Threatened Species Assessment

Ogyris otanes
Small Brown Azure Butterfly

Taxonomy

Ogyris otanes Felder & Felder, 1865

Current conservation status

Listed as threatened under the *Flora and Fauna Guarantee Act 1988* (SAC 1991).

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

Proposed conservation status

Critically Endangered in Victoria

Criteria B1ab(i,ii,iii,iv,v)+2ab(i,ii,iii,iv,v); C2a(i,ii)

Species Information

Description and Life History

The attendant ant is the Sugar ant, *Camponotus terebrans* and the larval food plant are the Sour-bushes, *Choretrum spicatum* and *C. glomeratum*. Adults fly fast and close to the ground near their food plants settling frequently on the ground, stones or dead twigs. When resting, wings closed, they are well camouflaged against the ground. Males make brief visits to the tops of sand ridges. Eggs are laid in small clusters near the base of the food plant, on litter or the main stem of the bush. During the day the larvae rest at the base of the plant in the underground tunnels of the sugar ant. Larvae feed at night on the shoots and flowers and when they are numerous the plant can appear heavily scorched. Pupation occurs in the ant tunnels, often under the roots of the plant. The pupa is attached by anal hooks and a central girdle.

Generation Length

The generation length of *Ogyris otanes* is suspected to be 5 to 12 months. This is based on observations and literature review (Field 2013). There may be two generations a year.

Distribution

This taxon has three subspecies recognised from Australia, two in southwestern WA and the other from restricted areas of SA and Victoria. In Victoria, the subspecies occurs in mallee heathland in the Big Desert Wilderness Area. The butterfly is uncommon and restricted to a few fire prone areas. Locations included Red Bluff and on the Murrayville Track north of Yanac but most records were from the 1970's and the species may no longer be present at these locations. Sour Bush is not common, but suitable habitat most likely still occurs in the Big Desert.

Habitat

The taxon inhabits open heathland, mallee and the transitional mallee- heathland communities.

Threats

The taxon is threatened by fire, both inappropriate burning regimes and bushfire. Natural succession is implicated as a strong threat and is also the likely cause of loss at some historical locations.

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 B1 as Critically Endangered

The Extent of Occurrence (EoO) across the taxon's range is estimated to be 4 km², based on accepted, post-1970 records from the Victorian Biodiversity Atlas (VBA).

It is estimated to have 1 location, as all key identified threats apply across its range and can rapidly affect all individuals of the taxon present.

It has a continuing decline in (i), (ii), (iii), (iv) and (v) above. The taxon is believed to be subject to continuing decline in population size and habitat quality due to the identified threats.

Eligible under Criterion B2 as Critically Endangered

The Area of Occupancy (AoO) across the taxon's range is estimated to be 4 km², based on 2 x 2 km grids derived from accepted, post-1970 records in the VBA. As above, it is estimated to have 1 location and has a continuing decline in (i), (ii), (iii), (iv) and (v) 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:

Eligible under Criterion C2 as Critically Endangered

It is estimated that there are 50 mature individuals. This is based on the knowledge of only one population, from The Big Desert Wilderness area where its food plant, *Choretrum*, is uncommon.

The number of mature individuals is inferred to continue to decline, the number of mature individuals in each subpopulation is 50 or fewer and the percentage of mature individuals in one subpopulation is 90-100 %.

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

It is estimated that there are 50 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). B*utterflies: Identification and life History* pp.244-245. Museum Victoria

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

SAC (1991). Flora and Fauna Guarantee Scientific Advisory Committee: Final Recommendation on a Nomination for Listing. Nomination No. 51 *Ogyris otanes*