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

Approved Conservation Advice for *Eucalyptus synandra* (Jingymia Mallee)

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

Eucalyptus synandra, Family Myrtaceae, also known as Jingymia Mallee, is a straggly, multi-stemmed tree to 10 m high. The bark is smooth, powdery white and shreds in ribbons over pink and brown bark. Juvenile leaves (up to 9 cm long and 1.5 cm wide) are narrow, dull and grey-green in colour. Branches are often pendulous, with a thin, narrow crown and pendulous leaves (up to 20 cm long and 16 mm wide). Inflorescences are simple, held in the leaf axils and have up to seven flowers. Stalked buds have hemispherical floral tubes, with a conical to beaked cap. The lower half of the stamens unite to form a tube. The creamy flowers turn pink as they age. The stalked, hemispherical fruits have a thick rim, a steeply ascending disc and up to five protruding valves that are 6–14 mm long. Flowering occurs from December to March (Brown et al., 1998; Patrick, 2001).

Conservation Status

Jingymia Mallee is listed as **vulnerable**. This species is eligible for listing as vulnerable 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 vulnerable under Schedule 1 of the *Endangered Species Protection Act 1992* (Cwlth). The species is also listed as declared rare flora under the *Wildlife Conservation Act 1950* (Western Australia).

Distribution and Habitat

Jingymia Mallee is endemic to Western Australia and is known from 27 populations from the northern Wheatbelt, over a range of 300 km, from north of Morowa to the Koora area. The majority of these populations occur on road verges, with the other populations located on private land, conservation estate, pastoral leases, an airport and a timber reserve (DEC, 2008). The number of mature plants is estimated to be 1200. The extent of occurrence is approximately 15 700 km^2 (DEC, 2008). There are insufficient data to determine area of occupancy. Most populations remain largely undisturbed and healthy, but one population is under threat from nearby mining activities (DEC, 2008).

Jingymia Mallee grows on sandy, lateritic soils in undulating or flat country with heath and scrub. Associated species include *Eucalyptus leptopoda, E. erwartiana, E. loxophleba* subsp. *supralaevis, E. subangusta* subsp. *subangusta, E. brachycorys, Acacia coolgardiensis, A. acueria* and *Hakea recurva* (Brown et al., 1998; Patrick, 2001). This species occurs within the Northern Agricultural, Rangelands and Avon (Western Australia) Natural Resource Management Regions.

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

Threats

The main identified threats to Jingymia Mallee are inappropriate fire regimes, invasive weeds, increasing salinity and mining (Patrick, 2001; Brunt, 2003). Some native vegetation has been removed from a mining area where one population occurs. The majority of populations are

affected by invasive weed species, possibly due to their close proximity to roads. Four populations are affected by grazing from domestic stock, such as sheep, and feral goats (*Capra hircus*).

The main potential threats to Jingymia Mallee include roadworks, erosion, invasive weeds, salinity, clearing for firebreaks and agriculture, and illegal collection (Patrick, 2001; Brunt, 2003). Maintenance, clearing and grading affect populations located close to or on road verges. Erosion could affect the population that occurs close to mining activities.

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, distribution, ecological requirements (including response to fire) and the relative impacts of threatening processes.
- Undertake survey work in suitable habitat and potential habitat to locate any additional populations/occurrences/remnants.
- Undertake seed germination trials to determine the requirements for successful establishment.
- Develop a genetic tagging system to establish a means of identifying illegal collections from the wild, and providing evidence required for prosecution (Palsboll et al., 2006).

Regional Priority Actions

The following regional priority recovery and threat abatement actions can be done to support the recovery of Jingymia Mallee.

Habitat Loss, Disturbance and Modification

- Develop and implement a management plan for illegal collection.
- Monitor known populations to identify key threats.
- Monitor the progress of recovery, including the effectiveness of management actions and the need to adapt them if necessary.
- Identify populations of high conservation priority.
- Ensure road widening and maintenance activities involving substrate or vegetation disturbance in areas where Jingymia Mallee occurs do not adversely impact on known populations.
- Manage any changes to hydrology that may result in changes to salinity.
- Investigate further formal conservation arrangements, management agreements and covenants on private land, and for crown and private land investigate inclusion in reserve tenure if possible.

Trampling, Browsing or Grazing

- Develop and implement a management plan for the control and eradication of feral goats in the region.

Fire

- Develop and implement a suitable fire management strategy for Jingymia Mallee.
- 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.

Conservation Information

- Ensure that relevant shire staff and road contractors are aware of the location of roadside populations.

- Raise awareness of Jingymia Mallee within the local community.
- Maintain liaison with the Shire, private landholders, pastoralists, mine operators and managers of land on which populations occur.

Enable Recovery of Additional Sites and/or Populations

- Undertake 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.

Local Priority Actions

The following local priority recovery and threat abatement actions can be done to support the recovery of Jingymia Mallee.

Habitat Loss, Disturbance and Modification

- Control access routes to suitably constrain public access to known sites on public land.
- Minimise adverse impacts from land use at known sites.

Invasive Weeds

- Identify and remove weeds in the local area, which could become a threat to Jingymia Mallee, using appropriate methods.
- Manage sites to prevent introduction of invasive weeds, which could become a threat to the species, using appropriate methods.
- Ensure chemicals or other mechanisms used to eradicate weeds do not have a significant adverse impact on Jingymia Mallee.

Trampling, Browsing or Grazing

- Manage known sites to ensure appropriate grazing regimes occur.
- Manage total grazing pressure at important sites through exclusion fencing or other barriers.

Fire

- Implement an appropriate fire management regime for local populations.

This list does not necessarily encompass all actions that may be of benefit to Jingymia Mallee, 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

- Declared Rare and Poorly Known Flora in the Geraldton District (Patrick, 2001),
- Merredin District Threatened Flora Management Program (Brunt, 2003), and
- Threat Abatement Plan for Competition and Land Degradation by Feral Goats (EA, 1999).

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*, Department of Conservation and Land Management, Western Australia.

Brunt, K 2003, *Merredin District Threatened Flora Management Program, Annual Report, 2003*, Department of Conservation and Land Management, Western Australia.

Department of Environment and Conservation (DEC) 2008, Records held in DEC's Declared Rare Flora Database and rare flora files, Department of Environment and Conservation, Western Australia.

Environment Australia (EA) 1999, *Threat Abatement Plan for Competition and Land Degradation by Feral Goats*, Biodiversity Group, viewed 30 May 2008, <http://www.environment.gov.au/biodiversity/threatened/publications/tap/goats/index.html>.

Patrick, SJ 2001, *Declared Rare and Poorly Known Flora in the Geraldton District*, Wildlife Management Plan No 26, Department of Conservation and Land Management, WA, viewed 22 August 2008, <http://www.dec.wa.gov.au/pdf/nature/flora/flora_mgt_plans/geraldton/geraldton_wmp26.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.