allied Tasmanian endemic *P. crebriflorum* are distinguished from other leek orchids in Tasmania by their widely gaping flowers. *Prasophyllum incorrectum* can be distinguished from *P. crebriflorum* by its non-crowded flowers, its longer labellum tail and its thick rough callus on the labellum (Jones 2003).

Plate 2. *Prasophyllum incorrectum* tubers (image by Louise Mendel)

Table 1. Population summary for *Prasophyllum incorrectum*

	Subpopulation	Tenure	NRM region *	1:25 000 mapsheet	Year last (first) seen	Area of occupancy (ha)	Number of mature plants
1	Campbell Town (golf course)	Private #	North	Campbell Town	2012 (1995)	c. 5	c. 5000
2	Campbell Town (north)	Private %	North	Conara	1999 (1999)	0.00001	1
3	Fingal Valley	Private #	North	Stanhope	2005 (2005)	0.00001	1

* NRM = Natural Resource Management region;
# covered by a conservation covenant under the Tasmanian *Nature Conservation Act 2002;*
% = covered by vegetation management agreement under the Tasmanian *Nature Conservation Act 2002.*

DISTRIBUTION AND HABITAT

Prasophyllum incorrectum is endemic to Tasmania's Northern Midlands, where it has been recorded from three sites (Figure 1). The species grows in relatively damp native grassland and grassy eucalypt and banksia woodland on sandy loams (Jones et al. 1999, Jones 2003).

The species has a linear range of 27 km, an extent of occurrence of 60 km^2, and an area of occupancy of about 5 ha (Table 1).

RESERVATION STATUS

Prasophyllum incorrectum is not known from any formal reserve. However, two of the three subpopulations occur on land covered by conservation covenants under the Tasmanian *Nature Conservation Act 2002,* and the third by a vegetation management agreement under the same Act.

POPULATION ESTIMATE

There are three known *Prasophyllum incorrectum* subpopulations: only a solitary plant is known from two of the subpopulations, while the third, at Campbell Town golf course, consists of up to several thousand plants (Table 1). Numbers at the golf course are known to fluctuate considerably from year to year, as reflected in the total number of flowering plants recorded in twenty 4 by 4 metre quadrats across the course in the years 2008 to 2012: 618, 1217, 540, 234 and 584 (the 'bumper' year of 2009 being characterised by well above average winter rainfalls following several years of drought).

The Campbell Town golf course site was discovered in 1995, and the other two sites in 1999 and 2005. No further subpopulations have been found in the interim despite extensive surveys, and the likelihood of other substantial subpopulations being discovered is very low.

CONSERVATION ASSESSMENT

Prasophyllum incorrectum was listed as endangered on the Tasmanian *Threatened Species Protection Act 1995* in 2001 (under the name *Prasophyllum correctum*), satisfying criterion B:

- severely restricted, extending over an area of less than 500 square kilometres and occupying less than 10 hectares;
- occurs in 5 or less populations;
- continuing decline.

THREATS & LIMITING FACTORS

Considerable areas of potential habitat for *Prasophyllum incorrectum* in Tasmania's Northern Midlands are thought to have been lost through agricultural development since European settlement, with the demise of an unknown number of plants. Other leek orchids currently listed on the EPBC Act are also known from native grasslands in Tasmania's Northern Midlands, including *Prasophyllum olidum, Prasophyllum taphanyx* and *Prasophyllum tunbridgense.* Each of these species is confined to very small sites (and numbers) among larger seemingly similar habitats or with seemingly similar sites available in the district. The general impression is one where it may be assumed that their distribution was always patchy, but the number of sites has been reduced drastically

due to habitat loss and/or degradation (Jones et al. 1999).

In addition to land clearance, the addition of fertilisers to native grasslands is seen as a significant past and future threat to species like *Prasophyllum incorrectum*. Artificial fertilisers dramatically change the soil of an area, usually to the detriment of orchids. Not only are orchids hampered by the increased competition created by invigorated growth of pasture plants and weeds, but they also suffer as their mycorrhizal fungus takes up phosphorus and quickly concentrates phosphates to a toxic level (Jones et al. 1999). At least one of the more northerly subpopulations, consisting of a single plant, is believed to have been degraded in the past through light top-dressing with fertilisers.

Changes in fire frequency or grazing/slashing regimes are also likely to have had an adverse impact on orchid persistence; as herbs requiring light and some space, orchids may be shaded out in tussock grasslands that are allowed to grow rank without some form of disturbance. While leek orchids do possess tubers, and might therefore be expected to persist in a dormant state during unfavourable conditions, the longer the period without flowering and fresh seed production, the less likely must be the long-term persistence of a species in an area (Jones et al. 1999, Coates et al. 2006).

The most serious future threat to *Prasophyllum incorrectum* is considered to be inadvertent damage associated with management of the native grasslands that comprise the 'roughs' at Campbell Town golf course (Jones et al. 1999, Nicholson 2000). Threats to the species include the application of fertiliser, an inappropriate slashing regime, herbicide spraying, the use of recycled effluent for irrigation purposes, soil disturbance and competition from introduced species (mostly exotic grasses).

MANAGEMENT STRATEGY

The main objectives for the recovery of *Prasophyllum incorrectum* are to prevent the loss or degradation of known subpopulations, promote conditions for the species' successful recruitment, and to increase the number of known subpopulations through survey.

What has been done?

- *Prasophyllum incorrectum* was included in a project in the late 1990s to manage and recover Tasmanian grassland orchids; extension surveys were undertaken in 1999, resulting in the discovery of a subpopulation to the north of Campbell Town.
- Campbell Town golf course is subject to a conservation covenant under the Tasmanian *Nature Conservation Act 2002* and associated plan of management (Nicholson 2000). Monitoring plots were established by at the golf course DPIPWE personnel in late 2008 to gauge the variability in plant numbers from year-to-year. These have been re-scored annually with the assistance of volunteers with Wildcare's Threatened Plants Tasmania group (Plate 3).
- Seed and mychorrizae were collected from the Campbell Town subpopulation in 2009 for long-term storage at the Tasmanian Seed Conservation Centre (Royal Tasmanian Botanical Gardens, Hobart).
- *Prasophyllum incorrectum* is included in the *Tasmanian Threatened Orchids Recovery Plan 2006–2010* (Threatened Species Section 2006) and in the draft *Tasmanian Threatened Orchids Recovery Plan* (Threatened Species Section 2013).

Plate 3. Monitoring *Prasophyllum incorrectum* at Campbell Town golf course

What is needed?

- monitor the implementation and success of the management plan for Campbell Town golf course;
- pursue management options with landowners/managers to protect subpopulations against possible changes in land use that would be detrimental to the species;
- maintain an appropriate disturbance regime at known sites through burning, grazing or slashing to maintain an open habitat;
- monitor known subpopulations for threats and declines;
- establish a mechanism to ensure management intervention when required;
- provide information and extension support to relevant Natural Resource Management Committees, local councils, government agencies and the local community on the locality, significance and management of known subpopulations and areas of potential habitat;
- further survey.

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