



## *Swainsona greyana* Hairy Darling-pea

### Taxonomy

*Swainsona greyana* Lindl.

### Current conservation status

Listed as threatened under the *Flora and Fauna Guarantee Act 1988* (SAC 2002).

Categorised as Endangered in the 2014 Advisory list of rare or threatened flora (DEPI 2014).

### Proposed conservation status

Critically Endangered in Victoria

Criterion B1ab(iii,v)

### Species Information

#### Description and Life History

Erect perennial shrub to c. 2 m tall; stems pubescent with spreading crisped basifixed hairs. Leaves mostly 10-15 cm long; leaflets mostly 17-21, elliptic to obovate, lateral leaflets 10-40 mm long, usually 4-10 mm wide, apices obtuse, upper surface glabrous, lower surface virtually glabrous to pubescent; stipules 4-10 mm long. Racemes mostly 12-20-flowered; flowers 20-25 mm long; calyx white-woolly, teeth much shorter than tube; petals white, pink or purplish; standard 15-22 mm long, 15-22 mm wide, suborbicular, clawed; keel 15-22 mm long, apex obtuse obscurely lipped; style tip straight or minutely inflexed. Pod ellipsoid, mostly 30-50 mm long, 8-12 mm wide, glabrous; stipe to c. 10 mm long; seeds c. 28, cordate, c. 4 mm long, olive-green to brown. Flowers September-March (VicFlora, 2019).

#### Generation Length

The generation length of *Swainsona greyana* is inferred to be 5 to 50 (midpoint 20) years. While mass germination of this perennial semi-shrub following fire has been recorded in NSW, fire is extremely rare in the relevant riverine habitat of far north-west Victoria. As evidence of continuous germination is lacking, it is presumed that germination is probably sporadic with local disturbance. The role of major floods in triggering germination is unclear.

#### Distribution

The taxon is very rare and apparently confined in Victoria to the far north-west at Lindsay Island.

#### Habitat

The taxon occurs on heavy soils in riverine woodland.

#### Threats

Potential threats to the taxon may include the impacts of climate change (decreased rainfall, extreme temperatures) including failed reproduction/recruitment; decreased frequency, amplitude and duration of flooding; damage to plants due to impacts of recreational activities; weed invasion; and the impacts of feral herbivores (including pigs, goats and rabbits) and possibly also kangaroos. Damage resulting from weed control, where plants are mistaken for weeds by uninformed workers is also a possible threat. It is also vulnerable due to its extreme

# Swainsona greyana

## Hairy Darling-pea

localisation within a very restricted geographical area and presumed small number of actual genets. G. Earl estimated the total area occupied by the taxon as less than 1 ha.

### IUCN Criteria

Criterion A. Population size reduction. Population reduction (measured over the longer of 10 years or 3 generations) based on any of A1 to A4			
	Critically Endangered	Endangered	Vulnerable
A1	≥ 90%	≥ 70%	≥ 50%
A2, A3, A4	≥ 80%	≥ 50%	≥ 30%
<p>A1 Population reduction observed, estimated, inferred or suspected in the past and the causes of the reduction are clearly reversible AND understood AND ceased.</p> <p>A2 Population reduction observed, estimated, inferred or suspected in the past where the causes of the reduction may not have ceased OR may not be understood OR may not be reversible.</p> <p>A3 Population reduction, projected or suspected to be met in the future (up to a maximum of 100 years) [(a) cannot be used for A3]</p> <p>A4 An observed, estimated, inferred, projected or suspected population reduction where the time period must include both the past and the future (up to a max. of 100 years in future), and where the causes of reduction may not have ceased OR may not be understood OR may not be reversible.</p>			
<p>based on any of the following:</p> <ul style="list-style-type: none"> <li>(a) direct observation [except A3]</li> <li>(b) an index of abundance appropriate to the taxon</li> <li>(c) a decline in area of occupancy, extent of occurrence and/or quality of habitat</li> <li>(d) actual or potential levels of exploitation</li> <li>(e) the effects of introduced taxa, hybridization, pathogens, pollutants, competitors or parasites</li> </ul>			

### Evidence:

#### Ineligible under Criterion A

There is insufficient evidence to determine whether there has been or will be a reduction in population sufficient to meet any threshold for Criterion A.

