

Action Statement

Flora and Fauna Guarantee Act 1988

No. 99

Gully Grevillea *Grevillea barklyana*

Description and Distribution

Gully Grevillea *Grevillea barklyana* (F. Muell. ex Benth.), also known as Large-leaf Grevillea, is a medium to tall sprawling shrub (1-3m high), or occasionally a small tree (up to 10m high), with alternately arranged highly variable leaves (either oblong or multi-lobed, often pointed). Lobed leaves are dominant on juvenile plants whereas mature plants appear to have predominantly oblong leaves. Both leaf types are smooth, dark green on top and finely pubescent, pale green-whitish below; venation is prominent (Costermans 1986, 1994; Walsh and Entwisle 1996). Young growth is bronze in colour and silky in texture. Flowers are pink to red, arranged in numerous one-sided brush-like structures (racemes) 50-100mm long. Flowering occurs from October to December (Costermans 1986, 1994).

Gully Grevillea is endemic to Victoria and is confined to an area of about 50 km² of State Forest and State Park in the Tarago River headwaters, and tributaries of the Bunyip River within the Bunyip State Park in West Gippsland. It is found in moist gullies and on slopes, particularly those with a southerly aspect, dominated by Silver Wattle *Acacia dealbata*, Messmate *Eucalyptus obliqua*, Silvertop

E. sieberi and/or Mountain Ash *E. regnans* (Costermans 1986, 1994; Morey *pers. obs.*).

Approximately half of the known area of its distribution occurs in the eastern section of the Bunyip State Park.

A closely related species of Gully Grevillea, *Grevillea macleayana*, is found on the south coast of New South Wales (Harden 1991, P. England *pers. com.*), and until recently was considered a



Gully Grevillea, *Grevillea barklyana*
(flower and leaves x0.5, illustration by Mali Moir)



Distribution in Victoria
[from Flora Information System, NRE 1998]

subspecies of *G. barklyana* (Olde and Marriott 1994).

Conservation Status

Current status

ANZECC (1999) Rare (Australia)

NRE (1998) Rare (Victoria)

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

Reasons for conservation status

In its final recommendation, the Scientific Advisory Committee (SAC 1991) determined that the Gully Grevillea is:

- significantly prone to future threats which are likely to result in extinction, and
- very rare in terms of abundance or distribution.

Major Conservation Objective

Maintain the current number and distribution of populations over its current range, ensuring natural regeneration occurs in each population

Management Issues

Ecological issues specific to the taxon

Gully Grevillea has a very limited distribution in Victoria, centred around the upper catchments of the Tarago and Bunyip Rivers, although suitable conditions appear to be present throughout much of the Central Highlands. Within its range, the species is locally very common, and in some areas is dominant in the understorey. It is not restricted to gullies, as its name implies, but also grows on slopes and lower spurs throughout its distribution. The entire area over which Gully Grevillea is currently found was burnt by wildfire in 1939.

Like other species of Grevillea, Gully Grevillea is an obligate seeder. That is, it requires fire to initiate germination, from a soil seed bank rather than re-sprouting (Morey *pers obs*). There is no canopy storage of seed. Studies by Vaughton (1998) of *G. macleayana* (previously known as *G. barklyana macleayana*) near Jervis Bay NSW, indicate a low fruit:flower ratio, and a decline in fruit production in older populations. It is estimated that fruit set is only 1%. Predation by insects and parrots result in up to 40% pre-dispersal seed loss with ground mammals consuming up to 100% of ground seed.

It is not known whether regeneration from seed is from the current year's seed crop or from an accumulated viable seed bank.

Wider conservation issues

Gully Grevillea can be propagated from cuttings or seed and because of its ornamental qualities, is sometimes sold at "specialty" nurseries for domestic planting (I. Starkey *pers. comm.*).

There is currently no evidence that seed or cutting collection from wild populations is a threat to its survival.

Social and economic issues

Timber harvesting is undertaken over much of the range of Gully Grevillea, particularly within the Tarago catchment. 10 740m³ of sawlog and 32 754m³ of pulpwood worth a total of \$679 180 was removed from 84ha in the Tarago River catchment in 1996/97 (O. Salkin *pers comm*).

The current method of timber harvesting is by clearfelling, whereby all harvestable timber, both sawlog and pulpwood, is removed from the coupe. Clearfelling results in the destruction of virtually all vegetation within the coupe, either during harvesting or during the burning of debris after harvesting.

If timber harvesting were restricted within Gully Grevillea habitat, additional areas would have to be found to satisfy Departmental timber licence commitments, thereby placing greater pressure on other available harvesting areas to meet timber quotas (sawlog and pulpwood volumes) to industry.

The public have unrestricted access to the Grevillea Reserve within the Bunyip State Park, where the species is present. Public access and visitation does not currently appear to be a threat to the survival of this population.

Previous Management Action

The Labertouche Wildflower Reserve was set up under Section 50 of the Forests Act in 1963, to protect a representative stand of Gully Grevillea (as well as Forest Boronia *Boronia muelleri* and Grasree *Xanthorrhoea australis*). This reserve was incorporated into the Bunyip State Park, which was formally gazetted in 1992 (P. Fitzsimons *pers. comm.*).

Current regional harvesting prescriptions do not allow logging operations within 20 m of rivers or streams. Ten metre wide filter strips apply to non-permanent water courses, where logging is permitted, but machinery movement is not allowed. Greater distances may apply in certain situations (e.g. wildlife corridors, Special Protection Zones etc). These prescriptions assist in protecting *Grevillea barklyana* within riparian environments and Special Protection Zones.

