Records of nesting behavior of the Long-billed Woodcreeper (*Nasica longirostris*) in an artificial structure in Yasuní National Park, Ecuador

Registros de comportamiento reproductivo del Trepatroncos piquilargo (*Nasica longirostris*) en una estructura artificial en el Parque Nacional Yasuní, Ecuador

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Abstract

The long-billed woodcreeper (*Nasica longirostris*) is a neotropical bird species in the family Furnariidae with very limited information about its breeding habits. We observed a nest from 5 to 10 February 2025 at the Pontificia Universidad Católica del Ecuador Scientific Station in Yasuní National Park, Orellana. Clutch size, number of chicks, visit frequency and duration, and prey types were recorded. The nest was located inside a metal pipe in a clearing beside the Tiputini River and contained dry bark at the base. This is the first known record of *N. longirostris* nesting in an artificial structure. We recorded 8 total hours of nest activity over 4 days before the chicks fledged. Two chicks were fed by two adults. Most parental visits occurred in the evening and increased in duration near fledging. Chick diet consisted of arthropods, including cockroaches and beetles. These data add novel insights into the reproductive biology of *N. longirostris* near fledging.

Key words: Amazonian birds, artificial nest site, Dendrocolaptinae, fledging behavior, parental care

Resumen

El Trepatronco piquilargo (*Nasica longirostris*) es una especie neotropical poco estudiada cuya biología reproductiva es poco conocida. Observamos un nido de *N. longirostris* entre el 5 y el 10 de febrero de 2025 en la estación científica de la Pontificia Universidad Católica del Ecuador en el Parque Nacional Yasuní, provincia de Orellana. Se registró el tamaño de puesta, número de polluelos, número y duración de visitas, y tipo de alimento traído al nido. El nido fue localizado en una tubería metálica en un claro junto al río Tiputini, y contenía corteza seca en la base. Este constituye el primer registro conocido de un nido de *N. longirostris* en una estructura artificial. Observamos un total de 8 horas de actividad durante 4 días previos a la salida de los polluelos del nido. Dos polluelos fueron alimentados por dos adultos. La mayoría de las visitas parentales ocurrieron en la tarde y aumentaron en frecuencia y duración hacia el final del período de polluelos. La dieta de los polluelos consistió en artrópodos como cucarachas y escarabajos. Estos datos aportan nueva información sobre la biología reproductiva de *N. longirostris* cerca de la salida del nido por parte de los polluelos.

Palabras clave: aves amazónicas, cuidado parental, Dendrocolaptinae, nidificación estructuras artificiales

Introduction

Furnariidae is a diverse avian family with approximately 321 species across 71 genera. While its taxonomy is well documented (Raikow 1994), the natural history of many species remains largely unstudied. The Long-billed Woodcreeper (*Nasica longirostris*) is a large and distinctive member of this family whose reproductive biology is virtually unknown, despite its extensive range across much of Amazonia. A nest was previously documented in the stump of a broken spiny palm tree on Marchantaria Island, Amazonas, Brazil. This nest contained three eggs, two of which hatched and fledged; parental care was not recorded (Petermann 1997). Marantz *et al.* (2020) also describe a nest in Orinoco, Ecuador, located in a cavity 4 meters up a tree with nestlings fed by both parents, but clutch size and fledging behavior were undescribed. In this study, we report a nest in an artificial structure in Yasuní National Park,

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Ecuador. These observations contribute new data on the nesting behavior of this species.

Materials and methods

We studied the nesting behavior of a pair of *N. longirostris* and their offspring at the Pontificia Universidad Católica del Ecuador Scientific Station in Yasuní National Park, Orellana Province, Ecuador. Observations were conducted between 5 and 10 February 2025, beginning at the nest's discovery and concluding at the chicks' fledging. We observed the nest twice daily, from 06:00–07:00 and 18:30–19:30, totaling 8 hours (no data were collected on 6 February). Data collection was restricted to two daily observational windows as part of an academic program.

Due to permit regulations on camera traps within Yasuní National Park, all data were collected through direct observation with binoculars and cameras. We were positioned farther along the walkway, about 15 meters from the nest, with a clear line of sight to the nest. We recorded nest structure, number of chicks and adults, visit frequency and duration, and food types. Diet was inferred from prey items seen in the adults' bills, under the assumption that adults entering the nest with food and leaving without it had fed it to the chicks. Because the nest was partially covered by the walkway itself, it was impossible to look directly inside, so photographs and videos of the nest's interior were taken with iPhones held over its opening.

