Recent records and breeding of Rufous Potoo *Nyctibius bracteatus* in French Guiana

Johan Ingels, Nigel Cleere, Vincent Pelletier and Vanessa Héquet

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L'Ibijau roux *Nyctibius bracteatus* est le plus petit des ibijaux. Les localités dispersées dans lesquelles l'espèce a été trouvée suggèrent sa présence dans toute la forêt amazonienne. Cet ibijau est rare dans toute son aire de distribution. Son comportement reste mal connu et notre connaissance de sa reproduction n'est actuellement basée que sur les données d'un seul nid. Les premières observations de l'Ibijau roux en Guyane ont été faites en 1998 et 2000. Nous complétons aujourd'hui ces connaissances par des observations récentes ainsi que par deux données de reproduction de cet ibijau. Nous présentons de plus la première photo d'un juvénile.

Potoos are insectivorous nocturnal birds represented by seven species in Middle and South America. The widespread Great *Nyctibius grandis* and Grey Potoos *N. griseus* frequently inhabit more open habitats, are therefore more easily observed, and are understandably the best known. Northern *N. jamaicensis* and Andean Potoos *N. maculosus*, which are restricted to continental Central America and a few West Indian islands, and to humid forest in the Andes, respectively, are less well known, whilst Rufous *N. bracteatus* and White-winged Potoos *N. leucopterus* prefer lowland rainforest and Long-tailed Potoo *N. aethereus* occurs in both lowland primary and secondary forests, where they are easily overlooked[6,9]. However, as their vocalisations become better known[12], these potoos are located and observed with increasing frequency and our knowledge of their distributions and life histories continues to grow[2,11]. Thus, we now know that of these sympatric forest species, *N. leucopterus* prefers the forest canopy, *N. bracteatus* the mid- and understories, and *N. aethereus* occurs in the midstorey, as well as at edges and treefalls[7].

Rufous Potoo, the smallest of the genus, at c.21–25 cm, is distinct not only by its size, but also the deep rufous coloration spotted white over the scapulars, breast and belly[3,6,9]. It is known from scattered localities throughout lowland Amazonia, from west-central Colombia, eastern Ecuador, eastern Peru and north-west Brazil, with more recent records coming from southern Venezuela, Guyana, Surinam and French Guiana[13]. Generally considered uncommon throughout its range[3,6,9], the species typically occurs in the understorey of primary forest, as well as in swampy palm forest[9], in old, well-grown secondary forest and at large natural treefalls in primary forest (A. Whittaker *in litt*. 2007). Little is known about its behaviour or reproduction, and the only breeding data published were based on the first nest found in Amazonian Brazil[5], although several other nests have since been found and studied in the same country (M. Cohn-Haft *in litt*. 2007). The first confirmed records of Rufous Potoo in French Guiana were in 1998[14] and 2000[4]. Here, we document recent observations in French Guiana and comment on two breeding attempts. We also present the first photograph of a juvenile.

Methods

We searched the literature and electronic resources for all written and photographic records of Rufous Potoos in French Guiana. Between 1999 and 2006, JI spent a total 28 weeks in this French department, of which 22 weeks were at Saül in the interior, where he mainly surveyed nighthawks, nightjars and potoos. Saül is surrounded by primary forest. From 1997 until the end of 2006, VP lived in a 1-ha clearing, c.1 hour's walk south-east of the same village. NC was in French Guiana on 8 September–1 October 2000 and 4–8 November 2002, conducting nightjar and potoo surveys with JI, around Saül and along the Mana River respectively. Between September 1998 and September 1999, VH worked as a botanist in the Réserve Naturelle Les Nouragues (04°05'N 52°41'W). During this period, she spent c.6 months in the reserve.

