

Canyon Deermouse

Peromyscus crinitus

REGULATORY STATUS

USFWS: No special status
USFS R2: No special status
USFS R4: No special status
Wyoming BLM: No special status
State of Wyoming: Nongame Wildlife

CONSERVATION RANKS

USFWS: No special status
WGFD: NSS3 (Bb), Tier II
WYNDD: G5, S1
Wyoming Contribution: LOW
IUCN: Least Concern

STATUS AND RANK COMMENTS

Canyon Deermouse (*Peromyscus crinitus*) has no additional regulatory status or conservation rank considerations beyond those listed above.

NATURAL HISTORY

Taxonomy:

Historically, there were up to twelve recognized subspecies of Canyon Deermouse¹. There are currently eight recognized subspecies, but only *P. c. douglasii* is found in Wyoming²⁻⁴.

Description:

Identification of Canyon Deermouse is possible in the field. Canyon Deermouse is a small to medium-sized *Peromyscus* with long, silky dorsal hair; finely-furred ears that are as long as the hind foot; white feet; and a pointed snout with long whiskers²⁻⁵. The bi-colored tail is hair-covered with a terminal tuft and typically longer than the combined length of the head and body²⁻⁵. The color of the dorsal pelage, which ranges from brown to orange-buff to light cinnamon, varies geographically across subspecies and may be similar to the predominant substrate at a microgeographic scale^{2,3,5}. Canyon Deermouse has a naturally oily coat, which it maintains by bathing in dust and fine sand²⁻⁴. The underbelly hairs are white with gray at the base^{2,5}. Males and females are comparable in size^{3,4}. Adults weigh between 14–20 g and can reach total lengths of 165–180 mm⁴. Tail, hind foot, and ear length ranges from 84–95 mm, 20–22 mm, and 20–22 mm, respectively⁴. Three other species of *Peromyscus* are found in Wyoming, but only North American Deermouse (*P. maniculatus*) and Piñon Deermouse (*P. truei*) have distributions that overlap with Canyon Deermouse in the state⁴. Canyon Deermouse can be distinguished from North American Deermouse by its longer tail, and from Piñon Deermouse by its smaller, finely-furred ears and more obvious terminal tuft of hair on the tail^{4,6}.

Distribution & Range:

The distribution of Canyon Deermouse extends from north-central Oregon south along eastern California to the northern Baja Peninsula, and as far east as western Colorado and northwestern New Mexico^{2,7}. Canyon Deermouse is a peripheral resident in Wyoming and is limited to the far southwestern part of the state^{4,8}. Most of the existing habitat for this species in Wyoming is likely found near Flaming Gorge Reservoir in Sweetwater County⁴. Confirmed breeding has been documented in just 1 of 28 latitude/longitude degree blocks in the state⁸. Both availability of habitat and competition with other deermice species may drive local distribution patterns⁹.

Habitat:

Canyon Deermouse is an arid, rocky habitat specialist and is always associated with rocky substrates including gravel pavement, slickrock, lava beds, boulders, canyons, and cliffs^{2,4,10,11}. Plant associations do not strongly influence local distribution of this species². In Wyoming, Canyon Deermouse is found in rocky cliff habitat with high amounts of rock and canopy cover and dense trees in woodlands dominated by Utah Juniper (*Juniperus osteosperma*)^{4,9,12}. Nests are typically constructed in rock crevices and lined with shredded vegetation, although this species may dig burrows in sandy substrate^{3,4}.

Phenology:

Canyon Deermouse is nocturnal and active all year³. Females are seasonally polyestrous, typically producing 2 or 3 litters per year starting in early spring^{2,4}. Litter size ranges from 1–5 with litters of 4 being the most common, and gestation lasts 24 or 25 days^{2,4}. This species has a 28-day lactation period, which is long compared to the average across 18 species of *Peromyscus*^{2,4}. Young leave the nest after 4–6 weeks and are able to reproduce at 10 weeks of age²⁻⁴.

