

Notes on Black Crakes *Amaurornis flavirostra* 2: Vocalizations, feeding and interactions with other species

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Summary

Black Crake vocalizations are described and compared to previous published records, as are observations of dietary items and interactions with other birds in the same habitat. An instance of site fidelity in extreme circumstances is given, together with an appendix of potential Black Crake predators sharing the same environment.

Keywords calls, diet, inter-specific behaviour, site fidelity

Introduction

The following miscellaneous notes on Black Crakes were recorded at the dam described in Parker & Parker 2019 as additions of detail and comment to what is already known about this species.

Vocalizations

Various calls were noted:

- (i) Hatchling soft mews: either uttered singly or strung together; initially very softly, becoming louder as the bird grew, and enabled tending members of the family to locate the caller.
- (ii) Hatchling 'lost' call: a louder, plaintive, extended mew given at two or three second intervals and often for several minutes at a time, uttered by an isolated hatchling.
- (iii) Crakes with food approaching hatchlings, gave a low, fast, guttural "grr-grr-grr-grr", only audible to humans within 5 m.
- (iv) Adults, sub-adults, immatures, and juveniles all give a gentle "kwep" of variable volume when minding hatchlings, in the vicinity of hatchlings on the close approach of people, dogs, mongooses, etc., entering the nesting vegetation. Incubating birds uttered it on several occasions before getting off their nest, and by adults apparently inducing hatchlings to leave the natal nest. Though not loud, it could be heard by humans at distances of up to at least 20 m. Overall, we associated it with alertness and low to medium levels of tension.
- (v) Alarm, at the sudden appearance of a raptor, strange dogs, and danger: was a very loud and explosive "pew", accompanied by a rush for cover from whence it continued calling.
- (vi) Black Crake 'singing' (if the components are not antiphonal, see Huxley & Wilkinson 1979) often indicates their presence before the birds are seen. It has been transcribed variously thus:

Mackworth-Praed & Grant (1952), "A shrill craking 'rr-rr-rr' which ends in a resonant croak"

Smitt (1975), "rrü-rrü-rrü."

Taylor & van Perlo (1998), one bird "a harsh repeated chatter 'krrok-krraaa', the other, a softer almost dove-like purring or crooning call which may comprise single notes 'crrooo' or a phrase such as 'coo-crr-ooo."

Urban *et al.* (1986), "Bird 1 'krrrok-krraaaa-krrrok-krrraaa.', Bird 2 'krrooo-krrooo'

Zimmerman *et al.* (1996), "A throaty 'coo-crr-chrooo' and a rippling 'weet, eet, eet, eet, eet."

Such variation of a call all recognized in the field aurally, infers the recorders' different aural acuities, senses of musicality and linguistic ability to transcribe sound to paper. Consequently, we have reservations, including our own, about committing bird sound to writing down.

Black Crake calling was described as a 'duet' (in which contributions are antiphonal) by Urban *et al.* (*loc. cit.*) and Taylor & van Perlo (*loc. cit.*). Yet the term was inappropriate if it was performed occasionally by trios, quartets or even quintets, as Taylor & van Perlo's (*loc. cit.*) and our own observations of families singing together indicated. In such cases, birds of different ages all congregated within < 1 m² that made it difficult to recognize which individuals were singing. This was even more so as Taylor & van Perlo (*loc. cit.*) found the song's dual components could be uttered by adults of either sex as well as by juveniles and immatures.

On all but one occasion duetting/singing was only heard from within the family's favourite patch of *Typha* or contiguous *Papyrus*, the two places where all but two breeding nests occurred (the exceptions were in *Pontedaria*, before the *Typha* and *Papyrus* were established). We never saw it performed without at least one adult taking part. Usually, but not always, both adults of the family were present. It was commonly given when an adult flew in to join others in the *Typha*. However, on one occasion an adult of the breeding pair, and a grey-breasted immature, performed the song without others present when the latter had just left the nest after a stint of incubating. It often followed sudden disturbances and also (but not invariably), when birds changed incubation shifts. It seemed an obligatory response to a tape recording of Black Crake calls recorded elsewhere and played within the family's hearing.

We heard calling at all times of the year, subjectively seeming more frequent just before and during egg-laying and incubation. In South Africa, Schmitt (*loc. cit.*) noted that it was seasonal and not uttered in winter between April and August. No such silent period was observed in the family reported upon in keeping with the year-round breeding in Kenya and seasonal breeding in South Africa (Parker & Parker *op. cit.*).

The calling seems to have two components: spaced musical 'growl notes' with higher 'trill notes' placed between the growls. We believe when one bird growls, another trills in response. Yet, subjectively, when there were more than two crakes present in a 'singing party', we could not tell whether only a pair or more members of it were calling.

