CONVENTION ON INTERNATIONAL TRADE IN ENDANGERED SPECIES
OF WILD FAUNA AND FLORA

_____

Sixteenth meeting of the Conference of the Parties
Bangkok (Thailand), 3-14 March 2013

CONSIDERATION OF PROPOSALS FOR AMENDMENT OF APPENDICES I AND II

A. Proposal

Delist the extinct *Caloprymnus campestris* from Appendix I in accordance with the Resolution Conf. 9.24 (Rev. CoP15). The species does not meet the biological criteria (Annex 1) and trade criteria (Annex 5) for Appendix I.

The precautionary measures referred to in Annex 4 A1 and D are not considered to be required for this proposal. Paragraph 1A requires species listed on Appendix I to be first transferred to Appendix II so that the impact of any trade can be monitored. Australia considers that it is not necessary to first transfer the species to Appendix II as it is extinct, has not been in trade and is never likely to be in trade. Paragraph D states that species regarded as possibly extinct should not be deleted from Appendix I if they may be affected by trade in the event of their rediscovery. Retaining the species on Appendix I with the annotation of 'possibly extinct' is not warranted because in the unlikely event of its rediscovery will not be affected by trade.

B. Proponent

Australia[*], as requested by the Animals Committee, to delete the species from Appendix I (AC26 WG1 Doc. 2).

C. Supporting statement

1. Taxonomy

1.1	Class:	Marsupialia	
1.2	Order:	Diprotodontia	
1.3	Family:	Potoroidae	
1.4	Species:	*Caloprymnus campestris* (Gould, 1843)	
1.5	Scientific synonyms:	*Bettongia campestris* Gould, 1843.	
1.6	Common names:	English:	Buff-nosed rat kangaroo; Desert rat kangaroo; Plains rat kangaroo
		French:	Kangourou-rat du désert
		Spanish:	Canguro del desierto; Canguro-rata desértico
1.7	Code numbers:	A-102.012.003.001	

[*] *The geographical designations employed in this document do not imply the expression of any opinion whatsoever on the part of the CITES Secretariat or the United Nations Environment Programme concerning the legal status of any country, territory, or area, or concerning the delimitation of its frontiers or boundaries. The responsibility for the contents of the document rests exclusively with its author.*

2. Overview

As part of the periodic review of the Appendices, the Animals Committee recommended that the extinct desert rat kangaroo (*Caloprymnus campestris)* be removed from Appendix I (AC 26 WG1 Doc. 2). The recommendation was made based on information provided by the Australian CITES Scientific Authority for consideration at the 26th meeting of the Animals Committee (Geneva, March 2012).

C. campestris was one of many species nominated by Australia for inclusion in the Appendices when CITES first came into force on 1 July 1975. It was listed as a precautionary measure as the species was not subject to trade and at the time, was considered extinct.

The desert rat kangaroo was endemic to arid regions of South Australia and Queensland. The species was first described by John Gould in 1843 based on three specimens from South Australia (Flannery, 1990). It was over 90 years later in 1931 that the species was first recorded in the wild by Finlayson near Ooroowilanie, east of Lake Eyre, South Australia (Finlayson, 1932).

The historical records indicate that the species was always rare and patchily distributed. The last reliable sighting of the desert rat kangaroo was in 1935 (Finlayson, 1990). Since then unconfirmed sightings have been recorded in Queensland in 1956–1957 and 1974–1975 following periods of drought-breaking rains (Johnson, 2006), and in South Australia up until 1988 (Carr and Robinson, 1997).

Habitat alteration and predation by feral cats (*Felis catus*) and European red foxes (*Vulpes vulpes*) are believed to be the primary drivers in the decline and extinction of the species (Australasian Mammal Assessment Workshop, 2008). Consequently, trade was not considered to be a factor in the extinction of the species and is not considered to be a risk in the highly unlikely event that the species is rediscovered.

