

First description of the eggs, chick, and nest site of the White-winged Nightjar *Eleothreptus candicans*

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ABSTRACT: We provide the first description of the nest site, eggs, and chick of the globally threatened White-winged Nightjar *Eleothreptus candicans*, based on observations in Aguara Ñu, Mbaracayú Forest Nature Reserve, Paraguay, made during November-December 1997. Two eggs were laid directly on the ground at the edge of a small clearing in *campo-sujo* grassland. Only the female appeared to attend the nest, undertaking a distraction display when the nest site was closely approached. Just one egg hatched, after a period of at least 16 days.

KEY WORDS: Caprimulgidae, *Cerrado*, distraction display, parental care, Paraguay.

INTRODUCTION

The White-winged Nightjar *Eleothreptus candicans* is one of the rarest caprimulgids in the Americas, considered Endangered by BirdLife International (2013). Until recently, White-winged Nightjar was also one of the least known of Neotropical caprimulgids. Cleere and Nurney (1998) considered the adult female plumage, chick, nest site, and eggs to be unknown. A population of the species was discovered at Aguara Ñu, Mbaracayú Forest Nature Reserve in 1995 (Lowen *et al.* 1997), and studies there have documented the female plumage (Capper *et al.* 2000), male display behavior (Clay *et al.* 2000), and breeding biology (Pople 2014). Here we provide details of the first known nest site, eggs, and chick of the species. These were previously briefly summarized in Cleere (1999), with additional data presented in Pople (2003).

The study site and methods

From July-December 1997 we undertook a study of the White-winged Nightjar population at the Mbaracayú Forest Nature Reserve, located in an area of palm savanna known as Aguara Ñu (see Clay *et al.* 1998). Aguara Ñu (centered on 24°10'S, 55°16'W) is a low plateau bordered by two rivers—the Arroyo Guyrakeha and the Río Jejui-

mí—and contains 5,487 ha of *Cerrado* habitats (a mosaic of deciduous and gallery forest, savannas, and grasslands). The variety of *Cerrado* habitats in Aguara Ñu includes *campo-sujo* grasslands with scattered *Yata'i* palms (*Butia paraguayensis*), dense *Yata'i campo cerrado*, wet grasslands and marshes, xerophytic woodlands and gallery forest. The southern border of the plateau is formed by a series of low ridgelines separated by valleys whose floors contain saturated grasslands around small water courses which run into the Arroyo Guyrakeha. Palm density is highest on the center of the plateau and along the crests of the ridgelines. On ridge slopes the *campo* grassland is more open, with few palms.

At 2030 h on 22 November 1997, EZE flushed a caprimulgid from an area of *campo-sujo* grassland on the southern edge of Aguara Ñu. On searching, two eggs were found on bare ground, partially concealed by the surrounding vegetation. On 23 November, JMB, RPC, and EZE returned to the nest and were able to confirm the identity of the incubating bird as a female White-winged Nightjar. The bird was identified as this species due to the head and upperpart plumage being similar to that of adult male White-winged Nightjar. Previously (on 21 November) a gravid White-winged Nightjar was caught, confirming the plumage to be that of a breeding female. Intermittent observations were conducted at the nest during November and December.

Description of the nest site and location

As with other Caprimulgid species, no nest was constructed, with the two eggs laid on an area of bare earth, of total diameter approximately 30 cm. This patch of earth was largely exposed from above, although the eggs were placed to one side, partially covered by a small herb *Mimosa dollens* (Figure 1). The surrounding vegetation was primarily herbaceous and 30-50 cm in height, with *Campomanesia adamantium* (Myrtaceae) among the dominant species.

The nest site was located just above the head of a small valley in *campo-sujo* grassland on a slope of 8°, and an aspect of 220°. The general area had a relatively higher density of *Yata'i* palms compared to adjacent male display arenas (see Clay *et al.* 2000), or the pure grasslands of the valley sides and bottom. However, the nest site was located in a small clearing amongst the palms, with only 14 *Yata'i* palms and 4 saplings within a radius of 14 m of the nest-site (Figure 2). Of the 14 palms, 11 were less than 1.5 m in height, and all were under 2 m. There was also a comparatively high density of dicot herbs in the *campo-sujo* of this area.

