

Exocarpos syrticola Coast Ballart

Taxonomy

Exocarpos syrticola (F. Muell. ex Miq.) Stauffer

Current conservation status

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

Proposed conservation status

Endangered in Victoria

Criteria A2bce+3ce+4bce; B2ab(ii,iii,iv,v)

Species Information

Description and Life History

The taxon is a shrub to c. 3.5 m high, much-branched, dark to bronze-green; branchlets erect, terete or slightly angular, rigid, striate, often swollen at tips, pubescent between ridges at first, finally glabrous. Leaves alternate, scale-like, ovate to lanceolate, 1-1.5 mm long, erect or spreading, persistent, usually becoming dark. Inflorescences usually 2-9-flowered short, dense, sessile spikes or clusters 2-5 mm long in upper leaf axils; rachis pubescent. Tepals 5, triangular, c. 0.5 mm long, obtuse, yellow-green, persistent. Fruiting receptacle subglobose, 4-8 mm long, white to pink; drupe ellipsoid, 3-4 mm long, smooth or slightly ribbed, glabrous, purplish when ripe. The taxon flowers mostly from September to December (VicFlora 2019).

As with other *Exocarpos* spp., it is suspected that many suckers are browsed off by rabbits before they can grow beyond accessibility. Reproduction from seed is rare and may best happen in either recent blowouts, or in mature vegetation in which adventive shrubs have become relatively rare.

Generation Length

The generation length of *Exocarpos syrticola* is inferred to be 40 to 80 years (midpoint 60 years). As with many *Exocarpos* taxa, *E. syrticola* is relatively long-lived and appears to sucker occasionally. Although it is not an obligate post-fire recruiter, most of its recruitment is post-fire. It is also potentially able to regenerate from seed in the absence of disturbance.

Distribution

The taxon is confined to coastal dunes and cliffs on and west of Wilsons Promontory National Park, where it is locally common. It also occurs in South Australia and Tasmania (VicFlora 2019).

Habitat

The taxon is strictly coastal in occurrence, and most common on more calcareous dune systems. It occurs on barely consolidated to well-consolidated coastal dunes, which were relatively recently mobile sands. It is rare in treed areas, and its presence within dense coastal scrub may be a reflection of its longevity in sites invaded by adventive shrubs.

Threats

The main threat to the taxon across its range is invasion by adventive shrubs, notably *Leptospermum laevigatum* and *Acacia longifolia* var. *sophorae*. Weeds such as *Rhamnus alaternus*, *Polygala grandis*, and *Myrsiphyllum* spp. are also an ongoing threat. Both natural and anthropogenic landscape instability is an oft-present danger, and can be attributable to recreational use of the near-coastal locales.

In a few localities, notably Wilsons Promontory, browsing by Hog Deer (*Axis porcinus*) is a major threat. Rabbit browsing also severely hampers regeneration at all sites, while browsing by other mammals such as Blacktail Wallabies, Eastern Grey Kangaroos, Swamp Wallabies, Wombats, and possibly even Emus, can be a local threat.

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

Evidence:

Eligible under Criterion A2 as Endangered

The population reduction over the past 120 to 240 years is inferred to be 65 to 80% (midpoint 75%), based on (b), (c) and (e) above.

Past decline is based on decreased habitat quality, namely the loss of calcarenite dune woodland as a result of clearing since European settlement, as well as the taxon's poor ability to cope with unstabilised landscapes, poor competition with *Acacia* and *Leptospermum*, and habitat loss in far SW Victoria.

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

Eligible under Criterion A3 as Endangered

The population reduction over the next 100 years is projected to be 35 to 70% (midpoint 60%), based on (c) and (e) above.

Future decline is based on invasion by native and exotic weeds and browsing by native and feral herbivores.

Eligible under Criterion A4 as Endangered

The population reduction over any 120 to 240 year period, including both past and future (up to 100 years in the future), is inferred to be 50 to 70% (midpoint 60%), based on (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 km ²	< 5,000 km ²	< 20,000 km ²
B2. Area of occupancy (AOO)	< 10 km ²	< 500 km ²	< 2,000 km ²
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 328 km², based on 2 x 2 km grids derived from accepted, post-1970 records in the Victorian Biodiversity Atlas.

The taxon is suspected to be severely fragmented, as sub-populations are usually separated by cleared or otherwise unoccupied landscapes.

It is inferred to have a continuing decline in (ii), (iii), (iv) and (v) above, as many stands have been adversely impacted by recreation and other development, as well as browsing by native and feral herbivores.

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 Vulnerable

It is suspected that there are 3,000 to 10,000 (midpoint 5,000) mature individuals, but this qualifier is too weak.

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 km ² or number of locations ≤ 5

Evidence:

Ineligible under Criterion D

It is suspected that there are 3,000 to 10,000 (midpoint 5,000) mature individuals, which exceeds the thresholds for criterion D.

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.

Harris S., Buchanan A. and Connolly A. (2001). *One Hundred Islands - The Flora of the Outer Furneaux*. Government of Tasmania.

VicFlora (2019) Flora of Victoria, Royal Botanic Gardens Victoria: *Exocarpos syrticola*. Retrieved from: <https://vicflora.rbg.vic.gov.au/flora/taxon/cec99447-63a4-4375-a56c-479a1beb8f9e>