

Threatened Species Assessment

Jasminum didymum subsp. *lineare* Desert Jasmine

Taxonomy

Jasminum didymum subsp. *lineare* (R. Br.) P.S. Green

"In his revision of the Australian *Jasminum*, Green (1984) recognized three subspecies of *J. didymum*. These differ mainly in leaflet size and shape, the length of the central petiolule (the stalk of a leaflet) and the number of flowers in the inflorescence. Intermediates between the subspecies are common outside of Victoria" (VicFlora 2018).

Current conservation status

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

Proposed conservation status

Endangered in Victoria

Criteria A2bce+4bce; B2ab(iii)

Species Information

Description and Life History

The taxon is a tangled shrub 1-2 m high, often prostrate or scrambling over other vegetation, with stems to 10 m long; branches glabrous or minutely pubescent. Leaves 3-foliolate with terminal leaflet largest; leaflets linear to broad-linear, mostly 3-10 cm long, 2-5(-12) mm wide, acute, blunt or rounded, apiculate, margins entire, surfaces glabrous or puberulent; petiole 3-20 mm long; terminal petiolule 4-20 mm long; lateral petiolules 0-5 mm long. Inflorescences axillary, 5-15-flowered. Calyx 2-3 mm long, puberulent, lobes 5, obscure, to c. 1 mm long; corolla white or cream, tube 3-10 mm long, lobes 5 or 6, ovate-lanceolate, 2.5-5 mm long, acute or obtuse. Berry globose, 8-12 mm diam., black. The taxon flowers sporadically throughout the year and mainly in May to July (VicFlora 2018).

The taxon is a shrub that is likely to recruit after rainfall events.

Generation Length

The generation length of *Jasminum didymum* subsp. *lineare* is estimated to be 20 to 80 years. *Jasminum didymum* grows to become a shrub that scrambles over other vegetation. Such a plant may be expected to take 20 years to grow to a mature size. It may eventually be killed by fire but this and other vegetation that it is commonly associated with it (e.g., *Myoporum platycarpum* [Sugarwood] and Chenopods) are fire retardant. This suggests that fires may be a rare event where this taxon occurs.

Distribution

In Victoria, the taxon occurs in the north-west, north of Lake Albacutya (old specimens labelled 'Wimmera' and 'Portsea' are of doubtful provenance). The taxon also occurs in Western Australia, Northern Territory, South Australia, Queensland, and New South Wales (VicFlora 2018).

Habitat

The taxon is confined to dry woodlands on loamy or sandy soils (VicFlora 2018).

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Threats

The main threats to the taxon are herbivory by mammals, especially given the extra pressure placed on plants from introduced goats, competition from weeds and prolonged droughts, which can cause recruitment failure.

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"> (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 Endangered

The population reduction over the past 60 to 240 years is inferred to be 60 to 80% (midpoint 70%), based on (b), (c) and (e) above. This estimate is based on the proportion of potential habitat (dry woodland) in northwest Victoria that was cleared over the last 240 years.

The causes of the reduction may not have ceased, be understood or be reversible.

Eligible under Criterion A4 as Critically Endangered

The population reduction over any 60 to 240 year period, including both past and future (up to 100 years in the future), is estimated to be 80 to 90%, based on (b), (c) and (e) above. The causes of reduction may not have ceased, be understood or be reversible.

The maximum amount of decline in *Jasminum didymum* subsp. *lineare* is likely to be in the past due to large-scale clearing of potential habitat.

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

The Area of Occupancy is estimated to be 163 km², based on 2 x 2 km grids derived from accepted, post-1970 records in the Victorian Biodiversity Atlas.

The two locations are considered to be sites of occurrence within large national parks, and sites of occurrence within small remnant conservation reserves. The impact and severity of threats is expected to be different between these locations. For example, it may be easier to control fires within small reserves surrounded by cleared land than continuous large tracks of dry vegetation and the edge effects of small reserves is going to be much larger suggesting weed invasion may be much more of a threat in small reserves.

It has a continuing decline in(iii) above.

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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. There has only been one estimate of the number of individuals at a site of occurrence (in 2010) and, as a result, it is difficult to estimate the total number of individuals currently across all sites.

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 ² 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. 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



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McConkey, K. R., Meehan, H. J. and Drake, D. R. (2004). Seed dispersal by Pacific Pigeons (*Ducula pacifica*) in Tonga, Western Polynesia. *Emu*, 104, 369-376.

VicFlora (2018). Flora of Victoria, Royal Botanic Gardens Victoria: *Jasminum didymum* subsp. *lineare*. Retrieved from: <https://vicflora.rbg.vic.gov.au/flora/taxon/d432c179-55b4-47f8-b011-d133c8281d77>