

Action Statement

Flora and Fauna Guarantee Act 1988

No. 205

Aniseed Boronia

Boronia galbraithiae

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.

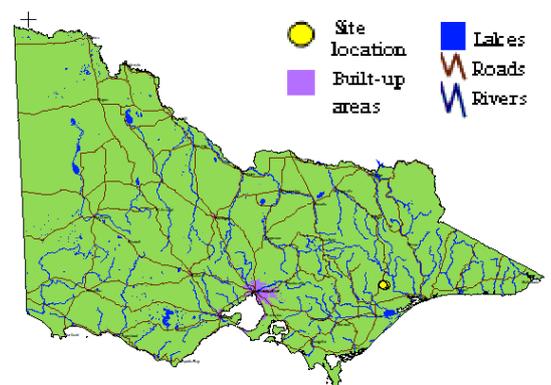
Description

Aniseed Boronia (*Boronia galbraithiae*) is a fennel-scented glabrous shrub, to about 1 m tall (rarely to 2 m) with 4-angled branches (Albrecht & Walsh 1993). The leaves are opposite and divided into 5 - 11 elliptic leaflets, to 8 x 3 mm (DNRE 2001). The leaflet margins are finely toothed. The midrib is not as prominent as in some other species of *Boronia* (Walsh & Entwisle 1999). White to deep pink flowers, up to 15 mm wide, appear in the leaf axils in spring (Walsh & Entwisle 1999). The sepals are ovate, deltoid, glabrous, 1 - 2 mm long, and overlap each other in bud (Walsh & Entwisle 1999). The petals, 4.5 - 8 mm long, also overlap each other in bud. The shiny black seeds are 2 - 2.5 mm long (Walsh & Entwisle 1999).

Boronia galbraithiae may be distinguished from the closely related Forest Boronia (*Boronia muelleri*) by its consistently shorter leaflets (<10 mm compared to >10 mm in *Boronia muelleri*), which have a different shape (oblanceolate to narrowly obovate compared to elliptic in *B. muelleri*) and serrulate margins (leaf margins are normally entire in *B. muelleri*) (Albrecht & Walsh 1993). *Boronia muelleri* is also generally much taller than *Boronia galbraithiae*, growing up to 7 m tall (Albrecht & Walsh 1993), and tends to prefer moister and more sheltered habitat (Albrecht & Walsh 1993). Furthermore, the odour of vegetative parts in the two species is distinctly different due to differences in the chemical composition of the leaf oils.



Aniseed Boronia (Photo: Eichler)



Distribution in Victoria
(Flora Information System DSE 2007)

Distribution

Aniseed Boronia is a Victorian endemic, and occurs in elevated, dry open-forest sites on skeletal spurs and upper slopes and a rocky streamside locality between Stockdale and Dargo (Walsh & Entwisle 1999), over a range of approximately 5 km. Sites occur from ~213 – 540 m above sea level (Albrecht and Walsh 1993; N. Walsh pers. obs.).

Abundance

It is estimated that 2,700-2,900 individuals exist. These plants occur in three populations.

Important populations

Important populations necessary to the long term survival and recovery of Aniseed Boronia occur in state forest in the Gippsland Forest Management Area:

- Insolvent Track (southern population): (300-500 plants)
- Insolvent Track (northern population): (~2000 plants)
- Howard's Road: (~400 plants)

Habitat

Populations of Aniseed Boronia occur in dry, tall, open sclerophyll forest, usually dominated by Silvertop Ash (*Eucalyptus sieberi*), with co-dominant Yellow Stringybark (*E. muelleriana*), Mountain Grey-gum (*E. cypellocarpa*), Red Box (*E. polyanthemos*) and/or Broad-leaved Peppermint (*E. dives*). Associated sub-strata species typically include, but are not restricted to, Mountain Hickory Wattle (*Acacia obliquinervia*), Blue Dampiera (*Dampiera stricta*), Hop Bitter-pea (*Daviesia latifolia*), Erect Guinea-flower (*Hibbertia riparia*), Silver-top Wallaby-grass (*Joycea pallida*), and Rough Bush-pea (*Pultenaea scabra*). Many other shrubs and herbaceous plants are also usually present. Interestingly, the largest population of *Boronia galbraithiae* occurs on a dry ridge-top, the other two known populations occur in sub-riparian and moist forest habitats.

