

Flora & Fauna Guarantee Action Statement

#27

This Action Statement was first published in 1992 and remains current. This version has been prepared for web publication. It retains the original text of the action statement, although contact information, the distribution map and the illustration may have been updated.

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Kamarooka Mallee *Eucalyptus froggattii*



Kamarooka Mallee (*Eucalyptus froggattii*)
(Illustration by Anita Barley)



Distribution in Victoria (DSE 2002)

Description and Distribution

Kamarooka Mallee (*Eucalyptus froggattii*) grows to 6 m as a multi-stemmed mallee or to 9 m as a tree. Its bark is rough and fibrous, grey to grey-brown on lower stems or its trunk, which then becomes smooth, grey-green and peeling in strips higher up. Adult leaves are alternate, thick, shining green, 7.5 cm long, 1.2-2 cm wide; the lateral veins are faint, marginal vein prominent and up to 3 mm from the margin. Flowers, 5-11, are borne freely in terminal panicles or often in clusters rising from the axils during January to April. Buds are quadrangular, strongly four-angled, on short, thick pedicels and the bud cap is hemispherical with a sharp point. Fruit is pear-shaped and strongly four-angled, on thick, flattened pedicels, valves 4 or 5 (for a more detailed description refer to *Flora of Australia* Vol. 19).

Kamarooka Mallee is endemic to Victoria, and restricted to three main areas. It is most common in the Whipstick area north of Bendigo where it is known from several

sites, generally in the north, and mostly on private land (Franklin *et al.* 1983). It also occurs in restricted areas to the north and west of Wedderburn, and in the Mount Arapiles area south-west of Horsham. New populations within these areas continue to be found.

Many of the stands of Kamarooka Mallee in the Whipstick area are on uncleared private land, although some are protected within the Kamarooka State Park. In the Wedderburn area, the Kamarooka Mallee on private land will possibly die out as there is no regeneration. There are, however, some stands reserved in the Wychitella Flora and Fauna Reserve and on roadsides. These roadside populations need to be carefully protected.

Four populations near Horsham are protected on public land; the main one is in a Flora Reserve in the Parish of Nurkong and another in the Mount Arapiles-Tooan State Park. The other two, one at Vectis and the other at Nurrabiel, have not been checked recently.

Unlike most other mallee communities in Australia, which grow on sandy or limestone areas, the Whipstick mallee community grows on clay and rocky soils derived from Ordovician sandstones. Kamarooka Mallee occurs in small stands on fine-textured soils on flats and lower hillslopes. The higher terrain is usually dominated by Blue Mallee (*Eucalyptus polybractea*), Green Mallee (*E. viridis*) or both. Kamarooka Mallee often grows in association with Bull Mallee (*E. behriana*), and less commonly Blue Mallee (*E. polybractea*), Green Mallee (*E. viridis*) or Grey Box (*E. microcarpa*). Understorey species often include Williamson's Wattle (also commonly known as Whirrakee Wattle) (*Acacia williamsonii*), Gold Dust Wattle (*Acacia acinacea*), Broom Honey-myrtle (*Melaleuca uncinata*), Violet Honey-myrtle (*Melaleuca wilsonii*), Totem-poles (*Melaleuca decussata*) and Slaty Sheoke (*Allocasuarina muelleriana*).

Conservation Status

Current Status

| | |
|-----------------------------|---------------------|
| Briggs <i>et al.</i> (1988) | Rare |
| Gullan <i>et al.</i> (1990) | Rare and vulnerable |

Kamarooka Mallee has been listed as a threatened taxon on Schedule 2 of the *Flora and Fauna Guarantee Act 1988*.

Reasons for Conservation Status

There is strong evidence that Kamarooka Mallee is extremely rare in terms of both abundance and distribution. The species has been recorded from only seven ten-minute grids (DCE Flora Information System) and is restricted to three areas in the west of Victoria, on private and public land, including roadsides. Only some of the stands are adequately protected, and clearing is continuing. Those on private land, where management is not likely to reflect conservation objectives, are probably not secure. The remaining populations on public land are mostly not in reserves and may contain insufficient numbers and genetic material to ensure long-term survival.

