

Action Statement

Flora and Fauna Guarantee Act 1988

No. 208

Betka Bottlebrush

Callistemon kenmorrisonii

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

Description

Betka Bottlebrush (*Callistemon kenmorrisonii*) is an erect to spreading shrub to 3 m tall and 1 - 4 m wide, with spongy, papery bark (Molyneux 1995; Walsh & Entwisle 1996). The leaves are densely arranged and spreading, narrowly lanceolate, to 52 x 6 mm, hairless, stiff and leathery (Walsh & Entwisle 1996; DNRE 2001). The bright red flowers with purple anthers form dense 'bottle-brush' spikes, to 10 x 6 cm, in the upper parts of younger branches. The flowers appear between November and February (Walsh & Entwisle 1996). The cup-shaped, woody capsules, to 9 mm across, are clustered along the older branches (DNRE 2001).

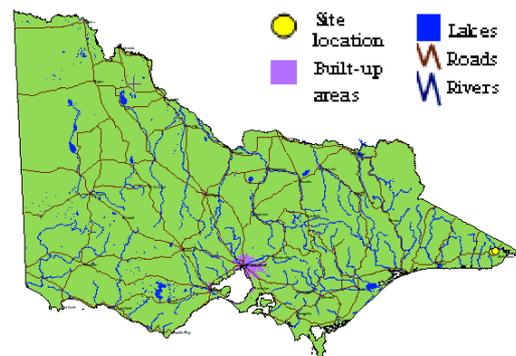
Callistemon kenmorrisonii resembles the Crimson Bottlebrush (*C. citrinus*) which grows nearby. The latter species, however, occurs in moist ground or heathland, while *C. kenmorrisonii* is a rheophytic chasmophyte (i.e. a plant which is anchored into crevices in rock) (Molyneux 1995). The leaves and flower spikes of *C. citrinus* are generally larger than those of *C. kenmorrisonii* (Walsh & Entwisle 1996).

Distribution

Betka Bottlebrush is known from two rocky sites along the Betka River in East Gippsland.

Abundance

It is estimated that between 90 and 130 individuals exist, based on personal observations by N. Walsh in October 2002 and from information provided by W. Molyneux. These plants occur in two populations. A previous estimate of 50 plants (Molyneux 1995) was made prior to discovery of the second site at Roger Track (Molyneux 1997). The abundance and distribution of this species prior to European settlement is unknown.



Distribution in Victoria
(Flora Information System DSE 2007)

Important populations

Important populations necessary to the long term survival and recovery of *Callistemon kenmorrisonii* occur in state forest (Special Protection Zone) in the Betka River area, near Stony Peak Road (40 - 60 plants) and Roger Track (50 - 70 plants).

Habitat

Populations of Betka Bottlebrush grow in crevices of granite rock bars across the Betka River. The parent substrate material is undifferentiated Devonian-Silurian granite (Molyneux 1995). At one site (near Stony Peak Rd), the vegetation is riparian scrub within woodland dominated by Narrow-leaf Peppermint (*Eucalyptus radiata*) and Silvertop Ash

(*Eucalyptus sieberi*). Associated species include Kanooka (*Tristaniopsis laurina*), Smooth Tea-tree (*Leptospermum glabrescens*) and Thatch Saw-sedge (*Gahnia sieberiana*). At the second site (Roger Track), the vegetation is riparian scrub with Black Sheoak (*Allocasuarina littoralis*), Bushy Needlewood (*Hakea decurrens*), Handsome Flat-pea (*Platylobium formosum*) and Kanooka.

Life history and ecology

Callistemon kenmorrisonii is probably pollinated by honeyeaters, as are other members of the genus. Paton (1993) has shown that honeyeaters may be displaced by introduced honeybees, leading to a reduction in seed production.

The response of Betka Bottlebrush to fire or flooding has not been studied but its habitat suggests it is tolerant of occasional flooding.

Conservation status

National conservation status

Betka Bottlebrush is listed as vulnerable under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*. There are 90 - 130 plants remaining in two wild populations.

Victorian conservation status

Betka Bottlebrush has been 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).

Decline and threats

Current threats/perceived risk

Bridge works / Road making

Low: Bridge works, or road works associated with logging or fire control, may threaten sites containing *Callistemon kenmorrisonii*.

Hydrological alterations via logging practices

Low: There is considerable logging in the areas and this may alter hydrological processes.

Potential threats/perceived risk

Mining

Moderate: There has been a licence sought for mineral exploitation in the Roger Track area.

Inappropriate biomass reduction / fire regimes

Low: The response of this species to fire is unknown.

Previous management action

- No active management to date.
- Informal monitoring by Ken Morrison and Neville Walsh (Royal Botanic Gardens).

