CONSIDERATION OF PROPOSALS FOR AMENDMENT OF APPENDICES I AND II

Proposals resulting from reviews by the Animals and Plants Committees

A. **Proposal**

Deletion from Appendix II, following the periodic review of the trade and biological status of the species by the Animals Committee, pursuant to Resolution Conf. 9.1.

B. **Proponent**

Australia

C. **Supporting Statement**

1. Taxonomy

1.1 **Class** Mammalia
1.2 **Order** Diprotodonta
1.3 **Family** Burramyidae
1.4 **Genus** *Burramys parvus* Broom 1896
1.5 **Scientific synonyms** None
1.6 **Common names** Mountain Pygmy-possum
1.7 **Code numbers** A-102.008.002.001

2. **Biological Parameters**

2.1 **Distribution**

Endemic to Australia.

Extant populations are known from alpine and sub-alpine areas in Victoria and New South Wales. In Victoria there are at least three isolated sub-populations: at Mt Bogong, Bogong High Plains and Mt Higginbotham-Mt Loch. These sub-populations are separated by low altitude valleys (< 1200m) vegetated with alpine ash (*Eucalyptus delegatensis*) forest. In New South Wales, the species is confined to the Kosciusko National Park, where it occurs at altitudes greater than about 1400 metres above sea level. The species inhabits slightly lower altitudes in Victoria (Mansergh et al, 1989).

2.2 **Habitat availability**

B. parvus is restricted to alpine and sub-alpine areas, which are extremely limited in Australia. Optimal breeding habitat appears to be characterised by basalt scree slopes with a dense shrub layer of *Podocarpus lawrencei*; *Tasmannia xerophylla* and *Olearia phlogocarpa*. Females remain permanently in such habitats, while males migrate into these areas to breed, moving out after the breeding season to "poorer" habitats when the juveniles become independent (Turner & McKay, 1989, Broome, 1992).

Mansergh & Broome (1994) estimate that the total extent of available habitat for *B. parvus* is approximately 200ha in Victoria and another 800ha in NSW.

2.3 **Population status**

The species is listed as Vulnerable under the *Endangered Species Protection Act 1992*, but IUCN (1996) considers the species to be Endangered.

2.4 **Population trends**

Mansergh & Broome (1994) estimate that the total breeding population of *B. parvus* is in the order of 2600 animals, comprisingapproximately 2000 females and 600 males). The breeding population may fall below 1500 in a poor season.

2.5 **Geographic trends**

B. parvus was originally described from Pleistocene fossil material found at Wombeyan Caves, New South Wales in 1895 (Broome, 1896). Fossils of *B. parvus* have since been found at Buchan, Victoria and Jenolan Caves, NSW. It was not until 1966 that a living specimen was discovered - in a ski lodge at Mt Higginbotham, Victoria. Two extant, disjunct populations are now known to exist - one extending from Mt Bogong to Mount Hotham, Victoria, and the other at Mount Kosciusko, NSW. The populations of Victoria and NSW are restricted to alpine-sub-alpine habitats and are separated by the broad, low valley of the Mitta Mitta River (Calaby, 1983, Mansergh *et al*, 1989).

The apparent restriction of the distribution of *B. parvus* to alpine and sub-alpine areas, coupled with the distribution of the fossil sites listed above, none of which now support alpine or sub-alpine communities, suggest that the extant populations are relictual, with the species retreating to the highest points of the Australian continent following the end of the last ice-age. Current predictions of the possible impacts of human-induced climate change suggest that alpine and sub-alpine communities may contract further in Australia, leading to a further contraction of the range of *B. parvus* (Dexter *et al*, 1995).

2.6 **Role of the species in its ecosystem**

B. parvus is the only Australian mammal that is restricted to alpine and sub-alpine ecosystems, and the only one to exhibit a winter torpor. This species and the dusky antechinus (*Antechinus swainsonii*), are the only two mammals which occur at the summit of Mount Kosciusko, which at 2230m, is the highest point in mainland Australia (Calaby, 1983).

B. parvus is omnivorous. Turner & McKay (1989) indicate that *B. parvus* relies heavily on fruits and seeds. Broome (1992) found that seasonally abundant Bogong moths (*Agrotis infusa*) are a major dietary item.