Records

In October 1998, VH discovered a Rufous Potoo c.100 m from the Crique (=Creek) Arataye (or Arataï, but not Atarayte[10]), near Camp Arataye (03°59'N 52°34'W), an ecotourist campsite run by the Association Arataï in collaboration with the Centre National de la Recherche Scientifique (CNRS). The camp is surrounded by lowland primary forest and is located at the confluence of the Crique Arataye and the Approuague River, at the entrance to the Réserve Naturelle Les Nouragues. The potoo was perched atop a dead tree stump, 2.0–2.5 m high with a diameter of c.3 cm at the top. When approached too closely, the potoo flew off to reveal a single egg. The egg and incubating bird disappeared c.10 days after being discovered. A thorough search of the forest floor around the

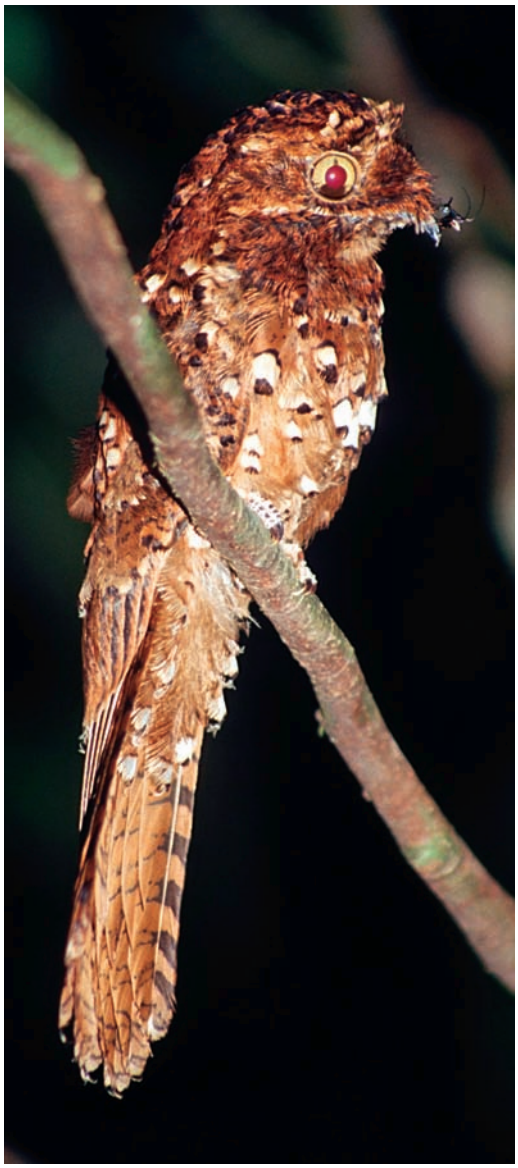

Figure 1 (above). Adult Rufous Potoo *Nyctibius bracteatus*, Montagnes de la Trinité, French Guiana, October 2002 (Maël Dewynter)

Figure 2 (top right). Adult Rufous Potoo *Nyctibius bracteatus* brooding a chick, Maripasoula, French Guiana, January 2006; the feet of both the adult and chick are clearly visible (Tanguy Deville)

Figure 3 (right). Juvenile Rufous Potoo *Nyctibius bracteatus*, Maripasoula, French Guiana, January 2006 (Tanguy Deville)

nesting tree failed to produce any signs of predation such as eggshell fragments. Predation by Tayra *Eira barbara* or Coatimundi *Nasua nasua*, both common in the reserve, might be a plausible explanation for this apparently failed breeding attempt. A photograph of the incubating bird, taken by S. Blanc, is posted on the website of the Société d'Études, de Protection & d'Aménagement de la Nature en Guyane (http://sepanguy.free.fr/). This constitutes the first record (and breeding) of Rufous Potoo in French Guiana[10].

On 20 September 2000, a Rufous Potoo was heard singing in primary forest at Camp Carbet Max (03°29'N 53°11'W), along the Creek Limonade, c.5 km south of Saül, by NC and JI[4]. It sang almost continuously between 05h15 and 06h00, with pauses of up to 30 seconds or more between songs. The vocalisation matched descriptions for the species[3,6,9] and was immediately identified by playback of a recording from Manaus, Brazil[12]. Another Rufous Potoo was heard singing briefly at dusk on 22 September 2000, by NC, in primary forest on the outskirts of Saül (03°35'N 53°12'W).

