

NEW RECORD OF *Glossophaga soricina* (CHIROPTERA:  
PHYLLOSTOMIDAE) IN THE PROVINCE OF CORRIENTES,  
ARGENTINA

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Short title: NEW BAT SPECIES FOR CORRIENTES, ARGENTINA

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**ABSTRACT:** The genus, *Glossophaga*, includes five species which are all found in the Neotropics. *G. soricina* has the largest range, which covers much of northern South America and Central America. Until this study, Argentine registrations of *G. soricina* were restricted to Misiones, Chaco, Salta, Jujuy and Buenos Aires. We report the discovery of the Nectivorous bat, *Glossophaga soricina*, in the province of Corrientes. We captured an example of *Glossophaga soricina* in a mist net during a research session in the island of Apipe Grande, Corrientes, in October 2019. We believe that this is the first registration of a nectivorous bat in Corrientes.

Key words: Distribution, Nectivorous bat, Neotropics

**RESUMEN:** NUEVA REGISTRACION DE *GLOSSOPHAGA SORICINA* EN LA PROVINCIA DE CORRIENTES, ARGENTINA. El género *Glossophaga* incluye cinco especies que se encuentran en el neotrópico. *G. soricina* tiene el rango más grande, que cubre gran parte del norte de América del Sur y América central. Antes de este estudio, los registros de la especie *G. soricina* estaban limitados a Misiones, Chaco, Salta, Jujuy y Buenos Aires. Se presenta el primer registro del murciélago nectívoro *Glossophaga soricina* en la provincia de Corrientes, Argentina. Este individuo fue capturado durante un muestreo llevado a cabo en Isla Apipe Grande, Corrientes, en octubre del 2019. Es el primer registro de un nectívoro para esta provincia.

Palabras claves: Distribucion, Murcielago nectivoro, Neotropico

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## INTRODUCTION

The example of *Glossophaga soricina* was captured in the Ecolodge ‘La Casona’, on Apipe Grande, an island in the River Parana between Argentina and Paraguay, on 15 October 2019. The geographical coordinates are:  $-27.457281^{\circ}$ ,  $-56.789269^{\circ}$ . (See Map 1). The Isla Apipe Grande is an island of some 27,500 hectares, 6000 of which were declared as a Provincial Natural Reserve in 1994. (Fontana 2008). It is situated in the Northeast of the province of Corrientes and has a small population of around 2000 according to a local resident.

The grounds of the Ecolodge has many mature fruit trees including Mango (*Mangifera indica*), Avacado (*Persea Americana*) and Mulberry (*Morus spp*), with potential roosts for Phyllostomidae bats. There are also many Molossidae bats roosting in the buildings of the Ecolodge. In general, the local vegetation is Paranaense. (Fontana 2008).

Corrientes has a total of 31 bat species (Argoitia 2019) from 4 families, including Noctilionidae, Phyllostomidae, Vespertilionidae and Molossidae. *Glossophaga soricina* is a

member of the family Phyllostomidae and sub-family Glossophaginae. This sub-family is predominantly nectivorous and is usually small bodied with a long muzzle and tongue. The nose leaf is less developed than in the other sub-families of Phyllostomidae. (Barquez et al 1999).

## MATERIALS AND METHODS

The object of the exercise was to research the Chiroptera species of the Isla Apipe Grande, which forms part of a series of research sessions in this location.

We placed 3 nets in and around the Ecolodge 'La Casona', including a triple high net 12m x 7.2m in height, a single net 12m x 2.4m and a double high net 9m x 4.8m. We used ultra-fine mist nets made by Ecotone in Poland specifically for catching small bats. There was only one successful net that night which was the Double high 9m x 4.8m which was placed in the grounds of the Ecolodge 'La Casona' between two Mango trees. Sunset was at 1854 and the nets were opened at 1920 local time. Nets were checked every 15 minutes to minimize distress for the bats that were captured. The bats were then weighed, measurements taken of forearm and anything else pertinent to the identification of the species, photographs taken where appropriate and echolocation calls recorded on release of the insectivorous species. The bats were released after minimal handling time. The session lasted 4 hours.

## RESULTS

We captured a total of 13 bats during the 4 hour session, of 6 different species. (See table 1).

### Range of *Glossophaga soricina*

The genus, *Glossophaga*, includes five species which are all found in the Neotropics.

