



Scaevola aemula

fairy fanflower

TASMANIAN THREATENED FLORA LISTING STATEMENT

Image by Tim Rudman

Scientific name: *Scaevola aemula* R.Br., *Prodr. Fl. Nov. Holland.*: 584 (1810)

Common Name: fairy fanflower (Wapstra et al. 2005)

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

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 Regions: **North & South**

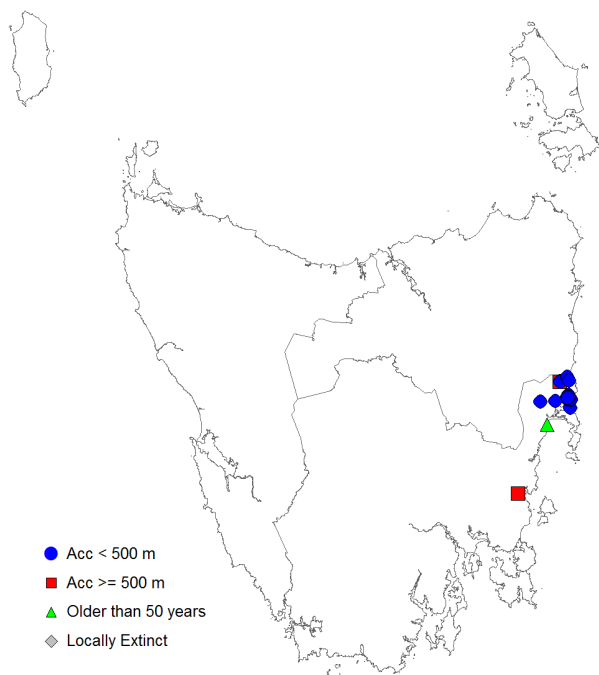


Figure 1. Distribution of *Scaevola aemula* in Tasmania, showing Natural Resource Management regions



Plate 1. *Scaevola aemula*: flowering branch (image by Richard Schahinger)

SUMMARY: *Scaevola aemula* is a short-lived perennial herb, known in Tasmania from about a dozen sites in the central east. The species occurs in dry sclerophyll vegetation on dolerite and has a disturbance-based ecology, appearing in large numbers for a few years after fire. The species' ephemeral character puts it at risk of inadvertent clearance, other threats including browsing by native herbivores, climate change and chance events. Monitoring of known sites is required to inform management, and further survey is also required.

IDENTIFICATION AND ECOLOGY

Scaevola aemula is a member of the Goodeniaceae family. *Scaevola* is a genus of about 100 species, predominantly Australian (Jeanes 1999), with three species currently recognised from Tasmania: *Scaevola aemula*, *Scaevola albida* and *Scaevola hookeri* (de Salas & Baker 2017).

Scaevola aemula has a disturbance-based ecology, appearing after fire or physical disturbance (Rozefelds 2001). Plants in Tasmania have been observed to recruit from a soil-stored seedbank, flower and set seed within the first year after fire, while flowering has been observed from November to May. Pollinators are likely to include native bees and butterflies.

Survey techniques

The species is most readily identified when in flower, though its distinctive leaf shape and vestiture mean that it can be identified at any time of year (Plates 1 & 2).

Description

Scaevola aemula is a decumbent to erect perennial herb to 60 cm high. Its stems are covered with coarse strigose hairs. Leaves are arranged alternately along the stem, obovate shaped, 1.5 to 9 (rarely 13) cm long and 0.8 to 4 cm wide. Both leaf surfaces are appressed-pubescent and the margins (of at least the lower leaves) are coarsely toothed. Flowers are sessile, in terminal leafy or bracteate spikes to about 45 cm long. The corolla is 15 to 20 mm long and has a tube split to the base that expands into an open fan of five winged lobes. The lobes are purple when fresh and the throat of the tube

yellowish. The sepal lobes are broadly triangular and about 0.5 mm long. The style is slender, 8 to 9 mm long and the indusium (a cup-like structure enclosing the stigma) about 1.5 mm wide with a tuft of rigid mauve-brown bristles at its posterior and white bristles around its orifice. The fruit is ovoid, 3 to 4 mm long, rugose and pubescent. It is two-celled, with one ovule per cell. [Description adapted from Curtis (1963), Jeanes (1999), Rozefelds (2001) and pers. obs.]

Confusing Species

Scaevola aemula can be distinguished from the other *Scaevola* species in Tasmania by the presence of a conspicuous tuft of bristles on the back of the indusium (frontispiece, Rozefelds 2001).



Plate 2. Lower leaves of *Scaevola aemula*

DISTRIBUTION AND HABITAT

Scaevola aemula occurs in South Australia, Victoria, New South Wales and Tasmania (Jeanes 1999). Within Tasmania the species is found on the East Coast between the Prosser River in the south and the Apsley River in the north (Rozefelds 2001).

