

Approved Conservation Advice
(s266B of the *Environment Protection and Biodiversity Conservation Act 1999*)

Approved Conservation Advice for
***Grevillea batrachioides* (Mt Lesueur Grevillea)**

This Conservation Advice has been developed based on the best available information at the time this Conservation Advice was approved; this includes existing plans, records or management prescriptions for this species.

Description

Grevillea batrachioides, Family Proteaceae, also known as Mt Lesueur Grevillea, is an upright shrub to 2 m tall that has rounded hairy branchlets. Leaves are about 15 mm long, stiff and divided into 3–5 narrow lobes which may then be further divided. Leaf margins are rolled under leaving only the midrib exposed, and have spreading hairs beneath. Flowers are creamy-pink to deep red, occurring in simple inflorescences (flower clusters) at the ends of branchlets. Flowers are 3–4 mm wide, dilated at the base, hairy outside with few hairs inside, and with stalks 12–13 mm long. The species flowers from September to October (Olde & Marriott, 1995; Brown et al., 1998; Makinson, 2000; Western Australian Herbarium, 2008).

Mt Lesueur Grevillea is closely related to *Grevillea maxwellii* (Maxwell's Grevillea), which has longer leaves and larger flowers, and *Grevillea asparagoides*, which has shorter flower stalks and longer leaves (Olde, 1996; Brown et al., 1998).

Conservation Status

Mt Lesueur Grevillea is listed as **endangered**. This species is eligible for listing as endangered under the *Environment Protection and Biodiversity Conservation Act 1999* (Cwlth) (EPBC Act) as, prior to the commencement of the EPBC Act, it was listed as endangered under Schedule 1 of the *Endangered Species Protection Act 1992* (Cwlth). The species is also listed as rare (declared rare flora – extant) under the *Wildlife Conservation Act 1950* (Western Australia).

Distribution and Habitat

Mt Lesueur Grevillea is known from a single population within Lesueur National Park, north-north-east of Cervantes in south-west Western Australia. This population consists of 45 adult and 13 juvenile plants (Stack & English, 2002). Despite many searches of what appears to be suitable habitat, no further populations have been found. The Kings Park Botanic Garden and Parks Authority (BGPA) has cultivated Mt Lesueur Grevillea (Stack & English, 2002).

The species grows on flat sandstone outcrops in brown sandy loam on north-west facing slopes, below a breakaway (Olde & Marriott, 1995; Olde, 1996; Brown et al., 1998; Makinson, 2000; Stack & English, 2002; Western Australian Herbarium, 2008). It inhabits low dense heath with open woodland of mallee and emergent *Banksia tricuspis* (Brown et al., 1998). This species occurs within the Northern Agricultural (Western Australia) Natural Resource Management Region.

The distribution of this species is not known to overlap with any EPBC Act-listed threatened ecological communities.

Threats

The main identified threats to the single population of Mt Lesueur Grevillea are inappropriate fire regimes and recreational activities (Olde, 1996; Brown et al., 1998; Stack & English, 2002). This species is likely to be an obligate seeder or resprout epicormically (Olde, 1996;

Brown et al., 1998). A single, intense fire could cause extinction of the only known population and too frequent fire would probably deplete the soil bank (Olde, 1996). As the only known population occurs within a scenic area in a National Park, it is also susceptible to trampling by visitors (Stack & English, 2002).

The main potential threats to Mt Lesueur Grevillea include vegetation clearing; increasing fragmentation; dieback caused by *Phytophthora cinnamomi*; and changed fire regimes (May & McKenzie, 2003). Dieback caused by *Phytophthora cinnamomi* is known from Lesueur National Park. Mt Lesueur Grevillea may be susceptible to this pathogen, or may be impacted by changes to vegetation structure as a result of the pathogen.

Research Priorities

Research priorities that would inform future regional and local priority actions include:

- Design and implement a monitoring program or, if appropriate, support and enhance existing programs.
- More precisely assess distribution, ecological requirements and the relative impacts of threatening processes.
- Undertake survey work in suitable habitat and potential habitat to locate any additional populations/occurrences/remnants. Searches for new populations should focus on Lesueur National Park (Brown et al., 1998).
- Investigate the reasons for low seed production (Stack & English, 2002).
- Study the soil seed bank dynamics and the role of various factors including disturbance (such as fire), competition, rainfall, grazing in recruitment, and seedling survival (Stack & English, 2002).
- Determine reproductive strategies, pollination biology, phenology, and seasonal growth.
- Investigation of population genetic structure, levels of genetic diversity, and minimum viable population size (Stack & English, 2002).

Regional and Local Priority Actions

The following priority recovery and threat abatement actions can be done to support the recovery of Mt Lesueur Grevillea.

Habitat Loss, Disturbance and Modification

- Monitor the progress of recovery, including the effectiveness of management actions and the need to adapt them if necessary. Staff from the WA DEC Moora District office regularly monitor the population of Mt Lesueur Grevillea (Stack & English, 2002).
- Ensure activities involving substrate or vegetation disturbance in areas where Mt Lesueur Grevillea occurs do not adversely impact on populations.
- Control access routes to suitably constrain public access to known sites on public land.

Trampling, Browsing or Grazing

- Provide signage within Lesueur National Park to inform visitors of the threat of trampling to Mt Lesueur Grevillea.