In the same vein, we were unable to resolve whether such Black Crake calling is always antiphonal, one component following the other, or with some overlap between the two components. We suggest that when only two birds call, it is antiphonal, but that when more are involved this precision is lost and there is overlap.

(vii) On the day before it disappeared from the family, a crake in late grey-breasted

immature dress that lost toes to a catfish *Clarius gariepinus* (see Parker & Parker 2019), gave a series of squeaks while crouching and fluttering its wings when approached by any other crake, juveniles, immatures or adults, but not downy young.

(vii) Inside the *Typha* bed the founding female crake was seen with plumage fluffed out, wings akimbo and head down like a defensive domestic hen with chicks, pecking repeatedly at an agitated, metre-long, cobra's tail *Naja nigricollis*. The accompanying sound was similar to that made by a defensive hen, though 'in miniature'.

Feeding

Black Crakes' diet is widely described in the literature, e.g. Urban *et al.* (*loc. cit.*), and can be summed as most forms of animal life that it can subdue, but principally arthropods and a wide range of plant parts. We witnessed scavenging on a dead 6-kg catfish as well as other smaller fishes. So wide was this omnivorous habit, that it is easier to list items rejected. These included bees (which were abundant, drinking at the water's edge, but never seen taken), water scorpions *Nepa* sp., tadpoles of toads *Bufo* sp. and the aquatic clawed toads *Xenopus* sp. With the last two, inexperienced birds seized them, but dropped them and vigorously wiped their bills. In contrast, frogs, tadpoles and adults (*Rana* and *Pixicephalus*), were taken readily. Tadpoles, and small fish *Poecelia* and *Oreochromis*, were usually taken in water <3 cm deep, but several lunges to the length of the neck were observed to catch small tilapia damaged by netting. On a single occasion an adult crake dived to 40cm to retrieve a handful of *Tenebrio* larvae thrown in for a Little Grebe *Tachybaptus ruficollis*. It had to bring one to the surface before swallowing.

The crakes showed specialized searching for tiny water-lily *Nymphaea nuchalis* seeds. When the plant's flower dies, its attached seed capsule sinks to develop under water. When ripe, the sunken capsule's casing rots, releasing seeds that, encased in an aril, float back to the surface. Many become trapped under the rafts of lily pads typical of *N. nuchalis*. Anything slightly submerging a leaf, as under a crake's weight, allows seeds to float round its edge on to the leaf surface to become stranded when the crake's weight is removed. The birds then gleaned them from on top of the leaves. Walking back and forth over lily beds, crakes searched for leaves above a rotting seed capsule-discharging seeds. Concentrating around such a site, their movements alternately submerging and letting the leaves resurface, produced a harvest of seeds. On Lake Naivasha, other rallids (Purple Swamphen *Porphyrio porphyrio*, Common Moorhen *Gallinula chloropus* and Red-knobbed Coots *Fulica cristata*) were also observed eating water lily seeds, but by opening the unripe capsules before they sank and the seeds were still clumped. They did not pick up individual seeds as Black Crakes did. Presumably the Black Crakes' smaller size makes their strategy economical, which might not be the case with larger species.

In 2005, Black Crakes feeding on moribund frogs *Rana*, *Pixicephalus*, and clawed toads (the toads uncharacteristically out of water) around the dam, drew attention to an outbreak of the chytrid fungal disease *Batrachochytrium dendrobatidis* that was causing conservation concern on other continents. Identified in tissue samples sent to Australia, this was among the earliest, if not the first, instance recorded in Africa (L. Berger, pers. comm.).

Interactions with other species

Reaction to animals other than prey varied. In dense cover, Black Crakes were bold and confiding. Even before habituated to people in the open, they approached to within a metre of a person or mammal inside the *Typha* patch. Any large bird suddenly appearing <20 m overhead elicited alarm calls and diving for cover. Some raptors (e.g., Black Kite *Milvus migrans* and African Harrier Hawk *Polyboroides typus*) elicited no alarm if higher than 20 m. The Accipitrines, African Goshawk *Accipiter tachiro*, Great Sparrowhawk *A. melanoleucus*, Shrike *A. badius*, and Little Sparrowhawk *A. minullus* all caused alarm regardless of distance.

No crane was seen within c.5 m of any heron (Grey *Ardea cinerea*, Black-headed *A. melanocephala*, Purple *A. pupurea*, or Squacco *Ardeola ralloides*), but tolerated Hammerkops *Scopus umbretta*, Egyptian Goose *Alopochen aegyptiaca*, and domestic ducks, within 1 m.

