

Action Statement

Flora and Fauna Guarantee Act 1988 No. 81 (Revised in 2008)

Concave Pomaderris

Pomaderris subplicata

This revised Action Statement is based on a draft Recovery Plan prepared for this species by DSE under contract to the Australian Government Department of the Environment, Water, Heritage and the Arts.

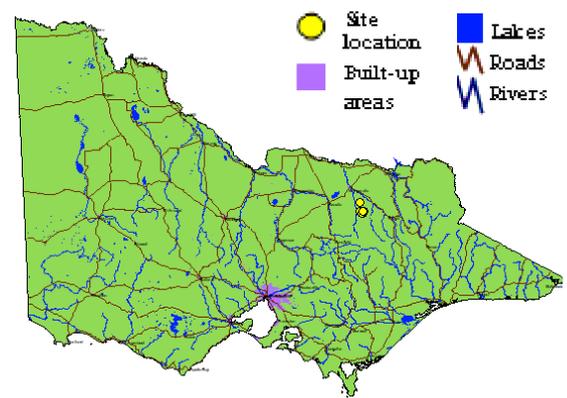
Description

Concave Pomaderris (*Pomaderris subplicata*) is an erect, multi-stemmed shrub which grows to a height of 2 m (Walsh 1992). It has ovate to elliptic dark-green leaves, 3 - 10 mm long and 2 - 6 mm wide (Walsh 1992). The leaves may be flat or V-shaped in transverse section (Walsh & Entwisle 1999). Star-shaped hairs cover both leaf surfaces, soft and fine on the upper surface and giving a white facade to the lower surface (Walsh 1992). Single, although sometimes star shaped, coppery-coloured hairs of up to approximately 1 mm height may also be found growing on veins of the lower surface of the leaf (Walsh 1992). Yellow flowers grow in small, dense groups at the ends of branchlets. They are pale yellow internally and have a soft covering of star-shaped hairs on their external surface, sometimes with a few longer single hairs (Walsh 1992). Flowering occurs in October (Walsh 1992). The fruits, produced in late November to mid-December, are small, round and hairy.

Several characteristics should be examined to distinguish this species from others of the *Pomaderris* genus in Victoria, particularly Small-leaf Pomaderris (*P. elachophylla*), Cluster Pomaderris (*P. racemosa*) and Round-leaf Pomaderris (*P. vacciniifolia*) which have leaves of similar shape and dimensions; none of these species, however, occur in north-east Victoria. The presence of simple hairs on young branches immediately distinguishes *P. subplicata* from these species (Walsh 1992).

Distribution

Pomaderris subplicata is confined to two wild populations in north-east Victoria near Carboor Upper, approximately 40 km south east of Wangaratta.



Distribution in Victoria
(Flora Information System DSE 2007)

Abundance

There are approximately 220 plants remaining in two wild populations.

Important populations

Important populations necessary to the long term survival and recovery of occur in the following locations:

<i>Population</i>	<i>Estimated size</i>
Private Land Carboor Upper - Crown land managed by the Hancock Victorian Plantations Pty Ltd.	Approximately 200 plants. In 1997 four plants occurred on adjoining private land (Johnson <i>et al.</i> 1997).
Roadside (Shire of Wangaratta) Carboor East Roadside, within the Rural City of Wangaratta.	This population is small (~ 22 plants) and unlikely to be viable in the long term due to the threat of competitive exclusion by Bracken (<i>Pteridium</i> <i>esculentum</i>).

Habitat

The only large population of *Pomaderris subplicata* occurs in woodland / shrubland dominated by Red Stringybark (*Eucalyptus macrorhyncha*) and Long-leaved Box (*Eucalyptus goniocalyx*), with Bracken (*Pteridium esculentum*) and Silver Wattle (*Acacia dealbata*) as associated understorey species. The terrain is flattish to steeply falling south to south-west. Soils are skeletal and derived from Ordovician sediments (Johnson *et al.* 1997). The mean annual rainfall is approximately 1,000 mm (Johnson *et al.* 1997).

