

Field report

Pampas foxes as prey of yellow anacondas

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Abstract

Carnivore predation by other predators is rarely observed in nature. Here we describe two predation events and report a third one of adult pampas foxes being eaten by yellow anacondas in Corrientes, north east Argentina.

Introduction

The pampas fox *Lycalopex gymnocercus* is a medium-sized fox (4.6kg) whose geographical distribution comprises the south of South America from eastern Bolivia, western and central Paraguay, and southern Brazil, to Uruguay and northern and central Argentina (Lucherini and Luengos Vidal 2008). It lives in a variety of habitats including open forests, grasslands, marshes, coastal dunes and even agricultural and rangelands (Redford and Eisenberg 1992, Lucherini and Luengos Vidal 2008). The main threat to the pampas fox is from hunting, both for predator control (foxes are blamed for lamb losses in sheep breeding farms) and for the pelt trade (Lucherini and Luengos Vidal 2008, Macdonald and Sillero-Zubiri 2010). Little is known about natural causes of death, or the fox's potential predators. Fox remains have been found in puma *Puma concolor* excrements in National Park Lihue Calel (Argentina) and some cases of foxes killed by feral dogs have been cited (Pessino et al. 2001, Lucherini and Luengos Vidal 2008).

In this note we describe predation events of adult pampas foxes by yellow anacondas *Eunectes notaeus* in the Iberá Provincial Reserve and the Mburucuyá National Park (Corrientes province, Argentina).

Results

The first predation event took place on 8 October 2013 at 19:45h, during a nocturnal mammal survey in Estancia Yaguareté Corá (27°56'S, 57°00'W) in the Iberá Provincial Reserve. In the marsh vegetation at the water's edge, a yellow anaconda was observed, wrapped around a fox. The observation

was conducted by torch light. This fox was identified as a pampas fox by the colour of its back legs and tail. The fox appeared to be already dead at the time of the observation, and the snake was beginning to swallow it. Several caimans *Caiman yacare* were seen a short distance away but none of them approached the snake. The observation lasted 15 minutes but unfortunately no photographic or video record of the event could be obtained. Some days later we received information about a similar event, which happened in Estancia San Ignacio (27°49'S, 56°50'W), located at approximately 40km of the former Estancia (M. Blanco, pers. comm.).

The second event took place on 31 March 2017 in the Mburucuyá National Park at approximately 8:00h, in a short-grass area at one side of the entrance road to the Santa María Park Ranger Department (28°02'S, 58°05'W). A yellow anaconda was observed, mid-way through the constriction process of a pampas fox which appeared to be dead (Figure 1). Two adult foxes were circling the snake and harassing it by biting its tail while they vocalized. The snake reacted with sudden movements but without releasing its prey (Figure 2). The foxes ran away once the snake started to swallow the fox, beginning with its head (Figure 3). This process lasted an hour, after which the snake moved slowly towards a small nearby marsh. When its body was fully extended its total length reached 3.5m (Figure 4). [There is a video of this event <https://youtu.be/LDnvO4dE0LU>].

Discussion

There are no previous records of pampas fox predation by boas, although Almirón et al. (2011) suggest that foxes are potential prey of the Argentinian boa constrictor *Boa constrictor occidentalis*.

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Figure 1. A 3.5m long yellow anaconda in the constriction process of a pampas fox while observed by two other foxes in the Mburucuyá National Park, Corrientes, Argentina.



Figure 2. While harassed by one of the pampas foxes, the anaconda begins to position itself in order to swallow the captured fox, starting with its head.



Figure 3. The anaconda has already swallowed half the fox. Notice the jaws and body distension of the snake to swallow the prey.



Figure 4. The anaconda leaves the capture site after swallowing the fox completely. The swelling in the central part of the snake's body is due to the fox it has eaten.

The yellow anaconda, known as *curiyú* in north east Argentina, is the largest boa in size of the region, exceeding 4m long and weighing approximately 30kg (Ceí 1993, Waller et al. 2007). Its habits are mainly aquatic and it is found in large rivers and their flood plains, lagoons, swamps and marshes. This snake is one of the main predators in these environments, capturing a wide variety of prey: fish, large snakes e.g. *Hydrodynastes gigas*, young caimans *Caiman latirostris* and *C. yacare*, aquatic birds, and small- and medium-size mammals including crab-eating raccoons *Procyon cancrivorus*, crab-eating foxes *Cerdocyon thous* and young capybaras *Hydrochoerus hydrochaeris* up to 6kg (Strüssmann 1997, Waller et al. 2007, Miranda et al. 2017). As with other boas, the yellow anaconda hunts its prey by means of the “sit-and-wait” ambush technique. It kills the larger prey during constriction by significantly affecting the cardiovascular system of the prey, squeezing until circulatory arrest occurs (Boback et al. 2015).

However, it also eats eggs and even carrion, which means that it carries out an active search for food, or that it is an occasional predator (Strüssmann and Sazima 1991). The predation event in the Mburucuyá National Park happened in a short-grass area where the boa was visible and it is unlikely that it was unnoticed in an attempt to ambush the fox. However, as the initial strike was not observed, it cannot be confirmed whether it was an ambush or an opportunistic capture. Predation is rarely observed in nature; these records and documentation are important because they contribute to the knowledge of the ecology of the species involved.

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Biographical sketch

Mario Chatellenaz is a zoologist in the Universidad Nacional del Nordeste (Corrientes, Argentina). He is currently studying the effects of forestations of exotic species and other crops on birds and mammals in north-east Argentina.

Gisela Müller and Gilberto Vallejos are park rangers working in the Administration de Parques Nacionales of Argentina. They carry out fieldwork on subjects regarding control and surveillance, environmental monitoring and research assistance in protected areas of the national system.