

**Advice from the Threatened Species Scientific Committee (the Committee)
on 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:

***Lagorchestes hirsutus bernieri* (rufous hare-wallaby (Bernier Island))**

2. Summary of Species Details

Taxonomy	Conventionally accepted as <i>Lagorchestes hirsutus bernieri</i> Thomas . The subspecies is conventionally accepted (Johnson and Burbidge, 2008; ABRS, 2009), but there is a strong case for <i>Lagorchestes hirsutus dorrae</i> to be synonymised with the subspecies (Eldridge et al., 2004). The Western Australia Government has accepted this inclusion (Eldridge and Spencer, 2004).
State Listing Status	Listed as fauna that is rare or likely to become extinct under the Western Australian <i>Wildlife Conservation Act 1950</i> . Managed as vulnerable by the Western Australian Government. This listing includes <i>Lagorchestes hirsutus dorrae</i> , which is listed as vulnerable under the EPBC Act.
Description	A small macropod (1.5–2 kg, 300–400 mm tall) that is rufous coloured (grey-brown-orange). Longer hair towards the back and below (Johnson and Burbidge, 2008). Larger than the mainland subspecies (Johnson and Burbidge, 2008).
Distribution	Restricted to Bernier Island, west of Carnarvon, Western Australia.
Relevant Biology/Ecology	Populations fluctuate greatly with higher numbers recorded after periods of higher rainfall and in areas following fire (Johnson and Burbidge, 2008). Conversely, population slumps are recorded during periods of prolonged drought (Richards, 2007). This subspecies and <i>Lagorchestes hirsutus dorrae</i> are reported to be highly inbred between and within the populations (Eldridge and Spencer, 2004; Eldridge et al., 2004).
Threats	
<i>Known</i>	Known threats include inappropriate recreational activity (Richards, 2007).
<i>Potential</i>	Potential threats include a major fire event, disease, development and the accidental introduction of feral predators (Richards, 2007). This subspecies is highly inbred and at risk from low genetic diversity (Eldridge et al., 2004).

3. Public Consultation

Notice of the proposed amendment was made available for public comment for 30 business days. Any comments received that are relevant to the survival of the species have been considered by the Committee.

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 – A 65% reduction in numbers was observed in 2007–2009 (figures unavailable, includes Dorre Island subspecies) (WA DEC, 2010) and a 25% reduction has also been observed (figures unavailable) (Short et al., 1997), however, these declines were in response to drought.

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

Eligible for listing as vulnerable

Criterion element	Evidence
Geographic distribution AND Geographic distribution precarious	Restricted – Naturally restricted to Bernier Island with an extent of occurrence of 44 km ² (Richards, 2007). Area of occupancy is unknown, but, as the species occurs in all habitat types on the island, may be inferred as being the same as the extent of occurrence (WA DEC, 2010). Yes – This subspecies is restricted to one island, is prone to great population fluctuations (Short and Turner, 1992) and a 65% reduction in numbers was observed in 2007–2009 during drought (figures unavailable, includes Dorre Island subspecies) (WA DEC, 2010). If a potential threat was to eventuate during prolonged drought (causing a population slump) the subspecies' geographic distribution may contract rapidly.

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

Not eligible

Criterion element	Evidence
Total no. of mature individuals AND Continued rate of decline	Limited – Bernier Island has a population of between 2600 individuals (estimated during drought conditions) (Short and Turner, 1992) to at least 3100 individuals (estimated during above-average rainfall conditions) (Short et al. 1997). It is unknown what percentage of these are mature individuals. No data

OR	
Total no. of mature individuals AND Continued decline likely AND Geographic distribution precarious	Limited – Bernier Island has a population of between 2600 individuals (estimated during drought conditions) (Short and Turner, 1992) to at least 3100 individuals (estimated during above average rainfall conditions) (Short et al. 1997). It is unknown what percentage of these are mature individuals. No data 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 – See Criterion 3

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. Recommendation

The Committee recommends **no amendment** to the list referred to in section 178 of the EPBC Act and that *Lagorchestes hirsutus bernieri* remains eligible for inclusion in the **vulnerable** category of the list.

Threatened Species Scientific Committee
26 August 2010

6. References cited in the advice

Australian Biological Resources Study (ABRS) (2009). Australian Faunal Directory. Australian Biological Resources Study. Canberra.

Viewed: 27 April 2010

Available on the Internet at:

<http://www.environment.gov.au/biodiversity/abrs/online-resources/fauna/afd/index.html>

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Eldridge MDB and Spencer PBS (2004). Department of Conservation and Land Management Fauna Nomination Form *Lagorchestes hirsutus bernieri* (Bernier Island Rufous Hare-wallaby or Mala) *Lagorchestes hirsutus dorrae* (Dorre Island Rufous Hare-wallaby or Mala) *Lagorchestes hirsutus hirsutus* (Rufous Hare-wallaby or Mala) *Lagorchestes hirsutus* ssp. (NTM U2430) (Rufous Hare-wallaby or Mala, Tanami Desert). Department of Conservation and Land Management. Perth, Western Australia.

Johnson KA and Burbidge AA (2008). Rufous Hare-wallaby *Lagorchestes hirsutus* Gould, 1844. In: ‘The Mammals of Australia – Third Edition’ (eds Van Dyck S and Strahan R). Reed New Holland. Chatswood, Australia.

Richards J (2007). Rufous hare-wallaby (*Lagorchestes hirsutus*) Recovery Plan 2007–2011. Wildlife Management Program No. 43. Department of Environment and Conservation. Perth.

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Short J, Turner B, Majors B and Leone J (1997). The fluctuating abundance of endangered mammals on Bernier and Dorre Islands, Western Australia – conservation implications. *Australian Mammalogy* 20: 53–61.

Thomas O (1907). List of further collections of mammals from Western Australia, including a series from Bernier Island, obtained for Mr. W.E. Balston; with field-notes by the collector, Mr. G.C. Shortridge. *Proceedings of the Zoological Society of London* 1906: 763–777.

Western Australia Department of Environment and Conservation (WA DEC) (2010). Records held in the Declared Rare Fauna File. Perth, Western Australia.