Kamarooka Mallee grows on fairly deep fertile soils, and has been eliminated from a large part of its former range by clearing for agriculture. Stands on private land may die out as there appears to be no regeneration.

In view of its original limited distribution, and the fact that it has been very much reduced, Kamarooka Mallee is one of the few eucalypts that is highly endangered and close to extinction (Pryor 1981).

Its short-term survival is assured, despite the extensive clearing which has occurred throughout its restricted range. However, continued clearing of Kamarooka Mallee will further restrict and isolate the remaining populations on public land.

In its final recommendation the Scientific Advisory Committee (1991) has determined that Kamarooka Mallee is:

- in a demonstrable state of decline which is likely to result in extinction; and
- significantly prone to future threats which are likely to lead to extinction.

Major Conservation Objectives

- To ensure the long term viability of naturally occurring Kamarooka Mallee by protecting existing populations.
- To maintain intact native vegetation canopies to prevent weed invasion.
- To encourage natural regeneration on both public and private lands.
- To maintain habitat in an undisturbed condition so that natural ecological processes continue to operate.

Management Issues

Ecological Issues Specific to the Taxon

The original distribution of Kamarooka Mallee has been drastically reduced through clearing areas of the deeper, more fertile soil which it prefers. The progressive clearing of Kamarooka Mallee on private land is eliminating the species over a large part of its former range.

The long-term viability of the species is unknown. In the locations north of Bendigo there is little or no evidence of recent seedling germination.

There is evidence of damage to Kamarooka Mallee by stock and rabbits, and it is clear that successful conservation of the species depends heavily on excluding grazing by domestic stock and rabbits.

Weed invasion poses a threat due to the continuous exposure of the Kamarooka Mallee areas to propagules from the surrounding agriculture areas. There is some evidence of smothering weeds being present and this may be attributing to poor recruitment of seedlings.

There is concern that the current practice of burning strategic strips in the Kamarooka State Park in autumn for fire protection encourages the growth of grasses, particularly introduced grasses, resulting in changes to the vegetation community.

Increased nutrient levels caused by runoff from the surrounding agriculture maybe influencing changes in species composition. The effect on Kamarooka Mallee is not yet known.

Kamarooka Mallee was used in the past for charcoal production, and apiarists have been operating in and around the Whipstick Public Lands for at least eighty years (Whipstick Public Lands Proposed Management Plan 1989). The mallees are useful nectar producers, with the Kamarooka Mallee being of most value. The potential ecological effects of apiculture on Kamarooka Mallee is not known.

Other threats include eucalyptus oil production, off-road vehicle activity, fossicking, mineral exploration, and rubbish dumping. The fragmented nature of the public land and its close proximity to the large population centre of Bendigo exacerbate these threats.

The insufficient information available on the ecology, biology, appropriate fire regime and distribution of Kamarooka Mallee is a limiting factor in determining appropriate management options.

Wider Conservation Issues

Myers & Elton (1982) regard the Whipstick area as unique and of utmost importance for conservation. They note the presence of many species of native plants and that it is an area of mallee vegetation on rocky, clay soils.

Protection of Kamarooka Mallee complements other conservation strategies in place in the Nurkong Flora Reserve and the Whipstick area.

Any land protection measures undertaken to protect Kamarooka Mallee, such as rabbit, weed and erosion control, will have significant off-site benefits in reducing land degradation.

Social and Economic Issues

Achievement of the conservation objectives requires that several social and economic issues be addressed. However, protection of Kamarooka Mallee will not have any significant adverse effect.

Restrictions on landholder activities in areas where Kamarooka Mallee is located have been in place for some time. Apart from Native Vegetation Retention Controls, local planning controls also operate in the Whipstick area. Protection of Kamarooka Mallee is only one of several objectives of these planning controls, and their effects cannot be attributed to protection of Kamarooka Mallee alone.

On private land, further actions necessary to protect existing populations and encouraging natural regeneration can be achieved largely through a cooperative approach involving landholders and community groups.

Landholders are likely to gain through improved shelter benefits for stock and by reversal of land degradation on both their land and adjoining public land.

Several activities could threaten the Kamarooka Mallee on public land. However, these activities are already controlled to protect many values apart from this species. While the controls may have some negative effect, the public benefits have been judged to be higher.

