

Pimelea axiflora subsp. *axiflora*

bootlace bush

TASMANIAN THREATENED SPECIES LISTING STATEMENT



Image by Kerri Spicer

Scientific name: *Pimelea axiflora* subsp. *axiflora* F.Muell. ex Meisn. *Linnaea* 26: 345 (1854)

Common name: bootlace bush (Wapstra *et al.* 2005)

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

Status: *Threatened Species Protection Act 1995*: **endangered**
Environment Protection and Biodiversity Conservation Act 1999: **Not listed**

Distribution: Endemic: **Not endemic to Tasmania**
Tasmanian NRM Region: **Cradle Coast**

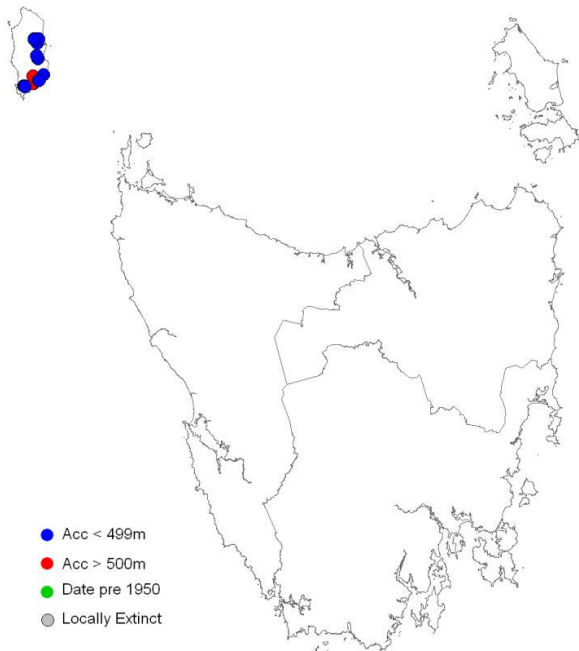


Figure 1. Distribution of *Pimelea axiflora* subsp. *axiflora* in Tasmania



Plate 1. *Pimelea axiflora* subsp. *axiflora*
(Image by Kerri Spicer)

IDENTIFICATION AND ECOLOGY

Pimelea axiflora subsp. *axiflora* is a woody shrub in the Thymelaeaceae family. It grows to about 6 m high, and has reddish branches and clusters of white tubular flowers in its leaf axils (Plate 1). The tough bark of the species was used by early settlers in Victoria for bootlaces, hence the common name.

Pimelea axiflora subsp. *axiflora* has been observed to recruit in the absence of fire, and is thought to be an obligate seeder (Spicer 2008, pers. comm.). Butterflies and long-tongued flies are the most likely pollination vector for the species. The species flowers from June to December, peaking in September and November, though it may be identified at any time of year.

Description

Pimelea axiflora subsp. *axiflora* is an open, erect or gracefully arching shrub to 6 m high. Its stems are reddish and mostly hairless, though younger stems may be pubescent. Leaves are narrow, dark green (paler below) and hairless, 2.5 to 9 cm long. They are arranged opposite each other along the stem and have a prominent midrib and veins on their underside. The species is dioecious, with male and female flowers on separate plants. The male (staminate) flowers are tubular, 3 to 4 mm long, white or cream in colour and hairy on the outside, and have two protruding stamens. The female (pistillate) flowers are smaller, the tube having short erect lobes that enlarge and persist around the dry fruit. The flowers occur in sessile clusters of 4 to 8 in the leaf axils. Flowers are surrounded by small, green or brown papery bracts. The fruit opens to release small seeds.

[description from Curtis 1967 and Entwisle 1996]

Confusing Species

Pimelea axiflora subsp. *axiflora* may be confused with *Pimelea drupacea*. The latter species is a straggly shrub to 3 m high, with flowers in terminal clusters and succulent fruit. No other subspecies of *Pimelea axiflora* occur in Tasmania.

