

NSW SCIENTIFIC COMMITTEE

Lasiopetalum behrii F.Muell. (Sterculiaceae)

Review of Current Information in NSW

July 2009

Current status:

The NSW Scientific Committee recently determined that *Lasiopetalum behrii* (Pink Velvet Bush) meets criteria for listing as Critically Endangered in NSW under the *Threatened Species Conservation Act 1995* (TSC Act), based on information contained in this report and other information available for the species. This species is not listed under Commonwealth or any other State legislation.

Species description:

Lasiopetalum behrii (family Sterculiaceae) is described in Harden (2000) as follows: 'Shrub to 1.5 m high. Leaves narrow-oblong to narrow-elliptic, or rarely ovate, 4–9 cm long, 0.5–3 cm wide, ± glabrous above and rusty tomentose below, with main vein and secondary veins visible; margins ± recurved. Petiole 3–10 mm long. Cymes mostly 2–8-flowered; bracteoles 3, stellate-hairy, 2–3 mm long; calyx lobes 5–8 mm long, the inner surface pink and glabrous or with a few scattered hairs, the outer surface white and densely stellate-hairy; petals 1–1.5 mm long, red-brown; anthers c. 2 mm long, red-brown; style glabrous. Capsule 4–8 mm diam., densely hairy.'

Taxonomy:

This species is conventionally accepted as *Lasiopetalum behrii* and was first described by E.J.H. von Mueller (1855).

Type: "In the Mallee Scrub on the Murray River and St. Vincent's Gulf, where it was first discovered by Dr. H. Behr,"

Lasiopetalum behrii is distinguishable from the other NSW species by the calyx lobes which are glabrous on the inner surface, whitish tomentose on the outer surface and 3–8 mm long. The most similar species to it, *L. parviflorum*, has a more coastal distribution and smaller calyx lobes (Harden & Murray 2000).

Distribution and number of populations:

Lasiopetalum behrii is known in NSW from a single locality in the Pooncarie district, in the far south-western plains (Harden & Murray 2000). It was recorded in September 1997 on a private property, Lethero Station, near Pooncarie (NSW Herbarium Records, Clements *et al.* 2000) and is believed to be at, or near, the limit of geographic range of this species (NSW Scientific Committee 2002) (Figure 1). Outside NSW however, populations of this species are frequent to very common in mallee scrub in north-western Victoria, with an outlier in the whipstick mallee near Bendigo (Walsh & Entwisle 1996) and in south-eastern South Australia (Jessop & Toelken 1986).

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Figure 1: Location of *Lasiopetalum behrii* in NSW

Surveys conducted:

Clements *et al.* (2000) conducted surveys within remote areas of the Pooncarie region of south-western NSW, east of the Darling River and west of the Lakes Garnpung and Mungo. This survey located in 1997, the first and only known specimen of *L. behrii* in NSW.

Previous surveys in this area did not locate this species (Porteners *et al.* 1997). Subsequent surveys in 2000 conducted by the Royal Botanic Gardens, Sydney (RBG) failed to locate any additional plants (expert advice). No other surveys since have been undertaken (expert advice)

Ecology:

Key habitat requirements

Lasiopetalum behrii grows in mallee and red dune / swale country (Harden & Murray 2000). The sole NSW specimen was found growing on a red swale at the edge of a sand plain (NSW Herbarium Records).

In Victoria, the species has been found in *Eucalyptus gracilis* mallee woodland with an understorey of *Acacia*, *Triodia*, *Halgania andromedifolia* and *Eutaxia microphylla*, in yellow-brown sand on the crest of a hill, and in deep sand. South Australian specimens have been recorded along a roadside and from gently undulating country on an easterly aspect in red-clay-loam over limestone. Habitats are remnant mallee scrub, with *Eucalyptus diversifolia*, *Eucalyptus socialis*, *Melaleuca uncinata*, *Casuarina stricta*, *Prosianihera*, *Eremophila* and *Templetonia* species (NSW Herbarium Records; Porteners & Robertson 2003).

Life history:

Lasiopetalum behrii flowers from late winter to spring (Harden & Murray 2000).

It is not known whether some disturbance of sites stimulates or inhibits recruitment of *L. behrii*. It has been recorded colonising a roadside site in South Australia (Porteners & Robertson 2003).

