

Harpy Eagle (*Harpia harpyja*) predation on an Infant brown Capuchin Monkey (*Cebus apella*) in the Brazilian Amazon

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Recebido em 06/12/2009. Aceito em 14/09/2010.

RESUMO: Predação de filhote de macaco-prego (*Cebus apella*) por Gavião-Real (*Harpia harpyja*) na Amazônia brasileira.

Descrevemos o primeiro registro de predação bem sucedida de macaco-prego (*Cebus apella*) pelo Gavião-real (*Harpia harpyja*) na natureza, ocorrido em uma ilha artificial localizada no lago da Hidrelétrica de Balbina, Amazônia Central. A presa foi um filhote capturado nas costas de um indivíduo adulto, fato inédito na literatura. Apesar de ser área geográfica natural de ocorrência de *Harpia harpyja*, este é o primeiro registro da espécie na área após a mudança na configuração da paisagem, demonstrando a utilização do habitat fragmentado pela espécie.

PALAVRAS-CHAVE: *Harpia harpyja*, *Cebus apella*, predação, dieta, Amazônia.

KEY-WORDS: *Harpia harpyja*, *Cebus apella*, predation, diet, Amazon.

The Harpy Eagle (*Harpia harpyja*), the most powerful raptor in the world, is found in neotropical forests in both Central and South America (Brown and Amadon 1968). Small- to medium-sized mammals, most of which are arboreal, comprise their primary prey (Peres 1990, Ferrari and Port-Carvalho 2003, Piana 2007). Eagles are predators of primates (Freese and Oppenheimer 1981), yet predation events are rarely observed (Cheney and Wrangham 1987). Predation, or attempts at predation, on neotropical primates has been reported for howlers (Eason 1989), bearded sakis (Martins *et al.* 2005) and capuchins (Touchton *et al.* 2002), with successful predation only observed on howlers (Peres 1990; Sherman 1991). Capuchins have been found as remains of prey in nests (Rettig 1978, Izor 1985, Piana 2007, Muñoz-López 2008), yet, they have never been seen to capture capuchins. Here we describe the first observed predation on an infant Capuchin Monkey (*Cebus apella*) by a Harpy Eagle.

The attack was observed on one of the nearly 3,500 islands in the Balbina Hydroelectric Reservoir, within the

Uatumã Biological Reserve, Amazonas, in the central Amazon of Brazil (Figure 1). On 7 May 2008, we were working on the island (1,815 ha, 01°36'19"S, 59°37'34"W) when a heavy rain stopped all work. As the rainfall diminished we observed a nearby (~ 20 m away) group of 12 capuchin monkeys. The group comprised eight adults, two sub-adults and two infants carried on the backs of two of the adults. The capuchins were in the middle canopy (20-25 m) and they were surprised at 15:14 h by an adult Harpy Eagle that suddenly appeared from the northwest and seized one of the infants from the back of an adult female. The event was followed immediately by intense long-calling by all members of the group. The presumed mother of the infant started moving rapidly between the middle and low canopy, calling frequently. We watched the eagle carry the infant away.

The island of the attack has a complex forest. When compared with 19 other islands, this island had the greatest canopy height (27 m), a very low percentage of open canopy (< 1%) and the greatest density of large trees (diameter at breast height – DBH > 10 cm, 419 individuals/

ha). The complex structure of the island seems to provide undisturbed habitat for Harpy Eagles.

This predation event is interesting for several reasons: 1) It is the first confirmed record of a successful

