Threatened Species Assessment

Hovea corrickiae
Glossy Hovea

Taxonomy

Hovea corrickiae J.H. Ross

Current conservation status

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

Proposed conservation status

Endangered in Victoria

Criteria B1ab(iii,v)+2ab(iii,v)

Species Information

Description and Life History

The taxon is a shrub or slender tree to 5 m high; branchlets with dense, appressed to slightly spreading, ± straight or curled hairs. Leaves narrow-ovate or elliptic, mostly 3-11.4 cm long, 0.7-2 cm wide; apex obtuse or acute, with a short mucro; upper surface dark green, glossy, ± flat either side of depressed midrib; lower surface with dense coiled or curled hairs; stipules narrowly ovate, to 1.2 mm long. Inflorescences usually 2- or 3-flowered, or the axis extending into a many-flowered leafy shoot to 12 cm long; pedicels 5-9.5 mm long; bract inserted 4.5-8 mm below bracteoles; bracteoles inserted at or just below calyx; upper lobes of calyx 6-6.5 mm long (including tube); corolla pale to deep mauve or occasionally white; standard 9.5-10.5 mm long (including claw); stamen-filaments 4.5-5.5 mm long. Pod shortly stipitate but stipe not exceeding calyx; seeds dark brownish-black, often mottled yellow to reddish-brown. The taxon flowers from September to October (VicFlora 2019).

Generation Length

The generation length of *Hovea corrickiae* is estimated to be 40 to 70 years. This is based on an estimated longevity of 35-50 years and an estimated pre-settlement fire interval of 40-70 years. Although poorly known, the taxon is likely to be a fire-sensitive, obligate seed regenerator which recruits episodically post-fire from a long-persistent, soil-stored seedbank, with some trickle recruitment in good seasons and in response to localised site disturbance. The taxon is unlikely to resprout and is likely to be killed by most fire events. Like many members of the Fabaceae, seed longevity is expected to greatly outlast adult longevity with the potential for seedbanks to persist in the absence of fire and observable recruitment.

Distribution

The taxon is confined in Victoria to the Victoria and Mt William Ranges in the Grampians, and in the nearby Black Range. The localities of records further east are suspected of being errors. The taxon also occurs in Tasmania (VicFlora 2019).

Older records in the Victorian Alps are almost certainly attributable to the alpine *H. montana* since the two taxa were once considered varieties of *H. longifolia*, a taxon now regarded as endemic to New South Wales.

Habitat

In Victoria, the taxon is confined to areas of high rainfall where it favours tall open-forest, usually with a dense shrub layer (VicFlora 2019).

Quadrat data in the Victorian Biodiversity Atlas indicates that the taxon is typically associated with *Acacia melanoxylon* (Blackwood), *A. verticillata* (Prickly Moses), *Blechnum nudum* (Fishbone Water-fern), *Callitris rhomboidea* (Oyster Bay Pine), *Clematis aristata* (Mountain Clematis), *Correa aemula* (Hairy Correa), *Cyathea australis* (Rough Tree-fern), *Dicksonia antarctica* (Soft Tree-fern), *Eucalyptus alaticaulis* (Grampians Grey-gum), *E. baxteri* (Brown Stringybark), *E. cypellocarpa* (Mountain Grey-gum), *E. obliqua* (Messmate Stringybark), *Goodenia ovata* (Hop Goodenia), *Howittia trilocularis* (Blue Howittia), *Leptospermum scoparium* (Manuka), *Poa tenera* (Slender Tussock-grass), *Polystichum proliferum* (Mother Shield-fern), *Pomaderris apetala* subsp. *apetala* (Grampians Pomaderris), *Prostanthera lasianthos* (Victorian Christmas-bush), *Pteridium esculentum* (Austral Bracken), *Tetrarrhena juncea* (Forest Wire-grass), and *Zieria oreocena* (Grampians Zieria).