DISTRIBUTION AND HABITAT

On mainland Australia *Pimelea axiflora* subsp. *axiflora* occurs in Victoria and New South Wales (Entwisle 1996). In Tasmania the species is restricted to King Island, where it grows as an understorey shrub in wet eucalypt forest and in damp environments along watercourses (Plate 2). *Eucalyptus globulus*, *Eucalyptus viminalis* or *Eucalyptus brookeriana* may be the dominant eucalypt, overtopping a relatively open small tree/tall shrub layer of *Pomaderris apetala*, *Acacia melanoxylon* and *Melaleuca ericifolia*. Smaller shrubs include *Bursaria spinosa* and *Pimelea drupacea*, while the ground layer is typically species poor, with *Australina pusilla* subsp. *pusilla*, *Clematis aristata*, *Ebrharta stipoides* and *Pteris tremula*, and in less mesic conditions *Pteridium esculentum*. Associated threatened species include *Austrocynoglossum latifolium*, *Elaeocarpus reticulatus* and *Hedycarya angustifolia*. The altitude range is 30 to 120 m above sea level, and the underlying geology is mostly Precambrian sandstones/siltstones, but also Quaternary sediments and Devonian granite.

Within Tasmania the species has a linear range of about 35 km, an extent of occurrence of about 260 km², and an area of occupancy of about 6 to 7 ha (Table 1).



Plate 2. *Pimelea axiflora* subsp. *axiflora* along the Seal River, King Island (Image by Richard Schahinger)

Table 1. Population summary for *Pimelea axiflora* subsp. *axiflora* in Tasmania

	Subpopulation	Tenure	NRM region	1:25 000 mapsheet	Year last (first) seen	Area of occupancy (ha)	Number of mature plants
1	Seal River	Crown Land *	Cradle Coast	Stokes	2009 (2007)	1.2	200–300
2	Mount Stanley	Private	Cradle Coast	Grassy	1966 (1966)	unknown	unknown
3	Grassy River	Private	Cradle Coast	Grassy	2007 (1998)	1–2	100–200
4	Grassy (scheelite mine)	Private	Cradle Coast	Grassy	2006 (2005)	0.000001	2
5	Lymwood	Private	Cradle Coast	Grassy	1976 (1976)	unknown	unknown
6	Yarra Creek	Private	Cradle Coast	Grassy	1998 (1998)	unknown	unknown
7	Naracoopa	Private	Cradle Coast	Grassy	2009 (2009)	2.0	1000–1500
8	Yates Creek	State Forest & Private	Cradle Coast	Naracoopa	2007 (2003) 2009 (2009)	0.05 2.0	10 60
9	Fraser River	Private	Cradle Coast	Sea Elephant	1998 (1998)	unknown	unknown
10	Sea Elephant River	Private	Cradle Coast	Sea Elephant	2007 (1998)	unknown	unknown
11	Reekara Road (east of Sea Elephant Hills)	Private reserve #	Cradle Coast	Saltwater	2009 (2002)	0.03	15–20 (plus 30 immature)
12	Houfes Road (west of Sea Elephant Hills)	Private	Cradle Coast	Saltwater	2001 (1998)	unknown	unknown

NRM region = Natural Resource Management region;

* Recommended to become a Conservation Area under the Tasmanian *Nature Conservation Act 2002* (CLAC Project Team 2005);

Covered by a conservation covenant under the Tasmanian *Nature Conservation Act 2002*.

POPULATION ESTIMATE

Pimelea axiflora subsp. *axiflora* is known from twelve discrete subpopulations on King Island. Mature plant numbers are available for only six of the subpopulations, with fewer than 2000 plants in total (Table 1).

The earliest King Island collection of *Pimelea axiflora* subsp. *axiflora* held by the Tasmanian Herbarium is from 1966. Several of the known subpopulations were uncovered during Bushcare surveys of private land in 1998, and it is considered likely that additional stands will be discovered given a concerted survey effort.

RESERVATION STATUS

Pimelea axiflora subsp. *axiflora* is not known from any formal reserve in Tasmania. One subpopulation occurs within a ‘river reserve’ that has been recommended to become a Conservation Area under the Tasmanian *Nature Conservation Act 2002* (CLAC Project Team 2005), while another occurs on private property

that is covered by a conservation covenant under the same Act (Table 1).

CONSERVATION ASSESSMENT

Pimelea axiflora subsp. *axiflora* was listed as endangered on the original schedules of the Tasmanian *Threatened Species Protection Act 1995*. At that time it qualified for listing under criterion D:

- The total population estimated to be number less than 250 mature individuals.

