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Authors: Raimilla, Víctor, Contardo, Nelson, Gallardo, Benjamín, Gutiérrez, Pablo, Melgarejo, Mauricio, et al.

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Notes on the breeding biology of Fuegian Snipe *Gallinago stricklandii* in northern Patagonia

by V́ctor Raimilla , Nelson Contardo, Benjamín Gallardo, Pablo Gutiérrez,
Mauricio Melgarejo, Bernardita Muñoz, Eduardo Quintanilla &
Fernando Medrano 

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SUMMARY. — Fuegian Snipe *Gallinago stricklandii* is one of the least-known Neotropical snipes; its breeding biology is almost entirely undescribed. We describe the third nest ever recorded and the first away from Cape Horn, reporting nest dimensions, composition, concealment, and egg morphology, all of which are consistent with historical records. We also report new information on breeding habitat, nest structure, egg characteristics, incubation period and phenology based on a separate nest and brood in Parque La Tapera, the species' northernmost known breeding site. Camera traps revealed an incubation period of at least 25 days and confirmed the presence of both adults near the nest. Chicks were observed earlier than previously reported, suggesting a broader phenology and possible asynchrony within populations. These findings substantially expand our knowledge of the species' breeding biology and provide critical baseline information for conservation, particularly given its Near Threatened status and exposure to invasive predators.

The Neotropical region has eight of the 17 species of the genus *Gallinago* (snipes), many of which are poorly known. For several species only a single nest has been described (e.g., Imperial Snipe *G. imperialis*, Amigo *et al.* 2017; Andean Snipe *G. andina*, Ortiz & Avelaño 2024). Fuegian Snipe *G. stricklandii* has the southernmost distribution of the Neotropical snipes, inhabiting the most remote areas of Patagonia (Chile and Argentina), including fjords and hard-to-access islands (van Gils *et al.* 2020). In this species, and those previously mentioned, many fundamental aspects of their natural history have yet to be elucidated, with some aspects such as the distribution and migration only recently and partially studied (Kusch & Marín 2010, Raimilla *et al.* 2023, Barroso *et al.* 2024, Michel *et al.* 2026), whilst breeding biology is almost undescribed.

Almost a century ago, on 11 December 1932, Reynolds (1935) found the first nest of Fuegian Snipe, with two eggs on Guffern Island (55°26'S, 68°03'W, Cape Horn), but the nest itself was not described. However, Reynolds provided meagre details of a second nest found on 16 December 1932, on Barnevelt Island (55°49'S, 66°47'W; Hermite Archipelago, Cape Horn), also containing two eggs and located over 'short, sparse rushes and grass on the high ground above the tussock'. The eggs from both nests were described as having 'ground-colour deep olive-buff spotted with cinnamon-brown', measuring 53.5 × 37.0 mm and 51 × 37 mm on Guffern Island and 55.0 × 36.5 mm and 53 × 38 mm on Barnevelt Island (Reynolds 1935).

Records of chicks (which are precocial like all snipes; Pereyra 1934) are also scarce and date from 17 November–23 January (Reynolds 1935, Olrog 1950, Kusch & Marín 2010, Barroso *et al.* 2024; S, Anselmino, <https://ebird.org/checklist/S299040810>), whilst juveniles have been recorded with adults between 19 December and 14 February (Barroso *et al.* 2024; S. Saiter, <https://ebird.org/checklist/S289251228>). Most of these records are from the south

of the species' range (e.g., Cape Horn), whereas almost no information for the north of the distribution exists, aside from the remarks of Raimilla *et al.* (2023), who suggested that incubation ends around early December, based on feathers regrowing over brood patches. Nothing else is known about the species' breeding biology and several basic aspects are unknown, e.g., nest structure, composition, and incubation period.

Considering that the species was recently reassessed as Near Threatened in Chile and that one threat is potential nest predation by the invasive American Mink *Neogale vison* (BirdLife International 2024), a better understanding of this snipe's breeding biology is needed. Here we provide new information on the breeding habitat, nest and egg descriptions, and phenology based on monitoring a nest of Fuegian Snipe in the northernmost known breeding area.

