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Cannibalism in *Caiman latirostris* (Daudin, 1802) (Crocodylia: Alligatoridae) in a permanent pond from Northeastern Brazil

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Abstract.

Cannibalism is an intraspecific predation behavior widespread among vertebrates and invertebrates, including crocodilians. However, records for the broad-snouted caiman (*Caiman latirostris*) remain scarce. We report a direct observation of cannibalism in a pond in Itapororoca, Paraíba, northeastern Brazil, in February 2025. An adult (~1.9 m total length) preyed upon a juvenile conspecific (~0.8 m). This record contributes to the limited knowledge of cannibalism in *C. latirostris* and highlights the value of natural history observations for understanding intraspecific interactions in crocodilians.

Keywords. Alligatoridae, intraspecific predation, feeding behavior, natural history, Neotropical crocodilian.

Cannibalism is an intraspecific predation behavior in which individuals partially or entirely consume conspecifics (Fouilloux et al., 2019; Bose, 2022; Vijendravarma, 2023; Falcão et al., 2025). This behavior is widespread among vertebrates and invertebrates (Allen et al., 2020; Fedurek et al., 2020; Javidpour et al., 2020; Vasconcelos and Brandao, 2022) and has been explained by a range of adaptive hypotheses, including direct nutritional gain and reduced intraspecific competition, although it may also carry costs such as injury risk, exposure to parasites or pathogens, and, in filial cases, loss of the cannibal's own reproductive investment (Bose, 2022). In the order Crocodylia, cannibalism has been reported across multiple species and ecological contexts, often associated with factors such as food limitation, high population density, territoriality, and size asymmetry (Caut et al., 2019; Campos and Mourão, 2021; Ugemuge et al., 2023). However, records of cannibalism in the broad-snouted caiman, *Caiman latirostris* (Daudin, 1802), remain scarce. Here, we report a direct observation of cannibalism in which an adult preyed upon a juvenile conspecific in a freshwater lagoon in northeastern Brazil.

C. latirostris is a medium-sized crocodilian, with individuals longer than 2.0 m currently rare in the wild, widely distributed in central and eastern South America, occurring across Brazil, Argentina, Uruguay, Paraguay, and Bolivia (Verdade et al., 2010; Leiva et al., 2019; Siroski et al., 2019). The species primarily inhabits lentic freshwater environments such as ponds, marshes, and slow-flowing rivers, often associated with dense riparian vegetation and, increasingly, urban wetlands (Marques et al., 2020; Mascarenhas-Junior et al., 2021). It is a generalist and opportunistic predator that exhibits an ontogenetic dietary shift, with juveniles feeding mainly on invertebrates and adults incorporating a higher proportion of vertebrates such as fish, amphibians, and reptiles (Borteiro et al., 2009; Marques et al., 2013). Field observations of predation events involving conspecifics remain limited. This is likely related to the cryptic and/or nocturnal hunting behavior reported for crocodilians, e.g., the American alligator,

Alligator mississippiensis (Daudin, 1801) (Somaweera et al., 2020), a trait also documented in *C. latirostris* during predation on the non-native Nile tilapia, *Oreochromis niloticus* (Linnaeus, 1758), in an urban stream in northeastern Brazil (Mascarenhas-Junior et al., 2025).

On 22 February 2025 at 14:35 h, we recorded a cannibalistic event involving *C. latirostris* in a permanent pond in the municipality of Itapororoca, Paraíba state, Brazil (06°49'37.1" S; 35°14'53.1" W; elevation: 66 m). Environmental conditions were 32 °C with partial cloud cover. An adult individual of ~1.9 m total length captured a juvenile of ~0.8 m total length at the pond margin, seizing it in the ventral cervical region. The adult then dragged the juvenile into the water and performed a vigorous lateral head thrash, resulting in decapitation. The body of the juvenile sank and was not recovered, whereas the adult consumed the head (Fig. 1). The entire event lasted 54 seconds, and no additional prey items were observed in the vicinity. Neither individual was captured or handled during the observation, precluding confirmation of sex, and no visible external signs of illness, injury, or malnutrition were noted in either the adult or the juvenile. A second adult, of similar size to the cannibalistic individual, was observed basking ~8.0 m away throughout the event, and vocalizations resembling hatchling distress calls were heard intermittently from dense marginal vegetation, although the associated brood could not be located or counted, precluding a reliable estimate of local population density.