Tolerance of smaller birds was illustrated when four weaver species, Grosbeak *Amblyospiza albifrons* (10 nests), Holub's Golden *Ploceus xanthops* (4 nests), Baglafaecht *P. baglafaecht* (2 nests) and Spectacled *P. ocularis* (1 nest), a Tawny-flanked Prinia *Prinia subflava* and a Black-faced Waxbill *Estrilda erythronotus* were nesting simultaneously within 5 m of incubating crakes. Individual adult Grosbeak Weavers were observed within a metre of an incubating crane, and one Spectacled Weaver collected nest fibre within 50 cm of it, the crane not reacting in either case.

On 30 March 1994 a mongoose *Herpestes sanguineus* entered the *Typha* bed where there were two downy crane chicks. The five fledged members of the family present gathered round it at distances of 0.75 to 1.5 m, all giving the low volume alarm or tension call—a relatively gentle, single note—'kwep'. The crakes kept up with the mongoose as it moved and while they went no closer than c.0.75 m, in the face of this escorting behaviour the predator did not forage, but moved quickly away from the dam.

On two occasions a Black Crane seized a newly fledged Grosbeak Weaver that had emerged from a nest in the crakes' favoured clump of reed mace, and killed it by a combination of pecking, harassing and eventual drowning. It was not clear if these attacks were a feeding behaviour or an interspecific interaction whose outcome was secondarily food.

Predators capable of taking Black Crakes or eggs seen in the vicinity of the dam during the period covered by these notes are listed in Appendix 1.

Site fidelity

In January 1997, the dam dried out completely through lack of rain run-off and all the riparian vegetation was lost. The process was gradual with the family dwindling until only two adults were left. The last cover to go was a stand of papyrus. Before it was completely gone a loose tangle of dead brush (approximately 1 x 1 x 1 m in dimensions), mainly small branches measuring between 0.75 and 1 m long and not more than 2.5 cm thick, was put next to the papyrus as substitute cover. Before the dam was completely dry, we placed an enamel basin of 0.75 m diameter next to this brush, filled it daily with water and supplied commercial poultry pellets as feed. The crakes stayed but spent much time in the fringing woodland thicket of *Euclea divinorum* and *Eleodendrum buchananii* (see Fig. 1, Parker & Parker 2019). Despite being free to depart, as the rest of the family presumably had, these two adult Black Crakes adopted a pile

of dry wood, a tin basin of water and feed in lieu of their normal habitat, and stayed thus until the dam refilled in April, and riparian vegetation was replanted. They laid a clutch of four eggs in November 1997 and once again a family of Black Crakes occupied the dam and was present until at least 2011, when we left Kenya. The dam drying resulted in an unusual demonstration of site fidelity.

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Appendix 1

Between 1967 and 2010 predators capable of taking a Black Crake or its eggs recorded on the Langata property cited in Parker & Parker 2019.

Birds

Hérons

Grey *Ardea cinerea*, Black-necked *A. melanocephala*, Purple *A. pupurea*, Black-crowned Night *Nycticorax nycticorax*.

Raptors

African Harrier Hawk *Polyboroides typus*, African Fish Eagle *Haliaeetus vocifer*, Common Buzzard *Buteo b. vulpinus*, African Goshawk *Accipiter tachiro*, Great Sparrowhawk *A. melanoleucus*, Shrike *A. badius*, Little Sparrowhawk *A. minullus*, Black Kite *Milvus migrans*.

Owls

Barn *Tyto alba*, Spotted Eagle *Bubo africanus* and African Wood *Strix woodfordii*.

Coucals

White-browed *Centropus superciliosus*

Mammals

Domestic dogs *Canis familiaris*, cats *Felis sylvestris*, genets *Geneta tigrina*, mongooses *Herpestes sanguineus*.

Reptiles

Snakes

An immature python *Python sebae*, cobras *Naja nigricollis*, and egg-eaters *Dasypeltis scabra*.

Turtle

Helmeted terrapin *Pelomedusa subrufa*. As a predator on waterside birds, this terrapin may be significant (Spawls *et al.* 2002). On the dam mentioned in this paper, 11 newly hatched ducklings were reduced to five between 08:00 and 13:00 one day, all only partially consumed.

Fishes

Largemouth Bass *Micropterus salmoides*, Sharp-toothed Catfish *Clarias gariepinus*. The former could take swimming hatchlings and the latter was observed on one occasion at the dam seizing a crake by the foot, and on another lunging at drinking weavers (D. Richardson, pers. comm.). The same species of catfish caught on Kenya's southern Uaso Nyiro River had seven *Quelea* sp. in its stomach (A. Archer, pers. comm.).