Fire

- Identify appropriate intensity and interval of fire to allow for maturity and seed set for Mt Lesueur Grevillea.
- Develop and implement a suitable fire management strategy for Mt Lesueur Grevillea (Stack & English, 2002).
- Ensure that Prescribed Fire Plans (as outlined by DEC, 2008) relating to areas supporting Mt Lesueur Grevillea take into account the fire ecology of the species.

This Conservation Advice was approved by the Minister / Delegate of the Minister on: 1/10/2008

- Provide maps of known occurrences to local and state Rural Fire Services and seek inclusion of mitigation measures in bush fire risk management plans, risk register and/or operation maps.

Diseases, Fungi and Parasites

- If necessary, implement suitable hygiene protocols to protect known sites from dieback caused by *Phytophthora cinnamomi*.
- Restrict access as much as possible, particularly when soil is wet. Warning signs regarding dieback from *Phytophthora cinnamomi* will be posted at the population (Stack & English, 2002).

Conservation Information

- All relevant land managers have been informed of the species' known locations and the associated legal obligations (Stack & English, 2002).
- Continue the publicity campaign, including brochures, regarding Mt Lesueur Grevillea originally funded through the Moora District Recovery Team (Stack & English, 2002).

Enable Recovery of Additional Sites and/or Populations

- Seed has been collected from the population and are stored at BGPA's WA Seed Technology Centre (Stack & English, 2002).
- Propagate plants and translocate them (Stack & English, 2002) using national translocation protocols (Vallee et al., 2004) if establishing additional populations is considered necessary and feasible.
- Maintain Mt Lesueur Grevillea plants in cultivation.

This list does not necessarily encompass all actions that may be of benefit to Mt Lesueur Grevillea, but highlights those that are considered to be of highest priority at the time of preparing the conservation advice.

Existing Plans/Management Prescriptions that are Relevant to the Species

- Interim Recovery Plan for Mt Lesueur Grevillea (Stack & English, 2002),
- Threat Abatement Plan for Dieback Caused by the Root-Rot Fungus *Phytophthora cinnamomi* (EA, 2001),
- There are several management and threat abatement plans addressing the problem of *Phytophthora cinnamomi* in Western Australia (Dieback Working Group, 2000; CALM, 2003),
- Western Australian Wildlife Management Program. No. 26: Declared Rare and Poorly Known Flora in the Moora District (Patrick & Brown, 2001), and
- Any Prescribed Fire Plan (DEC, 2008) relevant to the distribution of Mt Lesueur Grevillea.

These prescriptions were current at the time of publishing; please refer to the relevant agency's website for any updated versions.

Information Sources:

Brown, A, Thomson-Dans, C & Marchant, N (Eds) 1998, *Western Australia's Threatened Flora*, Western Australian Department of Conservation and Land Management, Como.

Department of Conservation and Land Management (CALM) WA, 2003, *Phytophthora cinnamomi and Disease caused by it, Volume 1—Management Guidelines*, CALM, viewed 14 May 2008, <<http://www.naturebase.net/pdf/projects/dieback/DBmanual2003.pdf>>.

Department of Environment and Conservation (DEC) WA 2008, *Prescribed Fire Plan*, DEC, viewed 14 May 2008, <<https://www.naturebase.net/content/view/2288/1141/>>.

This Conservation Advice was approved by the Minister / Delegate of the Minister on:
1/10/2008

Dieback Working Group 2000, *Managing Phytophthora Dieback Guidelines for Local Government*, viewed 14 May 2008, <http://www.naturebase.net/component/option,com_docman/task,doc_download/Itemid,1373/gid,313/>.

Environment Australia (EA) 2001, *Threat Abatement Plan For Dieback caused by the root-rot fungus Phytophthora cinnamomi*, Environment Australia, viewed 14 May 2008, <<http://www.environment.gov.au/biodiversity/threatened/publications/tap/phytophthora/pubs/phytophthora.pdf>>.

Makinson, RO 2000, 'Proteaceae 2 – Grevillea', In: *Flora of Australia*, vol. 17A, Australian Biological Resources Study and CSIRO Publishing, Melbourne.

May, JE & McKenzie, NL 2003, *A Biodiversity Audit of Western Australia's 53 Biogeographical Subregions, 2002*, Western Australian Department of Conservation and Land Management, Perth.

Olde, PM & Marriott, NR 1995, *The Grevillea Book Volume 2*, Kangaroo Press, Kenthurst.

Olde, PM 1996, *Rediscovery of Grevillea batrachioides*, Australian Plants Online, Society for Growing Australian Plants, viewed 14 May 2008, <<http://asgap.org.au/APOL3/sep96-4.html>>.

Patrick, SJ & Brown, AP 2001, *Declared Rare and Poorly Known Flora in the Moora District*, Western Australian Department of Conservation and Land Management, Perth.

Stack, G & English, V 2002, *Interim Recovery Plan for Mt Lesueur Grevillea (Grevillea batrachioides)*, *Interim Recovery Plan No. 114*, Western Australian Department of Conservation and Land Management, Perth, viewed 14 May 2008, <http://www.naturebase.net/pdf/plants_animals/threatened_species/irps/gre_bat_irp114.pdf>

Vallee, L, Hogbin, T, Monks, L, Makinson, B, Matthes, M & Rossetto, M 2004, *Guidelines for the Translocation of Threatened Plants in Australia* (2nd ed.), Australian Network for Plant Conservation, Canberra.

Western Australian Herbarium 2008, *FloraBase — The Western Australian Flora*, Western Australian Department of Environment and Conservation, viewed 14 May 2008, <<http://florabase.dec.wa.gov.au/>> .