REPORT

Title: Unheralded disappearance of the Endangered Bates's weaver, *Ploceus batesi*, in the Dja Biosphere Reserve in south-eastern Cameroon: Implications for conservation

Introduction

The rare and endangered Bates's weaver, *Ploceus batesi* is an endemic species in Cameroon with a small geographic range which does not exceed 68,800 km2 (BirdLife International 2019). It is estimated to number less than 1500 mature individuals in the wild and is suspected to be in decline at an unquantified rate (del Hoyo *et al*., 2016). This decline maybe the result of habitat loss or alteration. The most recent spotting of the species was in the Dja Biospehere Reserve (at Somalomo on the north-west boundary of the Reserve in 1995, and at Shwani, 12 km from Somalomo, in 1996; Fotso, 1999 in literature). Other surveys in its narrow belt of occurrence in western and south-eastern Cameroon in 1998-2001 failed to relocate the species (Dowsett-Lemaire, 2007), neither did the most recent survey by del Hoyo *et al*. (2016). It can thus be qualified as a really rare species but the reasons for its rarity are unclear, and there may be specific habitat requirements that are yet unknown and are limiting its distribution.

In this study, the main objective was to obtain data on the presence/absence of Bates' weaver to direct conservation action on the ground. We undertook a detailed field survey on the north-west boundary of the reserve using point census counts and random walks, and also did some mist netting. We took advantage of camera traps set along a 25 km² study plot of mature forest on the north-west boundary of the reserve by the Congo basin Institute (a regional nexus for interdisciplinary research and scientific excellence in Central Africa www.cbi.ucla.edu). We did not use playback surveys because the voice of Bates's weaver is still undescribed.

Methods

Project location: This study was undertaken at two research stations (Somalomo and Bouamir) within the Dja Biosphere Reserve in southern Cameroon (3.1500°N, 13.0000°E), a UNESCO World Heritage site classified by Birdlife International as an Important Bird Area (Figure 1).

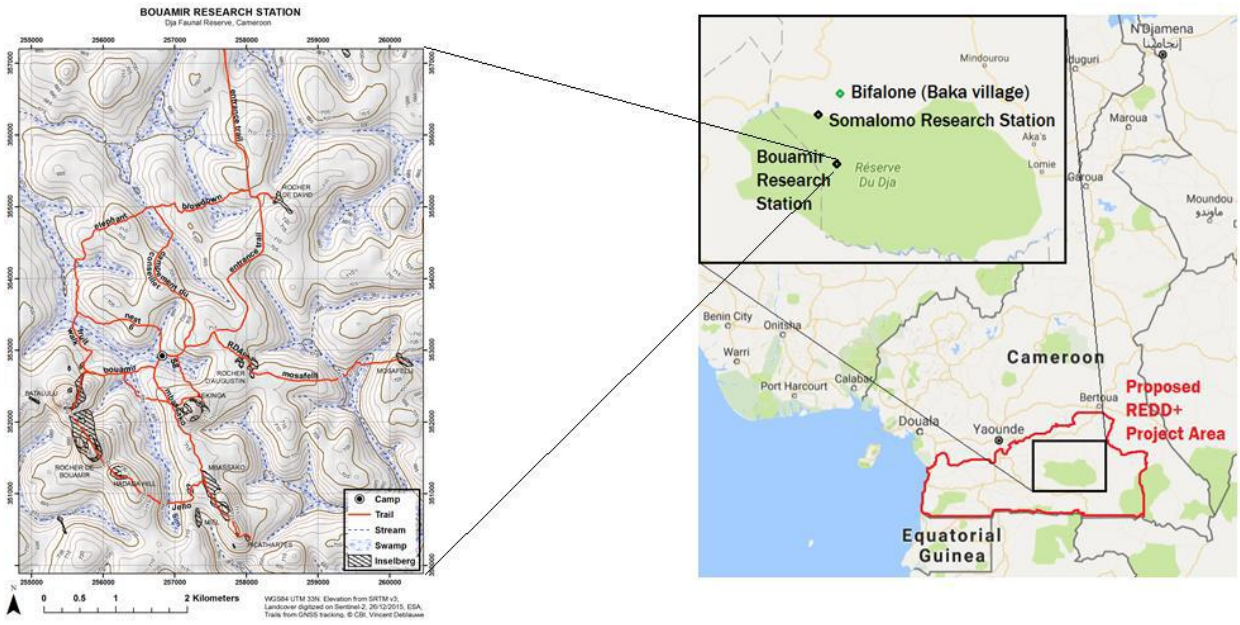

Fig.1. Map of Dja Reserve showing Somalomo and Bouamir research stations with trails available to researchers at the Bouamir research station. Source www.cbi.ucla.edu

Data collection

Project proponents

- Project PI: Dr. Eric D. Nana. Has more than 10 years of experience in avian ecology and conservation-oriented research in Cameroon.
- Project liaison officer: Dr. Roger Tabue Mbobda. Forest ranger who facilitated the study within the reserve and the community outreach program.
- Field assistant: Kamta Romeo, graduate with experience in community sensitization.
- Field consultant: Francis Motombi Njie: Experienced ornithologist with close to 20 years of field experience. He is one of the few who spotted Bates's weaver in this area and knows well the call of the bird.

