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On the juvenile plumage of Spot-tailed Nightjar *Hydropsalis maculicaudus*

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Spot-tailed Nightjar *Hydropsalis maculicaudus* occurs patchily from south-east Mexico to the Guianas, northern Brazil to south-east Peru, north and east Bolivia, eastern Paraguay and south-east Brazil (Cleere 1998, 1999). Its natural history is poorly known (Cleere 1998, Ojeda *et al.* 2014). Cleere (1998) described immature and juvenile plumages as similar to that of the adult female, but with all primaries and secondaries narrowly tipped pale buffish. Here, we provide a detailed description of the species' juvenile plumage.

Between October 2010 and May 2014, we undertook nocturnal surveys from dirt roads at Santa Alejandrina marsh, Minatitlan municipality, Veracruz, Mexico. When caprimulgids were detected by their eyeshine, we turned off the vehicle engine and trapped the birds using a portable round net (CAPERLAN 4x4 240). Birds were banded, aged and sexed, and if possible measured before being released. For ageing, moult criteria and colour contrast were used, as well as descriptions of typical moult strategy (Pyle 1997, Cleere 1998); for sexing, plumage criteria were mainly used. Caprimulgids encountered were Lesser Nighthawk *Chordeiles acutipennis*, Common Nighthawk *C. minor*, Pauraque *Nyctidromus albicollis*, Chuck-will's-widow *Antrostomus carolinensis*, Eastern Whip-poor-will *A. vociferus* and Spot-tailed Nightjar *Hydropsalis maculicaudus*. On 30 May 2014, we trapped two juveniles of the last-named species.

Juvenile plumage

The following characters were noted in both individuals. Forehead and crown blackish slightly spotted buff or tawny. Nape blackish brown, spotted or barred tawny and cinnamon-buff. Loes and ear-coverts tawny and cinnamon-rufous speckled dark brown (Fig. 1). Beige supercilium, pale malar stripe, throat paler than in adult, chest coarsely mottled cinnamon to buff or tawny. Reddish-cinnamon hindcollar slightly indicated (obvious in adults). Upperparts paler grey-brown, cryptically vermiculated dark brown, with buff-white or tawny spots (lacking adult's distinctive buffy scapular 'V'; Fig. 1). Rump and underparts buffy, barred blackish brown. Wing-coverts barred brown-cinnamon and black, forming



Figure 1. Juvenile Spot-tailed Nightjar *Hydropsalis maculicaudus*, Santa Alejandrina marsh, Minatitlan municipality, Veracruz, Mexico, 30 May 2014 (Israel Moreno)



Figure 2. Juvenile Spot-tailed Nightjar *Hydropsalis maculicaudus*, showing primaries mottled buffish cinnamon or rufous with black, inner primaries slightly tipped pale buffish and secondaries barred pale buff-cinnamon on brown-black background with buffy tips (Israel Moreno)



Figure 3. Rectrices of juvenile Spot-tailed Nightjar *Hydropsalis maculicaudus* (Israel Moreno)



Figure 4. Typical flight-feather growth in juvenile Spot-tailed Nightjar *Hydropsalis maculicaudus*, with buff-cinnamon pattern on black background (Israel Moreno)

slightly buffy spots (in adults these are strongly marked) and underwing-coverts beige-cinnamon and black; primaries mottled buffish cinnamon or rufous with black, inner primaries slightly tipped pale buffish and secondaries barred pale buff-cinnamon with brown-black background and buffy tips (Fig. 2). Tertiaries brown, spotted buff and blackish brown. Rectrices generally like those of adult females, central rectrices (r1) greyish brown barred black, slightly fringed cinnamon-rufous, and outer rectrices (rr2–5) blackish with brown-rufous bars or spots, speckled greyish brown and slightly tipped pale buffish (Fig. 3). In adult females, rr2–5 are dark brown indistinctly barred pale tawny or buff, and tipped buffish brown speckled brown (Cleere 1998). Cleere (1998: 218) had not previously noted that juvenile plumage differs from that of adult females in tail pattern.

Reviewing rectrices moult by caprimulgids (Pyle 1997, Cleere 1998), it appears that most (if not all) species replace their tail-feathers during the first pre-basic moult. It is possible that Spot-tailed Nightjar also does so. Of 32 individuals of the species that we captured between October 2010 and May 2014, only eight were determined as HY/SY (young yet to complete first cycle of basic moult) due to wing moult. Just one SY (second-year bird) banded was male, based on wing pattern and tail coloration (e.g. Cleere 1998). Of eight HY/SY birds, four were sexed as female using tail pattern (Cleere 1998).

Our data suggest that males have slightly longer wings than females: measurements for males ($n = 5$) were 130–139 mm, vs. 125–133 mm from females ($n = 4$). Cleere (1998) reported ranges of 127–146 mm for males and 122–137 mm for females. In contrast, the two juveniles in our study had wings of 105 and 113 mm, respectively, indicating ongoing growth of flight-feathers (Fig. 4). As juveniles have female-like rectrices and still-growing flight-feathers, it was impossible to sex them.

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