Threatened Species Assessment

Picris squarrosa
Squat Picris

Taxonomy

Picris squarrosa Steetz

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(iii)c(iv)

Species Information

Description and Life History

The taxon is a perennial, 20-120 cm high, usually with dense simple and mainly 2-fid hooked hairs; stems erect, few-many-branched. Basal leaves petiolate, linear-lanceolate to narrow-obovate or spathulate, 10-45 cm long, 1-4 cm wide, obtuse to acute, base attenuate, margins entire to dentate; cauline leaves sessile, few-many, similar to lower ones but bases truncate to cordate, reduced toward inflorescence and bract-like on peduncles. Peduncles with few-many bracts mostly close below capitulum. Involucre 5-9 mm diam.; involucral bracts 4-19 mm long; outer bracts squarrose with recurved apices, often tomentose along midrib or apical margins, rarely with simple or 2-fid hooked hairs along midrib. Ligules 8-16 mm long. Cypselas mostly 5-8 mm long, beak usually shorter than body; pappus 5.5-10.5 mm long. The taxon flowers mostly from October to April (VicFlora 2018).

Generation Length

The generation length of *Picris squarrosa* is estimated to be 2 to 5 years. This plant is a biennial or short-lived perennial herb, reaching reproductive maturity within the first or second year of growth. While is appears to often have a very short life-span, this interpretation may be influenced by observations during severe drought conditions. A generation length of 2-5 years is proposed to cover the range of conditions including occasional flooding of habitat and drought stresses.

Distribution

The taxon is widespread in Victoria but of disjunct distribution. The taxon occurs primarily along the lower Murray River and its tributaries, but also at some coastal sites (VicFlora 2018).

Habitat

The taxon is primarily found on riverine floodplains, and occasionally also on coastal sand-dunes (VicFlora 2018).

Threats

Potential threats to the taxon include the effects of climate change such as decreased rainfall, extreme temperatures, and failed recruitment, forestry operations such as clearing and management practices, deliberate 'control' or removal because plants are mistaken for weeds by uninformed workers, weed invasion, predation by introduced and native arthropods, and grazing/browsing and/or soil disturbance and pugging by feral animals and

domestic stock such as cattle, deer, goats, horses, pigs, and potentially rabbits. The taxon is suspected to be highly sensitive to grazing by 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:

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:

Eligible under Criterion B2 as Endangered

The Area of Occupancy (AoO) across the taxon's range is estimated to be 143 km², 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 as it is known from a number of widely disjunct localities from restricted habitat which is both naturally and anthropogenically fragmented within this range. Geographically isolated occurrences are situated at separations typically exceeding the dispersal range of the taxon which has no specialised mechanism for long-distance dispersal.

It is suspected to have 5 locations, and has a continuing decline in (iii) above based on the impacts of the identified threats, such as climate change, forestry operations, weed invasion, and disturbance by feral animals and domestic stock.

It has extreme fluctuations in (iv) above according to the seasonal conditions. Plant density can be high and local populations can be very large during good seasons.

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

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

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 D2 as Vulnerable

The taxon is suspected to be very restricted.

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 (2018). Flora of Victoria, Royal Botanic Gardens Victoria: *Picris squarrosa*. Retrieved from: https://vicflora.rbg.vic.gov.au/flora/taxon/524d3fa7-ed48-452f-829a-e3ac4b30814d