

**Florida Mouse**  
*Podomys floridanus*

This profile is a short summary of information to introduce the species and does not summarize all available information on the species.

Listing status: USFWS = Not listed  
FWC = Species of Special Concern

Trend: Specific population numbers are not available for Florida mice, but it is estimated at several thousand individuals. It is considered at-risk because of the widespread loss of upland communities throughout its range. Preferred habitat for Florida mice occurs in patches that are often small and isolated from other patches of suitable habitat. The patchy distribution of Florida mice leads to a high likelihood of local population extinctions.

Threats: The primary threat to this species is the loss of suitable upland habitat through degradation or conversion to development or agriculture (e.g., citrus groves, pine plantations, etc). Degradation of upland communities through a lack of prescribed fire in upland communities also reduces suitable habitat by promoting a later successional stage of vegetation. Reductions in gopher tortoises and their burrows, which Florida mice utilize, also threaten this species and there is some evidence that fire ants can have localized impacts on populations.

Notes: This species was considered a member of the genus *Peromyscus* until placed into the *Podomys* group in the early 80s. More recent DNA analysis suggests it may exist as a subgenus of *Peromyscus*. This relationship remains unclear and merits further study.

Prioritization information:

PLCP PVA proportion of pops modeled to persist on public lands = **0.17**

PLCP PVA probability of a 50% decline on public lands = **0.74**

Millsap biological score = 22

Millsap supplemental score = **19**

Legacy population trend = **Declining**

Legacy population status = Medium

Summary: This species triggers four of the prioritization parameters, and is considered to be a medium to high priority species. This is a management responsive species. Due to it be a commensal of the gopher tortoise, this species would likely benefit from management activities focused on the gopher tortoise.

Life History: Florida mice have been found only in peninsular Florida and Franklin Co., in fire-maintained, xeric uplands that occur on well-drained sandy soils (Layne 1992). The major Florida communities associated with Florida mice are sandhill and scrub. Scrub (including xeric oak scrub, sand pine scrub, rosemary scrub, and scrubby flatwoods) is considered the primary habitat. Florida mice are often more

abundant on sites supporting early successional vegetation shortly after fires (Layne 1992). Populations decline as habitat becomes more densely vegetated, shadier, and mesic in nature. Scrub habitat managed for Florida Scrub Jay often provide high quality habitat for Florida mice (Layne 1992). Florida mice use tortoise burrows almost exclusively as sites within which they construct their burrows (Layne 1992; Layne and Jackson 1994). Individual mice may use several different spots within a single tortoise burrow and often utilize 1-3 different tortoise burrows (Layne and Jackson 1994). The Florida mouse is considered an obligate commensal of the gopher tortoise, and may not be able to persist on sites, especially sandhill sites, where gopher tortoises have been extirpated.

Identified from other mice by the presence of five (occasionally only four) well-developed plantar tubercles on the hind foot. Other *Peromyscus* mice have six. Florida mice are frequently described as having a distinct skunk-like odor.

Breeds year round, although most reproductive activity is in the fall and early winter (Layne 1992). Populations generally are highest in winter-early spring and lowest in summer-early winter (Layne 1992). Gestation lasts about 3-4 weeks with an average litter size of 2-3. Young are weaned at 3-4 weeks with only a small percentage of the population living longer than 1 year. Florida mice are nocturnal and omnivorous; eating primarily seeds, nuts, fungi, insects, and other invertebrates. Acorns play an important role as a food source. Predation by various snakes, owls, and carnivores is probably the major mortality factor (Layne 1992).

Preferred Habitat Parameters: Specific habitat parameters are not known, but conditions suitable for Florida Scrub Jay and/or gopher tortoise will provide suitable habitat for Florida mice.

Minimum Habitat Requirement:

From PVA: Populations with at least 300 females.

From Literature: 30 – 60 ha (~75 – 150 acres) using density estimates (*see below*)  
~200 acres using home range estimates for females (*see below*)

- In high pineland, mean home ranges were 4,042 m<sup>2</sup> (~ 1 acre) for males and 2,601 m<sup>2</sup> (~0.65 acre) for females (Jones and Layne 1993)
- Mean densities of Florida mice in sandhill and scrub communities range from 5-10 individuals per hectare (2.47 acres)

Best Management Practices:

- A management regime to benefit gopher tortoises or Florida scrub jays will also provide benefits to Florida mice. For a patch of habitat to be considered suitable, it should contain active and inactive gopher tortoise burrows.
- Efforts should be made to reconnect currently disjunct patches of appropriate habitat and to enlarge smaller patches.
- Periodic prescribed fire or other appropriate habitat management activities should be used to maintain an open, early successional, high quality habitat.

