



New records of bats (Chiroptera, Mammalia) from Argentina

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Abstract: We provide new distributional records for five species of bats from Argentina, of the families Vespertilionidae and Molossidae, representing new records for Catamarca, Chaco, La Rioja, Misiones, and San Juan provinces, as well as unpublished data for several phytogeographic regions of the country. This information adds important extensions to the distribution of *Eumops glaucinus* (Wagner, 1843) in Argentina.

Key words: Chiroptera; Molossidae; Vespertilionidae; distribution; ecoregions; range extension

In the last three decades many studies about bats have been conducted in Argentina, resulting in a great addition to the wealth of knowledge on this group of mammals (Barquez 1987; Barquez et al. 1993, 1999; Barquez 2006). Currently, four families, 27 genera and 65 species are recognized in the country (Díaz et al. 2016). However, in some areas the diversity of bats is still poorly known because the majority of studies were focused on the northwestern portion of Argentina, including the provinces of Jujuy, Salta, and Tucumán (Mares et al. 1981, 1989; Ojeda and Mares 1989; Barquez et al. 1991; Mares et al. 1996; Díaz 1999; Díaz et al. 2000; Díaz and Barquez 2002, 2007), and to a lesser extent in the province of Catamarca (Mares et al. 1997). Moreover, in relation to both species richness and surveyed localities, the number of records decreases southward in Argentina. Additionally, many of these records are accidentals or casual.

In this study, we report new distributional records for five species of bats from Argentina belonging to the families Molossidae and Vespertilionidae. They represent new records for Catamarca, Chaco, La Rioja,

Misiones and San Juan provinces, as well as unpublished data for several phytogeographic regions of the country.

The new records come from surveys and voucher specimens housed at the Colección Mamíferos Lillo (CML), Universidad Nacional de Tucumán, and Fundación Miguel Lillo, Tucumán, Argentina. The field surveys were conducted at different localities in Chaco and La Rioja provinces. The bats were captured during three consecutive nights at each single locality, using 6–10 mist nets 12 m long, set after sunset and opened from 19:00 to 01:00 h. External measurements, sex, and reproductive condition were recorded from all collected specimens following Díaz et al. (1998). Voucher specimens were prepared as skins, skulls, and skeletons, and deposited at the CML. The species were identified following Barquez and Díaz (2009) and Díaz et al. (2011). Collection localities are listed in the Appendix I.

Molossops temminckii (Burmeister, 1854) belongs to the family Molossidae. Body size small, forearm ranges 29.0–32.5 mm. Ears small, triangular and well separated; tragus small and triangular, and the antitragus wide and slightly inclined posteriorly. Snout elongated and flat. General coloration darker dorsally, with predominating shades of grey; hair bases lighter and tips cream or white. Skull small but robust; greatest length of skull (GLS) 13.4 mm, and breadth of braincase (BB) 7.1 mm. Postorbital constriction well marked, and sagittal crest present, but low. Upper incisors are procumbent and curved downward, in contact at the base. The P1 is well developed; M2 is slightly larger than M1, and M3 has three commissures. Lower incisors markedly bifid and separated from the canines by a small space; p2 is larger than p1. The molars decrease in size from m1 to m3; m3 has a talonid composed of two cusps (Barquez et al. 1999). This species has a wide distribution in

