



# *Triptilodiscus pygmaeus*

dwarf sunray

TASMANIAN THREATENED SPECIES LISTING STATEMENT

Image by Richard Schahinger

**Scientific name:** *Triptilodiscus pygmaeus* Turcz., *Bull. Soc. Nat. Mosc.* 24: 66 (1851)

**Common name:** dwarf sunray (Wapstra et al. 2005)

**Group:** vascular plant, dicotyledon, family **Asteraceae**

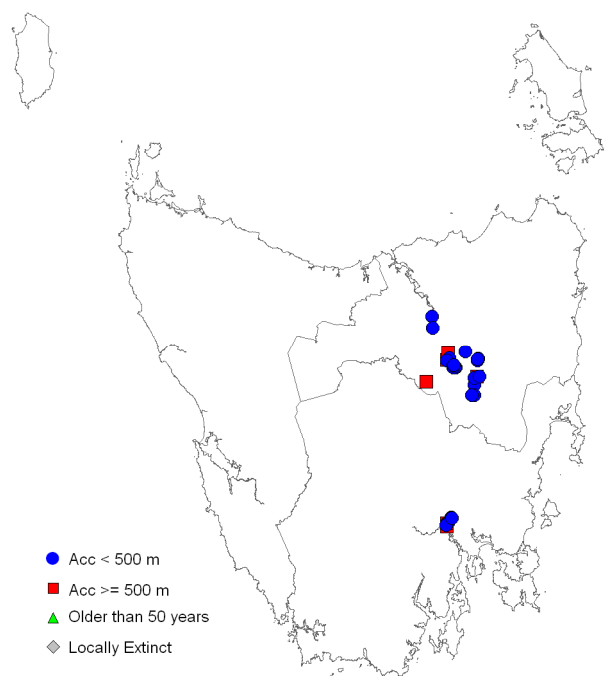
**Name history:** *Helipterum australe* (A.Gray) Druce

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

*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 *Triptilodiscus pygmaeus* in Tasmania



**Plate 1.** *Triptilodiscus pygmaeus*  
(image by Hans & Annie Wapstra)

## IDENTIFICATION AND ECOLOGY

*Triptilodiscus pygmaeus* is an annual herb in the Asteraceae (daisy) family (Walsh & Entwisle 1999) that grows in native grasslands, grassy woodlands and on rockplates. Fire or light grazing of the species' grassland habitat may be beneficial, as it will maintain the gaps between tussocks and reduce competition from other plants. Some daisy seed is known to persist in the soil for many decades. This allows species such as *Triptilodiscus pygmaeus* to emerge, at times in large numbers, in response to seasonally favourable conditions or the cessation of grazing.

### Survey techniques

Surveys for the species should be undertaken during its peak flowering period, September to November. Due to the species' ephemeral nature the precise timing of surveys will be governed by seasonal conditions. This species can be difficult to detect in its grassland habitat when in low numbers. It may not emerge in drought conditions.

### Description

*Triptilodiscus pygmaeus* is an ascending to erect annual herb to 12 cm high. Its leaves are linear to lanceolate, to oblanceolate, 0.5 to 3 cm long and 1 to 4.5 mm wide, flat with entire margins and sparsely pilose. The flower heads (capitula) are subglobular and about 5 mm long, the subtending leaves about twice the length of the capitulum. The florets, with the yellow corolla tubes curved outwards, are 1 to 2 mm longer than the involucre bracts which are 3 to 5 mm long. There are about 6 to 15 female florets, and 30 to 110 bisexual florets. The fruit (cypsela) is oblong-ellipsoid, about 2 mm long and blackish. The fruit of bisexual florets is topped with a 2 to 3 mm long pappus having 3 or 4 plumose bristles equal in length to the corolla.

[description based on Walsh & Entwisle 1999 and field observations]

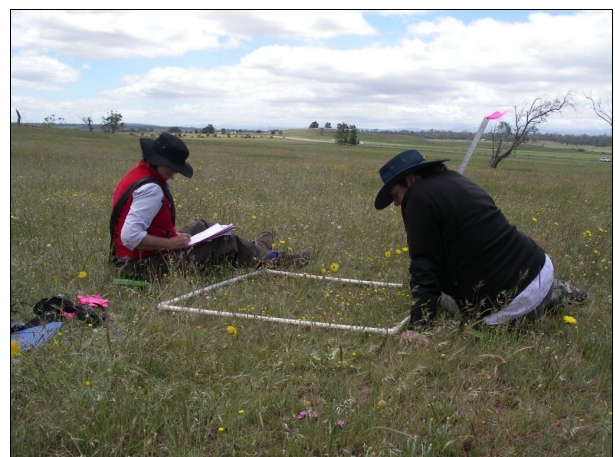
### Confusing species

None.

