

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 *Zieria odorifera* subsp. *copelandii* Duretto & P.I.Forst. 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. *Zieria odorifera* subsp. *copelandii* Duretto & P.I.Forst. (family Rutaceae) is an erect shrub to 20 cm tall. Branches ridged, with a sparse indumentum of simple, bifid and stellate hairs between the \pm glabrous leaf decurrencies. Leaves trifoliate, with a few simple hairs on midvein and/or margin; petioles 1–1.5 mm long, weakly glandular verrucose; terminal leaflets narrow elliptic to narrow oblanceolate to oblanceolate, $5\text{--}8.5 \times 1.5\text{--}3.5$ mm, margins entire to slightly glandular dentate, adaxial surface not glandular verrucose. Inflorescence usually about equal to subtending leaves, 1–3(–7)-flowered, peduncle 3–7 mm long, with simple and bifid hairs concentrated between decurrent bract bases; pedicels 1.5–3.5 mm long, with a sparse to moderately dense stellate indumentum. Sepals $1\text{--}1.5 \times 1\text{--}1.3$ mm, abaxial surfaces glabrous or with few stellate hairs towards base. Petals c. 3.5×1.7 mm, adaxial surface glabrous or glabrescent, abaxial surface glabrous or with a few hairs near margins. Gynoecium glabrous. Cocci smooth, glabrous (Duretto and Forster 2008; PlantNET 2016).
2. *Zieria odorifera* subsp. *copelandii* is endemic to New South Wales (NSW) and is known from a single population in Mount Kaputar National Park near Narrabri in northern NSW, growing in heath with *Prostanthera cruciflora*, *Calytrix tetragona* and *Kunzea* sp. on rocky slopes near rock outcrops (Duretto and Forster 2008; PlantNET 2016; L. Copeland *in litt.* May 2016, November 2016, January 2017). There are three herbarium collections of this taxon: two of these are known to come from the known population and the third has vague locality information that places it in the general area of the known population.
3. Surveys for *Zieria odorifera* subsp. *copelandii* in October 2012 and 2014 located 15 individuals over an area of 1 ha (L. Copeland *in litt.* May 2016, November 2016, January 2017). The number of mature individuals is therefore estimated to be extremely low.
4. The distribution of *Zieria odorifera* subsp. *copelandii* is very highly restricted. The area of occupancy (AOO) and the extent of occurrence are both estimated to be 4 km². The AOO is based on a single 2 x 2 km grid cell, the scale recommended for assessing AOO by IUCN (2016).
5. The only known population of *Zieria odorifera* subsp. *copelandii* is threatened by grazing by feral goats and inappropriate fire regimes (L. Copeland, *in litt.* May 2016, January 2017). The population's small size and limited distribution makes it highly susceptible to localised events such as clearing, disturbance and weed invasion. The only known population is located near a road and road works could have a major negative impact on the population. 'Clearing of native vegetation', '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.
6. *Zieria odorifera* subsp. *copelandii* Duretto & P.I.Forst. 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*:

NSW SCIENTIFIC COMMITTEE

Clause 9 Low number of mature individuals of species

The total number of mature individuals of the species is observed, estimated or inferred to be:

- (a) extremely low.

Dr Mark Eldridge
Chairperson
NSW Scientific Committee

Exhibition period: 26/05/17 – 21/07/17

Proposed Gazettal date: 26/05/17

References:

Duretto MF, Forster PI (2008) New subspecies for *Zieria odorifera* J.A.Armstr. (Rutaceae) from northern New South Wales. *Austrobaileya* **7**, 681–690.

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>

PlantNET (The NSW Plant Information Network System) Royal Botanic Gardens and Domain Trust, Sydney. <http://plantnet.rbgsyd.nsw.gov.au> (accessed 24 November 2016).