

# NSW SCIENTIFIC COMMITTEE

## Final Determination

The Scientific Committee, established by the Threatened Species Conservation Act, has made a Final Determination to list the shrub, *Callistemon megalongensis* (Craven & S.M. Douglas) Udovicic & R.D. Spencer as a **CRITICALLY ENDANGERED SPECIES** in Part 1 of Schedule 1A of the Act, and as a consequence, to omit reference to its listing as *Melaleuca megalongensis* Craven & S.M. Douglas from Part 1 of Schedule 2 (Vulnerable species) of the Act. Listing of Critically Endangered species is provided for by Part 2 of the Act.

The Scientific Committee has found that:

1. *Callistemon megalongensis* (Craven & S.M. Douglas) Udovicic & R.D. Spencer (family Myrtaceae), also known as Megalong Valley Bottlebrush, is described in Craven (2009) (under the name *Melaleuca megalongensis*), as follows: “Shrub to 5 m tall; bark subpapery, medium soft, flaking or peeling; branchlets glabrescent, sericeous. Leaves alternate, 35–55 x 3.5–5 mm, 8.8–12.5 x as long as wide; blade sericeous, glabrescent, narrowly elliptic to narrowly obovate, in transverse section transversely linear (and usually thickened at the margin and midrib), base narrowly cuneate, apex narrowly acute to narrowly acuminate, primary veins pinnate, ca. 15 to 24 on each side of the midrib, oil glands moderately dense, distributed throughout the lamina, distinct or obscure. Inflorescences spicate, pseudoterminal, with 25 to 60 monads, 30–40 mm wide; hypanthium hairy, 3.3–3.5 mm; calyx lobes abaxially glabrescent, 1.7–2 mm, scarious in a marginal band ca. 0.5–0.7 mm wide; petals deciduous, 3.3–3.7 mm; stamens free, ca. 45 to 50 per flower; filaments magenta-pink, 9.5–14 mm; anthers dark red; style 17–19 mm; ovules numerous. Fruit ca. 6 mm, calyx lobes deciduous; inner distal wall of staminophore without reflexed, free antesealous triangular processes; seed with concavo-convex cotyledons.”
2. *Callistemon megalongensis* is a species of bottlebrush, originally published as *Melaleuca megalongensis* Craven & S.M. Douglas in Craven (2009), where a broad view of *Melaleuca* was adopted that included *Callistemon*. However, this position was not universally accepted and Udovicic & Spencer (2012) moved the species to the genus *Callistemon* as *Callistemon megalongensis* (Craven & S.M. Douglas) Udovicic & R.D. Spencer. This view is followed on *NSW Flora Online* (Royal Botanic Gardens and Domain Trust 1999–2012).
3. *Callistemon megalongensis* is endemic to the Sydney Basin Bioregion, *sensu* Thackway and Cresswell (1995). The species is known to occur only in the Megalong Valley in the western part of the Blue Mountains (Craven 2009). In the valley, the species is mostly restricted to a small number of shrubby swamps in the immediate vicinity of Nellies Glen Road.
4. The known population is small and concentrated in the eastern portion of Megalong Valley. Most occurrences are on private land or Crown tenure (Douglas 2003), with only part of the population just inside the boundary of the Blue Mountains National Park (Douglas & Robyn 2006). The estimated population size is under 2000 even allowing for individuals occurring in sites that were not surveyed by Douglas & Robyn (2006).
5. The geographic distribution of *Callistemon megalongensis* is very highly restricted. The area of occupancy and extent of occurrence were estimated to be 8 km<sup>2</sup>. The area of occupancy is based on 2 x 2 km grid cells, the scale recommended for assessing area of occupancy by IUCN 2011.

# NSW SCIENTIFIC COMMITTEE

6. *Callistemon megalongensis* is under threat from a number of sources. Road works have affected drainage patterns which has resulted in gully erosion. The construction of a dam on one stream has also affected the hydrology of one of the swamps. Changes in hydrology and the resultant damage to the swamp ecosystem constitute a significant threat to the long-term viability of this population. 'Alteration to the natural flow regimes of rivers and streams and their floodplains and wetlands' is listed as a Key Threatening Process under the *Threatened Species Conservation Act 1995*. Inappropriate fire regimes are also a threat, in particular regimes of low or high fire frequency and/or severity. Clearing, although currently only on the edges of the plant's habitat, is significant for such a restricted species. Such disturbance to the habitat can lead to other threats from unsympathetic rural land use (eg. recreational vehicle use), grazing by horses and cattle, and weed invasion, leading to further reduction in the quality of the habitat. Weed infestation is a serious threat in a few areas of known habitat (roadsides, some drainage lines, and cleared areas of creek flats) particularly from Japanese Honeysuckle, *Lonicera japonica* and exotic Blackberries, *Rubus* species. 'Invasion and establishment of exotic vines and scramblers' is listed as a Key Threatening Process under the *Threatened Species Conservation Act 1995*. There are also ongoing threats to the species as a result of road and infrastructure maintenance, such as pipelines. By having a very highly restricted geographic distribution and occurring at only one location, *Callistemon megalongensis* is subject to demographic and environmental stochasticity due to its small size and localised extent.
7. *Callistemon megalongensis* (Craven & S.M. Douglas) Udovicic & R.D. Spencer is eligible to be listed as a Critically Endangered species as, in the opinion of the Scientific Committee, it is facing a very high risk of extinction in New South Wales in the near future as determined in accordance with the following criteria as prescribed by the *Threatened Species Conservation Regulation 2010*:

## Clause 7 Restricted geographic distribution and other conditions

The geographic distribution of the species is estimated or inferred to be:

- (a) very highly restricted,
- and:
- (d) a projected or continuing decline is observed, estimated or inferred in either of the key indicators:
    - (a) an index of abundance appropriate to the taxon, or
    - (b) the geographic distribution, habitat quality or diversity.

Associate Professor Michelle Leishman  
Chairperson  
Scientific Committee

Proposed Gazettal date: 31/05/13  
Exhibition period: 31/05/13 – 26/07/13

# NSW SCIENTIFIC COMMITTEE

## References:

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- Douglas SM (2003) Mysteries of the Megalong Valley: another rare plant for the Blue Mountains. *Australasian Plant Conservation* **12**, 5–7.
- Douglas SM, Robyn S (2006) Report on the conservation status and management requirements of *Melaleuca* sp. 'Megalong Valley'. Unpublished report to Blue Mountains City Council (Ecological Surveys & Planning, ACT)
- IUCN Standards and Petitions Subcommittee. (2011) Guidelines for Using the IUCN Red List Categories and Criteria. Version 9.0. Prepared by the Standards and Petitions Subcommittee. Downloadable from <http://www.iucnredlist.org/documents/RedListGuidelines.pdf>.
- Thackway R, Cresswell ID (1995) An interim biogeographic regionalisation for Australia: a framework for setting priorities in the National Reserves System Cooperative Program. (Version 4.0. Australian Nature Conservation Agency: Canberra.)
- Udovicic F, Spencer RD (2012) New combinations in *Callistemon* (Myrtaceae). *Muelleria* **30**, 23–25.
- Royal Botanic Gardens and Domain Trust (1999–2012) NSW Flora Online. *Callistemon megalongensis* <http://plantnet.rbgsyd.nsw.gov.au/cgi-bin/NSWfl.pl?page=nswfl&lvl=sp&name=Callistemon~megalongensis>