

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

Approved Conservation Advice for
Hakea archaeoides

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

Hakea archaeoides, Family Proteaceae, also known as Big Nellie Hakea, is a woody, multi-stemmed shrub or tree growing to 7 m tall. Leaves are soft, narrow, to 25 cm long, and 10–30 mm wide, and smooth, red-brown bark. The red and greenish-yellow flowers are clustered along a pendulous stalk in the leaf junctions during spring. Fruit is woody, 2–3 cm long, smooth, oval shaped, and ends in a sharp beak (Barker et al., 1999; DEC, 2005b).

Hakea archaeoides was formerly included in *H. trineura*, but this latter species is now considered restricted to Queensland (Harden, 2002). *Hakea archaeoides* differs from *H. trineura* by its secondary venation not obviously anastomosing, by its more densely pubescent stems, by its green tepals and red style, and by its smaller fruit and seed (Barker et al., 1999). This species has also been called *Hakea* sp. Manning River SF – Broken Bago SF (P.Hind, s.n.) (Briggs & Leigh, 1996).

Conservation Status

Hakea archaeoides 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 species is also listed as vulnerable under Schedule 2 of the *Threatened Species Conservation Act 1995* (NSW).

Distribution and Habitat

Hakea archaeoides is restricted to the near-coastal ranges, between Taree and Wauchope in north-east NSW, more than 230 m above sea level (Harden, 2002). Specimens have been found near Coopernook, Lansdowne State Forest, Broken Bago State Forest, Big Nellie (Manning River National Forest), Coorabak National Park (NP), Willi Willi NP, and Bago Bluff NP (Barker et al., 1999; Barker et al., 2000; NPWS, 2008). *Hakea archaeoides* is also reserved in Big Nellie Flora Reserve and Six-B Flora Reserve, each with less than 1000 plants (Briggs & Leigh, 1996). This species occurs within the Hunter–Central Rivers and Northern Rivers (NSW) Natural Resource Management Regions.

Hakea archaeoides occurs in a composite of wet sclerophyll forest and rainforest on hill slopes, on Triassic conglomerate (Barker et al., 1999). It is usually found on steep, rocky, sheltered slopes and in deep gullies in open eucalypt forest, and commonly occurs at the interface of dry eucalypt forest and gully communities (DEC, 2005b).

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

Threats

The main potential threats to *H. archaeoides* include inappropriate fire regimes; forest operations; and vulnerability to stochastic effects due to small population sizes (DEC, 2005b).

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 ecological requirements, including fire ecology, and undertake field studies to monitor seedling establishment and survivorship. This action may involve autecological study or a literature search for information on similar species (DEC, 2005a).

Regional and Local Priority Actions

The following priority recovery and threat abatement actions can be done to support the recovery of *H. archaeoides*.

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 forest activities, road widening and maintenance activities (or other infrastructure or development activities) involving substrate or vegetation disturbance in areas where *H. archaeoides* occurs do not adversely impact on known populations.
- 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.
- Investigate further formal conservation arrangements, management agreements and covenants on private land, and for crown and private land investigate inclusion in reserve tenure if possible.
- Assess implementation and effectiveness of forestry management prescriptions, and, if needed, develop or refine threatened species prescriptions.

Fire

- Develop and implement a suitable fire management strategy for *H. archaeoides*. The NSW Rural Fire Service recommends fire frequencies of no more than once every seven years for this species (NSW RFS, 2004).
- Provide maps of known occurrences to land managers and local and state Rural Fire Services and seek inclusion of mitigative measures in bush fire risk management plans, risk register and/or operation maps.

Conservation Information

- Raise awareness of *H. archaeoides* within the local community, particularly landowners with land adjacent to known populations.

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 Conservation Advice was approved by the Minister / Delegate of the Minister on: 1/10/2008

This list does not necessarily encompass all actions that may be of benefit to *H. archaeoides*, 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

- Coorabak National Park Draft Plan of Management and Fire Management Strategy (NPWS, 2002; NPWS, 2005a),
- Bago Bluff National Park Draft Plan of Management and Fire Management Strategy (NPWS, 2004; NPWS, 2005b), and
- Threatened species hazard reduction list (NSW RFS, 2004).

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

Information Sources:

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