

A new record of Bornean Peacock Pheasant *Polyplectron schleiermacheri* from Sabah, Malaysia

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The Bornean Peacock Pheasant *Polyplectron schleiermacheri* is an elusive, little-known Bornean endemic, with no recent records from Sabah, and a total population that may number only a few thousand individuals. In May–June 2016 the species was camera-trapped in the North Kuamut Forest Reserve in central Sabah. Up to three birds were recorded, on three separate dates, including an adult female and at least one apparent juvenile, the plumage of which has not previously been fully described. The birds were camera-trapped in an area of heavily degraded forest at an altitude of around 250 m. The images confirm the continued presence of Bornean Peacock Pheasant in Sabah, and at a previously unreported locality. They also provide evidence of breeding. These records are notable for being from heavily degraded forest, whereas the species is traditionally associated with primary forest. The area in which the records were made is now being targeted for conservation and restoration, with the prospect of further surveys. The record serves to remind visitors to Sabah's forests that they should remain vigilant for the calls of Bornean Peacock Pheasant.

INTRODUCTION

The Bornean Peacock Pheasant *Polyplectron schleiermacheri* is an elusive, little-known Bornean endemic. First collected at Muaratewe in Central Kalimantan in the late 1870s (Brüggermann 1877), it is known to be widely distributed across lowland Borneo, but has never been frequently encountered (Smythies 1981, Sözer *et al.* 1997, O'Brien *et al.* 1998, Mann 2008). The majority of recent records are from Indonesian Kalimantan, particularly the lowlands and foothills surrounding the central mountain ranges in East, Central and West Kalimantan (Mann 2008).

In the Malaysian state of Sabah, the Bornean Peacock Pheasant was first recorded in the 1890s, when 10 specimens were collected in the far north of the state, in the Paitan area (Gore 1968). This area is now largely deforested and searches in 1938–1939 failed to locate any birds (Smythies 1957). It was over a century before there was a second specimen record, an adult male collected at a somewhat ambiguous location given as 'Tongod, Ulu Tongod, or Ulu Tongod Forest Reserve, near Telupid' in January 1996. The specimen was deposited in the Sabah Museum, Kota Kinabalu (G. W. H. Davison *in litt.* 2017). Much of this area has since been heavily logged, with adjoining areas converted to plantations (Global Forest Watch 2014). Subsequent to the Tongod record, in 1998 a local guide described seeing the species near the Sukau river, a branch of the lower Kinabatangan (J. Corder *in litt.* 2017); then, in August 1998, a call thought to be that of a peacock pheasant was heard close to the Borneo Rainforest Lodge in Danum Valley (J. Corder *in litt.* 2017). This paucity of confirmed records, when contrasted with the relatively high number of birdwatchers and researchers visiting Sabah's forests, has led some to conclude that the species may now be extinct in the state (Eaton *et al.* 2016).

Across its full range, Bornean Peacock Pheasant has been recorded in forested habitat from sea-level to 1,000 m, but mainly near the lower end of this range (Madge & McGowan 2002, Mann 2008). Few empirical studies of the species's habitat preferences exist but, according to Fredriksson & Nijman (2004), it appears to avoid swamp-forest or flooded areas; beyond that, little is really known about the species's habitat preferences. The species has been recorded in areas of forest that were previously burned, but its tolerance of disturbed, degraded or regenerating habitats appears low, with the majority of records to date being from primary forest (Mann 2008). Bornean Peacock Pheasant is classified as Endangered (BirdLife International 2017), mainly due to its apparent restriction to primary lowland and lower hill forest, habitats which have suffered rapid loss, fragmentation and degradation over recent decades (Gaveau *et al.* 2014, BirdLife International 2017). The species has also been

recorded in trade by TRAFFIC in 1998, when six birds were taken out of Kalimantan to Singapore (C. Shepherd *in litt.* 2017). Due to the lack of quantitative data, the size of the current population of Bornean Peacock Pheasant is unknown, but the low number of records from remaining areas of apparently suitable habitat suggest that only a few thousand, if not fewer, individuals remain, with BirdLife International estimating the population to be between 600 and 1,700 (BirdLife International 2001, 2017).

