

featured creature

Ancient Atlas of the uplands

By FWC Staff

If you build an archway out of stones, the shape and placement of the rocks will defy gravity and keep the stones suspended overhead. The keystone – the one in the center at the top – is especially important. Without it, the structure will collapse.

A seldom-seen animal parallels this architectural rule. Every time the Southeastern United States loses a certain land turtle, 350 to 400 members of the animal kingdom may be negatively affected. That is because they seek refuge or live in the burrows that this keystone species builds.

Meet the gopher tortoise “*Gopherus polyphemus*.”

This medium-sized turtle with a gray or amber to dark brown shell is as old as the sandhills it loves. In fact, it is one of the oldest species on Earth, dating back to the Pleistocene Epoch – the Ice Age.

Despite surviving the perils of geological time, during just the past three decades, the rate of decline for the species exceeded 30 percent, so in 2007 the Florida Fish and Wildlife Conservation Commission (FWC) listed the gopher tortoise as threatened. The FWC also created

a plan to protect the tortoise and its habitat in Florida’s 67 counties.

“To me, the gopher tortoise is such an innocent creature,” said Deborah Burr, the FWC biologist-administrator over conservation planning for the reptile. “All it does is burrow in the ground to live and come out to forage on grass and leaves.”

Being a harvested species until the FWC prohibited that in 1988 didn’t help the animal, nor did the destruction of its burrows because of plowing, bulldozing or paving. Gopher tortoises live in high and dry places people want to use, such as sparsely treed longleaf pine and oak sand hills, pastures, prairies, roadsides, scrub, and coastal grasslands and dunes.

Planning

The FWC, together with the people who want to use such land and other interested parties, came up with a management plan to encourage landowners to conserve the tortoise while still allowing people to use their land.

“If construction or development will impact gopher tortoises or their burrows, people have to get a permit to move the reptiles,” Burr said.

Yes, that costs money. However, those who want to set aside an area to take in relocated tortoises have the potential to make money. While the recipients also need a permit to ensure they meet the turtle’s needs, the private financial incentive is \$800 to \$1,200 a tortoise. The FWC requires such recipients to prescribe cyclical burnings to maintain an open canopy and to conduct other land management activities that benefit the tortoise.

Burr noted that because so many species depend on the gopher tortoise, the FWC prohibits moving one more than 100 miles from its home. “We want to keep them distributed the way we found them.”

Even though it is not particularly social with other tortoises, the gopher tortoise doesn’t mind sharing with other animals the one-entrance burrow it digs with its strong, clawed legs. The tunnel is just big enough for the tortoise to turn around inside. Into the burrow crawl diamondback rattlesnakes; long and beautiful, but harmless, eastern indigo snakes (federally listed as endangered); burrowing owls, rabbits, foxes, skunks, armadillos; and hundreds of insects and spiders. Critters, such as the gopher frog, gopher cave cricket and Florida mouse, are “obligates” of the gopher tortoise: They are rarely found anywhere except in the burrows.

These creatures are not capable of digging this shelter.

Home

The cold-blooded tortoise digs to escape the hot sun, cold weather and predators. The sand it pushes out of the half-moon opening is the apron. That is where it lays its eggs, as does the indigo snake. The slow-to-mature tortoise doesn’t lay its first clutch of eggs resembling pingpong balls until it is 10 to 15 years old. Adults grow to be about a foot long, weigh up to 30 pounds and live 40 to 60 years in the wild.

When foraging, the tortoise uses its beak to chomp on grasses, nettles and poison ivy, and tender, low-to-the-ground plants. It usually gets the moisture it needs from plants. While it is at it, the gopher tortoise “plants” grass seeds contained in its droppings.

No wonder some ancient civilizations chose the tortoise to depict creation, carrying the world or the heavens on its back. It is the Atlas of the uplands.



Gopher tortoise burrow

You can help

■ Hazardous crossing? It is OK for adults who see a gopher tortoise crossing a road to pick it up and put it on the side of the road to which it is headed. Never put gopher tortoises in water. They only live on land.

