Evidence of fruit consumption by Black Vultures (*Coragyps atratus*) from exotic African oil palm (*Elaeis guineensis*) in Kourou, French Guiana

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Jules Greff - permafaune@gmail.com - Permafaune.com

Observation note :

On 11 June 2026 at 16:25, at the Total petrol station located at the entrance of Kourou, French Guiana, two Black Vultures (*Coragyps atratus*) were observed on the ground beneath an African oil palm (*Elaeis guineensis*). This green area spans approximately 30 m² between the petrol station and the main road. Upon closer inspection, the individuals were actively feeding on fallen palm fruits. Shortly after, they were joined by five additional Black Vultures. All seven individuals searched for remaining fruits on the ground and displayed clear antagonistic behaviors, chasing one another to secure food. When an individual charged, the target responded either by retreating and abandoning the fruit, or by fleeing while carrying the whole fruit away in its beak. Wing-spreading postures were frequently integrated into these charging displays. Although submissive individuals consistently retreated, it was not possible to definitively establish a clear dominance hierarchy within the group.

At 16:45, two individuals flew up into the palm tree (approximately 4 meters high) to feed directly on the infructescence. One vulture successfully detached a fruit but moved further along a palm branch to consume it away from the other. Only mature, ripe fruits still attached to the bunch appeared to be targeted. Meanwhile, the remaining five individuals on the ground continued to dispute the last three or four fallen fruits.

To detach the oily pulp efficiently, the vultures used their feet to pin the fruit to the ground, preventing it from rolling, and tore the flesh away with their beaks. The exact role of the tongue during this process could not be determined. The vultures consumed only the fleshy mesocarp, leaving the hard endocarp (seed) on the ground. These discarded seeds were checked several times by other members of the group looking for remaining pulp filaments.

Unfortunately, we were unable to remain at the observation site for more than 20 minutes. However, while driving past the location the following day (13 June 2026), two Black Vultures were observed still feeding on the fallen fruits, suggesting a multi-day exploitation of this urban food resource.

Discussion:

New World vultures belong to the order Cathartiformes. In French Guiana, they are represented by five species: the Black Vulture (*Coragyps atratus*), the Turkey Vulture (*Cathartes aura*), the Lesser Yellow-headed Vulture (*Cathartes burrovianus*), the Greater Yellow-headed Vulture (*Cathartes melambrotus*), and the King Vulture (*Sarcoramphus papa*)

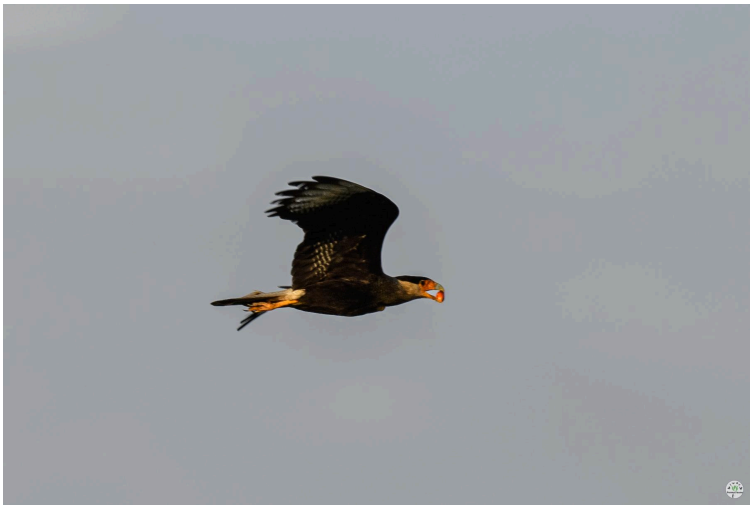
While traditionally classified as strict scavengers relying on animal carcasses, frugivory in vultures is an increasingly documented phenomenon. The most prominent example is the Palm-nut Vulture (*Gypohierax angolensis*) in Africa. Historically thought to be exclusively vegetarian, recent studies confirm that while *E. guineensis* pulp represents a massive part of its diet, it also consumes animal matter such as fish, crabs, and young turtles (Carneiro et al., 2017). In the Neotropics, records of palm fruit consumption by Cathartid vultures exist but remain scattered. *Cathartes aura* was the first species documented feeding on *Elaeis guineensis* fruits in Brazil (Pinto, 1965). *Coragyps atratus* is known for its extreme behavioral plasticity and opportunistic exploitation of urban organic waste (Ferguson-Lees & Christie, 2001), precise data regarding its frugivory are scarce. Extensive frugivory on *E. guineensis* was historically demonstrated in Colombia (Elias and Valencia, 1982) where an entire population heavily exploited oil palm plantations. In French Guiana, local records indicate that Black Vultures were previously observed eating *E. guineensis* fruits in Kourou (Tostain, 2014; Perrier, 2021) and native Awara palm fruits (*Astrocaryum vulgare*) in Awala-Yalimapo

(Claessens, 2022). Similarly, *Cathartes burrovianus* has been recorded feeding on *Astrocaryum vulgare* in Kourou (Proux, 2003; Perrier, 2021), and the King Vulture (*Sarcoramphus papa*) has been observed consuming fruits of *Mauritia flexuosa* and *Attalea maripa* (Schlee, 2005).

