



Jalmenus icilius Amethyst Hairstreak Butterfly

Taxonomy

Jalmenus icilius Hewitson, 1865

Current conservation status

Listed as threatened under the *Flora and Fauna Guarantee Act 1988* (SAC 2003).

Categorised as Vulnerable in the 2009 Advisory list of threatened invertebrate fauna in Victoria (DSE 2009).

Proposed conservation status

Endangered in Victoria

Criteria B2ab(i,ii,iii,v); C2a(ii)

Species Information

Description and Life History

In this taxon, the adult male and female butterflies are similar in appearance. The dorsal surface is mainly dark brown, with a blue iridescent sheen. The females are rather bluer and have a more rounded margin. The trailing edge of each hindwing has a pair of short tails, and beside one tail is a small black eyespot. The underside is fawn with faint bands of white-edged darker spots running across the wings. The hindwings each have two black and orange eyespots with black marks between them. The wingspan is about 30 mm.

Larval food plants include Golden wattle (*Acacia pycnantha*), Blackwood (*A. melanoxylon*) and Silver cassia (*Senna artemisioides*). Adults are rapid fliers, usually close to their breeding areas but will settle to feed at flowers and to bask in the sun. Eggs are laid in small clusters of 25 or more, in crevices on stems of the food plant. Eggs laid during late summer do not hatch until the following spring. Larvae feed openly on the foliage during the day and are attended by many ants (*Iridomyrmex* sp.). Pupation usually occurs at the base of the plant under litter or in an ant byre, but occasionally higher up on the host plant on a stem or in a crude leaf shelter. The pupa is attached to the substrate via anal hooks and a fine central girdle. The taxon is colonial and may reside in the one small area for many years. In Vic there appears to be only one generation a year but specimens occurring in the autumn may have resulted from a partial second generation.

Generation Length

The generation length of *Jalmenus icilius* is estimated to be 4 to 12 months. This is based on literature about the longevity and life cycle (Field 2013).

Distribution

This Australian endemic taxon occurs in all mainland states and territories, particularly in inland areas. It now occurs in a few localities in central and western Victoria, around the Grampians, and in Red Cliffs, Ouyen, Kingower, Trawalla, Riddells Creek, Craigieburn and Mt Piper.

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Habitat

The taxon occurs in open eucalypt and remnant mallee woodlands. One of the few known colonies in Victoria, at Riddells Creek, occurs on small Blackwoods. In northern Victoria it breeds on silver cassia but in other areas the larvae feed on wattles.

Threats

Extensive areas of apparently suitable habitat have been lost due to land clearing of vegetation for agriculture, rendering the species extinct at several historical localities. As most of the woodlands species, it is threatened by ongoing loss and fragmentation of habitat as a result of urban development and clearing for agriculture. Additional threats are frequent and intense fires, that damage food plants within the habitat, and application of aerial herbicides.

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>	<p>(a) direct observation [except A3]</p> <p>(b) an index of abundance appropriate to the taxon</p> <p>(c) a decline in area of occupancy, extent of occurrence and/or quality of habitat</p> <p>(d) actual or potential levels of exploitation</p> <p>(e) the effects of introduced taxa, hybridization, pathogens, pollutants, competitors or parasites</p>
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Evidence:

Ineligible under Criterion A

The past population reduction does not meet the threshold for eligibility under criterion A2, and 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 B2 as Endangered

The Area of Occupancy (AoO) across the taxon's range is estimated to be 56 km², based on 2 x 2 km grids derived from accepted, post-1970 records in the Victorian Biodiversity Atlas.

The taxon is inferred to be severely fragmented. There are multiple, small isolated subpopulations that are all at risk from habitat loss, such that there is increased extinction risk and little or no probability of recolonisation should subpopulations become extinct.

It is estimated to have a continuing decline in (i), (ii), (iii) and (v) above as a result 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 <u>C1</u> or <u>C2</u>				
<u>C1</u>	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)
<u>C2</u>	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				

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Evidence:

Eligible under Criterion C2 as Endangered

It is estimated that there are 500 to 2,100 mature individuals. The taxon often occurs in colonies containing many hundreds of individuals.

The number of mature individuals is estimated to continue to decline, and the percentage of mature individuals in one subpopulation is 95-100 %. Habitat loss is likely to lead to a continuing decline in population.

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 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

DSE (2009). *Advisory list of threatened invertebrate fauna in Victoria - 2009*. Department of Sustainability and Environment, Melbourne.

Field, R.P. (2013) *Butterflies: Identification and life History* pp.254-255. Museum Victoria.

Sand, D.P. A and New, T.R. (2002) *The Action Plan for Australian Butterflies*, Environment Australia, Canberra.

SAC (2003). Flora and Fauna Guarantee Scientific Advisory Committee: Final Recommendation on a Nomination for Listing. Nomination No. 662 *Jalmenus icilius*