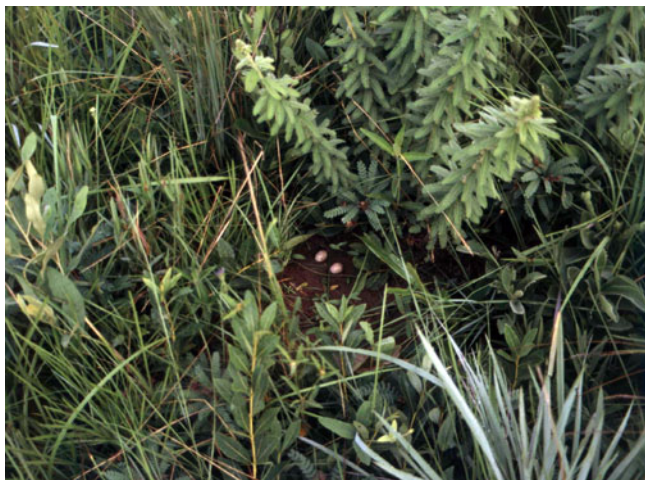


FIGURE 1. View from above of *Eleothreptus candicans* nest-site (Photo: Juan Mazar Barnett)



FIGURE 2. Immediate surroundings of *Eleothreptus candicans* nest-site (Photo: Juan Mazar Barnett)

Description of the eggs

The two eggs measured: 28.9 mm x 21.4 mm and 28.7 mm x 21.3 mm, with weights of 7.6 g and 7.5 g, respectively. Both eggs were quite uniform in width, pale creamy-brown in color, and with a fairly uniform light covering of darker brown and some greyer speckling. The slightly larger egg had uniform spotting over its whole surface, with grey spots and speckles overlaid with small dark brown spots. The slightly smaller egg had larger spots concentrated at the obtuse end, and fine elongated spots at the acute end (Figure 3).



FIGURE 3. *Eleothreptus candicans* egg (Photo: Juan Mazar Barnett)

Observations at the nest

During November, diurnal checks were made on the nest during the morning of 23 November, and the afternoons of 27 and 29 November. On all three days, the female was found to be present at the nest (although not always incubating the eggs). The nest was also watched on the evenings of the 25, 26, and 27 November. On all three nights, only the female was observed attending the nest, and no males were even seen in its vicinity. On the 26 November, the female was not present at the nest prior to dusk, arriving 27 minutes later and shortly prior to the onset of rain. Initially, the female sat in front of the eggs (apparently after first moving them), but as the intensity of the rain increased she gradually moved to cover, first one, and then both the eggs.

On the 27 November, ten minutes after the incubating female left the nest, a female was caught approximately 100 m from the nest site (at 2030 h). This bird was banded, and a black mark made on her rectrices to enable identification in the field. At 2300 h this same female was found close to the nest, when she performed an apparent injury-feigning distraction display. The display consisted of the bird rapidly moving away from the nest through and over the vegetation, with much wing flapping. Once away from the nest, the female flew up high, with strong, powerful wing beats, and circled

back around toward the nest. On the afternoon of the 29 November, this same female was observed incubating the eggs. Similar distraction displays were also observed during the daytime, especially once a single chick hatched, when they became more frequent and vigorous. The typical daytime reaction was for the female to jump forward, outstretching its wings and fanning its tail.

Description of chick

By 10 December, one of the eggs had hatched and a young chick was present. Although the second egg was still present, it did not hatch in the subsequent days and was presumed infertile. A description of chick was taken the day after its discovery (when it was believed to be two to three days old). The down feathers were largely uniform dark brown, with inconspicuous buffy-brown and cinnamon spots (Figure 4). The spotting was densest



FIGURE 4. Two to three days old *Eleothreptus candicans* chick (Photo: Juan Mazar Barnett)



FIGURE 5. Female and juvenile *Eleothreptus candicans* at nest-site, about one month after hatching (Photo: Juan Mazar Barnett)

on the crown, giving a slightly capped appearance, whilst the flanks and vent were a paler grey-brown. The irises were dark brown, and the bill blackish.

Due to inclement weather, no visits had been made to the nest site in the days prior to 10 December, but the hatching date was estimated to be 7-8 December (judged from the development of the chick when first found). This suggests an incubation period of at least 16 days, which falls within the 16-22 days of most other Caprimulgidae species (Cleere 1999). A recently fledged juvenile was observed in the vicinity of the nest site during early January (Figure 5).

The observations of female only parental-care, combined with the apparent clustering of male display territories led to Clay *et al.* (2000) suggesting that the Aguara Ñu population of White-winged Nightjars might exhibit a lek or “landmark” mating system, a hypothesis further supported by the studies of Pople (2003, 2014).

Documentation of White-winged Nightjar nesting habitat has been a key factor in informing management recommendations for the Cerrado at Aguara Ñu, which is threatened by too frequent burns and exotic invasive grasses (both spreading into the reserve from neighboring properties; Capper *et al.* 2000).

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Allocation of White-winged Nightjar to the genus *Eleothreptus* is somewhat contentious, but is used here in memory of Juan, with whom we first realized the morphological and plumage similarities between *E. candicans* and Sickle-winged Nightjar *E. anomalus*. Permission to work within the Mbaracayú Forest Nature Reserve was kindly granted by the Comité de Asuntos Científicos of the Fundación Moisés Bertoni (FMB). Thanks are also due to several other FMB staff (current and former), particularly Alberto Yanosky, René Palacios, Claudia Mercolli, and Tito Fernández. The reviewers, Marcelo Ferreira de Vasconcelos, Catherine Bechtoldt and Luciano Naka provided comments that greatly improved the manuscript.

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