3. Species characteristics

3.1 Distribution

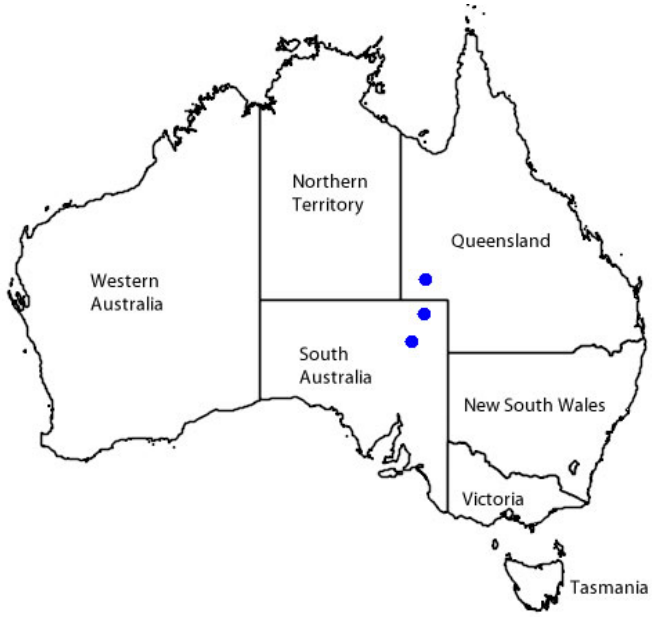

Figure 1 Map of occurrence records for the desert rat kangaroo, *C. campestris*. (Atlas of Living Australia, 2012).

C. campestris occupied a small area in the arid regions of northeastern South Australia and the adjacent part of Queensland, east and northeast of Lake Eyre, in the drainage basin of the Diamantina River and Cooper Creek (Smith, 1998). Finalyson (1932) described the distribution of the desert rat kangaroo as being discontinuous and generally following the fringes of gibber plains in arid South Australia and Queensland. Fossils were also found at Lake Menindee, New South Wales (Flannery, 1990). Lundelius and Turnbull (1984) reported recent remains of *C. campestris* in caves in the Nullarbor Plain, Western Australia. However, re-examination of the specimen revealed that it was

misidentified as the dentition in the jaw bone was characteristic of another extinct rat kangaroo; *Bettongia pusilla* (McNamara, 1997).

3.2 Habitat

The desert rat kangaroo inhabited claypans, gibber plains and sandridges in the stony transition zone between true gibber plains and loamy flats. It spent little time in the sandhills. The vegetation was sparse and included saltbush, emu bush, cherropods and some stunted corkwood (Smith, 1998). The desert rat kangaroo appeared to be quite independent of surface waters which was largely absent from its range and when present there was no evidence that the animals made use of them (Finlayson, 1932).

3.3 Biological characteristics

Unlike many potoroids the desert rat kangaroo did not burrow. It made a flimsy shallow nest in a shallow excavation about 10 cm deep and 25 cm in diameter frequently underneath a cotton or salt bush or out in the open. The nest was lined with leaves and grasses (Flannery, 1990). The top was covered with twigs and grass stems fixed in position by interlacing them with stumps of plants formerly growing around the depression (Finalyson, 1932). The nest had an entrance to the side and a hole in the roof which the animal used to survey its surroundings (Smith, 1998). Nest material was carried in its tail (Carr and Robinson, 1997). The species sheltered in its nest during the day and emerged from the nest at night to feed. It was thought to feed on plants, roots and insects (Flannery, 1990).

Little is known about the reproductive biology of the desert rat kangaroo. The females had a deep pouch containing four teats of which one or two were functional. Females appeared to have only a single young at a time (Flannery, 1990). Finlayson (1935) observed three females in June that had pouch young in different stages of growth suggesting a long breeding season or that they only bred after good rains. The animal appeared to be solitary except for females that had unweaned young (Flannery, 1990).

Although the limbs were not well developed in *C. campestris* it could move at a surprisingly fast speed; Finlayson (1932) reported that it moved fast enough to tire a galloping horse. It had remarkable endurance with one young male reportedly being pursued for 12 miles and tiring out two horses before he was brought to a halt by the third horse (Finlayson, 1932). Locomotion was via hopping with an easy stride in which the trunk leaned well forward and the tail was almost straight (Smith, 1998). The tracks were distinctive when the animal travelled at speed with the right foot 7cm in front of the left and rotated outwards by 30 degrees (Flannery, 1990; Smith, 1998).

When handled the animals were meek and gentle (unlike other bettongs which tend to bite) and produced a harsh aspirate sound. The desert rat-kangaroo had no characteristic smell (Finlayson, 1932).

3.4 Morphological characteristics

The desert rat kangaroo was a small potoroid in which females were larger than males and weighed between 743–1060g compared to 637–850g for males (Finlayson, 1932b). Finlayson (1935) described *C. campestris* as an animal with the bulk of a rabbit but built like a kangaroo with long spindly legs and tiny forelegs folded tight on its chest. The head was blunt with a very short muzzle and the upper lip was enormously developed and swelled outwards beyond the level of the nose (Flannery, 1990). The ears differed considerably from other bettongs and potoroos attaining a length of 45 mm and narrow in shape (Finlayson, 1932). Ears were thickly clothed with short yellow hairs (Oldfield 1988).