Field work and Methods

Field work was conducted in Parque La Tapera (Fig. 1), at the north end of the southern Patagonia ice field, during 10–13 October 2024. Parque La Tapera is a privately protected area of c.12,425 ha, between 48°07'S and 48°18'S (see Raimilla *et al.* 2023 for a more detailed description). Efforts focused on an area (48°14'S, 73°35'W) with previous records (Raimilla *et al.* 2023) and followed the same search methodology. Eight field ornithologists (the authors) walked in a line to flush birds, advancing in parallel no more than 2–3 m from each other. Our work was designed to capture two individuals with mist-nets, to deploy GPS and thereby gather information on the species' migrations (as part of ongoing research), but incidentally we documented two breeding events: an adult with a chick and an occupied

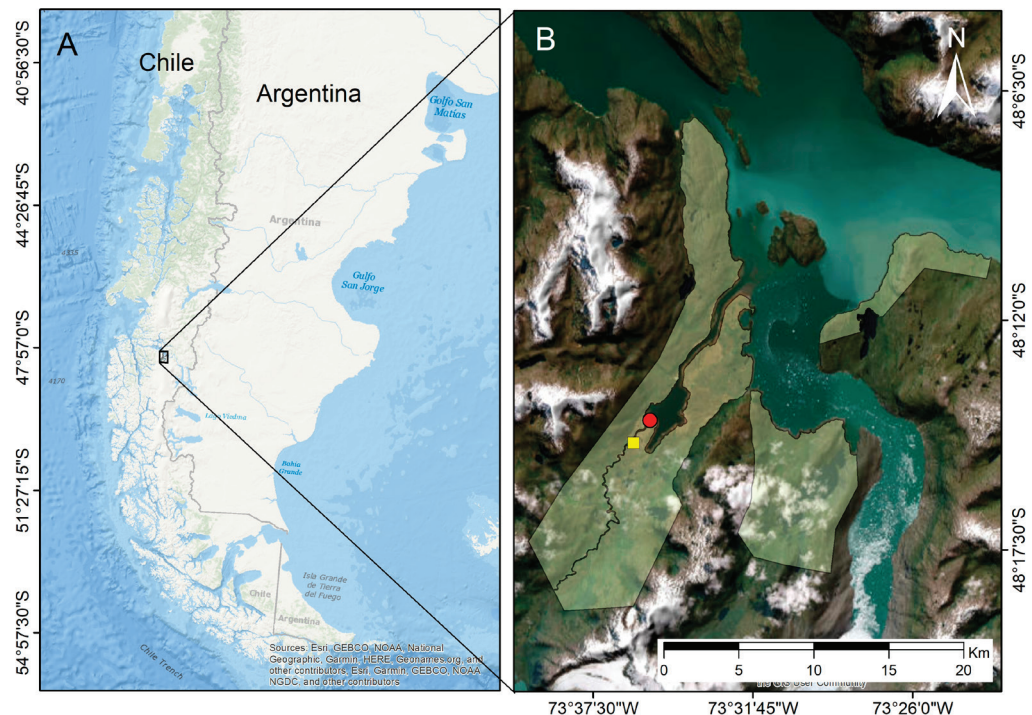


Figure 1. (A) Geographic location of the Jorge Montt fjord, Aysén region, Chile, and (B) location of the two breeding records of Fuegian Snipe *Gallinago stricklandii*: an adult with a single chick (red circle) and two adults attending an active nest (yellow square) in Parque La Tapera (green polygon). Map created using QGIS.

nest, distant from each other by 1.25 km (Fig. 1). We captured one individual from each pair and inspected the brood patch in both birds, but we took morphometrics for only one of them, as in the other case there was heavy rain and we needed to reduce bird-handling time.

Nest structure was assessed according to Simon & Pacheco (2005), thus we measured the dimensions of its internal and external cup, and described the nest's composition. To gauge the volume (V) of the eggs, we applied the formula $V = 0.51 \times (\text{length}) \times (\text{width})^2$ (Hoyt 1979). To describe vegetation surrounding the nest, we measured the height of the surrounding shrub stratum, distance from the nest to the nearest tree/shrub, and degree of nest concealment by estimating the upper vegetation cover within a 25 cm radius, from a perpendicular distance of 1 m above ground (Ralph *et al.* 1996). To estimate the remaining incubation period and periods of activity of the incubating birds around the nest, we installed two trail cameras 3 m from the nest at a height of 40–50 cm above ground. One camera was set to take photos and videos (Bushnell Trophy Cam Aggressor; three photos per event) and the other to take only photos (Browning Dark Ops Pro DCL Dual; five photos per event), deployed on 13 October, checked on 3 November and recovered on 16 December 2024.

Results and Discussion

On 11 October 2024, we captured an adult with a chick (Fig. 2a–b) in a meadow dominated by sparse rushes and grass, outside forest. The chick, of then unknown age, had a bill length of 18.0 mm, tarsus length 25.2 mm, bill–head length 45.0 mm and mass 37.99 g. The adult had a vascularised brood patch with several growing feathers.

