

Rhinoclemmys punctularia (Spot-legged Turtle or Galap)

Family: Geoemydidae (Wood and Pond Turtles)

Order: Testudines (Turtles and Tortoises)

Class: Reptilia (Reptiles)



Fig. 1. Spot-legged turtle, *Rhinoclemmys punctularia*.

[http://commons.wikimedia.org/wiki/File:Rhinoclemmys_punctularia.JPG, downloaded 16 November 2014]

TRAITS. The spot-legged turtle *Rhinoclemmys punctularia* is also known as the Neotropical or South American Wood turtle, and locally as the galap. Head is of small size relative to the shell with light yellow stripes that extend from the snout to the eye (Ruela-Almonacid, 2007). The dorsal region of head has a distinct pattern that may be two orange lines that run from the eye to the neck, these patterns may very slightly and there may be a horseshoe pattern anterior to the neck (Rotmans, 2007). The orange patterns may fade to a yellow at the neck. Their carapace is normally a brownish-black colour with a black plastron that has creamish-yellow borders at the edges and that also line each strut (Fig. 2). Forelimbs, hind limbs and tail are yellow in colour with black spots and the forelimbs are slightly webbed (Murphy, 2014). Sexual dimorphism (Fig 3) presents itself with the increased size of females compared to males (Wariss et al., 2011), and males tend to have flatter shells and thicker tails (Ruela-Almonacid et al., 2007).

ECOLOGY. *Rhinoclemmys punctularia* is present in Trinidad (but only as introduced specimens or waifs in Tobago), and also in Venezuela, Colombia, Guyana and northeastern Brazil (Ecology of Life, 2013). According to Warris et al. (2012), *R. punctularia* avoids regions that have water bodies with high salinity and high water current and they actually move from these regions to those with less salinity and calmer waters. They are found in regions with freshwater such as rivers, marshes, swamps, flooded forests and savannas, lagoons and lakes (Wariss et al., 2011) but can also be found in a variety of terrestrial regions (Ruela-Almonacid et al., 2007). Considered to be a generalist species (Ruela-Almonacid et al., 2007) and an omnivore consuming a wide plant variety for example *Nyphaea* (water lily), *Chrysobalanus* and *Anonna* seeds and a variety of fruits and invertebrates such as worms (Wariss et al., 2011; Murphy, 2014).

SOCIAL ORGANIZATION. There are no findings of any specific social organization in *R. punctularia*, however although they may be found travelling solitarily, they can also be seen forming small groups and are actually described as being communal turtles (Bartlett et al., 2001). Figure 4 shows two female *R. punctularia* found basking together however this social turtle can be found in groups greater than pairs.

ACTIVITY. Nocturnal (Murphy, 2014) but have been known to bask in the sun (Ernst et al., 1997) and also be active during the day. They seek semi-aquatic regions, retreating from dried up lakes and travelling to intact neighbouring ones during the dry season (Wariss et al., 2011; Ernst et al., 1997).

FORAGING BEHAVIOUR. Omnivorous, seeking both animal and plant-based foods. Foraging and feeding can occur in both water and on dry land (Ernst et al., 1997) as *R. punctularia* can be mobile in water. While feeding they bite at their food while utilizing their forelimbs to not only pull and break the larger amounts of food but also to manoeuvre the food into their mouths as well. Figure 5a shows a female *R. punctularia* first biting the food, and Fig. 5b shows her subsequent attempts to manoeuvre the food into her mouth with the forelimbs.

COMMUNICATION. There have been little studies have been done on the communication between *R. punctularia* however it is believed that some olfactory (scent) communication is involved in the mating process where the male sniffs the female's cloaca to determine whether she is reproductively accessible (Ernst et al., 1997).

SEXUAL BEHAVIOUR. There is no specific time throughout the year that *R. punctularia* reproduce. It is believed that different size and markings of female (distinct larger size of female can be seen in Fig. 3) play a role in the male's identification of it as a female (Ruela-Almonacid, 2007). Courtship behaviour involves the male pursuing the female of the same species and sniffing her cloaca. After this, the male then approaches her from the front and extends his head and withdraws it on both sides of her head. A non-consenting female would then attempt to bite the males head as it extends however in cases where the female chooses to accept the male, she remains quiet and immobile. The male then proceeds to her posterior and copulation can then follow (Ernst et al., 1997). Mating can occur on dry land or in water and males can mate with more than one female in its lifetime. The female can then lay multiple clutches of eggs.

PARENTAL BEHAVIOUR. The father has no role in the reproductive process after copulation. A female may lay from 1-2 brittle-shelled elongate eggs per clutch. A female may lay multiple clutches in a season. They then cover the eggs with leaf litter or conceal them within vegetation and roots (Ernst et al., 1997). Once covered the eggs are then abandoned by the mother. There is little or no evidence of parental care exhibited by the parents post hatch however as the species is communal the young may become part of the parents social groups after they hatch.

JUVENILE BEHAVIOUR. Once hatched, juveniles emerge from shell and do not display any feeding behaviour or interest in food until they have fully absorbed their yolk sacs (egg yolk remaining after hatching). When the yolk sac is absorbed, the young *R. punctularia* search for food and adequate and safe environments (shelter). Young also gravitate towards each other and other turtles of the same species however there are no findings of juvenile reliance on their mother or father.

ANTIPREDATOR BEHAVIOUR. Not much antipredator behaviour has been noted however *R. punctularia* is a docile species that rarely threatens other individuals but instead can be found to retract its head, legs and tail into shell defensively when they feel threatened (Fig. 6) which is also common for other turtles of the same family.

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Fig. 2. Plastron (underside) of *R. punctularia*.

[original picture]



Fig. 3. Sexual dimorphism in *R. punctularia*: female (left) and male (right).

[original picture]



Fig. 4. Social behaviour in *R. punctularia*.

[original picture]



Fig. 6. Antipredator behaviour in *R. punctularia*, retreating into shell when threatened.

[original picture]



Fig. 5. Feeding behaviour of *R. punctularia*. The female first bites the food (a) but due to its size, she is forced to use her forelimbs to manoeuvre it in her mouth (b).

[original pictures]