

Action Statement

Flora and Fauna Guarantee Act 1988

No. 216

Fern-leaf Baeckea

Sannantha crenulata

This Action Statement is based on a draft Recovery Plan prepared for this species by DSE under contract to the Australian Government Department of the Environment, Water, Heritage and the Arts.

Description

Fern-leaf Baeckea (*Sannantha crenulata*) (formerly *Babingtonia crenulata* and *Baeckea crenatifolia*) is an erect myrtaceous shrub, to 3 m tall (Walsh & Entwisle 1996). It has small, ovate or round hairless leaves, to 7 x 5 mm, which are blunt tipped. The leaf margins have fine rounded teeth (DNRE 2001). The flowers are white (or rarely pale pink), to 8 mm wide, in a branched umbel in leaf axils (Walsh & Entwisle 1996; DNRE 2001). Flowers appear from October through to March, and 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, to 3 mm wide, which contains small, dry seeds (DNRE 2001).

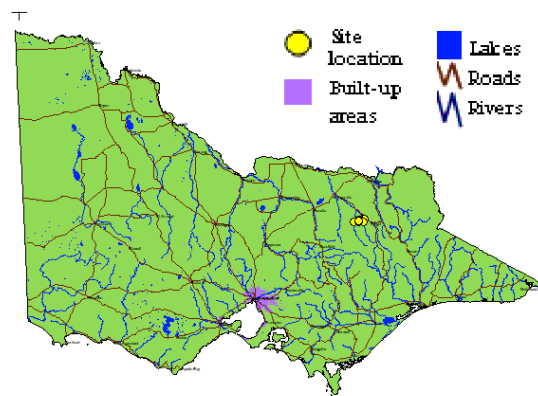
Fern-leaf Baeckea is closely related to *Sannantha tozerensis* (formerly *Babingtonia tozerensis*), which occurs on the Cape York Peninsula in northern Queensland (Bean 1997). The Fern-leaf Baeckea differs in having smaller leaves, crenulate leaf margins and compound sepals (Bean 1997).

Distribution

Fern-leaf Baeckea is a Victorian endemic restricted to rocky stream-sides on the lower slopes of Mt Buffalo in the north-east of the state (Walsh & Entwisle 1996). A century-old record from Mt Hotham has not been recently confirmed (Bean 1997), and is regarded as dubious.

Abundance

It is estimated that between 220 and 1000 individuals exist, based on personal observations by N. Walsh in October 2002. These plants occur in five populations. It is not known whether this species was formerly more widespread. Discrepancies in total abundance estimates are



Distribution in Victoria

(Flora Information System DSE 2007)

likely to be largely due to differences in estimates the Mt Buffalo Road and Buffalo Creek populations as their full extents have not been determined.

Important populations

Important populations necessary to the long term survival and recovery of Fern-leaf Baeckea occur in Mt Buffalo National Park in the Rollason's Falls area (conservative estimate of 100-500 plants), near Eurobin Creek (50-250 plants), in the Mackeys Lookout area (20-50 plants), along Creeklines near the Mt Buffalo Tourist Road (50-200 plants) and near Jurisich's Road. The southerly part of Eurobin Creek population is located on private land. Further populations were located in 2003

along Buffalo Creek between Mackeys Lookout and Twin Falls.

Habitat

Populations of Fern-leaf Baeckea occur in open forest and riparian scrub or on rocky outcrops. Some associated species include Blackwood (*Acacia melanoxylon*), Ovens Wattle (*Acacia pravissima*), Common Cassinia (*Cassinia aculeata*), Prickly Current-bush (*Coprosma quadrifida*), Mountain Swamp-gum (*Eucalyptus camphora*), Narrow-leaf Peppermint (*E. radiata*), Mountain Gum (*E. dalrympleana*), Burgan (*Kunzea ericoides*), Mountain Tea-tree (*Leptospermum grandifolium*) and Hazel Pomaderris (*Pomaderris aspera*). Soils tend to be shallow, gravelly loams above granite parent material. Altitudinal range varies from approximately 300 m to 1150+ m above sea level.

