

Action Statement

Flora and Fauna Guarantee Act 1998

No. 231

Wellington Mint-bush *Prostanthera galbraithiae*

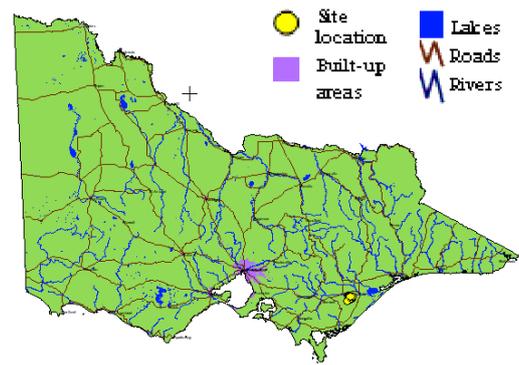
This Action Statement is based on a draft Recovery Plan prepared for this species by DSE under contract to the Australian Government Department of the Environment, Water, Heritage and the Arts.

Description

Wellington Mint-bush (*Prostanthera galbraithiae*) is an erect or spreading shrub, 0.3-2 m tall (Walsh & Entwisle 1999). Young branches have a square-shaped cross-section, and are densely hairy between two faint lateral-running ridges and on nodes; the rest of the branch is hairless (Walsh & Entwisle 1999). The leaves are stalkless, arise in opposite pairs and have a slight aroma when crushed (Walsh & Entwisle 1999). They are linear, narrowly ovate or oblong, ~15 x 2 mm, mid green and mostly hairless (Walsh & Entwisle 1999). Flowers appear from September through to November, and are generally deep mauve to purple with deep mauve to purple spots in the throat. The two upper petals form a hood and the three lower petals form a fan shape. The petals are 7 - 10 mm long; the middle petal of the lower three, however, is broader and longer than each of the two upper petals (Walsh & Entwisle 1999). The stamens have anthers which lack a basal appendage. The surrounding calyx is divided into two lips, the upper lip (curved backwards) grows to 5.5 mm in length. Eight to 24 flowers appear in a leafy, branched inflorescence that may be branched or unbranched.

Distribution

Wellington Mint-bush is restricted to the Holey Plains State Park in the Gippsland Plains in Victoria (Conn 1998). It was previously thought to be extinct from Dutson Downs, but surveys in November 2005 found 300 plants in two populations.



Distribution in Victoria
(Flora Information System DSE 2007)

Abundance

It is estimated that over 1000 individuals exist in 13 populations. The extent of range and abundance of Wellington Mint-bush prior to European settlement is unknown.

Important populations

All populations are likely to be important, but some populations in Holey Plains State Park are likely to be absent at certain times, depending on the period since fire. Important populations necessary to the long term survival and recovery of Wellington Mint-bush occur in the following locations:

<i>Land tenure/reservation</i>	<i>Population and size estimate</i>
Holey Plains State Park:	'Berlin Wall', Red Hill Track (~540 plants)
	Kelly's Track (~20 plants)
	Berminghams Rd (~150 plants)
	Red Hill Track, 3 km east of Kelly's Track (~100 plants)
	Springs Track (~25 plants)
	Between Kelly's and Seldom Seen Track South Boundary Track (no plants seen since 1986 when one plant was recorded)
	South Boundary Track (site not visited in 2002, ~10 - 20 plants seen in 1992)
	Holey Hill (no plants seen since 1986 when one plant was recorded)
	Chessum Rd (1) (no plants seen since 1986 when four plants were recorded)
	Chessum Rd (2) (one plant recorded in 1986 and 2002)
Private Land (managed by Gippsland Water)	Dutson Downs (~300 plants in two populations)

Habitat

Populations of Wellington Mint-bush occur in heathy open forest, heathland and heathy woodland, usually on gravelly sand (Walsh & Entwisle 1999). Commonly associated species include Spike Wattle (*Acacia oxycedrus*), Sweet Wattle (*A. suaveolens*), Silver Banksia (*Banksia marginata*), Sticky Boronia (*Boronia anemonifolia*), Thick Twist-rush (*Caustis pentandra*), Showy Parrot-pea (*Dillwynia sericea*), Burgan (*Kunzea ericoides*), Sandhill Sword-sedge (*Lepidosperma concavum*), Prickly Tea-tree (*Leptospermum continentale*) and/or Heath Tea-tree (*Leptospermum myrsinoides*).

Life history and ecology

Wellington Mint-bush appears to be strongly fire-dependent for germination, and appears to decline in vigour after about ten years. The appropriate fire interval is expected to be approximately 15 years.

Conservation status

National conservation status

Wellington Mint-bush is listed as vulnerable under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*.

Victorian conservation status

Wellington Mint-bush 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 Vascular Plants in Victoria - 2005* (DSE 2005).

Potentially threatening processes

Browsing by native herbivores

Moderate: Pine plantations in the area appear to have promoted increases in wallaby numbers and therefore browsing impacts. Browsing by native herbivores appears to have a greater impact due to higher concentration in smaller populations of <20 plants. Prolonged drought conditions may also contribute to increased grazing pressure due to the palatability of the Wellington Mint-bush.

Inappropriate fire regime

Moderate: Fire intervals less than about ten years may be detrimental. Plants begin to senesce about 15 years post fire (not ten years); flowering peaks at 7-10 years after fire.

Drift from aerial herbicides

Low: Drift from aerial herbicides, used in nearby pine plantations, appears to be damaging some populations.