■ Recognize burrows. The entrance to the underground home is a half moon shape, with the curve on top. Loose, clean sand fans out, like an apron, from an active burrow. You can protect the burrow, and prevent people and large animals from stumbling over it, with a log over the backside of the entrance or with a marker or flag near the front. Don’t block the tortoise’s path.

■ Make a donation. The Gopher Tortoise Habitat Fund furthers the Florida Fish and Wildlife Conservation Commission’s (FWC) management plan to protect the threatened gopher tortoise. Funds will help obtain gopher tortoise habitat and assist with the cost of land-management activities needed to maintain suitable living and foraging conditions. Please send your donations to:

Wildlife Foundation of Florida

P.O. Box 11010

Tallahassee, FL 32302

Make sure to put “Gopher Tortoise Habitat Fund” on the memo line of the check.



Gopher tortoise.

Below: A gopher frog, left, and a pine snake, right, are two species that share a gopher tortoise’s burrow.



To learn more, go to MyFWC.com/GopherTortoise

Kids coloring corner



The fruit of the gopher apple (*Licania michauxii*) is a favorite food for the gopher tortoise (*Gopherus polyphemus*).

Researching long-lived animals takes time – lots of time

Gopher tortoises live so long that it is no wonder Joan Berish has spent most of her working life studying them. The biologist-researcher with the Florida Fish and Wildlife Conservation Commission (FWC) in Gainesville started capturing, measuring, marking, releasing and tracking them in the early 1980s, recording important information about the structure and dynamics of populations over time.

The baseline data included burrow distribution and how tortoises use their habitat. Tagging them with radio transmitters helped.

Twenty-seven years later, Berish encountered some of the same tortoises she had identified with tiny drill-holes on the edges of their shells.

“They’re very, very long-lived critters. Saying they have a life span of 40 to 60 years may be conservative,” Berish said.

Her fieldwork is at Grove Park

Wildlife Management Area, a research site in North Central Florida managed cooperatively by the Plum Creek Timber Co. owner, the FWC and the St. Johns River Water Management District. Pine plantations, if properly managed through tree thinning and prescribed fire, can provide good habitat for gopher tortoises.

After a hiatus of several years working on gopher tortoise relocation permitting, Berish returned in 1992 to her research roots in the field. Many of the interesting things scientists learn are through gathering and analyzing data, then making comparisons.

The 1992 visit to Grove Park WMA was surreal. Plum Creek Timber Co. had clear-cut its land a few years earlier.

“It was scruffy looking – lots of small trees and shrubs. Yet, despite this, I found some of the same gopher tortoises I had marked nearly a decade earlier, and some

new ones,” Berish said.

Opening up the habitat benefitted gopher tortoises by providing plentiful forage.

This year, Berish conducted another follow-up survey. Where the pines had become thick again, Plum Creek Timber Co. had thinned the trees and conducted burns to remove shrubby undergrowth, so that tender grasses and other low-growing plants could provide forage for tortoises. Part of this Plum Creek site is one of the new recipient areas for gopher tortoises relocated from development, enabling the company to make money on the tortoises the FWC permits it to receive.

This year, she found that the babies had grown, new tortoises had moved in and some had moved out. She even came across the godfather, tortoise No. 33, which could be 60 or more years old.

“He was one of the earliest marked and later recaptured tortoises in the

study,” she said. “He’s so old he has just about stopped growing.”

Amazingly, No. 33 showed “site fidelity.” He was still in the same area where originally found, despite heavy timbering activity.

“Such tenacity shows timbering can be compatible with gopher tortoise habitat,” Berish said. “My findings, and those of others, indicate that the majority of gophers can dig out after timbering if there isn’t a lot of debris on top of their burrow entrance.”

The fact that silviculture, cultivating a forest, can have a beneficial impact on gopher tortoises, not just an adverse effect, is good news for all, Berish said. The three-decade study also found that tortoises use raised planting beds, windrows and ecotones (edges created where pine stands of different ages come together). These are important considerations when relocating gopher tortoises.



Joan Berish measures a mature gopher tortoise.