# Swainsona greyana

## Hairy Darling-pea

Criterion B. Geographic range in the form of either B1 (extent of occurrence) and/or B2 (area of occupancy)			
	Critically Endangered Very restricted	Endangered Restricted	Vulnerable Limited
B1. Extent of occurrence (EOO)	< 100 km <sup>2</sup>	< 5,000 km <sup>2</sup>	< 20,000 km <sup>2</sup>
B2. Area of occupancy (AOO)	< 10 km <sup>2</sup>	< 500 km <sup>2</sup>	< 2,000 km <sup>2</sup>
AND at least 2 of the following 3 conditions:			
(a) Severely fragmented OR Number of locations	= 1	≤ 5	≤ 10
(b) Continuing decline observed, estimated, inferred or projected in any of: (i) extent of occurrence; (ii) area of occupancy; (iii) area, extent and/or quality of habitat; (iv) number of locations or subpopulations; (v) number of mature individuals			
(c) Extreme fluctuations in any of: (i) extent of occurrence; (ii) area of occupancy; (iii) number of locations or subpopulations; (iv) number of mature individuals			

### Evidence:

#### Eligible under Criterion B1 as Critically Endangered

The Extent of Occurrence (EoO) across the taxon's range is estimated to be 67 km<sup>2</sup>, based on accepted, post-1970 records from the Victorian Biodiversity Atlas (VBA).

The taxon is observed to be severely fragmented,

It is estimated to have one location, as it is taxon is restricted to very localised patches which are dispersed across its distribution and small, precarious subpopulations, that are subject to a similar range of threats.

It has a continuing decline in (iii) and (v) above as a result of the identified threats, notably impacts of climate change and reduced flooding, which have amplified since 2001.

The taxon is restricted to very localised patches which are dispersed across its distribution.

#### Eligible under Criterion B2 as Endangered

The Area of Occupancy across the taxon's range is estimated to be 46 km<sup>2</sup>, based on 2 x 2 km<sup>2</sup> grids derived from accepted, post-1970 records from the VBA. As above, it is severely fragmented, is estimated to have 1 location and has a continuing decline in (iii) and (v) above.

# Swainsona greyana

## Hairy Darling-pea

Criterion C. Small Population size and decline				
		Critically Endangered	Endangered	Vulnerable
Number of mature individuals		< 250	< 2,500	< 10,000
AND at least one of C1 or C2				
C1	An observed, estimated or projected continuing decline of at least (up to a max. of 100 years in future):	25% in 3 years or 1 generation (whichever is longer)	20% in 5 years or 2 generations (whichever is longer)	10% in 10 years or 3 generations (whichever is longer)
C2	An observed, estimated, projected or inferred continuing decline AND least 1 of the following 3 conditions:			
(a)	(i) Number of mature individuals in each subpopulation	≤ 50	≤ 250	≤ 1,000
	(ii) % of mature individuals in one subpopulation =	90 – 100%	95 – 100%	100%
(b)	Extreme fluctuations in the number of mature individuals			

### Evidence:

#### Ineligible under Criterion C

It is suspected that there are 1,500 to 3,500 (midpoint 1,800) mature individuals, but this qualifier is too weak.

An estimate of population size was provided in 2001. No more recent information on population size was located. While it is plausible that the population of this relatively long-lived perennial may still be within this size range, some relatively recent decline due to severe drought is also possible. As the taxon is rhizomatous, the counts refer to shoots, and the actual number of genets is presumably substantially smaller.

Criterion D. Very small or restricted populations				
		Critically Endangered	Endangered	Vulnerable
Number of mature individuals (observed or estimated)		< 50	< 250	< 1,000
D2. Only applies to the VU category Restricted area of occupancy or number of locations with a plausible future threat that could drive the species to critically endangered or Extinct in a very short time.		-	-	D2. Typically: AoO < 20 km <sup>2</sup> or number of locations ≤ 5

### Evidence:

#### Eligible under criterion D2 as Vulnerable

The taxon is estimated to be very restricted.

Criterion E (Quantitative Analysis) was not addressed as the taxon does not have a detailed Population Viability Analysis.

### References

DEPI (2014). *Advisory list of rare or threatened plants in Victoria - 2014*. Department of Environment and Primary Industries, Melbourne.



*Swainsona greyana*  
Hairy Darling-pea

SAC (2002). Flora and Fauna Guarantee Scientific Advisory Committee: Final Recommendation on a Nomination for Listing. Nomination No. 605 *Swainsona greyana*

VicFlora (2019) Flora of Victoria, Royal Botanic Gardens Victoria *Swainsona greyana*. Retrieved from: <https://vicflora.rbg.vic.gov.au/flora/taxon/cfa54550-d32f-4320-b70d-2b254c9f7ac8>