

Gopher Tortoise

(*Gopherus polyphemus*)

Listing Status and Range

- **Federal Status:** Regionally Threatened/Candidate
- **FL Status:** State-designated Threatened
- **FNAI Ranks:** G3/S3 (Rare)
- **IUCN Status:** VU (Vulnerable)

The gopher tortoise is one of five North American tortoise species and is the only tortoise naturally found east of the Mississippi River. Its range includes the southeastern Coastal Plain from southeastern Louisiana east to southern South Carolina, and south to Florida. Gopher tortoises occur in parts of all 67 Florida counties.

The gopher tortoise is unique in that it is Federally listed as Threatened under the Endangered Species Act only in the portion of its range occurring west of the Mobile and Tombigbee Rivers in Alabama (U.S. Fish and Wildlife Service 1987). In the eastern portion of its range, the gopher tortoise is a Candidate species for federal protection (U.S. Fish and Wildlife Service 2011). The gopher tortoise has some form of state-level protection in each state which it occurs and is a State-designated Threatened species in Florida (see [Florida's Endangered and Threatened Species Rule](#)).



Appearance

The gopher tortoise is a moderate-sized, terrestrial turtle, averaging 9–11 inches in length when fully grown, though it can reach lengths of up to 15 inches (Ernst et al. 1994). The species is identifiable by its stumpy, elephantine hind feet and flattened, shovel-like forelimbs covered in thick scales. Hatchling (<1-year-old) and juvenile tortoises tend to be yellow-orange and brown in color, but the bright coloration fades with age (see pictures below). The shell of an adult gopher tortoise is generally tan, brown, or gray in coloration. Adult male and female tortoises can be differentiated by the presence or absence of a concavity on their lower shell (plastron); mature males will exhibit this concavity, whereas females will have a flat lower shell.



Hatchling



Juvenile



Adult

Life history

Gopher tortoises can live 40 to 60 years in the wild, though captive tortoises may live 90+ years. Males reach adulthood at approximately 9-12 years of age, whereas a female may take 10-21 years to reach maturity depending on local resource abundance and latitude (Ernst et al. 1994). The breeding season occurs between March and October. Females typically lay one clutch of 5-9 ping pong ball-sized eggs per year. Eggs are deposited between May and July. The gopher tortoise nests in open, sunny locations, frequently within the soft mound of sand at the entrance of their burrow, called the burrow apron. Egg incubation lasts 80 to 110 days, and hatchlings typically emerge from their nests between August and November. Tortoises exhibit no maternal care of their eggs or young. Hatchlings frequently dig their own burrow within a week of emerging from their nest location, though they may occasionally use burrows of adult tortoises. Due to high predation on nests and hatchlings, individual female tortoises may produce a successful nest (i.e., hatchlings reach adulthood) only once every 10 years (Gopher Tortoise Council 2019).

Habitat

Gopher tortoises prefer well-drained, sandy soils found in habitats such as longleaf pine sandhills, xeric oak hammocks, scrub, pine flatwoods, dry prairies, and coastal dunes. They are also found in a variety of disturbed habitats including pastures and [urban areas](#). Suitable gopher tortoise habitat contains well-drained sandy soils for digging burrows and nesting, abundant herbaceous plants for forage, and open, sunny areas with sparse canopy for nesting and basking. Periodic natural fires historically played an important role in many of the habitats where tortoises are found, as fire reduces canopy cover and promotes growth of herbaceous forage plants. When fire is suppressed from these environments, the habitat may become unsuitable for gopher tortoises. Prescribed fire is frequently used today to maintain these habitats (Gopher Tortoise Council 2019).

Diet

Gopher tortoises are herbivorous; they feed on low-growing plants like wiregrass, broadleaf grasses, gopher apple, and legumes (bean family plants). Tortoises are opportunistic grazers, so the dominant plants within their environment likely make up the bulk of their diet (Ernst et al. 1994). Tortoises may alter their diet seasonally depending on forage availability. They typically forage within 160 ft of their burrow but will travel farther if forage is unavailable. Gopher tortoises may drink water that has pooled following a rainstorm, but generally consume an adequate amount of water from forage plants.

