

NSW SCIENTIFIC COMMITTEE

Preliminary Determination

The Scientific Committee, established by the *Threatened Species Conservation Act 1995* (the Act), has made a Preliminary Determination to support a proposal to list the shrub *Pimelea cremnophila* L.M.Copel. & I.Telford as a CRITICALLY ENDANGERED SPECIES in Part 1 of Schedule 1A of the Act. Listing of Critically Endangered species is provided for by Part 2 of the Act.

The Scientific Committee has found that:

1. *Pimelea cremnophila* L.M.Copel. & I.Telford (family Thymelaeaceae) is described as an “erect shrub to 2.5 m high. Stems red-brown, hirsute with strigose white antrorse hairs to 3 mm long, glabrescent with age. Leaves opposite, petiolate. Petioles 1 mm long, densely hairy; lamina narrow-elliptic to narrow-ovate, acute, 10–37 mm long, 2.5–6 mm wide, abaxial surface hirsute with scattered white strigose hairs, the hairs denser and longer toward the margins. Inflorescence axillary or terminal, 1–4 flowered; peduncle c. 1 mm long, strigose; bracts leaf-like. Flowers functionally male, bisexual or functionally female, subsessile. Male flowers with hypanthium 6–8 mm long; sepals 3–4 mm long; stamens 2, rarely 3; anthers narrow-oblong. Bisexual flowers protandrous with hypanthium 4–6.5 mm long; sepals 3–4 mm long, stamens similar to male flowers; ovary c. 1.5 mm long, with erect hairs at apex; style eventually exerted; stigma brush-like. Female flowers with hypanthium 3–4.5 mm long; sepals 1.5–2.5 mm long; staminodes minute; gynoecium similar to bisexual flowers. Fruit dry ovoid, enclosed in the persistent base of the hypanthium, pale green. Seeds ovoid 3–3.5 mm long with minute longitudinal, foveate furrows, red brown” (Copeland and Telford 2006).
2. *Pimelea cremnophila* is endemic to New South Wales (NSW) and is known only from Oxley Wild Rivers National Park, approximately 40 km east of Walcha in the New England Tablelands Bioregion. A single population occurs along the rim of the Macleay River gorge at 1,050–1,090 m a.s.l. (Copeland and Telford 2006). *Pimelea cremnophila* was first observed by botanists working the Oxley Wild Rivers National Park in 2002 and populations were monitored in 2003–2004 and 2008. A brief search of the two northernmost populations of *P. cremnophila* in November 2015 failed to relocate known individuals. Surveys to locate additional populations have been conducted in suitable habitat within Oxley Wild Rivers National Park since 2006, including a major survey in 2012–2013. These surveys have failed to locate new populations of *P. cremnophila* (L. Copeland *in litt.* May 2016).
3. *Pimelea cremnophila* occurs on exposed cliff tops or more sheltered cliff-side sites with south-westerly to south-easterly aspects in shallow skeletal loam soils over metasediments (Copeland and Telford 2006). The habitat is open forest of *Eucalyptus campanulata*, *E. retinens* and *Allocasuarina littoralis* with a shrubby understorey including *Acacia blakei* subsp. *diphylla*, *Maytenus silvestris*, *Prostanthera rhombea*, *Dodonaea rhombifolia*, *Astrotricha longifolia*, *Ozothamnus obcordatus*, *Persoonia media*, *Callistemon* sp. nov., *Correa reflexa* var. *reflexa*, *Lepidosperma elatius* s. l., *L. laterale*, *Rhodanthe* sp. nov. and *Notodanthonia longifolia* (Copeland and Telford 2006). In addition, several species have been noted in herbarium collections to co-occur with *P. cremnophila* including *Logania albiflora*, *Leiocarpa serpens*, *Lomandra longifolia*, *Gonocarpus oreophilus*, *Persoonia linearis* and *Ozothamnus diosmifolius*. *Pimelea cremnophila* is likely to flower throughout spring as flowers, floral buds and young fruits have been observed in October (Copeland and Telford 2006).

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4. The number of mature individuals is estimated to be very low with fewer than 100 plants occurring in the only known population (L. Copeland *in litt.* May 2016).
5. The geographic distribution of *Pimelea cremnophila* is very highly restricted. The area of occupancy (AOO) and extent of occurrence (EOO) were estimated to be 4 km². The AOO is equivalent to a single 2 x 2 km grid cell, the scale recommended for assessing AOO by IUCN (2016).
6. Threats to *Pimelea cremnophila* include grazing by feral goats, extreme drought conditions and inappropriate fire regimes (Copeland and Telford 2006). Evidence of grazing by feral goats has been observed (L. Copeland *in litt.* May 2016). Mortality of mature individuals was also observed during 2002–2003, potentially correlated with extreme drought during this period (Copeland and Telford 2006). The forecast increase in the frequency and intensity of drought associated with anthropogenic climate change may therefore be a threat to this species. The population dynamics of *P. cremnophila* are currently poorly characterised, but the species is suspected to be an obligate seeder and therefore vulnerable to high frequency fires preventing successful recruitment and replenishment of the soil-stored seed bank. ‘Anthropogenic Climate Change’, ‘Competition and habitat degradation by Feral Goats, *Capra hircus* Linnaeus 1758’ and ‘High frequency fire resulting in the disruption of life cycle processes in plants and animals and loss of vegetation structure and composition’ are listed as Key Threatening Processes under the Act.
7. *Pimelea cremnophila* L.M.Copel. & I.Telford is eligible to be listed as a Critically Endangered species as, in the opinion of the Scientific Committee, it is facing an extremely high risk of extinction in New South Wales in the immediate future as determined in accordance with the following criteria as prescribed by the *Threatened Species Conservation Regulation 2010*:

Clause 7 Restricted geographic distribution and other conditions

The geographic distribution of the species is estimated or inferred to be:

- (a) very highly restricted,

and:

- (d) a projected or continuing decline is observed, estimated or inferred in the key indicator:
 - (b) the geographic distribution, habitat quality or diversity, or genetic diversity.

Clause 8 Low numbers of mature individuals of species and other conditions

The estimated total number of mature individuals of the species is:

- (a) very low,

and:

- (d) a projected or continuing decline is observed, estimated or inferred in the key indicator:
 - (b) the geographic distribution, habitat quality or diversity, or genetic diversity.

Dr Mark Eldridge
Chairperson
NSW Scientific Committee

Exhibition period: 30/06/17 – 25/08/17

Proposed Gazettal date: 30/06/17

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References:

- Copeland LM, Telford IRH (2006) *Pimelea cremnophila* (Thymelaeaceae), a new species from the New England Tablelands escarpment of northern New South Wales. *Telopea* **11**, 111-115.
- IUCN Standards and Petitions Subcommittee (2016) Guidelines for Using the IUCN Red List Categories and Criteria. Version 12. Prepared by the Standards and Petitions Subcommittee. <http://www.iucnredlist.org/documents/RedListGuidelines.pdf>