Coragyps atratus (BECHSTEIN, 1793): A NEW TYPE OF NESTING IN AN URBAN AREA OF PELOTAS, SOUTHERN BRAZIL

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ABSTRACT

Coragyps atratus is a species of New World vulture belonging to the *Cathartiformes* order. Its geographical distribution comprises urban areas from the South of North America, Central America, and South America to Tierra del Fuego in Argentina. This species is increasingly adapted to live close to human concentrations, benefiting from the food supply due to the incorrect disposal of organic waste, therefore, these factors contributed to the population increase. *C. atratus* are common near urban areas and can lead to several problems, such as damage to urban architecture, including historic buildings. However, *C. atratus* provides invaluable ecosystem services, increasing the flow of nutrients through food chains and reducing the transmission of infectious diseases through carcass removal. *C. atratus* uses a mosaic of habitat types to build its nests, even in urban environments. We describe here an unconventional case of nesting by *C. atratus* in a building in an urban area in the municipality of Pelotas, Rio Grande do Sul, Brazil.

Keywords: *Coragyps atratus*. Nests. Urban buildings. Black vulture.

Black vultures, *Coragyps atratus* (Bechstein, 1793) (*Cathartiformes*, *Cathartidae*), obligate scavengers, provide invaluable ecosystem services by enhancing the flow of nutrients within food webs and reducing transmission of infectious disease through the removal of carrion. Specialized in carcass consumption, vultures are adapted to detect and remove carcasses from landscapes more efficiently than any other terrestrial vertebrate scavenger (BYRNE et al., 2019). Black vultures, preferentially use a mosaic of habitat types: roosts and nests often are in dense, undisturbed forests, whereas pastures, fields, and other open areas are preferred for foraging, however it is possible to find them in urban environments, and their populations have grown significantly in recent years (HOLLAND et al., 2017). The female lays two or three eggs on the ground in a wooded area or in a hollow log or other cavity. The egg is oval and on average measures 7.56 cm × 5.09 cm or 2.98 in × 2.00 in (DE VAULT et al., 2019). Both parents incubate and feed the young, regurgitating food at the nest site. Most birds construct nest structures seeking a thermoregulatory function for eggs and later for the young, which are key to successful bird breeding. Though not having any natural predators of adult birds, they have become scarce in some areas due to lack of suitable nesting habitat, as a result, they seek safe nesting sites in this new environment, such as urban settlements. When these sites are scarce, birds seek good feeding conditions and/or other factors that may induce their colonization, even if nesting sites are not ideal as urban buildings under construction (DE VAULT et al., 2004). We describe here an unconventional case of nesting in a human-made building by black vulture in an urban area of the municipality of Pelotas, Rio Grande do Sul state, Brazil (31°46'10.3" S and 52°20'33.10" W).

On August 14th of 2018, in a field expedition for research purposes, it was found a black vulture nest containing two eggs and one adult with unidentified sex (Figure 1). Based on photographs, these eggs measured approximately 7 cm x 5 cm. Due to the approach of the field team, the adult began an avian mobbing that consisted of warning signs like regurgitation and wing flapping, which in birds is a sign of nervousness and function as an intimidation factor (CURIO et al., 1978), therefore the measurements of the eggs were estimated. The nest was found in an under construction building at an altitude of 76 meters, located in the center of the urban area of Pelotas city (Figure 2).

Figure 1 - Accidental discovery of a black vulture nest in Pelotas, Rio Grande do Sul, Brazil. A: Adult black vulture with unidentified sex in a state of alert near the nest. B: Nest containing two eggs and one adult black vulture with unidentified sex present.

Figure 2 - Map of South America showing Brazil and Rio Grande do Sul state (RS) locations. Adapted from: Cortez and Silveira (2008). The blue marker shows the location of the black vulture nest in the center of the urban area of Pelotas city, RS, Brazil.

On the second visit on September 19th of 2018, the two juveniles had already hatched and presented yellowish plumage (Figure 3). The last visit was made on November 1st of 2018, and only one of the juveniles was found on the spot. It was assumed that the disappeared black vulture puppy has been predated or has fallen, because the walls have not been completely built.

Figure 3 - Two juvenile black vultures with yellowish plumage.