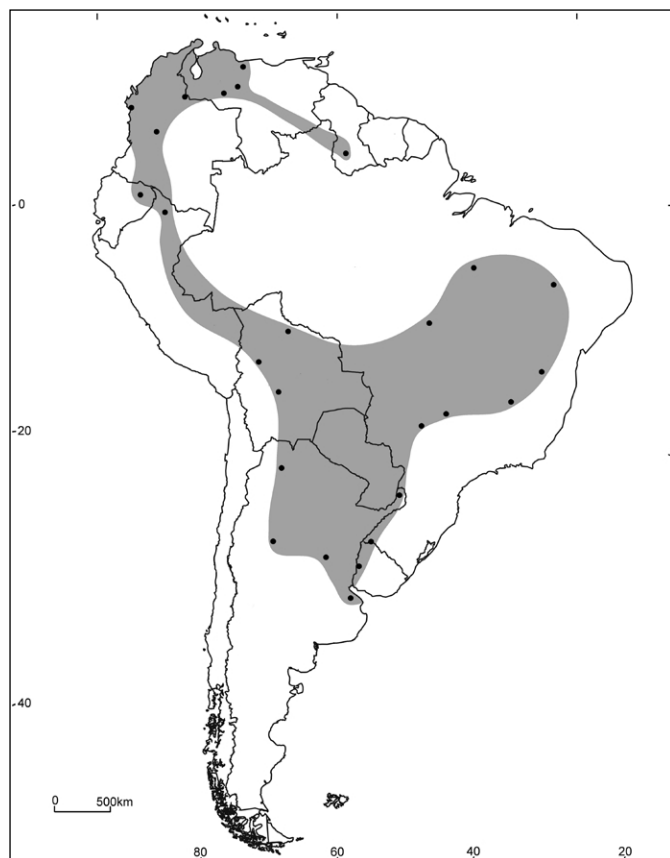


Figure 1. Distribution of *Molossops temminckii* in South America, only the marginal localities are pointed (see Appendix II).

South America (Eger 2008; Figure 1, Appendix II). In Argentina, it includes the provinces of Buenos Aires, Córdoba, Corrientes, Chaco, Chubut, Formosa, Jujuy, Misiones, Salta, Santa Fe, Santiago del Estero, and Tucumán (Barquez and Díaz 2009; Figure 2). Also, it has been recorded in several phytogeographic ecoregions as Fields and Weedlands, Dry Chaco, Humid Chaco, Delta and Islands of Paraná, Espinal, and Yungas Forests (Barquez 2006).

The captured specimen corresponds to an adult male (CML 10195) collected on 26 February 2014 in Tama (Gral. Vicente Peñaloza Department, La Rioja Province). At the same locality, one specimen of *Myotis dinellii* Thomas, 1902 and seven specimens of *Tadarida brasiliensis* (I. Geoffroy St.-Hilaire, 1824) were also captured. The individuals of *T. brasiliensis* used a roof as a roost, forming a colony of approximately 50 specimens, near to the collecting site of *M. temminckii*.

This new record is the westernmost locality known for the species in the country (Figure 2), and represents an unpublished record for La Rioja Province (see Appendix I). Along with its known presence in Catamarca Province (Puente Ruta Prov. 1, 1 km NE Ruta Prov. 22; Valle Viejo Department), as reported by Julio (2012), the distributional area of the species notably expands southward in western Argentina.

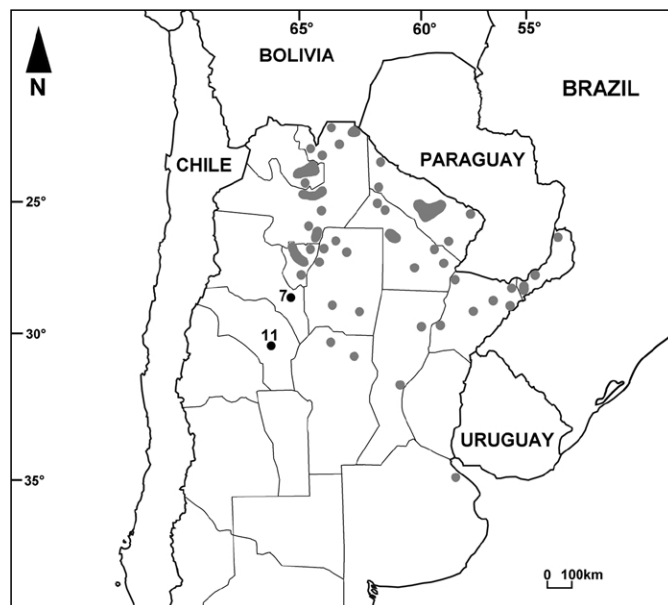


Figure 2. Distribution of *Molossops temminckii* in Argentina. The shaded area on the map shows the known distribution of this species, and dots 7 and 11 indicate the localities added in this study (see Appendix I).