Life history and ecology

Following fire, at least that of low to moderate intensity, Aniseed Boronia will regenerate from rootstock as well as from seed (Albrecht & Walsh 1993). This was observed after fire at the Insolvent Track populations (Albrecht & Walsh 1993).

Conservation status

National conservation status

Aniseed Boronia is listed as vulnerable under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*.

Victorian conservation status

Aniseed Boronia 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).

Decline and threats

Current threats/perceived risk

Inappropriate biomass reduction/fire regimes

Low: Plants resprout or regenerate from seed, but short fire intervals (<8 year interval) may be a threat to this species.

Road works

Generally low: Road works threaten roadside plants only, but one population (Howard's Road) has a linear distribution and occurs close to a track.

Localised distribution

Moderate: The range of all populations is only a few kilometres – a large stochastic event could destroy all populations.

Potential threats/perceived risk

Inappropriate biomass reduction / fire regimes

Low: Plant may resprout or seed after low-intensity fire, but hot fires in short succession would be threatening

Logging associated activities

Low: No evidence of recent logging. Logging associated activities, however, such as harvesting of local timber not suitable for sawlogs, may threaten populations.

Previous management action

- Field inspections and population counts have been conducted.
- Populations have been mapped.
- Sites have been entered on Flora Information System (FIS).
- Special Protection Zones have been identified for state forest.
- Research has been undertaken into ecological and environmental requirements.
- Threats and habitat quality have been assessed.
- Fire monitoring project has been established to investigate response of Boronia to fire.

Long term objective

To ensure that the Aniseed Boronia 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

<i>Action</i>	<i>Targets</i>	<i>Responsible</i>
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 (FIS, VROTPop and Herbarium). ▪ Accurate information and maps of all population locations. 	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 identified for the completion of essential life history stages, recruitment and dispersal. 	DSE
3. Conduct survey to locate suitable habitat. Identify and survey potential/ historical 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. 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 target 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>
6. Develop management prescriptions and/or zoning for state forest.	<ul style="list-style-type: none"> ▪ Negotiate Special Protection Zones in state forest at Insolvent Track (northern and southern populations) and Howard's Road sites if required. 	DSE
7. Erect/maintain signs to restrict or discourage access. Control threats from accidental damage	<ul style="list-style-type: none"> ▪ Measurable seedling recruitment or vegetative regeneration and 	DSE

	using appropriate signage.	measurable reduction in plant mortality at Insolvent Track (northern and southern populations) and Howard's Rd sites.	
		<ul style="list-style-type: none"> Installation of appropriate signage at Insolvent Track (northern and southern populations) and Howard's Rd sites. 	
8.	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 tissue culture techniques developed. At least 30 (10 different genotypes per population) mature plants in cultivation. 	DSE, Royal Botanic Gardens
9.	Liaise with private landholders. Ensure that information and advice about the recovery of <i>Boronia galbraithiae</i> 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
10.	Liaise with government agencies. Ensure that information and advice about the recovery of <i>Boronia galbraithiae</i> 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>
11. Undertake disturbance activities to maintain habitat and/or manage biomass.	<ul style="list-style-type: none"> Preparation of management prescriptions for ecological burning at Insolvent Track (northern and southern populations) and Howard's Rd sites. 	DSE

Objective IV To increase the number of populations or individuals

<i>Action</i>	<i>Targets</i>	<i>Responsible</i>
12. 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
13. 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>
14. Involve community groups and volunteers in recovery activities.	<ul style="list-style-type: none"> Opportunities for involvement identified, promoted and supported. 	DSE

References

- Albrecht, D.E. & Walsh, N.G. (1993) Two new species of *Boronia* (Rutaceae) endemic in Victoria, *Muelleria*, 8(1): 21-25.
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- Walsh, N.G. & Entwisle, T.J. (1999) *Flora of Victoria Volume 4: Dicotyledons: Cornaceae to Asteraceae*, Inkata Press, Melbourne.

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