Advice to the Minister for Sustainability, Environment, Water, Population and Communities from the Threatened Species Scientific Committee (the Committee) on Amendment to the list of Threatened Species under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act)

1. Reason for Conservation Assessment by the Committee

This advice follows assessment of new information provided through the Species Information Partnership with Western Australia on:

***Banksia serratuloides* subsp. *perissa* (northern serrate dryandra)**

2. Summary of Species Details

Taxonomy	Conventionally accepted as *Banksia serratuloides* subsp. *perissa* (AS George) AR Mast and K Thiele
State Listing Status	Listed as declared rare flora under the Western Australian *Wildlife Conservation Act 1950*. Managed as endangered by the Western Australian Government.
Description	A low, compact shrub, growing to 1 m tall and 1.2 m in diameter, with crowded leaves on erect branches. Leaves are 19 cm long, paler on the underside and divided almost to the midrib forming 20–33 long, flat, quite rigid lobes. The flower heads, held in the leaf axils, are axillary and surrounded by lanceolate bracts which are hairless on the back and with white woolly margins, which later become smooth. Flowers are yellow 2.5 cm long and have a silky-hairy perianth. The style is long, hairless and has a narrow, furrowed, darker coloured stigmatic end (Brown et al., 1998; Patrick and Brown, 2001).
Distribution	Endemic to Western Australia and known from three populations (consisting of 16 subpopulations) (DEC, 2009). Restricted to the Badgingarra area (Brown et al., 1998). Five subpopulations occur within a national park, one occurs within a nature reserve and eight occur within shire road reserves (DEC, 2009).
Relevant Biology/Ecology	Prefers low dense heath but may also be found in low open woodland. Inhabits areas of lateritic gravel and brown loam on ridge tops, slopes or in red-brown clayey sand on lower areas (Brown et al., 1998). Details of the ages of sexual maturity, life expectancy and natural mortality of this species are unknown. Flowering occurs from August to September (Brown et al., 1998).
Threats *Known*	Roadwork and firebreak maintenance is a known current and past threat. Many plants occur on road verges or close to firebreaks and there has been evidence of pruning of plants. Part of one subpopulation has been 'scraped' in the past during road maintenance activities. Thus some subpopulations may be disturbed or destroyed by vehicles and machines undertaking track maintenance in the future (DEC, 2009).

Potential	Disease is a major potential threat as the subspecies is presumed to be susceptible to *Phytophthora cinnamomi* which invades a plant's roots and stem to obtain nutrients for growth and reproduction. This kills the plant's cells and reduces its ability to transport water and nutrients (DEC, 2009). Disturbance during roadwork and firebreak maintenance may introduce and/or encourage weed invasion. Weeds suppress early plant growth by competing for soil moisture, soil nutrients and light. Weeds also exacerbate grazing pressure and increase the fire hazard due to the easy ignition of high fuel loads produced annually by many weed species (DEC, 2009). Inappropriate fire regimes are a potential threat as the fire response to this subspecies is currently unknown. Frequent fire would most likely destroy populations if it occurs before the plant can regenerate or before the juvenile plants have reached maturity, produced seed and replenished to soil seed bank. Conversely, infrequent fires may be required to germinate soil stored seed (DEC, 2009).

3. Public Consultation

Notice of the proposed amendment was made available for public comment for 30 business days. No comments were received.

4. How judged by the Committee in relation to the EPBC Act criteria and Regulations

Criterion 1: It has undergone, is suspected to have undergone or is likely to undergo in the immediate future a very severe, severe or substantial reduction in numbers

Not eligible

Criterion element	Evidence
Reduction in numbers	Not substantial – Varying trends in subpopulations have been recorded with eight subpopulations showing an increase in plant numbers (1 226−2 180) and 5 subpopulations recording a decrease (1 846−780). The number of known plants is currently 2 143: a small decrease from the highest recorded number of 2 180 (DEC, 2009). One known subpopulation of 100 plants in 1991 was presumed lost after surveys in 1994 failed to locate any plants of the subspecies (DEC, 2009).