A nearby small population (named Carboor East Roadside) has an overstorey of Narrow-leaved Peppermint (*Eucalyptus radiata*) and Long-leaved Box (*Eucalyptus goniocalyx*), with Common Cassinia (*Cassinia aculeata*), Silver Wattle (*Acacia dealbata*), Blackwood (*Acacia melanoxylon*), Bracken (*Pteridium esculentum*) and Common Tussock-grass (*Poa labillardierei*) as associated understorey taxa. This site slopes gently to the south and occurs on loamy soils derived from sediments.

Life history and ecology

There have been no specific studies of the biology or ecology of *Pomaderris subplicata*. Propagation trials suggest seed production and viability may be low (Johnson *et al.* 1997). The modified landscape of the Carboor Upper population (native forest surrounded by pine plantations and cleared grazing land) may be unable to attract suitable pollinators; this may result in low seed production (Johnson *et al.* 1997). A large proportion (65%) of the Carboor Upper population comprises senescing mature individuals, and only 22 seedlings have been recorded (Johnson *et al.* 1997). Regeneration of seedlings may be restricted by weed competition, grazing by native and introduced herbivores, and/or the absence of an appropriate disturbance regime. Mature plants do appear to be able to resprout from the base (Johnson *et al.* 1997).

Conservation status

National conservation status

Pomaderris subplicata is listed as vulnerable under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*.

Victorian conservation status

Pomaderris subplicata is listed as threatened under the Victorian *Flora and Fauna Guarantee Act 1988*.

It is considered vulnerable in Victoria according to DSE's *Advisory List of Rare or Threatened Plants in Victoria - 2005* (DSE 2005b).

Potentially threatening processes

Weed invasion

Environmental weeds, including Blackberry (*Rubus fruticosus* spp. agg.) and St John's Wort (*Hypericum perforatum*), as well as the native Bracken (*Pteridium esculentum*), appear to be restricting seedling regeneration (Johnson *et al.* 1997). Blackberry is a Weed of National Significance.

Grazing

Grazing by introduced herbivores - European Rabbits (*Oryctolagus cuniculus*), Common Wombats (*Vombatus ursinus*) and Black Wallabies (*Wallabia bicolor*) - was observed on approximately 40% of seedlings in 1997 (Johnson *et al.* 1997).

Reservation status

No populations of this species occur in formal conservation reserves.

Inappropriate biomass reduction / fire regimes

The effects of fire on *Pomaderris subplicata* are unknown, but fire is likely to further promote weeds, including Bracken. The production of a management prescription for fire management at the Carboor Upper site is a proposed action in this Action Statement.

Weed invasion

Woody weed invasion by Hawthorn (*Cratageus monogyna*) and Monterey Pine (*Pinus radiata*) pose a threat to survival and recruitment of individuals.

Previous management action

- Action Statement was first published in 1997.
- Populations have been monitored annually since 1997.
- Propagation and reintroduction.
- Royal Botanic Gardens and the Society for Growing Australian Plants have initiated some propagation trials.
- Surveys in 1986 within forest remnants surrounding the Carboor Upper site failed to locate any new populations (Johnson *et al.* 1997).

Long term objective

To ensure that *Pomaderris subplicata* can survive, flourish and retain its potential for evolutionary development in the wild.

Specific Objectives, Actions and Targets

The specific Objectives, Actions and Targets listed below are further elaborated in DSE's Actions for Biodiversity Conservation (ABC) system. Detailed information about the actions and locations, including priorities, is held in this system and will be provided annually to land managers and other authorities.

Objective I To increase knowledge of biology, ecology and management requirements

