



Short Communication

Predation of *Boa constrictor* (Boidae) by *Cerdocyon thous* (Canidae) in Caatinga in Brazil

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ABSTRACT

There are few reports on the presence of snakes in the diet of the crab-eating-fox (*Cerdocyon thous*). Here we reported the predation of the crab-eating-fox over a boa (*Boa constrictor*) in the Caatinga biome, Brazil. Despite having a predominantly nocturnal habit, the crab-eating-fox was observed foraging during the day, a practice that is unusual and has little documentation about it. This report helps to understand the feeding behavior of the species, being the first to record the predation and activity of the crab-eating-fox over a boa under the daylight.

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Authors' Contribution

LAQL, TMAO and TG collected the data. AS, IT, RS and CC wrote the paper.

Key words

Boa, Crab eating fox, Feeding, Hunting, Semi-arid region

Cerdocyon thous (Linnaeus, 1966), the crab-eating-fox, has a wide geographic distribution in South America (Tchaicka *et al.*, 2007). It is tolerant to anthropic disturbances (Ferraz *et al.*, 2010; Beisiegel *et al.*, 2013), but intolerant to urbanization (Beisiegel *et al.*, 2013). It is present in all of Brazil's biomes and in an extensive variety of habitats (Cheida *et al.*, 2006; Beisiegel *et al.*, 2013). It has a nocturnal or twilight habit (Brady, 1979; Cheida *et al.*, 2006; Toishy *et al.*, 2013) and generally selects edges and environments that are more open than dense forests (Vieira and Port, 2007; Beisiegel *et al.*, 2013). It is a generalist and opportunistic species in terms of food, ranging from small mammals, amphibians, birds, reptiles, molluscs, fruits, eggs of various species, insects and carrion (Motta-Junior *et al.*, 1994; Cheida *et al.*, 2006; Rocha *et al.*, 2008; Beisiegel *et al.*, 2013).

There are reports about the presence of snakes in the diet of *C. thous*, however, among these, few snakes are identified up to species level, such as *Bothrops jararaca* (Gatti *et al.*, 2006; Rocha *et al.*, 2008), *Erythrolamprus poecilogyrus* and *Liophis poecilogyrus* (Rocha *et al.*, 2008), *Erythrolamprus miliaris* (Gonzalez *et al.*, 2016) and *Boa constrictor amarali* (Silva *et al.*, 2018). The other reports describe these snakes such as Squamata not identified (Facure *et al.*, 2003), Ophidia (Gatti *et al.*, 2006), Colubridae (Facure *et al.*, 2003; Bueno and Motta-Junior, 2004;

Gatti *et al.*, 2006; Rocha *et al.*, 2008), and Viperidae (Facure *et al.*, 2003; Rocha *et al.*, 2008).

Boa constrictor (Linnaeus, 1758) is a tropical snake and, in Brazil, is distributed from the humid tropical forest to the Caatinga (Amaral, 1977). It is considered a top predator, opportunistic and generalist (Monroy-Vilchis *et al.*, 2011). It is semi-arboreal and feeds on small vertebrates such as lizards, birds and mammals (Vangilder and Vitt, 1983; Martins and Oliveira, 1998; Cabral *et al.*, 2019).

Materials and methods

On January 19, 2021 at 8h: 17AM, researchers from the Laboratory of Ecology and Conservation of Wild Animals (ECOFAUNA) of the Federal Rural University of the Semi-arid (UFERSA), observed a specimen of a *C. thous* eating a *B. constrictor*. The registration took place in a fragment of the Caatinga located at the UFERSA's Rafael Fernandes Experimental Farm (05°04' S and 47°24' W), rural area of the Municipality of Mossoró, state of Rio Grande do Norte.

Results and discussion

During the five-minute observation period, it was possible to notice that the *C. thous* initially eat the snake's head. In a second moment, in the predation site, the *B. constrictor* carcass was found and it was noted that the specimen had no internal organs, being visible only the skin and bone structure.

Although *C. thous* is a predominantly nocturnal mammal (Cheida *et al.*, 2006; Gatti *et al.*, 2006), it was

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already active in the early hours of the day in a study by Dias and Bocchiglieri (2016) and Gonzalez *et al.* (2016), however, this pattern remains uncommon and poorly referenced in the literature. According to Silva *et al.* (2018), these species are influenced by seasonality in their diet, making the variety of items ingested flexible depending on the time of year, and there may also be adaptation of foraging times. Due to the seasonal influences that the Caatinga presents (Prado, 2003) and the flexibility in the use of habitat and diet (Beisiegel *et al.*, 2013), *C. thous* consumes the resources that are available in the environment. *C. thous* is described as an opportunistic hunter (Brady, 1979) and with solitary foraging behavior, although it can also occur in pairs or in small groups (Cheida *et al.*, 2006). Studies addressing only the composition of the diet have already demonstrated the opportunistic behavior of *C. thous* (Rocha *et al.*, 2008), as well as the ingestion of certain items according to availability and time of year (Raíces and Bergallo, 2010; Dias and Bocchiglieri, 2016).

The fact that the *B. constrictor* predation started by the head, may suggest a characteristic of defensive behavior by *C. thous*. In a predation record of *B. constrictor* by two *C. thous* in Brazil's Cerrado, it was observed that *C. thous*, sought to attack the snake's head, while *B. constrictor* tried to protect it (Silva *et al.*, 2018). In experiments carried out by França *et al.* (2017) with venomous snakes and mimetic species, it can also be observed that its predators initially attacked the head, probably to avoid possible injuries. *B. constrictor* can pose a threat to *C. thous* as this species can prey on medium-sized animals such as *Puma yagouaroundi* (Monroy-Vilchis *et al.*, 2011).

There are still few records reporting the predation of snakes by *C. thous* and the existing data are sub-sampled, being restricted to the level of order, suborder or family (Gonzalez *et al.*, 2016). By eating the snake's head first, *C. thous* tries to accomplish a lethal attack, since in the study by Silva *et al.* (2018) the predated boa tried to shrink as a defense mechanism, in order to protect its head.

The present record helps to understand ecological, conservationist and evolutionary aspects about the diet of *C. thous*, presenting the second predation record of *C. thous* on *B. constrictor*, being the first record of *C. thous* haunting alone. Additionally, it contributes to the knowledge of the diet of *C. thous* in the Caatinga, biome that occurs exclusively in Brazil.

Statement of conflict of interest

The authors have declared no conflict of interest.

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