The African oil palm (*Elaeis guineensis*) is an exotic species introduced and naturalized across Latin America (Bakoumé et al., 2013). Its fleshy drupes are highly energetic due to their exceptional lipid content, making them a valuable food source for various birds, including large frugivores like the Rhinoceros Hornbill (*Buceros rhinoceros*) in degraded landscapes of Borneo, where we have taken this picture.

It has been proposed that frugivory in raptors and vultures might not be only a default behavior caused by a total absence of carrion but could rather serve as an energetic complement. The lipid profile of palm pulp closely mirrors some nutritional benefits of animal fat. Elias and Valencia (1982) emphasized that the frugivorous behavior they observed in Colombia persisted even when animal carcasses were readily available, indicating that fruit consumption is an active dietary choice rather than a default behavior triggered by carrion scarcity.

In addition to New World vultures, other Neotropical raptors have been observed feeding on this fruit in Brazil, such as the Swallow-tailed Kite (*Elanoides forficatus*) (Olmos et al., 2006), the Roadside Hawk (*Rupornis magnirostris*), the Crested Caracara (*Caracara plancus*), the Yellow-headed Caracara (*Milvago chimachima*), and the Black Caracara (*Daptrius ater*), reinforcing the evolutionary importance of these lipid-rich fruits for predatory birds. Furthermore, frugivory on other tree species has been documented in the Crested Caracara (*Caracara plancus*) and the Red-throated Caracara (*Daptrius americanus*).



Crested Caracara (*Caracara plancus*) with a Awara palm fruits (*Astrocaryum vulgare) Kourou 2023.*

Beyond the strict energetic value of the lipids contained in *Elaeis guineensis* pulp, fruit consumption might also satisfy specific physiological requirements. In birds, carotenoids are diet-derived micronutrients vital for health and physiological signaling (Blanco et al., 2022). However, because birds cannot synthesize these pigments de novo, they must be acquired through their diet. The active foraging for dietary carotenoids by Old World vultures, such as the Cinereous Vulture (*Aegypius monachus*), Griffon Vulture (*Gyps fulvus*), and Egyptian Vulture (*Neophron percnopterus*), has been well-documented through their consumption of semi-digested vegetation within carcass viscera, fresh plant matter, and vertebrate feces (coprophagy) (Blanco et al., 2002, 2013). Given that African oil palm pulp is rich in carotenoids, we hypothesize that opportunistic frugivory in Neotropical Cathartidae could similarly serve as a key source of these essential pigments, a mechanism already discussed for the Palm-nut Vulture (Gypohierax angolensis) in Africa.

Four out of the five vulture species found in French Guiana (Turkey Vulture, Lesser Yellow-headed Vulture, Greater Yellow-headed Vulture, and King Vulture) exhibit bright yellow, orange, or red integument on their bare heads. Whether these colors are primarily derived from dietary carotenoids (Negro, 2002) or vascular hemoglobin perfusion (Justyn, 2023), and how they function in social communication, remains a subject of ongoing debate. A similar signaling function has been proposed for the facial coloration of the Crested Caracara (*Caracara plancu*s) (Ingels, 2011)and the Andean Condor (*Vultur gryphus*), they display rapid variations in skin color intensity during competitive interactions at carcasses, suggesting that these bare parts act as dominance indicators that facilitate the establishment of feeding hierarchies (Blanco, 2012).

In contrast, the Black Vulture (Coragyps atratus) is the only species in French Guiana lacking bright facial coloration, possessing instead a uniform grey-black bare head. Even if carotenoid intake does not serve a visual signaling function via skin pigmentation in this species, this might not rule out the health-maintenance hypothesis. Foraging for carotenoid-rich resources may provide other essential physiological benefits, such as the acquisition of provitamin A, immunomodulatory support, antioxidant defense, and photoprotection. Consequently, carotenoids, vitamins, and minerals likely play a vital yet overlooked role in vulture physiology and life-history strategies (Blanco, 2012).

Another point is that the social feeding dynamics observed in Kourou show some variations from previous literature. Da Silva & Souza (2014) observed Cathartes burrovianus feeding on E. guineensis in smaller groups (maximum of 3 individuals) where birds patiently waited their turn or flew away with the fruit to consume it elsewhere, acting as potential seed dispersers. In our observation of Coragyps atratus, competition was significantly more aggressive, featuring active charges and wing-flashing. Furthermore, no individuals left the immediate vicinity with the fruit; they only carried them short distances to avoid piracy, consuming the pulp on-site and leaving the seeds behind. This suggests that in this specific urban environment, C. atratus acts strictly as a pulp consumer rather than a long-distance seed disperser. However, our observation was too short to exclude the possibility that fruits were taken away.

Because raptors are widely regarded as strict carnivores, opportunistic frugivory and raptor-mediated seed dispersal remain largely overlooked in the Neotropics. Collaborative monitoring by scientists and birdwatchers is essential to clarify vulture foraging behaviour, the true scale of their frugivorous habits.

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