Action	Targets	Responsible
1. Acquire baseline population data by conducting detailed field and desk top surveys including (a) identification of the area and extent of populations, and (b) infer or estimate population change	<ul style="list-style-type: none"> ▪ Determination or update of conservation status for inclusion on state and national threatened species lists. ▪ Populations accurately mapped. 	DSE
2. Assess habitat characteristics and /or condition. Accurately survey known habitat and collect floristic and environmental information relevant to community ecology and condition.	<ul style="list-style-type: none"> ▪ Completion of data on essential life history stages, recruitment and dispersal at known sites. ▪ Core habitat mapped. 	DSE
3. Conduct survey to locate suitable habitat. Identify and survey potential/ historical habitat, using ecological and bioclimatic information that may indicate habitat preference.	<ul style="list-style-type: none"> ▪ Predictive model for potential habitat developed and tested. 	DSE
4. Undertake research to identify key biological functions. Evaluate current reproductive / regenerative status, seed bank status and longevity, fecundity and recruitment levels. Determine seed germination requirements by conducting laboratory and field trials aimed to identify key stimuli and determine stimuli for vegetative regeneration.	<ul style="list-style-type: none"> ▪ Seed bank / regenerative potential quantified for target populations. ▪ Stimuli for recruitment / regeneration identified. ▪ Management strategies identified to maintain, enhance or restore regenerative processes fundamental to reproduction and survival. 	DSE
5. Analyse population trends. Measure population trends and responses against recovery actions by collecting demographic information including recruitment and mortality, timing of life history stages and morphological data. Collate, analyse and report on census data and compare with management histories.	<ul style="list-style-type: none"> ▪ Techniques for monitoring developed and implemented. ▪ Census data for target populations collected. ▪ Population growth rates determined. ▪ Population Viability Analysis completed for target populations. 	DSE

Objective II To secure populations or habitat from potentially incompatible land use or catastrophic loss

Action	Targets	Responsible
6. Negotiate Memorandum of Understanding (MoU) or appropriate management agreement for public land. Negotiate agreements with Hancock Plantations and Rural City of Wangaratta to protect populations.	<ul style="list-style-type: none"> ▪ Formal agreements reached with Hancock Plantations and Rural City of Wangaratta for naturally occurring populations. 	DSE
7. Establish cultivated plants <i>ex situ</i> to safeguard from the unforeseen destruction of the wild population.	<ul style="list-style-type: none"> ▪ Effective propagation and cultivation techniques developed. 	Royal Botanic Gardens

	<ul style="list-style-type: none"> At least 10 mature plants in cultivation. 	
8. Erect /maintain signs to restrict or discourage access. Control threats by installation of appropriate signage.	<ul style="list-style-type: none"> Appropriate signage installed at both sites. 	DSE, Rural City of Wangaratta, Hancock Plantations

Objective III To improve condition of habitat

<i>Action</i>	<i>Targets</i>	<i>Responsible</i>
9. Manage weeds. Control threats from pest plants by using broadscale application of herbicide or hand removal of weeds.	<ul style="list-style-type: none"> Measurable reduction in weed cover/abundance. 	DSE, Rural City of Wangaratta, Hancock Plantations
10. Undertake disturbance activities to maintain habitat and /or manage biomass.	<ul style="list-style-type: none"> Preparation of management prescriptions for fire management at Carboor Upper site. 	DSE

Objective IV To increase the number of populations or individuals

<i>Action</i>	<i>Targets</i>	<i>Responsible</i>
11. Store reproductive material. Establish a seed bank.	<ul style="list-style-type: none"> Long-term storage facility identified. Seed from target populations in storage. 	DSE, Royal Botanic Gardens
12. Determine seed viability.	<ul style="list-style-type: none"> Seed viability determined. 	DSE, Royal Botanic Gardens
13. Establish and maintain a reintroduced / translocated population. Prepare site(s) to achieve maximum survival of translocated plants and implement translocation plan. Establish a minimum population size of cultivated plants. Maintain and monitor translocated plants.	<ul style="list-style-type: none"> Translocation plan prepared. 200 plants in cultivation that are disease free and vigorous. Successful translocation techniques developed. At least 30% survival of translocated plants. Measurable increase in population size at the site. 	DSE, Royal Botanic Gardens
14. Identify potential sites for reintroduction / translocation. Select and evaluate suitable translocation sites that are ecologically / biologically suitable, have secure land tenure, and are managed appropriately	<ul style="list-style-type: none"> Criteria for site suitability identified and site selected 	DSE

Objective V To increase community awareness and support

<i>Action</i>	<i>Targets</i>	<i>Responsible</i>
15. Involve community groups and volunteers in recovery activities	<ul style="list-style-type: none"> Opportunities for community involvement provided. 	DSE

References

- DSE (2005a) *Flora Information System 2005 (electronic flora database)*. Department of Sustainability and Environment.: Melbourne.
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