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

Eighteenth meeting of the Conference of the Parties
Colombo (Sri Lanka), 23 May – 3 June 2019

CONSIDERATION OF PROPOSALS FOR AMENDMENT OF APPENDICES I AND II

A. Proposal

To transfer *Pseudomys fieldi praeconis* from CITES Appendix I to CITES Appendix II in accordance with provisions of Resolution Conf. 9.24 (Rev CoP17), Annex 4 precautionary measures A1 and A2a(i).

In transferring this species, amend the name from *Pseudomys fieldi praeconis* to *Pseudomys fieldi* (Waite, 1896), in compliance with standand nomenclature.

B. Proponent

Australia*

C. Supporting statement

1. Taxonomy

1.1 Class: Mammalia

1.2 Order: Rodentia

1.3 Family: Muridae

1.4 Genus, species or subspecies, including author and year:

Pseudomys fieldi praeconis = *Pseudomys fieldi* (Waite, 1896)

1.5 Scientific synonyms: *Pseudomys fieldi, Pseudomys praeconis*

1.6 Common names: English: Djoongari, Shark Bay Mouse, Alice Springs Mouse
French: Fausse souris de la baie Shark
Spanish: Raton bastardo peludo

1.7 Code numbers: -

* *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

At the 29th meeting of the Animals Committee (AC29 Com 7 Rev) the Committee selected *Pseudomys fieldi praeconis* (Djoongari, Shark Bay Mouse) for review between CoP17 and CoP19 in accordance with Resolution Conf. 14.8 (Rev. CoP17) *Periodic Review of the Appendices*. Parties were notified of the Animals Committee's selection in Notification 2017/069. Australia undertook a review of *Pseudomys fieldi* which was provided to the 30th meeting of Animals Committee, and the Committee asked the Secretariat to invite the proposal to be submitted to the 18th meeting of the Conference of the Parties.

Nomenclature

The Appendices adopted at CoP1 in 1977 list both *Pseudomys fieldi* and *Pseudomys praeconis* as separate species included in Appendix I.

At CoP2 in 1979, Proposal 15 was adopted to remove *P. fieldi* from the CITES Appendices. By around this time, *P. fieldi* was known from a single specimen from Alice Springs, Northern Territory, Australia, while the name *P. praeconis* was associated with the population on Bernier Island, Western Australia. There was no proposal at CoP2 to delete *P. praeconis*, and *P. praeconis* was retained on Appendix I.

Pseudomys praeconis was synonymized with *fieldi* some 15 years later, with *P. fieldi* taking priority over *praeconis. Pseudomys fieldi* is the valid name for both the Bernier Island population and it's extinct mainland relatives. Whether *praeconis* was accepted as a subspecies under *P. fieldi* at that time is unknown. The 'intermediate' subspecies ranking arrangement may have been adopted within CITES to recognize *praeconis* as a name for the extant Shark Bay population as distinct from the extinct mainland taxon. However, it is nonetheless inconsistent with the CITES standard nomenclature and the CITES listing of *P. fieldi praeconis* should be updated to *P. fieldi*.

The following review is undertaken for *P. fieldi* (Waite, 1896) given that *P. f. praeconis* is not a recognised subspecies.

Review outcomes

The primary threat to *P. fieldi* has historically been predation by feral animals. This threat is currently mitigated as the three extant subpopulations occur on exotic-predator-free islands. There are potential threats from climate change and fire (Woinarski et al. 2014, Department of the Environment and Energy 2016). The species is protected nationally.

Resolution Conf. 9.24 (Rev CoP17) resolves that, when considering proposals to amend Appendix I and II, species that *are or may be affected by trade* should be included in Appendix I if they meet at least one of the biological criteria listed in Appendix I. A species "is or may be affected by trade" if:

i) it is known to be in trade (using the definition of 'trade' in Article I of the Convention), and that trade has or may have a detrimental impact on the status of the species; or

ii) it is suspected to be in trade, or there is demonstrable potential international demand for the species, that may be detrimental to its survival in the wild.

There is no evidence that trade is or may be a threat to the survival of this species. The species is demonstrably not in trade. There is no suspected or demonstrable potential demand for the species. Future commercial trade is unlikely. Therefore *P. fieldi* does not meet the basic criteria for inclusion on Appendix I. *Pseudomys fieldi* is eligible for transfer from Appendix I to Appendix II in accordance with Resolution Conf. 9.24 (Rev CoP17).

