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OBSERVED ABNORMALITIES OF THE ENDANGERED KEY LARGO COTTON MOUSE (*Peromyscus gossypinus allapaticola*)

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The Key Largo cotton mouse (*Peromyscus gossypinus allapaticola*) is a subspecies of cotton mouse endemic to the island of Key Largo, Florida, and is the only *Peromyscus* species present in the Florida Keys (Schwartz 1952). Because of habitat loss, habitat degradation, and overall population decline, the subspecies was listed as endangered by the United States Fish and Wildlife Service in 1984 (U.S. Department of the Interior 1973, U.S. Fish and Wildlife Service 1984, Hersh 1981, Barbour and Humphrey 1982, Keith and Gaines 2002). Presently, approximately 790 ha of 945 ha of tropical hardwood hammock remaining on the northern half of Key Largo are suitable for the Key Largo cotton mouse and occur almost exclusively within protected public lands at Crocodile Lake National Wildlife Refuge and Dagny Johnson Key Largo Hammock Botanical State Park (Ross et al. 1995, Keith and Gaines 2002).

Information on natural history and population ecology of the Key Largo cotton mouse is limited (Barbour and Humphrey 1982, Humphrey 1988, Sasso and Gaines 2002, Greene et al. 2013). To assess population status and inform recovery efforts, we initiated a long-term monitoring program in 2007 (Greene et al. 2013). Herein, we report on several abnormalities observed from 4 of 798 individual Key Largo cotton mice captured during 5 years of live-trapping surveys (2007–2011). We conducted capture and handling under United States Fish and Wildlife Service Endangered Species Permits (TE139405-0 and -1, TE137411-0, and TE233262-0); a Florida Fish and Wildlife Conservation Commission Permit (WV06293); Florida Department of Environmental Protection Division of Recreation and Parks Research and Collecting Permits (5-07-20, 5-08-34, 5-11-02, and 5-12-09); and a University of Georgia Institutional Animal Care and Use Permit (A2006-10206-m1).

On 23 March 2007, we captured an adult male missing its front left leg (UTM 17R 569001.50 E, 2792679.49 N; Fig. 1A). It is unknown if the mouse was born without this limb or sustained an earlier injury. The mouse lacked hair where the limb would have attached to the body and showed no sign of recent trauma such as scarring. When released, this mouse moved quickly and capably across the forest floor, showed no other health issues, and was of normal weight (29.0 g, 32.0 g, and 33.0 g for all three captures, respectively). We recaptured this individual on 8 and 9 November 2007 <14 m from the point of first capture.

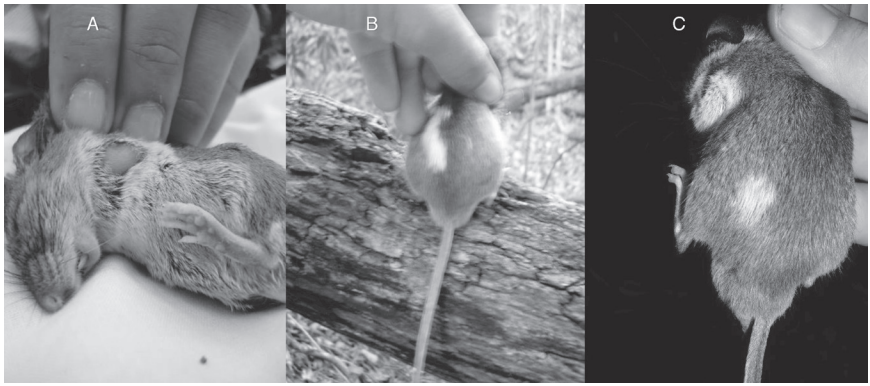

Figure 1. A male Key Largo cotton mouse (*Peromyscus gossypinus allapaticola*) with its left front leg missing (A), and two males with hypopigmented marks (B and C), north Key Largo, Florida.

From 2007 through 2011, we captured three adult males with areas of hypopigmented fur (i.e., white spots). We captured two of these mice at Crocodile Lake National Wildlife Refuge, one with an elongated white mark to the left of the spine (4 March 2007; 32.0 g; UTM 17 R 570851.86 E, 2799259.70 N; Fig. 1B) and the other with a white patch in the same area, closer to the rump (27 November 2007; 33.0 g; UTM 17 R 568583.35 E, 2791975.64 N; Fig. 1C). We captured the third mouse at Dagny Johnson Key Largo Hammock Botanical State Park on 5 December 2011; it had white spotting on the rostrum near the vibrissae (34.25 g; UTM 17R 566819.9817 N, 2789096.68 E; not photographed). We are unaware of other records of wild *Peromyscus* with missing limbs. White patches of fur have been reported for several species of *Peromyscus*, including white-footed mouse (*P. leucopus*) and deer mouse (*P. maniculatus*; e.g., Sumner 1932, Feldman 1936). To our knowledge, our observations of hypopigmentation are the first for the Key Largo cotton mouse and possibly for the species.

The findings and conclusions in this article are those of the authors and do not necessarily represent the views of the U.S. Fish and Wildlife Service.

Literature Cited

Barbour, D. B., and S. R. Humphrey. 1982. Status and habitat of the Key Largo woodrat and cotton mouse (*Neotoma floridana smalli* and *Peromyscus gossypinus allapaticola*). Journal of Mammalogy 63:144–148.

Feldman, H. W. 1936. Piebald characters of the deer mouse. Journal of Heredity 27:301–304.

Greene, D. U., S. B. Castleberry, and M. T. Mengak. 2013. A methodology for long-term population monitoring of the endangered Key Largo cotton mouse. Wildlife Society Bulletin 37:368–374.

Hersh, S. L. 1981. Ecology of the Key Largo woodrat (*Neotoma floridana smalli*). Journal of Mammalogy 62:201–206.

Humphrey, S. R. 1988. Density estimates of the endangered Key Largo woodrat and cotton mouse (*Neotoma floridana smalli* and *Peromyscus gossypinus allapaticola*), using the nested-grid approach. Journal of Mammalogy 69:524–531.

KEITH, B., AND M. S. GAINES. 2002. Using geographic information systems to evaluate available habitat for two rodent species on north Key Largo, Florida. Florida Scientist 65:126–133.

ROSS, M. S., J. F. MEEDER, G. TELESNICKI, AND C. WEEKLEY. 1995. Terrestrial ecosystems of the Crocodile Lake National Wildlife Refuge: the effects of Hurricane Andrew. Final report to the U.S. Department of the Interior, Fish and Wildlife Service, Vero Beach, Florida.

SASSO, C. R., AND M. S. GAINES. 2002. Population ecology of three species of small mammals on Key Largo, Florida. Florida Scientist 65:115–125.

SCHWARTZ, A. 1952. Three new mammals from southern Florida. Journal of Mammalogy 33:381–385.

SUMNER, F. B. 1932. Genetic, distributional and evolutionary studies of the subspecies of deer mice (*Peromyscus*). Bibliographica Genetica 9:1–106.

U.S. DEPARTMENT OF THE INTERIOR. 1973. Threatened wildlife of the United States. Resource Publication 114. Bureau of Sport Fisheries and Wildlife, Washington, D.C.

U.S. FISH AND WILDLIFE SERVICE. 1984. Endangered and threatened wildlife and plants; determination of endangered status for the Key Largo woodrat and the Key Largo cotton mouse. Federal Register 49:34504–34510.