

## *Octopus briareus* (Caribbean Reef Octopus)

Order: Octopoda (Octopuses)

Class: Cephalopoda (Octopuses, Squid and Cuttlefish)

Phylum: Mollusca (Molluscs)



**Fig. 1.** Caribbean Reef Octopus, *Octopus briareus*.

[<http://reefguide.org/pix/reefoctopus4.jpg>, downloaded 29 March 2015]

**TRAITS.** The Caribbean reef octopus is distinguishable by its vibrant green and blue coloured sheen covering its body with occasional traces of brown-red spots (Fig. 1) (Kaplan, 1982). Large specialized cells in the skin known as chromatophores allows for the octopus to instantly change its colours (Snyderman and Wiseman, 1996). The body of the octopus grows to approximately 54 cm in length, with the longest arm being 5 times the length of its body (Kaplan, 1982). The male and female Caribbean reef octopus are similar in appearance. However, the male differs in that it has the hectocotylus (modified arm) which it uses to deposit a spermatophore (capsule containing sperm) in the female during mating.

**DISTRIBUTION.** Commonly found in the Western Atlantic and Caribbean, the Caribbean reef octopus is predominant in the Sweetings Pond on Eleuthera Island in the Bahamas (Aronson, 1986). There is no clear indication of voluntary migration of this species but forced migration may occur if the food source becomes scarce (Aronson, 1986).

**HABITAT AND ACTIVITY.** This species of octopus is rarely seen during the day but is more common at night in shallow saltwater reefs. The optimum temperature requirement for the species survival ranges from 20-30°C, which is also favourable to many other species of organisms that the Caribbean reef octopus preys on (Borer and Lane, 1971). Its common residing and hideout areas are in the natural crevices in the reefs (Brunt and Davies, 1994). This organism prefers the den to be dark with little or no illuminated organism sharing the habitat. These crevices are usually the starting point at which they forage their prey (Jordan, 2010). The Caribbean reef octopuses do not usually defend their territories but they may defend their immediate surrounding areas or sheltered spot (Iglesias et al., 2014). If they are disturbed by intruders or potential predators, they move from one sheltered home to another. Caribbean reef octopus quickly adjusts its colour to camouflage with its surroundings when it changes its location (Iglesias et al., 2014). The Caribbean reef octopus returns to the same den after hunting and only changes its den a few times over its life time (Snyderman and Wiseman, 1996).

**FOOD AND FEEDING.** Crabs and other crustaceans are the typical prey of the Caribbean reef octopus (Brunt and Davies, 1994). Although the Caribbean reef octopus spends most of its day hidden in dark crevices in the reef and is a nocturnal hunter, its keen eyesight helps it to spot prey such as small fishes, crabs, shrimp, lobsters and small molluscs in the distance (Brunt and Davies, 1994). After foraging its prey, it makes its way back to the hiding area. Studies have shown that their food intake is doubled with an increase in temperature of 10°C (Borer and Lane, 1971). This species of octopus have three ways of capturing its prey (Hanlon and Messenger, 1996). They forage their prey by throwing themselves over coral heads or crevices, spread a web-like formation to trap their prey (Fig. 2) and reach below the web with their arms to capture their food (Miller et al., 1971). It then devours the victims by pushing them into its mouth or beak area (Miller et al., 1971). This is known as the pounce attack (Hanlon and Messenger, 1996). The second method is side arm attack in which it stretches its arm closest to its prey, seizes it and rolls it under its body or web (Hanlon and Messenger, 1996). The third strategy the Caribbean reef octopus uses for hunting is creeping up on its prey, extending its two front arms and capturing its prey (Hanlon and Messenger, 1996). Because the octopus is so large in size, this means of acquiring food was the least successful (Hanlon and Messenger, 1996). Cannibalism is common for the Caribbean reef octopus and the smaller one is usually the one eaten (Ibáñez and Keyl, 2010; Iglesias et al., 2014).

**POPULATION ECOLOGY.** The Caribbean reef octopus, like most species of octopus, is usually solitary. It is commonly seen (Snyderman and Wiseman, 1996). Both male and female of the species are territorial (Iglesias et al., 2014). Both sexes do not reside together but occasionally meet for mating purposes (Hanlon and Messenger, 1996). Studies have shown that this species has a lifespan of 10-12 months. It was also observed that the rate of mortality was affected by the feeding patterns, for example sporadic feeding decreased the lifespan (Saxena, 2005).

**REPRODUCTION.** Mating occurs in the open marine environment and not sheltered. The male octopus mounts the female and mating usually occurs for an hour ((Hanlon and Messenger, 1996). The Caribbean reef octopus produces eggs (Fig. 3) that hatch in approximately 65 days at 23°C. There is no larval stage in the life cycle of the Caribbean reef octopus (Hanlon, 1977). The eggs hatch in approximately 80 days. A seam across the distal end of the egg forms. The posterior mantle of the hatching breaks the seam and is the first to eject out of the egg, and the head and arms ejects within fifteen seconds (Saxena, 2005). Research shows that the mean size of a juvenile Caribbean reef octopus is 5.5 mm mantle length, 15.0 mm total length, arm lengths ranging from 7.0 mm to 9.0 mm and a wet weight of approximately 0.095 g (Saxena, 2005).

**BEHAVIOUR.** The large hatching emerge as miniature adults (Saxena, 2005). They have full capabilities of crawling, swimming, inking, changing colours to camouflage and feeding (Saxena, 2005). The Caribbean reef octopus' body patterning and ability to change colour to camouflage in different environments act as anti-predatory responses (Aronson, 1991). It also uses it den as a hideout area (Aronson, 1991).

**APPLIED ECOLOGY.** The Caribbean reef octopus, *Octopus briareus*, is not currently listed in the IUCN. Sweetings Pond on Eleuthera Island in Bahamas, which hosts a large population of the Caribbean reef octopus, adheres to the coastal-marine conservation policies and protects its wildlife (Ray and McCormick-Ray, 2004).

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**Fig. 2.** Caribbean reef octopus hunting.

[<http://3219a2.medialib.glogster.com/kpage/media/be/be5d50d41385758f7115c50e6047217e2e80b518/caribbean-reef-octopus-800.jpg>, downloaded 29 March 2015]



**Fig. 3.** Caribbean reef octopus laying eggs.

[[http://marinebio.org/upload/\\_cephs/octopus-briareus/9.jpg](http://marinebio.org/upload/_cephs/octopus-briareus/9.jpg), downloaded 29 March 2015]