## DISTRIBUTION AND HABITAT

*Triptilodiscus pygmaeus* is found in Tasmania, and all mainland states of Australia where it is reportedly widespread and common (Tremont 1995, Walsh & Entwisle 1999). In Tasmania, the species has a disjunct distribution, with occurrences in the Northern and Southern Midlands, and a linear range of 142 km and an extent of occurrence of about 3,000 km<sup>2</sup> (Figure 1). The area of occupancy is in the order of 150 ha (Table 1).

*Triptilodiscus pygmaeus* grows within grasslands (Plate 2), grassy woodlands or rockplates, the underlying substrate being mostly Tertiary basalt or Jurassic dolerite. The elevation range of recorded sites in Tasmania is 30 to 470 m above sea level, with an annual rainfall of about 450 to 600 mm. The species occurs within native grassland dominated by *Themeda triandra* (kangaroo grass). This is a facies of the ecological community 'Lowland grasslands of Tasmania' which is listed as Critically Endangered on the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*. Co-occurring threatened flora species include the nationally listed *Glycine latrobeana* (clover glycine) and *Pterostylis ziegeleri* (grassland greenhood), and the State listed *Caesia calliantha* (blue-star lily), *Pultenaea prostrata* (silky bushpea) and *Stackhousia subterranea* (midlands candles).



**Plate 2.** Grassland habitat *Triptilodiscus pygmaeus* (image by Richard Schahinger)

**Table 1.** Population summary for *Triptilodiscus pygmaeus* in Tasmania

	Subpopulation	Tenure	NRM region	1:25 000 mapsheet	Year last (first) observed	Area of occupancy (ha)	Number of plants
1	Brighton Transport Hub	Crown land (DIER)	South	Broadmarsh	2009 (1972?)	1.3	190,000 (±100,000)
2	Horses Head, Brighton	private land	South	Tea Tree	2009	2	2000–7000
3a	Pontville	private land	South	Tea Tree	1996	status uncertain	
3b	Pontville	Commonwealth land	South	Tea Tree	1999 (1996)	unknown	locally abundant
4	Merton Vale	private land *	North	Jacobs	2010 (2002?)	10	150,000 (±50,000)
5	Wanstead Park	private land *	North	Conara	2009	0.002	40
6	Meadowbank	private land **	North	Conara	2009 (2005)	5 to 10 (>110 patches over 105ha)	110,000
7	Lake River	private land	North	O'Connors	1973	unknown	unknown
8	York Park	private land	North	Hanleth & Stanhope	2005	unknown	200–300
9	Epping Forest	Tom Gibson Nature Reserve	North	Cleveland	2009 (1988)	4 to 5 (several sites)	10,000s
10	Hummocky Hills	private land	North	Cressy, Delmont, Nile	1992 (1991)	unknown	unknown
11	Powranna	private land?	North	Nile	1991	unknown	unknown
12	Fordon	private land?	North	Nile	2005	unknown	200
13	Longford	private land?	North	Prospect	2005	unknown	unknown
14	Hardwicke Street, Trevallyn	Launceston Council	North	Prospect	2009	0.25	200

\* Covered by a vegetation management agreement under the Tasmanian *Nature Conservation Act 2002*;

\*\*Small proportion of subpopulation covered by vegetation management agreement & conservation covenant under the Tasmanian *Nature Conservation Act 2002*;

DIER = Tasmanian Department of Infrastructure, Energy and Resources; NRM=Natural Resource Management region

The first collection of *Triptilodiscus pygmaeus* in Tasmania was from the Bridgewater–Brighton area in 1971. Its belated collection is somewhat puzzling, as even less conspicuous annual daisies, such as *Hyalosperma demissum* (moss sunray) and *Isoetopsis graminifolia* (grass cushion) were first collected in Tasmania in the late 19<sup>th</sup> century. Kirkpatrick et al. (1988) speculated that the species, then known as *Helipterum australe*, may have been an introduction from mainland Australia, though collections from a range of sites in the interim lend weight to the belief that the species is indeed native to Tasmania (Buchanan 2009).

