

Habitat Preferences of a Small Ecosystem Engineer

Most people don't think about how animals modify their environment, but several species do just that. Let's consider the southeastern pocket gopher for a moment.

Pocket gophers live most of their lives underground where they dig and maintain tunnels to access their primary food source: plant roots. These tunnels become habitat for other species such as scarab beetles, gopher frogs, and Florida pine snakes, while the excavated soil deposited in mounds above ground become important germination sites for native vegetation and sunning areas for some reptiles. Because of these varied impacts, we consider the pocket gopher to be an ecosystem engineer.



A rare glimpse of a southeastern pocket gopher outside its mound. They spend most of their life in tunnels below ground.

The southeastern pocket gopher is only found in the Coastal Plain of Alabama, Georgia, and Florida. Populations in portions of this species' range appear to be declining. The southeastern pocket gopher is considered a species of conservation concern throughout its geographical range and is listed as threatened by the state of Georgia.

Scientists at The Jones Center, University of Florida, University of Georgia, and Auburn University partnered to study pocket gophers range wide. Part of this research investigated vegetation at sites where we suspected pocket gophers to occur based on current land use and their historic range. We collected data at sites where pocket gophers were found as well as sites where they were absent. By comparing the differences in vegetation between sites with and without pocket gophers, we were able

to better understand what makes a location a suitable home for these secretive mammals. Our results indicate pocket gophers are found more often in pine forests with an open canopy and ground cover dominated by grasses and other herbaceous vegetation. Habitat quality is greatest when herbaceous vegetation is short and canopy closure is about 50%. As canopy closure increases or decreases from this 50%, the likelihood of finding pocket gophers in the area declines.

MORE INFORMATION

Parsons, E.I., R.A. Gitzen, J.T. Pynne, L.M. Conner, S.B. Castleberry, S.I. Duncan, J.D. Austin, and R.A. McCleery. 2022. Determining habitat requirements for the southeastern pocket gopher (*Geomys pinetis*) at multiple scales. *Journal of Mammalogy*. Volume 103: 672–679. doi.org/10.1093/jmammal/gyab144

Pynne, J.T., E.I. Parsons, L.M. Conner, A. Whelan, S.B. Castleberry, R.A. Gitzen, S.I. Duncan, J.D. Austin, and R.A. McCleery. 2021. Southeastern Pocket Gopher (*Geomys pinetis*) Tunnels Provide Stable Thermal Refugia. *The American Midland Naturalist* 185(2), 218-228. doi.org/10.1674/0003-0031-185.2.218

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KEY POINTS

Our work increases our ability to manage southeastern pocket gophers because it:

1. Defines vegetation structure associated with their habitat.
2. Shows prescribed fire helps maintain habitat for southeastern pocket gophers.
3. Provides guidance for future restoration efforts, particularly for translocation of animals to more suitable areas.