3. Species characteristics

3.1 Distribution

Pseudomys fieldi became extinct on the mainland and from Dirk Hartog Island and Faure Island by the late 19th century. The only natural surviving population was on Bernier Island, in Shark Bay, Western Australia (Morris et al. 2000).

Between 1993-2002 specimens were successfully translocated to North West Island (Montebello Islands) and Faure Island (Shark Bay) in Western Australia (Morris et al. 2000, Woinarski et al. 2014). In 2011-12, 88 individuals were released into a fenced and feral predator-free area on the mainland at Matuwa (Lorna Glen) in Western Australia. The translocated population is assumed to have failed due to predation. In 2017, 39 individuals were translocated from North West Island and Faure Island to the Australian Wildlife Conservancy's Mt Gibson Wildlife Sanctuary.

3.2 Habitat

Given its wide historic range, the species probably used a variety of arid and semi-arid habitats. In its sole remaining natural occurrence on Bernier Island, *P. fieldi* most commonly inhabits coastal dune vegetation dominated by *Spinifex longifolius* (beach spinifex) and *Olearia axillaris* (coastal daisy bush). Animals have also been found in lower densities in inland *Troidia*/*Acacia* heath (Robinson et al. 1976 in Morrisson et al. 2000).

3.3 Biological characteristics

Pseudomys fieldi does not seem to use burrows as the primary refuge, unlike other *Pseudomys* species, but prefers tunnels built in piles of seagrass on beach sand (Robinson 1983 in Morris et al. 2000).

Burrow use is observed more commonly during breeding season (Morris and Speldewinde 1992 in Morris et al. 2000). Breeding is from May to November, with litters of up to five (Morris et al. 2000). *Pseudomys fieldi* appears to be vegetarian/omnivorous and individuals live for at least two years (Morris et al. 2000).

3.4 Morphological characteristics

Pseudomys fieldi is a long-haired pseudo-mouse weighing 30-50g (Ride and Tyndale-Biscoe 1962, Watts and Spencer 1978, Watts and Aslin 1981). It has a graded coat from buff on the side to a white underbelly, with dorsal fur a mix of yellow-fawn and dark guard hairs (Watts and Aslin 1981).

3.5 Role of the species in its ecosystem

Little is known about the role of *P. fieldi* in its ecosystem.

4. Status and trends

4.1 Habitat trends

The species is probably entirely reliant on habitat that is free of introduced predators (cats and foxes). Although very limited, the habitat in use by *P. fieldi* is relatively secure. Climate change may be a moderate threat, as rainfall is expected to decrease across the species' limited range (Cleugh et al. 2011) which may affect availability of vegetation for food and shelter.

4.2 Population size

The population on Bernier Island in Shark Bay, Western Australia, was estimated to comprise 6000-7000 animals in 1992 (Morris et al. 2000).

The current population size on Bernier Island is currently unknown due to low capture rates. Based on density estimates, the population size on North West Island is likely >1000 individuals. The population size on Faure Island is unknown but the species was regularly sighted during spotlight monitoring in 2017.

4.3 Population structure

Poorly known.

4.4 Population trends

The three subpopulations are estimated to number around 10 000 individuals, but is likely to fluctuate based on seasonal conditions (Woinarski et al. 2014). Woinarski et al 2014 assessed the population to be stable or increasing due to its presence on three islands that are currently predator-free. The species is vulnerable to significant population loss from a drying climate (Woinarski et al. 2014) and any predator incursion on the islands would likely have a severe to catastrophic effect. Failures of several translocation efforts to both island and mainland sites remain a concern.

The Shark Bay Mammal Recovery Team has noted that this species is difficult to monitor and therefore there are large errors associated with any population size estimates and assessments of population trends.

4.5 Geographic trends

Prior to European settlement, *P. fieldi* occupied most of the south-west part of Australia (Morris et al. 2000). It became extinct on the mainland and from Dirk Hartog Island and Faure Island by the late 19th century. The only natural surviving population was on Bernier Island, in Shark Bay, Western Australia (Morris et al. 2000).

