



Caladenia hildae Honey Hood-orchid

Taxonomy

Caladenia hildae Pescott & Nicholls

The taxon is also referred to as Honey Caladenia, Golden Caladenia (Backhouse and Jeanes 1995), Golden Caps (Backhouse et al. 2016).

Other names: *Caladenia testacea*, *Caladenia testacea* var. *hildae*, *Stegostyla hildae* (Backhouse et al. 2016).

The specific epithet *hildae* was originally coined as a varietal name for particularly colourful and robust plants near Cobungra. These plants are now thought to be no more than an aberrant form of the species, possibly the product of the richer basaltic soils in which they grew.

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(iii)

Species Information

Description and Life History

The taxon is a flowering plant slender, 8-20 cm tall, sparsely hairy. Leaf linear, 6-20 cm long, 1-3 mm wide. Flowers 1-4, yellowish brown to golden brown, darker towards extremities; ovary c. 6 mm long; perianth segments 9-14 mm long, 2.5-3.5 mm wide, acute, both surfaces with stalked and sessile glands (except mid-section of inner surfaces); dorsal sepal hooded, curved at about the middle, embracing column, narrow-elliptic to linear-obovate; lateral sepals and petals spreading, drooping beyond midway, narrow-elliptic to linear-lanceolate, asymmetric, lateral sepals slightly broader than petals. Labellum sessile, obscurely 3-lobed, 6-7 mm long (when flattened), white; margins entire until labellum starts tapering towards the apex, then fringed with calli; calli slender, relatively long, granular-headed (i.e. with rounded minute papillae), white- or yellow-tipped, becoming shorter near to scalloped or toothed apex; apex glandular, entirely dark purple; lamina calli in 4 rows above basal pair, extending from base almost to apex, short and stout, clubbed, heads smooth and white at base of labellum, granular and purple towards tip. Column incurved, narrowly winged at base but expanded above, irregularly banded with reddish or purplish-crimson transverse markings; anther with short point (VicFlora 2018).

The taxon flowers from October to December. The flowers emit a pleasant floral fragrance on warm days (Backhouse et al. 2016). It has been recorded hybridising with *C. clarkiae*, *C. congesta* and *C. moschata*, although these hybrids are generally rare (Backhouse et al. 2016).

Sometimes it grows sympatrically with the closely related and recently described *Caladenia clarkiae*, and possible hybrids have been observed (Backhouse and Jeanes 1995).

Generation Length

The generation length of *Caladenia hildae* is estimated to be 20 to 40 (midpoint 30) years. Generation time for non-colonial terrestrial orchids is estimated to be a nominal 30 years based on the annual replacement of the mother



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tuber by daughter tubers. Whilst somatically immortal, individuals are 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.

Distribution

The taxon occurs in the mountains of eastern Victoria east from Licola to the New South Wales. Although the taxon has a restricted distribution in Victoria and is rather patchily distributed across its range, it can be locally common at some sites. As much of its potential habitat is remote and not easily accessed, it may be under-reported and may be more common than current records suggest (Backhouse et al. 2016).

The taxon's habitat chiefly occurs from the Omeo district eastwards, with an apparently isolated occurrence near Mt Wellington, north of Licola (VicFlora 2018).

Habitat

The taxon is restricted to high-altitude peppermint forests or snow-gum woodlands of eastern Victoria, on well-structured clay loams. The altitude range is from 600-1350 metres above sea level (ASL) (VicFlora 2018). The main habitat is in open forests with a shrubby or heathy understorey, generally on drier slopes and ridge tops in well-drained, gravelly sand and clay loams (Backhouse et al. 2016; Backhouse and Jeanes 1995).

Threats

A few subpopulations occur at sites where the habitat is being damaged by feral horses and may be in decline. All subpopulations and habitat may be at risk from increasingly dry conditions from declining rainfall and consequent increase in severity and intensity of bushfires. Very small subpopulations are highly susceptible to stochastic events causing major decline or local extinction within a very short time frame.

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 style="text-align: center;"><i>based on any of the following:</i></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:

Ineligible under Criterion A

There is insufficient evidence to determine whether there has been a reduction in population (criterion A2). The future population reduction does not meet the threshold for eligibility under criterion A3.

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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 B1 as Vulnerable

The Extent of Occurrence (EoO) across the taxon's range is estimated to be 7323 km², based on accepted, post-1970 records from the Victorian Biodiversity Atlas (VBA).

The taxon is estimated to have 1 location. The highlands of eastern Victoria, where all subpopulations occur, is deemed as a single location. This is because the threat of feral horses applies across the range of the taxon and can rapidly affect all individuals of the taxon present.

It has a continuing decline in (iii) above, based on the impacts of the identified threats.

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 has 1 location and 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

It is estimated that there are 610 to 1,350 mature individuals, but other thresholds under this criterion have not been met.

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 D 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

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