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

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

Approved Conservation Advice for *Banksia goodii* (Good's Banksia)

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

Banksia goodii, Family Proteaceae, also known as Good's Banksia, is a prostrate shrub, with a slight tendency to grow erect, the stems growing to 20 cm high, often forming spreading clumps. The leaf blades are densely hairy, 15–30 cm long, 3–8 cm wide, have irregular, sharp teeth on the margin, and have curved leaf stalks 5–18 cm long (George, 1999). Good's Banksia has reddish to brown flowers forming inflorescence 8–15 cm long, which occur from November to January (George, 1999).

Conservation Status

Good's Banksia 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 rare under the *Wildlife Conservation Act 1950* (Western Australia).

Distribution and Habitat

Good's Banksia is endemic to south-western Western Australia, occurring near Albany and the Porongorups (George, 1999). The species was formerly widespread but most suitable habitat has been cleared for agriculture (Taylor & Hopper, 1988). Most populations are on roadside verges and farmland and nine populations are in Millbrook Nature Reserve (Robinson & Coates, 1995). This species is considered to have 17 subpopulations (Witkowski & Lamont, 2006). In 1995, the total population was estimated at 1000 plants with a mean of 34 plants in each stand (Robinson & Coates, 1995; Leimu et al., 2006).

Good's Banksia forms dense stands in low open forest and low woodland of Jarrah (*Eucalyptus marginata*) and Western Sheoak (*Allocasuarina fraseriana*) over *Agonis* heath (Witkowski & Lamont, 2006). Soils are generally shallow, white to grey sand over laterite (Robinson & Coates, 1995). Landform is generally flat to gently undulating, with winter dominant rainfall of 800–870 mm annually (Taylor & Hopper, 1988). This species occurs within the South Coast (Western Australia) Natural Resource Management Region.

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

Threats

The main identified threats to Good's Banksia are inappropriate fire regimes; poor dispersal ability; low reproductive rates; road maintenance activities; and clearing for agriculture (Lamont et al., 1993b; Witkowski & Lamont, 2006). Small populations have extremely low fecundity and are likely to eventually die out unless direct human intervention such as hand-seeding is undertaken (Witkowski & Lamont, 2006). Seedling establishment only occurs after fire. Prescribed burns every 15 years would maximise recruitment in this species (Drechsler et al., 1999).

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The main potential threats to Good's Banksia include dieback caused by the root rot fungus *Phytophthora cinnamomi* and climate change (Brown et al., 1998; Witkowski & Lamont, 2006). As a consequence of poor dispersal ability, low reproductive rates, and habitat fragmentation, Good's Banksia cannot migrate with climate change, but given its wide climatic tolerance the species is likely to withstand climate change *in situ* (Witkowski & Lamont, 2006).

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, genetic variation, 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 trials to determine the requirements for successful establishment.
- Research the impact of dieback caused by the root rot fungus *Phytophthora cinnamomi* on Good's Banksia (Brown et al., 1998).

Regional and Local Priority Actions

The following priority recovery and threat abatement actions can be done to support the recovery of Good's Banksia.

Habitat Loss, Disturbance and Modification

- 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, specifically small populations (less than 80 individuals) that are likely to decline due to decreased seed production (Lamont, Klinkhamer & Witkowski, 1993a; Drechsler et al., 1999).
- Manage threats to areas of vegetation that contain populations/occurrences/remnants of Good's Banksia.
- Ensure road widening and maintenance activities (or other infrastructure or development activities) involving substrate or vegetation disturbance in areas where Good's Banksia occurs do not adversely impact on known populations.
- Investigate further formal conservation arrangements such as the use of covenants, conservation agreements or inclusion in reserve tenure.
- Control access routes to suitably constrain public access to known sites on public land.
- Suitably control and manage access on private land.

Fire

- Develop and implement a suitable fire management strategy for Good's Banksia.
- Provide maps of known occurrences to land owners 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.

Diseases, Fungi and Parasites

- Develop and implement suitable hygiene protocols to protect known sites from further outbreaks of dieback caused by the root rot fungus *Phytophthora cinnamomi*.

Conservation Information

- Raise awareness of Good's Banksia within the local community, particularly landholders and road maintenance workers.

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Enable Recovery of Additional Sites and/or Populations

- Undertake appropriate seed collection and storage.
- Consider hand-seeding to foster population increase (Witkowski & Lamont, 1997).
- 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 Good's Banksia, 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 & Poorly Known Flora in the Albany District (Robinson & Coates, 1995),
- Threat Abatement Plan for Dieback Caused by the Root-Rot Fungus *Phytophthora cinnamomi* (EA, 2001), and
- There are several management and threat abatement plans addressing the problem of *Phytophthora cinnamomi* specifically in Western Australia (Dieback Working Group, 2000; CALM, 2003).

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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