Efforts to increase diversity and abundance of ground cover may be important in determining habitat quality. In scrub habitats, fires probably should be arranged spatially and temporally to provide a mosaic in which 5- to 10-year-old scrub is always plentiful.

- Because Florida mice are dependent on acorns as a major component of the diet (Layne 1992), the presence of mast-producing oaks should be considered when estimating habitat quality. In sandhill sites, it is important to maintain patches of oaks within the larger community of open-canopy pines. White oak acorns (i.e., live oaks, laurel oaks, and various scrub oaks) may be preferred over red oaks.
- Translocation may be used to reintroduce Florida mice to otherwise suitable, but unoccupied habitat (see Layne 1992).

Monitoring Protocol: See FWC protocol for determining presence/absence of Florida mice (DRAFT as of 04/01/08)

For more information on monitoring, see Wilson 1996.

PVA Summary: The Wildlife Habitat Conservation Needs in Florida project created a PVA ([http://research.myfwc.com/features/view\\_article.asp?id=29815](http://research.myfwc.com/features/view_article.asp?id=29815)) for Florida mouse was developed under two statewide scenarios; one considerate of all potential habitat and one that only considered managed (i.e., public) lands. Little is known about dispersal for this species, so a distance of 1.3 km between independent populations was used. This value is less than ideal, but necessary given the patchy nature of mouse habitat and to limit the number of populations to 500 (the maximum that the software could handle). The model with all potential habitat contained 244 populations, while the managed habitat model contained 472 populations.

Florida mice do not have a long life expectancy; therefore survival and fecundity parameters were created using 3 stages of 2 months each (i.e., 0-2 mos, 2-4 mos, etc), with increasing survival in the later stages (from 0.36 – 0.64). Fecundity also increased in the later two stages of the model (from 0.47 to 0.63). These parameters produced a model with a population growth rate of 1.003.

Probability of extinction over 1,000 months was small (~ 1%) under both scenarios. Likelihood of a 50% decline in abundance during the next 1,000 months, however, was high for both scenarios. The all potential habitat model indicated a 70% likelihood of a 50% decline and the managed habitat model indicated a 74% probability. Changes to adult (Stage 3) and juvenile (Stage 1) survival rates had the most impact on the model's performance. Reduction in adult survival by 5% increased the risk of a 50% population decline to 100%. A 5% reduction in adult fecundity increased the risk of a 50% decline to 99%. These results suggest that additional research on the survival and fecundity of this species, particularly adults, is warranted to ensure long-term population persistence.

2003 Landcover used for model:

Sandhill

Xeric Oak Scrub

Sand Pine Scrub

FNAI Natural Communities used:

Sandhill

Scrub

Xeric Hammock

Scrubby Flatwoods

FNAI field guide description of habitat: Xeric upland communities with sandy soils, including scrub, sandhill, and ruderal sites where they inhabit burrows of the gopher tortoise (*Gopherus polyphemus*).

Important Links:

FNAI field guide:

[http://www.fnai.org/FieldGuide/pdf/Podomys\\_floridanus.pdf](http://www.fnai.org/FieldGuide/pdf/Podomys_floridanus.pdf)

NatureServe:

<http://www.natureserve.org/explorer/servlet/NatureServe?searchName=Podomys%20floridanus>

Pertinent Documents/Literature:

Jones, C.A. and J.N. Layne. 1993. *Podomys floridanus*. American Society of Mammalogists., Mammalian Species No. 427:1-5

Layne, J.N. 1992. Florida mouse (*Peromyscus floridanus*). Pp. 250-264 in Rare and endangered biota of Florida. Vol. 1. Mammals (S.R. Humphrey, ed.). University Press of Florida, Gainesville, FL.

Layne, J.N. and R.J. Jackson. 1994. Burrow use by the Florida mouse (*Podomys floridanus*) in south-central Florida. American Midland Naturalist 131:17-23.

Wilson, D.E., et al. 1996. Measuring and monitoring biological diversity: standard methods for mammals. Smithsonian, Washington, D.C. 440pp.