# *Senecio georgianus*

## grey fireweed

TASMANIAN THREATENED SPECIES LISTING STATEMENT

Image by Kew Gardens

**Scientific name:** ***Senecio georgianus*** DC., *Prod.* 6: 371 (1838)

**Common name:** grey fireweed (Wapstra et al. 2005)

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

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

*Environment Protection and Biodiversity Conservation Act 1999*: **Extinct**

**Distribution:** Endemic status: **Not endemic to Tasmania**

Tasmanian NRM Regions: **South**

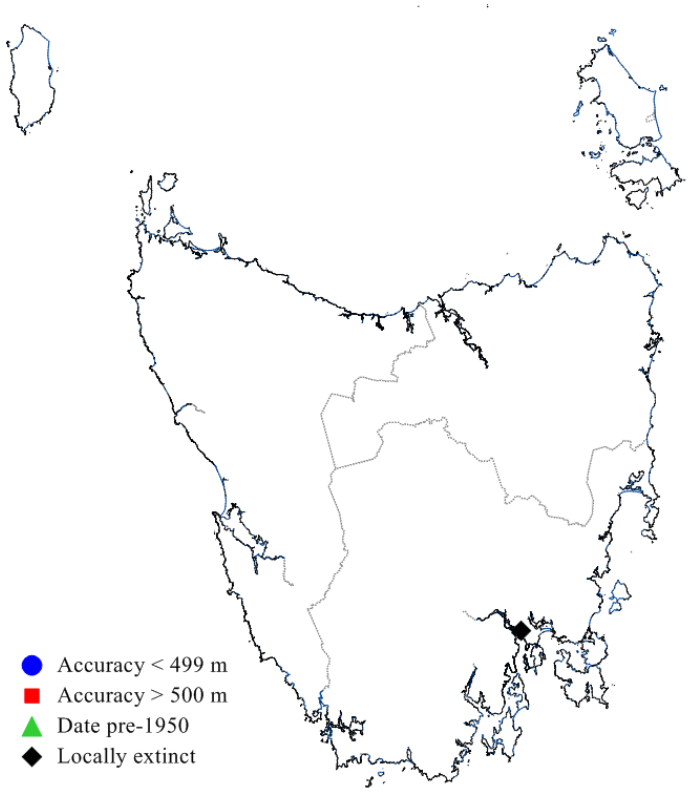


**Figure 1.** The distribution of *Senecio georgianus* within Tasmania

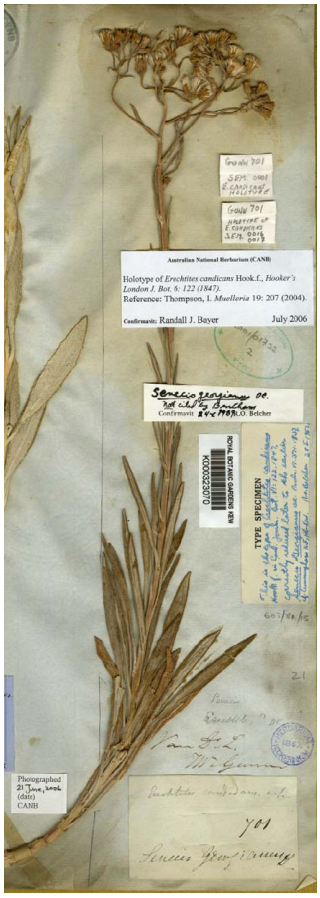


**Plate 1.** Specimen (Gunn 701) of *Senecio georgianus* collected by Gunn from "Van D.L.", date unknown [extract of image downloaded from Kew Gardens' website]

## IDENTIFICATION AND ECOLOGY

*Senecio georgianus* is a poorly known perennial herb presumed to be extinct in Tasmania, and elsewhere in Australia. While the species was recognised as part of the Tasmanian flora early (e.g. Hooker 1847, 1858), later accounts of the flora ignored the species (e.g. Rodway 1903, Curtis 1963), probably because of the lack of specimens at the Tasmanian Herbarium, hence the lack of inclusion in the formal census of the vascular flora (Baker & Duretto 2011). Only more recent literature included recognition of the species from Tasmania (e.g. Leigh et al. 1984, Thompson 2004, 2006, Wapstra et al. 2006), although the details were incomplete (Wapstra 2010).

Species of *Senecio* are usually annual to short-lived perennial herbs referred to as fireweeds or groundsels. They are categorised by the form of the capitulum (the compound flowerhead). Radiate capitula can be seen in the typical garden daisy, with a heart of tubular florets (disk florets) surrounded by ray florets with their radiating ligules. Non-radiate capitula do not have ray florets. They are categorised as disciform if the central florets are bisexual and the outer florets are female and, in Australian *Senecio*, the outer florets have a more slender and fewer-lobed corolla; or discoid if all florets are bisexual. *Senecio georgianus* is 1 of only 3 discoid species in Tasmania.

Species of *Senecio* reproduce by seed (referred to as achenes), which are usually produced in high numbers on each plant and are wind-dispersed as most species have seeds with a long pappus (a ring of very fine bristles or hairs at the tip of the body of the achene) that aid in dispersal. As such, species of *Senecio* are often one of the first colonisers of bare and disturbed ground, but can produce locally and temporarily dense populations that are short-lived and decrease as competition with other plants progresses. The response of *Senecio georgianus* to disturbance events is unknown.

### Survey techniques

The peak flowering period of most species of *Senecio* is spring through summer and into autumn but many species are detectable and identifiable at most times of the year (Wapstra et al. 2008). The only dated Tasmanian collections of *Senecio georgianus* were made in late February 1804, and in 1805, the latter probably in late November (Table 1).