Burrows and Gopher Tortoise Behavior

The life of a gopher tortoise revolves around its burrow(s) where gopher tortoises spend up to 80% of their time. They often use multiple burrows throughout their lives, the number of which varies depending on the individual. Gopher tortoises are ectotherms, meaning they depend upon their environment to maintain their body temperature. Due to its warm climate, tortoises are essentially active year-round in Florida, though peak activity outside burrows occurs from May through August. In northern Florida, tortoises typically remain within their burrows during cold winter months but will bask or forage near their burrows on warm winter days.

Gopher tortoise burrows average 15 feet long and 6.5 feet deep, though they have been documented reaching up to 40 feet long and 10 feet deep. The burrows maintain a stable temperature and humidity year-round, providing protection from extreme temperatures, drought, and fire. Burrows also offer shelter from predators and serve as refugia for more than 350 other species, called [commensals](#). Some examples of commensal species include burrowing owls, Florida mice, indigo snakes, rabbits, gopher frogs, and invertebrates.

Threats

The primary threat to the gopher tortoise is habitat loss through habitat destruction, fragmentation, and degradation, particularly from urbanization and development. Land development for residential homes generally occurs in the same high, dry habitats that the tortoise prefers. Lack of appropriate land management (especially prescribed burning) has also contributed to population declines in areas where natural habitat remains. Additional threats include increased risk of road mortality due to fragmentation, particularly of females searching for suitable nest sites. Upper respiratory tract disease (URTD) also poses a potential threat to gopher tortoise populations as evidence suggests URTD may be partially responsible for declines in some populations (Enge et al. 2006). Human harvest and habitat degradation from fire suppression has also significantly depleted gopher tortoise populations in the Florida panhandle (Enge et al. 2006).

Conservation and Management

The gopher tortoise was listed as a Species of Special Concern in Florida in 1979 and was reclassified as a State-designated Threatened species in 2007; FWC created its first [Gopher Tortoise Management Plan](#) following this reclassification. The goal of the management plan is to “restore and maintain secure, viable populations of gopher tortoises throughout Florida so the species no longer warrants listing.” This goal can be attained by achieving the following conservation objectives:

- Minimize loss of gopher tortoises
- Increase and improve habitat
- Enhance and restore populations
- Maintain the gopher tortoise’s function as a keystone species

Permitting

Because gopher tortoises are protected in Florida, handling and relocation of gopher tortoises is an illegal activity unless conducted under a valid permit issued by FWC. In accordance with the Gopher Tortoise Permitting Guidelines, an FWC relocation permit must be obtained before disturbing burrows and conducting construction activities.

If you see a tortoise crossing a busy road, FWC grants permission to move the gopher tortoise across the road in the same direction it was headed if it is safe for you to do so. Do not move the tortoise to another location or put the tortoise in a car as this constitutes illegal possession. In addition, most activities associated with residential lawn and landscape maintenance do not require a permit provided they do not collapse gopher tortoise burrows or harm tortoises.

Other Resources

[Animal Diversity Web](#)

[Florida Natural Areas Inventory](#) – Gopher tortoise fact sheet

[FWC Petitions and Listing Actions](#)

[Gopher Tortoise Council](#)

[Gopher Tortoise Day](#) – Learn fun facts about gopher tortoises

[NatureServe Explorer](#)

[South Carolina Department of Natural Resources](#) – Gopher tortoise fact sheet

Visit [FWC’s Gopher Tortoise Home Page](#) or [Education Corner](#)

References

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- Ernst, C. H., J. E. Lovich, and R.W. Barbour. 1994. Turtles of the United States and Canada. Smithsonian Institute Press, Washington, D.C., USA.
- Florida Natural Areas Inventory. 2001. Field guide to the rare animals of Florida.
http://www.fnai.org/FieldGuide/pdf/Gopherus_polyphemus.PDF
- Gopher Tortoise Council. 2019. Gopher Tortoise Life History. Retrieved February 27, 2019, from
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- [U.S. Fish and Wildlife Service. 1987.](#) Endangered and threatened wildlife and plants: determination of threatened status for the gopher tortoise (*Gopherus polyphemus*). Federal Register 52:25376.
- [U.S. Fish and Wildlife Service. 2011.](#) Endangered and threatened wildlife and plants: 12-month finding on a petition to list the gopher tortoise as threatened in the eastern portion of its range; Final rule. Federal Register 76:45130-45162.