

**Advice to the Minister for the Environment, Heritage and the Arts  
from the Threatened Species Scientific Committee (the Committee)  
on Amendments to the list of Threatened Species  
under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act)**

**1. Scientific name (common name)**

*Pomaderris reperta* (Denman pomaderris)

**2. Reason for Conservation Assessment by the Committee**

This advice follows assessment of information provided by a public nomination to list the Denman Pomaderris.

This is the Committee's second consideration of the species under the EPBC Act.

**3. Summary of Conclusion**

The Committee judges that the species has been demonstrated to have met sufficient elements of Criterion 2 to make it **eligible** for listing as **critically endangered**.

The highest category for which the species is eligible to be listed is **critically endangered**.

**4. Taxonomy**

The species is conventionally accepted as *Pomaderris reperta* (Denman Pomaderris). The Denman Pomaderris was described as a new species in 1997 (Walsh & Coates 1997).

**5. Description**

The Denman Pomaderris is a perennial shrub in the family Rhamnaceae which grows from one to three metres high. The plant has oval leaves eight to twenty millimetres wide with a hairy upper surface. The species bears clusters of 10 to 30 cream flowers on a short stem.

**6. National Context**

The Denman Pomaderris is currently known from a single ridgeline near Denman in the upper Hunter Valley, New South Wales. The species is endemic to New South Wales and its current geographic distribution falls within the Hunter-Central Rivers Catchment Management Authority. Three populations of the Denman Pomaderris have been identified within a 4 km radius along this ridgeline. Two are located either within the [REDACTED] site, managed by the [REDACTED], or on adjacent Crown land. The third population, comprised of at least 15 subpopulations, is located at [REDACTED], north of Denman, on land owned by [REDACTED].

The total population size for the Denman Pomaderris was originally estimated to be 300–400 individuals. A recent revision, however, based on additional survey work at the [REDACTED] site, has increased the total population estimate to 500–2000 individuals (T.Peake 2006 pers. comm.). These population estimates make no reference to the numbers of mature or juvenile individuals.

The extent of occurrence of this species has been estimated at 50 km<sup>2</sup> and the area of occupancy less than 10 km<sup>2</sup> (based on the occurrence of all populations within a radius of 4 km and the lack of specific location data). This may be an overestimate. The population is severely fragmented.

The Denman Pomaderris was gazetted as endangered under the NSW *Threatened Species Conservation Act 1995* in December 2002.

## **7. Relevant Biology/Ecology**

According to the Rhamnaceae Study Group, the Denman Pomaderris would regenerate primarily from seed (J. Walker 2006, pers. comm.). The plant, as with other members of the genus *Pomaderris*, flowers in the October–November period. Seeds are usually produced in large quantities and drop close to the parent plant with the seed capsules opening in early summer. Seeds are 1–2 mm long and hard-coated. *Pomaderris* seeds require heat to germinate. In the wild, this means that high rates of germination occur after fires. Seed loss generally occurs through insect predation on the ground, rather than while the seed is retained within the capsules. *Pomaderris* species are usually very easy to propagate from seed (J. Walker 2006, pers. comm.). The Denman Pomaderris grows in *Eucalyptus crebra*–*E. blakelyi* woodland associated with sandy loam on sandstone or conglomerate or colluvial soils on similar substrate (T. Peake 2006, pers. comm.).

## **8. Description of Threats**

Given its restricted geographical distribution and low population numbers, the potential threats to the Denman Pomaderris include vegetation clearance and physical damage to plants associated with vehicular traffic and public access. Prolonged drought has been cited as another threat to this species, based on observations made in relation to small populations of a related species, *Pomaderris delicata*, which had been restricted to two sites. In the latter case a combination of drought and road widening activities reduced the total population by fifty per cent. The Committee notes that an open cut coal mine has been proposed for an area that includes a population of this species. In the absence of any conservation agreement with the mine developer it is possible that mining activities may result in adverse impacts on the species through clearance of native vegetation, pollution or changes in hydrology.

## **9. Public Consultation**

The nomination was made available for public exhibition and comment for five months. The Committee has had regard to all public comment that was relevant to the survival of the species.

