Threatened Species Assessment

Ficus coronata
Sandpaper Fig

Taxonomy

Ficus coronata Spin

Current conservation status

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

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

Proposed conservation status

Critically Endangered in Victoria

Criteria A2ce+3ce+4ce; C1+2a(i)

Species Information

Description and Life History

The taxon is a tree or shrub to 12 m high. Leaves alternate, ovate to oblong; apex gradually tapered, wedge-shaped or rounded; margin toothed or minutely scalloped; base often asymmetric, sometimes cordate; lamina 6–13 cm long, 2–5 cm wide, scabrous and sparsely hispid above (short stiff hairs readily detached), densely hispid beneath, mainly on prominent veins (main veins scabrous); petiole and stipules to c. 1 cm long, hispid. Figs axillary or clustered along trunk and major branches, ellipsoid to ovoid, c. 15 mm long, hispid, purple-black when mature, edible; osteole raised with protruding apical bracts; basal bracts 3, variously arranged on pedicel; lateral bracts scattered around fig. Flowers probably most of year (VicFlora 2017).

Generation Length

The generation length of *Ficus coronata* is estimated to be 100 to 150 years. Several large trees with multiple trunks that would be expected to be within the estimated range have been observed at several of the sites of occurrence. This period of time also represents the expected time between disturbance events, such as fires and floods, that might open up the forest to allow recruitment in the warm temperate rainforest communities of far east Gippsland.

Distribution

The taxon is found in Victoria in far East Gippsland, around Mallacoota Inlet.

Habitat

The taxon occurs in warm temperate rainforest along creek lines.

Threats

Threats to *F. coronata* include a series of threats that are common to other plants of warm temperate rainforest communities. This includes increased frequency and intensity of disturbance events such as fire and prolonged droughts. These types of events are expected to be exacerbated by climate change, and the bushfires of 2019/20 showed that such fires could be extensive and potentially impact all areas of warm temperate rainforest.

Damage by Sambar deer (*Rusa unicolor*) rubbing and herbivory are also an issue, with such damage visible at some sites. The Smellies Inlet site is close to Mallacoota Inlet and is threatened by increased salination due to likely increased water level of the inlet, caused by future lack of freshwater flow to disrupt sandbar formation and keep the lagoon open.

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 Critically Endangered

The population reduction over the past 300 to 450 years is suspected to be 70 to 90%, based on (c) and (e) above.

Rainforest has been declining in Victoria since European settlement. More recently, the taxon is believed to have 91% of its 11 Victorian sites occur within the 2019/2020 bushfire footprints. It is likely that many plants have been fire-killed, and it may have also been impacted by post-fire activities and feral herbivores.

The causes of the reduction may not have ceased, be understood or be reversible.

Eligible under Criterion A3 as Critically Endangered

The population reduction over the next 100 years is projected to be 50 to 80%, based on (c) and (e) above.

There is expected to be some decline in the number of mature individuals of the taxon into the future due to increased salination of sites of occurrence closest to Mallacoota Inlet. Additionally, continuing threats such as damage by Sambar, drought periods, and fire may also contribute to decline especially for very small subpopulations such as Dowell Creek, which are assumed to go extinct in the estimate given.

Eligible under Criterion A4 as Critically Endangered

The population reduction over any 300 to 450 year period, including both past and future (up to 100 years in the future), is estimated to be 70 to 90%, based on (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 B as Endangered

The Extent of Occurrence (EoO) is estimated to be 140 km², and the Area of Occupancy (AoO) is estimated to be 55 km², based on 2 x 2 km grids derived from accepted, post-1970 records in the Victorian Biodiversity Atlas (VBA).

The taxon is estimated to have 1 to 2 locations, and has a continuing decline in (i), (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 Critically Endangered.

It is estimated that there are 60 to 350 mature individuals. Twenty trees were recorded recently at the Miners Track subpopulation, twenty to thirty trees are estimated for the Marshmead subpopulation at the Ken Morrison Rainforest Walk, and around 4 individuals have been observed along Dowell Creek. There are an additional 8 to 10 subpopulations, and if each of these have between 2 and 30 individuals, then the total number of mature individuals is currently likely to be between 60 and 350.

There is estimated to be a continuing decline of 50 to 80% within one generation.

Eligible under Criterion C2 as Critically Endangered

It is estimated that there are 60 to 350 mature individuals.

The number of mature individuals is estimated to continue to decline, and the number of mature individuals in each subpopulation is 50 or fewer.

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

It is estimated that there are 60 to 350 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.

SAC (2004). Flora and Fauna Guarantee Scientific Advisory Committee: Final Recommendation on a Nomination for Listing. Nomination No. 695 *Ficus coronata.*

VicFlora (2017). Flora of Victoria, Royal Botanic Gardens Victoria: *Ficus coronata*. Retrieved from: https://vicflora.rbg.vic.gov.au/flora/taxon/21b2b2a5-caef-4c0c-b58a-23d4b77e4ddb