

## Lappet-faced Vultures –social hunters?

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The Lappet-faced Vulture *Torgos tracheliotos* is described as a carrion feeder (Maclean 1993), but it is also noted that they kill small prey, e.g. nestling flamingos. In February 2001 during an aerial survey of flamingo breeding colonies on Sua Pan, Botswana, I observed Lappet-faced Vultures feeding on the carcasses of young flamingo chicks and some also appeared to be feeding on adults (McCulloch 2004). I suspected that the vultures had killed the flamingos, rather than scavenge on dead ones. This was because of the abnormally high number of fresh carcasses and the fact that the vultures were positioned in the middle of the breeding colony, some standing on nests while feeding. Vultures have been observed at the breeding colony only when the pan was dry, when they were able to land on the nests and the adjacent pan surface. It was not until April 2005, however, that I actually witnessed predation of flamingo chicks by Lappet-faced Vultures and I also saw some extraordinary and unexpected predation methods that can be described as social hunting behaviour

During the 2004–2005 wet season, the Makgadikgadi salt-pan system experienced below-average rainfall and poor flooding resulted on Sua Pan (20°

45'S, 26° 00'E). Flooding in the north of the pan, which had remained inundated through the dry season from the previous wet season (2003–2004), was sufficient to sustain the flamingo populations and breeding began in November 2004. By January 2005, more than 35 000 pairs of flamingos, mostly Lesser Flamingos *Phoeniconaias minor*, were raising young in the south of the pan. Owing to little rain that season, the pan around the colonies dried up quickly. By early April, huge chick crèches were tightly clustered around the last remaining puddles of water. These crèches, each containing as many as ten thousand chicks, were left to fend for themselves during the day, while most of the adults flew to the feeding grounds, which still contained water, in the north of the pan. At night, tens of thousands of adults arrived back to seek out and feed their young. During the very noisy and apparent chaotic hours after sunset, when adults and chicks desperately searched for their respective family members, Black-backed Jackals *Canis mesomelas* and Brown Hyaenas *Hyaena brunnea* wandered onto the pan and depredated on those that ventured too far from the crèches. These predators were observed leaving the pan before sunrise and their tracks were followed

to flamingo chick carcasses, where their tracks showed signs of predation.

It was during daylight hours that the chicks fell prey to the most consistent and efficient predators. By 09h00 each day of the observation (nine days in total between 10 March and 6 May), vultures, mostly Lappet-faced, and eagles (Tawny *Aquila rapax* and Steppe A. *nipalensis* Eagles) located the scores of dead chicks that had fallen victim to nocturnal predators or that had simply perished in the cold conditions the previous night. Between 15 and 22 Lappet-faced Vultures, together with a handful of African White-backed Vultures *Gyps africanus*, congregated on the pan and, within an hour or so, left little evidence of the previous night's mortalities. Once the carcasses were devoured, the vultures would take to the air and, climbing on the thermals, come together in threatening spirals over the flamingo crèches. As if orchestrated, the Lappet-faced Vultures took it in turns to attack the crèches, suddenly diving from a great height to swoop in on stragglers left behind as the chicks quickly ran to avoid the onslaught. The attack frequently took the form of a terrestrial pursuit, whereby the vultures ran or bounded along the pan after their prey. The vultures used their feet to catch and restrain the chicks before they began to feed, sometimes while the chick was still alive. Occasionally the targeted

chicks would escape, but almost without exception, this initiated more attacks and as many as five chicks were predated within minutes by different vultures. In some cases, the same vulture would hunt another chick as others descended on the first kill. After approximately 20–30 minutes, the vultures would take to the air again to climb, regroup and re-orchestrate another attack. Attacks like these continued throughout the day until the mid-afternoon. During a three-month period (the time it takes flamingo chicks to fledge; McCulloch & Irvine 2004), this predatory behaviour had a profound impact on chick mortality rates. Even after the chicks fledged and began flying around the pan, the vultures persisted with predation.

In early May many of the juvenile birds had already joined the adult population in the remaining waters in the northern section of Sua Pan. A few hundred chicks still remained in the southern section. The majority of them could now fly; those that could not made easy targets for the vultures and were soon picked out and killed. What subsequently happened was quite unexpected. With a seemingly increased appetite for flamingo, the Lappet-faced Vultures began harassing the fledglings. Initially, with some persistence, they successfully hunted birds that were slow at taking off, swooping down fast and seizing them

with their talons, giving their prey little chance of getting airborne. In addition, they stole the kills made by Tawny Eagles and Steppe Eagles that were also taking advantage of the easy prey and being better adapted at hunting, were catching the fledglings in the air. Then, remarkably, the Lappet-faced Vultures also began hunting flamingo fledglings in the air. In groups that varied between four and seven individuals (mostly four or five), the vultures descended together with a leading vulture in pursuit of the target. Whenever the leading vulture ceased pursuit or missed its prey, another vulture would take over from the rear. The relay continued for sometimes three to five minutes until eventually the flamingo, exhausted of energy and escape routines, fell to its pursuers. The hunting team would then quickly descend on their victim and devour it within minutes. Most of the hunting groups comprised mature adults, but some immature individuals were also observed taking part. These young birds were positioned at the back of the hunting groups and only fed on the carcasses after the adults had finished. While they were not always successful using this technique, by early May, a month after the first observation of their predation was made, the vultures had mastered the technique so well that they killed the five remaining juvenile flamingos in a spectacular display of

persistence, stamina and, above all, team effort.

There is a lack of witnessed kills by Lappet faced Vultures (Mundy et al. 1992). Brown & Root (1971) witnessed Lappet-faced Vultures killing young and adult flamingos, but gave no description of how they captured and killed their prey. Otherwise, very little evidence of predatory behaviour exists in the literature. It has been presumed they catch and kill small prey owing to observations of the carcasses on which they were found feeding being 'still warm' and, therefore, fresh. The remarkable hunting methods adopted by Lappet-faced Vultures on Sua Pan is, therefore, compelling evidence that they can be efficient predators. These observations, in fact, raise further questions: has this predation been happening at Sua Pan and other similarly remote flamingo breeding sites unnoticed for millennia, or have they recently learned these hunting skills? Certainly, this type of social predation was not witnessed among any other vultures or among the eagles at Sua Pan. Regardless whether one interprets such behaviour as random opportunistic predation or as organised and co-ordinated hunting, there is no doubt that the observations suggest that Lappet-faced Vultures are more adaptable and skilled as predators than previously thought.

**References**

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