## **10. How judged by the Committee in relation to the criteria of the EPBC Act and Regulations**

The Committee judges that the species is **eligible** for listing as **critically endangered** under the EPBC Act. The assessment against the criteria is as follows:

**Criterion 1: It has undergone, is suspected to have undergone or is likely to undergo in the immediate future a very severe, severe or substantial reduction in numbers**

The Denman Pomaderris is only known from an area of the Wybong Uplands, estimated at about 2 000 ha in area, that is one of the largest remaining tracts of native vegetation in the upper Hunter Valley region. The nomination infers that there has been a decline in the extent of native vegetation in the region. The estimated decline in native vegetation cover has not, however, been quantified. In particular, no estimate of decline in the preferred habitat of the Denman Pomaderris, namely *Eucalyptus crebra*–*E. blakelyi* woodland on sandy loam or colluvial soils, has been provided. Details provided in Walsh 2006 concerning the population of the species at the Myambat site suggest that this population has declined but the decline has not been quantified.

There are no quantitative data available to judge the degree to which the species has undergone a reduction in numbers. Although the Committee notes that the species is suspected to have undergone a reduction in numbers, it judges that there are insufficient data available to assess whether the reduction would be very severe, severe or substantial. Therefore, the species is not eligible for listing in any category under this criterion.

**Criterion 2: Its geographic distribution is precarious for the survival of the species and is very restricted, restricted or limited**

The geographical distribution of the Denman Pomaderris is very restricted. Its distribution is also severely fragmented. The species exists as three populations, none of which is located in a conservation reserve. Based on advice that all three populations are located within a circle with a radius of 4 km, the extent of occurrence is estimated to be about 50 km<sup>2</sup> and the area of occupancy less than 10 km<sup>2</sup>.

In Bell (2001) it was reported that “extensive vegetation survey in the nearby Goulburn River NP, Wollemi NP, and Manobolai NR and Crown land did not locate any additional populations of this species”. This species is conspicuous within its preferred habitat, and thus readily detected if present. Although the largest population of this species was discovered subsequent to this report (i.e. the population at [REDACTED] in the Wybong uplands) all advice suggests that surveys for the species have been adequate. The limiting factor for the distribution of the Denman Pomaderris would appear to be the presence of preferred habitat — *Eucalyptus crebra*–*E. blakelyi* woodland associated with sandy loam soil on sandstone or conglomerate (NSW Scientific Committee 2002).

As seed is dispersed from capsules on the parent plant and falls in the area surrounding the parent plant, it would appear that the ability of this species to colonise new areas or re-colonise previous habitat is restricted. Fragmentation has taken place through changes in land management such as conversion to grazing land. These changes are likely to have removed contiguous areas of the preferred woodland habitat and created barriers to plant dispersal. Land clearance has reduced the geographical distribution of this species to a degree that, at its current extent, is precarious for the survival of the species. The precariousness of the distribution is heightened by the lack of targeted conservation management at any of the population sites and, in the absence of any agreed conservation measures such as covenants, management plans and recovery plans. The species is therefore potentially threatened by activities such as open cut mining and changing land management practices, activities which are currently proposed or occurring in the immediate environs.

The Committee considers that the species has a very restricted geographic distribution, which is precarious for the survival of the species due to potential threats in the form of vegetation clearance, physical damage to plants, certain impacts associated with open cut mining such as pollution and altered hydrology, and road maintenance and widening. Therefore, the species has been demonstrated to have met the relevant elements of Criterion 2 to make it **eligible** for listing as **critically endangered**.

**Criterion 3: The estimated total number of mature individuals is limited to a particular degree; and either**  
**(a) evidence suggests that the number will continue to decline at a particular rate; or**  
**(b) the number is likely to continue to decline and its geographic distribution is precarious for its survival**

Although the estimated total number of mature individuals is likely to be low there are no data available to determine the proportion of mature individuals in the population. The geographical distribution is precarious for the survival of the species but there is no quantified evidence to determine rate of decline in population numbers.

The Committee judges that the total number of mature individuals is low, however, there are insufficient data available to suggest whether the number will decline at a very high, high or substantial rate or is likely to decline and the species' distribution is precarious for its survival. Therefore, as the species has not been demonstrated to have met the required elements of Criterion 3, it is not eligible for listing in any category under this criterion.

