

NSW SCIENTIFIC COMMITTEE

Final Determination

The Scientific Committee, established by the *Threatened Species Conservation Act 1995* (the Act), has made a Final Determination to list *Banksia vincentia* Stimpson & P.H.Weston 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. *Banksia vincentia* Stimpson & P.H.Weston (family Proteaceae) is described as a “lignotuberous shrub, c. twice as wide as it is high, 0.30–0.75m high x 1–2 m wide. Stems basally prostrate from a lignotuber, i.e. divergent and \pm horizontal in basal 20–30 cm, then ascending to erect more distally; stems under 12 months old densely covered in a 2-layered indumentum of tightly curled trichomes forming a felted layer c. 0.2 mm thick, overtopped by a much sparser layer of straight, antrorse to patent trichomes 0.2–1.3 mm long; stems older than 12 months gradually sheading (sic) trichomes until glabrescent after about 3–4 years; axillary buds prominent in immature leaves. Leaves narrowly oblong-obovate, rounded to truncate; petiole 1–3.5 mm long, moderately to densely covered in an indumentum resembling that of the stem, more sparse abaxially; lamina 12–47 mm long, 2–6.5 mm wide, entire or with 1–6 marginal teeth in the distal 1/5–1/15 of the lamina, sometimes with one or more toothless undulations replacing teeth, with slightly recurved margins; adaxial surface sparsely to moderately covered in a mixture of short, tightly curled trichomes and appressed, straight trichomes 0.2–0.5 mm long when immature, becoming glabrescent or with a few residual trichomes along the midvein when mature, RHS colour green group 139A–D when fresh; abaxial surface of lamina densely covered in a tomentum of tightly curled trichomes with a sparse layer of emergent, straight, appressed trichomes either side of the midvein, sparsely covered in straight, appressed trichomes without an underlying tomentum on the midvein, RHS colour greyed green group 195A–D when fresh, browning slightly on drying, becoming darker with age; adaxial midvein shallowly impressed proximally, flat distally; abaxial midvein 0.3–0.4 mm wide, prominently protruding; lamina apex mucronate. Conflorescence surrounded by a whorl of 1–4-year old branches, 75–167 mm long developing basipetally; flowers divergent, with 14–17 columns of flower pairs. Involucral bracts subulate, with abaxial spine, thickened at base, villous, 1.5–3 mm long. Common bract with one thickened keel extending from apex to base of the exposed part of the bract, silky; margins distally convex; apex rounded. Perianth yellow or cream with a white to beige indumentum of appressed, straight trichomes, to orange with ferruginous indumentum; claw 19–25 mm; limb 2.5–4 mm long. Anthers 0.5–1 mm long. Style apically hooked, 26–35 mm long from ovary to bend, 5–7 mm long from bend to apex; discolorous, green for 12–16 mm above ovary, distally grading from red to maroon to black just prior to anthesis. Infructescence of similar length to conflorescences, 125–135 mm in circumference.” (Stimpson *et al.* 2014).
2. *Banksia vincentia* was first discovered in 2008 near Vincentia, Jervis Bay on the south coast of New South Wales (NSW), and was referred to as *Banksia* sp. Jervis Bay. The species was formally described as *Banksia vincentia* in 2014 (Stimpson *et al.* 2014). *Banksia vincentia* is within the *Banksia spinulosa* complex and differs from other taxa in the complex by having a semi-prostrate growth habit (Stimpson *et al.* 2014). Shrubs of *B. vincentia* have a low stature with stems basally prostrate from the lignotuber for 20–30 cm, then distally ascending (Stimpson *et al.* 2014).
3. *Banksia vincentia* is currently only known from the Shoalhaven local government area of the south coast of NSW where it is restricted to a single location in the Vincentia area, Jervis Bay. It occurs within sclerophyllous shrubland dominated by *Allocasuarina littoralis*, *B. ericifolia*, *Hakea teretifolia* with *Persoonia mollis*, *Lambertia formosa*, *Isopogon anemonifolius*, *H. laevipes*, *Aotus ericoides* and

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ground cover dominated by species of Restionaceae and Cyperaceae (Stimpson *et al.* 2014). It grows in sandy soil over clay on sandstone. *Banksia ericifolia*, *B. spinulosa* and *B. paludosa* co-occur with *Banksia vincentia*. Parts of the habitat appear to have been disturbed in the past, leading to an open shrub vegetation structure (T. Auld pers. comm. July 2015).

4. The number of mature individuals of *Banksia vincentia* is extremely low with fewer than 20 plants occurring in the only known population.
5. The geographic distribution of *Banksia vincentia* is very highly restricted. The area of occupancy (AOO) and extent of occurrence are 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 (2014). Surveys of similar coastal habitats in the region, including intensive searches of the surrounding area up to 5 km away, have failed to find any additional populations (Stimpson *et al.* 2014).
6. *Banksia vincentia* is prone to the effects of human activities or stochastic events within a very short time period in an uncertain future because it has a very highly restricted geographic distribution occurring at only one location. There is a road through the middle of the population of *Banksia vincentia*, with a number of plants on or near the road verge. It is thought the construction and presence of the road may have altered the drainage of the site and consequently led to the poor health of some of the plants (Stimpson *et al.* 2014). The presence of the road has also led to a number of additional threats including: road maintenance activities, the spraying of herbicide and dumping of roadside rubbish. The presence of trail bike riding in the area (M. Stimpson pers. comm. July 2015) may also have adverse impacts on the species and its habitat. Recent sampling has found that the pathogen *Phytophthora cinnamomi* is present at the site on both sides of the small road that bisects the remaining plants. Further work on the extent of *P. cinnamomi* at the site and the susceptibility of *B. vincentia* to the pathogen are planned. (T. Auld *in litt* May 2016). An inappropriate fire regime may also pose a threat for the species' survival. Until the response of *B. vincentia* to fire is better understood, fire should be excluded from the site (T. Auld pers. comm. October 2015). 'High frequency fire resulting in the disruption of life cycle processes in plants and animals and loss of vegetation structure and composition' and 'Infection of native plants by *Phytophthora cinnamomi*' are listed as Key Threatening Processes under the Act.
7. *Banksia vincentia* Stimpson & P.H.Weston 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 either of the key indicators:
 - (a) an index of abundance appropriate to the taxon, or
 - (b) the geographic distribution, habitat quality or diversity, or genetic diversity of the species.

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 either of the key indicators:
 - (a) an index of abundance appropriate to the taxon, or
 - (b) the geographic distribution, habitat quality or diversity, or genetic diversity of the species.

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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
Scientific Committee

Exhibition period: 05/08/16 – 30/09/16

Proposed Gazettal date: 05/08/16

References:

IUCN Standards and Petitions Subcommittee (2014) Guidelines for Using the IUCN Red List Categories and Criteria. Version 11. Prepared by the Standards and Petitions Subcommittee.

<http://www.iucnredlist.org/documents/RedListGuidelines.pdf>.

Stimpson ML, Bruhl JJ, Weston PH (2014) Could this be Australia's rarest Banksia? *Banksia vincentia* (Proteaceae), a new species known from fourteen plants from south-eastern New South Wales, Australia. *Phytotaxa* **163**, 269–286.

**A notice of determination to provisionally list this species
as an critically endangered species was gazetted on 02/10/15**