Green Tree Python

Morelia viridis

Class: Reptilia **Order:** Squamata (snakes and lizards) **Suborder:** Serpentes
Family: Pythonidae

Other names: none
Other subspecies:
Other Relatives: Green tree pythons were once known by the name *Chondropython viridis* and was placed in its own genus. When scientists noticed the similarities with Australian and New Guinea carpet pythons, it was placed in the genus *Morelia* and given the scientific name *Morelia viridis*. [1]

(neonate colors)

Zoo Green Tree Pythons 0.0.2
'Verdi' 0.0.1 – gender unknown
Hatch: 08/03/2014 AQ: 04/25/2015 ~45
About Verdi
Verdi was hatched at Clyde Peeling's Reptiland.

Status
Least Concern, Appendix II of CITES [1]

Geographic Region
Distributed throughout mainland New Guinea, its offshore islands, in eastern Indonesia, and the northeast Cape York Peninsula of Australia [1].

Habitat
Restricted to moist forests from lowland to mid-montane altitudes [1].

Characteristics
Size: Sizes vary with locality.
Length average length of 1.5 meters [2] 36-60" [3]
Weight: 1.75-2lbs [3]

Longevity: Wild 15-19 years [1] **Captivity** 20+ years [1]

Physical Description

- **Thermoreceptive labial** heat-sensing pits are only found within the scales on the upper lip [1].
- Their tail is **prehensile**
- As adults, green tree pythons display a brilliant green over most of their bodies. On the **dorsal** surface there us a distinct ridge of scales that is usually white to yellow in coloration and forms a broken or continuous line down the length of the body. **Ventrally**, the scales are generally yellow. [1]
- Juvenile green tree pythons may be either bright yellow or brick-red. Along the dorsal surface, they exhibit a series of white blotches edged in black or brown. These blotches may be either symmetrical or randomly placed on both sides of the body. [1]
    - They undergo **ontogenetic** color change in order to acquire their adult green coloration [1].
    - This occurs between 53 and 59 cm in length, when they are large enough to change foraging behavior and habitat [1]

Neonate red python

Dimorphism
Green tree pythons do not appear to exhibit sexual dimorphism in adulthood; however, at smaller lengths juvenile females have both wider and longer heads when compared to males of similar size [1].

Males:
Females:

Diet: Carnivore
Non-venomous
Ambush predators that hang near the ground and angle their heads downward to ambush passing rodents

Diet in the Wild: obligate ambush predators feeding on small reptiles, invertebrates, mammals, and birds throughout their lives [1]. There is a distinct change in feeding behavior as these snakes age, which also coincides with their color change: at hatching they feed primarily on invertebrates, they then move to feeding on small diurnal animals until they change to their adult emerald green, where they change to feeding on nocturnally active, larger prey [1].

Diet in the Zoo: mice

Behavior

- *Nocturnal*, night-active
- Before ontogenetic color change, green tree pythons are *diurnal*, coinciding with smaller prey that are active during the day [1].

Home Life

- The most arboreal of python species [1]
- When young, green tree pythons restrict themselves to canopy gaps or along the edges of forest where light can easily reach the ground. As adults, they are generally found in closed-canopy rainforests [2].
- Males do not maintain stable home ranges; apparently this transience is due to mate seeking behavior [1]. Only female green tree pythons have distinct home ranges [1].

Social Structure & Communication

- This species is solitary, aside from breeding [1]
- When finding potential mates, green tree pythons most likely use chemical pheromones as opposed to visual cues [1]

Defense Mechanisms

- The main anti-predator strategy of *Morelia viridis* is to avoid predation using its **cryptic** coloration and hiding behavior, which is especially effective against its visually-oriented avian predators.

Feeding Behavior

- They maintain a hunting posture, where the anterior end of the body is extended from the branch and folded like an accordion, ready to strike at the ground or at a lower branch, while the posterior end is wrapped securely around its perch. This is converse to their resting posture, where they stay coiled up tightly on a branch with their head resting in the middle. [1].