Conservation objectives, actions and targets

Long term objective

To ensure that the Betka Bottlebrush can survive, flourish and retain its potential for evolutionary development in the wild.

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, including: identification of the area and extent of the population; estimates of the number, size and structure of the population; and inference or estimation of population change.	<ul style="list-style-type: none"> ▪ Updated records on all state databases (Flora Information System, VROTPop and Herbarium). ▪ Populations accurately mapped. 	DSE
2. Assess habitat characteristics and/or condition. Accurately survey known habitat in spring, and collect and analyse floristic and environmental information relevant to community ecology and condition.	<ul style="list-style-type: none"> ▪ Core habitat mapped. ▪ Ecological requirements for the completion of essential life history stages, recruitment and dispersal identified at known sites. 	DSE

3.	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
4.	Undertake research to identify key biological functions. Evaluate current reproductive / regenerative status, seed bank status and longevity, fecundity, and recruitment levels by conducting field based experimental trials. 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
5.	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
6.	Identify disturbance regimes to maintain habitat or promote regeneration and recruitment.	<ul style="list-style-type: none"> ▪ Preparation of management prescriptions for ecological burning at Betka River (Stony Peak Rd and Roger Track) sites. 	DSE

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

<i>Action</i>	<i>Targets</i>	<i>Responsible</i>
7. Establish cultivated plants <i>ex situ</i> to safeguard from the unforeseen destruction of the wild population.	<ul style="list-style-type: none"> ▪ Effective propagation and cultivation techniques developed. ▪ At least 30 mature plants in cultivation representing a range of genotypes from both populations. 	DSE, Royal Botanic Gardens
8. Erect/maintain signs to restrict or discourage access. Control threats from accidental damage during road or bridge works using appropriate signage.	<ul style="list-style-type: none"> ▪ Measurable seedling recruitment or vegetative regeneration and/or maintenance of health and extent of current population and/or a measurable reduction in plant mortality at Betka River (Stony Peak Rd and Roger Track) sites. Installation of appropriate signage at Betka River (Stony Peak Rd and Roger Track) sites. 	DSE

Objective III To increase the number of populations or individuals

<i>Action</i>	<i>Targets</i>	<i>Responsible</i>
9. 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
10. Determine seed viability.	<ul style="list-style-type: none"> ▪ Seed viability determined. 	Royal Botanic Gardens

Objective IV To increase community awareness and support

Action	Targets	Responsible
11. Involve community groups and volunteers in recovery activities.	▪ Opportunities for involvement identified, promoted and supported.	DSE

References

- DNRE (2001) *DNRE Flora Information System 2001*, Department of Natural Resources and Environment.
- DSE (2005) *Advisory List of Rare or Threatened Plants in Victoria - 2005*. Department of Sustainability and Environment, East Melbourne, Victoria.
- IUCN (2000) *IUCN Red List Categories Version 3.1*. Prepared by the IUCN Species Survival Commission. IUCN, Gland, Switzerland.
- Molyneux, W. (1995) *Callistemon kenmorrisonii* (Myrtaceae), A new species from East Gippsland, *Muelleria*, **8**(3): 379-383.
- Molyneux, W. (1997) Notes on *Callistemon* in East Gippsland, including the description of *C. genofluvialis* sp. nov., *Muelleria*, **10**: 57-61.
- Paton, D.C. (1993) Disruption of Bird-Plant Pollination Systems in Southern Australia, *Conservation Biology*, **14**(5): 1232-1234.
- Walsh, N.G. & Entwisle, T.J. (1996) *Flora of Victoria Volume 3: Winteraceae to Myrtaceae*, Inkata Press, Melbourne.

This Action Statement has been prepared under section 19 of the Flora and Fauna Guarantee Act 1988 under delegation from Mr Peter Harris, Secretary, Department of Sustainability and Environment, July 2008.

Published by the Victorian Government Department of Sustainability and Environment

Melbourne, July 2009

© The State of Victoria Department of Sustainability and Environment 2009

This publication is copyright. No part may be reproduced by any process except in accordance with the provisions of the *Copyright Act 1968*.

Authorised by the Victorian Government, 8 Nicholson Street, East Melbourne.

ISSN 1448-9902

For more information contact the DSE Customer Service Centre 136 186

Disclaimer

This publication may be of assistance to you but the State of Victoria and its employees do not guarantee that the publication is without flaw of any kind or is wholly appropriate for your particular purposes and therefore disclaims all liability for any error, loss or other consequence which may arise from you relying on any information in this publication.

Accessibility

If you would like to receive this publication in an accessible format, such as large print or audio, please telephone 136 186, 1800 122 969 (TTY), or email customer.service@dse.vic.gov.au. This document is also available in PDF format on the Internet at www.dse.vic.gov.au