



## *Fimbristylis velata* Veiled Fringe-sedge

### Taxonomy

*Fimbristylis velata* R. Br.

### Current conservation status

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

### Proposed conservation status

Endangered in Victoria

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

### Species Information

#### Description and Life History

The taxon is a small densely tufted annual. Culms compressed, 5-25 cm high, 0.5-1 mm diam. Leaves shorter than culms, ± softly hairy at least on sheaths, 0.3-1 mm wide; ligule absent. Inflorescence compound, with several to many solitary spikelets, on branches to 5 cm long; involucral bracts leaf-like, softly hairy, 1-4 shorter than to equalling inflorescence. Spikelets ovoid, angular, acute, 4-7 mm long, 1-1.5 mm diameter; glumes thinly membranous, ± acute, with 3-nerved acute keel excurrent in a straight or slightly excurved mucro to 0.3 mm long, glabrous or pubescent, straw-coloured, 1.5-2 mm long; stamen 1; anther 0.2-0.3 mm long; style 2-fid, sparsely ciliate above with a basal whorl of long-whitish hairs, deflexed and closely appressed to nut and at least partially covering it in the upper half. Nut biconvex, with acute angles, obovoid, shortly stipitate, obscurely reticulate by the isodiametric epidermal cells, shining, straw-coloured, 0.6-0.8 mm long, c. 0.5 mm diam. The taxon flowers from spring to summer (VicFlora, 2018).

#### Generation Length

The generation length of *Fimbristylis velata* is inferred to be 1 to 10 years (midpoint 3 years).

The taxon is an annual sedge of drying mud of wetlands associated with floodplains. The extent to which the species expresses can vary seasonally, presumably according to variations in timing of drawdown events, seasonal conditions and performance of other taxa. The proposed range of generation length is intended to cover this variation.

#### Distribution

The taxon mostly occurs in northern Victoria, but with recent collections in the south from, for example, Bairnsdale and Healesville areas. The taxon also occurs in Western Australia, South Australia, Northern Territory, Queensland and New South Wales (VicFlora, 2018).

#### Habitat

This taxon is occasional on drying mud beside lakes and rivers and in seasonally wet depressions (VicFlora, 2018).

# Fimbristylis velata

## Veiled Fringe-sedge

### Threats

Threats to this taxon include the effects of climate change (decreased rainfall, extreme temperatures, decreased frequency, amplitude and duration of flooding), eutrophication of wetlands, altered hydrologies relating to agricultural practices on floodplains, weed invasion and grazing and pugging by horses, cattle and other stock.

### 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>based on any of the following:</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

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.

# *Fimbristylis velata* Veiled Fringe-sedge

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:

### Eligible under Criterion B2 as Endangered

The Area of Occupancy (AoO) across the taxon's range is estimated to be 76 km<sup>2</sup>, based on 2 x 2 km grids derived from accepted, post-1970 records in the Victorian Biodiversity Atlas.

The taxon is estimated to be severely fragmented, being restricted to (mostly small) wetlands on floodplains which are dispersed over a wide area of the state. Many of the areas of potential habitat have been rendered unsuitable by land-use practices and other modifications.

It is estimated to have 2 locations. It has a continuing decline in (ii), (iii) and (v) above, based on the current and projected impacts of the identified threats.

It is estimated to have extreme fluctuations in (iv). Being an annual, it can produce prolific amounts of seed under favourable conditions. The amount of this taxon at a given wetland can vary substantially between different drawdown events.

# Fimbristylis velata

## Veiled Fringe-sedge

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			

### Evidence:

#### Ineligible under Criterion C as Data Deficient

There is insufficient evidence to determine the number of mature individuals. Expression of this annual on the drying floors of wetlands can vary from scattered individuals to dense patches containing many thousands of individuals with small areas. There are no relevant population data, and numbers of plants can fluctuate markedly according to the timing of wetting and drying cycles at a wetland and consequently suitable conditions for it to germinate and complete its life cycle.

Criterion D. Very small or restricted population				
		Critically Endangered	Endangered	Vulnerable
Number of mature individuals		< 50	< 250	<u>D1</u> < 1,000
<u>D2</u>	<i>Only applies to the VU category</i> 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.	-	-	<u>D2</u> . Typically: <u>AoQ</u> < 20 km <sup>2</sup> or number of locations ≤ 5

### Evidence:

#### Ineligible under Criterion D

There is insufficient evidence to determine the number of mature individuals.



# *Fimbristylis velata* Veiled Fringe-sedge

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.

VicFlora (2018). Flora of Victoria, Royal Botanic Gardens: *Fimbristylis velata*. Retrieved from: <https://vicflora.rbg.vic.gov.au/flora/taxon/5053ed5a-87d7-45fb-b32e-bea97dc7c9c8>