

LONG-DISTANCE DISPERSAL OF A SOUTHEASTERN BEACH MOUSE (*PEROMYSCUS POLIONOTUS NIVEIVENTRIS*) AT CAPE CANAVERAL, FLORIDAD. M. ODDY^{1,3}, M. A. HENSLEY², J. A. PROVANCHA¹, AND R. B. SMITH²¹*Dynamac Corp. Mail Code DYN-2, Kennedy Space Center, Florida 32899*²*Dynamac Corp. Mail Code DYN-1, Kennedy Space Center, Florida 32899*

The southeastern beach mouse, *Peromyscus polionotus niveiventris*, is currently listed as threatened by the U.S. Fish and Wildlife Service. Presently, the subspecies inhabits the dunes and coastal strand only at Canaveral National Seashore (CNS), Kennedy Space Center (KSC), Cape Canaveral Air Station (CCAS), and the southern half of Sebastian Inlet State Recreation Area (Stout 1992). The continued existence of the subspecies is primarily threatened by habitat loss due to development, erosion, and habitat fragmentation.

On 15 October 1996 a juvenile male southeastern beach mouse was captured, ear tagged, and released on a grid at CCAS. It was recaptured on the same grid on 16 and 17 October 1996 after moving distances of 40 m and 10 m, respectively. No trapping was conducted on this site between October 1996 and March 1997. On 13 March 1997, the mouse, now an adult, was recaptured on a grid 28,000 m to the north on KSC. This is a record long-distance dispersal for this species.

Home range estimates recorded on KSC are based on average distances for male and female *P. p. niveiventris* and are as follows: 24 m and 19 m (Extine 1980), 21 m and 26 m (Stout 1980), and 22 m and 24 m (Provancha, Mailander, and Oddy unpublished data). Previous dispersal movements identified on KSC are movements of 690 m and 2440 m (both males) (Provancha and Oddy 1992). Prior to this, the longest dispersal reported for *P. p. niveiventris* was an adult female from Sebastian Inlet State Recreation Area that moved approximately 4828 m to Treasure Shores County Park, in Indian River County (Bard 1997). Other documented long-distance dispersals for juveniles of this species are 600 m for *P. p. leucocephalus* on the west coast of Florida (Blair 1951) and 2834 m and 7725 m for two male *P. polionotus* at Ocala National Forest (Smith 1968). Maximum movements of other juvenile *Peromyscus* spp. such as *P. maniculatus bairdi* were recorded at a distance of 1082 to 1219 m (Stickel 1968).

Obtaining unbiased estimates of the distribution of animal dispersal distances in natural unbounded populations is problematic, because the probability of detecting dispersal events declines directly and dramatically with dispersal distance (Koenig et al. 1996). Thus, detection of such a long distance dispersal movement by *P. p. niveiventris* is an unusual occurrence. The successful dispersal was likely made possible by the availability of relatively unfragmented, suitable habitat.

LITERATURE CITED

- BARD, A. 1997. The gypsy beach mouse of Sebastian Inlet. Florida Park Service and Florida Department of Environmental Protection Resources Management Notes 8(4):83.
- BLAIR, W. F. 1951. Population structure, social behavior, and environmental relations of the beach mouse (*Peromyscus polionotus leucocephalus*). Contributions of the Laboratory of Vertebrate Biology, University of Michigan 48:1-47.

³E-mail: donna.oddy-1@ksc.nasa.gov

- EXTINE, D. D. 1980. Population ecology of the beach mouse, *Peromyscus polionotus niveiventris*. M.S. thesis. University of Central Florida, Orlando.
- KOENIG, W. D., D. VAN VUREN, AND P. N. HOOGE. 1996. Detectability, philopatry, and the distribution of dispersal distances in vertebrates. *Trends in Ecology and Evolution* 11(12):514-516.
- PROVANCHA, J. A., AND D. M. ODDY. 1992. A mark and release study of the Southeastern beach mouse (*Peromyscus polionotus niveiventris*) on the Kennedy Space Center. (Paper abstract) *Florida Scientist* 55 (Supplement 1):28.
- SMITH, M. H. 1968. Dispersal of the old-field mouse, *Peromyscus polionotus*. *Georgia Academy of Science* 26:45-51.
- STICKEL, L. F. 1968. Home range and travels. Pages 373-411 in *Biology of Peromyscus (Rodentia)* (J. King, Ed.). American Society of Mammalogists, Special Publication No. 2.
- STOUT, I. J. 1980. Terrestrial community analysis. Vol. I: a continuation of base-line studies for environmentally monitoring space transportation systems (STS) at John F. Kennedy Space Center. NASA Contract Report No. 10-8986.
- STOUT, I. J. 1992. Southeastern beach mouse. Pages 242-249 in *Rare and endangered biota of Florida*. Vol. 1, Mammals. (S. R. Humphrey, Ed.). University Presses of Florida, Gainesville.