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Distribution Update

Northern extension of records of the crab-eating fox in Brazil

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Abstract

The crab-eating fox *Cerdocyon thous* is a neotropical canid occurring in northwestern and southern South America. Here we report the first records of the species in the Cabo Orange National Park, Amapá state, north Brazil. These records from the eastern part of the Guiana Shield suggest a northward extension of the core southern distribution.

Introduction

The crab-eating fox *Cerdocyon thous* (Linnaeus, 1766) is a medium-sized neotropical canid. The species has an extensive distribution in the savannas, shrublands and forests of South America, with core northern distribution from western Colombia to the coastal and mountain regions in northern Colombia and Venezuela (Figure 1). While it has not been recently confirmed in northeastern South America (Suriname and French Guiana), it has been stated to be common in the northern neotropical savannas (Husson 1978), a common habitat type in this region. The core central or southern distribution of the species is restricted to lowland Amazon forest northeast of the Amazon and Negro Rivers, southeast of the Amazon and Araguaia Rivers, and south of Beni River in Bolivia (Figure 1). It also extends from the Bolivian and Argentinean foothills, to the Atlantic forests of eastern Brazil and Argentina, and south to the province of Entre Ríos, Argentina (Berta 1987, Courtenay and Maffei 2008; Figure 1). The two core distribution areas are associated with genetic and morphological signatures, likely associated with habitat history and influenced by the Holocene Glacial Maximum in South America (Tchaika et al. 2007, Machado and Hingst-Zaher 2009).

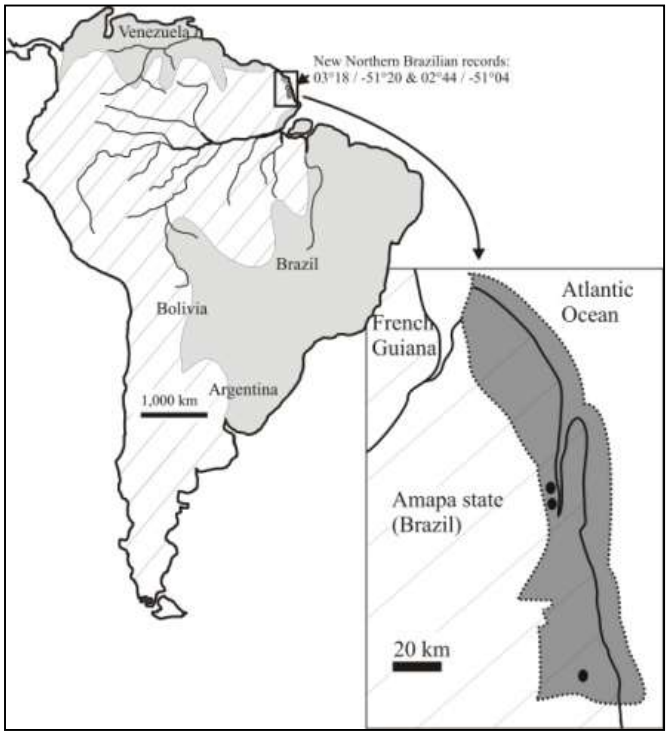

Figure 1: Currently recognized distribution of the crab-eating fox (light grey), from Courtenay and Maffei 2008. In detail: location of Cabo Orange National Park (dark grey); black dots: new records of the crab-eating fox.

Methods

In 1980 the Cabo Orange National Park was created on the eastern part of the Guiana Shield within the Amazon biome in the state of Amapá, Brazil. Its 619,000ha area protects large floodplains covered with forests and open habitats, and is surrounded by coastal mangrove areas influenced by the tides of the Atlantic Ocean and the mouth of the Amazon River (Figure 1). During the dry season of 2010 (August 2010 to January 2011), we conducted a camera trap study in the northern part of the Cabo Orange National Park, to assess richness of mammals in the park. Twenty-eight digital Reconyx 500© cameras and eight

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conventional model CamTrakker© were installed in the savanna along the Cassiporé River and in gallery forest along small tributaries, over 70 days. A mean distance of 1.9km was set between cameras.

