

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

Approved Conservation Advice for
***Cadellia pentastylis* (Ooline)**

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

Cadellia pentastylis, Family Surianaceae, also known as Ooline and Scrub Myrtle, is a medium-sized spreading tree growing to 10 m and rarely to 25 m high. Leaves are glossy green, paler and dull underneath, and 1–7 cm long, 1.5–2 cm wide, with broad rounded tips. Leaf venation is prominent on both leaf surfaces when dry. Flowers are usually single, with white petals 5–7 mm long and occur sporadically. Fruit are a cluster of up to five brown coloured drupes, 3–5 mm in diameter, surrounded by papery, red sepals (Harden, 2002; DECC, 2005a; Harden et al., 2006).

Conservation Status

Ooline 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). It is also listed as vulnerable under the *Threatened Species Conservation Act 1995* (NSW) and vulnerable under the *Nature Conservation (Wildlife) Regulation 2006* (Queensland).

Distribution and Habitat

Ooline occurs on the western edge of the NSW north-west slopes, from Mt Black Jack near Gunnadah to west of Tenterfield, and extends into Queensland to Carnarvon Range and Callide Valley, south-west of Rockhampton (Harden et al., 2006). This species is conserved within the Tregole National Park (NP), Sundown NP, Carnarvon Gorge NP, Mt Kaputar NP, Gamilaroi Nature Reserve (NR), Gibraltar NR, Bunal Flora Reserve (FR), Mehi FR, Campbell State Forest (SF) and Deriah SF (Briggs & Leigh, 1996; Curran & Curran, 2005). Both Sundown NP and Carnarvon Gorge NP have more than 1000 individuals (Briggs & Leigh, 1996). Some existing stands are on private property (Fletcher, 2002). This species occurs within the Border River–Gwydir, Namoi (NSW), Burdekin, Burnett Mary and South West Queensland Natural Resource Management Regions.

Ooline grows in dry rainforest, semi-evergreen vine thickets and sclerophyll ecological communities, often locally dominant or as an emergent. Plants have been reported to be growing in cultivation at the Australian National Botanic Gardens, Canberra and Royal Botanic Gardens, Sydney (CHABG, 1994). Ooline is of significant biogeographic interest as it is a relic of the extensive rainforest vegetation which covered much of Australia during the Pleistocene (1.6 million to 10 000 years ago).

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

- Semi-evergreen vine thickets of the Brigalow Belt (North and South) and Nandewar Bioregions,
- Brigalow (*Acacia harpophylla* dominant and co-dominant), and
- White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland.

Threats

The main identified threats to Ooline are localised extinction due to small and scattered populations; inbreeding which threatens genetic diversity in small populations; low seed viability which threatens breeding success; clearing for agriculture; grazing and soil compaction by domestic stock, feral goats (*Capra hircus*) and pigs (*Sus scrofa*); invasion of habitat by weeds, such as Tiger Pear (*Opuntia aurantiaca*); frequent fires; tunnel and sheet erosion; damage to roadside populations during roadworks; and high insect attack (Fletcher, 2002; DECC, 2005a).

The main potential threats to Ooline include lack of recruitment of individuals at the Black Jack Mountain population (Curran & Curran, 2005) and logging of tree species, which may have affected the microclimate in the understorey (DECC, 2005a).

Research Priorities

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

- Design and implement a comprehensive monitoring program to determine and assess the success or otherwise of the recovery actions, and to guide further actions (DECC, 2005b).
- Identify at least three sites for implementation of recovery actions and monitoring, and investigate and assess the status of the Tenterfield Creek population (DECC, 2005b) including the impact of insects.
- More precisely assess ecological requirements, population dynamics, genetic variation, establishment and recruitment of individuals, to understand if inbreeding is adversely affecting populations (DECC, 2005b).

Regional Priority Actions

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

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 Ooline occurs do not adversely impact on known populations, by erecting signage and fencing off roadside remnants (DECC, 2005b).
- Investigate further formal conservation arrangements such as the use of covenants, conservation agreements or inclusion in reserve tenure, such as the possible acquisition of Turkey Ridge for the conservation of Ooline (DECC, 2005b).

Conservation Information

- Raise awareness of Ooline within the local community, particularly landowners.

Fire

- Identify appropriate intensity and interval of fire to promote seed germination and vegetation regeneration.
- Ensure the Threatened Species Hazard Reduction List is updated with the requirements of Ooline and that personnel undertaking burns are aware of its presence and fire sensitivity (DECC, 2005b).
- Review/include operational for Mt Kaputar NP and Gamilaroi NR Fire Management Strategies to protect Ooline from fire (DECC, 2005b).

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- 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.

Trampling, Browsing or Grazing

- Develop and implement a stock management plan for roadside verges and travelling stock routes.

Enable Recovery of Additional Sites and/or Populations

- Undertake appropriate seed collection and storage.
- Investigate options for linking, enhancing or establishing additional populations (DECC, 2005a).
- Implement appropriate 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 Ooline.

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.
- Minimise adverse impacts from land use at known sites.

Invasive Weeds

- Prepare advice and assist in the removal weed species within Ooline habitat, such as Tiger Pear (DECC, 2005b).
- Identify and remove weeds in the local area, which could become a threat to Ooline, using appropriate methods.
- Ensure chemicals or other mechanisms used to eradicate weeds do not have a significant adverse impact on the Ooline.
- Manage sites to prevent introduction of invasive weeds, which could become a threat to Ooline, 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 (DECC, 2005b).
- Implement threat abatement plans for the control and eradication of feral goats and pigs in the region (EA, 1999; DEH, 2005).

This list does not necessarily encompass all actions that may be of benefit to Ooline, 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

- NSW Priority Action Statement for Ooline (DECC, 2005b),
- Threat Abatement Plan for Competition and Land Degradation by Feral Goats (EA, 1999),
- Threat Abatement Plan for Predation, Habitat Degradation, Competition and Disease Transmission by Feral Pigs (DEH, 2005), and
- Gamilaroi Nature Reserve – Plan of Management (NSW NPWS, 2004).

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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