

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

Approved Conservation Advice for
Dodonaea rupicola

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

Dodonaea rupicola, Family Sapindaceae, is a shrub to 1 m tall with spreading branches and rounded to somewhat angular branchlets densely covered in coarse hairs. Leaves are pinnate (divided into leaflets), 1.5–3.5 cm long on a stalk 3–8 mm long, ending in a single terminal leaflet. Each leaf has 10–18 lateral leaflets which are often curved downwards, 4–9.5 mm long, 2–4 mm wide, with a dense covering of coarse hairs, margins entire or sometimes wavy. The terminal leaflet is lobe-like. This species has separate male and female plants with unisexual flowers borne in branched inflorescences. Flowers are on stalks 2–2.5 mm long, lacking petals. The fruit is a four-winged capsule 7.5–9 mm long, 12–15 mm wide, red-brown at maturity, leathery, the wings extending 3–4 mm beyond the main body of the capsule. Flowering and fruiting usually occur from September to November (West, 1984, 1985).

Conservation Status

Dodonaea rupicola 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 Act 1992* (Queensland).

Distribution and Habitat

Dodonaea rupicola is known from the Glasshouse Mountains in south-east Queensland, growing among rocks on the mountains (West, 1984). It occurs at four sites over about 10 km between Caboolture and Beerwah, with a total area of occupancy of about 17 ha (Halford, 1998). Surveys conducted in 1997 indicated populations of approximately 550 at Wild Horse Mountain, 660 at Mount Saddleback and 65 at Mount Cooee site 2 (Halford, 1998). Another site at Mount Cooee held the majority of individuals of the species, but the extremely patchy distribution of *D. rupicola* at this site made it difficult to accurately estimate the population size from quadrant data. Halford (1998) suggested that 10 000 to 20 000 individuals was a reasonable 1997 estimate of this population. Sites are on low hill crests and moderately to steeply inclined slopes between 40 to 160 m above sea level, in open shrubland to tall woodlands (Halford, 1998). The sites on Mount Saddleback and Mount Cooee are in legally-gazetted conservation reserves in the Glasshouse Mountains National Park, whereas the Wild Horse Mountain site is in state forest (Halford, 1998). This species occurs within the South East Queensland 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 potential threats to *D. rupicola* include inappropriate fire regimes and invasion by weed species. If fires are too frequent, plants will have too little time between fires to build up a soil seedbank to replace the plants lost to fire, while if fire is too infrequent adult plants will

become senescent and the soil seedbank may decline to the point where population levels cannot be maintained (Halford, 1998). Exotic weed species have been recorded from Wildhorse Mountain and Saddleback Mountain and there is potential for these weeds to impact upon *D. rupicola* populations (Halford, 1998).

Research Priorities

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

- Conduct research into the effects of fire on the population dynamics of *D. rupicola* (Halford, 1998).
- Collect detailed data on reproductive ecology, especially in relation to seed germination (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 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.

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. rupicola*.

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.
- Ensure road widening and maintenance activities (or other infrastructure or development activities as appropriate) involving substrate or vegetation disturbance in areas where *D. rupicola* occurs do not adversely impact on known populations.
- Control access routes to suitably constrain public access to known sites on public land.

Invasive Weeds

- Identify and remove weeds in the local area, which could become a threat to *D. rupicola*, using appropriate methods.
- Manage sites to prevent introduction of invasive weeds, which could become a threat to the species, using appropriate methods.
- Ensure chemicals or other mechanisms used to eradicate weeds do not have a significant adverse impact on *D. rupicola*.
- Monitor the level and distribution of weeds within the habitat of *D. rupicola* (Halford, 1998).

Fire

- Develop and implement a suitable fire management strategy for *D. rupicola*.
- Identify appropriate intensity and interval of fire to promote seed germination.
- 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 *D. rupicola* within the local community.

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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.

This list does not necessarily encompass all actions that may be of benefit to *D. rupicola*, but highlights those that are considered to be of highest priority at the time of preparing the conservation advice.

Information Sources:

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.

West, JG 1984, 'A revision of *Dodonaea* Miller (Sapindaceae) in Australia', *Brunonia*, vol. 7, no. 1.

West, JG 1985, '*Dodonaea*' in: George, AS (Ed.) *Flora of Australia*, vol. 25, Australian Government Printing Service, Canberra.