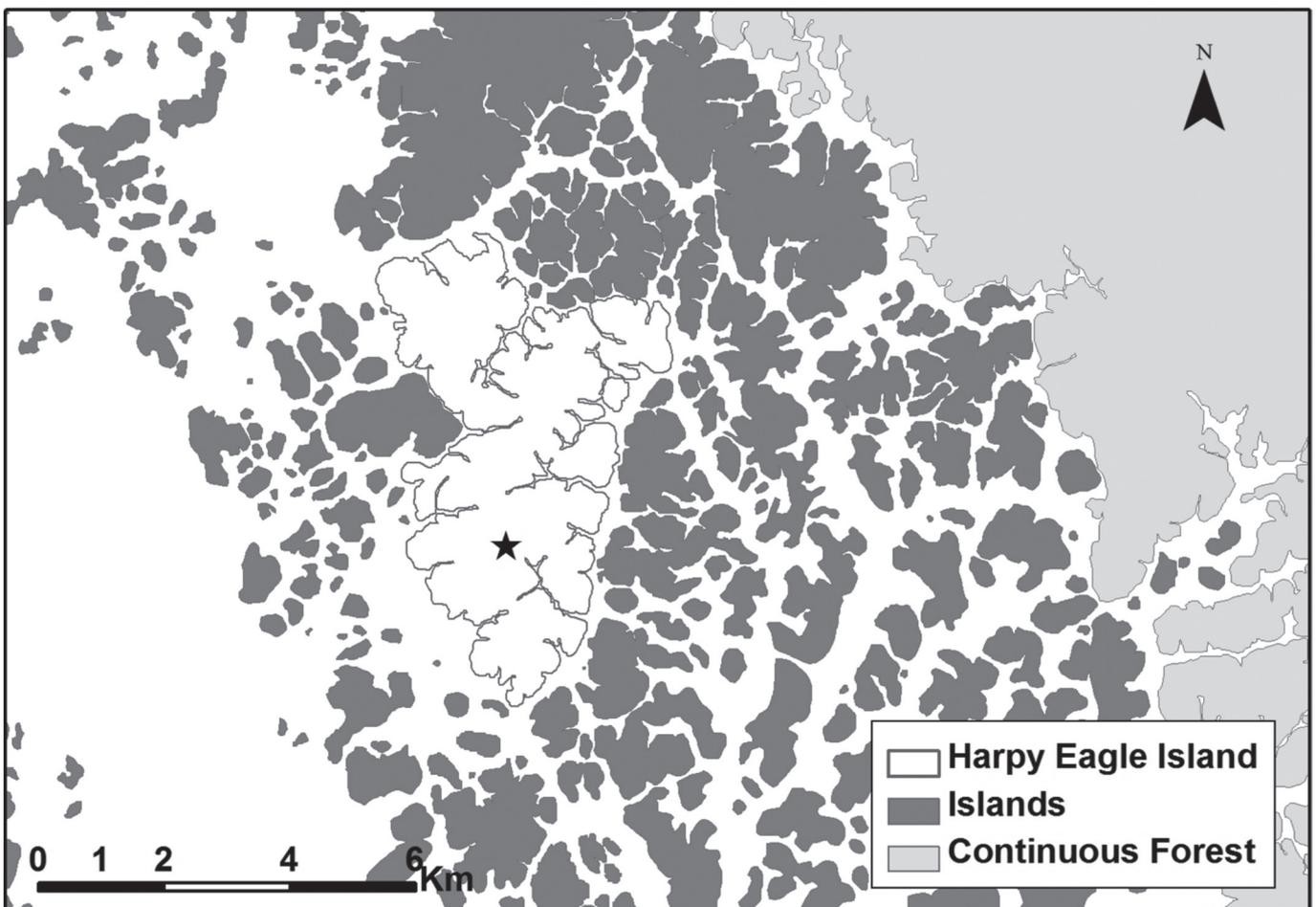


FIGURE 1: Location of the observation (indicate by a star) of predation on infant Capuchin Monkeys by a Harpy Eagle in the Balbina islands.

Harpy Eagle attack on a Capuchin Monkey, 2) the infant prey was taken from the back of an adult and 3) the predation event occurred on an island created by the flooding of natural forest following the construction of a hydroelectric dam. Specifically, the episode occurred in one of the biggest islands of the reservoir, which may indicate that this site is an important habitat to sustain both prey and the predator. Prey remains in harpy nests indicate that primates are the second most commonly consumed prey, after sloths (Rettig 1978, Touchton *et al.* 2002, Piana 2007, Muñiz-López 2008). Among primates, medium and large-bodied species are most reported, probably because they provide a better yield in relation of energy per unit time and are easier to be captured, as the eagles can detect them through visualization, by noise and sounds, or even by chance encounter (Touchton *et al.* 2002). Here, the prey was an infant that weighed around of 260 g (Napier and Napier 1967) – lighter than the range of all animal remains (0.5-3.2 kg) reported by Rettig (1978). However, we do not know whether the infant or the mother was the intended prey, but the observation might suggest that infants are easier prey and so their selection should receive more study.

Despite the loss of an extensive area by flooding, the habitat fragmentation process formed islands with abundant primates. The capuchin was the second most commonly seen and most abundant primate on twenty islands (Benchimol 2009). Foraging patterns by eagles are directly or indirectly affected by prey species abundance (Touchton *et al.* 2002). An attack by a Harpy Eagle on a collared peccary was suggested to be due to the fact that the prey was very abundant (Ferrari and Port-Carvalho 2003). The preference for arboreal mammal prey, combined with abundant primates on the Balbina islands may offer Harpy Eagles an important resource and thereby may sustain an eagle population in the reservoir landscape.

While Harpy Eagles occurred in the pristine forest before the construction of the dam (Willis and Oniki 1988), this is the first record of the species on the Balbina islands some 20 years after the formation of the reservoir. The eagle is considered an indicator of intact ecosystems (Albuquerque 1995) and is ecologically important as a keystone predator (Touchton *et al.* 2002). Therefore, this report implies that these islands (at least the larger islands) are viable habitat for Harpy Eagles and the islands should be protected through conservation actions within the reserve.

ACKNOWLEDGMENTS

This study was supported by the Wildlife Conservation Society (WCS), Fundação O Boticário de Proteção à Natureza, Cleveland Metroparks Zoo/Cleveland Zoological Society, Idea Wild, IBAMA and the INPA graduate programme in Ecology. M.B. was funded by a Brazilian Science and Research Council (CNPq) studentship. We especially thank S. Sales, R. Nascimento and P. Santos for their help with the field work. We are grateful to D. Teles, F. Röhe and two anonymous reviewers for their constructive comments on the manuscript and H. Wright III for his help with the English.

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