The observed lateral head thrashing is consistent with known prey-processing behaviours in crocodylians, used to dismember relatively large prey items (Njau and Blumenschine, 2006), with such lateral shaking and rotational movements facilitating fragmentation prior to ingestion (Caldicott et al., 2005). Cannibalism in Caiman species has been described as largely opportunistic and influenced by environmental conditions. In the southern Pantanal, Brazil, Campos and Mourão (2021) reported eight cannibalism records in *Caiman yacare* (Daudin, 1802), during an extreme drought, when habitat contraction led to

unusually high local densities. In the present case, we found no evidence of habitat contraction or water scarcity at the study site.

The relatedness between the two individuals could not be confirmed, precluding a definitive classification of this event as filial or non-filial cannibalism. In *C. latirostris*, parental care documented in captivity lasted 17–33 days (Carl and Darlington, 2017), whereas in free-ranging populations parental care is restricted to nest maintenance, defense against predators, assistance with hatching by opening the eggs, and transport of hatchlings to the water (Barboza et al., 2024), a stage that the juvenile involved in this study (~0.8 m total length) had already surpassed. Hatchlings of *C. latirostris* reach approximately 38–46 cm in total length within their first year of life (Pina et al., 2007), indicating that the consumed individual was likely 3–4 years old. The presence of a second adult nearby and hatchling distress calls detected elsewhere in the pond suggest the possible presence of a recent brood in the area. We therefore consider this event to represent opportunistic cannibalism. This record contributes to the knowledge of cannibalism in *C. latirostris* and highlights the importance of natural history observations for understanding intraspecific interactions in crocodilians.

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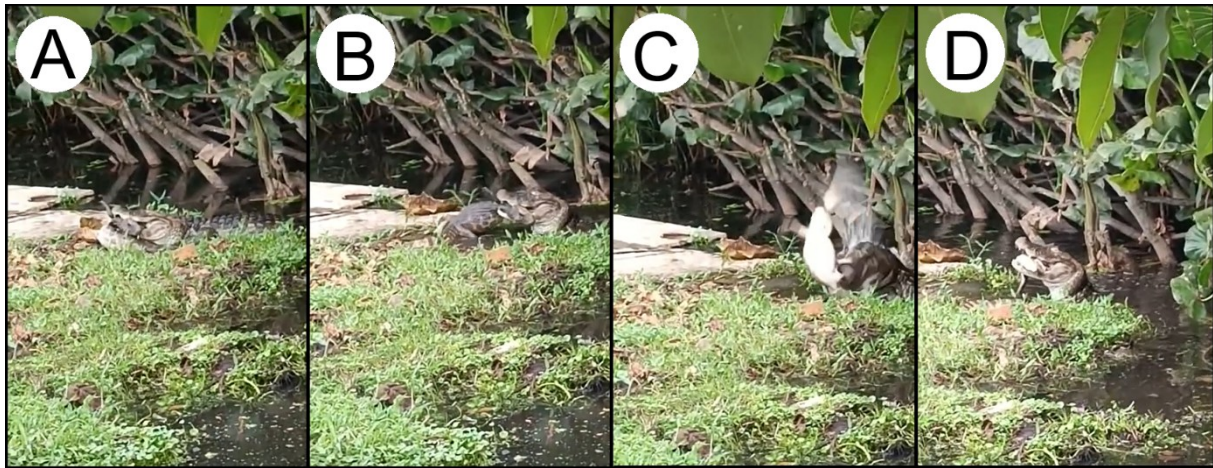
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171

172 **Fig. 1.** Cannibalistic event in *Caiman latirostris* in a pond in Itapororoca, Paraíba, Brazil: (A)

173 adult seizes a juvenile at the water's edge; (B) juvenile is dragged into the pond; (C) lateral

174 head thrash results in decapitation; (D) adult consumes the head.