Table 1. Population summary for *Scaevola aemula* in Tasmania

	Subpopulation	Tenure	NRM region *	1:25 000 mapsheet	Year last (first) observed	Area of occupancy (ha)	Number of plants
1	Blindburn Creek	Douglas-Apsley National Park	North	Henry	2010 Fire Sept 2007		'few'
2	Apsley River	Douglas-Apsley National Park	North	Henry	2008 (1985) Fire Dec 1994 & Sept 2007	0.6–0.7	40,000–50,000 with c. 10,000 in flower (19 in March 1997)
3a	Apsley Tier	Private land	South	Bicheno	2014		1
3b	West of Bicheno golf course	Private land	South	Bicheno	1986	Unknown	8
4	Daggs Hill	Freycinet National Park	South	Lodi	2014 Fire Jan 2013	> 4	1000s
5	Cusicks Hill	Freycinet National Park & private land	South	Lodi	2014 (2000) Fire Dec 1994 & Jan 2013	> 20	Many 1000s
6	Campbells Sugarloaf	Freycinet National Park & private land	South	Lodi	2014 Fire Jan 2013	4 to 5	Many 1000s
7	Mt Peter	Freycinet National Park	South	Friendly	2008 Fire Jan 2006	0.1	100s (10 in flower)
8	Cherry Tree Hill	Private land **	South	Apslawn	2007 (2005) Fire Oct 2004	0.25	30
9	Cygnets River	Private land	South	Apslawn	2003	0.003	140 (12 in flower)
10	Prosser River	Private land	South	Orford	1979	Unknown	Unknown
11	Swanport	Unknown	South	Unknown	1892	Unknown	Unknown
12	On top of Tiers, Swansea	Unknown	South	Unknown	1800s	Unknown	Unknown

* NRM region = Natural Resource Management region.

** = Covered by a Conservation Covenant under the Tasmanian *Nature Conservation Act 2002*.

In Tasmania *Scaevola aemula* has been recorded from dry woodland/forest dominated by *Allocasuarina verticillata* or 'half-barked' *Eucalyptus amygdalina*, with *Callitris rhomboidea* sometimes present. *Scaevola aemula* occurs on dolerite substrates, growing most abundantly on well-insolated slopes with a high rock cover. The species has been recorded in the altitude range 20 to 200 metres above sea level.

POPULATION PARAMETERS

Scaevola aemula has been recorded from ten sites in Tasmania over the past 35 years, with two collections from the 19th century (Table 1). The

total population size may fluctuate considerably from year to year, depending on the time since fire, with tens of thousands of plants recorded the year after a wildfire near Bicheno in early 2013. The species has a linear range of 85 km, extent of occurrence of about 900 km² and an area of occupancy in excess of 30 hectares.

The species' transient nature and its preference for out-of-the-way rocky sites means that its status in Tasmania has, until recently, been very poorly known. There appears to be no shortage of suitable habitat within the species' recorded range, and it is considered highly likely that targeted surveys will yield additional sites, as

evidenced by the discovery of the species at Mount Peter in 2008 and the Daggs Hill – Campbells Sugarloaf area in 2014. *Gyrostemon thesioides* (broom wheelfruit) may be used as a highly visible surrogate target (Plate 3), as it has been recorded at most contemporary sites. Potential areas for survey might thus include Buxton River Conservation Area (North et al. 1998), Dry Creek East Nature Reserve (Craven et al. 1999), and along the O Road a few kilometres north of Cherry Tree Hill (within Apslawn Regional Reserve), the focus being on areas that have been recently burnt.



Plate 3. Campbells Sugarloaf site, April 2014: *Scaevola aemula* and *Gyrostemon thesioides* in foreground and background, respectively (image by Richard Schahinger)

RESERVATION STATUS

Reserved within Douglas-Apsley National Park and Freycinet National Park.

CONSERVATION ASSESSMENT

Scaevola aemula was listed as endangered on the original schedules of the Tasmanian *Threatened Species Protection Act 1995*.

Eight of the species' ten contemporary sites have been discovered since its listing as endangered on the TSP Act, with the total

number of plants increased by orders of magnitude. Five of those eight sites are within National Parks, while two are on private land covered by Conservation Covenants under the Tasmanian *Nature Conservation Act 2002*.

THREATS AND LIMITING FACTORS

Threats include browsing and drought, inappropriate fire regimes, land clearance, climate change, and the stochastic risk of extinction due to small population size.

Browsing and drought: *Scaevola aemula* is highly palatable to native animals. For large populations the impact of browsers may be relatively minor, but for smaller populations it may prevent seed set and lead to local extinction. Thirty plants were observed at the Cherry Tree Hill site in 2005 following a fire in October 2004, though all had died by 2008 without the soil seed-bank being replenished (N. Meeson, pers. comm.).