Eumops bonariensis (Peters, 1874) belongs to the family Molossidae. Medium size, but small for the genus; forearm ranges 46–49 mm. Ears wide and united by a thin membrane; keel of ear projects beyond the posterior margin of the antitragus. Snout broad and nares separated by a V-shaped furrow. Dorsal color cinnamon brown, with the bases of the hairs paler, generally white; ventrally paler, with tips of some hairs frosted. Skull elongated, GLS=19.1 mm and BB=9.4 mm. Sagittal and lambdoidal crests absent or poorly developed. Basisphenoidal pits oval and deep, separated by a wide wall. Upper incisors hook-like and procumbent; a diastema present between the incisors and the canine. P1 small, usually displaced to the labial side. i1 markedly bilobed; p1 smaller than p2. m1 and m2 subequal in size; m3 smaller (Barquez et al. 1999). This species is known from southeastern Brazil, Uruguay, Paraguay, and northern Argentina (Díaz et al. 2016; Figure 3, Appendix II). In Argentina, it has been reported in Buenos Aires, Catamarca, Córdoba, Corrientes, Entre Ríos, Santa Fe, and Tucumán provinces (Barquez 2006; Barquez et al. 2011; Pavé and Giraudo 2014; Figure 4).

The specimen examined was an adult female (CML 3267) collected on 25 November 1990, 10 km W from Aristobulo del Valle (Cainguas Department, Misiones Province). It was previously cited by Mares et al. (1995) and Barquez et al. (1999) as *Eumops patagonicus* Thomas, 1924. This record represents an unpublished record for Misiones Province and significantly extends northward the species distribution in Argentina (Figure 4). Additionally, it is a new record for the Paranean Forests ecoregion. Recently, this species was reported in the



Figure 3. Distribution of *Eumops bonariensis* in South America, only the marginal localities are pointed (see Appendix II).

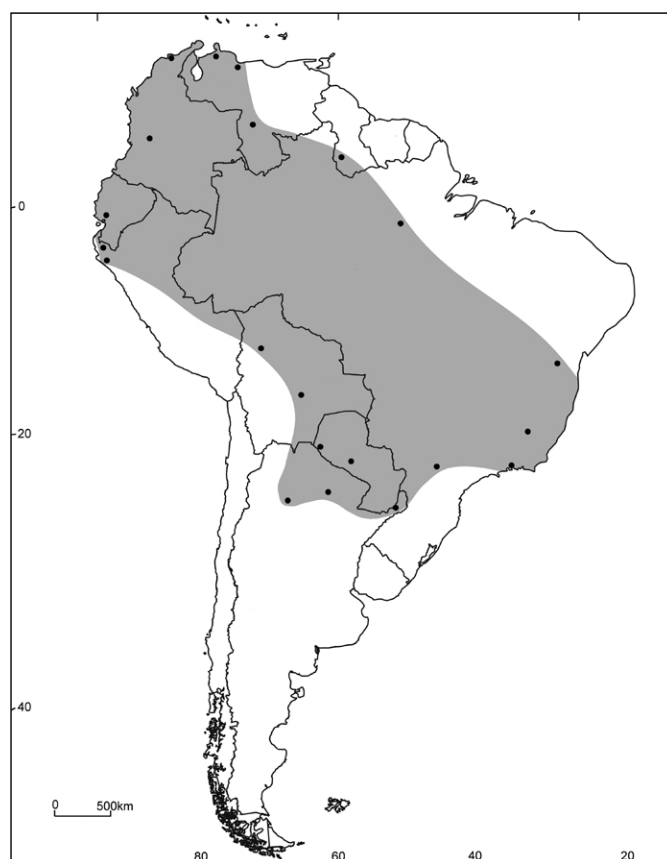


Figure 5. Distribution of *Eumops glaucinus* in South America, only the marginal localities are pointed (see Appendix II).

