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J.M.B. King†
Stonehaven, 16 Marsh Road,
Rode, Frome, Somerset BA11 6PE, U.K.

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Ed.

Hartlaub's Ducks *Pteronetta hartlaubii* feeding on elephant dung

Hartlaub's Duck *Pteronetta hartlaubii* is a large forest duck that is common in the rivers, streams and smaller lakes of central Africa. It is valuable to skin collectors (F. Duckworth, pers. comm.) and is large-bodied enough to warrant being hunted for food: it is classed as Near-threatened (BirdLife International 2000). Little is known of its habits: a nest has never been found, although BaAka pygmies in Central Africa say that it builds its nest on the ground on the edges of small streams in thick vegetation. It is thought to feed mostly on insects and other animal material, although seeds have also been reported (Brown *et al.* 1982). This note describes Hartlaub's Ducks using elephant dung as a food source.

The vegetation of the region where these observations were made is Guineo-Congolian rainforest (White 1983). Small, often swampy, forest clearings are found scattered throughout this forest, especially along river courses. They are characterised by short herbaceous vegetation, usually dominated by Cyperaceae (*e.g.* Leonard 1951). In areas protected from poaching, many large mammals, including Forest Elephant *Loxodonta africana cyclotis*, use these clearings to feed on the vegetation and to ingest mineral-rich water and soil (Klaus *et al*. 1998, Houston *et al*. 2001). The activities of elephants maintain a short sward and in some cases ("elephant-dominated" clearings), create large areas of bare soil in the centre. Several of the elephant-dominated clearings (locally known as *bais*) in two adjoining National Parks,

Nouabalé-Ndoki National Park (NNNP) and Dzanga-Ndoki National Park (DNNP), in the Republic of Congo and the Central African Republic respectively, have been monitored by conservation and research projects for periods of 18 months and twelve years (Inkamba-Nkulu 2002, Turkalo & Fay 2001). A small forest lake near the NNNP frequented by elephants has also been monitored for the last three years. The monitoring in all cases is by observation from a hide at the edge of the clearing, and data on all elephants and other large mammals visiting the clearings are recorded.

Hartlaub's Ducks were commonly found in all of the monitored elephant-dominated clearings at all times of year. Between five and 30 individuals could be seen at any one time scattered across the whole clearing. In addition, up to six ducks at a time were seen at the small forest lake, which was heavily used by elephants and buffalo; the ducks were present > 70% of the time during an earlier study (Ruggiero & Eves 1998). Hartlaub's Ducks often perched in trees surrounding the clearings or in the water, usually in pairs. When elephants arrived at a large *bai*, the number of ducks visible on the ground tended to increase. They followed the elephants around, often calling. The elephants occasionally reacted by chasing the ducks. When an elephant produced dung the ducks immediately started to feed on it by pulling it apart and ingesting items from it. The ducks would also feed on older dung but seemed to prefer fresh dung.

In the forest clearings of the region, Hartlaub's Duck will follow and even jump up on animals such as Bongo *Tragelaphus eurycerus* and Forest Buffalo *Syncerus caffer nanus* and remove ectoparasites (Ruggiero & Eves 1998). These authors also observed Black Crakes *Limnocorax flavirostra* and African Jacanas *Actophilornis africana* foraging in elephant dung in the region (Ruggiero & Eves 1998) but did not mention that Hartlaub's Ducks did the same thing. Various mammal species have been observed feeding on elephant dung in the region, including Agile Mangabeys *Cercocebus agilis*, Sitatunga *Tragelaphus spekeii*, forest duikers *Cephalophus* spp., Red River Hogs *Potamochoerus porcus,* Civets *Civetticticus civetta* and squirrels (Ekondzo & Gautier-Hion 1998, White 1995); these species were assumed to feed mostly on seeds ingested but not fully digested by elephants.

Elephants produce 12–20 dung piles a day (*e.g.* Tchamba 1992, Barnes 1996) and each elephant may spend many hours at a given clearing. The clearings therefore contain large quantities of elephant dung in various stages of decay. Elephant dung typically contains undigested seeds and partially digested fruit fragments. Dung piles are also attractive for many insects, which feed on and lay their eggs in the nutrient-rich substrate. The dung piles are usually covered with flies and beetles, and harbour various insect larvae. However, the ducks' preference for fresh dung suggests that it is seeds or fruit fragments that they are selecting rather than insects. The birds might also benefit from clays ingested by the elephants, which could help in absorbing plant toxins in their own diet (D. Houston pers. comm.). The presence of so many ducks at one time in the clearings is clearly linked to the abundance of dung, which is, in turn, linked to the number of elephant-hours at the clearing. Thus, in the areas of central

Africa where these forest clearings occur, Hartlaub's Duck may depend on another, far more threatened, species, the Forest Elephant, for providing a rich and dependable food source.

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Andrea Turkalo[1], Clement Inkamba-Nkulu[2] & Fiona Maisels[2,3]
[1]Wildlife Conservation Society, BP 1053, Bangui, Central African Republic
[2]Wildlife Conservation Society, Nouabalé-Ndoki Project, BP 14537, Brazzaville, Congo
[3]Corresponding author: Institute of Cell, Animal and Population Biology, Edinburgh University, U.K.; email <bomassa@uuplus.com>