

Rodents of the Colorado River corridor and their relationship with campers

by Jessica Dettman

There are seventeen rodent species known to exist in the Colorado River corridor of the Grand Canyon (Dettman 2005), although only some of these rodents regularly interact with humans. Members of the *Peromyscus* genus are probably the most commonly seen rodent species in the canyon, because they frequently seek out scraps leftover by campers and hunt for food in camp kitchens. Near the river, where most rafters camp, the most common species are the deer mouse (*Peromyscus maniculatus*), the canyon mouse (*Peromyscus crinitus*), and the cactus mouse (*Peromyscus eremicus*) (Carothers and Brown 1991). These species are often quite bold, and will come close to humans in order to gain access to food scraps in and around the camp. *Peromyscus* species, like many rodents, are primarily nocturnal. Therefore, they are most frequently seen from the early evening through the early morning, or from dusk to sunrise.

During our early spring rafting trip down the canyon we saw only one *Peromyscus* individual. This individual was likely either a brush mouse *P. boylii* (Fig. 1) or canyon mouse *P. crinitus*. The mouse appeared just as the sun was setting, and approached the camp kitchen area. It was moving in and out of the rocky cliff area surrounding the kitchen, and allowed us to come within about one foot of it. It appeared to be pregnant although it could also have been overweight. We considered pregnancy to be the more likely explanation because March is a suitable pregnancy time for *Peromyscus* and an overweight individual following the winter months would be unlikely. The mouse returned to the kitchen again in the morning while breakfast was being prepared.



Figure 1. *Peromyscus boylii*, the brush mouse, is one of the species that inhabits the Grand Canyon river corridor (Photo: © Rob and Ann Simpson *in* Whitaker 1998).

Since *Peromyscus* are common camp pests, it seems odd that we only saw one individual during our entire trip. However, the river guides on our trip told us that mice in camp are generally uncommon during spring trips, and then become progressively more common during the summer and fall (Scott Stevens, pers. comm.). In fact, by fall there are normally multiple rodents every day in the camp kitchens. The guides attribute this gradual change in abundance to the mice learning where food is located. Since campsites are limited along the Colorado River, rafters generally stop in the same places to camp. These campers inadvertently leave food scraps behind, and rodents find it. As the rafting season continues, rodents continue to return to these sites in hopes of finding more food, and therefore they become more concentrated throughout the year. During the winter, food scraps become scarce and rodent activity is minimal in the cold, so the mice seek out other resources. When spring returns, new scraps appear and the cycle repeats.

This progressive concentration of mice at camp sites has several consequences for mice and for humans. First of all, many *Peromyscus* species can have multiple litters in a year (Fig. 2) (Whitaker 1998). The availability of additional food from humans could lead to an increase in reproduction during the spring through fall. This can in turn promote population growth, and the high population levels at the end of the fall may not be sustainable when the additional food source (human scraps) is removed during the

winter. Starvation die-offs may result during the winter months. Also, population growth can allow for disease outbreaks, which can also cause die-offs. Another problem is that human scraps may not be nutritionally adequate for rodents, and therefore they may experience malnutrition and be more prone to illness. Additionally, disease can be a problem for humans, since rodents can carry diseases that are transmissible to people. For example, the deer mouse (*P. maniculatus*) can carry Hanta virus, although transmission of this virus to humans is extremely rare.



Figure 2. *Peromyscus maniculatus*, the deer mouse, can have between two and four litters per year, depending on conditions (Photo © John McDonald in Whitaker 1998)

These problems can be avoided in several ways by controlling human behavior within the river corridor. First, if food is kept in secure locations that are inaccessible to rodents, then both food access to mice and disease risk to humans can be reduced. Also, if campers are careful about how they eat and avoid dropping scraps, artificial food resources can be further reduced. Together, these simple steps can help prevent rodent overpopulation. We cannot change the fact that mice will continue trying to access human food, but we can minimize their ability to access it, and thereby diminish overpopulation and disease problems.

REFERENCES

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