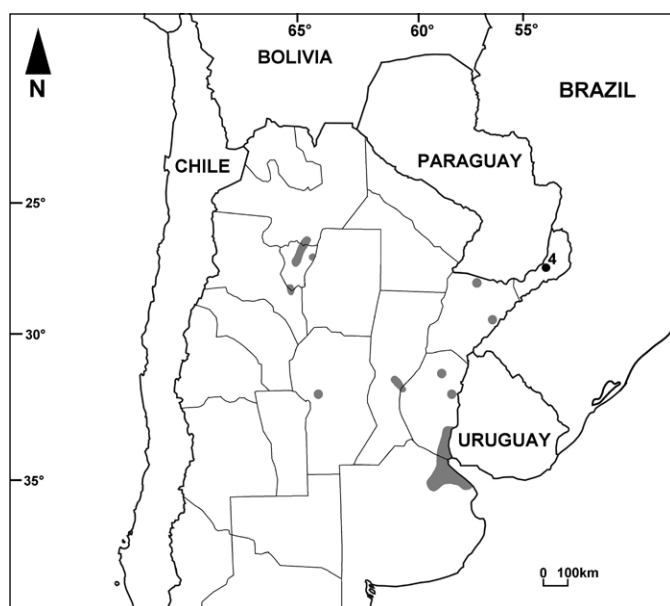


Figure 4. Distribution of *Eumops bonariensis* in Argentina. The shaded area on the map shows the known distribution of this species, and dot 4 indicates the locality added in this study (see Appendix I).

Province of Corrientes by Pavé and Giraudo (2014) and Idoeta et al. (2015), indicating that it is a poorly known species in northeastern Argentina (see Appendix I).

Eumops glaucinus (Wagner, 1843) is medium body sized for the species of the genus; forearm ranges 58–65 mm. Ears united by a thin band on the forehead; tragus

well developed and almost square. Dorsal coloration dark, blackish brown or blackish cinnamon, with lighter bases of hairs. Skull elongated, rostrum proportionally long and narrow; GLS=24 mm and BB=11.1 mm. Sagittal crest reduced or absent. Basisphenoidal pits well defined, deep, and separated. M3 with the third commissure rudimentary (Barquez et al. 1999). In South America, this species is known from Colombia, Venezuela, Guyana, Brazil, Ecuador, Peru, Paraguay, Bolivia, and Argentina (Díaz et al. 2016; Figure 5, Appendix II). In Argentina, it is a poorly known species, with only 10 previous records distributed in the provinces of Jujuy (3), Misiones (1), Salta (4), and Tucumán (2) (see Appendix I). It has been registered in Dry Chaco, Paranean Forests, and Yungas Forests ecoregions (Barquez 2006). A record from La Rioja Province (Vaccaro 1992) has been reported, but the specimen could not have been located for review at the Museo Argentino de Ciencias Naturales “Bernardino Rivadavia”, Buenos Aires, where it was deposited.

The specimen examined is an adult female (CML 10165), collected on 6 March 2013, in Finca Popovich, 65 km northeast from Los Frentones (Almirante Brown Department, Chaco Province). Previous records come from well-preserved natural environments such as chacoan gallery forests, and Yungas and Paranean forests. It is important to mention that *E. glaucinus* also has been found in urban environments along

its distribution in America (Best et al. 1997). In the northwestern Argentina, this species has been collected in the cities of San Miguel de Tucumán and San Isidro de Lules, in Tucuman Province (López Berrizbeitia and Díaz 2013).

