

Status Survey and Conservation Action Plan

North American Rodents

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IUCN/SSC Rodent Specialist Group

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Microdipodops megacephalus

Merriam 1891

Dark kangaroo mouse

David J. Hafner and John C. Hafner

13 subspecies, 2 of conservation concern:

M. m. atrirelictus Owyhee River kangaroo mouse

M. m. nexus Izenhood kangaroo mouse

IUCN Red List Category

Microdipodops megacephalus – Lower Risk, least concern (LR,lc)

M. m. atrirelictus – Vulnerable (VU): D2

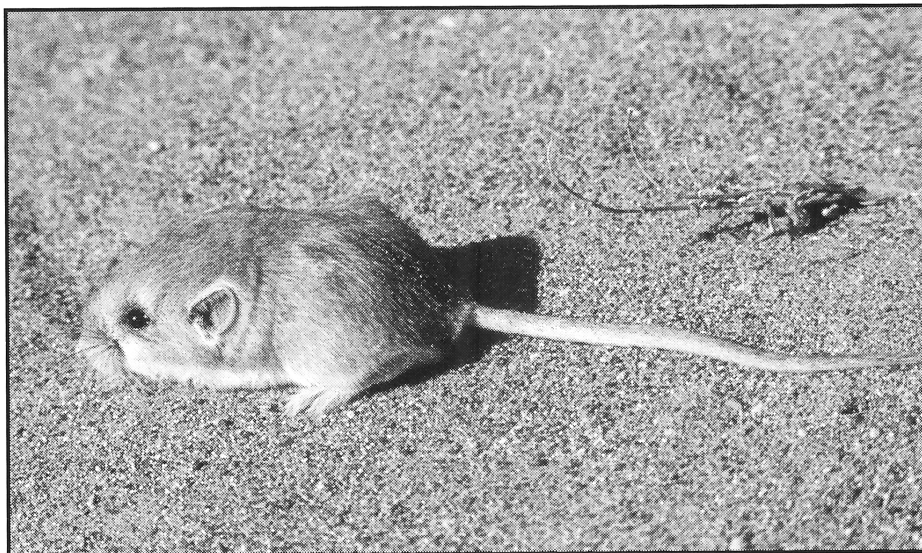
M. m. nexus – Data Deficient (DD)

Assignment of *M. m. atrirelictus* is based on its occurrence at a single site. Subspecific validity of *M. m. nexus* remains to be confirmed based on genetic comparison with neighboring populations of *M. megacephalus*.

Taxonomy and distribution

Hafner *et al.* (1979) evaluated genetic interactions of the two species of *Microdipodops* in sympatry, and demonstrated that they behaved as distinct species at a purported zone of hybridization. Hafner (1981) revised the taxonomy of the species and evaluated evolutionary relationships and biogeography of the genus. He questioned the subspecific validity of *M. m. nexus*, but retained it as

Dark kangaroo mouse, *Microdipodops megacephalus*.



J. Harris

a subspecies pending investigation of genetic relationships with neighboring subspecies. Hafner (1985) named a new subspecies, *M. m. atrirelictus*, for a highly distinctive, disjunct population in southern Idaho.

Kangaroo mice (*Microdipodops*) are confined to the Great Basin of Nevada and parts of surrounding California, Oregon, Idaho, and Utah. Within the Great Basin, they are further restricted to xeric, sandy habitats, often bordering alkaline dry lakes and sinks. Of the two species, the dark kangaroo mouse (*M. megacephalus*) occupies higher elevations and is more widespread, occurring in all five states (above). Hafner *et al.* (1996) studied ecological interactions of *M. pallidus* and *M. megacephalus* in sympatry. *Microdipodops m. atrirelictus* is known only from one locality, 11mi [17.7km] S and 44.2mi [71.1km] W Riddle, 5,000ft [1,524m], Owyhee County, Idaho (Hafner 1985). *Microdipodops m. nexus* has an extremely limited distribution in north-central Nevada, and may already be extirpated from its type locality (Hafner 1981).

Remarks

Although no current threats to either *M. m. atrirelictus* or *M. m. nexus* are known, their restricted and isolated distributions leave both subspecies particularly vulnerable to habitat alteration. Throughout the remainder of the range of the genus, other populations have suffered from introduction of weedy grasses and cultivation of dry sinks by irrigation from limited pockets of water that collect under the pans (J.C. Hafner pers. obs.). Although the supply of water may be limited, habitat alteration at these cultivated sites is extreme, resulting in wholesale displacement of *Microdipodops*. In addition to these human-related habitat changes, apparently natural shifts in vegetative zones have resulted in the replacement of rodent communities including *Microdipodops* by those including *Dipodomys deserti*, and vice versa (J. C. Hafner pers. obs.). Natural and human-related habitat modifications may have amplified effects on the already fragmented, patchy distribution of *Microdipodops*. O'Farrell and Blaustein (1974a) reviewed the general biology of this species.

Conservation status and occurrence in captivity and protected areas

Neither subspecies currently has any protected status. Breeding populations of *Microdipodops megacephalus* have been maintained with limited success for several generations (D.J. Hafner pers. obs., J.C. Hafner pers. obs., W.L. McNeil pers. comm.). No populations of either subspecies are known to occur in protected areas.

Recommended action

- Initiate a survey and monitoring program to detect major human-induced and natural habitat alterations that affect the distribution of *Microdipodops*, specifically to include *M. m. atrirelictus* and *M. m. nexus*.

- Compare *M. m. nexus* to neighboring populations of *M. megacephalus* in order to evaluate validity of its subspecific distinction.
- Survey appropriate habitat in the vicinity of the type locality of *M. m. atrirelictus* to determine its population status and distributional limits, and consider potential protected area(s) for conservation of this isolated subspecies.