This Conservation Advice was approved by the Minister / Delegate of the Minister on: 3/07/2008.

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

Approved Conservation Advice for *Pultenaea glabra* (Smooth Bush-pea)

This Conservation Advice has been developed based on the best available information at the time this conservation advice was approved.

Description

Pultenaea glabra, Family Fabaceae, also known as Smooth Bush-pea or Swamp Bush-pea, is an erect shrub growing to 1.5 m tall with smooth hairless stems and leaves (Fraser et al., 2004; DECC, 2005). Leaves are alternate, narrow, and concave, to 20 mm x 2 mm, with a pointed tip. The yellow-orange pea-like flowers are borne in dense subterminal or apparently terminal inflorescences (DECC, 2005). Fruit is a swollen pod to 5 mm long.

The taxonomy of the Smooth Bush-pea species complex was recently revised (de Kok & West, 2002) and is the subject of ongoing research (DECC, 2005). Information in this document will follow the Australian Plant Census and the CHAH's (2005) view of the species in a narrower sense than that described by de Kok & West (2002).

Conservation Status

Smooth Bush-pea 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). This species is also listed as vulnerable under Schedule 2 of the *Threatened Species Conservation Act 1995* (NSW).

Distribution and Habitat

Disjunct populations of Smooth Bush-pea occur in Queensland, Victoria and NSW (de Kok & West, 2002; Fraser et al., 2004). The species is known from central-eastern Queensland (de Kok & West, 2002) as well as from four locations in Victoria, where it is locally abundant at the Bunyip and Lerderderg-Wombat localities, is uncommon at Wandin, and is in serious decline at Kinglake (Fraser et. al., 2004). In NSW, it is confined to the higher Blue Mountains (Katoomba-Hazelbrook and Mount Victoria) (DECC, 2005). This species occurs within the Fitzroy, Port Phillip and Westernport (Victoria) and the Hawkesbury-Nepean (NSW) Natural Resource Management Regions.

Smooth Bush-pea occurs in discrete populations within swamp margins, hillslopes, gullies and creekbanks within dry sclerophyll forest and tall damp heath on sandstone (Fraser et al., 2004; DECC, 2005). In Victoria, Smooth Bush-pea is associated with acidic, seasonally waterlogged soils, swampy areas and drainage lines (Fraser et al., 2004).

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

- Shale/Sandstone Transition Forest,
- White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland,
- Cumberland Plain Woodlands,
- Turpentine-Ironbark Forest in the Sydney Basin Bioregion, and
- Temperate Highland Peat Swamps on Sandstone.

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Threats

The main identified threats to Smooth Bush-pea include habitat loss due to clearing for urban development, weed invasion, dieback caused by *Phytophthora cinnamomi,* fire (too frequent and too infrequent) and grazing (Fraser et al., 2004; DECC, 2005). The species is thought to require no more that once every seven years (NSW RFS, 2004).

Research Priorities

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

- Clarify the species' taxonomic status.
- Undertake survey work in suitable habitat and potential habitat to locate any additional populations.
- Once the taxonomy has been clarified, assess population size, distribution, ecological requirements and the relative impacts of threatening processes.
- Investigate the species' response to fire, including identifying appropriate intensity and interval of fire to promote seed germination.
- Undertake seed germination and/or vegetative propagation trials to determine the requirements for successful establishment.

Regional Priority Actions

The following regional priority recovery and threat abatement actions can be done to support the recovery of Smooth Bush-pea.

Habitat Loss, Disturbance and Modification

- Identify populations of high conservation priority.
- Ensure chemicals or other mechanisms used to eradicate weeds do not have a significant adverse impact on Smooth Bush-pea.
- Ensure road widening and maintenance activities and other infrastructure or development activities involving substrate or vegetation disturbance in areas where the species occurs do not adversely impact on known populations.
- Investigate formal conservation arrangements such as the use of covenants, conservation agreements or inclusion in reserve tenure.

Invasive Weeds

- Develop and implement a management plan for the control of weed species in the local region.

Fire

- Develop and implement a suitable fire management strategy for Smooth Bush-pea. and hazard reduction techniques should not include slashing, tree removal or trittering
- 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 relevant hygiene and management protocols recommended in the Threat Abatement Plan for Dieback caused by the Root-rot Fungus *Phytophthora cinnamomi* (EA, 2001) to protect known sites from further outbreaks of the disease.

Conservation Information

- Raise awareness of Smooth Bush-pea within the local community and among contractors undertaking road maintenance activities (or other infrastructure or development activities involving substrate or vegetation disturbance) within potential habitat.

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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

Local Priority Actions

The following local priority recovery and threat abatement actions can be done to support the recovery of Smooth Bush-pea.

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.
- Control access routes to suitably constrain public access to known sites on public land.
- Minimise adverse impacts from land use at known sites.
- Develop and implement a targeted prelogging survey protocol and management prescription for this species in Coricudgy State Forest (DECC, 2005).
- Develop and implement site management statements for known populations, based on outcomes of monitoring (DECC, 2005).

Invasive Weeds

- Identify and remove weeds in the local area, which could become a threat to Smooth Bush-pea, using appropriate methods.
- Manage sites to prevent introduction of invasive weeds, which could become a threat to Smooth Bush-pea, using appropriate methods.

Trampling, Browsing or Grazing

- Prevent grazing pressure at known sites through exclusion fencing or other barriers.

Fire

- Implement an appropriate fire management regime for local populations.
- Protect Kinglake population from fire, as reintroduction of fire may lead to local extinction of the species at the site (Fraser et al., 2004).

This list does not necessarily encompass all actions that may be of benefit to this species 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

- Blue Mountains National Park Fire Management Strategy (NSW NPWS, 2004) and Plan of Management (NSW NPWS, 2001), and
- Threat Abatement Plan for Dieback Caused by the Root-Rot Fungus *Phytophthora cinnamomi* (EA, 2001).

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

Information sources:

Council of Heads of Australasian Herbaria (CHAH, 2005) Australian Plant Census, viewed 5 May 2008, <http://www.anbg.gov.au/cgi-bin/apni?taxon_id=4898>.

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