Threatened Species Assessment

Dipodium interaneum
Yellow Hyacinth-orchid

Taxonomy

Dipodium interaneum D.L. Jones

This was previously known as *D. hamiltonianum* which is now considered to be endemic to near-coastal heathy vegetation of south-eastern Queensland, including sandy islands near the mainland. *D.hamiltonianum* differs in the more heavily blotched, greener flowers and labellum furnished with longer hairs. It flowers earlier than *D. interaneum* and their habitats are very different.

Current conservation status

Listed as threatened under the *Flora and Fauna Guarantee Act 1988*. known as *Dipodium hamiltonianum.*

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

Proposed conservation status

Endangered in Victoria

Criteria B2ab(iii); D

Species Information

Description and Life History

Leafless plant, up to 80 cm tall. Stem greenish, spotted. Pedicels (including ovary) 20-30 mm long; flowers c. 12-20, bright yellow to dull yellowish-green with red or purple spots or streaks, segments widely spreading. Sepals and petals narrowly oblong-obovate, 15-25 mm long, 3-5 mm wide, petals slightly narrower and shorter than sepals. Labellum 15-20 mm long; lateral lobes more or less oblong, clasping column, hairy on inside of base; mid-lobe oblong-elliptic, 10-15 mm long; lamina callus of 2 shortly pubescent, divergent, triangular ridges; lamina with central band of mauve hairs (c. 1 mm long) in apical half, shortly pubescent between these hairs and callus. Flowers Dec.-Feb.

Generation Length

The generation length of *Dipodium interaneum* is estimated to be 50 to 100 years. Generation time for non-colonial terrestrial orchids is estimated to be a nominal 30 years based on the annual replacement of the mother tuber by daughter tubers. Whilst somatically immortal, each individual is susceptible to endogenous exhaustion or environmental causes of mortality at rates likely to result in replacement at intervals of several decades only. Such orchids are classed as obligate seed regenerators (OSRs) reliant on seed-based recruitment for population maintenance. Despite being a non-colonial OSR, *Dipodium* taxa have extended longevity based on their rhizomic habit.

Distribution

The taxon is very rare and restricted to dry open-forest or woodland in the north-east between Wangaratta and Wodonga, and near Wulgulmerang in the east. The main sub-populations are on public land (National, Regional and Historic Parks) while there are also some small private land sites from Upper Everton to Chesneyvale. It also occurs in Qld and NSW.

Habitat

The taxon is very rare and restricted to dry open-forest or woodland. Habitat is characteristically associated with out-cropping granite (usually pinkish granite) in dry woodland.

Threats

Browsing of flower spikes by native and introduced herbivores continues to threaten/limit reproduction potential. The taxon doesn't appear to tolerate fire particularly well. Increased fire extent and intensity may further influence decline of this species.

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

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.

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 68 km², based on 2 x 2 km grids derived from accepted, post-1970 records in the Victorian Biodiversity Atlas.

The taxon is estimated to be severely fragmented naturally at the regional and landscape scales.

It is estimated to have two locations. It has a continuing decline in (iii) 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

It is estimated that there are 50 to 100 mature individuals, but other thresholds under this criterion have not been met.

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 D as Endangered

The taxon is estimated to have 50 to 100 mature individuals, based on monitoring results.

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.

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SAC (1996). Flora and Fauna Guarantee Scientific Advisory Committee: Final Recommendation on a Nomination for Listing. Nomination No. 370 *Dipodium hamiltonianum.*

VicFlora (2018). Flora of Victoria, Royal Botanic Gardens Victoria: *Dipodium interaneum*. Retrieved from: https://vicflora.rbg.vic.gov.au/flora/taxon/7b2904fb-9338-40bd-a397-d72c7015da06