

**Approved Conservation Advice for
Acacia constablei (Narrabarba Wattle)**

(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

Acacia constablei, Family Mimosaceae, also known as the Narrabarba Wattle, is an erect or spreading shrub or small tree with bipinnate leaves comprising 6–15 pairs of pinnae each with 9–30 pairs of pinnules (leaflets) 1.5–2.5 mm long and <1 mm wide (Harden, 2001). The pale yellow to white/cream flower heads are globular and 5–7 mm diameter (Harden, 2001). Individuals are mostly from 1 to 3 m high but can grow to 7 m in sheltered situations (Orchard and Wilson, 2001).

Conservation Status

Narrabarba Wattle 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). The Narrabarba Wattle is also listed as vulnerable under the *Threatened Species Conservation Act 1995* (NSW).

Distribution and Habitat

Narrabarba Wattle has a geographic range of about 3 km (Briggs and Leigh, 1990) and is restricted to the Narrabarba area, on the far south coast of New South Wales (Tindale, 1980; Briggs and Leigh, 1990; Harden, 1991; Tame, 1992; Orchard and Wilson, 2001; NSW NPWS, 2003). Most known populations of this species are in Nadgee State Forest and within the boundaries of the proposed Narrabarba Hill Flora Reserve (NSW NPWS, 2003) but there is also one in Ben Boyd National Park (Kodala, pers.comm., 2002).

The Narrabarba Hill population is by far the largest and occupies several hectares. This population is estimated to have 5000 plants. Four much smaller populations occupy small areas on nearby rocky ridge-tops. One of these populations contains only one seedling, and the other three populations are estimated to be 400 plants, 300 plants and 20 mature plants with 3 seedlings. A sixth population located on another rocky ridge-top 1.4 km further north, north of the Womboyn River, has 40 plants recorded (NSW NPWS, 2003). Most of the populations are predominantly even-aged and appear to have regenerated after the last major fire event in November 1980 (Briggs and Leigh, 1990). Surveys failed to locate any plants on the ridge beside Swamp Road where several hundred plants were present in 1986 (Briggs and Leigh, 1990).

Narrabarba Wattle is confined to outcrops of rhyolite on rocky ridges (NSW NPWS, 2003) and grows mostly in poor, skeletal soils but sometimes in rich, brown to black loams (Briggs and Leigh, 1990; Orchard and Wilson, 2001). It is associated with a large expanse of bare rock (NSW NPWS, 2003) and grows on all aspects but predominantly on westerly-facing slopes (Briggs and Leigh, 1990). The largest population occurs on a long, narrow razorback ridge running north-west to south-east, with very steep exposed rocky slopes (Briggs and Leigh, 1990). Other sites contain large expanses of fairly flat rock (NSW NPWS, 2003).

This species is likely to be susceptible to extreme drought since the water-carrying capacity of the soil associated with the outcrops is generally low. In the 1997 to 1998 drought, an

estimated 25% of plants at Narrabarba Hill died and other populations were similarly affected (NSW NPWS, 2003).

The species forms almost impenetrable whipstick-like scrub (Tindale, 1980; Orchard and Wilson, 2001) and is the dominant or co-dominant species in the shrub community on these rock outcrops (Briggs and Leigh, 1990; Harden, 1991; NSW NPWS, 2003). Occupying the ecotone between the outcrops and forests dominated by *Eucalyptus sieberi*, these shrublands can be up to 8 m wide. *Allocasuarina littoralis* is also abundant here and appears to compete strongly with *Acacia constablei*.

This species occurs within the South East Corner Bioregion and the Southern Rivers 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 potential threat to Narrabarba Wattle is controlled and uncontrolled fire (NSW NPWS, 2003). Two of the sites were burnt by wildfire in 1980. Before then the sites were dominated by *Melaleuca armillaris* and *Kunzea ambigua*. However, these two species were almost eliminated from these sites by the single wildfire event. Such a dramatic change in the species composition for these sites reflects the fire-sensitive nature of the communities. While Narrabarba Wattle regenerated well from seed following the 1980 fire, any subsequent burning before the species has replenished soil-stored seed reserves could result in a marked decline of the *Acacia* populations (Briggs and Leigh, 1990). Other potential threats to this species include competition by weeds, especially from *Allocasuarina littoralis*, which clearly suppresses or kills many wattle plants at the edges of the rhyolite outcrops (NSW NPWS, 2003b). There is also some concern that adjacent forest areas are showing symptoms of infection with *Phytophthora cinnamomi* and that logging operations may spread the fungus. The susceptibility of this species to Dieback due to *Phytophthora cinnamomi* is unknown (NSW NPWS, 2003).

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 survey work in suitable habitat and potential habitat to locate any additional populations.
- Undertake seed germination and/or vegetative propagation trials to determine the requirements for successful establishment.
- Determine the susceptibility of the species to *Phytophthora cinnamomi*.
- Identify optimal fire regimes for regeneration (vegetative regrowth and/or seed germination) and response to other prevailing fire regimes.

Regional and Local Priority Actions

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

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.
- Control access routes to suitably constrain public access to known sites on public land.
- Undertake survey work in suitable habitat and potential habitat to locate any additional populations.
- Minimise adverse impacts from land use at known sites.
- If populations of the listed species are located on private land, protect them through the development of conservation agreements and/or covenants.
- Ensure there is no inappropriate anthropogenic disturbance in areas where Narrabarba Wattle occurs, excluding necessary actions to manage the conservation of the species.
- Manage any other known, potential or emerging threats.

Fire

- Develop and implement a suitable fire management strategy for the habitat of Narrabarba Wattle that provides an appropriate fire management regime for local populations.
- Ensure all known occurrences and new records of the species are entered into the NSW Wildlife Atlas to ensure up to date data is available for impact assessment and fire planning.

Diseases, Fungi and Parasites

- Develop and implement suitable hygiene protocols to protect known sites from further 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 Narrabarba Wattle within the local community.
- Engage with 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.

This list does not necessarily encompass all actions that may be of benefit to Narrabarba Wattle 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

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

- Draft Recovery Plan for Threatened Flora of Rocky Outcrops in South Eastern New South Wales (NSW National Parks and Wildlife Service, 2003) <http://www.nationalparks.nsw.gov.au>
- Threat Abatement Plan for Dieback caused by the root-rot fungus (*Phytophthora cinnamomi*) (Environment Australia (EA), 2001) <http://www.environment.gov.au>

Information Sources:

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