Firebreak works

Moderate: Further firebreak works may threaten some sites. Disturbance from maintenance of firebreaks and road-works, however, has ensured the survival of some isolated populations in the absence of fire.

Previous management action

- Field inspections and population counts have been conducted, and sites have been entered on the Flora Information System database

Dutsons Downs

- Parks Victoria has liaised with Gippsland Water about locating populations and identifying the species.

Long term objective

To ensure that the Wellington Mint-bush 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. Conduct detailed field and desk top surveys 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).▪ Target populations accurately mapped.	DSE, Parks Victoria
2. Assess habitat characteristics and/or condition. Accurately survey known habitat, and collect and analyse floristic and environmental information relevant to community ecology and condition.	<ul style="list-style-type: none">▪ Requirements for the completion of essential life history stages, recruitment and dispersal identified at known sites.▪ Core habitat mapped.	DSE, Parks Victoria
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, Parks Victoria
4. 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 the ten known populations within Holey Plains State Park.	DSE, Parks Victoria
5. 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.	<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	DSE

Holey Plains State Park

- Approximately two thirds of the species' distribution in the Holey Plains State Park has been mapped.
- The species' response to past fuel reduction and wildfires has been documented, and its fire response has been discussed with the Royal Botanic Gardens.
- Two big populations in areas of past soil disturbance have been documented.
- The species' life cycle has been observed (plants die after about 18 years and seeds are short-lived).
- Potential threat from wallaby-grazing on new seedlings has been observed.

	reproduction and survival.	
6. 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. ▪ Population growth rates determined. ▪ Population Viability Analysis completed for targeted populations. 	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. Negotiate appropriate management agreement with a public authority. Negotiate a Public Authority Management Agreement, including agreement for cessation of stock grazing, with Gippsland Water for the Dutson Downs site.	<ul style="list-style-type: none"> ▪ Agreement established. 	DSE, Gippsland Water
8. Erect / maintain signs to restrict or discourage access. Control damage resulting from firebreak slashing by installing appropriate signage. Erect appropriate conservation signage at the 'Berlin Wall', Red Hill Track and Red Hill Track, 3 km east of Kelly's Track sites to inform firebreak contractors / workers of the presence of those populations.	<ul style="list-style-type: none"> ▪ Measurable seedling recruitment / vegetative regeneration and a measurable reduction in plant mortality at relevant sites. 	DSE, Parks Victoria
9. Establish cultivated plants <i>ex situ</i> to safeguard from the unforeseen destruction of the wild population.	<ul style="list-style-type: none"> ▪ Development of effective propagation and cultivation techniques. ▪ At least 25 mature plants in cultivation. 	DSE, Royal Botanic Gardens
10. Liaise with private landholders. Ensure that information and advice about the recovery of Wellington Mint-bush has been provided to Gippsland Water.	<ul style="list-style-type: none"> ▪ All relevant private land managers are aware of the species and its management needs. 	DSE
11. Liaise with government agencies. Ensure that information and advice about the recovery of Wellington Mint-bush 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 III To improve the condition of habitat

<i>Action</i>	<i>Targets</i>	<i>Responsible</i>
12. Manage the inappropriate use of pesticide/herbicides and non-target impacts. Reduce herbicide drift by negotiating alternative herbicide spraying practices with local pine plantation managers	<ul style="list-style-type: none"> ▪ Alternative procedures negotiated and adopted. ▪ No significant impact from spray drift observed for Wellington Mint-bush populations. 	DSE, Parks Victoria

13. Erect /maintain cages, fences or other structures to exclude native animals. Erect fencing to exclude native herbivores. Monitor wallaby abundances at Holey Plains populations and implement suitable measures to reduce browsing impact if browsing has significant detrimental effects on a population.	<ul style="list-style-type: none"> ▪ Enclosures erected. ▪ Measurable reduction in herbivory achieved. 	DSE, Parks Victoria
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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"> ▪ 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
16. Identify potential sites for reintroduction / translocation. Select and evaluate suitable translocation sites that are ecologically and biologically suitable, have secure land tenure and are managed appropriately.	<ul style="list-style-type: none"> ▪ Criteria for site suitability identified and site selected. The Dutson Downs site may be an appropriate site for reintroduction/ translocation of Holey Plains stock. ▪ Translocation plan prepared. 	DSE
17. Establish and maintain a reintroduced / translocated population. Prepare site(s) to achieve maximum survival of translocated plants and implement translocation plan. Establish a minimum population size of cultivated plants. Maintain and monitor translocated plants.	<ul style="list-style-type: none"> ▪ Development of successful translocation techniques. ▪ Maintain at least 20 plants in cultivation that are representative of important populations, disease free and vigorous. ▪ At least 30% survival of translocated plants. 	DSE, Royal Botanic Gardens

Objective V To increase community awareness and support

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

References

- Conn, B.J. (1998) Contributions to the systematics of *Prostanthera* (Labiatae) in south-eastern Australia, *Telopea* 7(4): 319 - 331.
- DSE (2005) *Advisory List of Rare or Threatened Vascular Plants in Victoria - 2005*. Department of Sustainability and Environment, East Melbourne, Victoria.
- Walsh, N.G. and Entwisle, T.J. (1999) *Flora of Victoria, Volume 4. Dicotyledons Cornaceae to Asteraceae*, Inkata Press, Melbourne.

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