Threats

As a result of climate change, the taxon is likely to be at increasing risk of local extinction in response to repeat fire events at intervals below or approaching the tolerable fire interval (TFI), coupled with extreme drought events. Such events may result in recruitment failure, seedbank depletion and exhaustion, and local extinction. The TFI for the taxon is likely to be around 10 years. The risk of repeat fire events at intervals approaching the TFI is low at present but likely to increase in future decades.

These threats may be exacerbated by the impact of native and exotic herbivores such as wallabies, goats, and feral deer and, during early recruitment, potentially also by rabbits. Targeted browsing of recruiting stands of other members of the Fabaceae, such as *Pultenaea weindorferi* (Swamp Bush-pea) by Sambar Deer (*Rusa unicolor*), suggest shrubby members of the genus *Hovea* may be equally susceptible to recruitment failure through targeted browsing by Red Deer (*Cervus elaphus*) and Fallow Deer (*Dama dama*) which are abundant within the Grampians.

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%

A1 Population reduction observed, estimated, inferred or suspected in the past and the causes of the reduction are clearly reversible AND understood AND ceased.

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.

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*]

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.

based on any of the following:

(a) direct observation [*except A3*]

(b) an index of abundance appropriate to the taxon

(c) a decline in area of occupancy, extent of occurrence and/or quality of habitat

(d) actual or potential levels of exploitation

(e) the effects of introduced taxa, hybridization, pathogens, pollutants, competitors or parasites

Evidence:

Ineligible under Criterion A

The past population reduction does not meet the threshold for eligibility under Criterion A2. There is insufficient evidence to determine whether will be a future reduction in population size (Criterion A3).

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 km²	< 5,000 km²	< 20,000 km²
B2. Area of occupancy (AOO)	< 10 km²	< 500 km²	< 2,000 km²
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 Endangered

The Extent of Occurrence (EoO) across the taxon's range is estimated to be 875 km², based on accepted, post-1970 records from the Victorian Biodiversity Atlas (VBA).

The taxon is severely fragmented naturally at the landscape scale. Geographically isolated stands occur at separations exceeding the dispersal range of the taxon, which has no specialised mechanism for long-distance dispersal. The only plausible seed vectors are ants (the phenomenon of myrmecochory) which operate at the metre scale only. This precludes the possibility of recolonisation in the event of local extinction.

The taxon is considered to occur in two locations since all identified threats apply consistently across the very restricted ecological and geographic range of the taxon in the Grampians and Black Range.

It has a continuing decline in (iii) and (v) above, due to the identified threats, notably the impacts of climate change including more frequent fires and drought, and browsing by native and exotic herbivores.

Eligible under Criterion B2 as Endangered

The Area of Occupancy (AoO) across the taxon's range is estimated to be 76 km², based on 2 x 2 km grids derived from accepted, post-1970 records in the VBA. As above, it is severely fragmented, has two locations and has a continuing decline in (iii) and (v) above.

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 as Data Deficient

There is no available estimate of population size for the taxon in Victoria.

Criterion D. Very small or restricted population			
	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 km2 or number of locations ≤·5

Evidence:

Eligible under Criterion D2 as Vulnerable

The taxon is estimated to be very restricted. It has a restricted distribution, occurring in a single location, such that this restriction makes the taxon capable of becoming Critically Endangered or Extinct within a time frame of one or two generations. This is in response to the impact of the identified long-term threats, notably the impacts of climate change including more frequent fires and drought, and browsing by native and exotic herbivores.

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. Retrieved from:

https://www.environment.vic.gov.au/__data/assets/pdf_file/0021/50448/Advisory-List-of-Rare-or-Threatened-Plants-in-Victoria-2014.pdf

VicFlora (2019). Flora of Victoria, Royal Botanic Gardens Victoria: *Hovea corrickiae*. Retrieved from: https://vicflora.rbg.vic.gov.au/flora/taxon/0a5371f5-14a7-447f-a43e-d9e55eda191a