The fur on the body was soft and straight with dense under fur. The coloration was a very pale sandy brown with hairs tipped with sooty brown (Harper, 1945). The sides were a dirty yellow colour and the under parts dirty white. The front and back legs were redder in colour and the hands and feet paler in colour than the rest of the body (Flannery 1990). The centre of the chest had a patch of naked thickened skin about 5cm wide and 2cm long and glandular although its function is unknown (Lydekker, 1896). The tail was around 297–377 mm and was slightly longer than the head and body length of 254–280 mm (Finlayson, 1932; Claridge *et al.,* 2007).

Figure 2 Desert rat kangaroo by John Gould (Richter, 1863).

3.5 Role of the species in its ecosystem

Little is known about the role of the *C. campestris* in its ecosystem. Examination of the stomach contents from a specimen collected in South Australia revealed that it ate beetles and weevils (Dixon, 1998). Aboriginals reportedly captured the desert rat kangaroo for food (Lavery, 1985). Predation by introduced predators, namely the feral cat and European red fox may have contributed to its decline and extinction (Jenkins and Thornback, 1982).

4. Status and trends

4.1 Habitat trends

Much of the area where the desert rat kangaroo formerly occurred is subject to cattle grazing and rabbit invasion which caused soil and vegetation degradation (Flannery, 1990).

4.2 Population size

Little is known about the population sizes of the desert rat kangaroo. Finlayson (1935) found 17 desert rat kangaroos in the course of one week's horse riding over an area of around 20 square miles (around 32 square kilometres) in northwest South Australia. Finlayson (1935) described the species as locally common during favourable conditions, such as after the breaking of a drought, but emphasised that normally the population sizes would have been small.

4.3 Population structure

There is no information known about the population structure. It appeared that the animals were solitary except for females with dependent young (Flannery, 1990).

4.4 Population trends

There is no quantitative population trend data for this species. Populations of the desert rat kangaroo appeared to go through boom and bust cycles. During droughts the populations apparently crashed and it was during these times that it was thought that the species had become extinct (Flannery, 1990).

4.5 Geographic trends

There is no information available on the geographic trends of this species.

5. Threats

The rapid decline of the desert rat kangaroo in the 1930s coincides with the invasion of the European red fox into its habitat (Fisher and Blomberg, 2010). Predation by feral cats and red foxes and habitat alteration due to grazing by cattle and rabbits are likely to have contributed to the extinction of the species along with the bust cycles that the populations experienced during drought conditions (Flannery, 1990). Given these threats, it is considered unlikely that the species will reappear as it had in the past following a good season of rain (Flannery, 1990).

6. Utilization and trade

6.1 National utilization

There is no trade in the desert rat kangaroo as the species is considered extinct. Historical data indicates that the species was never subject to trade activities (Finlayson, 1935).

6.2 Legal trade

There are no records of legal trade in *C. campestris*.

6.3 Parts and derivatives in trade

There were no parts or derivatives used in trade.

6.4 Illegal trade

There was, and is currently, no indication of illegal trade in the desert rat kangaroo**.** Illegal trade is not considered to be a factor in the desert rat kangaroo's extinction.

6.5 Actual or potential trade impacts

The desert rat kangaroo was not subject to trade before its extinction. Should the species be rediscovered, it is unlikely that there would be any trade activity for this species. Any potential trade in this species would be strictly regulated under domestic Australian law (see 8.3.1).

7. Legal instruments

7.1 National

The desert rat-kangaroo, *C. campestris,* is listed nationally as Extinct under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

7.2 International

The species is listed as Extinct under the International Union for Conservation of Nature (IUCN) Red List 2011 (Australasian Mammal Assessment Workshop, 2008). *C. campestris* is listed in Appendix I under CITES. Permits are required for the import and export of CITES Appendix I listed species.

8. Species management

8.1 Management measures

No management measures are currently taking place as the species is considered extinct.

8.2 Population monitoring

The species is considered extinct. A comprehensive search for the desert rat kangaroo in north-east South Australia and south-west Queensland was carried out between 1984 and 1989 (Carr and

Robinson, 1997). The study involved an examination of historical accounts, a study of Aboriginal names and places where the species possibly occurred, interviews with people that sighted the species in the 1920s to 1950s, a poster seeking the public to report sightings and spotlight surveys of selected sites (Carr and Robinson, 1997). The study did not find the species; however, evidence was found of sightings during the 1970s to 1980s that described a small wallaby that matched the description of *C. campestris* and was seen within parts of its assumed former range (Carr and Robinson, 1997). The most compelling evidence that the species survived up until 1988 was sightings of bettong-like animals on Clifton Hills Station of South Australia. One of the animals was observed carrying nesting material in its tail which was behaviour of *C. campestris* (Carr and Robinson, 1997).