**Criterion 4: The estimated total number of mature individuals is extremely low, very low or low**

Population estimates for the Denman Pomaderris range from 300 to 2000 individuals. This estimate does not refer to the proportion of mature and immature individuals. The most recent surveys (2006) suggest that the total number of individuals is at the high end of the range but the surveys have not been supported by published data.

There are insufficient data available to estimate whether the total number of mature individuals is very low, low or limited. Therefore, as the species has not been demonstrated to have met this required element of Criterion 4, it is not eligible for listing in any category under this criterion.

**Criterion 5: Probability of extinction in the wild that is at least:**  
**a) 50% in the immediate future; or**  
**b) 20% in the near future; or**  
**c) 10% in the medium-term future.**

There are no data available to estimate a probability of extinction of the species in the wild over a relevant timeframe. Therefore, as the species has not been demonstrated to have met the required elements of Criterion 5, it is not eligible for listing in any category under this criterion.

## 11. CONCLUSION

The Denman Pomaderris is a species in the family Rhamnaceae which has a total population estimated to be between 300 and 2000 individuals. The number of individuals falls within the low classification. The species has a very restricted geographical distribution, with an estimated extent of occurrence of about 50 km<sup>2</sup> and an area of occurrence less than 10 km<sup>2</sup>. The species exists as three populations along a ridgeline near Denham in the upper Hunter Valley within a circular area with a 4 km radius. The three populations are currently exposed to a range of activities which represent current threats, or potential threats, to the species' existence. It is possible that, in the absence of agreed conservation measures, one major development, a proposed open cut coal mine, may have a major impact on the largest of the remaining populations. It is believed that this very restricted geographical distribution and the lack of any formal conservation arrangements in relation to the species are precarious for the survival of the species.

*Pomaderris reperta* (Denman Pomaderris) was nominated for inclusion in the list of threatened species referred to in section 178 of the EPBC Act. The nominator suggested listing in the endangered category of the list.

The Committee accepts that this species, with an estimated extent of occurrence of 50 km<sup>2</sup> has a very restricted distribution and that this distribution is precarious for the survival of the species. Therefore, the species has been demonstrated to have met sufficient elements of Criterion 2 to make it **eligible** for listing as **critically endangered**.

The highest category for which the species is eligible to be listed is **critically endangered**.

## 12. Recommendation

The Committee recommends that the list referred to in section 178 of the EPBC Act be amended by **including** in the list in the **critically endangered** category:

***Pomaderris reperta* (Denman Pomaderris)**

## Key references used to assess this nomination

Bell, S. (1997b) Vegetation survey and mapping of Crown land south of Manobalai NR, upper Hunter Valley. Unpublished report to the NSW National Parks and Wildlife Service, Upper Hunter District.

Bell, S. (1998) Vegetation survey of Wollemi National Park: A fire management document. Vols 1 & 2. Unpublished report to NSW National Parks and Wildlife Service, Upper Hunter District.

Bell, S.A.J. (2001) Notes on the distribution and conservation status of some restricted plant species from sandstone environments of the upper Hunter Valley, New South Wales. *Cunninghamia* **7(1)**: 77–88.

Hill, L. (1999) Goulburn River National Park & Munghorn Gap Nature Reserve. Vegetation survey for fire management purposes. Vol. 1: Main report. NSW National Parks and Wildlife Service, Upper Hunter District.

Hunter-Central Rivers Catchment Management Authority (in prep.) *The Vegetation of the Central Hunter Valley, NSW. A report on the findings of the Hunter Remnant Vegetation Project — Final Draft 20 April 2005.*

NSW Scientific Committee (2002) *Pomaderris reperta* — Endangered Species Listing, Final Determination. NSW Government.

Peake, T. & Bell, S. (in prep) The vegetation of Manobalai NR, upper Hunter Valley. Unpublished report to NSW National Parks and Wildlife Service, Upper Hunter District.

Peake, T. (Umwelt (Australia) Pty Ltd). Personal communication. 10 November 2006.

Walker, J. (Rhamnaceae Study Group/ Association of Societies for Growing Australian Plants). Personal communication. 6 November 2006.

Walsh, N.G., and Coates, F. (1997) New taxa, New Combinations and an Infrageneric Classification in *Pomaderris* (Rhamnaceae). *Muelleria* **10**: 27–56.