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SHORT NOTE

NESTING OF THE GREATER YELLOW-HEADED VULTURE (*CATHARTES MELAMBROTUS*) IN EASTERN PERU

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Abstract · The Greater Yellow-headed Vulture (*Cathartes melambrotus*) is one of the least studied cathartids (Cathartiformes, Cathartidae). Its reproductive biology is little known, being the only species in the family whose nest has not been described. Here, I report the finding of a nest located in a cavity 55 m above the ground on a high cliff, at 1,230 m a.s.l. in the rainforest of central Peru. The nest was active during the late dry season (October 31, 2019) and hosted a well-developed chick (50-60 days old) being fed by parents. The nesting site's habitat was thinned forests for shade coffee, banana, and citrus crops and remnants of mature secondary forests.

Resumen · Nidificación del gallinazo de cabeza amarilla mayor (*Cathartes melambrotus*) en el este de Perú
El gallinazo de cabeza amarilla mayor (*Cathartes melambrotus*), es uno de los catártidos (Cathartiformes, Cathartidae) menos estudiados. Su biología reproductiva es poco conocida, siendo la única especie en la familia que no cuenta con una descripción del nido. Aquí describo el hallazgo de un nido ubicado en una cavidad a 55 m de altura en un acantilado a 1.230 m s.n.m. en la selva central de Perú. El nido estaba activo al final de la estación seca (31 octubre 2019) y contenía un polluelo bien desarrollado (50–60 días) que estaba siendo alimentado por sus padres. El hábitat alrededor del sitio nido presentó bosques raleados para sombrear cultivos de café, plantaciones de plátano y cítricos, y remanentes de bosque secundario maduro.

Key words: Amazon basin · Breeding · Cathartidae · New World Vultures · Phenology · Rocky cliff

The Greater Yellow-headed Vulture (*Cathartes melambrotus*) is a little studied Cathartidae endemic to tropical South America (Ferguson-Lees & Christie 2001). It is largely restricted to the Amazon basin, ranging from southern Colombia and northeastern Venezuela, east to the Guianas and south to southeastern Peru, northern Bolivia, and central and eastern Brazil, where it mainly occupies primary forests (Jones 2020). Due to its wide distribution, the IUCN considers it a Least Concern species, even though its population appears to be decreasing (BirdLife International 2021).

Although the Greater Yellow-headed Vulture is common in unbroken primary forests throughout its range (Thiollay 1989), there is little information on its reproductive biology (Monsalvo et al. 2020, Jones 2020). Perhaps due to its preference for undisturbed lowland humid forest that is difficult to access, its nests and nesting sites have been poorly documented (Jones 2020). Available information is fragmentary, superficial, and controversial. Breeding activity of Greater Yellow-headed Vultures has been reported in Amazonas state, Brazil (Cintra & Naka 2012, Monsalvo et al. 2020), but the information provided is limited to the mention that the species breeds in a natural reserve, and remarks the presence of fledglings and dates of observations. Monsalvo et al. (2020) speculated that a Lesser Yellow-headed Vulture (*Cathartes burrovianus*) egg collected from a nest on the ground "between prickly thickness" in Paraguay could instead, according to its size, belong to a Greater Yellow-headed Vulture. Ferguson-Less & Christie (2001) described a nest as in a large tree cavity, but did not provide details on location; thus, Jones (2020) questioned this report. Here I describe, for the first time, a nesting record of the Greater Yellow-headed Vulture from eastern Peru by providing unquestionable evidence.

While scanning a rocky cliff in search of raptor nests (Figure 1) on 31 October 2019 at 9:00 h, close to the town of San Luis de Shuaro (10°53'S, 75°17'O; 1,230 m a.s.l., Junín, Peru, I repeatedly observed two Greater Yellow-headed Vulture adults flying in front of the cliff. At around 15:00 h , one of the vultures approached the cliff and perched on a nearby tree for 5 min before moving to a rock on the cliff wall and then jumping to the entrance of a cavity, from where a well-developed nestling appeared (Figure 2). The adult fed the nestling while fluttering awkwardly, and 2 min later it flew away (Figure 3). At 17:30 h, an adult vulture visited the nest, apparently intending to feed the nestling, but the birds were out of sight. At 18:00 h, I watched an adult vulture walking on the ground on a secondary road near the nest site, presumably foraging (Figure 5). Proper identification of the Greater Yellow-headed Vultures was possible due to the pale undersides to the secondaries, and by its apparent larger size compared to Turkey Vultures (*C. aura*), the only other vulture of this genus in the region. The similar Lesser Yellow-

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Figure 1. Greater Yellow-headed Vulture (*Cathartes melambrotus*) nest-site in eastern Peru. Photo: Tomás Rivas-Fuenzalida.

