

Approved Conservation Advice for
***Gastrolobium luteifolium* (Yellow-leafed Gastrolobium)**

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

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

Gastrolobium luteifolium, Family Fabaceae, also known as the Yellow-leafed Gastrolobium, is a tall erect shrub that can grow to 2 m high (Western Australian Herbarium, 2006). The flowers are red, and the flowering period is from September to November (DEC, 2006). The flowers tend to hang down, allowing pollination by honeyeaters, which perch on the stem and probe the flowers for nectar. Seeds of the Yellow-leafed Gastrolobium germinate following fire, and occasional fire is needed for recruitment (DEC, 2006).

Conservation Status

The Yellow-leafed Gastrolobium is listed as **critically endangered**. This species is eligible for listing as critically endangered under the *Environment Protection and Biodiversity Conservation Act 1999* (Cwlth) (EPBC Act) as it has a very restricted geographic distribution, with an extent of occurrence and an area of occupancy each estimated to be less than 1 km². The species' geographic distribution is precarious for its survival given the nature of ongoing threats (TSSC, 2009).

The Yellow-leafed Gastrolobium is also listed as declared rare flora under the *Western Australian Wildlife Conservation Act 1950*, and is managed as critically endangered (according to IUCN criteria) by the Western Australian Government.

Distribution and Habitat

The Yellow-leafed Gastrolobium is endemic to Western Australia, and is known from one population within the Stirling Range National Park, approximately 70 km north-north-east of Albany. The extent of occurrence of the species is less than 1 km² and its area of occupancy is estimated to be less than 1 km² (DEC, 2006).

The population size of the species is approximately 15 500 mature plants, based on population surveys undertaken in 2003, 2005 and 2008 (DEC, 2009).

The Yellow-leafed Gastrolobium grows in skeletal sandy clay loam soils in shrubland on a mountain slope and summit in the Stirling Range National Park (DEC, 2006; Western Australian Herbarium, 2006).

The species occurs within the Esperance Plains IBRA Bioregions and the South Coast Natural Resource Management region. The distribution of this species is not known to overlap with any EPBC Act-listed threatened ecological community.

Threats

The main identified threats to the Yellow-leafed Gastrolobium are dieback caused by *Phytophthora cinnamomi* and inappropriate fire regimes (DEC, 2006).

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 population size, geographic distribution, ecological requirements, and the relevant impacts of threatening processes, including:
 - factors that trigger or influence seed production, germination and recruitment;
 - factors that influence the levels of flower and fruit production for the species;
 - the species' response to disturbance (e.g. fire regimes);
 - impacts of dieback caused by *Phytophthora cinnamomi* and phosphate application on the Yellow-leafed Gastrolobium and its habitat; and
 - other relevant mortality and morphological data for the species.
- Undertake survey work in suitable habitat and potential habitat during the September to November flowering period to locate any additional populations/occurrences/remnants.
- Undertake seed germination and seedling establishment trials to determine the requirement for successful establishment.

Priority Actions

The following priority recovery and threat abatement actions can be done to support the recovery of the Yellow-leafed Gastrolobium.

Habitat Loss, Disturbance and Modification

- Monitor known populations to identify key threats.
- Minimise adverse impacts from land use at known sites.
- Control access routes to suitably constrain public access to known sites on public land.
- Monitor the progress of recovery, including the effectiveness of management actions and the need to adapt them if necessary.

Fire

- Develop and implement a suitable fire management strategy for the Yellow-leafed Gastrolobium.
- Where appropriate, provide maps of known occurrences to local and state Rural Fire Services and seek inclusion of mitigative measures in bush fire risk management plans, risk register and/or operation maps.

Diseases, Fungi and Parasites

- Develop and implement suitable hygiene protocols to protect known sites from further outbreaks of dieback caused by *Phytophthora cinnamomi*.
- If necessary, implement appropriate management actions to minimise the adverse impacts of existing *Phytophthora cinnamomi* infestations.

Conservation Information

- Raise awareness of the Yellow-leafed Gastrolobium within the local community. Provide fact sheets and identification information to visitors entering the Stirling Range National Park.

Enable Recovery of Additional Sites and/or Populations

- Maintain appropriate seed collection and storage.
- Investigate options for linking, enhancing or establishing additional populations.
- Implement national translocation protocols (Vallee et al., 2004) if establishing additional populations is considered necessary and feasible.

This list does not necessarily encompass all actions that may be of benefit to the Yellow-leafed *Gastrolobium*, 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

- Threat Abatement Plan for dieback caused by the root-rot fungus *Phytophthora cinnamomi* (EA, 2001); and
- Stirling Range and Porongurup National Parks Management Plan 1999–2009 (CALM, 1999).

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

Information Sources:

CALM (1999). Conservation and Land Management. Stirling Range and Porongurup National Parks Management Plan 1999–2009. Western Australian Department of Environment and Conservation (formerly the Department of Conservation and Land Management), Western Australia.

Viewed: 27 January 2009.

Available on the Internet at:

www.naturebase.net/pdf/nature/management/stirling-porongurup_nps.pdf

DEC (2006). Department of Environment and Conservation. Records held in DEC's Declared Flora Database and rare flora files. Western Australian Department of Environment and Conservation, Western Australia.

DEC (2009). Department of Environment and Conservation. Records held in DEC's Declared Flora Database and rare flora files. Western Australian Department of Environment and Conservation, Western Australia.

EA (2001). Dieback caused by the root-rot fungus *Phytophthora cinnamomi*. Threat Abatement Plan. Australian Government Department of the Environment, Water, Heritage and the Arts (formerly Environment Australia).

Viewed: 27 January 2009.

Available on the Internet at:

<http://www.environment.gov.au/biodiversity/threatened/publications/tap/phytophthora/index.html>

TSSC (2009). Threatened Species Scientific Committee Listing Advice for *Gastrolobium luteifolium* (Yellow-leafed *Gastrolobium*).

Vallee L, Hogbin T, Monks L, Makinson B, Matthes M and Rossetto M (2004). Guidelines for the Translocation of Threatened Plants in Australia - Second Edition. Australian Network for Plant Conservation, Canberra.

Western Australian Herbarium (2006). FloraBase – The Western Australian Flora. Department of Environment and Conservation.

Available on the Internet at: <http://florabase.calm.wa.gov.au/>