

NSW SCIENTIFIC COMMITTEE

Pomaderris delicata N.G.Walsh & F.Coates (Rhamnaceae)

Review of Current Information in NSW

July 2009

Current status:

Pomaderris delicata (Delicate Pomaderris) is not currently listed under Commonwealth, or any other State legislation. The NSW Scientific Committee recently determined that *Pomaderris delicata* meets criteria for listing as Critically Endangered in NSW under the *Threatened Species Conservation Act 1995* (TSC Act), based on information contained in this report and other information available for the species.

Species description:

Pomaderris delicata (family Rhamnaceae) is described in Walsh & Coates (1997) as follows: “shrub 1-2m high. Young stems pubescent with very sparse, loosely appressed greyish-yellow or rusty simple hairs and dense, greyish-yellow stellate hairs. Leaves elliptic, 13-30mm long, 5-15mm wide; base cuneate; margins entire, plane or slightly recurved; apex obtuse to broadly acute; adaxial lamina glabrous, smooth lateral veins not or slightly impressed; abaxial lamina densely pubescent with greyish stellate hairs; midrib with a few appressed, pale or rusty simple or comb-like hairs, sometimes extending onto lateral veins; petiole 3-5mm long; stipules triangular, acute, 1-2mm long, caducous. Inflorescence of 20 to >50 flowers, pyramidal, terminal, 1.5-4cm long, 2-5cm wide; bracts caducous; pedicels 1.5-3mm long. Flowers golden-yellow; externally pubescent with sparse to moderately dense, loosely appressed to spreading greyish simple hairs (sometimes very short) and dense, greyish stellate hairs, both hair types less dense on sepals; hypanthium 0.8-1.2mm in diameter, 0.8-1mm long; sepals 1.7-2mm long, spreading; petals 1.7-2mm long, spathulate; stamens c. 1.5mm long; anthers 0.9-1.1mm long; ovary inferior, pubescent with simple and stellate hairs; style glabrous, 1-1.5mm long, branched in upper to middle third. Fruit ellipsoid to obovoid, 2.5-3.5mm long, brown; apex obtuse; torus c. equatorial; operculum c. two-thirds pyrene length; seed c. 2mm long.”

Taxonomy:

Pomaderris delicata was discovered in 1995 from the Goulburn area and described by Walsh and Coates (1997). It was recognised as to be a unique taxon that had close affinity with *P. andromedifolia*, a species that occurs close to *P. delicata* populations, but is distinguished by leaves that are generally shorter and not silky on the lower surface. In addition, the upper surface of the leaves of *P. delicata* are generally smooth, unlike the wrinkled surface of *P. andromedifolia*. *Pomaderris delicata* also differs in having stipules that fall before or soon after the expansion of the leaf blade whereas those of *P. andromedifolia* usually persist for several nodes below the growing tip and are larger (2-4 mm long) (Walsh & Coates 1997).

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Distribution and number of populations:

Pomaderris delicata is known from two subpopulations south-west of Goulburn on the Southern Tablelands. Each subpopulation is bisected by a road. The 'northern' subpopulation is located between Goulburn and Bungonia on roadside reserve, adjoining private property and Crown land. Most of this subpopulation is proposed to be gazetted in a Nature Reserve as part of the Goulbourn CRA (although this has been proposed for years). The 'southern' subpopulation is located south of Windellama, on a narrow road reserve and possibly extending onto adjacent private property. No known populations occur within a conservation area.

Ecology:

Key habitat requirements

At both known sites *P. delicata* grows in dry sclerophyll forest dominated by *Eucalyptus sieberi* with a dense shrubby (mainly she-oak) understorey on shallow, rocky soil, derived from Silurian and Ordovician sediments (Walsh & Coates 1997).

Life history

Almost nothing is known about the ecology and life history of *P. delicata* (expert advice). The species flowers occur in October and fruits in December (Walsh & Coates 1997).

Nothing is known about the response of the species to fire and other disturbances and its response to disturbances such as fire (expert advice).

Generation length

This species is thought to flower within the first couple of years (expert advice). The longevity of the species is unknown but estimated at 15-50 years (expert advice). The generation length (IUCN 2008) is therefore estimated to be eight to 26 years.

Number of mature individuals:

'Northern' subpopulation

The current number of mature individuals for this subpopulation is estimated to be around 100 plants. Previous estimates of 1 000 (in 2002: expert advice) were subsequently found to be quite inflated, partly because of assumptions about what occurred on private property, and also the co-occurrence of similar looking *Pomaderris* species on all tenures. As yet however, there has been no count of plants and this current estimate of 100 plants may be an underestimate if it turns out that habitat on the private property, which has yet to undergo a thorough search, contains a lot of plants. Though, there have been unsuccessful searches well beyond the original known area of occupancy (including on the Crown land) and so the population does appear to be very restricted (expert advice).

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At this point, based on these broader surveys of the area and suitable habitat in the area, it would seem that there are likely to be around 100 plants with no more than 250 in this subpopulation (expert advice).