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Generation length:

Based on similar species, it is estimated that *L. behrii* reaches reproductive maturity at around two to five years and longevity is estimated to be 20-50 years (expert advice). The 'generation length' (IUCN 2008) is therefore estimated to be 11 to 28 years.

Number of mature individuals:

The size of the population is difficult to determine with the current information as there is only one known record of this species in NSW. It is likely however, that the number of mature individuals of the species is almost certainly fewer than 50 and possibly one.

Threats:

Threats to *Lasiopetalum behrii* include: clearing of vegetation and habitat for agriculture, grazing, lack of seedling recruitment, competition with exotic plants, and mineral sands exploration and mining (soil disturbances may remove potential populations present in the form of soil-stored seed). This species is also susceptible to catastrophic events such as fire, clearing and logging due to its extremely small population size and extent in NSW. 'Clearing of native vegetation' is listed as a Key Threatening Process under the TSC Act in NSW.

As the species may be present in the form of soil stored seed, soil disturbances from agricultural and mining activities may also pose a threat to this species in NSW (Porteners & Robertson 2003).

Extreme fluctuations:

There is no information/evidence of this species experiencing extreme fluctuations.

Population reduction and continuing declines:

It is thought that widespread agricultural development of the mallee environments may have led to a reduction of *L. behrii* (Clements *et al.* 2000). The area where the single plant was found has not experienced the grazing pressure of similar habitat as it is relatively removed from artificial water sources and so has experienced minimal human disturbance. It is possible however, that *L. behrii* was not particularly widespread within NSW in pre-history, and the species occurs here at its eastern-most limit, being more common and with a wider distribution in both north-western Victoria and south-eastern South Australia (Porteners & Robertson 2003).

Extent of Occurrence (EOO) & Area of Occupancy (AOO):

The extent of distribution in NSW is difficult to determine with the current information as there is only one known record of this species. It is believed however, that in NSW this species has a small and very localised extent.

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Based on the one known record, the entire distribution of the species falls within a single 2 x 2 km grid cell, the spatial scale recommended for estimation of AOO by IUCN (2008). Hence, both the EOO and AOO are estimated to be less than 4 km².

Severe fragmentation:

It is believed that the NSW record is at or near the limit of geographic range of this species with the main known distribution occurring in north west Victoria and south east South Australia. As a result of habitat clearing for agriculture, it is thought that the habitat of this species is now 'severely fragmented' (IUCN 2008).

References

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- IUCN (2008) 'Guidelines for using the IUCN Red List Categories and Criteria. Version 7.0.' (Standards and Petitions Working Group of the IUCN Species Survival Commission Biodiversity Assessments Sub-committee: Switzerland). (<http://intranet.iucn.org/webfiles/doc/SSC/RedList/RedListGuidelines.pdf>).
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- NSW Scientific Committee (2002) '*Lasiopetalum behrii* (a shrub) - Endangered species determination – final'. DEC (NSW), Sydney.
- Porteners MF, Ashby EM, Benson JS (1997) The natural vegetation of Pooncarie 1:100 000 map. *Cunninghamia* **5**, 139-232.
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Explanatory note

Between 2007 and 2009 the NSW Scientific Committee undertook a systematic review of the conservation status of a selection of plant and animal species listed under the Threatened Species Conservation Act. This species summary report provides a review of the information gathered on this species at the time the Review was undertaken.

The Scientific Committee's report on the Review of Schedules project and final determinations relating to species that were either delisted or had a change in conservation status can be found on the following website: www.environment.nsw.gov.au .

The Committee gratefully acknowledges the past and present Committee members and project officers who ably assisted the Committee in undertaking the Review of Schedules Project. Information on the people involved in the project can be found in the Acknowledgement section of the project report entitled "Review of the Schedules of the Threatened Species Conservation Act 1995. A summary report on the review of selected species" which is available on the abovementioned website.

This species summary report may be cited as:

NSW Scientific Committee (2009) *Lasiopetalum behrii* Review of current information in NSW. July 2009. Unpublished report arising from the Review of the Schedules of the Threatened Species Conservation Act 1995. NSW Scientific Committee, Hurstville.