

## Arizona Desert Tortoises

There are two native species of desert tortoise in Arizona: the Sonoran, *Gopherus morafkai*, and the Mojave, *Gopherus agassizii*. Although similar in many ways, the two species differ geographically.

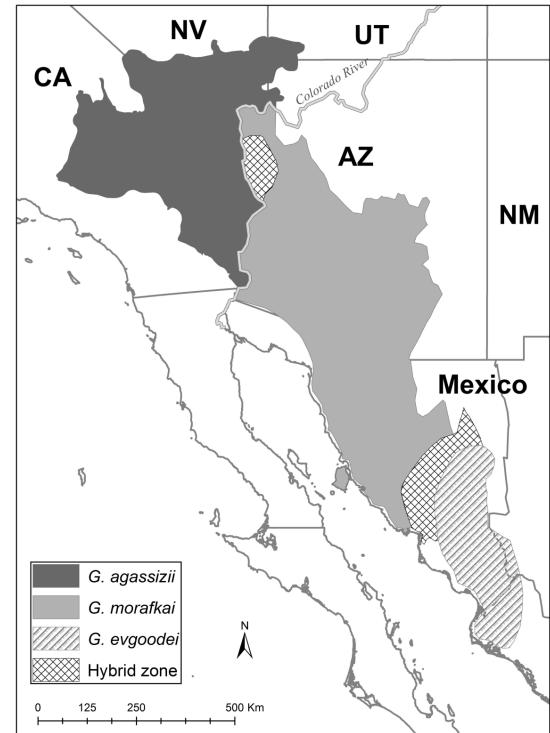
**Range:** The Sonoran desert tortoise is found in central and western parts of Arizona and northwestern Mexico, south and east of the Colorado River. The Mojave Desert tortoise inhabits the area north and west of the Colorado River.

**Habitat:** Each population has evolved separately. As a result, each favors a different habitat. The Sonoran desert tortoise, found in Sonoran Desert scrub and Semidesert Grassland, prefers rocky slopes and bajadas. The Mojave population inhabits Mojave Desert scrub where it can be found in the flat inter-montane basins. The Mojave desert tortoise is listed as threatened under the Endangered Species Act.

**Description:** There is considerable variation in the tortoise's ecology, behavior, morphology, and DNA in different portions of its range. Tortoises differ from other turtle families by certain characteristics: the hindlegs are cylindrical and elephantine in shape; the feet are short, broad and club-shaped. The forelimbs are flattened, an adaptation for digging and burrowing. The toes are completely unwebbed in some genera. The upper shell, called the carapace, is usually high and domed and the ribs are modified in alternating triangular wedges. The sections of the carapace are called scutes. The lower shell is called the plastron. The Mojave tortoise has a much wider and box-like shell and longer gular scutes while the Sonoran tortoise has a narrower, flatter pear-shaped shell.

**Hunting/Prey:** All tortoises are terrestrial and basically herbivorous, although they may occasionally eat invertebrates and carrion. The desert tortoise may spend up to 95 percent of its life in burrows emerging only for feeding, basking and breeding primarily during the summer after the onset of the monsoon season. It will get most of its food for the entire year during this period. It eats the leaves, stems and flowers of many species of desert plants and is able to digest many species of plants that are indigestible to other animals because of a unique bacterium in its digestive system. Males use a home-range of about 17 acres to forage, whereas females use about 7.5 acres.

**Determining Sexes:** The rear portion of lower shell, called the plastron, is concave in mature males and allows the male to fit the carapace (upper shell) of the female during mating. The plastron in mature females is flat. Immature tortoises, both male and female, also have flat plastra. This means that sexual maturity is best determined by size: when the straight-line carapace measures 6-8 inches which usually occurs between 10 and 20 years of age.



**Breeding/Nesting:** After the onset of the monsoon season, tortoises between the ages of 12 and 20 will begin breeding. This usually takes place between late June through July. 3 to 12 eggs are laid near or inside the nest of a burrow. Sonoran tortoises lay only one clutch per year; Mohave usually lay two. Hatchling are 2-3 inches in length and soft-shelled. They emerge in September or October following the rainy season.

