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Short communications

Recognition of *Eucalyptus quaerenda* (Myrtaceae) at specific rank

Phylogenetic analysis of the relationships between the taxa in the *Eucalyptus angustissima* complex have been investigated using RFLP analysis of nuclear genome (Elliott and Byrne 2003) (Voucher specimens at PERTH: W. O'Sullivan 127, 357, 812, 968, 966, 1183, 1190, 1193, 1194). This study assessed populations of *E. angustissima* subsp. *angustissima*, *E. angustissima* subsp. *quaerenda*, *E. foliosa* and *E. misella* and found all four taxa to be genetically distinct. *Eucalyptus angustissima* was not monophyletic as the two subspecies did not cluster together. *Eucalyptus misella* was sister species to *E. angustissima* subsp. *angustissima*, and *E. foliosa* was sister species to both these taxa. *Eucalyptus angustissima* subsp. *quaerenda* was the most distinct of the four taxa. This level of genetic differentiation between *E. angustissima* subsp. *quaerenda* and *E. angustissima* subsp. *angustissima* warrants the elevation of *E. angustissima* subsp. *quaerenda* to species rank.

The genetic study also assessed a population from north-west of Ravensthorpe, currently identified as *E. angustissima* subsp. *quaerenda* (D. Nicolle pers. com.), but previously referred to as an intergrade between *E. angustissima* subsp. *quaerenda* and *E. angustissima* subsp. *angustissima*. This population showed greatest genetic affinities with *E. angustissima* subsp. *quaerenda* and the level of genetic similarity between this population and *E. angustissima* subsp. *quaerenda* was higher than the genetic similarity among *E. angustissima* subsp. *angustissima* populations (Elliott & Byrne 2004). The genetic analysis is consistent with the identification of this population as *E. angustissima* subsp. *quaerenda*. Recognition of this population marks a substantial range expansion for *E. angustissima* subsp. *quaerenda* as it occurs in the upper reaches of the Phillips River approximately 100 km east of the previous recorded location around Lake Chinocup. Specimens identified as *E. angustissima* subsp. *quaerenda* have also been recorded from the western shores of Lake King.

Recognition of *E. angustissima* subsp. *quaerenda* as *E. quaerenda* is made here. All other detail and description of the taxon remain as previously published (Hill & Johnson 1992) except for the increase in distribution reported here and recognition of the intergrade population of Hill and Johnson (1992) as *E. quaerenda*.

Eucalyptus quaerenda (L.A.S. Johnson & K.D. Hill) Byrne, *comb. et stat. nov.*

Eucalyptus angustissima F. Muell. subsp. *quaerenda* L.A.S. Johnson & K.D. Hill, *Telopea* 4:598-599. – *Type*: 100m S of the south shore of Lake Chinokup [Chinocup] WA, 13 November 1986 *K.D. Hill, L.A.S. Johnson & D.F. Blaxell* KH2460 (*holo*: NSW; *iso*: CANB, CBG, MEL, PERTH).

Distribution: Southern and western shores of Lake Chinocup and Lake Altham, the upper reaches of the Phillips River and around the western shores of Lake King (Figure 1).

Conservation Status: Conservation Codes for Western Australian Flora: Priority Three. Known from less than 5 populations, at least one in a Nature Reserve (Chinocup Nature Reserve).

Selected specimens: 3.1 km from highway along Fitzgerald road, NW of Ravensthorpe, on upper Phillips River branch [*c.* 39 km SSE of Lake King], 18 Jan. 1985, *M.I.H. Brooker* 8807 (PERTH); 18 miles SE of Lake King township, 25 Feb. 1966, *S.G.M. Carr & A.S. George* ASG 7674 (CANB, K,