Diet:

Canyon Deermouse is omnivorous, consuming seeds, fruits, berries, fungi, insects, and green vegetation, with seasonal priority given to seeds during the colder months and insects during the warmer months^{2,3,5}. All water required for survival is obtained from food^{2,3,5}.

CONSERVATION CONCERNS

Abundance:

Continental: WIDESPREAD

Wyoming: VERY RARE

There are no robust estimates of abundance available for Canyon Deermouse in Wyoming. The species has a statewide abundance rank of VERY RARE and appears to be rare even within suitable environments in the occupied area⁸. Canyon Deermouse historically lost habitat in Wyoming to flooding when the Green River was dammed to create Flaming Gorge Reservoir in 1962^{4,9}. Research conducted in 1998 and 1999 recorded just 13 individuals across 2 cliff habitat sites out of 7 cliff and 7 rocky slope sites sampled in juniper woodlands east of Flaming Gorge Reservoir for an overall capture rate of 0.007 captures per trap night throughout suitable habitat^{9,13}. Abundance in Wyoming seems to be much lower than nearby populations in northeastern Utah¹³.

Population Trends:

Historic: MODERATE DECLINE

Recent: UNKNOWN

Because of its restricted distribution in Wyoming, Canyon Deermouse likely experienced historic moderate population declines due to the aforementioned habitat loss following the creation of Flaming Gorge Reservoir half a century ago. However, recent population trends for this species in Wyoming are unknown.

Intrinsic Vulnerability:

HIGH VULNERABILITY

Canyon Deermouse has high intrinsic vulnerability in Wyoming due to very low abundance, specific habitat requirements within a very restricted distribution, and limited dispersal ability. The species has high fecundity but is likely to be affected by any natural or anthropogenic disturbance to occupied habitat within its already restricted distribution. The environment of Flaming Gorge is unique in Wyoming and supports wildlife species, including Canyon Deermouse, that are not found anywhere else in the state. Therefore, this species has little to no opportunity for range expansion within the state and would likely have an increased risk of extirpation should disturbance or loss of existing habitat occur.

Extrinsic Stressors:

MODERATELY STRESSED

Loss and degradation of existing habitat as well as disturbance, both natural and anthropogenic, could negatively impact Canyon Deermouse in Wyoming. Rocky habitats in southwestern Wyoming are threatened by potential oil-shale and other energy development, as well as exposure to anthropogenic disturbances from recreational activities^{12, 14}. Furthermore, juniper woodlands are potentially vulnerable to changes in fire regime; invasive species such as Cheatgrass (*Bromus tectorum*); drought and climate change; habitat fragmentation; and human disturbance, including juniper removal and thinning programs¹². However, recent expansion of juniper woodlands into shrub-grasslands might provide additional habitat that could offset some of these threats. Canyon Deermouse may be exposed to some anthropogenic disturbance within its Wyoming distribution, and the species has shown susceptibility to fires in the desert environments of southwestern Utah and southern California^{15, 16}. Currently, it is not known how these potential extrinsic stressors could be impacting Canyon Deermouse in Wyoming.

KEY ACTIVITIES IN WYOMING

Canyon Deermouse is classified as a Species of Greatest Conservation Need by the Wyoming Game and Fish Department (WGFD). In 1998 and 1999, the WGFD funded a University of Wyoming graduate research project that examined habitat use for three rare, small mammal species in southwestern Wyoming, including Canyon Deermouse⁹. In 2016, the WGFD began a two-year project designed to collect crucial data on the distribution, relative abundance, and habitat use of piñon-juniper obligate species, including Canyon Deermouse, in the woodlands of southwestern Wyoming.

