

Action Statement

Flora and Fauna Guarantee Act 1988

No. 206

Ben Major Grevillea *Grevillea floripendula*

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

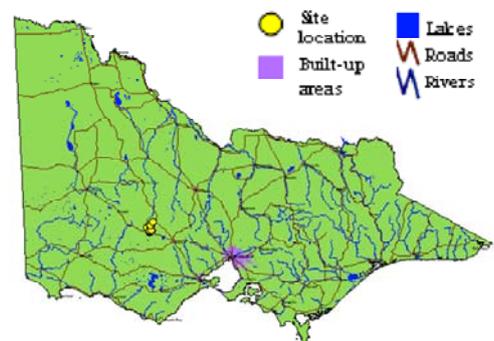
Ben Major Grevillea (*Grevillea floripendula*) is a prostrate to decumbent to spreading shrub, 0.1 – 1.0 m tall (Walsh & Entwisle 1996). Leaves are ovate in outline, 20 – 65 mm long and 15 – 40 mm wide, usually pinnatisect to pinnatifid (rarely simple), with 2– 9 angular-obovate lobes each ending in a spine. The upper surface is bright to dull green, glabrous or slightly hairy with shortly recurved margins (Walsh & Entwisle 1996). The lower surface is light green with a sparse covering of curly to wavy hairs (Walsh & Entwisle 1996). Conflorescences are terminal, usually pendulous, second 30 – 55 mm long. Peduncles are slender, wiry, glabrous or slightly pubescent. The rachis is pubescent. The external surface of the perianth is green to mauve and covered loosely with silky to woolly hairs. The internal surface is mauve to maroon or blackish in colour. The pistil is 13.5 – 16 mm long, pale yellow, green-yellow, or pink to red (Walsh & Entwisle 1996). The ovary is stipitate and densely villous. The style is hairy at the base, and the pollen presenter is oblique. The fruits have longitudinal brown bands and are covered in small silky hairs (Walsh & Entwisle 1996).

This species is distinguished from the related Brisbane Range Grevillea (*Grevillea steiglitziana*) and Goldfields Grevillea (*Grevillea dryophylla*) by its slender, wiry and glabrous peduncles (Walsh & Entwisle 1996). Olde & Marriott (1995) identified two forms:

- Ben Major form, which has a sprawling mostly prostrate habit, and leaves that are shallowly divided; its flowers have a red tinge, and is restricted to Ben Major State Forest;
- Musical Gully form, which grows to 1 m tall and is more shrubby, leaves are more deeply divided and flowers are variable in colour.



Ben Major Grevillea (Photo: DSE/McCann)



Distribution in Victoria
(Flora Information System DSE 2007)

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Distribution

Ben Major Grevillea is restricted to a small area north of Beaufort (approximately 160 km west of Melbourne), from Waterloo to Ben Major Forest (Walsh & Entwisle 1996).

Abundance

It is estimated that approximately 4000 individuals exist. These plants occur in 21 populations. This estimate is based on VROTPop database records taken in 1997. Changes in population sizes since 1997 are unknown. The extent of range and abundance of Ben Major Grevillea prior to European settlement is unknown.

Habitat

Populations of Ben Major Grevillea occur in dry open-forest, on shallow quartzitic soils (Walsh & Entwisle 1996). Associated overstorey species include *Eucalyptus goniocalyx*, *Eucalyptus aromaphloia* and/or *Eucalyptus macrorhyncha*. *Daviesia leptophylla*, *Dianella revoluta*, *Epacris impressa*, *Joycea pallida*, *Lomandra sororia* and/or *Poa sieberiana* var. *sieberiana* are associated in lower strata.

Important populations

Populations important for long-term persistence of *Grevillea floripendula* have not been formally determined but include those that take in the genetic range of the species (see Table 1 below). For example, geographic isolates and populations at the edge of geographic range tend to be important sources of genetic variability within a species. Such information for this species has not been collected and is given as a high priority action in this Action Statement. Until that action is complete, important populations are determined to be those that are of high abundance, or occur in protected reserves. Those populations tend to be less threatened and are probably more likely to persist in the long-term given their legal protection.

Other populations tend to occur on roadsides and/or contain fewer plants (i.e. four populations contain 175 plants and eleven populations contain less than 50 plants). Some of these sites may contain important genotypes however, and their condition, likelihood of persistence and genetic composition should be determined.

Life history and ecology

Important populations of *Grevillea floripendula* tend to occur in largely intact vegetation, where inappropriate burning regime is likely to be the major threat. Little is known of the biology of the species; other related *Grevillea* species may germinate after fire or resprout from basal stems. Anecdotal evidence suggests that this species is an obligate seed regenerator, with new individuals appearing after fire. Recruitment in intervening years between fires has also been observed, suggesting some other disturbance event (eg. Echidna digging) may cue germination (J. Downe pers. obs.). *Grevillea floripendula* is likely to be bird-pollinated (e.g. Eastern-Spinebill (*Acanthorhynchus tenuirostris*)), and important habitat for any identified pollinator needs to be considered. For example, the minimum fire interval tolerated by *Grevillea floripendula* may not be tolerated by the pollinator.

Conservation status

National conservation status

Ben Major Grevillea is listed as vulnerable under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*.

Victorian conservation status

Ben Major Grevillea 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).