Some illegal activities that occur on public land, such as grazing, off-road driving, firewood collection and removal of plants, need to be addressed. The causes, whether ignorance, private gain or a perception of public land as being a free resource or having little value, need to be identified and addressed.

Future studies on the ecology, biology, appropriate fire regime and distribution of the species may indicate the need to alter current management practices to ensure its long-term viability. If necessary, these matters can be fully addressed once research findings are known.

Management Action

Previous Management Actions

There has been no active management of the Horsham or Wedderburn sites.

Within the Whipstick mallee area, previous management actions have centred on planning controls to protect a range of values, including Kamarooka Mallee.

Much of the freehold land is now zoned 'Rural Whipstick' in the planning schemes of the Rural City of Marong and the Shire of Huntly. The zone aims to protect and maintain native vegetation, encourage revegetation, and allow uses where compatible with these objectives. A permit is required for mineral prospecting or exploration. Mining and intensive animal industries are prohibited and minimum subdivision sizes are set. DCE is a referral authority for planning permit applications, for animal husbandry, eucalyptus leaf harvesting, forest production, mineral prospecting, exploration, native vegetation clearance and subdivision.

The Whipstick Public Lands Proposed Management Plan was completed in 1989 and the final plan, with input from the community, is expected to be approved in 1992.

Land Conservation Council recommendations for Kamarooka State Park and Whipstick State Park that have been accepted by Government include:

- The eucalyptus oil leases be, terminated by 1987.
- Grazing be phased out by 1987.
- The existing gravel pit, operated by the Shire of East Loddon, not be extended outside its present boundaries, with all extraction to cease and reclamation and landscaping to be started by no later than 1991.

The Department has carried out significant fire-protection works in the Whipstick Public Lands since 1988 including:

- Increased road and track maintenance.
- Strategic autumn fuel-reduction burning of strips approximately 60 m wide along most of the boundaries of the Kamarooka State Park.

In the Horsham Region in 1985, private land to the east of the Nurkong (State?) Forest was being cleared of a significant stand of Kamarooka Mallee. The National Trust of Victoria purchased a 10 ha block adjacent to the forest. DCE has now fenced this area into the forest and included it in the fire protection plan. The area has been transferred to the Crown and is part of a 582 ha area currently listed as a temporary Flora Reserve, soon to be gazetted as a permanent Flora Reserve.

Intended Management Action

Planning

- The final Whipstick Public Lands Management Plan will give conservation of this species a high priority for areas in which it is found. This plan and the current Huntly and Marong Municipal Planning Scheme provide for the conservation of Kamarooka Mallee. However, these need to be complemented with further information on the ecology, biology, appropriate fire regime and distribution of Kamarooka Mallee to determine specific management options. Actions that directly involve private landholders in protection are also important.

Research

- Establish the current distribution of Kamarooka Mallee on both public land and private land.
- Undertake research into the ecological requirements and reproductive biology of kamarooka Mallee. Make

available limited quantities of seed or cuttings to foster this research.

- Conduct ecological studies of the strategic autumn fuel-reduction burning of strips along most of the boundaries of the Kamarooka State Park.
- Undertake a comparative vegetation study of 126 ha along Tennyson Road, burnt on 15 November 1982, to establish the effect of fire on Kamarooka Mallee.

Monitoring

- Monitor known colonies of Kamarooka Mallee.
- Monitor grazing and browsing damage by both native and introduced animals and pursue an eradication program for introduced animals if necessary.
- Continue to inspect the standard of external fencing with the view of maintaining stock proof fences.
- Monitor the invasion of introduced weeds and investigate and pursue an eradication program.

Park Ranger Presence

- Increase Park Ranger presence in the area to deter illegal activities such as grazing, off-road driving and riding, firewood collection, removal of plants, and regulate visitor activity, such as restricting walking to formed tracks.

Propagation

- Establish a small population of Kamarooka Mallee specimens of known provenance at the Bendigo Seed Orchard, managed by Bendigo Environmental Services, from which future material for propagation can be taken, thus relieving naturally occurring populations of further stress.
- Continue to propagate specimens of known provenance, under the Park Ranger's supervision, and consolidate existing populations with properly guarded tubestock.
- Guard isolated individuals, using double thickness tree guards, to minimise browsing.