**Threats:** Degradation and loss of habitat from drought, wildfire, destruction and fragmentation, encroachment by pet trade, invasion of exotic plant and wildlife species, vandalism, OHV use, vehicle mortality and captive tortoises being released into the wild that can carry a bacterium that causes a life-long disease called URTD, Upper Respiratory Tract Disease. URTD has caused die-offs in the Mojave tortoise populations resulting in part of its listing as threatened under the Endangered Species Act.

**Other Facts:**

- Tortoises can live up to 80 and 100 years.
- Tortoise shells are made of bone. The bone is surrounded with keratin. The keratin can be "notched" for identification by scientists without harming the tortoise.
- The scales or sections of the carapace are called scutes.
- In 2011, the Sonoran desert tortoise was elevated to full species status. The currently accepted scientific name is now *Gopherus morafkai*. In some literature, the common name *Morafkai's* desert tortoise may be used, but we retain the common name, Sonoran desert tortoise, to avoid unnecessary confusion.
- Ravens, Gila monsters, kit fox, badgers, roadrunners and coyotes are all predators of the desert tortoise. They prey on the juveniles, which are 2 to 3 inches long and have thin, delicate shells. Mountain lions may occasionally take adult tortoise.
- Gila monsters will eat tortoise eggs.
- Tortoises will defend themselves by emptying their bladder or "peeing" if they are picked up or handled. This could lead to their death by dehydration if they were unable to find water quickly to replace it.
- Because captive tortoises can transmit diseases that can decimate our wild population, they cannot be returned to the wild. Each year, Arizona Game and Fish Department will offer for adoption captive desert tortoises that cannot be released back into the wild. This typically takes place April 1 to Sept. 30 when they are not hibernating. Specific rules apply. For information, call the Desert Tortoise Adoption Hotline 844-896-5730.

## **Liberty Wildlife Education Tortoises**

**GRANDPA**



Grandpa, a Sonoran tortoise, was found wandering down Scottsdale Road May 14, 1998 and was brought to Liberty. He weighed 3 lbs. 9 oz. He had puncture wounds on his carapace that did not seem to completely penetrate the shell which was generally in poor condition. At one time a spider took up residence in his shell. It was evicted by Medical Services. He is now in good health and is given regular checkups, claws trimmed, soakings in water, and prepared for hibernation each year. By 2004, his weight was up to 8 lbs but a checkup detected a bladder stone which was later removed. By 2014, he required his second stone surgery which required going through the shell to reach the stone. At that time, the veterinarian determined Grandpa was approximately 75 years old. Grandpa is very responsive to his handlers and knows when it's time for breakfast! Visitors love watching him.

**ALPO**



Alpo, a Sonoran tortoise, was attacked by a dog and left in a box out front of Liberty by the previous owner on October 17, 2000. A dog had attacked the tortoise and the owner could not afford the vet bill to fix the 3-inch hole in its shell that exposed its lung. Eventually, scar tissue formed over the hole. Alpo has gone into hibernation normally each year. In 2014, a bladder stone was detected during his examination which eventually had to be removed in 2017. It is estimated that Alpo is 17 years old.





**SHELLY**

Shelly, a Mohave tortoise, was left on a patio and abandoned. Luckily, she was discovered and brought to Liberty on September 8, 2009. She had “Happy 25<sup>th</sup> Birthday” written on her carapace but had no other injury. It was assumed she had been taken out of the wild and kept in an area with no food or water. A recent checkup revealed she has a large bladder stone. She will have surgery in 2018 to remove the stone. Her length of time in captivity precludes her being released into the wild. Visitors can compare her carapace to the Sonoran tortoises in the nearby enclosures.



**SPEEDY**

Speedy is a Sonoran tortoise that was admitted to Liberty Wildlife on March 18, 2011. His age was estimated to be seven years at the time. His left front leg had been damaged by a dog causing the amputation of that leg. He recovered nicely, gaining 3 pounds during his two-year recuperation period. He moved so easily and quickly that he earned the name “Speedy” and became a member of the Liberty Education team.

Compiled by Carol Marshall and Cindy Ziegler

**Sources:**

Arizona Game & Fish, US Geological Survey, Arizona-Sonora Desert Museum, U.S. Fish & Wildlife, Arizona Wildlife Views, Basin & Range Watch