Threatened Species Assessment

Trapezites luteus luteus
Yellow Ochre Butterfly

Taxonomy

Trapezites luteus luteus (Tepper, 1882)

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

Criterion B2ab(i,ii,iii,iv,v)

Species Information

Description and Life History

The larval food plants are Mat-rushes, *Lomandra filiformis* (commonly) and *L. longifolia* (rarely). The adults are rapid fliers and remain close to their larval food plants but land frequently to bask in the sun or feed at flowers. Adults emerge during the late spring and eggs are laid singly, generally near the base of the food plant. Small larvae rest between the bases of adjoining leaves and emerge at night to feed near the top of the leaves. Larger larvae construct tubular shelters in the leaves, often near the base of the plant but sometimes higher up the plant and using dead leaves. Pupation can occur in the final larval shelter but more often occurs at or near the base of the plant in rolled leaf litter. Most adults that emerge in late summer/early autumn have probably been larvae for more than 10 months.

Generation Length

The generation length of *Trapezites luteus luteus* is estimated to be 9 to 12 months, based on the life history, including adults' times of emergence.

Distribution

Most documented Victorian observations of this taxon are to the north of Melbourne and south of Bendigo. Scattered other records towards Ballarat and in South Gippsland. The taxon also occurs in Qld, NSW and SA.

Habitat

The taxon inhabits eucalypt woodland and open grassland. Many of the suitable habitats have become degraded but the colonies seem to persist for many years along roadside cuttings and railway lines.

Threats

No specific threats have been identified for the taxon. It is assumed that general threats such as habitat destruction due to land clearing and urbanisation have taken place, reducing the taxon's distribution.

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 Vulnerable

The Extent of Occurrence (EoO) across the taxon's range is estimated to be 19,384 km², based on accepted, post-1970 records in the Victorian Biodiversity Atlas (VBA).

The taxon is estimated to be severely fragmented, considering the limited dispersal ability of the taxon, the barriers to dispersal, or lack of habitat separating the individuals.

It is estimated to have 3 locations. It has a continuing decline in (i), (ii), (iii), (iv) and (v) as It is likely that the identified threats currently operate with sufficient intensity to result in a continuing decline in population size, range sand habitat.

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 VBA. As above, it is severely fragmented, has 3 locations and has a continuing decline in (i), (ii), (iii), (iv) and (v).

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 C1 as Vulnerable

It is estimated that there are 500 to 1,000 mature individuals, based on monitoring of the known populations. However it requires intensive survey effort to confirm the assumption that other subpopulations exist and are undetected.

There is estimated to be a continuing decline of 0 to 25% within three generations, although the identified threats are likely to act stochastically and with unpredictable intensity.

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 Vulnerable

It is estimated that there are 500 to 1,000 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, East Melbourne, Victoria.

Field, R.P. (2013). B*utterflies: Identification and Life History*, pp.40-41. Museum Victoria.

SAC (2003). Flora and Fauna Guarantee Scientific Advisory Committee: Final Recommendation on a Nomination for Listing. Nomination No. 659 *Trapezites luteus luteus*

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