'Southern' subpopulation

The current number of mature individuals for this subpopulation is estimated to be between 15 – 25 plants, most likely just less than 20 (expert advice June 2009). Surveys were conducted in 2004 and 2007 and more plants were found after the species was listed (in 2002) including some on private property. However these have subsequently disappeared, it seems, because of overgrazing and understorey thinning. A few extra plants were also found as a result of the road realignment, which destroyed most of the population originally found, leaving little habitat left, but which cut through new forest that had not previously been searched. Most of the area of occupancy, immediate surrounds and suitable habitat elsewhere (where on public land) has been surveyed (expert advice Nov. 2008).

Total number of mature individuals

The current number of mature individuals for this species is estimated about 120, with a maximum of 270 (expert advice).

Threats:

'Northern' subpopulation: Clearing and overgrazing are potential threats on the private land and Crown land, but at the moment there is no grazing on either pieces of land (expert advice June 2009). The greatest immediate threat to this population is the roadside component (of about 10 – 15 plants). The road edge is very narrow and there has already been some habitat damage through the laying of optical fibre cables.

'Southern' subpopulation: Roadside damage is the also the biggest threat to this subpopulation. Half of this population was destroyed by roadwork in late 2007 (expert advice). Understorey clearing or overgrazing on private property has also greatly reduced the size of the southern subpopulation.

The species is may also be threatened by inappropriate fire regimes, however the response of this species to fire is unknown (expert advice).

The species is also at risk due to stochastic events due to small population size.

Extreme fluctuations:

There is no information/evidence of this species experiencing extreme fluctuations.

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Population reduction and continuing declines:

When the 'southern' subpopulation of this species was discovered early this decade, there were estimated to be about 50 plants. As the result of the impact of roadwork, more than half of these have now been lost and some of the survivors are in poor condition (expert advice 2008).

The 'northern' subpopulation has also experienced a decrease as a result of roadside slashing but the overall reduction in the size of that population would have been small. A telecommunications cable laid several years ago may have also resulted in the removal of plants. The road verge is very narrow and so damage is likely to continue to occur in the future. Recently fire prevention works along this road, bisecting the subpopulation, have been proposed, which if occurs, would impact this species (expert advice 2009).

The Crown land containing most of the northern subpopulation is still under negotiations to be turned into a Nature Reserve, but this has been proposed for many years. It is believed that without proper management of the site however, there is the risk that people will start using it for firewood collection or rubbish dumping (expert advice 2009).

Population reductions and continuing declines may also occur as a result of the limited reproductive success of this species (expert advice).

Extent of Occurrence (EOO) & Area of Occupancy (AOO):

The AOO of *P. delicata* is estimated to be 8 km² (based on occupancy of two 2 x 2 km grid cells, the scale recommended by IUCN (2008) for assessment of AOO). The EOO of *P. delicata* is estimated to be no more than 12 km² (based on the distance between the most widely separated occurrences and the linear alignment of locations).

Severe fragmentation:

Clearing, changing land use and past fire regimes have probably had a profound impact on this species. Much of the land between the two subpopulations has been cleared and, more recently, subdivided into hobby farms where people run goats and horses on remnant native vegetation (expert advice 2009). A survey conducted on Crown land immediately to the south of the northern subpopulation, which had been grazed but contained vegetation similar to that of the northern subpopulation of *P. delicata*, did not locate any of the species (expert advice 2009). It is likely that the habitat of this species would be considered 'severely fragmented'.

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Explanatory note

Between 2007 and 2009 the NSW Scientific Committee undertook a systematic review of the conservation status of a selection of plant and animal species listed under the Threatened Species Conservation Act. This species summary report provides a review of the information gathered on this species at the time the Review was undertaken.

The Scientific Committee's report on the Review of Schedules project and final determinations relating to species that were either delisted or had a change in conservation status can be found on the following website: www.environment.nsw.gov.au.

The Committee gratefully acknowledges the past and present Committee members and project officers who ably assisted the Committee in undertaking the Review of Schedules Project. Information on the people involved in the project can be found in the Acknowledgement section of the project report entitled "Review of the Schedules of the Threatened Species Conservation Act 1995. A summary report on the review of selected species" which is available on the abovementioned website.

This species summary report may be cited as:

NSW Scientific Committee (2009) *Pomaderris delicata* Review of current information in NSW. July 2009. Unpublished report arising from the Review of the Schedules of the Threatened Species Conservation Act 1995. NSW Scientific Committee, Hurstville.

References:

IUCN (2008) 'Guidelines for using the IUCN Red List Categories and Criteria. Version 7.0.' (Standards and Petitions Working Group of the IUCN Species Survival Commission Biodiversity Assessments Sub-committee: Switzerland). (<http://intranet.iucn.org/webfiles/doc/SSC/RedList/RedListGuidelines.pdf>).

Walsh NG, Coates F (1997) New taxa, new combinations and an infrageneric classification in *Pomaderris* (Rhamnaceae). *Muelleria* **10**, 27–56.