Results

Five pictures of crab-eating foxes were obtained on two different cameras spaced 2km apart at the following coordinates: 3.18°N / 51.27°W and 3.19°N / 51.26°W (Figure 2). These sites were located 200m from the Cassiporé River on small trails used by hunters in a riparian forest joining two savanna patches. All pictures were taken at night or before dawn (1930h, 2103h, 2300h, 0221h, 0540h). In four of the pictures only one animal was featured, yet the fifth picture showed two crab-eating foxes, presumably a female and her young. According to local people living close to this part of the Cabo Orange National Park, the species is not rare in the area.

Figure 2: Picture of a crab-eating fox in the Cabo Orange National Park, with an unidentified frog in the mouth (B. de Thoisy / PNCO ©, photo with a CamTrakker® camera).

Independent of this camera trap survey, another record of the species was made in the southern part of the Cabo Orange National Park (2.44°N / 51.04°W) when an animal was sighted along a car track crossing herbaceous savanna during the night (2230h). This part of the Park is similar to the northern portion of Cabo Orange National Park, with habitat dominated by savanna surrounded by dense forest, but it is drier due to the absence of large rivers in the area. While this sighting was further south than the five camera trap photos, it is further north than the records previously reported in the species' distribution (Courtenay and Maffei 2008). Therefore, these six records of the crab-eating fox in the northern part of the Amapá State represent an increase in the distribution of the species in Brazil.

Other mammals photographed with the camera traps in northern Cabo Orange National Park were: jaguar *Panthera onca*, puma *Puma concolor*, ocelot *Leopardus pardalis*, jaguarundi *Puma yagouaroundi*, tapir *Tapirus terrestris*, agouti *Dasyprocta leporina*, paca *Cuniculus paca*, grey and red brocket deer *Mazama gouazoubira* and *M. americana*, common and four-eyed opossums *Didelphis marsupialis* and *Philander opossum*, coati *Nasua nasua*, and spiny-rats *Proechimys sp*.

Discussion

The crab-eating fox is a generalist species, using many types of landscapes and habitats, including marshlands, savannas, shrublands, woodlands, dry forests, semi-deciduous forests, and gallery forests (Berta 1982, Medel and Jaksic 1988, Maffei and Taber 2003, Rocha et al. 2004, Vieira and Port 2007). On the northern plains of Amapá, the Cabo Orange National Park shows the transition between the Amazon rainforest and the Atlantic Ocean, with mosaics of dry savannas and small forest patches connected by riparian gallery forests. According to camera-trap data, direct observations and track records, these riparian areas are extensively used by a wide spectrum of vertebrates and likely constitute key areas for carnivores in hunting, movements between core areas among home ranges, and dispersal. In addition, gallery forests in the area represent shady retreats with permanent water during the dry season when fires are common in the savannas.

In contrast to the great expanse of open habitat seen in northern Amapá, the eastern part of the Guiana Shield (Suriname, French Guiana, western Amapá) has savannas restricted to the coastal area (Gond et al. 2011). Although the distribution of the crab-eating fox may include the Guiana Shield (Berta 1982), presence of this canid in French Guiana is not confirmed despite intensive efforts to investigate the presence of this species (B. de Thoisy and F. Catzeflis, pers. obs.). On the other hand, few field studies have been performed in the northern part of the Amapá state and we suggest a wider distribution than previously assessed. Interestingly, a study of mitochondrial DNA variation showed an expansion signature in northern Brazilian populations and a high number of migrants from south to north (Tchaika et al. 2007). The presence of the species in northern Amapá can corroborate this pattern. Consequently, it is expected to be a northward extension of the species' core central or southern distribution, rather than an eastward extension of the species core northern distribution (Figure 1).

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Biographical sketches

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