*Glossophaga soricina* is the largest of the genus and has the largest range, from Northern

Mexico to northern Argentina. It also includes Trinidad, Isla Margarita, Jamaica and Tres Marias Islands. (Alvarez et al. 1991). It is the only member of this genus in Argentina.

### Description

The individual that we examined was a small bat with small rounded ears, a short, pointed tragus and large eyes. (See Plate 1). The muzzle was elongated, although less so than the other Argentine nectivore, *Anoura caudifer*, which we captured in 2016 with biologist Cesar Bracamonte in Jujuy. Unlike this species, the lower jaw of *G. soricina* is equal in length to the upper jaw. The tongue is long, extendible and adapted for probing flowers that open at night. Generally, teeth are small. *Glossophaga soricina* has a well developed uropatagium, unlike most nectivorous bats. (Barquez et al. 1999). The individual we examined had a tail that was shorter than the uropatagium, and emerged out of the membrane on the dorsal side by a few mm. The fur was dense, long and silky, with a pale base and golden brown tips. The nose leaf was small and pointed with a broad base. Chin had a V shaped groove surrounded by small warts. Wings were relatively short, which may be related to its hovering ability. (Welch et al. 2008). The platiopatagium was attached to the base of the tibia. There are 2 upper incisors each side which are procumbent and unequal in size. It also has 2 lower incisors each side, unlike *Anoura*. (Barquez et al. 1999).

The individual that we captured was an adult, non-reproductive male that weighed 11 grams and had a forearm length of 35.4mm. This species will readily feed from a sugar solution when in the hand and this one was no exception. (See Plate 2).

### Diet

It is believed that *G. soricina* has a small feeding territory and relies on spacial cues, rather than olfactory cues or echolocation. (Carter et al. 2010). As it feeds predominantly on the

nectar/pollen of flowers, it tends to return to the same flowers each night. (Carter et al. 2010) This species is thought to feed on flowers, fruit and insects by hovering or more often landing (Alvarez et al. 1991). Whilst it may sometimes be an opportunistic feeder, it is adapted to consume nectar (long tongue, longer rather than wider palate compared with pure frugivores), (Freeman 1988), soft bodied insects, (incisors, echolocation) (Clare et al. 2013) and fruit (studies have shown that it has a preference for small, soft fruits such as *Piper* and *Cecropia*, rather than *Ficus* or *Solanum*). (Goncalves da Silva 2008; Freeman 1998). Its omnivore diet may contribute to its abundance in South and Central America. Bat pollination tends to occur in plants that flower at night, usually in low densities, and in those that produce large flowers. *G. soricina* can play an important role in the pollination of these species. (Fleming et al. 2009)

### Conservation

*Glossophaga soricina* is considered 'Least Concern' globally (IUCN redlist). In Argentina it is considered 'Vulnerable' (Diaz et al. 2013)

## DISCUSSION

This discovery of *G. soricina* expands the range in Argentina. The location in which *G. soricina* was found is in the northeast of the province of Corrientes at a latitude of  $\sim -27.5^\circ$ . There is a known roost of this species close to the River Parana in the southwest of Misiones at a latitude of  $\sim -27.3^\circ$ . In this location *G. soricina* roosts in an abandoned building with *Carollia perspicillata*. The distance between the 2 places is 118 km, therefore it is not surprising that this species was discovered in the Isla Apipe, as the ambient conditions would not be dissimilar. This predominantly nectivorous bat will survive in areas in which there are flowers that open at night, and, with more research, it may well be discovered in other areas of Corrientes especially in the gallery forests bordering the River Parana. Somewhat surprising is

that it has been reported in the province of Buenos Aires, where frosts are quite prevalent in winter. (Barquez et al 1999). This species has been documented as going into short term torpor when deprived of food (Kelm & von Helversen, 2007), but there is no evidence that it does this in cold conditions. There is some doubt about the validity of this registration. It is not known to migrate but a lot more study is necessary on this species in Argentina. It may have had a more southerly distribution early in the century when the gallery forests extended further south. This habitat has largely disappeared now and the present range of the species is unknown. (Barquez et al. 1999)

## ACKNOWLEDGMENTS

Thanks to Parques y Reservas, Corrientes and Direccion de Recursos Naturales, Corrientes for authorisation to conduct our bat research in Corrientes. Thank you also to Anibal de la Cruz and Silvia Batista for their hospitality at the Ecolodge La Casona and for allowing us to place our nets on their property. Thank you also to Alejandra Boloqui, Cepi Oporto, Leo Georgadis for assisting with the exercise. Research funded by Collett Trust for Endangered Species.