Around the building, there are species of predatory birds such as *Circus buffoni*, *Rupornis magnirostris* and *Caracara plancus* (SACCO et al., 2013) and domestic cats, probably due to the high population of domestic pigeon, *Columba livia*, in the central area of the city. When the ideal sites are scarce, birds seek good feeding conditions and/or other factors that may induce their colonization, even if nesting sites are not ideal as urban buildings under construction (HOLLAND et al., 2017). However, in a new visit on September 2019, the construction of a new nest in the same area was observed. These reports of black vultures nesting on human construction might indicate that these species may exhibit behavioral plasticity with regard to selection of a nest structure. When suitable human made building are available, this plasticity may allow black vultures to overcome a shortage of natural nest sites. The fact that the black vultures chose this site for its nesting was exceptional in this area. After research and consultation with experts on this species, no previous was found record of this kind of nesting site for black vultures in the municipality of Pelotas. Organic waste is one of the most important anthropogenic food subsidies used by different species (PLAZA; LAMBERTUCCI, 2017). However, there is little information about the health impact that rubbish dumps produce on species foraging on these sites. Foraging in organic waste could be

considered beneficial for black vultures because they increase body mass and parameters associated to nutritional status like calcium and hematocrit. Nesting in buildings might be a strategy for protecting juveniles as well as facilitating access to food sources such as existing garbage dumps of organic waste in the municipality. These reports of black vulture nesting on human structures might indicate that these species may exhibit behavioral plasticity with regard to selection of a nest structure. This is the first record of a nest of the black vulture on a human-made structure in Southern Brazil.

Coragyps atratus (BECHSTEIN, 1793): NIDIFICAÇÃO EM ÁREA URBANA DO MUNICÍPIO DE PELOTAS, SUL DO BRASIL

RESUMO

Coragyps atratus é uma espécie de abutre do Novo Mundo pertencente à ordem *Cathartiformes*. Sua distribuição geográfica compreende áreas urbanas do sul da América do Norte, América Central e América do Sul até a Terra do Fogo na Argentina. Esta espécie está cada vez mais adaptada a viver perto das concentrações humanas, beneficiando-se do suprimento de alimentos devido ao descarte incorreto de resíduos orgânicos, portanto, esses fatores contribuíram para o aumento da população. *C. atratus* são comuns nas proximidades de áreas urbanas, podendo levar a vários problemas, como danos à arquitetura urbana, incluindo edifícios históricos. No entanto, *C. atratus* fornece serviços ecossistêmicos inestimáveis, aumentando o fluxo de nutrientes nas cadeias alimentares e reduzindo a transmissão de doenças infecciosas através da remoção de carcaça. *C. atratus* usa um mosaico de tipos de habitat para construir seus ninhos, inclusive em ambientes urbanos. Descrevemos aqui um caso não convencional de nidificação por *C. atratus* em um prédio em área urbana do município de Pelotas, Rio Grande do Sul, Brasil.

Palavras-chave: *Coragyps atratus*. Ninhos. Prédios urbanos. Abutre preto.

Coragyps atratus (BECHSTEIN,1793): UN NUEVO TIPO DE NIDO EN UN ÁREA URBANA DE PELOTAS, EN EL SUR DE BRASIL

RESUMEN

Coragyps atratus es un buitre del Nuevo Mundo, perteneciente al orden *Cathartiformes*. Se distribuye geográficamente desde el sur de América del Norte hasta el sur de América del Sur (Tierra de Fuego, Argentina). Esta especie está cada vez más adaptada a vivir cerca de concentraciones humanas. Se beneficia del descarte incorrecto de residuos orgánicos, siendo esto un importante aporte alimenticio lo que está contribuyendo al aumento de la población. *C. atratus* son comunes en las proximidades de áreas urbanas, pudiendo llevar a varios problemas, como daños en la arquitectura urbana, incluyendo edificios históricos. Sin embargo, este buitre aporta servicios ecosistémicos invaluables, como el aumento del flujo de nutrientes en las cadenas alimenticias y la reducción de la transmisión de infecciones a través de la remoción de carcasas. *C. atratus* usa un mosaico de tipos de hábitat para construir sus nidos, inclusive en ambientes urbanos. En el presente trabajo se describe un caso no convencional de anidamiento en un edificio del área urbana del municipio de Pelotas, Rio Grande del Sur, Brasil.

Palabras clave: *Coragyps atratus*. Nidos. Edificios urbanos. Buitre negro.

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