

Approved Conservation Advice for

***Cassinia tegulata* (Avenue Cassinia)**

(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

Cassinia tegulata, Family Asteraceae, also known as the Avenue Cassinia, is a small to medium-sized shrub. It has an upright habit, grey-green to yellowish green, hairy, needle-like leaves, fissured brown bark and off-white to cream flowers at the end of branches. Flowers are honey-scented, but leaves and stems are odourless and not sticky (DEH, 2006).

Conservation Status

Cassinia tegulata is listed as **critically endangered** under the *Environment Protection and Biodiversity Conservation Act 1999* (Cwlth) (EPBC Act) as, in 2008, the Minister considered the Threatened Species Scientific Committee's (TSSC) advice under section 189 of the EPBC Act and amended the list under section 184 to include *Cassinia tegulata*. The TSSC determined that this species met criteria 2, 3 and 4 of their eligibility criteria (TSSC, 2008), as its geographic distribution is very restricted and precarious for the survival of the species. The species is also threatened by having a low number of mature individuals which are likely to continue to decline. The species is also listed as endangered under the South Australian *National Parks and Wildlife Act 1972*.

Distribution and Habitat

The Avenue Cassinia is known from two populations. One is located 17 km west of Lucindale (the 'Avenue' population) and the other is located 30 km from Blackford in south-eastern South Australia. It is found in *Melaleuca brevifolia* / *Gahnia filum* Shrubland, which is associated with interdune flats with shallow, grey or yellow, sandy, clay soils on a limestone parent material, which are seasonally waterlogged. This species occurs within the South East South Australia Natural Resource Management Region.

Threats

The main identified threats to the Avenue Cassinia include land clearing and the effect of unknown processes preventing recruitment. Vegetation clearance is associated with service maintenance such as for powerlines, fire break creation and incidental roadworks, as both populations occur in road reserves. The absence of juvenile plants in the 'Avenue' population, suggest a low level of recruitment to the population.

The main potential threats to the Avenue Cassinia include inappropriate fire regimes, susceptibility to stochastic events and high edge to area ratios of the remaining populations. It also appears likely that drainage, agroforestry and the use of groundwater for irrigation is affecting the groundwater hydrology of the area. This combined with the effects of drought (and possibly climate change) on a species that requires relatively high soil water levels has and may continue to threaten this species. Grazing by native, domestic and introduced herbivores is also suspected as a threat to this species. Kangaroos, rabbits and sheep appear to graze in the habitat of the Avenue Cassinia, based on the presence of scats, skeletal material, warrens and wallows at the 'Avenue' site.

Research Priorities

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

- Design and implement a survey and monitoring programme to monitor known populations and to identify new populations in potential habitat.
- Identify the reasons for the lack of recruitment in the ‘Avenue’ population. To this end, determine the ecological preferences and reproductive requirements of the species. For example identify the following: preferred habitat; whether germination is stimulated by disturbance (conduct germination trials); seed viability; and means of pollination and preferred hydrology.
- Clarify the taxonomic status of possible hybrids with the Avenue Cassinia in south-eastern Australia, where the taxonomic status of these hybrids is uncertain.

Priority Actions

The following priority recovery and threat abatement actions can be done to stop the decline or support the recovery of the Avenue Cassinia.

Habitat Loss, Disturbance and Modification

- Monitor known populations to identify key threats or the progress of recovery, including the effectiveness of management actions and the need to adapt them if necessary.
- Manage threats to areas of vegetation that contain populations of the Avenue Cassinia.
- Ensure road widening and maintenance activities (or other infrastructure or development activities as appropriate) in areas where the Avenue Cassinia occurs do not adversely impact on known populations.
- Manage any changes to hydrology that may result in changes to water table levels.
- Ensure chemicals or other mechanisms used to eradicate weeds do not have a significant adverse impact on the Avenue Cassinia.
- Minimise adverse impacts from land use at known sites.
- Protect populations of the listed species through the development of conservation agreements.

Trampling, Browsing or Grazing

- Prevent grazing pressure at known sites on leased crown land through exclusion fencing or other barriers.
- Control introduced pests such as rabbits at known sites.

Fire

- Develop and implement a suitable fire management strategy for the Avenue Cassinia.
- Identify appropriate intensity and interval of fire to promote seed germination or vegetative regeneration.
- 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 registers and operation maps.

Conservation Information

- Raise awareness of the Avenue Cassinia within the local community. Distribute a fact sheet produced by the South Australian Department for Environment and Heritage within the local community. Conduct field days with known industry or community interest groups.

- An awareness strategy could include the following interest groups: South Australian Department for Environment and Heritage; South Australian Department of Transport, Energy and Infrastructure; Naracoorte Lucindale Council; and the Naracoorte/Lucindale Field Naturalist Group.

Establishing Additional Populations

- Undertake appropriate seed collection and storage.
- Undertake seed germination and/or vegetative propagation trials to determine the requirements for successful establishment.
- Investigate options for enhancing existing populations or establishing additional populations such as the establishment of 'ex-situ' populations in botanical gardens.
- Implement appropriate translocation protocols if establishing additional populations is considered necessary and feasible.

Existing Plans/Management Prescriptions that are Relevant to the Species

- Avenue Cassinia *Cassinia tegulata* Fact Sheet (DEH, 2006).
- Regional Action Plans for the Recovery of Threatened Flora and Ecological Communities in the South East of SA (Johnson, 2005).

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

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

Information Sources:

Department for Environment and Heritage (2006). Threatened Flora of the South East, Avenue Cassinia *Cassinia tegulata* Fact Sheet. South Australian Department for Environment and Heritage, Mount Gambier.

Johnson R (2005). Regional Action Plans for the Recovery of Threatened Flora and Ecological Communities in the South East of SA. South Australian Department for Environment and Heritage, Mount Gambier.

Orchard AE (2004). A revision of *Cassinia* (Asteraceae: Gnaphalieae) in Australia. 2. Sections *Complanatae* and *Venustae* in Australian Systematic Botany 17, 505-533.