

# NSW Threatened Species Scientific Committee

---

## **Notice of the Determination for provisional listing of a critically endangered species on an emergency basis**

The NSW Threatened Species Scientific Committee, established by the *Biodiversity Conservation Act 2016* (the Act), has made a Determination for provisional listing, on an emergency basis, of the of the species, *Fontainea* sp. Coffs Harbour (A.S.Benwell 341, NSW1102027) as a CRITICALLY ENDANGERED SPECIES Part 1 of Schedule 1 of the Act.

### **What happens next?**

This species will be provisionally listed as critically endangered species when the provisional listing determination is published on the New South Wales legislation website [www.legislation.nsw.gov.au](http://www.legislation.nsw.gov.au).

In the near future the Committee will make a preliminary determination regarding this proposal which will be placed on public exhibition. Public submissions will be invited at that time.

Dr Anne Kerle  
Chairperson  
NSW Threatened Species Scientific Committee

## Determination for provisional listing of a Critically Endangered species on an emergency basis

The NSW Threatened Species Scientific Committee, established under the *Biodiversity Conservation Act 2016* (the Act), has made a Determination for provisional listing, on an emergency basis, of the species, *Fontainea* sp. Coffs Harbour (A.S.Benwell 341, NSW1102027) as a CRITICALLY ENDANGERED SPECIES in Part 1 of Schedule 1 of the Act. Provisional Listing of Critically Endangered species on an emergency basis is provided for by Part 4 of the Act.

### Summary of Conservation Assessment

*Fontainea* sp. Coffs Harbour (A.S.Benwell 341, NSW1102027) was found to be Critically Endangered under Clause 4.2(1)(a),(2)(b,c); Clause 4.3(a)(d)(e, i,ii,iii,iv); Clause 4.4(a)(d,(i)), (e(i), (ii, A(I),B)); and Clause 4.5(a). The main reasons for this species being eligible are: i) it has a very highly restricted geographical range; ii) the estimated total number of mature individuals is extremely low; iii) it is only found at a single location; and (iv) there is projected continuing decline due to the only known occurrence of the species occurring on land that is due to be cleared for road construction works.

The NSW Threatened Species Scientific Committee has found that:

1. *Fontainea* is a genus of rainforest trees in the Euphorbiaceae family. Two species of *Fontainea* have previously been found to occur in New South Wales (Jessup and Guymer 1985). *F. oraria*, listed as a critically endangered species under the Act, occurs near Lennox Head on the NSW far north coast and *F. australis*, listed as a vulnerable species under the Act, occurs on the NSW far north coast/hinterland and in Queensland.
2. A recent survey in the Coffs Harbour area led to the discovery of *Fontainea* individuals that are considered to be different to other known *Fontainea* species. The plants have been recognised as a distinct species (Guymer *in litt.* August 2021; PlantNET accessed July 2021) and are currently referred to as *Fontainea* sp. Coffs Harbour (A.S.Benwell 341, NSW1102027). *Fontainea* sp. Coffs Harbour is thought to be most similar to *F. oraria*. The main feature that distinguishes *F. sp.* Coffs Harbour from *F. oraria* and any other known *Fontainea* species is the unique endocarps of the fruits (Guymer *in litt.* August 2021). The endocarps of *F. sp.* Coffs Harbour are “ellipsoidal, about twice as long as wide, 24-28 mm long, 13-15 mm wide, apex acute; intersutural faces markedly rugose; fruits ellipsoidal, pink-orange, 25-30 mm long, 16-24 mm diameter.” (Guymer *in litt.* August 2021). The endocarps of *F. oraria* are “globose about as long as wide, 15-18 mm long, 14-16 mm wide, apex obtuse; intersutural faces slightly rugose and grooved; fruits globular or depressed-globular, shallowly 3 or 6-lobed, pink to red, 18-22 mm long, 22-24 mm diameter.” (Guymer *in litt.* August 2021). Further taxonomic work will provide a detailed description of the species.

