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

Approved Conservation Advice for *Darwinia* sp. Coorow (B.A. Fuhrer 96/54) WA Herbarium (Chapman's Bell)

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

Darwinia sp. Coorow (B.A.Fuhrer 96/54) WA Herbarium, Family Myrtaceae, also known as Chapman's Bell, is a rounded, spreading shrub with many branches and a woody rootstock (Paczkowska, 1995; Brown et al. ,1998; Patrick & Brown, 2001). This species grows 30–60 cm high (Paczkowska, 1995) and up to 3 m wide (Brown et al., 1998; Patrick & Brown, 2001). Leaves are grey-green and hairy and grow to 7 mm long. Flower heads are erect to nodding, and carry 10 small, red, tubular flowers (Patrick & Brown, 2001). The species flowers in October (Paczkowska, 1995) or from September to December (Brown et al., 1998).

Darwinia sp. Coorow (B.A.Fuhrer 96/54) WA Herbarium is also known as *Darwinia chapmaniana* N.G.Marchant MS (CHAH, 2005).

Conservation Status

Chapman's Bell 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 Ac*t 1992 (Cwlth). This species is also listed as rare (declared rare flora – extant) under the *Wildlife Conservation Act 1950* (Western Australia).

Distribution and Habitat

Chapman's Bell is known from a restricted area near Coorow, south-east of Geraldton, Western Australia (Paczkowska, 1995; Patrick & Brown, 2001; NACC, 2006). This species was previously known from one population south-east of Coorow, where it occurs in a Nature Reserve alongside a track. In 1992, this population consisted of more than 2000 undisturbed plants (Patrick & Brown, 2001). New populations of Chapman's Bell (including three sub-populations) have since been discovered as part of surveys and monitoring programs undertaken within the Northern Agricultural region (Paczkowska, 1995; NACC, 2006). This species occurs within the Northern Agricultural (Western Australia) Natural Resource Management Region.

This species grows around salt lakes in woodland or shrubland dominated by Mallee (Brown et al., 1998). Soils are red clayey loam, red sand over broken rock, or yellow soil in low flat areas of sandstone and limestone. Associated species include *Eucalyptus gracilis*, other mallee species (*Eucalyptus* spp.), *Acacia uncinata*, *Acacia* spp., *Melaleuca uncinata*, and *Melaleuca* spp. (Paczkowska, 1995; Patrick & Brown, 2001).

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

Threats

The main potential threats to Chapman's Bell include broad scale vegetation clearing; increasing fragmentation; loss of remnants (ANRA, 2007a); changed fire regimes; changed

hydrology (including salinity); weed invasion; grazing (ANRA, 2007b); and dieback caused by the root-rot fungus *Phytophthora cinnamomi* (Patrick & Brown 2001).

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 and the relative impacts of threatening processes.
- Undertake seed germination and/or vegetative propagation trials to determine the requirements for successful establishment.
- Undertake survey work in suitable habitat and potential habitat to locate any additional populations/occurrences/remnants.

Regional and Local Priority Actions

The following priority recovery and threat abatement actions can be done to support the recovery of Chapman's Bell.

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.
- Identify populations of high conservation priority.
- Ensure road widening and maintenance activities (or other infrastructure or development activities) involving substrate or vegetation disturbance in areas where Chapman's Bell occurs do not adversely impact on known populations.
- Manage any changes to hydrology that may result in changes to the water table levels, increased run-off, or salinity levels.
- Investigate further formal conservation arrangements such as the use of covenants, conservation agreements or inclusion in reserve tenure.
- Control access routes to suitably constrain public access to known sites on public land.
- Suitably control and manage access on private 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 Chapman's Bell, using appropriate methods.
- Ensure chemicals or other mechanisms used to eradicate weeds do not have a significant adverse impact on Chapman's Bell.
- Manage sites to prevent introduction of invasive weeds, which could become a threat to Chapman's Bell, using appropriate methods.

Trampling, Browsing or Grazing

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

Fire

- Develop and implement a suitable fire management strategy for Chapman's Bell.
- 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 land managers and seek inclusion of mitigative measures in bush fire risk management plans, risk register and/or operation maps.

Diseases, Fungi and Parasites

- Implement hygiene procedures to protect known sites from outbreaks of dieback caused by the root-rot fungus *Phytophthora cinnamomi* (Patrick & Brown, 2001).

Conservation Information

- Raise awareness of Chapman's Bell within the local community.

Enable Recovery of Additional Sites and/or Populations

- Undertake appropriate seed collection and storage according to the protocols of the Threatened Flora Seed Centre at the Western Australian Herbarium (Patrick & Brown, 2001).
- 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 Chapman's Bell, 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

- Prescribed Fire Plans (DEC, 2008) relevant to the distribution of Chapman's Bell, and
- Threat Abatement Plan for Dieback Caused by the Root-Rot Fungus *Phytophthora cinnamomi* (EA, 2001).

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

Information Sources:

Australian Natural Resources Atlas (ANRA) 2007a, *Biodiversity Assessment - Geraldton Sandplains - Species at risk and the Threatening Process*, Department of Environment, Water, Heritage and the Arts, viewed 21 May 2008, <http://www.anra.gov.au/topics/vegetation/assessment/wa/ibra-gs-species-threats.html>.

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