Criterion 2: Its geographic distribution is precarious for the survival of the species **and** is very restricted, restricted or limited

Eligible for listing as critically endangered

Criterion element	Evidence
Geographic distribution AND	Very restricted − The extent of occurrence is 57 km^2. The area of occupancy is only known for seven subpopulations and is estimated be less than 1 km^2 (DEC, 2009).

Geographic distribution precarious	Yes – The subspecies is restricted to 16 subpopulations over three fragmented locations. Whilst the total number of plants has not shown a substantial decrease, the numbers of plants within several subpopulations have exhibited varying trends of increases and declines, including those subpopulations within conservation estates (DEC, 2009). Known current and potential threats may adversely affect the numbers of the eight subpopulations located within shire road reserves (DEC, 2009).

Criterion 3: The estimated total number of mature individuals is very low, low or limited; **and either**
(a) evidence suggests that the number will continue to decline at a very high, high or substantial rate; **or**
(b) the number is likely to continue to decline **and** its geographic distribution is precarious for its survival

Eligible for listing as vulnerable

Criterion element	**Evidence**
Total no. of mature individuals AND Continued rate of decline	Limited − In 2008 the northern serrate dryandra had a population of 2 143 mature plants (DEC, 2009). Not substantial – see Criterion 1.
OR	
Total no. of mature individuals AND Continued decline likely AND Geographic distribution precarious	Limited − In 2008 the northern serrate dryandra had a population of 2 143 mature plants (DEC, 2009). Yes – The total number of plants has not shown a substantial decrease, though the numbers of plants within several subpopulations have exhibited varying trends of increases and declines (DEC, 2009). One known subpopulation was presumed lost after surveys failed to locate any plants (DEC, 2009). There are known current and potential threats that may adversely affect the numbers of the eight subpopulations. Yes – see Criterion 2.

Criterion 4: The estimated total number of mature individuals is extremely low, very low or low

Not eligible

Criterion element	**Evidence**
Total no. of mature individuals	Not low − In 2008 the northern serrate dryandra had a population of 2 143 mature plants (DEC, 2009).

Criterion 5: Probability of extinction in the wild that is at least
(a) 50% in the immediate future; or
(b) 20% in the near future; or
(c) 10% in the medium-term future

Not eligible

Criterion element	Evidence
Probability of extinction in the wild	No data

5. Recovery Plan

There should not be a recovery plan for ***Banksia serratuloides*** **subsp.** ***perissa*** at this time, as recovery of the species is not complex and the approved conservation advice for the species provides sufficient direction to implement priority actions and mitigate against key threats.

6. Recommendations

(i) The Committee recommends that the list referred to in section 178 of the EPBC Act be amended by **transferring** from the **vulnerable** category to the **critically endangered** category:

Banksia serratuloides **subsp.** ***perissa***

(ii) The Committee recommends that there should not be a recovery plan for this species.

Threatened Species Scientific Committee

24 August 2010

References cited in the advice

Brown A, Thomson-Dans C and Marchant N (eds) (1998). Western Australia's Threatened Flora, Department of Conservation and Land Management, Western Australia.

Department of Environment and Conservation (DEC) (2009). Records held in DEC's declared flora database and rare flora files. Western Australian Department of Environment and Conservation, Western Australia.

George, AS (1996). New taxa and a new infrageneric classification in *Dryandra* R.Br. (Proteaceae: Grevilleoideae). Nuytsia 10(3): 350.

Mast AR and Thiele K (2007). The transfer of *Dryandra* R.Br. to *Banksia* L.f. (Proteaceae). Australian Systematic Botany 20(1): 70.

Patrick SJ and Brown AP (2001). Declared rare and poorly known flora in the Moora District, Wildlife Management Program No. 28. Department of Conservation and Land Management, Western Australia.