## NSW Threatened Species Scientific Committee

---

3. *Fontainea* sp. Coffs Harbour is presently known from only two sites just north of Coffs Harbour on the NSW mid-north coast. The sites occur in two separate fragments of Brush Box–rainforest (Benwell *in litt.* May 2021). This vegetation type is uncommon in the Coffs Harbour area occurring in a narrow zone along drainage lines and gullies (Benwell *in litt.* May 2021). The vegetation community is dominated by mature *Lophostemon confertus* (Brush Box), 25-35 m high with occasional *Eucalyptus microcorys* (Tallowwood), *Corymbia intermedia* (Pink Bloodwood) and *E. pilularis* (Blackbutt) over a rainforest understorey 5-15 m high of small to medium sized trees, including *Dysoxylum mollissimum* (Red Bean), *Cryptocarya microneura* (Murrogun), *Cryptocarya rigida* (Forest Maple), *Elaeocarpus reticulatus* (Blue-berry Ash), *Endiandra discolor* (Domatia Tree), *Synoum glandulosum* (Scentless Rosewood), *Niemeyera whitei* (Rusty Plum), *Archontophoenix cunninghamiana* (Bangalow Palm) and *Ficus watkinsiana* (Strangling Fig), plus many vines, herbs and ferns (Benwell *in litt.* May 2021).
4. The geographic distribution of *Fontainea* sp. Coffs Harbour is very highly restricted. The extent of occurrence (EOO) and the area of occupancy (AOO) are both 4 km<sup>2</sup>. The area of occupancy is based on the species' occupying a single 2 km x 2 km grid cell, the spatial scale of assessment recommended by IUCN (2019). The EOO is also estimated to be 4 km<sup>2</sup>. The EOO is reported as equal to AOO, despite the range of the species measured by a minimum convex polygon containing all the known sites of occurrence, being less than AOO. This is to ensure consistency with the definition of AOO as an area within EOO, following IUCN Guidelines (2019).
5. An extremely low number (<10) of mature individuals of *Fontainea* sp. Coffs Harbour are known. Surrounding areas have been searched in the vicinity of the known sites, but no other occurrences of the species have been found (Benwell *in litt.* May 2021). There are areas of potential habitat that have not yet been surveyed, so other occurrences are possible. *Fontainea* sp. Coffs Harbour is currently not known from any land reserved for conservation purposes.
6. *Fontainea* sp. Coffs Harbour is in immediate threat from clearing and road construction works. The sites where it occurs are within the construction footprint of the approved highway bypass at Coffs Harbour. Other threats *Fontainea* sp. Coffs Harbour plants and habitat may have been exposed to in the past include disturbance and possible grazing by domestic stock. Feral deer are known from the area and there is evidence of disturbance to co-occurring species at one of the *Fontainea* sp. Coffs Harbour sites. As the two sites are currently the only known occurrences of *Fontainea* sp. Coffs Harbour, the elimination of these sites would lead to the species' extinction in the wild.

# NSW Threatened Species Scientific Committee

---

7. *Fontainea* sp. Coffs Harbour (A.S.Benwell 341, NSW1102027) is eligible to be provisionally listed in Schedule 1 as a Critically Endangered species as, in the opinion of the NSW Threatened Species Scientific Committee:
- (a) the species:
    - (i) although not previously known to have existed in New South Wales, is believed on current knowledge to be native to New South Wales,
    - (ii) is subject to an immediate and significant threat of extinction, and
  - (b) the species is not listed in Schedule 1 as an endangered or critically endangered species.

Dr Anne Kerle  
Chairperson  
NSW Threatened Species Scientific Committee

## References:

IUCN Standards and Petitions Committee (2019) Guidelines for Using the IUCN Red List Categories and Criteria. Version 14. Prepared by the Standards and Petitions Committee. Accessed from <http://www.iucnredlist.org/documents/RedListGuidelines.pdf>.

Jessup LW & Guymer GP (1985) A revision of *Fontainea* Heckel (Euphorbiaceae – Clutyeae). *Austrobaileya* 2(2): 112-125.

PlantNET (The NSW Plant Information Network System) Royal Botanic Gardens and Domain Trust, Sydney. <http://plantnet.rbgsyd.nsw.gov.au> (accessed 20<sup>th</sup> July 2021) at [https://plantnet.rbgsyd.nsw.gov.au/cgi-bin/NSWfl.pl?page=nswfl&lvl=sp&name=Fontainea~sp.+Coffs+Harbour+\(A.S.Benwell+341,+NSW1102027\)](https://plantnet.rbgsyd.nsw.gov.au/cgi-bin/NSWfl.pl?page=nswfl&lvl=sp&name=Fontainea~sp.+Coffs+Harbour+(A.S.Benwell+341,+NSW1102027))

# NSW Threatened Species Scientific Committee

---

## Appendix 1

### Assessment against *Biodiversity Conservation Regulation 2017* criteria

The Clauses used for assessment are listed below for reference.