Between 1993 and 2002, *P. fieldi* were successfully translocated to North West Island and to Faure Island in Western Australia following the eradication of feral animals (Morris et al. 2000, Woinarski et al. 2014). Efforts to introduce the species on two other islands failed (Woinarski et al. 2014). In 2011-12, 88 individuals were released into a fenced and feral predator-free area on the mainland at Matuwa (Lorna Glen) but the translocated population is assumed to have failed due to predation. In 2017, 39 individuals were translocated from North West Island and Faure Island to AWC's Mt Gibson Wildlife Sanctuary.

5. Threats

Pseudomys fieldi is listed as Vulnerable on the IUCN Red List (Woinarski and Burbidge 2016). The main threat to *P. fieldi* in their historical range was introduced predators (foxes and cats). All three extant subpopulations are found on predator-free islands but there is a risk of predator incursion to these islands. Predation continues to be a major threat for any mainland translocated population. The national conservation advice for *P. fieldi* prioritises the development of biosecurity plans to prevent invasive species incursions on all islands where translocations have occurred, or will occur (Department of the Environment and Energy 2016). The spread of introduced buffel grass (on the mainland and also on the Shark Bay Islands) is causing an increase in the frequency and size of fires, which may affect *P. fieldi* by exposing them to greater levels of predation, and also by reducing food resources and shelter. Accidental ignitions on the Shark Bay islands are potentially more likely as the incidence of recreational boat traffic in the area increases (Department of the Environment and Energy 2016).

There is no evidence of trade threatening the survival of this species.

6. Utilization and trade

6.1 National utilization

None.

6.2 Legal trade

No trade is recorded in the CITES Trade Database and the species is not traded domestically.

6.3 Parts and derivatives in trade

No trade is recorded in the CITES Trade Database.

6.4 Illegal trade

There is no known incidence of illegal trade in *P. fieldi*. Illegal trade is not considered to have been a factor in this species' decline.

6.5 Actual or potential trade impacts

The species is protected nationally. There is no known incidence of trade in this species. Trade has therefore not had a detrimental impact on the status of the species. There is no demonstrable potential demand for the species. Future commercial trade is unlikely; some trade for scientific or conservation purposes may arise and there are national control measures in place to control for any potential for detrimental impact to the species.

7. Legal instruments

7.1 National

Pseudomys fieldi is listed as Vulnerable under Australia's national environmental legislation - the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). The species is listed as Vulnerable under Western Australia's *Wildlife Conservation Act 1916;* Extinct under the Northern Territory's *Territory Parks and Wildlife Conservation Act 2000*; and Endangered (but presumed extinct) under South Australia's *National Parks and Wildlife Act 1972*.

7.2 International

Pseudomys fieldi has been listed on Appendix I of CITES since 1976. Permits would be required for import and export and no commercial trade is allowed. No trade has been recorded.

8. Species management

8.1 Management measures

Pseudomys fieldi is subject to an approved conservation advice and a recovery plan under national environmental legislation.

The approved conservation advice sets out the grounds on which the species is listed as threatened under national environmental legislation, the main factors that are the cause of it being listed as threatened, and information about what could appropriately be done to stop the decline of, or support the recovery of the species (or if nothing can appropriately be done).

The recovery plan identifies the management actions and research necessary to stop the decline of, and support the recovery of, the species so that its chances of long-term recovery in the wild are maximised. Australian Government is committed to acting in accordance with a recovery plan that is in force under national environmental legislation and to implementing the plan as it applies to Commonwealth managed areas. The national recovery plan is that of Morris et al. (2000) which came under force under national environmental legislation from 2002.

A national conservation advice (Department of the Environment and Energy 2016) is in place for this species under Australia's national environmental law. This conservation advice outlines a number of biosecurity management priorities to address the threats to the species from predation by introduced feral species (primarily foxes, cats and possibly black rats) and habitat degradation by introduced vegetation (e.g., buffel grass) (see section 8.5).

The conservation advice proposes research priorities for the species that will identify suitable locations for future potential translocations; increase understanding of the species' diet and factors that may limit food availability including this relationship to population size or reproductive success; and options for more effective landscape-scale management of feral cats and foxes (Department of the Environment and Energy 2016).

