

**Approved Conservation Advice for
Olearia pannosa subsp. *pannosa* (silver daisy-bush)**

(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 and draft plans, records or management prescriptions for this species.

Description

Olearia pannosa subsp. *pannosa* (silver daisy-bush), family Asteraceae, is a spreading undershrub or shrub growing up to 1.5 m high, producing rooting stems that can spread over 10–20 m along the ground. The leaf lamina (blade) is elliptic to ovate, the length usually greater than twice the width and obtuse to acute at the base. The hairs of the lower leaf surface and peduncle are appressed, white to cream or a very pale rusty-brown. Flower heads are white or rarely pale mauve, with a yellow centre (Cooke, 1986; Wisniewski et al., 1987; Cropper, 1993).

The silver daisy-bush differs from the velvet Daisy-bush (*Olearia pannosa* subsp. *cardiophylla*) in leaf shape and the orientation and colour of hairs on the leaf (Willson & Bignall, 2009). Leaf shape is elliptic to ovate in the former and broad-ovate in the latter; and hairs in the former are appressed and white to cream or a very pale rusty-brown, and in the latter are slightly appressed and buff to rusty-brown (Cooke, 1986)

Conservation Status

The silver daisy-bush is listed as vulnerable under the name *Olearia pannosa* subsp. *pannosa*. This subspecies 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 subspecies is also listed as vulnerable under the *National Parks and Wildlife Act 1972* (South Australia).

Cultural Significance

The silver daisy-bush has tuberous roots that may have provided Indigenous people with water and food resources during summer (Cropper, 1993).

Distribution and Habitat

The silver daisy-bush is endemic to South Australia where it is scattered throughout agricultural areas. Collections have been made in the Eyre Peninsula, Yorke Peninsula, Flinders Ranges, Southern and Northern Mount Lofty Ranges, Murray and South Eastern South Australia herbarium regions and a single collection from Kangaroo Island (Cooke, 1986; Cropper, 1993). Despite previous reports (e.g. Cropper, 1993) the subspecies does not occur in New South Wales or Victoria (Smith et al., 2004; Walsh & Stajsic, 2007; RBGDT, 2013)

The silver daisy-bush is known from 35 populations in the Murray Darling Basin, consisting of a total of 1100 plants. The largest population in the area has 262 plants, at Strathalbyn, and of the remaining populations six have 50–150 plants, ten have 10–40 plants and 17 have 1–7 plants (Obst, 2005). On the Eyre Peninsula, 18 populations are known, consisting of a total of 1150 plants with an extent of occurrence of 2200 km² (Pobke, 2007). There is no available information on the species total extent of occurrence, total area of occupancy or total population size.

The silver daisy-bush occurs on Wanilla Conservation Park (CP), Wanilla Land Settlement Reserve, Middlecamp Hills CP, Newland Head CP and Black Hill CP (Pobke, 2007; Willson & Bignall, 2009).

The silver daisy-bush occurs in sandy, flat areas and in hilly, rocky areas in woodland or mallee (Cropper, 1993; Kahrimanis et al., 2001). Hilly area soil types include hard pedal mottled-yellow duplex and hard pedal red duplex (Laut et al., 1977, cited in Pobke, 2007).

In the Murray Darling Basin region the silver daisy-bush has been found in ten mallee, woodland and shrubland vegetation associations (Obst, 2005). On the Eyre Peninsula it has been found in eight mallee, woodland, shrubland and open forest vegetation associations (Pobke, 2007). In the Adelaide and Mount Lofty Ranges area it has been recorded in seven mallee, woodland and shrubland vegetation associations (Willson & Bignall, 2009).

The silver daisy-bush occurs within the Flinders Lofty Block, Eyre Yorke Block, Kanmantoo, Murray Darling Depression, Naracoorte Coastal Plain and Southern Volcanic Plain IBRA Bioregions and the Eyre Peninsula, Northern and Yorke, Adelaide and Mt Lofty Ranges, South Australian Murray-Darling Basin, Kangaroo Island and South East Natural Resource Management Regions.

The distribution of this subspecies overlaps with the following EPBC Act-listed threatened ecological communities:

- Grey Box (*Eucalyptus microcarpa*) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia
- Peppermint Box (*Eucalyptus odorata*) Grassy Woodland of South Australia
- Eyre Peninsula Blue Gum (*Eucalyptus petiolaris*) Woodland.