B. parvus is preyed upon by native carnivores such as kestrels and owls, as well as introduced carnivores such as foxes, dogs and cats (Mansergh et al, 1989).

2.7 **Threats**

Alpine and sub-alpine communities, which provide habitat for *B. parvus*, are extremely limited in Australia. The two localities in which *B. parvus* is known to occur are subject to intense recreational use, particularly associated with skiing and other winter sports. In recent years, engineering solutions such as corridor-culverts and rock-filled trenches have been used to minimise the impact of ski resort infrastructure on habitat continuity and social organisation of pygmy-possums (Broome, 1992; Mansergh & Scotts, 1989; Young 1986). Activities associated with ski resort operations, particularly snow grooming, may contribute to a progressive decline in the *B. parvus* population over the long term (Broome, 1992).

The species is restricted to alpine and sub-alpine communities and any further decrease in the extent of these communities is likely to have serious repercussions on the future survival of the species. Protection from fire is necessary, as the vegetation which supports *B. parvus* is fire sensitive (Mansergh *et al*, 1989). Possible global warming is also a matter for concern. The possible impacts on *B. parvus* of human-induced climate change have been modelled by Dexter *et al* (1995) using BIOCLIM and CLIMCHG. The predicted change in core climatic habitat for the species under three climate change scenarios were:

A) small temperature increase: -46.2% change;

B) large temperature increase + small rainfall increase: -94.9% change; and
C) large temperature increase + large rainfall increase: -94.9% change.

Other threats to the species include predation by native and introduced animals, and grazing and trampling of habitat, and erosion (Mansergh *et al*, 1989). Trade is not recognised as a threat to this species.

3. **Utilisation and Trade**

3.1 **National utilisation**

No commercial use.

Current holdings of this species by major Australian zoos are 10 animals (5.5.0) at 1 January 1995 (ARAZPA, 1995)

3.2 **Legal international trade**

The Australian CITES Management Authority has never issued an export permit for this species. No specimens have been recorded in international trade in the last ten years (WCMC data).

3.3 **Illegal trade**

No illegal trade reported or likely.

3.4 **Actual or potential trade impacts**

None.

3.5 **Captive breeding or artificial propagation for commercial purposes (outside country of origin)**

None, although Turner & McKay (1989) indicate that the species breeds readily in captivity.

4. **Conservation and Management**

4.1 **Legal status**

4.1.1 **National**

This species is listed as vulnerable under the Commonwealth *Endangered Species Protection Act* 1992 and on Schedule 2 of the *Wildlife Protection (Regulation of Imports and Exports) Act* 1982.

The *Wildlife Protection (Regulation of Imports and Exports) Act* 1982 is the legislative basis for conservation-oriented controls on the export and import of wildlife and wildlife products. The Act controls the export of Australian native animals and plants and fulfils Australian legislative requirements as a Party to CITES.

The *Endangered Species Protection Act 1992* (the ESP Act), contains lists of species considered endangered or vulnerable or those that are presumed extinct. Once a species is listed under this Act, the Government of the Commonwealth of Australia must prepare and implement a recovery plan for that species. The lists are based on those agreed by the Australian and New Zealand Environment and Conservation Council (ANZECC) through its Networks on Endangered Fauna and Flora.

4.1.2 **International**

The species is currently included in Appendix II of CITES.

4.2 **Species management**

4.2.1 **Population monitoring**

Mark/recapture studies and radio-tracking have provided an extensive baseline for population monitoring, with morphometric and life-history data derived from over 1800 *B. parvus* being studied.

The specific habitat requirements of *B. parvus* have enabled its habitat to be mapped throughout its potential range. Initial mapping was conducted using aerial survey photography, with BIOCLIM computer modelling being used to further refine the predicted distribution of the species, based on climatic variables. The BIOCLIM predictions have been ground-truthed by live trapping and visual inspection for signs of *B. parvus* (Mansergh & Broome, 1994).