The record presented here is the first known for the species in the Province of Chaco, and represents a 675 km westward and 370 km eastward distributional extension (Figure 6). It is the only known record of this species for the central area of the Argentine Chaco.

Histiotus macrotus (Poepig, 1835) is a medium-sized bat of the family Vespertilionidae; forearm ranges 45–51 mm. Ears are very large, generally greater than 30 mm, and connected by a thin membranous band. Wing membranes thin and almost naked. Calcar long and thin, extending more than one-half the distance between the foot and the tail. Pelage smooth and dense, hairs strongly bicolored; dorsal hairs with black or dark brown bases and yellowish tips; ventral hairs have dark brown bases and whitish tips. Skull robust and rostrum wide; GLS=18.5 mm and BB=8.4 mm. The tympanic bullae are large and rounded. The external breadth across the third upper molars is greater than 7 mm (Barquez et al. 1999). This species is known from Argentina, Chile, Paraguay (López-González et al. 1998) and Bolivia (Acosta and Venegas 2006) (Figure 7, Appendix II). In Argentina, it is distributed in Catamarca, Chubut, Córdoba, Jujuy, Neuquén, Río Negro, Salta, San Juan, San Luis and Tucumán provinces (Barquez and Díaz 2009; Giménez 2010; Figure 8).

Two females (CML 10196, 10197) were captured on 3 March 2015 in Quebrada de Santo Domingo, 30 km southwest of Jagüé (Vinchina Department, La Rioja Province), which belongs to the Puna ecoregion, at 3140 m above sea level (a.s.l.). The specimens were collected

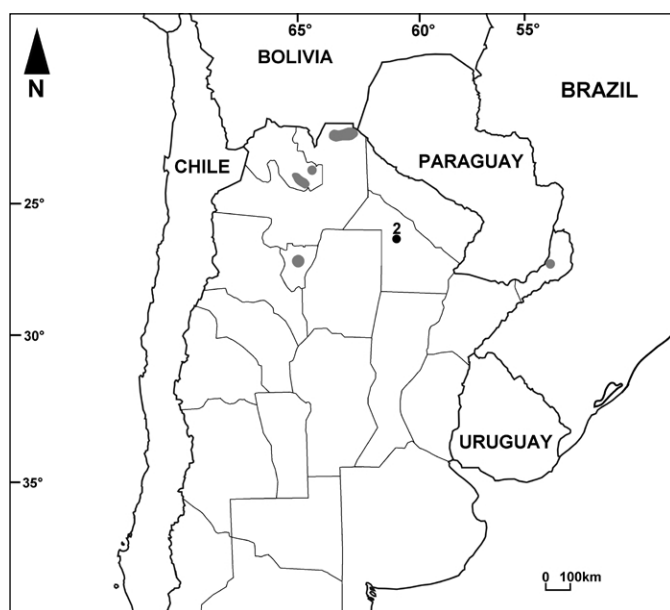


Figure 6. Distribution of *Eumops glaucinus* in Argentina. The shaded area on the map shows the known distribution of this species, and dot 2 indicates the locality added in this study (see Appendix I).

