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

Approved Conservation Advice for *Daviesia discolor*

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

Daviesia discolor, Family Fabaceae, is a multi-stemmed shrub to 2 m tall with hairless, angular branchlets. Phyllodes are spirally arranged, more or less sickle-shaped, tapered to both ends, 4–16 cm long, 4–11 mm wide, thin and green. Flowers are in inflorescences borne in the angles between the upper phyllodes and branchlets. Inflorescences are 3–8 flowered, the axis 2.5–10 mm long. Flowers are of a typical "pea" form with a large petal at the back (the standard), two smaller lateral petals (wings) and two inner petals fused together to form the keel. The standard is yellow with dull red markings surrounding an intense yellow spot in the centre. Wings are yellow towards the apex, dull red towards the base. The keel is pale green with a dull red tip. Pods are 7–8.5 mm long, 5.5–6 mm wide, lead grey or purple. Flowering occurs from August to October (Crisp, 1991).

Conservation Status

Daviesia discolor 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 the *Nature Conservation (Wildlife) Regulation 2006* (Queensland).

Distribution and Habitat

Daviesia discolor is known from three widely disjunct localities in Queensland, near Blackwater on the Blackdown Tableland, in the Mount Walsh area near Biggenden (Crisp, 1991) and north of Mount Playfair within Carnarvon National Park (Queensland Herbarium specimen records). On the Blackdown Tableland, *D. discolor* occurs on sandy soil derived from sandstone and on lateritic clay, at altitudes of 600 to 900 m, in open eucalypt forest dominated by species such as Blackdown Stringybark (*Eucalyptus sphaerocarpa*) and Black Stringybark (*Eucalyptus nigra*) (Crisp, 1991). In the Mount Walsh area, *D. discolor* grows in very tall open forests of Bloodwood (*Corymbia trachyphloia*) and White Mahogany (*Eucalyptus acmenoides*) on hillcrests and slopes at 500 to 580 m altitude on well-drained, shallow sandy loam to sandy clays (Halford, 1998). The population in Carnarvon National Park occurs on brown sandy loam of creek banks, in mixed shrubland with scattered *Triodia* sp. hummocks and *Angophora* sp. trees (CANB collection details, 1993).

The species is conserved within Blackdown Tableland National Park (Briggs & Leigh, 1996), Mount Walsh National Park (Halford, 1998) and Carnarvon National Park. Surveys in the Mount Walsh area in 1997 indicated that there were two populations, at Mount Walsh National Park and SF 1344, with a combined total of about 17 800 plants over an area of 2.5 ha, all being mature individuals to 1.5 m tall (Halford, 1998). The Mount Walsh National Park population contained approximately 90% of the total population (Halford, 1998). There are no survey data available for the Blackdown Tableland area but herbarium notes indicate that the species was regarded as locally common when collected in the area in 1977, 1990 and 1997 (BRI collection details, n.d.; CANB collection details, n.d.). No data are available on the

size of the population in Carnarvon National Park. This species occurs within the Fitzroy and Burnett Mary (Queensland) Natural Resource Management Regions.

The distribution of this species overlaps with the "Brigalow (*Acacia harpophylla* dominant and co-dominant)" EPBC Act-listed threatened ecological community.

Threats

The main identified threat to *D. discolor* is fire, either deliberate fuel reduction burns, or wildfire (Halford, 1998). Although the species appears to be capable of resprouting from rootstock after fire, too high fire frequency would eventually lead to population declines (Halford, 1998).

The main potential threats to *D. discolor* include cattle grazing, which may indirectly affect the species through the use of regular fires to promote grass in the understorey (Halford, 1998). No exotic weed species were observed at the Mount Walsh National Park and SF 1344 sites surveyed for *D. discolor*, although Lantana (*Lantana camara*) was a common weed in the vicinity of these populations (Halford, 1998).

Research Priorities

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

- Conduct research into the population biology and ecology of *D. discolor*.
- Investigate the effects of frequent fire on longevity and the ability of *D. discolor* to resprout.
- Assess the impact of current fire and grazing regimes (Halford, 1998).
- 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 the Blackdown Tableland area to gather information on populations of *D. discolor* and potential threats in this region (Halford, 1998).
- Undertake seed germination and/or vegetative propagation trials to determine the requirements for successful establishment.

Regional and Local Priority Actions

The following regional and local priority recovery and threat abatement actions can be done to support the recovery of *D. discolor*.

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 chemicals or other mechanisms used to eradicate weeds do not have a significant adverse impact on *D. discolor*.
- Ensure road widening and maintenance activities (or other infrastructure or development activities as appropriate) involving substrate or vegetation disturbance in areas where *D. discolor* occurs do not adversely impact on known populations.
- Minimise adverse impacts from land use at known sites.
- Investigate further formal conservation arrangements such as the use of covenants, conservation agreements or inclusion in reserve tenure.

Invasive Weeds

- Identify and remove weeds in the local area, which could become a threat to *D. discolor*, using appropriate methods.
- Manage sites to prevent introduction of invasive weeds, which could become a threat to the species, using appropriate methods.

Trampling, Browsing or Grazing

- Ensure grazing management practices, such as burning to promote grass growth, do not have adverse effects on the recovery of *D. discolour*.

Fire

- Develop and implement a suitable fire management strategy for *D. discolor*.
- 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.

Conservation Information

- Raise awareness of *D. discolor* within the local community.

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 *D. discolor*, 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

- Weeds of National Significance: Lantana (*Lantana camara*) Strategic Plan (ARMCANZ, 2001).

This prescription was current at the time of publishing; please refer to the relevant agency's website for any updated versions.

Information Sources:

Agriculture & Resource Management Council of Australia & New Zealand (ARMCANZ) 2001, *Weeds of National Significance: Lantana (*Lantana camara*) Strategic Plan*. National Weeds Strategy.

BRI Collection Records (undated), Queensland Herbarium specimens.

Briggs, JD & Leigh, JH 1996, *Rare or Threatened Australian Plants*, Centre for Plant Biodiversity Research, CSIRO Division of Plant Industry, Canberra, ACT.

CANB Collection Records (undated), Australian National Herbarium specimens.

Crisp, MD 1991, 'Contributions towards a revision of *Daviesia* (Fabaceae: Mirbelieae), II. The *D. latifolia* group' *Australian Systematic Botany*, vol. 4, no. 2, pp. 229–298.

Halford, D 1998, *Survey of Threatened Plant Species in South East Queensland Biogeographical Region*, Department of Environment, Queensland CRA/RFA Steering Committee.

Vallee, L, Hogbin, T, Monks, L, Makinson, B, Matthes, M & Rossetto, M 2004, *Guidelines for the Translocation of Threatened Plants in Australia* (2nd ed.), Australian Network for Plant Conservation, Canberra.