Ten of the twelve known subpopulations on King Island have been recorded since the species’ listing. A reassessment of the species’ status should be undertaken following surveys of previously recorded subpopulations and extension surveys of suitable habitat.

THREATS, LIMITING FACTORS & MANAGEMENT ISSUES

Pimelea axiflora subsp. *axiflora* is threatened by land clearance, browsing by stock,

inappropriate fire frequencies, mining activities, climate change and a lack of secure tenure.

Land clearance: Almost 70% of King Island's native vegetation has been cleared since European settlement (Barnes *et al.* 2002; Finzel 2004), including significant areas of the species' preferred wet eucalypt forest. An unknown number of plants — including *Phyllocladus asplenifolius* (celerytop pine) — have been lost during past clearance. *Eucalyptus globulus* (blue gum) King Island forest is a threatened vegetation community listed under the Tasmanian *Nature Conservation Act 2002*, and as such its clearance is not permitted unless approved under exceptional circumstances.

Stock: *Pimelea axiflora* subsp. *axiflora* is very palatable to stock. Barnes *et al.* (2002) suggest that areas where this species occurs should be managed as stock-free zones.

Fire: The species grows within wet eucalypt forest that requires at least 30 years between fires to maintain the defining species (Pyrke & Marsden-Smedley 2005). More frequent fires have the potential to degrade the species' habitat. The time to attain reproductive maturity for *Pimelea axiflora* subsp. *axiflora* is unknown, but it might be expected to in the order of 10 years. Successive fires within such a time scale have the potential to eliminate the species.

Mining: Plants are likely to have been lost during activities associated with the scheelite mine at Grassy. Redevelopment of the mine will impact on one known plant, though a commitment has been provided by the proponent that propagation and replanting of the species will be undertaken (SEMF 2006).

Climate change: A reduction in rainfall associated with global climate change may lead to a diminution of suitable habitat and exacerbate the risk of fire to the species.

Lack of secure tenure: The majority of known subpopulations on King Island are on private land, and consequently are at risk from a range of unregulated activities.

MANAGEMENT STRATEGY

What has been done?

Extension surveys: Surveys of the Seal River, Grassy River, Yarra Creek, Pegarah State Forest and Naracoopa areas were undertaken by personnel with the Threatened Species Section in 2007 and 2009 as part of flora verification projects funded by the Cradle Coast Authority. The surveys revealed the presence of large subpopulations near Naracoopa and along the Seal River, the latter mostly within an area proposed to become a Conservation Area.

Post-fire monitoring: The response of the species to the 2007 Sea Elephant fire has been monitored by personnel with DPIPW's Private Land Conservation Program (Reekara Road subpopulation). The results indicated that the species is likely to be an obligate seeder.

Management objectives

The main objective for the recovery of *Pimelea axiflora* subsp. *axiflora* is to prevent the inadvertent destruction of subpopulations, maintain the viability of existing subpopulations, and promote conditions for its successful recruitment.

What is needed?

- provide information and extension support to the Cradle Coast Natural Resource Management committee, local councils, government agencies and the local community on the locality, significance and management of known *Pimelea axiflora* subsp. *axiflora* subpopulations and areas of potential habitat;
- conduct extension surveys to determine the species' full extent on King Island — this should include determining the status of all reported but undescribed subpopulations, and the identification of management issues;
- pursue increased security and improved management of subpopulations on private land through private land conservation programs;

- include specific prescriptions to safeguard known subpopulations in fire management plans for King Island (Parks & Wildlife Service 2002);
- collect seed for long-term storage at the Tasmanian Seed Conservation Centre;
- formally reserve areas of Crown land that support the Seal River subpopulation;
- support the implementation of the King Island Biodiversity Recovery Plan;
- monitor known subpopulations biennially to determine the level of recruitment and/or plant loss.

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Prepared in 2009 under the provisions of the *Tasmanian Threatened Species Protection Act 1995*. Approved by the Secretary and published in January 2010.

Cite as: Threatened Species Section (2010) *Listing Statement for Pimelea axiflora subsp. axiflora (bootlace bush)*, Department of Primary Industries, Parks, Water and Environment, Tasmania.

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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.