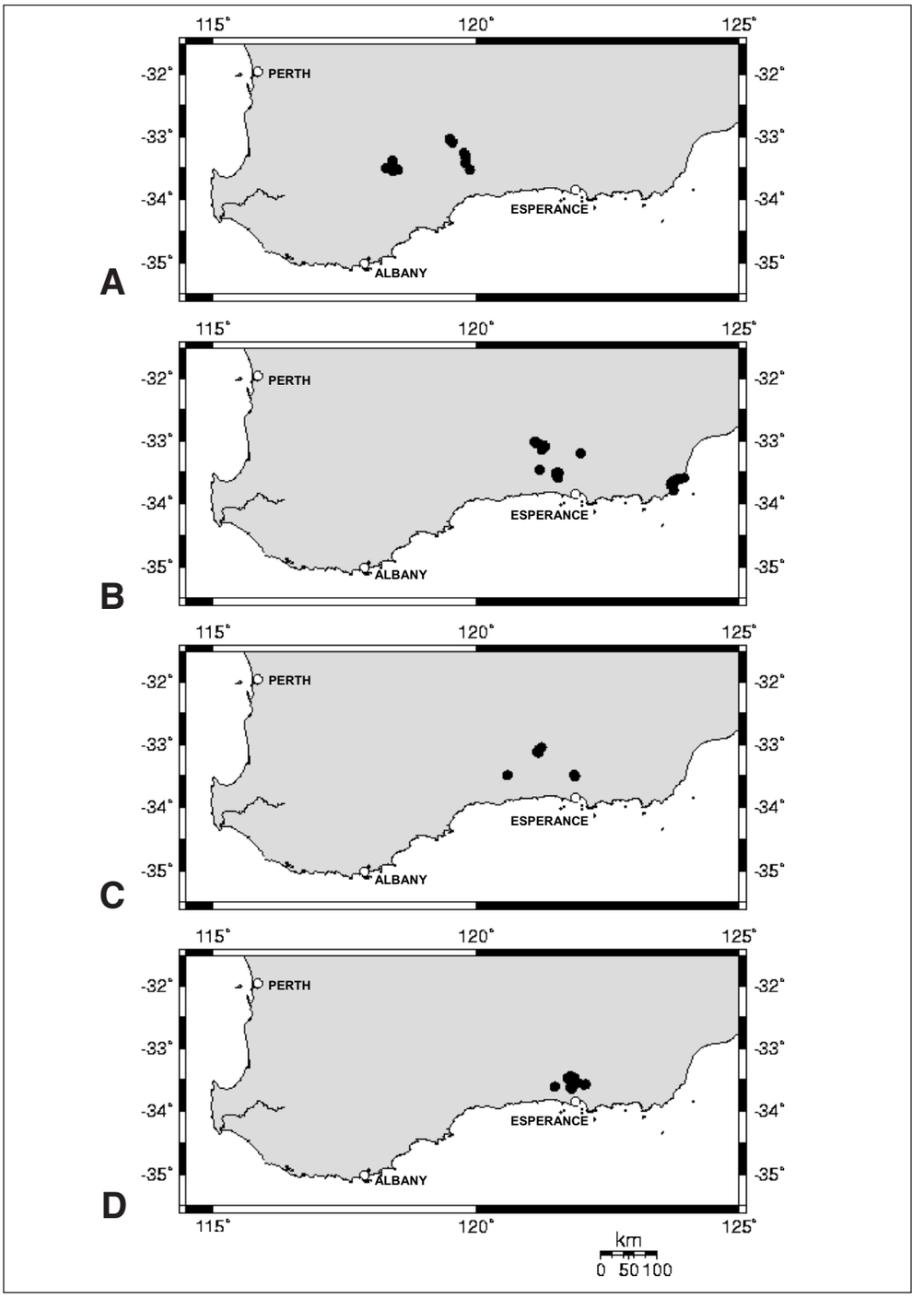

Figure 1. Distributions of A) *E. quaerenda*, B) *E. angustissima*, C) *E. misella* and D) *E. foliosa* in south-west Western Australia. Distribution data obtained from FloraBase (Western Australian Herbarium, 1998) on 1 June 2004.

PERTH); Lake King - Ravensthorpe road, 2.9 km N of Hatters Hill road, private property - Helen Brownley's Farm, 9 Oct. 1996, *W. O'Sullivan* WOS 130 (PERTH); Phillips River crossing, W side of Long Creek Road, 10 Oct. 1996**,** *W. O'Sullivan* WOS 162 (PERTH); SW of Lake Chinocup, 9 Jun. 2000, *W. O'Sullivan* WOS 968 (AD, CANB, PERTH); W of Pingrup, Jan. 1953, *J. Reeves* 146 (PERTH); *c*. 3.5 km N of Rasmussen Road, NW of Lake Altham, 18 Sep. 1998, *P. White* PJW 1164 (PERTH); *c*. 6 km N of Lake Grace - Lake King Road along Hewson Road, 800 m SE of Hewson Road in paddock, 5 Jun. 2002, *P.J. White* 1279 (AD, PERTH).

References

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