During an avifaunal survey of the Réserve Naturelle de la Trinité (Montagnes de la Trinité), organised by the Office National des Forêts (ONF), M.-L. Cayatte found a Rufous Potoo in the morning of 4 October 2003, at Camp Aïmara (04°40'N 53°17'W), near the Crique Grand Blond (O. Claessens pers. comm.). This locality is just c.80 km inland. It was photographed the same day by M. Dewynter (Fig. 1). The bird was seen again several times in the preceding days, usually perched at a height of c.3 m in an understorey sapling.

Intensive nocturnal surveys for potoos were conducted, by VP, in April–July 2004 at La Barje Verte (03°35'N 53°12'W), a man-made clearing in primary forest. Surveys were conducted without playback on at least three evenings per week, approximately from sunset until midnight. *N. bracteatus* was heard singing on six nights, always near the clearing. On 30 April one was heard singing between 21h30 and 23h00 and again from 23h30 to 00h30. On 5 June, one sang for c.5 minutes at 23h25 and, on 11 June, one sang once at 02h30. On both days in June, singing commenced at moonrise. On 23, 26 and 27 July, one sang for c.5 minutes at 20h45, 21h20 and 01h35 respectively.

On 21 November 2005, JI and VP heard a Rufous Potoo singing at 22h00 from secondary forest adjacent to primary forest, at the southern end of the airstrip on the outskirts of Saül (03°37'N 53°12'W).

On 31 January 2006, T. Deville (pers. comm. 2006) found a Rufous Potoo c.10 m inside a patch of secondary forest within primary forest beside the Maroni River, on the western outskirts of Maripasoula (03°38'N 54°02'W). It was perched atop the dead stump of a spiny palm, at c.2 m above ground. The stump was c.3.5 cm in diameter and on the bank of a tiny creek that flows into the Maroni River. Following heavy rain, the base of the dead palm was surrounded by water. On 10 February, the adult was found brooding a single chick. The adult brooded the chick from behind, thus only its head was visible amongst the adult's breast feathers (Fig. 2). Daily observations revealed that an adult brooded the chick until at least 22 February, when it was first left unattended atop the stump (Fig. 3). On 11 March, the young had disappeared and had possibly fledged. If Rufous Potoo has an incubation period of c.1 month and a fledging period of c.2 months, as in other potoos[6], then the egg was possibly laid in the first half of December, at the end of the dry season.

Rufous Potoo has to date not been heard at Saint-Eugène (04°51'N 53°04'W), a field station of the Muséum National d'Histoire Naturelle (Paris), despite intensive surveys since 1994[1] (O. Claessens pers. comm.). During a two-week avifaunal survey of Massif Lucifer (04°44'N 53°55'W) in late 2006, organised by the Office National des Forêts, no Rufous Potoos were heard (O. Claessens pers. comm.). Both localities are in primary forest.

Discussion

Status

Rufous Potoo is probably uncommon and local throughout its range[3,6,9]. In French Guiana, the species has been found at Camp Arataye, Saül and Maripasoula in the interior. Forests at these localities have been well surveyed for birds. At Saint-Eugène in the coastal region, the species has surprisingly not been heard, despite much attention to its possible presence. However, this potoo has been found at the Réserve Naturelle de la Trinité, just c.30 km further inland from Saint-Eugène. In French Guiana, Rufous Potoo is certainly not common, but careful surveys will surely reveal its presence at other forest localities.

Habitat

Rufous Potoo occurs in a broad variety of habitats, but mainly in lowland primary forest[3,6;9]. In French Guiana, however, two individuals, one breeding near Maripasoula and one singing near the airstrip of Saül, were in older, well-developed secondary forest, adjacent to primary forest. All other observations were made in primary lowland forest.