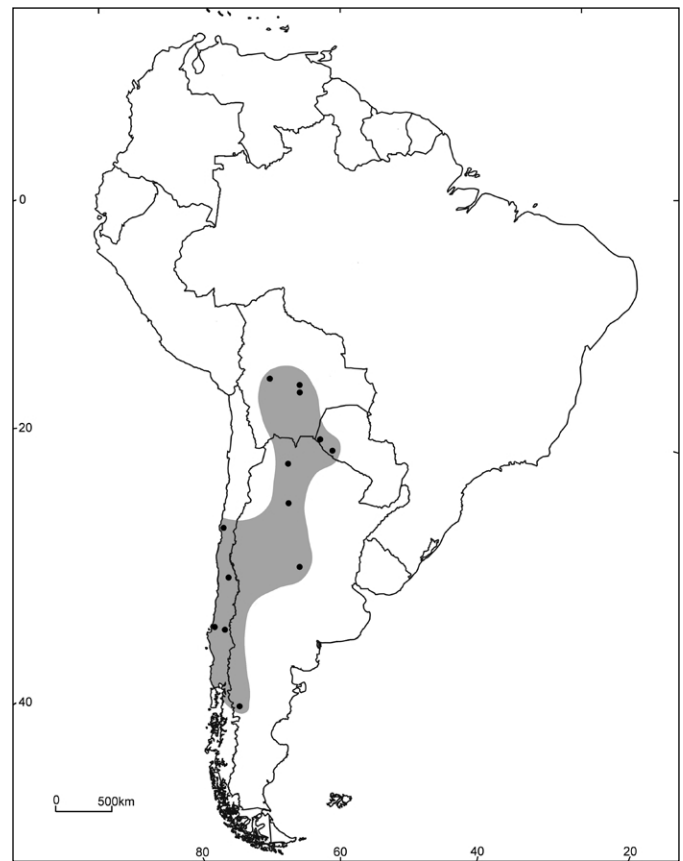


Figure 7. Distribution of *Histiotus macrotus* in South America, only the marginal localities are pointed (see Appendix II).

in a mist net placed inside a ravine. In Paraje El Chiflón, across from Reserva Provincial El Chiflón (Independencia Department, La Rioja Province) a male and a female (CML 10198, 10199) were captured on 24 March 2015. The capture site is placed in a transitional area between Monte of Mountains and Isolated Valleys and Dry Chaco ecoregions. In this site, one specimen of *Desmodus rotundus* (E. Geoffroy St.-Hilaire, 1810), was also collected in a mist net placed at the entrance of a cave.

Histiotus macrotus has been reported previously for the adjacent provinces (Figure 8), but its presence in La Rioja Province had not been recorded until now (see Appendix I). It inhabits different environments in western Argentina, from 900 m a.s.l. in Catamarca Province to 3600 m a.s.l. in Jujuy Province, and from the Yungas Forests to the Puna ecoregion (Barquez et al. 1999). In southern Argentina, it inhabits the Andean-Patagonian Temperate Rainforests in Neuquén, Río Negro, and Chubut provinces.

Histiotus montanus (Philippi & Landbeck, 1861) belongs to the family Vespertilionidae; medium size, forearm ranges 42–49 mm. Ears very large, generally smaller than 30 mm, and clearly separated; the connecting band is very low or absent. Pelage strongly bicolored, with darker bases and paler tips. Skull proportionally small; GLS=17.5 mm and BB=8.2 mm. Tympanic bullae small, less than 4.0 mm in length (Barquez et al.



Figure 8. Distribution of *Histiotus macrotus* in Argentina. The shaded area on the map shows the known distribution of this species, and dots 8 and 9 indicate the localities added in this study (see Appendix I).

1999). This species occurs in Argentina, Bolivia, Brazil, Colombia, Chile, Ecuador, Peru, Uruguay, and Venezuela (Díaz et al. 2016; Figure 9, Appendix II). In Argentina, it is found in the provinces of Buenos Aires, Córdoba, Chubut, La Rioja, Mendoza, Neuquén, Río Negro, Santa Cruz, and Santiago del Estero (Barquez 2006; Figure 10). Recently, it was photographed from a locality in the Province of San Luis (see <http://www.pcma.com.ar/fotos%20de%20nuestros%20amigos.html>).

The specimen from San Juan Province is a female (CML 5568) collected on 7 September 1995 in Posta El Balde (Jachal Department). The specimens from Catamarca are both males, one collected by O. A. Budin (CML 1758) in 1967, in Las Estancias Yunka Suma (Andalgala Department), and the other collected by R. Golbach (CML 1021) in 1950, at El Rodeo (Ambato Department). The two specimens were deposited originally at the CML, where they were misidentified as *H. macrotus*. These records represent unpublished data for this species in three provinces of Argentina (Figure 10; see Appendix I).