Life history and ecology

Fern-leaf Baeckea may regenerate after fire, as has been demonstrated in other closely related *Sannantha* species. The riparian habitat of many individuals of the species, however, suggests a relatively non-fire prone setting. Fires in January 2003 in Mt Buffalo National Park affected all known populations of Fern-leaf Baeckea, although some parts of some populations remained unburnt, and so provide an opportunity to determine the species' post-fire response. Glen Johnson (DSE) observed some seedling recruitment shortly after the fires (G. Johnson pers. comm.). It is speculated that other types of localised disturbance such as flood or frost heave may be required for germination.

Conservation status

National conservation status

Fern-leaf Baeckea is listed as vulnerable under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*.

Victorian conservation status

Fern-leaf Baeckea is listed as threatened under the Victorian *Flora and Fauna Guarantee Act 1988*.

It is considered vulnerable in Victoria according to DSE's *Advisory List of Rare or Threatened Plants in Victoria - 2005* (DSE 2005).

Potentially threatening processes

Inappropriate fire or other disturbance regimes

Appropriate fire regimes are unknown for this species. It is known that Fern-leaf Baeckea

Long term objective

To ensure that the Fern-leafed Baeckea can survive, flourish and retain its potential for evolutionary development in the wild.

regenerates after fire, but it is not known if this or some other disturbance (such as flood or frost-heave) is the most important stimulus for seedling recruitment.

Weed invasion

Notable weed species that threaten the ecological viability of Fern-leaf Baeckea include Japanese Honeysuckle (*Lonicera japonica*), Himalayan Honeysuckle (*Leycesteria formosa*), Grey Sallow (*Salix cinerea*) and Blackberry (*Rubus fruticosus* spp. agg.).

Grey Sallow and Blackberry are both considered Weeds of National Significance.

Localised distribution

There is no evidence to suggest that Fern-leaf Baeckea has decreased in geographic distribution or abundance since European settlement. Its highly restricted distribution, however, suggests that it is particularly vulnerable to inappropriate disturbance. The maximum distance between all populations is six kilometres (VROTPop 1998).

Expansion of weeds

Expansion of weeds, notably Blackberry, Himalayan Honeysuckle and Grey Sallow.

Road works / vegetation clearance

Road works/widening may threaten sites along the Mount Buffalo Tourist Road, particularly the Eurobin Creek population near the Mt Buffalo National Park entrance (which occurs outside the national park) and scattered plants west of Mackeys Lookout.

Previous management action

- Surveys and monitoring have been undertaken at all sites.
- Post-2003 Bushfire Recovery Program has been undertaken. Re-sprouting and/or seed germination were recorded and a post-fire weed control program has been implemented.
- Technique for monitoring regeneration in the post-disturbance phase of a population has been investigated.
- Seed has been collected and held in storage. Seed viability and cultivation trials are in progress

Specific objectives, actions and targets

The intended management actions listed below are further elaborated in DSE's Actions for Biodiversity Conservation (ABC) system. Detailed information about the actions and locations, including priorities, is held in this system and will be provided annually to land managers and other authorities.

Objective I To increase knowledge of biology, ecology and management requirements

Action	Targets	Responsible
1. Acquire baseline population data. Identify the area and extent of the population; estimate the number, size and structure of the population; and infer or estimate population change.	<ul style="list-style-type: none"> ▪ Determination or update of conservation status and other records on all state databases (Flora Information System, VrotPop and Herbarium). ▪ Populations accurately mapped. 	DSE, Parks Victoria
2. Assess habitat characteristics and/or condition. Accurately survey known habitat and collect floristic and environmental information relevant to community ecology and condition.	<ul style="list-style-type: none"> ▪ Ecological requirements for the completion of essential life history stages, recruitment and dispersal identified at known sites. ▪ Regeneration and recruitment monitored at sites burnt in January 2003. ▪ Core habitat mapped. 	DSE
3. Map populations. Any mapping and/or survey of populations should incorporate or consider monitoring carried out by Parks Victoria staff since c. 1998.	<ul style="list-style-type: none"> ▪ All populations accurately mapped. ▪ Mapping incorporated into relevant information systems. 	DSE
4. Conduct survey to locate suitable habitat. Identify and survey potential habitat, using ecological and bioclimatic information that may indicate habitat preference.	<ul style="list-style-type: none"> ▪ Predictive model for potential habitat developed and tested. 	DSE
5. Identify disturbance regimes to maintain habitat or promote regeneration and recruitment.	<ul style="list-style-type: none"> ▪ Management prescriptions prepared for ecological burning at all sites, considering results of post-January 2003-fire monitoring. 	DSE, Parks Victoria
6. Assess threats. Undertake site-specific threat assessments and determine need for management action.	<ul style="list-style-type: none"> ▪ Detailed threat assessment completed for all populations. ▪ Potential threat of plant disease and risk of degradation by weeds assessed. 	DSE, Parks Victoria
7. Undertake research to identify key biological functions. Evaluate current reproductive/regenerative status, seed bank status and longevity, fecundity and recruitment levels. Determine seed germination requirements by conducting laboratory and field trials aimed to identify key stimuli and determine stimuli for vegetative regeneration.	<ul style="list-style-type: none"> ▪ Seed bank/regenerative potential quantified for target populations. ▪ Stimuli for recruitment/regeneration identified. ▪ Management strategies identified to maintain, enhance or restore regenerative processes fundamental to reproduction and survival. 	DSE, Royal Botanic Gardens