**Overall Assessment Outcome: Critically Endangered under Clause 4.2(1)(a),(2)(b,c), 4.3(a)(d)(e, i,ii,iii,iv), 4.4(a)(d,(i)), (e(i), (ii, A(I),B)) and 4.5(a).**

#### Clause 4.2 – Reduction in population size of species (Equivalent to IUCN criterion A)

**Assessment Outcome: Critically Endangered under Clause 4.2(1)(a),(2)(b,c).**

<b>(1) - The species has undergone or is likely to undergo within a time frame appropriate to the life cycle and habitat characteristics of the taxon:</b>			
	(a)	for critically endangered species	a very large reduction in population size, or
	(b)	for endangered species	a large reduction in population size, or
	(c)	for vulnerable species	a moderate reduction in population size.
<b>(2) - The determination of that criteria is to be based on any of the following:</b>			
	(a)	direct observation,	
	(b)	an index of abundance appropriate to the taxon,	
	(c)	a decline in the geographic distribution or habitat quality,	
	(d)	the actual or potential levels of exploitation of the species,	
	(e)	the effects of introduced taxa, hybridisation, pathogens, pollutants, competitors or parasites.	

#### Clause 4.3 – Restricted geographic distribution of species and other conditions

**(Equivalent to IUCN criterion B)**

**Assessment Outcome: Critically Endangered under Clause 4.3(a)(d)(e, i,ii,iii,iv).**

<b>The geographic distribution of the species is:</b>			
	(a)	for critically endangered species	very highly restricted, or
	(b)	for endangered species	highly restricted, or
	(c)	for vulnerable species	moderately restricted.
<b>and at least 2 of the following 3 conditions apply:</b>			
	(d)	the population or habitat of the species is severely fragmented or nearly all the mature individuals of the species occur within a small number of locations,	
	(e)	there is a projected or continuing decline in any of the following:	
		(i)	an index of abundance appropriate to the taxon,
		(ii)	the geographic distribution of the species,
		(iii)	habitat area, extent or quality,
		(iv)	the number of locations in which the species occurs or of populations of the species.
	(f)	extreme fluctuations occur in any of the following:	
		(i)	an index of abundance appropriate to the taxon,

## NSW Threatened Species Scientific Committee

---

	(ii)	the geographic distribution of the species,
	(iii)	the number of locations in which the species occur or of populations of the species.

### Clause 4.4 – Low numbers of mature individuals of species and other conditions

(Equivalent to IUCN criterion Clause C)

**Assessment Outcome: Critically Endangered under Clause 4.4(a)(d,(i)), (e(i), (ii, A(I),B)).**

<b>The estimated total number of mature individuals of the species is:</b>			
	(a)	for critically endangered species	very low, or
	(b)	for endangered species	low, or
	(c)	for vulnerable species	moderately low.
<b>and either of the following 2 conditions apply:</b>			
	(d)	a continuing decline in the number of mature individuals that is (according to an index of abundance appropriate to the species):	
		(i)	for critically endangered species very large, or
		(ii)	for endangered species large, or
		(iii)	for vulnerable species moderate,
	(e)	both of the following apply:	
		(i)	a continuing decline in the number of mature individuals (according to an index of abundance appropriate to the species), and
		(ii)	at least one of the following applies:
		(A)	the number of individuals in each population of the species is:
			(I) for critically endangered species extremely low, or
			(II) for endangered species very low, or
			(III) for vulnerable species low,
		(B)	all or nearly all mature individuals of the species occur within one population,
		(C)	extreme fluctuations occur in an index of abundance appropriate to the species.

### Clause 4.5 – Low total numbers of mature individuals of species

(Equivalent to IUCN criterion D)

**Assessment Outcome: Critically Endangered under Clause 4.5(a).**

<b>The total number of mature individuals of the species is:</b>			
	(a)	for critically endangered species	extremely low, or
	(b)	for endangered species	very low, or
	(c)	for vulnerable species	low.

# NSW Threatened Species Scientific Committee

---

## **Clause 4.6 – Quantitative analysis of extinction probability**

**(Equivalent to IUCN criterion E)**

**Assessment Outcome: Data Deficient**

<b>The probability of extinction of the species is estimated to be:</b>		
(a)	for critically endangered species	extremely high, or
(b)	for endangered species	very high, or
(c)	for vulnerable species	high.

## **Clause 4.7 – Very highly restricted geographic distribution of species vulnerable species**

**(Equivalent to IUCN criterion D2)**

**Assessment Outcome: Vulnerable under Clause 4.7.**

For vulnerable species,	the geographic distribution of the species or the number of locations of the species is very highly restricted such that the species is prone to the effects of human activities or stochastic events within a very short time period.
-------------------------	--