Mansergh & Broome (1994) provide results from 65,000 trap-nights in alpine areas, and 150,000 trap-nights in adjacent sub-alpine and lower areas in Victoria and NSW. The Victorian population appears to be composed of three distinct sub-populations which are isolated from each other by low-altitude (< 1200m) valleys. Within NSW the species is confined to patches of available habitat within Kosciusko National Park.

4.2.2 **Habitat conservation**

All of the habitat for *B. parvus* in NSW is included within the Kosciusko National Park. Within the Park there are several ski resort areas, namely Charlotte Pass, Mt Blue Cow and Guthega, in which *B. parvus* habitat is found. Broome (1992) estimates that approximately 8% of the NSW population of *B. parvus* exists within the boundaries of the ski resort leases.

The majority of *B. parvus* habitat in Victoria is included within the Bogong National Park. The most productive habitat is bisected by the Mt Hotham Alpine Resort: approximately 80% of the Victorian population of *B. parvus* is found within or adjacent to the Mt Hotham Alpine Resort. A small area of habitat is located on land managed by the State Electricity Commission as part of the Kiewa Hydroelectricity Scheme (Mansergh *et al*, 1989).

4.2.3 **Management measures**

The discovery of a live specimen of *B. parvus* in 1966 raised considerable public interest in this “living fossil”. Since that time, a considerable amount of work has been done to elucidate aspects of its biology, ecology and conservation needs. The critical habitat requirements for the species have been determined, and the distribution of this habitat mapped. Studies of the behaviour, social structure and population dynamics of the species have also been carried out (Mansergh *et al*, 1989).

The impacts of habitat destruction and fragmentation due to engineering and other works associated with alpine resorts were demonstrated to be threatening the viability of the most important *B. parvus* population in Victoria. The species has been observed to avoid cleared areas such as ski runs, roads and tracks. Once the problem was recognised, habitat continuity was restored by the establishment of a rock scree corridor and tunnel between areas of favourable habitat. Following construction of the tunnel, adult female survivorship to the next breeding season rose from 21% (1984) to 44% (comparable to undisturbed levels), and fecundity increased from 3.2 to 3.7 young per mother (Mansergh & Scotts, 1989).

4.3 **Control measures**

4.3.1 International trade

Export of *B. parvus* from Australia is prohibited except for *bona fide* scientific or zoological exchange. Enforcement of this export prohibition is conducted by the Australian Customs Service, in conjunction with the Australian Federal Police and the Australian Nature Conservation Agency.

4.3.2 Domestic measures

In Australia, conservation and management of wildlife is principally a responsibility of State and Territory governments; the Commonwealth is responsible for conservation and management of wildlife on Commonwealth lands and waters, and for controlling the import and export of wildlife and wildlife products. The species is managed in New South Wales by the NSW National Parks and Wildlife Service, and by the Department of Conservation and Natural Resources in Victoria.

5. **Information on Similar Species**

B. parvus is a miniature marsupial (approx. 40grams, 100mm head and body length) which has an appearance intermediate between possums and rat-kangaroos.

Turner & McKay (1989) recognise four genera and seven species in the family Burramyidae. The genera and species are:

Acrobates, with one species (*A. pygmaeus*);
Burramys, with one species (*B. parvus*);
Cercartetus, with four species (*C. caudatus*, *C. concinnus*, *C. lepidus*, *C. nanus*); and
Distoechurus, with one species (*D. pennatus*).

The four genera can be distinguished from each other by the presence or absence of a patagium (a flap of skin extending laterally along the body from the elbow to the knee which assists in gliding), tail hair characteristics and dentition (Turner & McKay, 1989). The distinguishing characteristics are:

Acrobates: patagium present, tail hairs distichous;
Burramys: patagium absent, tail lightly furred and never incrassated, third premolar greatly enlarged;
Cercartetus: patagium absent, tail lightly furred and often incrassated, third premolar not enlarged; and
Distoechurus: patagium absent, tail hairs distichous.

6. **Other Comments**

Consultation with other range States is not applicable as the species is endemic to Australia.

7. **Additional Remarks**

As trade is not recognised as a threat to this species, and no trade has been reported, the continued listing of this species on Appendix II to CITES will contribute little to current efforts in place within Australia to conserve the species and its habitat.

8. **References**

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