8. Analyse population trends. Measure population trends and responses against recovery actions by collecting demographic information including recruitment and mortality, timing of life history stages and morphological data. Collate, analyse and report on census data and compare with management histories.	<ul style="list-style-type: none"> ▪ Techniques for monitoring developed and implemented. ▪ Census data for target populations collected. ▪ Population growth rates determined. ▪ Population Viability Analysis completed for targeted populations. 	DSE, Parks Victoria
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Objective II To increase the extent of habitat

<i>Action</i>	<i>Targets</i>	<i>Responsible</i>
9. Prevent habitat loss. Control threats as required, based on site-specific threat assessments.	Measurable seedling recruitment/vegetative regeneration and a measurable reduction in plant mortality at target populations.	DSE, Parks Victoria

Objective III To secure populations or habitat from potentially incompatible land use or catastrophic loss.

<i>Action</i>	<i>Targets</i>	<i>Responsible</i>
10. Establish cultivated plants <i>ex situ</i> to safeguard from the unforeseen destruction of the wild populations.	<ul style="list-style-type: none"> ▪ Development of effective propagation and cultivation techniques. ▪ At least 30 mature plants in cultivation. 	DSE, Royal Botanic Gardens
11. Negotiate co-operative management agreement with private landholders. Protect populations on private land.	<ul style="list-style-type: none"> ▪ Private landholder approached regarding voluntary conservation agreement. 	DSE
12. Liaise with private landholders. Ensure that information and advice about the recovery of Fern-leaf Baeckea has been provided to private land managers and landholders.	<ul style="list-style-type: none"> ▪ All relevant private land managers are aware of the species and its management needs. 	DSE
13. Liaise with government agencies. Ensure that information and advice about the recovery of Fern-leaf Baeckea has been provided to public land managers, local government authorities and Catchment Management Authorities.	<ul style="list-style-type: none"> ▪ All relevant authorities and public land managers are aware of the species and its management needs. 	DSE

Objective IV To increase the number of populations or individuals

<i>Action</i>	<i>Targets</i>	<i>Responsible</i>
14. Store reproductive material. Establish a seed bank.	<ul style="list-style-type: none"> ▪ Long-term storage facility identified. ▪ Seed from target populations in storage. 	DSE, Royal Botanic Gardens
15. Determine seed viability.	<ul style="list-style-type: none"> ▪ Seed viability determined. 	Royal Botanic Gardens

Objective V To increase community awareness and support

<i>Action</i>	<i>Targets</i>	<i>Responsible</i>
16. Involve community groups and volunteers in recovery activities.	<ul style="list-style-type: none"> ▪ Opportunities for involvement identified, promoted and supported. 	DSE

References

- Bean, A.R. (1997) Reinstatement of the genus *Babingtonia* Lindl. (Myrtaceae, Leptospermoideae), *Austrobaileya*, 4:627-645.
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- DNRE (2001) *DNRE Flora Information System 2001*, Department of Natural Resources and Environment.
- Walsh, N.G. & Entwisle, T.J. (1996) *Flora of Victoria Volume 3: Winteraceae to Myrtaceae*, Inkata Press, Melbourne.

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