Table 1 Important populations of the Ben Major Grevillea

Ben Major Flora Reserve	Big Hill Rd 1 (~375 plants recorded in 1997, including many seedlings)
	Big Hill Rd 2 (~750 plants recorded in 1997, including many seedlings)
	Amphitheatre Rd (~175 plants recorded in 1997, including many seedlings)
	Grevillea Track (~175 plants recorded in 1997)
Roadsides (Shire of Pyrenees)	Wildlife Rd (~750 plants recorded in 1997, including many seedlings)
	Sheisa Lane (~750 plants recorded in 1997; some seedlings observed with small proportion of the site burnt 2-3 years earlier)

Decline and threats

Current threats/perceived risk

Inappropriate biomass reduction / fire regimes

Moderate: Sites lacking recruitment tend to be those unburnt for more than 10 years. Appropriate fire interval for *Grevillea floripendula* is expected to be around 8-10 years.

Weed invasion

Low: Sites with low abundance of *Grevillea floripendula* tend to be on infrequently burnt roadsides that are heavily weed infested.

Timber harvesting / Firewood collection

Moderate: Activities associated with timber harvesting and firewood collection pose a threat to all populations, even those within Special Protection Zones, where such practices are illegal but continuing.

Reservation status

Moderate: Only 4 of 21 known populations occur in formal reserves.

Potential threats/perceived risk

Road works

Moderate: Many populations occur close to roads and tracks, and may be prone to physical damage from grading or other track maintenance. However, certain grading methods may actually facilitate resprouting of some plants.

Defoliation by insects

Low: Plants in some populations demonstrate high levels of leaf damage and defoliation, apparently by *Grevillea* Leaf Miner (N Marriott pers comm.).

Fossicking

Low: Gold fossicking in the area is common, and may cause trampling of some plants.

Previous management action

- Weed control undertaken
- Liaison undertaken with Glenelg Hopkins Catchment Management Authority regarding flora recovery actions.

Long term objective

To ensure that the Ben Major *Grevillea* 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 1 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 (FIS, VROTPop and Herbarium).▪ Populations accurately mapped.	DSE
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">▪ 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	<ul style="list-style-type: none">▪ Seed bank/regenerative potential quantified for target populations.▪ Stimuli for recruitment/regeneration	DSE Royal Botanic Gardens

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.	identified.	
	<ul style="list-style-type: none"> ▪ Management strategies identified to maintain, enhance or restore regenerative processes fundamental to reproduction and survival. 	
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. ▪ 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>
6. Negotiate MOU or appropriate management agreement for public land. Negotiate formal management agreements regarding the Wildlife Rd and Sheisa Lane sites	<ul style="list-style-type: none"> ▪ Formal management agreements made for Wildlife Rd and Sheisa Lane sites. 	DSE
7. Erect/maintain structures to restrict or control access. Control threats from accidental damage from road works by fencing sites.	<ul style="list-style-type: none"> ▪ Measurable reduction in plant mortality at Ben Major Flora Reserve (i.e. Big Hill Rd 1, Big Hill Rd 2, Amphitheatre Rd and Grevillea Track), and Wildlife Rd and Sheisa Lane sites. 	DSE, Parks Victoria Pyrenees Shire
8. Erect/maintain signs to restrict or discourage access. Control threats from accidental damage from road works by erecting appropriate conservation signage	<ul style="list-style-type: none"> ▪ Measurable reduction in plant mortality at Ben Major Flora Reserve (i.e. Big Hill Rd 1, Big Hill Rd 2, Amphitheatre Rd and Grevillea Track), and Wildlife Rd and Sheisa Lane sites. 	DSE, Parks Victoria Pyrenees Shire
9. Establish cultivated plants ex situ to safeguard from the unforeseen destruction of the wild population	<ul style="list-style-type: none"> ▪ Effective propagation and cultivation techniques developed. ▪ At least 25 mature plants in cultivation. 	Royal Botanic Gardens
10. Liaise with private landholders. Ensure that information and advice about the recovery of Ben Major Grevillea 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
11. Liaise with government agencies. Ensure that information and advice about the recovery of Ben Major Grevillea 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 environmental weeds. Control threats from pest plants using application of herbicide or hand removal	<ul style="list-style-type: none"> ▪ Measurable seedling recruitment or vegetative regeneration at Ben Major Flora Reserve and Wildlife Rd and Sheisa Lane sites. 	DSE, Parks Victoria Pyrenees Shire

13. Undertake disturbance activities to maintain habitat and/or manage biomass	<ul style="list-style-type: none"> Preparation of management prescriptions for ecological burning at Ben Major Flora Reserve (i.e. Big Hill Rd 1, Big Hill Rd 2, Amphitheatre Road and Grevillea Track), and Wildlife Road and Sheisa Lane sites. 	DSE
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Objective IV To increase the number of populations or individuals

Action	Targets	Responsible
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

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

References

- DSE (2005) *Advisory List of Rare or Threatened Plants in Victoria - 2005*. Department of Sustainability and Environment, East Melbourne, Victoria.
- Olde, P.M. & Marriott, N.R. (1995) *The Grevillea Book, vol. 2*, Kangaroo Press, Kenthurst, New South Wales.
- Walsh, N.G. & Entwisle, T.J. (1996) *Flora of Victoria Volume 3: Winteraceae to Myrtaceae*, Inkata Press, Melbourne.

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