Threatened Species Assessment

Eragrostis australasica
Cane Grass

Taxonomy

Eragrostis australasica (Steud.) C.E. Hubb.

The taxon was previously included within *E. infecunda*, the more common 'cane-grass' in Victoria (VicFlora 2019).

Current conservation status

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

Proposed conservation status

Critically Endangered in Victoria

Criteria A4abce; C1

Species Information

Description and Life History

The taxon is a shortly rhizomatous perennial, culms rather stout, to 5 mm diam. or more, covered in greyish wax at least when young, freely branching at nodes, to 3 m high. Leaves smooth and glabrous, rather stiff, largely confined to culms; blade flat or inrolled, to 20 cm long and 6 mm wide, but often rudimentary at upper nodes; sheaths spreading, loosely clustered at branching nodes; ligule ciliate, 0.5-0.8 mm long. Inflorescence a panicle, to 20 cm long and 12 cm wide, initially contracted but branches finally spreading. Spikelets 4-10-flowered, 5-13 mm long and 1-1.8 mm wide, slaty green or grey, shining; glumes membranous, faintly nerved, acute or erose at apex, the lower 1.5-3.5 mm long, the upper usually longer by 0.5-1.5 mm; lemma 2.3-3.5 mm long, obtuse or erose at apex; palea equal to lemma, splitting along the midline as the grain matures. Anthers 1.2-2 mm long. The taxon flowers from September to May (VicFlora 2019).

Generation Length

The generation length of *Eragrostis australasica* is inferred to be 50 to 100 years. The taxon is assumed to be very long-lived, resprouting after even extended drought and not readily observed recruiting from seed.

Distribution

The taxon occurs in all mainland states. In Victoria it occurs in the north-west, from near Kerang to the South Australia border. More southerly records are often associated with irrigation channels, and it is likely that these plants have established through inadvertent transport of seed (VicFlora 2019).

Habitat

The taxon is largely confined to clay-pans and shallow lakes in the north-west (VicFlora 2019).

Threats

Threats to the taxon include changes in surface runoff, reduced regularity of flood events, and cropping of smaller wetland sites (e.g. some lignum swamps around Kerang). The taxon is subject to saline water discharge leading to increased salinity, and is potentially threatened by *Thinopyrum ponticum* (Tall Wheatgrass), particularly as salinity increases. The taxon is also threatened by trampling and grazing by stock, including sheep and cattle.

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:

Eligible under Criterion A2 as Endangered

The population reduction over the past 150 to 300 years is estimated to be 50 to 75%, based on (a), (b), (c) and (e) above.

Past decline is based on habitat loss to agriculture, draining and cropping of wetlands, the impact of exotic herbivores and weed invasion.

Eligible under Criterion A3 as Endangered

The population reduction over the next 100 years is estimated to be 50 to 90% (midpoint 65%), based on (b), (c) and (e) above.

Future decline is based on the impacts of the identified threats.

Eligible under Criterion A4 as Critically Endangered

The population reduction over any 150 to 300 year period, including both past and future is estimated to be 80 to 90%, based on (a), (b), (c) and (e) above. The causes of reduction may not have ceased, be understood or be reversible.

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) is estimated to be 384 km², based on 2 x 2 km grids derived from accepted, post-1970 records in the Victorian Biodiversity Atlas (VBA).

The taxon is severely fragmented naturally at the regional and landscape scales and anthropogenically at the landscape scale. The taxon is not readily bird-dispersed nor water dispersed across catchment boundaries, noting that many occurrences are in small internal drainage basins or claypans.

Two locations can be identified based on landscape context and tenure: one for the great majority of occurrences in highly fragmented agricultural landscapes, subject to a wide range of anthropogenic threats, and one for occurrences within parks and reserves, notably in the vicinity of Lindsay Island and Lake Wallawalla.

It has a continuing decline in (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 C1 as Endangered

It is estimated that there are 200 to 2,000 (midpoint 1000) mature individuals, based on the likelihood that each occurrence comprises one to five mature individuals and that the number of occurrences is likely to be two to four 4 times more than the number of site records.

There is estimated to be a continuing decline of 50 to 90% (midpoint 65%) within two generations.

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 200 to 2,000 (midpoint 1000) mature individuals.

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

References

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

https://www.environment.vic.gov.au/__data/assets/pdf_file/0021/50448/Advisory-List-of-Rare-or-Threatened-Plants-in-Victoria-2014.pdf

VicFlora (2019). Flora of Victoria, Royal Botanic Gardens: *Eragrostis australasica*. Retrieved from: https://vicflora.rbg.vic.gov.au/flora/taxon/01fc8b41-bdb2-495f-a69b-8c6ae12f2917