Point counts & Random walks:

At each of the research stations, we established 10 census points along transects 2 km long. The distance between neighbouring points was be 200 m (Bibby *et al*., 2000; Djomo Nana *et al*., 2014). In total, we had 5 transects at each research station, making a total of 50 census points per research station. Two visits were conducted at each census point, recording all birds (both visually and acoustically) within a 50 m radius for 10 minutes. All visits were

performed during morning hours (between 06:00 and 10:00), changing the order of points visited to factor out the effect of daytime.

Following the visits of census points, we undertook random walks after 10:00 am along established trails and tracked with the tracking function of a GPS. Trails were walked at a constant pace of about 2 km/h with every sighting marked as a waypoint. All birds seen and heard were identified while taking photos and sound recordings as much as possible. During random walks, we paid particular attention to any weaver nest occurring singly and in pairs in the area because Bates's weaver is known to occur singly or in pairs (Fotso *et al*., 2001). We described the weaver nests found and tried to identify to which species they belong.

Mist netting:

We also used mist nets, and mounted 20-mist nets (12 m, 16 x 16 mm mesh; Ecotone, Poland) at each research station. Nets were opened at 06:00 am and closed at 06:00 pm for three consecutive days. All birds caught were identified (by project applicant and assistant) with the help of a field guide (Borrow & Demey, 2014).

(a) Project proponents doing point counts

(b) Brown-backed Scrub Robin caught in a mist net

Camera trapping:

We took advantage of camera traps set within a 25 km² study plot of mature forest at the Bouamir research station by the CBI for its ebony project. The cameras (10) were set at a height of about 2.5 m above ground and 500 m apart. These cameras were left in the field from April to October 2019.


(c)


(d)


(e)

Outreach campaign in local schools

Main findings

We identified a total of 84 bird species during this survey (see checklist in appendix) of which 2 weavers; Yellow-capped Weaver *Ploceus dorsomaculatus and* Maxwell's Black Weaver *Ploceus albinucha*. We did not find Bates's weaver using any of the above survey methods neither did we find any nest that could be attributed to this species. The number of species identified increased as we moved from the human dominated landscape of Somalomo to the more forest pristine Bouamir.

Outreach campaign

An awareness campaign was organized in schools in the area to teach students the ecological role of birds. A quiz was organized at the end and prizes (books, pencils, and schools bags) given to the best students. An environmental club of rare and endangered birds was created in the area to recruit students interested as ambassadors.

Project Outputs and Conservation Implications

- This disappearance of Bates' weaver in the only area where it was last spotted in 1995 and 1996 has serious implications for the conservation of this species. It is also clear that human activities in this area have greatly increased with much of the region being logged and degraded. This may probably be one reason why Bates' weaver has left this last safe haven.
- We propose that Bates' weaver be reclassified on the IUCN Redlist of species from ***Endangered*** to ***Critically Endangered***. It is imperative that further surveys be carried out on the southernmost part of its range, that is, Boumba bek, Nki and Lobeke National Parks to actually determine if this species is extinct given that there are no individuals in any zoo.

- We created an environmental club in the schools around the reserve with 50 students accepting to become ambassadors of rare and endangered birds.
- A manuscript is under preparation for submission to a conservation journal by February 2020.

Budget

Costs are in *£UK* Sterling Pounds

Description of budget item in priority order	**Unit cost**	**Number**	**Total cost**
Cost for research permit application	£200	01	£200
Fuel for truck to transport researchers + field gear to field site and back	£10/day	10 days	£100
Survey materials - mist nets, writing materials (pack), GPS receiver	£30/mist net £20/pack £150/GPS	20 01 01	£770
Feeding and accommodation for 2 people	£20/day	60 days	£1200
Per diem for 1 Field guide	£5/day	60 days	£300
Porters for transporting field gear into reserve	£10/round trip	05 porters	£50
Awareness campaign- hiring of premises, flyers, banner, refreshments, etc	Lump sum	01	£200
Report production – hard and electronic copies	£50/copy	02	£100
Production of local field guide	£100/copy	01	£100
Grand Total			**£3,020**
Amount obtained from ABC			**£2,500**

APPENDIX

List of bird species identified during this survey

	English name	**Scientific name**
1	African harrier hawk	*Polyboroides typus*
2	Akun Eagle Owl	*Bubo leucostictus*
3	Long-tailed Hawk	*Urotriorchis macrourus*
4	Congo Serpent Eagle	*Dryotriorchis spectabilis*
5	African pied hornbill	*Tockus fasciatus*
6	Red-billed dwarf hornbill	*Tockus camurus*
7	Black-casqued hornbill	*Ceratogymna atrata*
8	White-crested Hornbill	*Tropicranus albocristatus*
9	Great blue Turaco	*Corythaeola cristata*
10	Yellow-billed Turaco	*Tauraco macrorhynchus*

