

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

Approved Conservation Advice for
***Dryandra serratuloides* subsp. *serratuloides* (Southern Serrate Dryandra)**

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

Dryandra serratuloides subsp. *serratuloides*, Family Proteaceae, now known as *Banksia serratuloides* subsp. *serratuloides* (CHAH, 2007) and also known as Southern Serrate Dryandra, is a low, compact shrub, growing to 1 m tall and 1.2 m in diameter. The leaves, up to 8 cm long, are crowded on erect branches. They are paler on the underside and divided almost to the midrib, forming long flat lobes which are quite rigid. The flower heads are axillary, surrounded by lanceolate bracts which are hairless on the back and with white woolly ciliate margins that later become smooth. The yellow flowers are up to 2.5 cm long, with the outer floral whorl covered with silky hairs. The long, hairless style has a narrow, furrowed, darker coloured stigmatic end (George, 1996; Brown et al., 1998; Patrick & Brown, 2001; DEC, 2008).

Southern Serrate Dryandra differs from *Dryandra serratuloides* subsp. *perissima* in having shorter leaves with fewer lobes, shorter inflorescence bracts, earlier flowering and a more southern distribution (Brown et al., 1998).

Conservation Status

Southern Serrate Dryandra 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). Southern Serrate Dryandra is also listed as declared rare flora under the *Wildlife Conservation Act 1950* (Western Australia).

Distribution and Habitat

Southern Serrate Dryandra is endemic to Western Australia where it is known from nine populations, 10 km north of Mogumber. These populations occur on road verges, rail reserves, freehold land and conservation estate. The total population is estimated to be 600 plants (Patrick & Brown, 2001) and the area of occurrence is approximately 90 km². There is insufficient data to determine the area of occupancy. The majority of populations are in healthy condition and one population has increased from 35 plants in 2000, to 40 plants in 2008 (DECC, 2008).

Southern Serrate Dryandra grows in dense low heath, sometimes in open low woodland of *Eucalyptus wandoo* or *E. drummondii* or mallee eucalypt. It is found growing in lateritic gravel and brown loam on ridge tops or slopes in red-brown clay sand in lower areas. Associated species include *Allocasuarina humilis* and *Dryandra* species (George, 1996; Brown et al., 1998; Patrick & Brown, 2001). This species occurs within the Northern Agricultural (Western Australia) Natural Resource Management Region.

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

Threats

The main identified threat to Southern Serrate Dryandra is human disturbance and vehicle damage; one population has had vehicular damage.

The main potential threats to the species include weeds, inappropriate fire regimes, low rainfall periods, clearing, roadworks, grazing and disease. Populations occurring on road verges and near fire breaks are susceptible to damage from maintenance. Southern Serrate Dryandra's response to fire is unknown; however, it is thought that the species is vulnerable to fire in the vegetative and flowering phase. Feral rabbits (*Oryctolagus cuniculus*) have consumed seed at one location. This species is presumed to be susceptible to dieback caused by *Phytophthora cinnamomi*.

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.
- Identify appropriate intensity and interval of fire to promote seed germination and vegetation regeneration.
- More precisely assess population size, distribution, ecological requirements 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 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 Southern Serrate Dryandra.

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 and other activities involving substrate or vegetation disturbance in areas where Southern Serrate Dryandra occurs do not adversely impact on known populations.
- Investigate further formal conservation arrangements, management agreements and covenants on land where Southern Dryandra occurs and investigate inclusion in reserve tenure if possible.
- 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

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

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Trampling, Browsing or Grazing

- Implement a management plan for the control and eradication of feral rabbits.
- Manage total grazing pressure at important sites through exclusion fencing or other barriers.

Fire

- Develop and implement a suitable fire management strategy for Southern Serrate Dryandra.
- 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.

Diseases, Fungi and Parasites

- Implement suitable hygiene protocols to protect known populations from outbreaks of dieback caused by *Phytophthora cinnamomi*.
- If necessary, implement appropriate management actions to minimise the adverse impacts of existing *Phytophthora cinnamomi* infestations

Conservation Information

- Raise awareness of Southern Serrate Dryandra within the local community.
- Maintain liaisons with private landholders and land 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.

This list does not necessarily encompass all actions that may be of benefit to Southern Serrate Dryandra, 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 Moora District (Patrick & Brown, 2001),
- Threat Abatement Plan for Dieback caused by the root-rot fungus (*Phytophthora cinnamomi*) (EA, 2001), 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.

Council Heads of Australasian Herbaria (CHAH) 2007, *Australian Plant Census, IBIS database*, Council of Heads of Australian Herbaria, Centre for Plant Biodiversity Research, viewed 24 September 2008, <http://www.anbg.gov.au/cgi-bin/apni?taxon_id=269981>.

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George, AS, 1996, 'New taxa and a new infrageneric classification in *Dryandra* R.Br. (Proteaceae: Grevilleoideae)', *Nuytsia*, vol. 10, no. 3.

Patrick, SJ & Brown, AP, 2001, *Declared Rare and Poorly Known Flora in the Moora District*, Wildlife Management Plan No 28, Department of Conservation and Land Management, WA.

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.