

SEED DISPERSAL BY *GOPHERUS POLYPHEMUS*  
AT ARCHBOLD BIOLOGICAL STATION, FLORIDA

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**ABSTRACT:** We investigated the potential for the gopher tortoise (*Gopherus polyphemus*) to act as an agent of seed dispersal at Archbold Biological Station, Florida. Scat dissections, as well as foraging observations, were used to determine the seed species and plant taxa consumed by the tortoises during June and July 2001. The diet of the gopher tortoise consisted mainly of grasses and sedges, and these, as well as *Pinus elliottii*, *Galactia* sp., *Vaccinium myrsinites*, and *Gaylussacia dumosa*, comprised the majority of the plant matter identified in the scat. Germination tests were performed on digested and undigested seed of the two most abundant seed species found in the scat, the exotic grass *Paspalum notatum* (bahiagrass) and its native congener, *P. setaceum*. The percent germination of digested *P. notatum* seeds was significantly lower than the germination of undigested *P. setaceum* (<1% vs. 27%). In contrast, many seeds of *P. setaceum* germinated after digestion, and there was no significant difference between digested and undigested seeds of this species. Gopher tortoises disperse seeds of the exotic *P. notatum* but suppress immediate germination. They disperse the native grass *P. setaceum*, which is able to germinate immediately after tortoise digestion.

**Key Words:** Gopher tortoise, *Paspalum notatum*, *Paspalum setaceum*, Lake Wales Ridge, diet, herbivory, seed survival

THE GOPHER tortoise (*Gopherus polyphemus*) lives in upland xeric habitats throughout most of the Southeastern Coastal Plain of the United States (Auffenberg and Franz, 1982). Like all other members of the genus *Gopherus*, gopher tortoises dig and maintain burrows, which protect inhabitants from extreme temperatures, fire, desiccation, and predators (Cox et al., 1987). Gopher tortoise burrows provide habitat for over 350 different vertebrate and invertebrate species, and because of this, the tortoise is considered a keystone species (Cox et al., 1987; Jackson and Milstrey, 1989). The burrows and adjacent mounds of extracted sand also influence the vegetation in these communities by providing favorable microsites for certain plant species (Kaczor and Hartnett, 1990). Though these and many other aspects of the tortoise's natural history have been well studied, the potential role of the gopher tortoise as a seed disperser has been largely uninvestigated.

Seed dispersal by reptiles, or saurochory, is not entirely uncommon, yet has received considerably less attention than dispersal syndromes associated with other

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