Singing

The species' typical song is an owl-like series of bubbling *boo-boo-boo* notes that trails off and descends in pitch at the end[12]. Year-round surveys by VP suggest that Rufous Potoo may not be vocal at certain seasons (non-breeding?), making its presence easily overlooked. Surveys were

performed during all phases of the moon, but singing was only heard on nights within a period of seven days before and seven days after a full moon. Singing may occur from dusk to dawn, but tends to be more prolonged before midnight.

Nest sites

Of the two nesting attempts in French Guiana, one nest was sited well inside primary forest, the other in secondary forest near primary forest. At one site, an egg was laid on top of a dead tree stump, 2.0–2.5 m above ground. As is typical of all *Nyctibius*[6], the incubating adult covered the egg completely, making it invisible unless left unattended. At the second nest, c.2 m above ground, the adult was not disturbed at the time of discovery and breeding was only confirmed when the chick became visible. The diameter of the tree stump varied between 3–4 cm. The nest at Maripasoula resembled that of a Grey Potoo in eastern Ecuador, where an adult incubated an egg on top of a spiny-covered stump surrounded by water[8]. Observations presented here correlate with data from the first nest of Rufous Potoo, discovered north of Manaus, Amazonas, Brazil[5], which was well inside primary forest and at which an adult and chick perched on top of a palm stump, several metres high and with an estimated diameter of c.4 cm at the top.

Nesting period and seasonality

How the period of c.3 months between egg laying and fledging of the young[6] correlates to the 28-day lunar cycle is unknown. Potoos typically possess large amounts of fat in the abdominal cavity, which may be an adaptation for surviving periods without food, such as rainy or moonless nights. Supplementing diet from fat stores during periods of reduced foraging may also be advantageous to both adults and young during the long nesting period[6]. Although poorly understood, rainfall, insect abundance and lunar cycles are possibly related to nesting seasonality, as is the case for Caprimulgidae[3,6,9]. Heavy rainfall may endanger chick survival, decrease insect abundance and limit foraging time, whilst full-moon periods offer greater foraging opportunities. Nesting in the drier parts of the year is therefore probable. In French Guiana, October and December coincide with the middle and late dry season respectively.

Description of juvenile

Upperparts cinnamon, with some rufous feathers emerging, finely barred and vermiculated brown, and boldly spotted blackish brown on the crown, nape, back and wing-coverts. Underparts probably similar to upperparts, though throat apparently greyish-white. Bill greyish and iris pale yellow. The juvenile in Fig. 3 is identical to another young photographed in Ecuador by N. Blank in December 2004.

Previous descriptions of juvenile plumage state that it is browner without white spots[6], or that it is duller than that of the adult, with black blotches on the head and mantle, and smaller white markings on the scapulars, breast and belly[9]. It is probable that the latter description is of an immature that has undergone post-juvenile moult. A downy chick has been photographed but not yet described in the literature (M. Cohn-Haft *in litt*. 2007).

Conclusions

Since its discovery in French Guiana in 1998, the presence and breeding of Rufous Potoo has been confirmed at several sites throughout the department. Knowledge of its territorial, nocturnal song is probably the most important factor for establishing its presence in a given area, and use of playback is probably the best way to establish the species' presence. Present data suggest, however, that it is not common in French Guiana.

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Johan Ingels
Galgenberglaan 9, BE-9070 Destelbergen, Belgium. E-mail: johan.ingels@skynet.be.

Nigel Cleere
2 Hawthorn House, Roundfields, Upper Bucklebury, Berks. RG7 6RQ, UK. E-mail: cleere@churr.freeserve.co.uk.

Vincent Pelletier
4, Lotissement Beney, Route de Montabo, FR-97300 Cayenne (Guyane française), France.

Vanessa Héquet
18, Rue Saint-Exupéry, FR-95150 Taverny, France. E-mail: vhequet@hotmail.com.