Figure 2. Greater Yellow-headed Vulture (*Cathartes melambrotus*) nestling in eastern Peru. Photo: Tomás Rivas-Fuenzalida.

headed Vultures (*C. burrovianus*) does not occur in this area.

Based on the information available for other *Cathartes* species, the time of reproduction and the age of the observed nestling could be estimated. Since Turkey and Greater Yellow-headed Vultures have similar body masses (c. 1,500 g; Jones 2020, Kirk & Mossman 2020), their nestling periods should be similar. According to Nelson et al. (2009), Turkey Vulture nestlings have an appearance similar to that of the Greater Yellow-headed Vulture chick shown in Figure 2, are 50 to 60 days old, and are close to fledging. Furthermore, incubation in the Turkey Vulture lasts 38–40 days (Kirk & Mossman 2020). Thus, assuming a 40-day incubation period

Figure 3. Adult Greater Yellow-headed Vulture (*Cathartes melambrotus*) leaving the nest in eastern Peru. Photo: Tomás Rivas-Fuenzalida.

Figure 4. Adult Greater Yellow-headed Vulture (*Cathartes melambrotus*), foraging in a secondary road near the nesting-site in eastern Peru. Photo: Tomás Rivas-Fuenzalida.

for the Greater Yellow-headed Vulture and that the nestling was 50–60 days old, hatching must have occurred in the first week of September, and egg-laying between the third and fourth week of July. This breeding timing is consistent with the scant data from other regions. Tostain et al. (1992) watched copulation of Greater Yellow-headed Vultures in August in French Guiana. They suggested that breeding occurred during the dry season, with fledglings being active at

Figure 5. Greater Yellow-headed Vulture (*Cathartes melambrotus*) nest cavity, photographed by a drone in eastern Peru. Photo: Tomás Rivas-Fuenzalida.

the beginning of the rainy season. Additionally, the estimated timing of breeding of the Greater Yellow-headed Vulture coincides with that of many diurnal and nocturnal birds of prey within my study area in central-eastern Peru (author's pers. observ.) and in other regions of the Neotropics (Whitacre & Burnham 2012). This is likely related to a better chance of survival of chicks in exposed nests by avoiding periods of heavy rains (Gerhardt & Gerhardt 2012) or by greater availability of food at the beginning of the rainy season (Whitacre & Burnham 2012).

The nesting site was a rocky cliff approximately 130 m wide and 70 m high, facing south, thus protecting the nest against solar radiation, strong winds, and rain. The nesting cavity was located approximately 55 m above a river course, 7 m from the cliff's top and 5 m from the lateral verge of the cliff, and vegetation was dense above and around the cliff face. The cavity entrance (Figure 5) was about 80 cm high and 60 cm wide, and inaccessible to humans and terrestrial predators. Cliff and nest dimensions were estimated from altitude and distance recordings made by a drone and by comparing the entrance hole with the size of the parent vultures when perching at the nest entrance. It is of interest that two pairs of Black Vultures (*Coragyps atratus*) and one of Turkey Vultures (*Cathartes aura*) were also nesting in crevices and ledges on the same cliff as the Yellow-headed Vulture nested. Nesting in rocky substrates is also known for other Cathartidae, such as the Turkey Vulture (Kirk and Mossman 2020), the Black Vulture (Buckley 2020), the King Vulture (*Sarcoramphus papa*; Holste et al. 2020), the California Condor (*Gymnogyps californianus*; Finkelstein et al. 2020), and the Andean Condor (*Vultur gryphus*, Houston et al. 2020).

My finding shows that breeding occurred at the upper limit of the altitudinal range of the Greater Yellow-headed Vulture in Peru (1,100 m a.s.l; Walker et al. 2006, Schulenberg et al. 2010), revealing that it is not an exclusive breeder of lowland forests. It also suggests that Greater Yellow-headed Vultures may tolerate disturbed habitats, as observed in other areas of its distribution (Olmos et al. 2006, Thiollay 2007).

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