In October 1994, four monitoring plots were established in an unlogged but scheduled coupe

that was subsequently harvested between December 1994 and February 1995. The number of Gully Grevillea in each plot was recorded pre-logging; post-logging and pre-burn, and 12 months and 24 months post-burn. The data so far indicate that Gully Grevillea regenerates prolifically from seed after fire, with an average of 4 plants per 10m² pre-logging and an average of 107 plants per 10m² 24 months post-regeneration burn (J. Morey *unpubl. data*).

Intended Management Action

Monitoring

1. Continue to measure monitoring plots established in 1994 at least biennially. Collect data to ascertain age of plants at first flowering and at viable seed production.

Soil-stored seed viability

2. Investigate viability of accumulated soil seed banks. If current year's seed crop only is capable of germination, coupes containing Gully Grevillea should only be logged after the current year's seed crop has matured and fallen.

Mapping of sites

3. Map and record distribution of Gully Grevillea through-out the Bunyip and Tarago catchments, concentrating initially on Special Protection Zones and State Park occurrences.

Regeneration

4. Inspect previously logged coupes within the Grevillea's distribution for regeneration of the species. If no regeneration is observed, attempt to ascertain reasons.
5. Establish plots within the Grevillea Reserve in the Bunyip State Park to monitor natural regeneration.
6. Investigate methods of post-harvest coupe regeneration which maintain levels of abundance.
7. Monitor Gully Grevillea regeneration in future logging coupes.

Timber harvesting prescriptions

8. Modify timber harvesting techniques and/or forest management prescriptions if current methods prove to be detrimental to the regeneration, abundance or distribution of Gully Grevillea.

Other Desirable Action

9. Investigate biology and ecology of species, especially seeding, regeneration and response

to disturbance, and incorporate findings into conservation management of species.

Legislative Powers Operating

Legislation

Catchment and Land Protection Act 1994 - provides for the integrated management and protection of catchments, community participation in the management of land and resources, and the control of noxious weeds and pest animals.

Conservation Forests and Lands Act 1987 - provides for the management of public land under the Act, the coordination of legislation administered by NRE and for the preparation of codes of practice.

Crown Land (Reserves) Act 1978 - Provides for reserving areas as public land and for making a specific reservation status for existing public land

Flora and Fauna Guarantee Act 1988 - provides for the protection of flora and fauna in Victoria through a range of mechanisms including controls over the handling of protected flora and listed fish.

Forests Act 1958 - Provides for the management of forests, and includes controls over the taking of forest produce.

National Parks Act 1975 - provides for the preservation, protection and management of natural areas and includes controls over the taking native of flora and fauna from parks.

Licence/permit conditions

Permits for taking or collecting will only be issued for the purposes of research, which will provide information useful for the protection and management of the species or propagation purposes.

Consultation and Community Participation

Consultation with experts from universities, along with Flora and Fauna staff from NRE was undertaken before and during the preparation of this Action Statement.

Implementation, Evaluation and Review

The Regional Managers in Gippsland and Port Phillip Regions where the Gully Grevillea occurs will coordinate the implementation of this action statement. Primary responsibility for implementation and assessment of the effectiveness of the management actions lie with the Flora and Fauna Fisheries Managers. The appropriate Catchment Management Authorities will be kept informed of progress in the implementation of this Action Statement.

In line with the major conservation objectives, the results of monitoring will be assessed, and this Action Statement will be reviewed, in 2004.

Contacts

Personal Communications

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I. Starkey, Koorooman Native Flora Nursery, Leongatha.

Management

Flora and Fauna Co-ordinator, DSE Traralgon.

Flora, Fauna and Fisheries Planner, DSE Noojee.

Chief Ranger, Bunyip State Park, Gembrook.

Forester in Charge, DSE Noojee.

Flora and Fauna Program, DSE Melbourne.

Biology

Neville Scarlett, botanist, La Trobe University.

John Davies, botanist, NRE Warragul.

Neville Walsh, botanist, National Herbarium, Melbourne.

References

- ANZECC (1999) *Threatened Australian Flora*. List prepared by the Endangered Flora Network for the Australian and New Zealand Environment and Conservation Council.
- Costermans L. (1986) *Native Trees and Shrubs of South - Eastern Australia*. Rigby Press. NSW. p. 162.
- Costermans, L. (1994) *Trees of Victoria and Adjoining Areas*. Costermans Publishing. Victoria. p. 23.
- Harden, G. J. (1992) (ed.) *Flora of New South Wales* 2: 42. University of NSW Press.
- NRE (1998) *The Victorian Flora Information System Spring 1998 edition* (electronic flora database). Flora and Fauna Program, Department of Natural Resources and Environment, Heidelberg.
- Olde, P.M. & Marriott N.R. (1994) *The Grevillea Book, Vol. 1*. Kangaroo Press, Kenthurst, NSW.
- SAC (1991) Final recommendation on a nomination for listing: Gully Grevillea *Grevillea barklyana*, (Nomination No. 39). Flora and Fauna Guarantee. Department of Conservation and Natural Resources, Melbourne.
- Vaughton, G. (1998) Soil seed bank dynamics in the rare obligate seeding shrub, *Grevillea barklyana* (Proteaceae). *Aust. J. Ecology* 23: 375-84.
- Walsh, N. G. & Entwisle, T. J.[eds] (1996) *Flora of Victoria. Vol. 3 - Dicotyledons: Winteraceae to Myrtaceae*. Royal Botanic Gardens. Inkata Press, Melbourne. pp: 861-2.

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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>

This Action Statement was first published in 2000 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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