

Acacia loderi Nealie

Taxonomy

Acacia loderi Maiden

The taxon is closely related to *A. papyrocarpa*. Some collections from the north-west of Victoria in the vicinity of Wood Wood have been referred to as '*A. sp. aff. papyrocarpa*' and superficially there is much resemblance with that species. As presently interpreted, *A. papyrocarpa* does not extend farther east than the South Flinders Range in South Australia, and *A. loderi* differs by several flower and fruit characters. Most plants referred to '*A. sp. aff. sowdenii*' by Court (in Willis, 1973) can be accommodated within *A. loderi*, but it is possible that some are hybrids between this species and *A. melvillei* (VicFlora, 2019).

Current conservation status

Listed as threatened under the *Flora and Fauna Guarantee Act 1988* (SAC 2015).

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

Species Information

Description and Life History

Shrubs or trees, 3-15 m high, often suckering; branchlets terete with several ribs, with appressed, minute hairs, glabrescent. Phyllodes linear, 5-11 cm long, 1-2(-3.5) mm wide, straight to slightly curved, compressed to subterete, semi-rigid, tips sometimes curved, acuminate, innocuous, with appressed, minute hairs or glabrous; veins numerous, closely parallel, obscure. Racemes 2-6-headed, rachis minute, with appressed, minute hairs, or peduncles in axillary clusters; peduncles 4-7 mm long, with appressed, minute hairs and red resin-hairs intermixed; heads globular, 4-5 mm diam., 25-35-flowered, golden; bracteoles spatulate, not ciliate. Flowers 5-merous; sepals free; petals two-thirds united. Pods submoniliform, to 10 cm long, 2-5 mm wide, straight to slightly curved, chartaceous, smooth, sometimes with appressed, minute hairs; seeds longitudinal, elliptic, c. 4.5 mm long, glossy brown-black, fleshy funicle expanded at seed in small aril. The taxon flowers around September (VicFlora, 2019).

Generation Length

The generation length of *Acacia loderi* is estimated to be 100 to 150 years. Generation length is based on field observations suggesting that the taxon persists indefinitely since it is capable of root suckering and since Victorian occurrences flower but never set seed since insect galls prevent flowers maturing to seed. Victorian stands typically include very small numbers of mature veterans which are effectively incapable of recruiting from seed.

Distribution

In Victoria, the taxon is restricted to near Merbein and Nyah in the north-west, and near Pyramid Hill and Nathalia in the central north. It exists now as mostly remnant stands on or near private land. The taxon also exists in South Australia and New South Wales (VicFlora, 2019).

Habitat

The taxon grows in solonised brown and red soils, in semi-arid low woodland and tall shrubland, sometimes associated with chenopods.

Threats

The taxon has suffered significant historic decline through habitat loss and degradation in response to intensive agricultural land use practices, including cropping, viticulture and orchard establishment. The greatest threat to the taxon is its apparent failure to set seed at all known Victorian occurrences, persisting as mature veterans capable of root suckering but not seed recruitment. Ongoing threats to surviving stands include herbivory and incremental habitat loss.

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 Critically Endangered

The population reduction over the past 300 to 450 years is estimated to be 70 to 90% (midpoint 80%), based on (c) and (e) above.

The taxon has suffered significant historic decline through habitat loss and degradation in response to intensive agricultural land use practices, including cropping, viticulture, and orchard establishment.

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 95% (midpoint 80%), based on (c) and (e) above. Future decline is based on the current and projected impact of the identified threats.

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 80 to 95% (midpoint 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 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 B1 as Vulnerable

The Extent of Occurrence (EoO) is estimated to be 8610 km², based on accepted, post-1970 records in the Victorian Biodiversity Atlas (VBA).

The taxon is estimated to have one location, to be severely fragmented and has a continuing decline in (i), (ii), (iii), (iv) and (v) above.

Eligible under Criterion B as Endangered

The Area of Occupancy (AoO) is estimated to be 83 km², based on 2 x 2 km grids derived from accepted, post-1970 records in the VBA. As above, it is estimated to have one location, to be severely fragmented 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 50 to 250 mature individuals, based on field observations.

There is projected to be a continuing decline of 50 to 95% (midpoint 80%) within one generation.

| Criterion D. Very small or restricted populations | | 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:

Eligible under Criterion D as Endangered

It is estimated that there are 50 to 250 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 (2015). Flora and Fauna Guarantee Scientific Advisory Committee: Final Recommendation on a Nomination for Listing. Nomination No. 849 *Acacia Ioderi*



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