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Map 1

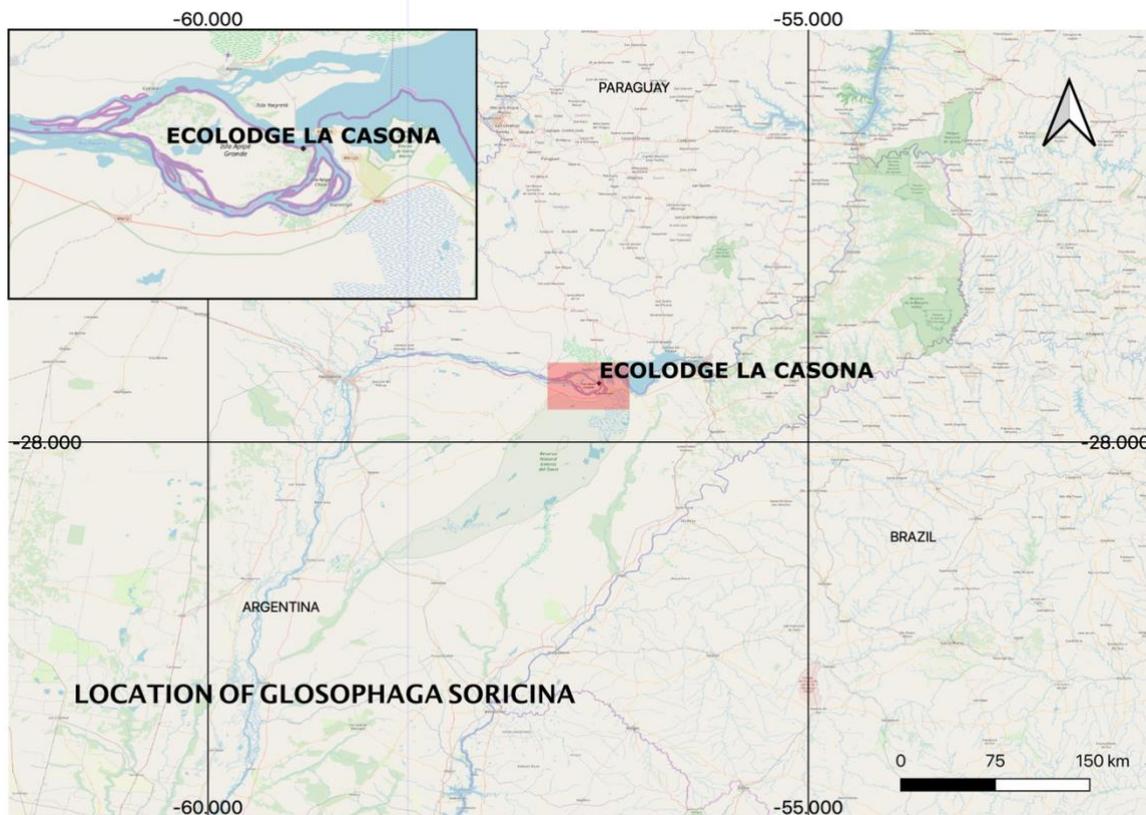


Table 1

Family	Species	Sex	Age	Weight g	Forearm mm	Repro. status
Phyllostomidae	<i>Platyrrhinus lineatus</i>	Male	Adult	25	48.0	Non repro
Phyllostomidae	<i>Glossophaga soricina</i>	Male	Adult	11	35.4	Non repro
Vespertilionidae	<i>Eptesicus furinalis</i>	Male	Adult	10	38.0	Repro. Testes medium
Vespertilionidae	<i>Myotis nigricans</i>	Female	Adult	8	32.4	Possibly pregnant
Vespertilionidae	<i>Lasiurus blossevillii</i>	Female	Adult	13	39.9	Probably nulliparous
Molossidae	<i>Eumops patagonicus</i>	7 x Females 1 x Male	Adults	16-19	43.2- 45.6	4 pregnant females 3 Nulliparous females 3 parous females 1 Repro male with med testes.

Plate 1



Plate 2

