Threatened Species Assessment

Theclinesthes albocinctus
Bitterbush Blue Butterfly

Taxonomy

Theclinesthes albocinctus (Waterhouse, 1903)

Current conservation status

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

Categorised as Endangered 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); D

Species Information

Description and Life History

The taxon relies on the presence of ants which attend larvae and pupae. Ants from 11 different genera have been recorded as attending butterflies' larvae from throughout Australia. The larval food plant is Bitter Bush (*Adriana tomentosea var. hookeri*). Adults fly low and close to host plants and readily feed at flowers. Males fly on the top of sand ridges. Eggs are laid singly on flower buds, stems and young leaves. Larvae feed openly during the day on flower spikes and young leaves, their colour closely matching that part of the host plant on which they are feeding. The presence of larvae on the plant is characterised by feeding scars on leaves and holes in flowers. Pupation occurs under litter at the plant base, the pupa attached by anal hooks and a silken girdle. There are several generations each year.

Generation Length

The generation length of *Theclinesthes albocinctus* is estimated to be 3 to 6 months, based on a literature review (Field 2013).

Distribution

In Victoria, the taxon occurs in Pink Lakes, Wyperfeld National Park, Lake Albacutya and Ouyen. It also occurs in Qld, SA, WA, NT and NSW.

Habitat

In Victoria, the taxon occurs in semi-arid mallee habitat.

Threats

Subpopulations and habitat are considered at risk from vegetation clearing for agriculture, grazing by sheep and ring barking by rabbits. The food plant is currently sparse, and recruitment of new plants has been impeded by land degradation.

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

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.

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 52 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, considering the taxon's poor dispersal ability, and the isolation of most records.

The taxon is considered to occur in two location as all key identified threats apply across both subpopulations and can rapidly affect all individuals of the taxon present.

It has a continuing decline in (i), (ii), (iii) and (v) above, due to the host plant being uncommon in Victoria, and it continues to suffer from land clearing.

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:

Eligible under Criterion C as Vulnerable

It is estimated that there are 100 to 500 mature individuals, based on monitoring and field observations.

The number of mature individuals is estimated to continue to decline, due to the host plant be uncommon in Victoria and the taxon continues to suffer from land clearing, and the number of mature individuals in each subpopulation is fewer than 1000.

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 100 to 500 mature individuals.

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.278-279. 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. 615 *Theclinesthes albocincta*