Results

Nest area and structure-. The nest was located inside a metal pipe supporting a river lookout walkway on the Tiputini River (0.673922° S, 76.396425° W). The area surrounding the nest site was on a steep slope leading to the river and was clear cut with only tall grass remaining. Dense forest began just beyond the clearing (Fig. 1).

The pipe had a circumference of 76 cm, a diameter of about 23 cm, and was about 2 meters tall. The nest was 21 cm deep and its base was lined with dry bark. Its opening was partially covered by the metal structure of the walkway (Fig. 2, Appendix 1).



Figure 1. Nesting area. The nest was located inside the circled pipe. Walkway, clearing, and surrounding habitat are shown. Photo by Anton Gous.

Clutch size and number of adults-. Two chicks were observed, fed by both adults. Adults were not observed to visit the nest simultaneously, although they were clearly seen visiting one at a time.

Feeding-. A total of 13 visits was observed, and a food item was brought to the nest each time. Identification of prey in the adults' bills was difficult, but cockroaches and beetles were among those possible to identify. Number of visits and time spent in the nest varied widely (Table 1).

Fledging-. Fledging took place on the morning of February 10th. Beginning at 0619, the chicks started vocalizing constantly and were subsequently joined by the adults. At 0633, an adult briefly visited the nest for 7 seconds, and one chick flew out almost immediately after the adult's departure. It flew about 2 meters before landing in the undergrowth. For the next 10 minutes, the fledgling made its way across the ground back to the base of the nest, still calling. At 0644, the fledgling made another short flight, landing unseen in an area of dense growth. The second chick remained actively calling in the nest until we left at 0700. When we returned at 0720, the nest was empty, indicating that the second chick had fledged in our absence. One of the fledglings was observed close to the nest clinging to a vertical tree trunk in typical woodcreeper



Figure 2. Clockwise from top left: Adult visiting nest, chicks in nest (photographed 2 days before fledging), adult carrying nesting material, empty nest after fledging (containing bark and feces). Photographs by Anton Gous, Kate Rounds and Ariel Raizman.

fashion, with an adult higher up in the same tree holding an unidentified arthropod in its mouth. The fledglings' bills and tails were significantly shorter than those of the adults. Plumage was mostly brown with gray around the head, lacking the distinctive patterning seen on the adult *N. longirostris* head and chest.

Other behaviors-. Adults repeatedly flew across the clearing before entering the nest. This may have been to assess safety and may have been influenced by the observers' presence.

Discussion

The nest structure and setting resemble those described by Petermann (1997) situated in a riparian habitat, in a vertical cylindrical cavity with bark at the bottom. The nest described by Marantz *et al.* (2020) was also in a cavity. However, this nest's placement in an artificial structure is novel for the species. Nesting in artificial substrates has been recorded in other woodcreepers: Cockle & Bodrati (2009) describe 14 of 17 observed *Dendrocolaptes platyrostris* pairs nesting in human-made nest boxes. Additionally, Sandoval *et al.* (2021) describe a pair of *Xiphorhynchus susurrans* building a nest in the wall of a research housing facility in an unintended anthropogenic cavity like ours.

In general, the parents visited the nest more often and stayed longer in the evenings than in the mornings; however, given our limited sample size, we cannot say with certainty which time was the most active. No visits were observed on February 5, but the adults were present. The parents' behavior seemed to be somewhat affected by human presence, shown through their reluctance to enter the nest when humans were nearby. The fledglings' underdeveloped bill and tail, limited flight ability, and adult provisioning suggest extended parental care after fledging, as seen in other Dendrocolaptinae like *Glyphorynchus spirurus* (Darrah & Smith 2017). However, it is also possible that our presence caused the nestlings to fledge earlier than they might have otherwise. To more thoroughly record nesting behavior and minimize human disturbance, future studies should utilize automated monitoring through camera traps. Expanding observational periods beyond a single nesting cycle will also help confirm the full extent of post-fledging parental care in this species.

Conclusion

We document the first known instance of *N. longirostris* nesting in a human-made structure. Our observations provide new data on nesting location, diet, fledging behavior, and fledgling appearance. Additional studies are needed across the species' range to further understand its breeding biology.

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Table 1. Parental visit data. Observations were conducted twice daily from 6:00 to 7:00 and from 18:30 to 19:30. Food was brought to the nest during every observed visit. No visits were observed on February 5, and no data were collected on February 6.

Date	5-feb		7-feb		8-feb		9-feb		10-feb		Totals
Number of visits	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	
	0	0	1	2	2	5	2	1	1	0	13
Total visiting time (seconds)	0	0	10	45	50	180	30	70	7	0	385

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