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First recorded predation of a Yacaré Caiman, *Caiman yacare* (Daudin, 1801), by a Tuiuiú, *Jabiru mycteria* (Lichtenstein, 1819), in the Southern Pantanal, Brazil

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Understanding species' trophic interactions and dietary patterns is crucial, as these provide insights into their ecological roles and adaptive strategies (Roman-Palacios et al., 2019). Gathering information on trophic ecology is vital for addressing knowledge gaps in biodiversity and gaining a deeper understanding of ecosystem dynamics (Hortal et al., 2015). The habitat in which both predator and prey reside can significantly influence these interactions. Environmental factors, such as resource availability (Michelin et al., 2020), habitat structure (Choi et al., 2020), and climate conditions (Ceron et al., 2019) can shape the species feeding behaviour and dietary preferences. Additionally, the ontogeny of the predator plays a crucial role in its dietary habits (Samplonius et al., 2016). As predators develop, their dietary needs and hunting capabilities often change, leading to different prey preferences between juvenile and adult stages (Polis, 1984). Similarly, the vulnerability of potential prey can vary throughout their life stages, with juveniles often being more susceptible to predation due to their smaller size, limited mobility, or lack of defensive adaptations (Werner and Gilliam, 1984).

In the Pantanal, an ecoregion well known for its high animal abundance, some of the largest populations of various species are found. Among these are the Tuiuiú, *Jabiru mycteria* (Lichtenstein, 1819), and the Yacaré Caiman, *Caiman yacare* (Daudin, 1801), both of which are particularly abundant in the Pantanal, where this ecoregion harbours their largest populations (Campos et al., 2015; Mourão et al., 2010). The Tuiuiú, also known as the Jabiru Stork, is the tallest flying bird in the Americas and is commonly observed in wetland habitats throughout the Pantanal. While it is known for its piscivorous diet, feeding on fish and small amphibians (Sick, 1997), records of predation on larger vertebrates are rare. *Caiman yacare*, a common inhabitant of the Pantanal, is an apex predator when adult, typically preying on fish, birds, and small mammals (Campos et al., 2013). We report on an observation of predation by a Tuiuiú upon a juvenile Yacare Caiman.

The predation event was observed on 26 August 2024, at 07:39 h, near a pond adjacent to the Paraguay River (17.99337ºS, -57.44532ºW) in the Southern Pantanal opposite the traditional community of Barra do São Lourenço community, which coexist with Pantanal's biodiversity. On the day of the observation, the sky in the region was obscured by smoke from nearby fires, and the air temperature was approximately 25 °C, despite the early hour. The area is characterised by high fish abundance (Petrere et al., 2002), providing an ideal feeding ground for many aquatic bird species. During a routine field survey, we observed a *J. mycteria* engaging in predatory behaviour towards a juvenile *C. yacare* (Fig. 1). There were two individuals of Tuiuiú standing at the edge of the pond. One of them used its beak to grasp the caiman, which was estimated to be about 60 cm in length. The bird exerted significant force

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to subdue the caiman, throwing it up in the air before eventually consuming it. This predatory event lasted approximately 15 minutes and was uninterrupted by other wildlife. Considering that hatchlings of *C. yacare* usually sleep close together during the day and separate from their mother during the night to avoid predation (Cintra, 1989), and since the predation that we recorded was in the morning, it is likely that the mother was nearby and sleeping.

Although previous observations have mentioned *Jabiru mycteria* as a predator of *Caiman yacare* hatchlings, one anonymous account from the northern Pantanal (Cintra, 1989) and another by Gorzula and Seijas (1989), which refers to *J. mycteria* as a predator of hatchlings, albeit misidentifying the species as *Caiman crocodilus* and providing no locality, none of these reports included direct evidence or documentation of such predation events. They merely cited the stork as a potential predator. The observation provides the first documented evidence of *J. mycteria* preying on *C. yacare*, expanding our understanding of the species' dietary habits. The predation of a juvenile caiman by a stork, while unusual, underscores the opportunistic nature of the Tuiuiú's feeding behaviour. Adult caimans are rarely preyed upon, with documented cases of predation typically involving large predators like jaguars (da Silveira et al., 2010). In contrast, eggs (Campos and Mourão, 2015) and juveniles of crocodilians are more vulnerable and are more frequently targeted by a wider range of predators (Somaweera et al., 2013), such as Anaconda (*Eunectes notaeus*), Great Black Hawk (*Buteogallus urubitinga*), and Crested Caracara (*Polyborus plancus*) (Cintra, 1989). On 31 August 2024, we searched for records of *J. mycteria* on the citizen science website WikiAves (https://www.wiki-aves.com.br/). This search yielded 6997 records of the bird, including 1120 instances of feeding. Most of these feeding records did not provide detailed information about the exact prey items. Still, it was generally possible to identify the prey group: 89.25% were fish, 4.30% were snakes, 1.08% were snails, 1.08% were frogs, 1.08% were crabs, and 3.23% were unidentified. To the best of our knowledge, our observation of the Tuiuiú attempting to consume the Yacaré Caiman is

Figure 1. Predation attempt of Tuiuiú Stork (*Jabiru mycteria*) upon Yacaré caiman (*Caiman yacare*) in the Pantanal, municipality of Corumbá, state of Mato Grosso do Sul, Brazil. Photos by P. I. Martins.

the first recorded instance of a crocodilian being a food item for *J. mycteria*. The large size of the Tuiuiú and its capacity to prey on smaller reptiles may make such interactions more common than previously recognised.

This observation not only provides new insight into the feeding behaviour of *J. mycteria*, but also raises questions about how environmental stressors may influence predator-prey dynamics in the Pantanal. The region is currently experiencing the most severe drought ever documented, leading to a reduction in available water bodies for aquatic animals (Libonati et al., 2022). Additionally, widespread fires are putting further pressure on Pantanal organisms (Tomas et al., 2021), forcing them to seek out the remaining water sources. These conditions may cause increased interactions among species as aquatic and semi-aquatic animals gather in larger aggregations. While this predation event may be rare, such interactions could become more frequent under the current environmental pressures, altering the ecosystem's balance in unforeseen ways.

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