8.3 Control measures

8.3.1 International

The EPBC Act regulates trade in CITES listed and Australian native wildlife and their products. Export of live Australian native mammals is strictly prohibited for commercial purposes but may be exported for specific non-commercial purposes (e.g. for research, education or exhibition). As an Australian native mammal an Australian export permit would be required for the export of *C. campestris* even if it were delisted from CITES.

8.3.2 Domestic

Should the desert rat kangaroo be rediscovered, any take from the wild would be strictly regulated by the relevant Australian domestic environmental legislation.

8.4 Captive breeding and artificial propagation

Captive breeding programs were not established before the extinction of *C. campestris.*

8.5 Habitat conservation

There are no conservation measures currently being undertaken across its former range.

8.6 Safeguards

Should the species be rediscovered, it would be afforded protection from international trade by provisions of Australian wildlife law (the EPBC Act).

9. Information on similar species

Other species of rat kangaroo, especially *Bettongia* spp. are similar in appearance; however the *C. campestris* can be distinguished by its broader face, long and narrow ears, longer tail and a large hindfoot relative to other sections of the leg (Smith, 1998). It also had a distinctive naked patch on its chest and a very large thick upper lip that protruded beyond the level of the nose (Flannery, 1990). The tail has no crests or white tip as is found in *Bettongia* spp. (Gould, 1843).

10. Consultations

The species was endemic to Australia prior to its extinction and therefore consultation with other range States is not required.

11. Additional remarks

None.

12. References

Atlas of Living Australia website at http://bie.ala.org.au/species/Onychogalea+lunata Accessed 2 October 2012.

Australasian Mammal Assessment Workshop. 2008. *Caloprymnus campestris*. In *IUCN 2012. IUCN Red List of Threatened Species*. Version 2012.1.http://www.iucnredlist.org. Downloaded on 27 August 2012.

Carr, S.G. and Robinson, A.C. 1997. The present status and distribution of the desert rat-kangaroo *Caloprymnus campestris* (Marsupialia: Potoroidae). *South Australian Naturalist* 72: 4–27.

Claridge, A., Seebeck, J. and Rose, R. 2007. *Bettongs, potoroos and the musky rat-kangaroo*. CSIRO Publishing, Victoria, Australia. Pp. 192.

Gould, J. 1843. On a new species of Kangaroo Rat. *Proceedings of the Zoological Society of London* 1843: 81.

Finlayson, H.H. 1932a. *Rediscovery of Caloprymnus campestris* (Marsupialia). *Nature* 129: 871.

Finlayson, H.H. 1932b. *Caloprymnus campestris*. Its recurrence and characters. *Transactions of the Royal Society of South Australia* 56: 146–167.

Finlayson, H.H. 1935. *The Red Centre. Man and beast in the heart of Australia*. Sydney. Pp. 146.

Fisher, D.O. and Blomberg, S.P. 2010. Correlates of rediscovery and the detectability of extinction in mammals. *Proceedings of the Royal Society B* 278: 1090-1097.

Flannery, T. 1990. *Australia's vanishing mammals*. Readers digest Press, Surrey Hills, Australia.

Harper, F. 1945. *Extinct and vanishing mammals of the Old World*. American Committee for International Wild Life Protection, New York.

Jenkins, M. and Thornback, J. 1982. The IUCN Mammal Red Data Book Part I. IUCN Gland, Suiz. Pp. 33–34.

Johnson, C. 2006. *Chapter 1: A brief history of Australia's mammals. Australia's mammal extinctions: a 50,000 year history*. Cambridge University Press, Cambridge. Pp. 278.

Lavery. 1985. *The kangaroo keepers*. University of Queensland Press, Queensland. pp. 46–48.

Lundelius, E.L. and Turnbull, W.D. 1984. *The mammalian fauna of Madura Cave, Western Australia. Macropodidae: Potorinae*. Fieldiana, Geology, new series no. 14. Field Museum of Natural History, Chicago.

Lydekker, R. 1896. *Lloyd's natural history*. E. Lloyd, London. Pp. 66–67.

Oldfield, T. 1888. *Catalogue of the Marsupialia and Monotremata in the collection of the British Museum (Natural History)*. Printed by order of the Trustees, London. Pp. 115.

McNamara, J.A. 1997. Some smaller macropod fossils of South Australia. *Proceedings of the Linnean Society New South Wales* 117: 97–101.

Nowak, R.M. 1991. *Walker's mammals of the world*. John Hopkins University Press, Baltimore. Vol. 1. Pp. 90–91.

Richter, H.C. 1863. Mammals of Australia by John Gould. Volume II. Plate 66. Published by the author, London.

Smith, M.J. 1998. Desert rat-kangaroo. *Caloprymnus campestris*. Pp. 296–297 In Strahan, R (ed.). *Mammals of Australia*. Australian Museum/Reed New Holland, Sydney.