Erosion Control

- Investigate methods to reduce gully erosion, particularly in gullies containing Kamarooka Mallee.

Road Closures

- Review the system of vehicle tracks and establish if any pose a threat to Kamarooka Mallee populations.

Liaison

- Improve liaison with the Shires of Marong and Huntly in relation to their road works in the area, to minimise weed invasion and disperse runoff from roads.
- Develop an extension program with appropriate incentives for adjacent land holders to encourage them to consider the ramifications of current farming practices on the long-term viability of Kamarooka Mallee.

Protection of Original Populations

- Where appropriate, fence the original, and any newly established, populations on both private, and public land to reduce grazing and to prevent accidental or deliberate disturbance or destruction of Kamarooka Mallee.
- In the Wedderburn area the Kamarooka Mallee on private land will possibly die out as there is no regeneration. However, some stands are reserved in the Wychitella Flora and Fauna Reserve and on roadsides. These roadside populations need to be carefully protected. In particular the local shire and VicRoads need to be consulted with the view to fencing and signposting the roadside populations.

Other Desirable Management Actions

- Continue to search for new populations of Kamarooka Mallee. If others are found they will increase the genetic resource of the species and could be used in a program to create more healthy, genetically diverse populations. Subsequent discoveries would also further contribute to the ecological understanding of the Mon.

Legislative Powers Operating

Legislation

Flora and Fauna Guarantee Act 1988 (Vic): provides for protected flora controls and the protection of critical habitat if so designated.

Planning and Environment Act 1987 (Vic): provides, through the State Section of all planning schemes, protection of native vegetation.

National Parks Act 1975 and Regulations.

Reference Areas Act 1978.

Vermin and Noxious Weeds Act 1958.

Licence/Permit Conditions

A permit for the collection of Kamarooka Mallee seed or any vegetative material will only be given for work that is in accordance with the conservation objectives.

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Consultation and Community Participation

DCE will consult with the local community to ensure the protection of populations on public land, and with the adjacent landholders to foster conservation of the taxon on private land.

Implementation, Evaluation and Review

The regional Manager, Bendigo, will be responsible for coordinating the implementation of this action statement and annual monitoring of the effectiveness of actions taken.

Contacts

Management

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Biology

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Further information

Further information can be obtained from Department of Sustainability and Environment Customer Service Centre on 136 186.

Flora and Fauna Guarantee Action Statements are available from the Department of Sustainability and Environment website: <http://www.dse.vic.gov.au>

References

- Briggs, D. & Leigh, J.H. (1988) *Rare or Threatened Australian Plants*. Special Publication No. 14, Australian National Parks and Wildlife Service, Canberra.
- Bureau of Flora and Fauna (1988) *Flora of Australia* Volume 19, *Myrtaceae, Eucalypts, Angophora*, AGPS, Canberra.
- DCE (1989) *Whipstick Public Lands Proposed Management Plan*. Department of Conservation and Environment, Victoria.
- DSE (2002) Flora Information System (Electronic Flora Database). Parks, Flora & Fauna, Department of Sustainability & Environment, East Melbourne.
- Franklin, D., Lindner, J. & Robinson, J. (1983) *Eucalypts of the Bendigo District*. Bendigo Field Naturalist Club, Bendigo.
- Gullan, P.K., Cheal, D.C. & Walsh, N.G. (1990) *Victorian Rare or Threatened Species*. Department of Conservation and Environment, Victoria.
- Myers, R.D. & Elton, D.J. (1982) *An Assessment of Habitat Significance in the Loddon-Campaspe Region*. Environmental Study Series No. 375. Ministry for Conservation, Victoria.
- Pryor, L.D. (1981) *Australian Endangered Species: Eucalypts*. Special Publication No.5. Aust. Nat. Parks & Wildlife Service Canberra.
- SAC (1991) Final Recommendation on a nomination for listing: *Eucalyptus froggattii* (Nomination no. 79). Scientific Advisory Committee, Flora and Fauna Guarantee. Dept. of Conservation and Environment: Melbourne.