Threatened Species Assessment

Cyperus fulvus
Sticky Sedge

Taxonomy

Cyperus fulvus R. Br.

Current conservation status

Categorised as Vulnerable in the 2014 Advisory list of rare or threatened flora (DEPI 2014).

Proposed conservation status

Endangered in Victoria

Criterion D

Species Information

Description and Life History

Slender tufted perennial, occasionally viscid. Culms trigonous or triquetrous, smooth or scabrous, with bases sometimes bulbous, 25-50 cm high, 0.9-2.5 mm diam. Leaves usually septate-nodulose, often curled, often slightly shorter than culms, to 6 mm wide. Inflorescence mostly simple with 3-8 branches to 7 cm long; clusters dense, subdigitate to shortly spicate, hemispherical to globose, to 3 cm diam.; involucral bracts leaf-like, 2-4 much exceeding the inflorescence. Spikelets flattened, 5-20 per cluster, 6-18 mm long, 2-3.5 mm wide in side view, 8-25-flowered; rachilla unwinged to broadly winged, persistent; glume spacing 1.2-1.8 mm; glumes broad-acute with mucro to 0.3 mm long, with 2-4-nerved sides, straw-coloured or golden brown tinged red-brown, 2-3 mm long; stamens 3; style 3-fid. Nut trigonous, obovoid to broad-ellipsoid, yellow-brown, almost as long as glume, 1.5-2 mm long, 0.6-0.9 mm diam. The taxon flowers in spring-summer.

Generation Length

The generation length of *Cyperus fulvus* is estimated to be 2 to 5 years. This is inferred from its habitat and its habit (slender tufted perennial, 25-50 cm), as well as the known longevity of similar perennial Victorian species in the genus. The longevity of the taxon is likely to be much longer than the estimated generation length. Recruitment is from long-persistent soil-stored seed, and the generation length is most likely influenced by the frequency of flooding,

Distribution

The taxon is recorded in Victoria on the Snowy River near the New South Wales border at Willis. It also occurs in Queensland, New South Wales (NSW) and New Guinea. It is widespread across NSW.

Habitat

In Victoria it occurs only on the rocky shores of the Snowy River.

In NSW the taxon grows mostly in open woodland or forest, often in a grassy understorey, usually on sandy to loamy soils. Cunningham *et al.* (1981) notes that in eastern NSW it is never common, despite its relatively wide distribution. The taxon appears to be specific in its habitat requirements and is rarely or never seen away from sandy and rocky sites.

Threats

The habitat is potentially threatened by weed invasion, particularly by members of the *Rubus fruticosus* aggregate, which occur in the lower Snowy River area.

Cunningham *et al*. (1981) note that the taxon is not known to be grazed.

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

There is insufficient evidence to determine whether there has been or will be a reduction in population sufficient to meet any threshold for Criterion A.

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:

Ineligible under Criterion B

The Extent of Occurrence is 4 km² and the Area of Occupancy is 4 km² but other thresholds 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 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:

Ineligible under Criterion C as Data Deficient

The taxon is estimated to have 50 to 250 mature individuals, but other thresholds under this criterion have not been met.

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 50 to 250 mature individuals. The taxon's population size is considered with reasonable confidence to be less than 250 mature plants, although not confidently that there are less than 50 plants. However, recent extensive surveys have not been conducted.

Criterion E (Quantitative Analysis) was not addressed as the taxon does not have a detailed Population Viability Analysis.

References

Cunningham, G.M., Mulham, W.E., Milthorpe, P.L. and Leigh, J.H. (1981). Plants of western New South Wales.

DEPI (2014). *Advisory list of rare or threatened plants in Victoria* - 2014. Department of Environment and Primary Industries, Melbourne.

VicFlora (2017). Flora of Victoria, Royal Botanic Gardens: *Cyperus fulvus*. Retrieved from: https://vicflora.rbg.vic.gov.au/flora/taxon/2a979dda-9dfc-407e-a9aa-edb78d0cfb67

Wilson, K.L. (1994). Cyperaceae. In: Walsh, N.G.; Entwisle, T.J. (eds), *Flora of Victoria* Vol. 2, Ferns and Allied Plants, Conifers and Monocotyledons. Inkata Press, Melbourne.