Here we report a new locality for Bornean Peacock Pheasant from Sabah—the North Kuamut Forest Reserve. This large area of degraded forest now covers about 83,000 ha to the south of the Kinabatangan River and to the north-west of the famous Danum Valley Conservation Area (Figure 1). The area has suffered a long history of repeated logging, but from around 2015 onwards all logging ceased, and it is now the target of a large-scale long-term forest protection and restoration project.

OBSERVATIONS

Bornean Peacock Pheasant was camera-trapped in the North Kuamut Forest Reserve on three occasions. On 29 May 2016 two birds were recorded, of which at least one was an apparent juvenile (Plate 1); on 10 June one adult female was recorded (Plate 2), and

Figure 1. The location of the Kuamut Forest Reserve, Sabah; the exact location of the camera-trap is withheld. Since 2015, the northern and eastern part of this area, known as the North Kuamut Forest Reserve, has been the target of a large-scale forest restoration and protection project.

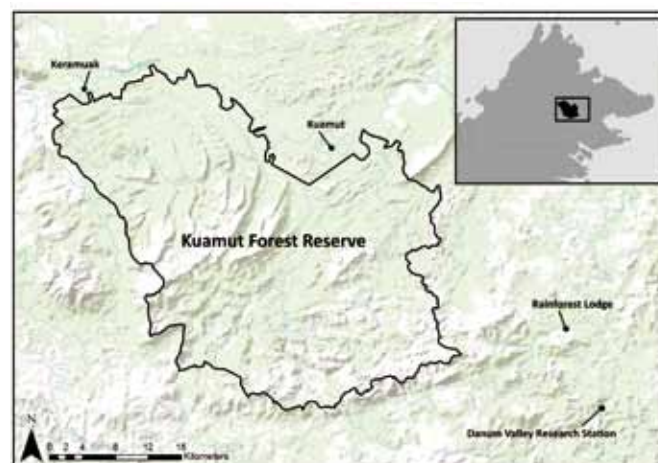




Plate 1. An apparent juvenile male Bornean Peacock Pheasant *Polyplectron schleiermacheri*, North Kuamut Forest Reserve, Sabah, 29 May 2016. The bird lacks ocelli on its tail feathers, suggesting it is a juvenile, whilst also appearing to display ten pairs of tail feathers, indicating that it is a male.



Plate 2. An adult female Bornean Peacock Pheasant, North Kuamut Forest Reserve, 10 June 2016.



Plate 3. A group of three camera-trapped Bornean Peacock Pheasants, North Kuamut Forest Reserve, 18 June 2016. The bird on the left is an apparent adult female, based on the blue-green ocelli on the tail. The bird on the right lacks these, indicating it is a juvenile; the ten pairs of tail feathers suggest it is a male. Note how the patterns of spots on the back and wing coverts differ in pattern between the foreground birds. A third bird is partially visible in the background to the right. This bird cannot reliably be identified as either a juvenile or adult female, but it is clearly not an adult male.

on 18 June 2016 there were three birds—one apparent juvenile, one adult female and one of unknown age and sex (Plate 3). All records were from the same camera-trap (Reconyx PC850), the exact location of which is withheld as a precautionary measure.

The images show up to three birds, most probably the same group on each occasion (see above). The juvenile plumage of Bornean Peacock Pheasant has never been fully described, but the images show a bird with typical female-like plumage, although lacking the blue-green ocelli on the tail shown by an adult. On two of the images (Plates 1 & 3), the apparent juvenile appears to show 10 rectrices on the side of the tail facing the camera, which might indicate that it is a male, as females of other *Polyplectron* species typically possess only nine pairs (Madge & McGowan 2002, J. Corder *in litt.* 2017). Similarly, the black spots on the back and wing-coverts also appear more like those of an adult male than an adult female. It is also of interest to note the grey head, whitish chin, dull orange facial skin, and the strongly barred outer webs of the rectrices. It is not possible to tell whether the third bird which can be seen in the background (Plate 3) is an adult female or a juvenile, but it is definitely not an adult male.

