

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

**Approved Conservation Advice for**  
***Hakea aculeata* (Column Hakea)**

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**

*Hakea aculeata*, Family Proteaceae, also known as Column Hakea, is a slow growing, lignotuberous shrub with several erect or ascending stems, growing to 3 m tall. Branchlets are 1–5 cm in length, numerous and spreading. The 4 cm long and 0.8 cm wide leaves are scattered, being more crowded towards the end of the branchlets, and end in a sharp needle-like point. They are on short stalks or are stalkless and are initially hairy. Inflorescences are terminal with up to 22 large, cream and yellow, strongly scented flowers. The ovary is red and the style red at the tip and yellow below. The fruit are pale brown and up to 20 mm long and 14 mm wide. Flowering occurs from September to October (Brown et al., 1998; Durell & Buehrig, 2001; DEC, 2008).

**Conservation Status**

Column Hakea 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**

Column Hakea is endemic to Western Australia where it is known from 30 populations, from south of Meckering and Tammin to north-east of Brookton. The number of mature, flowering plants which constitute these populations is estimated to be 1300. The extent of occurrence is approximately 2255 km<sup>2</sup>. There are insufficient data available to determine area of occupancy. As most populations of this species occur in disturbed areas with populations declining, it is possible that populations will become extinct in the future (DEC, 2008).

Column Hakea is found growing among scrub and tall shrubland, on higher ground or hill tops on pale white loamy sand and gravelly soil. Otherwise, it is found growing on weed-choked road verges. Associated species include *Eucalyptus macrocarpa*, *Dryandra horrida*, *D. fraseri*, *Leptospermum erubescens*, *Allocasuarina campestris*, *Banksia sphaerocarpa* and *Daviesia oxylobium* (Brown et al., 1998; Durell & Buehrig, 2001; DEC, 2008). This species occurs within the Avon (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 Column Hakea are weeds and grazing by feral rabbits (*Oryctolagus cuniculus*) and kangaroos. Seedlings are very slow growing.

The main potential threats to Column Hakea include inappropriate fire regimes, poor seed set, chemical drift and roadworks. One site is threatened by mining activity. This species is vulnerable to fire in the vegetative and flowering phase; however it is able to survive and

regenerate from a lignotuber. Poor seed set may be caused by lack of pollinators or insect attack. Road works may disturb populations located on road verges through road maintenance and widening activities.

### **Research Priorities**

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

- More precisely assess population size, distribution, ecological requirements (including pollinator requirements) and the relative impacts of threatening processes.
- Undertake survey work in suitable habitat and potential habitat to locate any additional populations/occurrences/remnants.
- Design and implement a monitoring program or, if appropriate, support and enhance existing programs.
- Undertake seed germination and/or vegetative propagation trials to determine the requirements for successful establishment.

### **Regional and Local Priority Actions**

The following regional and local priority recovery and threat abatement actions can be done to support the recovery of Column Hakea.

#### **Habitat Loss, Disturbance and Modification**

- 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.
- Ensure road widening and maintenance and other activities involving substrate or vegetation disturbance in areas where Column Hakea occurs do not adversely impact on known populations.
- Investigate formal conservation arrangements, management agreements and/or covenants on private land, and for crown and private land investigate inclusion in reserve tenure if possible.
- Control access routes to suitably constrain public access to known sites.
- Minimise adverse impacts from land use at known sites.

#### **Invasive Weeds**

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

#### **Trampling, Browsing or Grazing**

- Develop and implement a management plan for the control and eradication of feral rabbits (*Oryctolagus cuniculus*) (EA, 1999) and the control of kangaroos in the region.
- Manage total grazing pressure at important sites through exclusion fencing or other barriers.

#### **Fire**

- Develop and implement a suitable fire management strategy for Column Hakea.
- Identify appropriate intensity and interval of fire to promote seed germination and vegetation regeneration.
- 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.

This Conservation Advice was approved by the Minister / Delegate of the Minister on:  
16/12/2008

### Conservation Information

- Raise awareness of Column Hakea within the local community. Distributing fact sheets to property owners and organising field days in conjunction with known industry or community interest groups would be beneficial, potentially leading to further sightings of the species.

### 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.

This list does not necessarily encompass all actions that may be of benefit to Column Hakea, 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 Narrogin District (Durell & Buehrig, 2001),
- Merredin District Threatened Flora Management Program (Brunt, 2003), and
- Threat Abatement Plan for Competition and Land Degradation by Feral Rabbits (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.

Durell, GS & Buehrig, RM 2001, *Declared Rare and Poorly Known Flora in the Narrogin District*, Wildlife Management Plan No 30, Department of Conservation and Land Management, Western Australia.

Environment Australia (EA) 1999, *Threat Abatement Plan for Competition and Land Degradation by Feral Rabbits*, Biodiversity Group, viewed 30 May 2008,

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

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