Other priority management measures identified in this conservation advice include captive breeding and future translocations (see section 8.4), surveying and monitoring (see section 8.2) as well as raising awareness and increasing collaboration with local managers.

The Shark Bay Mammal Recovery Team guides the recovery of the relevant Shark Bay mammals, including the Shark Bay mouse, against the recovery actions listed in the *Western barred bandicoot, burrowing bettong and banded hare-wallaby Recovery Plan 2012.* The species is represented entirely in conservation estate or lands managed for conservation.

8.2 Population monitoring

Bernier Island and North West Island subpopulations are currently monitored by the Western Australian Government and Faure Island is currently monitored by the Australian Wildlife Conservancy. The species' conservation advice identifies survey priorities to estimate population structure (including age and sex composition), abundance and population trends of all sub-populations, and the design and implementation of a monitoring program to monitor the progress of recovery, evaluate the effectiveness of management actions, and identify adaptive management where necessary, particularly in relation to translocation success rates (Department of the Environment and Energy 2016).

8.3 Control measures

8.3.1 International

Pseudomys fieldi has been listed on Appendix I of CITES since 1976.

8.3.2 Domestic

Pseudomys fieldi is protected through national and state legislation throughout its current and former range (see section 7.1). It is listed as Vulnerable under Australian national environmental legislation (*Environment Protection and Biodiversity Conservation Act 1999*). Under this legislation, an action requires approval from the Australian Government Environment Minister if the action has, will have, or is likely to have, a significant impact on the species.

When making a decision about an action that may have an impact on the species and what conditions to attach to any approval of an action, the Minister must not act inconsistently with a recovery plan that is in force under national environmental legislation and must have regard to the approved conservation advice for the species.

International movement of the species is also regulated under this national legislation.

It is listed as Vulnerable in the state of Western Australia (*Wildlife Conservation Act 1950*).

In Western Australia, the *Wildlife Conservation Act 1950* provides protections for all fauna native to Australia. Native fauna may only be taken or disturbed under non-commercial licenses, such as for research or management. A licence may be issued to the taking of a threatened species for breeding purposes, such as for a recovery program, but would not be issued for breeding for sale or trade. A licence is required to keep fauna for any purpose. Species that are likely to become extinct, are rare, or otherwise in need of special protection may be declared by the Minister as specially protected fauna. The effect of such a declaration is that the penalties are increased for taking the fauna not in accordance with a licence.

8.4 Captive breeding and artificial propagation

A captive breeding population was maintained (at a Western Australian Government research centre and later Perth Zoo) from 1996 to 2002 to provide animals for release to the wild (Lambert et al. 2016). The species' conservation advice identifies as a priority: the maintenance of an ongoing viable captive insurance population; experimental release of captive-bred individuals into suitable but currently unpopulated habitat where the threats are controlled; followed by consideration of further translocations (Department of the Environment and Energy 2016).

8.5 Habitat conservation

The national conservation advice (Department of Environment and Energy 2016) for the species identifies protection from the impacts of invasive species as the primary habitat-related action. These priorities include the development and implementation of biosecurity plans for all islands where the species has been and will be translocated, maintenance of strict controls on vessels transporting the public for day visits to Bernier Island to be free of invasive species, the identification of additional sites with suitable habitat for potential translocation, the establishment of formal protection measures for known populations, including conservation covenants or management agreements with landholders (where applicable) to translocated sites, that they are invasive predator free, and evaluation of options

for more effective landscape-scale management of feral cats and foxes for populations translocated to mainland Australia.

8.6 Safeguards

Regardless of any reclassification under CITES, the species will continue to be regulated by national environmental legislation as well as state environmental legislation. The species is not subject to commercial harvest across any of its range. Take from the wild is controlled by both national and state regulation. Permission to collect, or other actions that may impact on the species can only be undertaken if consistent with the species' recovery plan.

9. Information on similar species

The genus *Pseudomys* contains approximately 20 species. They are found across Australia (with one species extending to New Guinea) in diverse habitats. *Pseudomys fieldi* is currently the only species of *Pseudomys* listed on the CITES Appendices.

10. Consultations

Input was sought from the Western Australian Department of Biodiversity, Conservation and Attractions.

11. Additional remarks

None.

12. References

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