

THREATENED SPECIES SCIENTIFIC COMMITTEE

Established under the *Environment Protection and Biodiversity Conservation Act 1999*

The Minister's delegate approved this Conservation Advice on 16/12/2016.

Conservation Advice

Sannantha crenulata

fern-leaf baeckea

Conservation Status

Sannantha crenulata (fern-leaf baeckea) is listed as Vulnerable under the *Environment Protection and Biodiversity Conservation Act 1999* (Cwlth) (EPBC Act). The species is eligible for listing as prior to the commencement of the EPBC Act, it was listed as Vulnerable under Schedule 1 of the *Endangered Species Protection Act 1992* (Cwlth).

Species can also be listed as threatened under state and territory legislation. For information on the current listing status of this species under relevant state or territory legislation, see <http://www.environment.gov.au/cgi-bin/sprat/public/sprat.pl>.

The main factors causing the species to be eligible for listing in the Vulnerable category are restricted area of occupancy, limited number of locations and low number of mature individuals.

Description

The fern-leaf baeckea (formerly *Babingtonia crenulata* and *Baeckea crenatifolia*) is an erect myrtaceous shrub growing to 3 m tall. The leaves are small (7 x 5 mm), ovate or round, hairless and blunt tipped. The leaf margins have fine rounded teeth (DNRE 2001). The flowers are white (rarely pale pink), 8 mm wide, and occur in branched umbels in leaf axils (Walsh & Entwisle 1996; DNRE 2001). Flowers consist of a cup-shaped base with five round petals, a ring of 10-15 stamens and a central style (Walsh & Entwisle 1996; Bean 1997). The fruit is a cup-shaped, papery capsule, 3 mm wide, and contains small, dry seeds (DNRE 2001).

Distribution

The fern-leaf baeckea is endemic to Victoria, where it is currently restricted to rocky stream-sides on the lower slopes of Mt Buffalo in the northeast of the state (Walsh & Entwisle 1996), which is within the South Eastern Highlands IBRA Bioregion (DEH 2000).

The fern-leaf baeckea has been recorded from the following locations in Mt Buffalo National Park (ALA 2016; Carter & Walsh 2006; DSE 2008):

- Rollason's Falls area (100–500 plants).
- Eurobin Creek area (50–250 plants) (the southerly part of the Eurobin Creek subpopulation is located on private land).
- Mackeys Lookout Area (20–50 plants).
- Mt Buffalo Tourist Road.
- Buffalo Creek (50–200 plants).
- Jurisich's Road area.
- Buffalo Creek, between Mackeys Lookout and Twin Falls.

The maximum distance between these locations is 6 km (Carter & Walsh 2006). In 2002, the total fern-leaf baeckea population was estimated to be between 220–1000 individuals (N. Walsh unpubl. cited in Carter & Walsh 2006).

It is not known if the species was formerly more widespread (DSE 2008). There is an unconfirmed, century old record from Mt Hotham (Bean 1997) but this is considered an unlikely record of the species (DSE 2008).

Relevant Biology/Ecology

The fern-leaf baeckea occurs in open forest and riparian scrub or on rocky outcrops. Soils tend to be shallow, gravelly loams above granite parent material. Altitudinal range varies from around 300–1150 m above sea level (Carter & Walsh 2006; DSE 2008).

Associated species include *Acacia melanoxylon* (blackwood), *Acacia pravissima* (ovens wattle), *Cassinia aculeate* (common cassinia), *Coprosma quadrifida* (prickly current-bush), *Eucalyptus camphora* (mountain swamp-gum), *Eucalyptus radiata* (narrow-leaf peppermint), *Eucalyptus dalrympleana* (mountain gum), *Kunzea ericoides* (Burgan), *Leptospermum grandifolium* (mountain tea-tree) and *Pomaderris aspera* (hazel pomaderris) (Carter & Walsh 2006; DSE 2008).

Flowering occurs from October through to March (Carter & Walsh 2006; DSE 2008). The fern-leaf baeckea regenerates after fire, but the optimal fire regime for the species is unknown (DSE 2008). However, the riparian habitat of many individuals of the species is not likely to be prone to fire (Carter & Walsh 2006; DSE 2008). Some seedling recruitment in Mt Buffalo National Park was observed shortly after fires in 2003 (G. Johnson pers. comm. cited in Carter & Walsh 2006). It is speculated that other types of localised disturbance such as flood or frost may be required for germination (Carter & Walsh 2006; DSE 2008).

Threats

The fern-leaf baeckea is threatened by weed species and potentially threatened by road works and altered fire frequency. These threats and their effects on the fern-leaf baeckea are described in the table below. The threats outlined below have corresponding conservation management priorities.

Table 1 – Threats impacting the fern-leaf baeckea in order of severity of risk, based on available evidence.