Threats

The main identified threats to the silver daisy-bush are:

- livestock grazing (Pobke, 2007)
- small population sizes and poor recruitment (Cropper, 1993; Willson & Bignall, 2009)
- weed invasion, particularly bridal creeper (*Asparagus asparagoides*) and, to a lesser extent, perennial veldt grass (*Ehrharta calycina*) (Obst, 2005; Pobke, 2007)
- fragmentation (Cropper, 1993; Pobke, 2007)
- lack of fire and/or disturbance (Pobke, 2007)
- road/rail maintenance (Obst, 2005; Pobke, 2007).

The main potential threats to the silver daisy-bush include insect pests (Pobke, 2007), dieback caused by *Phytophthora cinnamomi* (Obst, 2005; Pobke, 2007), recreational activities (Obst, 2005), trampling (Obst, 2005) and vegetation clearance (Obst, 2005).

Research Priorities

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

- Undertake seed germination and/or vegetative propagation trials to determine the requirements (including optimal disturbance regimes) for successful establishment and factors affecting current low recruitment (Obst, 2005).
- More precisely assess population size, distribution, plant biology, ecological requirements, ecological genetics and the relative impacts of threatening processes (such as competition, grazing, dieback caused by *Phytophthora cinnamomi* and neighbouring land use) (Obst, 2005; Pobke, 2007).

Regional Priority Actions

The following regional priority recovery and threat abatement actions can be done to support the recovery of the silver daisy-bush.

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 there is no disturbance in areas where the silver daisy-bush occurs, excluding necessary actions to manage the conservation of the subspecies.
- Investigate formal conservation arrangements, management agreements and covenants on private land, and for crown and private land investigate and/or secure inclusion in reserve tenure if possible.

Invasive Weeds

- Develop and implement a management plan for the control of bridal creeper and perennial veldt grass in the region.
- Ensure chemicals or other mechanisms used to eradicate weeds do not have a significant adverse impact on the silver daisy-bush.

Fire

- Develop and implement a suitable fire management strategy for the habitat of the silver daisy-bush that avoids too infrequent fire.
- Where appropriate provide maps of known occurrences to local and state Country Fire Service and seek inclusion of mitigative measures in bush fire risk management plan/s, risk register and/or operation maps.

Conservation Information

- Raise awareness of silver daisy-bush within the local community.
- Install road markers at known sites on road reserves (Obst, 2005).
- Engage with private landholders and land managers responsible for the land on which populations occur and encourage these key stakeholders to contribute to the implementation of conservation management actions.
- 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 the silver daisy-bush.

Habitat Loss, Disturbance and Modification

- Control access routes to suitably constrain public access to known sites on public land.
- Suitably control and manage access on private land and other land tenure.
- Undertake survey work in suitable habitat and potential habitat to locate any additional populations/occurrences/remnants.

- Implement appropriate disturbance regimes to initiate natural germination.
- Minimise adverse impacts from land use at known sites, including from off road vehicles, spray drift, intentional spraying, rubbish dumping, road/rail maintenance activities, illegal collection, rubbish dumping, trampling and inappropriate recreational activities.

Invasive Weeds

- Identify and remove weeds in the local area that could become a threat to silver daisy-bush, using appropriate methods.
- Introduce biological control agents for the bridal creeper in the most severe infestations (Obst, 2005).

Trampling, Browsing or Grazing

- If livestock grazing occurs in the area, ensure land owners/managers use an appropriate management regime and density that does not detrimentally affect this subspecies and allows regeneration from seedlings and seed head development.
- Where appropriate, manage total grazing pressure at important sites through exclusion fencing or other barriers.

Fire

- Implement an appropriate fire management regime for local populations.

Diseases, Fungi and Parasites

- If necessary, implement appropriate management actions to minimise the adverse impacts of existing *Phytophthora cinnamomi* infestations

This list does not necessarily encompass all actions that may be of benefit to the silver daisy-bush, but highlights those that are considered to be of highest priority at the time of preparing the Approved Conservation Advice.

Existing Plans/Management Prescriptions that are Relevant to the Subspecies

- Regional recovery plans for South Australia Murray Darling Basin (Obst, 2005), Adelaide and the Mount Lofty Ranges (Willson & Bignall, 2009) and the Eyre Peninsula (Pobke, 2007).

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

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Viewed: 14 August 2013

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