11	Gabon Coucal	*Centropus anselli*
12	Brown-eared Woodpecker	*Campethera caroli*
13	Buff-spotted Woodpecker	*Campethera nivosa*
14	Chocolate-backed Kingfisher	*Halcyon badia*
15	African Dwarf Kingfisher	*Ispidina lecontei*
16	White-bellied Kingfisher	*Alcedo leucogaster*
17	Western Bronze-naped Pigeon	*Columba iriditorques*
18	Afep Pigeon	*Columba unicincta*
19	Blue-headed Wood Dove	*Turtur brehmeri*
20	Grey-necked Picathartes	*Picathartes oreas*
21	Grey parrot	*Psitticus erithacus*
22	Grey-throated Rail	*Canirallus oculeus*
23	Plumed Guineafowl	*Guttera plumifera*
24	Latham's Forest Francolin	*Francolinus lathami*
25	Little swift	*Apus affinis*
26	Ansorge's greenbul	*Andropadus ansorgei*
27	Eastern bearded greenbul	*Criniger chloronotus*
28	Icterine greenbul	*Phyllastrephus icterinus*
29	White-bearded greenbul	*Criniger ndussumensis*
30	Cameroon Sombre greenbul	*Andropadus curvirostris*
31	Yellow-necked Greenbul	*Chlorocichla falkensteini*
32	Red-tailed greenbul	*Criniger calurus*
33	Xavier's greenbul	*Phyllastrephus xavieri*
34	Yellow-throated Nicator	*Nicator vireo*
35	Lesser Bristlebill	*Bleda notatus*
36	Red-tailed Bristlebill	*Bleda syndactylus*
37	Black Bee-eater	*Merops gularis*
38	Blue-headed Bee-eater	*Merops muelleri*
39	Black-and-white mannikin	*Spermestes bicolor*
40	Black-capped	*Illadopsis cleaver*
41	Brown Illadopsis	*Illadopsis fulvescens*
42	Brown-chested Alethe	*Alethe poliocephala*
43	Fire-crested Alethe	*Alethe diademata*
44	Red-tailed Ant Thrushe	*Neocossyphus rufus*
45	White-tailed Ant Thrushe	*Neocossyphus poensis*
46	Black-collared Lovebird	*Agapornis swindernianus*
47	Cassin's Malimbe	*Malimbus cassini*
48	Blue-billed Malimbe	*Malimbus nitens*
49	Blue-throated Rollers	*Eurystomus gularis*
50	Brown-backed Scrub Robin	*Cercotrichas hartlaubi*

51	Cassin's Spinetail	*Neafrapus cassini*
52	Dusky Crested Flycatcher	*Elminia nigromitrata*
53	Cassin's Flycatcher	*Musdcapa cassini*
54	Fraser's Forest Flycatcher	*Fraseria ocreata*
55	Olivaceous Flycatcher	*Muscicapa olivascens*
56	White-browed Forest Flycatcher	*Fraseria cinerascens*
57	Shrike Flycatcher	*Megabyas flammulatus*
58	Tessmann's Flycatcher	*Muscicapa tessmanni*
59	Dusky Long-tailed Cuckoo	*Cercococcyx mechowi*
60	Olive Long-tailed Cuckoo	*Cercococcyx olivinus*
61	Gosling's Apalis	*Apalis gosling*
62	Green-throated Sunbird	*Chalcomitra rubescens*
63	Johanna's Sunbird	*Cinnyris johannae*
64	Little Green Sunbird	*Anthreptes seimundi*
65	Little Grey greenbul	*Andropadus gracilis*
66	Collared sunbird	*Anthodiata collaris*
67	Tiny Sunbird	*Cinnyris minullus*
68	Lesser striped swallow	*Cecropis abyssinica*
69	White-throated Blue Swallow	*Hirundo nigrita*
70	Lowland Akalat	*Sheppardia cyornithopsis*
71	Maxwell's Black Weaver	*Ploceus albinucha*
72	Yellow-capped Weaver	*Ploceus dorsomaculatus*
73	Narrow-tailed Starling	*Poeoptera lugubris*
74	Splendid Starling	*Lamprotornis splendidus*
75	Purple-headed Starling	*Lamprotornis purpureiceps*
76	Rufous-bellied helmetshrike	*Prionops rufiventris*
77	Sabine's Spinetail	*Rhaphidura sabini*
78	Blue Cuckoo-shrike	*Coracina azurea*
79	Sooty Boubou	*Laniarius leucorhynchus*
80	Western black-headed oriole	*Oriolus brachyrhynchus*
81	Western Bluebill	*Spermophaga haematina*
82	White-spotted Flufftail	*Sarothrura pulchra*
83	Spotted Honeyguide	*Indicator maculatus*
84	Zenker's Honeyguide	*Melignomon zenkeri*