Threat factor	Threat type and status	Evidence base
Invasive species		
Competition with weed species	known current	Competition with weeds for resources is a major threat to the fern-leaf baeckea. Weed species that threaten the fern-leaf baeckea population include Japanese honeysuckle (<i>Lonicera japonica</i>), Himalayan honeysuckle (<i>Leycesteria formosa</i>), grey sallow (<i>Salix cinerea</i>) and blackberry (<i>Rubus fruticosus</i> species aggregate) (Carter & Walsh 2006; DSE 2008). Grey sallow and blackberry are both Weeds of National Significance (Carter & Walsh 2006; DSE 2008).
Habitat loss, disturbance and modifications		
Habitat loss and disturbance from road works	potential	In 2008, road works were identified as a potential threat to the fern-leaf baeckea at sites along the Mt Buffalo Tourist Road, particularly the Eurobin Creek subpopulation (near the Mt Buffalo National Park entrance) and scattered plants west of Mackey’s Lookout (DSE 2008). Road works may threaten the species through habitat clearing. However, the threat of road works on the fern-leaf baeckea has not been demonstrated.

Fire		
Altered fire frequency	potential	Increased or decreased fire frequency may pose a threat to seedling recruitment (Carter & Walsh 2006; DSE 2008), however, the threat has not been demonstrated.

Conservation Actions

Conservation and Management priorities

Habitat loss, disturbance and modifications

- Ensure land managers and local council are aware of the species' occurrence and provide protection measures against identified threats.

Invasive species

- Manage sites by monitoring weed abundance, and if necessary use appropriate methods to control and reduce the spread of weed species. Possible threats to the fern-leaf baeckea associated with the control method must be considered. Weed control programs should be undertaken in conjunction with research.
- Post fire, implement a weed management plan to prevent weed invasion.

Fire

- Fires must be managed to ensure that prevailing fire regimes do not disrupt the life cycle of the species, that they support rather than degrade the habitat necessary to the species, that they do not promote invasion of exotic species, and that they do not increase impacts of grazing and predation.
- Physical damage to the habitat and individuals of the species must be avoided during and after fire operations.
- Fire management authorities and land management agencies should use suitable maps and install field markers to avoid damage to the species.

Seed collection, propagation and other ex situ recovery action

- Establish plants in cultivation in appropriate institutions such as the Royal Botanic Gardens Victoria.
- To manage the risk of losing genetic diversity, undertake appropriate seed and storage in appropriate institutions, such as the Victorian Conservation Seedbank and Royal Botanic Gardens Victoria, and determine viability of stored seed. Best practice seed storage guidelines and procedures should be adhered to, to maximise seed viability and ability to germinate. Seeds from all natural populations to be collected and stored

Stakeholder Engagement

- Liaise with state government organisations including the Victorian Government Department of Environment, Land, Water and Planning, Parks Victoria and the Royal Botanic Gardens, as required, to ensure appropriate actions are being undertaken to conserve the species.
- Erect appropriate conservation signs to educate the public of the species.
- Liaise with relevant stakeholders including local councils and private landowners where the species occurs to ensure subpopulations are not damaged or destroyed accidentally.

- Encourage formal links with local land care groups and interested individuals.

Survey and Monitoring priorities

- Design and implement a monitoring program to more precisely assess population size, distribution, recruitment and the relative impacts of weeds, road works and fire.
- Monitor the structure, regeneration and seedling recruitment of subpopulations following fire events to determine the fire response of the species.
- Monitor the progress of conservation actions, including the effectiveness of management actions and adapt them if necessary to contribute to the species' recovery.

Information and research priorities

- Undertake research to identify stimuli for recruitment and regeneration.
- Undertake seed germination and/or vegetative propagation trials to determine the requirements for successful establishment.
- Investigate options for linking, enhancing or establishing additional subpopulations.
- Undertake appropriately designed experiments in the field and/or laboratory to improve understanding of the species' response to different fire regimes and identify appropriate fire regimes for conservation of the species.

References cited in the advice

Bean, A. R. (1997). Reinstatement of the genus *Babingtonia* Lindl. (Myrtaceae, Leptospermoideae), *Austrobaileya* 4, 627-645.

Carter, O. and Walsh, N. (2006). National Recovery Plan for the Fernleaf Baeckea *Babingtonia crenulata*. Department of Sustainability and Environment, Melbourne.

Department of Environment and Heritage (DEH) (2000). Revision of the Interim Biogeographic Regionalisation of Australia (IBRA) and the Development of Version 5.1. Summary Report. Environment Australia, Canberra.

Department of Natural Resources and Environment (DNRE) (2001). DNRE Flora Information System 2001, Department of Natural Resources and Environment.

Department of Sustainability and Environment (DSE) (2008). Action Statement. Fern-leaf Baeckea *Sannantha crenulata*. Victorian Government, East Melbourne.

Walsh, N. G. & Entwisle, T. J. (1996). Flora of Victoria Volume 3: Winteraceae to Myrtaceae, Inkata Press, Melbourne.

Other sources cited in the advice

Atlas of Living Australia (ALA) (2106). Occurrence Records. Species: *Sannantha crenulata*.

Viewed 4 July 2016. Available on the internet at:

<http://biocache.ala.org.au/occurrences/search?taxa=&q=lsid%3Aurn%3Aalsid%3Abiodiversity.org.au%3Aapni.taxon%3A337097&fq=&wkt=&lat=&lon=&radius=&offset=0&max=20>

