



## *Telicota eurychlora* Southern Sedge-darter Butterfly

### Taxonomy

*Telicota eurychlora* Lower, 1908

### Current conservation status

Listed as threatened under the *Flora and Fauna Guarantee Act 1988* (SAC 2004).

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

### Proposed conservation status

Endangered in Victoria

Criterion D

### Species Information

#### Description and Life History

The larval food plant is *Cladium procerum* Leafy Twig-sedge. Adults emerge in December and January. Adults fly fast and close to their breeding areas but will visit nearby flowers to feed. Egg laying habits are unknown although open plants less than a metre tall are often used as a host. Seldom is more than one mature larva found on a plant. Large larvae construct weak cylindrical shelters by joining several leaves together with silk. The shelter is often deep within the plant and the leaves are truncated above the shelter, characterised by a sloping feeding cut. Shelters towards the outside of the plant will often have a bent leaf incorporated in the shelter. Larvae hide in these shelters during the day and emerge at night to feed. Pupation takes place within the shelter.

#### Generation Length

The generation length of *Telicota eurychlora* is estimated to be 1 year. Only one generation is completed each year.

#### Distribution

The taxon is known only from isolated populations in coastal areas of SE Qld to Nowra, NSW and in Victoria from one site, the area surrounding the mouth of the Thurra River, Croajingolong NP in east Gippsland.

#### Habitat

Leafy Twig-sedge grows on the edge of the river, on vegetated river sand banks and in swales behind sand dunes on the coast. The butterfly can be found breeding in all of these sites. A previously known nearby locality appears to have been destroyed by pastoral development. Similar habitats along the East Gippsland coast may also support colonies of this butterfly.

#### Threats

Historically, the habitat of the taxon has been lost as a result of urban development, weed invasion (especially exotic grasses), draining of wetlands, filling, canal construction and crop cultivation (SAC 2004). Severe flooding at the mouth of the Thurra River could cause inundation of the main breeding area, and bushfires could damage the food plants. The isolated distribution makes the taxon at risk of stochastic events.

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The bushfires of 2019/20 came very close to the margins of the Thurra River, but it is unknown whether there were any impacts on the taxon.

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

## 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 <sup>2</sup>	< 5,000 km <sup>2</sup>	< 20,000 km <sup>2</sup>
B2. Area of occupancy (AOO)	< 10 km <sup>2</sup>	< 500 km <sup>2</sup>	< 2,000 km <sup>2</sup>
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:

#### Ineligible under Criterion B

The Extent of Occurrence (EoO) across the taxon's range is estimated to be 4 km<sup>2</sup> and the Area of Occupancy (AoO) is estimated to be 4 km<sup>2</sup>, but other thresholds under this criterion have not been met.

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 C1 as Vulnerable

It is estimated that there are 50 to 200 mature individuals. There is one known extant population at the mouth of the Thurra River.

There is estimated to be a continuing decline of 0 to 10% within three generations. Severe flooding or further severe bushfires could reduce numbers of larvae or adults.

Criterion D - Very small or restricted population <sup>Ⓜ</sup>			
<sup>Ⓜ</sup>	Critically Endangered <sup>Ⓜ</sup>	Endangered <sup>Ⓜ</sup>	Vulnerable <sup>Ⓜ</sup>
Number of mature individuals (observed or estimated) <sup>Ⓜ</sup>	<50 <sup>Ⓜ</sup>	<250 <sup>Ⓜ</sup>	<1,000 <sup>Ⓜ</sup>
D2 Only applies to the VU category <sup>Ⓜ</sup> 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. <sup>Ⓜ</sup>	- <sup>Ⓜ</sup>	- <sup>Ⓜ</sup>	D2 Typically: <sup>Ⓜ</sup> AoO < 20 km <sup>2</sup> or number of locations ≤ 5 <sup>Ⓜ</sup>

## Evidence:

### Eligible under Criterion D as Endangered

The taxon is estimated to have 50 to 200 mature individuals.

### Eligible under Criterion D2 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. 106-107. Museum Victoria

SAC (2004). Flora and Fauna Guarantee Scientific Advisory Committee: Final Recommendation on a Nomination for Listing. Nomination No. 700 *Telicota eurychlora*