

Species Name: Northern Spider Tortoise

Scientific Name: Pyxis arachnoides

Relatives: Class: Reptilia
Order: Testudines - turtles
Family: Testudinidae - tortoises
Genus: Pyxis - spider tortoise
Species: Pyxis arachnoides

Description: This tortoise gets its name from the spider-like pattern on the carapace. It is a small reptile with an oblong shell that is extremely curved and widens towards the back. The shell is dark in color with 5 to 8 yellow lines radiating from the yellow center.

The head is darker with yellow spotting and the legs and tail are dark. The plastron is a light yellow and lacks a hinge, separating it from the other two subspecies of spider tortoises.

The males have longer and thicker tails than the females.

Size: The Northern spider tortoise is the smallest of the three subspecies of spider tortoises. Their shell can reach a maximum length of 15 cm (about 6 in). Females will reach average lengths of 12.2 cm (4.8 in) and 11.6 cm (4.5 in) for males. Hatchlings are 4.5 cm in length (1.75 in).

Habitat: This tortoise prefers arid to semi-arid habitats that have sandy soils and low lying vegetation generally made up of thorny shrubbery and succulents. They inhabit areas of 30% - 50% canopy coverage because they rely on this cover for thermal regulation.

Range: The spider tortoise is endemic to the arid coastal regions of southwestern Madagascar where it is distributed from the coast to about 20 km inland. It was once known to inhabit 555 km of coastline from Morombe to the Amboasary region but has since been fragmented due to poachers and habitat destruction.

The three subspecies are geographically divided with the Northern spider tortoise being the most northern of the species. Their populations are separated covering around 500 sq km of coastal

forest from as far north as Morombe to Lake Ihotry.

- Predators:** Humans, snakes, raptors
- Life Span:** Can live between 50-70 years
- Diet/Prey:** Feeds on grasses, roots of succulents, insects and larvae typically during the wet season when vegetation is lush.
- Aquarium Diet:** Crickets, veggies
- Reproduction:** There is very little documentation about the reproduction habits of the Northern spider tortoise. It is believed that they reach sexual maturity at around 6-7 years old. They tend to be most active in the wet season from November to April because of the amount of lush vegetation and it is thought mating takes place just prior to the start of this season.

The female lays one egg in a clutch and there is no research on how many times a year she lays a clutch. In captivity, females laid three clutches in one year but it is unsure if this is true in the wild. The egg is incubated for between 220-250 days. Once hatched, the young tortoise is merely 4.5 cm long.

- Fun Facts:**
- Known to feed on larvae living in cow dung.
 - Due to lacking a hinge on their plastron, this subspecies of spider tortoise is unable to close up its shell.
 - The Northern spider tortoise is the smallest of its genus.
 - Very popular in the pet trade because of the unique and beautiful markings on the carapace.

- Ecology:** Little is known about the ecology of the Northern spider tortoise. At the beginning of the dry season, many spider tortoises will bury themselves deep in the sandy soils and remain dormant throughout the colder and drier season. This behavior demonstrates an energy and moisture saving tactic when vegetation is scarce.

Because of their diet, they could influence the composition of the vegetation within its habitat. However, this is not proven as an ecological connection.

- Conservation Connection:** The conservation of the Northern spider tortoise is believed, by Pedrono (2008) and Chiari et al. (2005), to have different needs than the other two subspecies and should be treated separately. The

reason for these thoughts are because of the specific regional threats to this species, like harvesting eggs by locals for food, which may have caused extinction in their former range. It is the only subspecies that does not occur in a protected area, and as a result, is believed to be the most threatened of the three subspecies of spider tortoises.

Even though protected by law in Madagascar, the protection of these animals is difficult to enforce with so many numbers leaving the country in support of the exotic pet trade.

“*Pyxis arachnoides* faces threats from habitat destruction and fragmentation (through conversion for agriculture, charcoal production, human-induced wildfires, and alien invasive plants). Recent analyses by Conservation International (May, 2007) of the state of the spiny forest biome, using aerial imagery, indicate that deforestation rates have significantly increased over the last five years (compared with the period 1990-2000) (H. Crowley pers. comm.). A loss of 21-50% was estimated to have occurred over the period 1970-2000 (an average annual rate of 1.2% spiny forest loss; Harper et al. 2007), and a further loss of 51-80% of remaining habitat was projected for the period 2002-2012 (CBSG 2001). Invasive plant species affecting habitat suitability were considered a significant threat at the 2001 CAMP workshop (CBSG 2001).

In addition, the species has increasingly become subject to collection for the local food trade as Radiated Tortoise populations have been depleted, and exploitation has recently included harvesting for livers for export to Asia (Behler 2000). A pulse of legal export trade occurred during the period 2000-2004; CITES trade records show that about 4,000 animals were exported for the international pet trade in that time (Walker et al. 2005).

Pyxis arachnoides was recommended to be listed as Endangered (A3acd, B1b) at the 2001 CAMP workshop (CBSG, 2001).

Overall, the northern subspecies *P.a. brygooi* is under more severe habitat loss and exploitation pressures than the other two subspecies, with some *brygooi* subpopulations already extirpated and others declining.

The 2005 Population and Habitat Viability Analysis (PHVA) workshop (Randriamahazo et al. 2007) evaluated different threat and population scenarios, which variously yielded estimates of about 60

to 80 years of decline into extinction based on harvest rates of 2005. With increasing exploitation and accelerating loss of remaining habitat, this may be a conservative set of estimates".
(<http://www.iucnredlist.org/apps/redlist/details/19035/0>)

Status: The spider tortoise (including all three subspecies) is Critically Endangered and listed on Appendix I of CITES.

Aliases: N/A

References:

1. <http://www.turtlesurvival.org>
2. <http://www.arkive.org/spider-tortoise/pyxis-arachnoides/#text>
3. <http://www.iucnredlist.org/apps/redlist/details/19035/0>