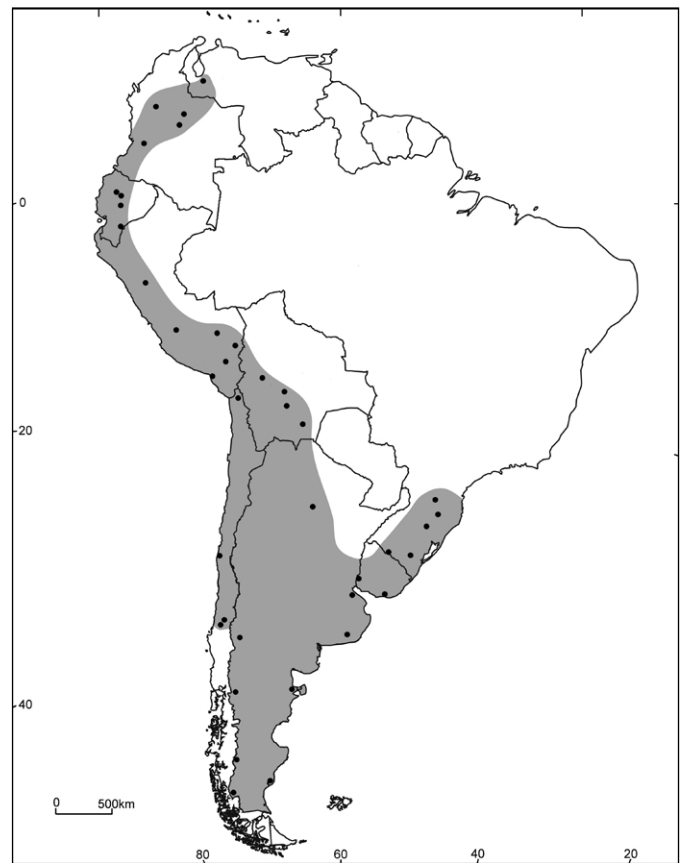


Figure 9. Distribution of *Histiotus montanus* in South America, only the marginal localities are pointed (see Appendix II).

The first systematic revision of bats from Argentina was conducted by Cabrera (1930, 1957), who established the basis for the development of subsequent field and systematic studies, like those by Barquez (1987) and Barquez et al. (1999). Since then the studies of bats became more frequent including a wide variety of topics as ecology (Iudica 1995; Iudica and Bonaccorso 1997; Giannini 1999; Autino et al. 2009; Bracamonte 2010; Sánchez et al. 2012; Lutz 2013), behavior (Romano et al. 1999), conservation (Díaz 2000, 2012), distribution (De Souza et al. 2008; Barquez et al. 2009; Castilla et al. 2010; Barquez et al. 2011.), and systematics (Barquez and Díaz 2001; Vaccaro and Varela 2001).

However, many areas of Argentina remain poorly studied or the information with respect to bats is almost unknown. For example, in San Juan Province no systematic or ecological studies of bat have been ever conducted, and until now only five species of bats have been cited for the province by Barquez et al. (1999). This is a low number even considering the little phytogeographic diversity of the area represented mostly by the Monte of Mountains and Isolated Valleys ecoregion (Burkart et al. 1999). The inclusion of *H. montanus* in San Juan Province, based on a specimen deposited in a museum, shows the importance of the collections as an additional source of information about species.