ECOLOGICAL INFORMATION NEEDS

Very little is known about the current status of Canyon Deermouse in Wyoming⁴. The species would benefit from research to determine its actual distribution, current abundance, habitat use, reproductive rates, and basic life history in Wyoming. Additionally, the distribution of juniper forests in Wyoming is far vaster than the distribution of Canyon Deermouse, and a better understanding of habitat use and requirements at this northernmost range boundary is needed, including a better understanding of the current range boundary for both the species as well as the juniper habitat on which it depends. Perhaps most importantly, potential extrinsic stressors

should be identified within the species' limited distribution to ensure the persistence of available habitat for this species in Wyoming.

MANAGEMENT IN WYOMING

This section authored solely by WGFDD; Nichole L. Bjornlie. Little is known about Canyon Deermouse in Wyoming. Consequently, management priorities for the species in the short-term will focus on addressing these data deficiencies. Of particular importance are data on presence, distribution, population status and trends, and the impact of extrinsic threats. Upcoming projects will address these needs, including evaluating habitat requirements and potential changes in presence and distribution in response to juniper removal and juniper expansion. These results will be used to develop management and conservation recommendations as well as develop monitoring protocols to establish trends.

CONTRIBUTORS

Kaylan A. Hubbard, WYNDD

Nichole L. Bjornlie, WGFDD

Wendy A. Estes-Zumpf, WYNDD

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Figure 1: Adult Canyon Deermouse in-hand following capture in Flaming Gorge, Sweetwater County, Wyoming. (Photo courtesy of Madelyn Voelker, WGFD)



Figure 2: North American range of *Peromyscus crinitus*. (Map from: Patterson, B. D., et al. (2007) Digital Distribution Maps of the Mammals of the Western Hemisphere, version 3.0, NatureServe, Arlington, Virginia.)



Figure 3: Rocky juniper woodland habitat east of Flaming Gorge Reservoir in Sweetwater County, Wyoming. (Photo courtesy of Kaylan A. Hubbard)

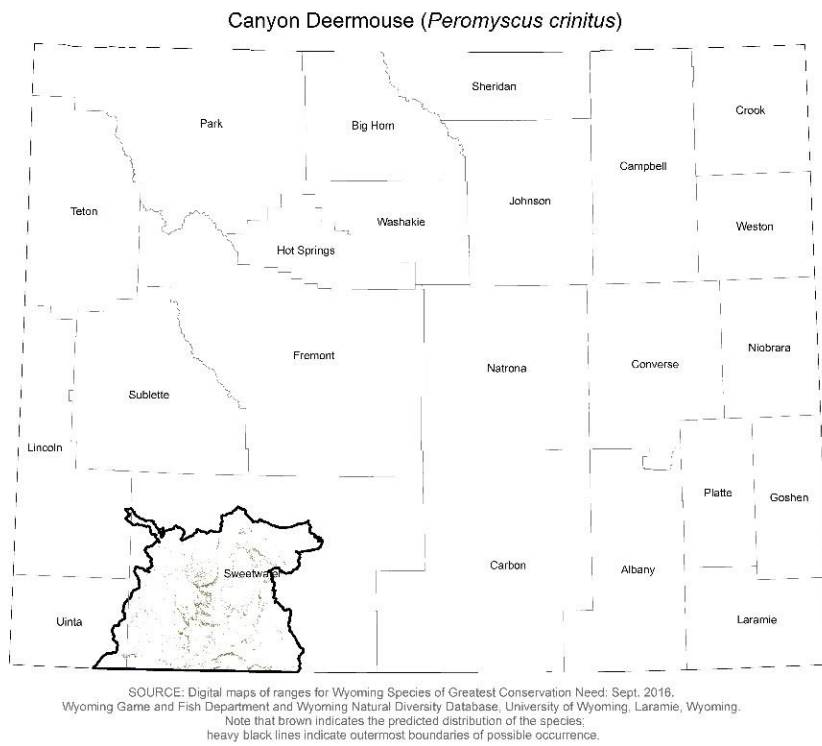


Figure 4: Range and predicted distribution of *Peromyscus crinitus* in Wyoming.