### Description

Based on limited available herbarium material, *Senecio georgianus* has been described as an erect perennial herb, 30 to 80 cm tall, with stems covered by appressed cobwebby hairs. The leaves in the middle third of the stems are more or less evenly spaced and sized, mostly narrow-oblanceolate, very narrow-elliptic or linear, 6 to 8 cm long, with a length to width ratio of about 8 to 12. They are usually undivided, their bases are without auricles and they have revolute margins that appear entire but are actually minutely denticulate. The progressively smaller uppermost leaves are linear, with attenuate bases and a length to width ratio of about 15 to 30. The upper leaf surface has sparse appressed cottony hairs or is glabrescent. The lower surface has dense appressed woolly hairs. Altogether, the several stems in the inflorescence hold 10 to 40 capitula (flowerheads) on peduncles that are not or only sparsely cobwebby at flowering. There are 6 to 10 bracteoles, 2 to 3 mm long, grouped to resemble a calyx at the base of each flower head. The involucre (ring of bracts called phyllaries that surround the group of the florets in the capitulum) is 5 to 7 mm long and about 2 mm in diameter. The 12 to 14 phyllaries are glabrous and their apices recurved. The 25 to 40 florets in a capitulum are all bisexual, or possibly some female with the stamens reduced to staminodes. The achenes are narrow-obloid, 2.5 to 3.0 mm long and mostly very dark brown and sometimes olivaceous, with papillose hairs in dense bands. The length to width ratio of the hairs is about 2 to 3. The pappus is about 5 to 6 mm long.

[description based on Thompson 2004]

### Confusing species

*Senecio georgianus* is 1 of 20 species of *Senecio* in Tasmania that have non-radiate flowerheads, many of which are superficially similar (Wapstra et al. 2008).

**Table 1.** Population summary for *Senecio georgianus* within Tasmania

| | Subpopulation* | Tenure | NRM Region | 1:25000 Mapsheet | Year of collection | Area occupied | Number of individuals |
|---|---|---|---|---|---|---|---|
| 1 | Derwent River near Risdon Cove | unknown | South | Hobart | 1804 | unknown | unknown |
| 2 | Agricultural settlement, Hobart | unknown | South | Hobart? | 1805** | unknown | unknown |

NRM region = Natural Resource Management region; * locality description taken from herbarium sheets;
** Caley, the collector, was in Hobart at the end of November 1805 (Webb 1995)

The species most closely related to *Senecio georgianus* are not present in Tasmania. However, confusion with other species is still likely, especially some of the superficially similar and poorly known species such as *Senecio longipilus*. Vegetatively, *Senecio georgianus* is probably most similar to the subalpine and widespread *Senecio gunnii* although the latter has hairs on both leaf surfaces and the former is usually hairless above. It is recommended that specialist opinion be sought on any collections suspected to be *Senecio georgianus*.

## DISTRIBUTION AND HABITAT

*Senecio georgianus* has been recorded from southeastern Australia, including Tasmania, Victoria, and New South Wales (Thompson 2006). Only 2 of the 3 collections of the species from Tasmania were accompanied by location details. Both were collected from in or near Hobart (Table 1, Figure 1).

On mainland Australia, *Senecio georgianus* is recorded as occurring in savannah grassland, undulating grassy eucalypt woodland, grassy subalpine ridges, and collections frequently occurred in association with major rivers and lakes (Leigh et al. 1984). The habitat within Tasmania is unknown.

## POPULATION ESTIMATE

*Senecio georgianus* is no longer thought to be extant. It has been collected 3 times, all early in the 19th century, though there is no information on the size of subpopulations at the time of collection (Table 1; Wapstra 2010). The location of the third collection from Tasmania was not specified (see legend to Figure 1).

## RESERVATION STATUS

The reservation status of *Senecio georgianus* is uncertain because the species is presumed extinct and the precise location of historical collections is unknown.

## CONSERVATION ASSESSMENT

*Senecio georgianus* was listed as extinct on Schedules of the *Threatened Species Protection Act 1995* in 2011, meeting the criterion for the presumed extinct category as no occurrence in the wild of the species has been confirmed during the previous 50 years. The species has not been collected in Tasmania for over 160 years.

## THREATS, LIMITING FACTORS AND MANAGEMENT ISSUES

The threats to *Senecio georgianus* are not entirely understood, but clearing and domestic stock grazing appear to have caused the local extinctions on the mainland (DEWHA 2010). All sites of historical collections on southeastern mainland Australia have been converted to pasture (Leigh et al. 1984). Being in or near Hobart, the clearing of sites for primary production and human occupation is the most probable cause of habitat loss for the only locations identified in Tasmania.

## MANAGEMENT STRATEGY

### *What has been done?*

The collection history of the species in Tasmania has been compiled (Wapstra 2010) but no targeted surveys have been undertaken.

### *Management objectives*

The development of a management strategy for *Senecio georgianus* is limited by the presumed extinct status of the species in Tasmania.

### *What is needed?*

While the presumed extinct status of the species is recognised, the possibility of re-discovering the species must not be discounted, considering several recent re-discoveries of plant species in Tasmania, including species of *Senecio* (e.g. Wapstra et al. 2006). However, Wapstra (2010) noted that the lack of information on potential habitat and likely sites in Tasmania for *Senecio georgianus* means that the opportunity for re-discovery of extant populations of the species must be considered serendipitous at best.

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**View:**
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.