Inappropriate fire: *Scaevola aemula* occurs within dry sclerophyll communities characterised by fire intervals of 10 to 25 years. The species has the ability to recruit from soil-stored seed, flower and set seed in the space of a year after fire, so a fire frequency at the lower end of this range is unlikely to be detrimental to the species. The longevity of the seedbank is unknown, though it might be expected to be at the upper end of the aforementioned fire interval. The absence of fire for longer periods may pose a potential threat to the species.

Land clearance: All known sites have a very high rock cover and are unsuited to agricultural development. However, land clearance for other purposes remains a threat to the species for those occurrences on private land.

Climate change: The trend towards a warmer climate may accentuate the impact of browsing of the species by native animals post-fire.

Stochastic events: The small size of some of the *Scaevola aemula* populations exposes the species to a stochastic risk of extinction.

Management Strategy

The main objectives for recovery of *Scaevola aemula* are to:

- Prevent the loss or degradation of known populations.
- Identify new populations within the range of the species.
- Increase the information and data available on the location, size and condition of populations not previously surveyed.
- Understand the species' requirements for fire and other disturbances for regeneration.

What has been done?

Targeted surveys & monitoring: Targeted surveys for the species were undertaken by Threatened Species Section personnel in early 2008, while monitoring sites were established at the Apsley River site in 2008 to gauge the species' response to a planned burn in 2007.

Fire management: Three of the populations are within reserves subject to fire management plans that aim to maintain levels of biodiversity and foster the long-term survival of threatened species (Parks & Wildlife Service 1998, 2002).

Seed collection: Seed has been collected from the Apsley River site for long-term storage at the Tasmanian Seed Conservation Centre (Royal Tasmanian Botanical Gardens, Hobart).

What is needed?

Recovery actions necessary to decrease the extinction risk to *Scaevola aemula* include:

- Monitor known populations for health and recruitment, and gauge their response to browsing and fire.
- 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 and the local community on the locality, significance and management of known *Scaevola aemula* populations and potential habitat.

BIBLIOGRAPHY

- Craven, B., Watts, S., Ziegler, K. & Ziegeler, D. (1999). Supplement to North, A., Johnson, K., Ziegler, K., Duncan, F., Hopkins, K., Ziegeler, D., and Watts, S. (1998). *Flora of Recommended Areas for Protection and Forest Reserves in Tasmania*. Forest Practices Board, Forestry Tasmania, and Parks and Wildlife Service, Tasmania.
- Curtis, W.M. (1963). *The Student's Flora of Tasmania. Part 2*. Government Printer, Hobart
- de Salas, M.F. & Baker, M.L. (2017). *A Census of the Vascular Plants of Tasmania, including Macquarie Island*. (Tasmanian Herbarium, Tasmanian Museum and Art Gallery, Hobart) www.tmag.tas.gov.au
- Jeanes, J. (1999). Goodeniaceae. In *Flora of Victoria* Volume 4: 589–615 (Inkata Press, Melbourne).
- North, A., Johnson, K., Ziegler, K., Duncan, F., Hopkins, K., Ziegeler, D. & Watts, S. (1998). *Flora of Recommended Areas for Protection and Forest Reserves in Tasmania*. Forest Practices Board, Forestry Tasmania, and Parks and Wildlife Service, Tasmania.
- Parks and Wildlife Service (1998). *Douglas-Apsley National Park Fire Management Plan*. Department of Environment and Land Management, Hobart.
- Parks and Wildlife Service (2002). *Freycinet Reserves Fire Management Plan*. Department of Primary Industries, Water and Environment, Hobart.
- Rozefelds, A. C. (2001). The species of *Scaevola* (Goodeniaceae) in Tasmania. *Telopea* 9 (2): 345–352.
- Wapstra, H., Wapstra, A., Wapstra, M. & Gilfedder, L. (2005). *The Little Book of Common Names for Tasmanian Plants*. Department of Primary Industries, Water and Environment, Hobart.

Prepared in 2008 under the provisions of the Tasmanian *Threatened Species Protection Act 1995*. Approved by the Secretary and published in February 2010. Revised March 2018.

Cite as: Threatened Species Section (2018). *Listing Statement for Scaevola aemula (fairy fanflower)*, Department of Primary Industries, Parks, Water and Environment, Tasmania.

View:

www.dpipwe.tas.gov.au/threatenedspecieslists
www.threatenedspecieslink.tas.gov.au/

Contact details: Threatened Species Section, Department of Primary Industries, Parks, Water and Environment, GPO Box 44 Hobart Tasmania Australia 7001. Phone 1300 368 550. threatenedspecies.enquiries@dpipwe.tas.gov.au

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