#### POPULATION ESTIMATE

*Triptilodiscus pygmaeus* has been recorded from fourteen locations in Tasmania, with the total number of plants in a good year likely to be in the many hundreds of thousands (Table 1). Natural fluctuations of several orders of magnitude may occur from year to year in response to varying climatic conditions. There is no information available for several of the sites, and little information to indicate population trends. The Pontville private land occurrence, first recorded in 1996, was not seen in dedicated surveys in 2008/2009, a presumed

consequence of grazing practices in the intervening years.

Several new subpopulations have been discovered in the past few years, most during the course of surveys for development proposals on private land, indicating that additional sites are likely to emerge given a targeted survey effort at the appropriate time of year.

#### RESERVATION STATUS

*Triptilodiscus pygmaeus* is reserved within Tom Gibson Nature Reserve. Three subpopulations are on private land covered by either conservation covenants or five-year vegetation management agreements under the Tasmanian *Nature Conservation Act 2002* (Table 1). A large subpopulation in the Brighton area (subpopulation 1) is in the process of being reserved under a provision of the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*.

#### CONSERVATION ASSESSMENT

*Triptilodiscus pygmaeus* was listed as vulnerable on the Tasmanian *Threatened Species Protection Act 1995* when the Act came into being. At that time the species was known in Tasmania from just five locations, with little in the way of population information.

The species continues to qualify as vulnerable, meeting criterion B as the area of occupancy is less than 50 ha, and

- 2c. a continuing decline is inferred in area, extent and/or quality of habitat;
- 3d. there are extreme fluctuations in the number of mature individuals.

#### THREATS, LIMITING FACTORS AND MANAGEMENT ISSUES

Land clearance for agriculture, light industry and urban expansion poses the greatest threat to the species. The threat to potential habitat is exacerbated by the ephemeral nature of the species as plants may not emerge or only emerge in low numbers in unfavourable years, evading detection during impact assessment surveys. Additional threats include over-

grazing, weed invasion and a lack of disturbance.

**Land clearance:** Much of the species' native grassland habitat in the Northern and Southern Midlands has been cleared and improved, with the extant subpopulations surviving in just a few remnants, typically in areas that have been too rocky to plough. Urban and light industrial expansion in the Brighton to Pontville area in the past decade continues to threaten the species' habitat.

**Stock and weeds:** Overgrazing is a potential risk to the species for sites on private land, while woody weed invasion (gorse, briar rose) poses a threat to several of the known sites, especially in the Brighton–Pontville area.

**Lack of disturbance:** The species requires open ground to germinate and recruit, which may be prevented if tussock grasses become rank. It is important to note that areas of native vegetation that have supported the species in the past remain potential habitat due to the probable presence of dormant soil-stored seed.

**Stochastic events:** The small size of some of the subpopulations exposes them to a high risk of extinction due to chance events.

#### MANAGEMENT STRATEGY

##### What has been done?

- Covenants and vegetation management agreements have been realised in the past few years for several private properties that support the species. These have been facilitated by the Department of Primary Industries, Parks, Water and Environment's Private Land Conservation Program.
- Areas of private land near Brighton that support the species were acquired by the Crown in 2009/2010 as part of the Brighton Transport Hub development. They are to be managed for their natural values under an agreement between Department of Infrastructure, Energy and Resources and the Commonwealth;
- Targeted surveys were undertaken for the species in 2009 and 2010 with the assistance of the volunteer group Threatened Plants Tasmania;

- Seed has been collected from the Tom Gibson subpopulation and lodged for long-term conservation storage at the Tasmanian Seed Conservation Centre at the Royal Tasmanian Botanical Gardens.

### Management objectives

The main objectives for the recovery of *Triptilodiscus pygmaeus* are to prevent the loss or degradation of known subpopulations, gain a better understanding of the species' ecological and management requirements and identify new subpopulations within the range of the species.

### What is needed?

- monitor compliance with existing covenants and vegetation management agreements to ensure that prescriptions are appropriate for the species;
- encourage private landowners to consider protection and management of the species' habitat through perpetual covenants under the Tasmanian *Nature Conservation Act 2002*;
- undertake surveys to determine the status of known subpopulations that have not been visited in the past five years, in particular those at Pontville;
- monitor known subpopulations for health, recruitment and response to disturbance;
- undertake extension surveys of potential habitat within the species' known range.
- 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.

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**View:** [www.dpipwe.tas.gov.au/threatenedspecieslists](http://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