On 12 October, we found an adult at a nest containing two eggs (Fig. 3), only the third nest of this species ever found (see Reynolds 1935) and the first in the northernmost breeding area, c.930 km from Cape Horn. The nest was on the ground and its materials did not differ from the vegetation in the surroundings, so we classified it as 'simple/unlined' (Simon & Pacheco 2005). The exterior cup measured 150 × 139 mm, the interior cup 90 × 88 mm, and the nest had a height of 47 mm. The cup comprised peat moss (*Sphagnum* sp.), reeds (*Marsippospermum grandiflorum*), a fern (*Austroblechnum penna-marina*) and an unidentified lichen. The nest was on the west side of the vegetation patch, at the foot of a Prickly heath (*Gaultheria* sp.) 0.56 m tall and a Chilean firetree (*Embothrium coccineum*) of 2.5 m, the latter 0.6 m away. Nest concealment was 65%, with cover provided by *Gaultheria* sp., *Escallonia virgata*, *Embothrium coccineum* and *Marsippospermum grandiflorum*. The two eggs were ovoid, pale brown with yellow undertones, abundant red-brown spots and somewhat fewer cinnamon-coloured spots, both more concentrated at the larger end. One



Figure 2. (a) Adult Fuegian Snipe *Gallinago stricklandii*, Parque La Tapera, Aysén, Chile, 11 October 2024 (Pablo Gutiérrez); (b) chick of Fuegian Snipe, Parque La Tapera, Aysén, Chile, 11 October 2024 (Benjamín Gallardo)



Figure 3. (a) Active brood patch on an incubating adult Fuegian Snipe *Gallinago stricklandii*, 12 October 2024 (Nelson Contardo); (b) nest structure and composition from above; note that the materials do not differ from the vegetational composition in the nest's surroundings, 12 October 2024 (Benjamín Gallardo); (c) eggs of Fuegian Snipe, Parque La Tapera, Aysén, Chile, 12 October 2024 (V́ctor Raimilla); (d) next day, 13 October 2024, an adult that might be incubating (the bird without GPS) was seen near the nest (V́ctor Raimilla)

measured 52×33 mm, volume 28.9 cm^3 and mass 32.24 g , and the other 51.2×34.1 mm, 30.4 cm^3 and 31.88 g . These data coincide with those previously reported by Reynolds (1935) for eggs on Guffern and Barnevelt Islands, Cape Horn.

Incubation at the nest we found spanned at least 25 days, from 12 October to 5 November, on which date two chicks were recorded by the trail cameras in the snow. This is more or less similar to the 19 days suggested for Pantanal Snipe *Gallinago paraguayiae* (Colombo *et al.* 2021). In the following days, one chick was observed with an adult until 13 November (eight days after hatching). By comparing photographs of the newly hatched chicks to the other adult with a chick found on 11 October, we deduced that this chick was less than one week old. If this assumption is correct, and taking into account the 25-day incubation period, the eggs at the nest were probably laid in early September. The phenology differs from that described in the literature. We found chicks in mid-October, one month earlier than reported on Tierra del Fuego ($54^{\circ}25'S$, $71^{\circ}07'W$; Kusch & Marín 2010) and almost two months earlier than on Horn Island ($55^{\circ}58'S$, $67^{\circ}13'W$; Barroso *et al.* 2024). However, we also found a nest with similar phenology. Consequently, it appears this species does not necessarily nest synchronously at a given locality, and birds might start breeding earlier in Tierra del Fuego and Cape Horn as well. Olrog (1950) also suggested the possibility of second clutches. Further information is needed to understand whether latitude might affect the phenology of this snipe as it does many other species in Patagonia.

Although the relative contribution of each parent during incubation could not be estimated, it was confirmed that both were present or nearby during incubation at the nest with a trail camera, being distinguishable in the photos by the installed GPS antenna and

the ring. Unexpectedly, we found that the bird without a GPS was also ringed, it being one of those trapped 1.5 km away in December 2021 (Raimilla *et al.* 2023). Small territorial shifts have been confirmed for other Patagonian wetland birds, e.g., Austral Rail *Rallus antarcticus* (Galeto *et al.* 2025), as microhabitat features presumably may change between breeding seasons.

Our findings expand our knowledge of breeding phenology, nest structure and composition, and incubation period in *G. stricklandii*, aligning with what is known for other snipes. Use of camera traps could provide further information on this species' reproductive behavior, for example duration of incubation bouts or parental care of chicks, as recently reported for Austral Rail (Galeto *et al.* 2025).

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Addresses: Víctor Raimilla, Fundación Parque La Tapera, Sitio 1, Manzana 32 S/N, Caleta Tortel, Aysén, Chile; and Red de Observadores de Aves y Vida Silvestre de Chile, Chile. Nelson Contardo, Benjamín Gallardo and Pablo Gutiérrez, Red de Observadores de Aves y Vida Silvestre de Chile, Chile. Mauricio Melgarejo, Fundación Parque La Tapera, Sitio 1, Manzana 32 S/N, Caleta Tortel, Aysén, Chile. Bernardita Muñoz, Eduardo Quintanilla and Fernando Medrano, Red de Observadores de Aves y Vida Silvestre de Chile, Chile, e-mail: fernandomedranomartinez@gmail.com (corresponding author).