Reproduction

- *Oviparous*
- Most of what we know of green tree pythons' breeding is from captive bred pythons.
- In the wild, have a highly seasonal breeding cycle. Because few offspring are encountered in any one year, it is suggested that these pythons do not breed every annually [1].
- Males seek out females for breeding; once the male has found a sexually mature female he will stimulate her with his cloacal spurs (vestigial digits) to make her receptive for mating [1].
- Females are **gravid** for 39 to 65 days, then lay their clutches of 6 to 32 eggs which they then **brood** for approximately 50 days, but this can range from 39 to 60 days. Hatching typically corresponds with the start of the wet season in the Australian region. [1]
- Green tree pythons exhibit some maternal care by *brooding* their eggs before they hatch. In captivity, females have been observed coiling around their clutches. They will often shiver and contract their coils, apparently to produce metabolic heat and thus maintain an ideal brooding temperature, which ranges from 84 to 88 degrees Fahrenheit. Once the young hatch, however, there does not appear to be any parental care [1].
- Hatchlings are about 30.5 cm in length when they hatch [1]
- Reaching sexual maturity can take several years and can be long after they have changed into their adult green coloration. In males, sexual maturity reportedly occurs after 2.4 years and in females, sexual maturity occurs after 3.6 years. [1]

Conservation

- **Use & Trade**: This is one of the most common python species in the international pet trade, and is often taken from the wild. Indigenous people in New Guinea also hunt this species for food [1].
- **Threats**: This species is becoming increasingly popular in the pet trade. The natural color morphs and need for fresh blood lines have resulted in the constant capture of wild specimens for the pet trade. This is one of the most common python species in the international pet trade, and has been utilized for decades. Indigenous people in New Guinea also hunt this species for food. [1]
- **Predators**: The main predators of green tree pythons are rufous owls, black butcherbirds, and an assortment of diurnal raptors. Other predators include mangrove monitors, dingoes, and New Guinea quolls [1].

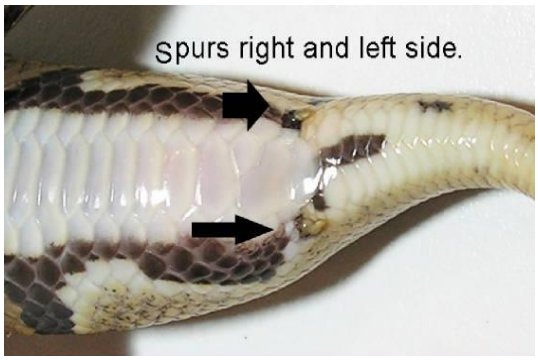
Did You Know?/Fun Facts

- They look and behave similarly to the emerald tree boa of South America. This makes a great example of **convergent evolution** in which two unrelated species have evolved similar characters because of the similarities of their environments [3].
    - One of the few ways to tell them apart is the position of the labial pits. In emerald tree boas, the pits are on the upper and lower lip. Green tree pythons only have labial pits on the upper lip surface [1].

Glossary: List of definitions of the most important recurrent technical terms used in the text.

brood

Convergent evolution In evolutionary biology, convergent evolution is the process whereby organisms not closely related (not monophyletic), independently evolve similar traits as a result of having to adapt to similar environments or ecological niches.
Cryptic (of coloration or markings) serving to camouflage an animal in its natural environment
Dorsal of, on, or relating to the upper side or back of an animal, plant, or organ.
Gravid pregnant; carrying eggs or young.
Labials- The labial scales are the scales of snakes and other scaled reptiles that border the mouth opening. (see picture at right)
Ontogenetic - is the origination and development of an organism, usually from the time of fertilization of the egg to the organism's mature form.
Spurs- The term spur is sometimes used to describe the pelvic spur, **vestigial** limbs found in primitive snakes, such as boas and pythons and in the striped legless lizard. The spurs primarily serve as holdfasts during mating. As these form at the terminal end of the limb, they may properly be claws rather than true spurs.



Thermoreceptive labial
Ventrally - of, on, or relating to the underside of an animal or plant; abdominal.
Vestigial- refers to genetically determined structures that have apparently lost most or all of their ancestral function in a given species, but have been retained through evolution
Vomeronasal -The vomeronasal organ (VNO), or the Jacobson's organ, is an auxiliary olfactory sense organ that is found in many animals. This is a pair of pit-like organs on the roof of the mouth that are lined with olfactory cells and nerves that interpret chemical stimuli in an animal's surroundings

References

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[3] Reptiles Magazine, "Wild Green Tree Pythons (Morelia Viridis)," 2015. [Online]. Available: http://www.reptilesmagazine.com/Snake-Care/Green-Tree-Python/. [Accessed August 2015].
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