Threatened Species Assessment

Sarcozona praecox
Sarcozona

Taxonomy

Sarcozona praecox (F. Muell.) S.T. Blake

Current conservation status

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

Proposed conservation status

Endangered in Victoria

Criterion B2ab(i,ii,iii,v)

Species Information

Description and Life History

The taxon is a prostrate or shrubby perennial to c. 0.5 m high, 1 m diam. Leaves 4-0 cm long, 4-7 mm diam, glaucous, warty, the adaxial face flat, outer surfaces flat to convex, the dorsal angle usually raised and roughened; bracts of involucre 12–20 mm long, fused in the lower two-thirds, internally appressed to but remaining free from ovary. Sepals 4 (rarely 5), the longer 3-5 mm long, acute, keeled and fleshy throughout, the shorter obtuse and with broad membranous margins; petaloid staminodes mostly c. 2 cm long; styles and locules of ovary 4 (rarely 5). Fruit globoid, c. 1 cm diam.; seeds ovate, acute, c. 1 cm long, smooth. The taxon flowers from August to November (VicFlora, 2019).

Generation Length

The generation length of *Sarcozona praecox* is estimated to be 25 to 30 years. The longevity is plausibly in the 25-50 year range, therefore, the generation length is approximately at the mid point, skewed toward the older age class.

Distribution

The taxon is occasional in the north-west of the state (VicFlora, 2019).

Habitat

The taxon is occasional in mallee and *Callitris-Casuarina* woodlands, usually on loamier soils (VicFlora, 2019).

Threats

The taxon is threatened by the effects of incremental weed invasion, incremental sporadic habitat loss and habitat decline, which are expected to occur in the next 90 years.

It should be noted that the taxon has a potential recolonisation capacity, given the likely inherent adaptation to future climatic change and competition regime.

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:

Eligible under Criterion A2 as Vulnerable

The population reduction over the past 75 to 90 years is estimated to be 20 to 30%, based on (c) and (e) above.

Past decline is based on considerable historic decline, which occurred in the early 1900s, prior to 1920-1930 period.

Eligible under Criterion A4 as Vulnerable

The population reduction over any 75 to 90 year period, including both past and future, is estimated to be 20 to 30%, based on (c) and (e) above.

Future decline is based on the effects of incremental weed invasion, incremental sporadic habitat loss and habitat decline, which are expected to occur in the next 90 years.

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 B2 as Endangered

The Area of Occupancy (AoO) across the taxon's range is estimated to be 309 km², based on 2 x 2 km grids derived from accepted, post-1970 records in the Victorian Biodiversity Atlas.

Considering the limited dispersal ability of the taxon, the barriers to dispersal, or lack of habitat separating them, the subpopulations can be considered to be severely fragmented.

It is suspected to have 2 locations. It has a continuing decline in (i), (ii), (iii) and (v) above, based on the current and projected impacts of the identified threats.

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 insufficient evidence to determine the number of mature individuals.

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:

Ineligible under Criterion D

There is insufficient evidence to determine the number of mature individuals.

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.

VicFlora (2019). Flora of Victoria, Royal Botanic Gardens Victoria: *Sarcozona praecox.* Retrieved from: https://vicflora.rbg.vic.gov.au/flora/taxon/c6b3781b-33c3-4b6a-9119-66a8cc8ce7f2