The habitat in the vicinity of the camera-trap was mainly heavily degraded forest, the whole North Kuamut area having been actively logged as recently as 2009 (Yayasan Sabah *in litt.* 2017). Large trees have now been lost from most parts, with only small remnant patches of nearly intact forest remaining on steep slopes, and young pioneer woody vegetation such as *Macaranga* now predominating in more degraded areas. The camera-trap itself was placed on an old logging skid-trail, still easily identifiable as such. The camera was located in a flattish area, not near any river, stream or pond, at an altitude of around 250 m. Land in the general vicinity is mainly a series of low ridges and valleys at altitudes from 50–700 m.

The birds were recorded during a systematic camera-trapping programme throughout the North Kuamut Forest Reserve between March and July 2016. Camera-trap placement in general sought to optimise terrestrial mammal detections, but all images obtained were examined and fully identified. The majority of cameras used visual flashes rather than infra-red, as the image quality is typically better. The camera-trap survey included 53 stations, each consisting of two camera-traps set at a height of approximately 30 to 45 cm above the ground. The distance between cameras was on average 2.2 km, and they were left in place for a minimum of 60 days, and for as long as three months. The camera which recorded the images included here was active for 82 days (26 April to 17 July 2016). No other camera recorded Bornean Peacock Pheasant, but other species recorded in the vicinity included Bearded Pig *Sus barbatus*, Malayan Porcupine *Hystrix brachyura*, Long-tailed Porcupine *Trichys fasciculata*, Malay Civet *Viverra zibetha*, unidentified chevrotain *Tragulus* sp., Pig-tailed Macaque *Macaca nemestrina*, Sambar *Rusa unicolor*, Short-tailed Mongoose *Herpestes brachyurus* and Sun Bear *Helarctos malayanus*. Similarly, camera-trapping between 2008 and 2015 in nearby Tangkulap-Pinangah Forest Reserve and Deramakot Forest Reserve, in habitat and at altitudes similar to Kuamut, and again primarily focused on terrestrial mammals, recorded no Bornean Peacock Pheasants in over 20,000 camera-trap nights from over 350 different stations (Mohamed *et al.* 2013, Mohamed *et al.* in prep.).

DISCUSSION

This series of images confirms the continued presence of Bornean Peacock Pheasant in Sabah, and at a previously unreported locality. Furthermore, the presence of at least one juvenile bird is evidence of breeding. Nothing is known about the breeding habits of Bornean Peacock Pheasant in the wild, but birds in captivity, and the closely related Malay Peacock Pheasant *P. malacense*, typically lay single-egg clutches (Madge & McGowan 2002), which would support the

theory that the 'third bird' seen in Plate 3 was another adult female rather than another juvenile.

These records are also notable for being from heavily degraded forest rather than in, or close to, pristine forest habitat. It is also the first record of breeding in such habitat. Whether this is indicative of a relict population struggling to survive, or evidence of a hitherto unknown tolerance for a degraded environment, can only be speculation. One cause for optimism is that the area in which they were recorded is now subject to a proposed long-term forest protection and restoration project that should see the forest protected from further disturbance for the foreseeable future, and the area itself became a fully protected (Class 1) Forest Reserve in 2016.

Further surveys are already planned, including both camera-trapping and bird surveys based on sightings and calls. It is hoped that they will reveal more information about the species in the Kuamut area. The record should also serve to remind both visiting researchers and birdwatchers to Sabah (and other parts of Borneo) that they should remain vigilant for the calls of Bornean Peacock Pheasant (www.xeno-canto.org/species/Polyplectron-schleiermacheri). Similarly, researchers using camera-traps to survey large mammalian fauna should pay close attention to any images of terrestrial birds that are obtained to ensure that records of Bornean Peacock Pheasant are not overlooked or misidentified.

ACKNOWLEDGEMENTS

This project was supported by the German Federal Ministry of Education and Research (BMBF FKZ:01LN1301A) and part of the fieldwork was supported by the Point Defiance Zoo and Aquarium, through the Dr. Holly Reed Conservation Fund. The authors would like to thank Yayasan Sabah, Rakyat Berjaya, Maxland and the Sabah Forest Department for providing support and access to the Kuamut area. We thank the Sabah Biodiversity Centre for issuing a research permit to carry out research in Sabah and our local research assistants for their involvement during field work. We would also like to thank Geoffrey Davison, John Corder, Clive Mann, Chris Shepherd, James Eaton, Will Duckworth and Simon Mitchell who provided input and information to the draft of this manuscript, and Nathan Renneboog for creating the map.

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