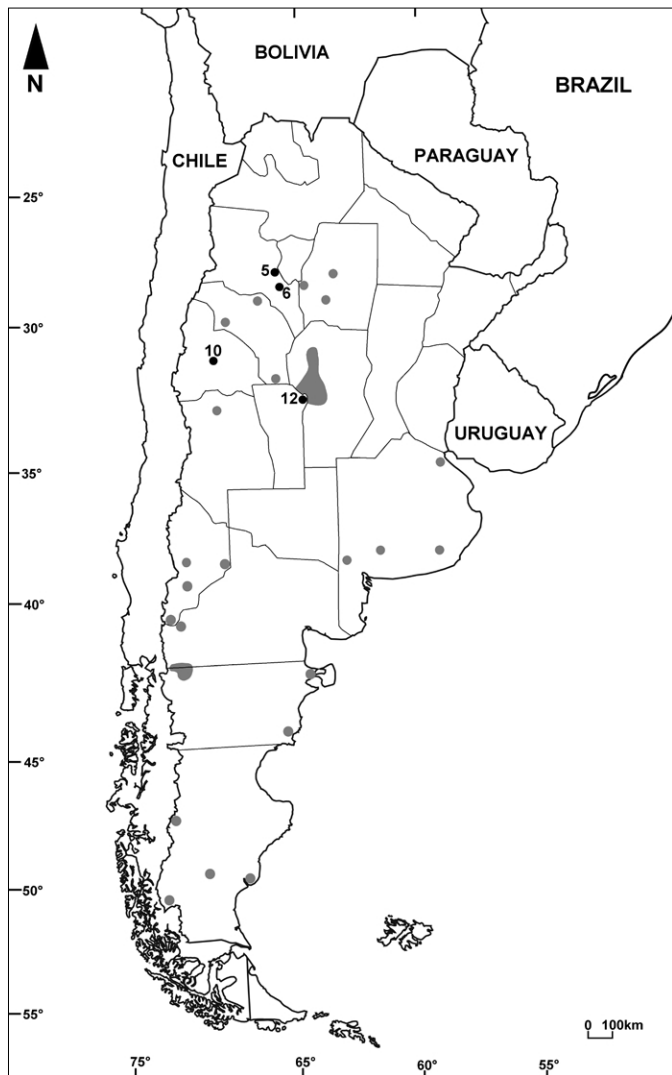


Figure 10. Distribution of *Histiotus montanus* in Argentina. The shaded area on the map shows the known distribution of this species, and dots 5, 6, 10 and 12 indicate the localities added in this study (see Appendix I).

Another similar example is to be found in La Rioja, an Argentine province which is known for having the lesser number of mammals recorded in the country, probably due to the lack of studies and systematic surveys. Until now, 11 species of bats have been recorded in the province (Barquez and Díaz 2009; Ball et al. 2012), in only 31 collecting sites. The two new species here reported (*H. macrotus* and *M. temminckii*) for La Rioja Province show that bat diversity of the province is still poorly understood.

The situation for Catamarca is different, because several previous studies were conducted in the province (Mares et al. 1997; Sánchez 2011; Julio 2012). Nineteen species of bats were recorded (Barquez and Díaz 2009; Barquez et al. 2011), and now we add *H. montanus* from a specimen housed in the Colección Mamíferos Lillo. It is highly probable that with what is known about other bat distributions reported in adjacent provinces, and with more field surveys in the area, several new species

can be added, such as *Eumops glaucinus*, *Eumops perotis* (Schinz, 1821) and *Molossus molossus* (Pallas, 1766).

Until now, 24 species of bats have been recorded in Chaco Province (Barquez and Ojeda 1992; Barquez and Díaz 2009). However, this species richness probably has descended because of human pressure and changes in the natural landscapes of the province over the last 20 years. The natural environments of the area have suffered a huge retraction, being replaced by agricultural lands and pastures for livestock. This has caused disappearance of large woodlands, leaving only the state property lands or other lands that cannot be exploited (Cuadra 2012). All those activities have had a negative effect on the flora and fauna of the region and the effect on bats has not been evaluated due to the lack of recent studies. Here, a new species is reported for the province only from one survey in two different localities. In these surveys, few insectivorous species with high abundance were captured, a sign of a disturbed environment.

With respect to the bat fauna, one of the most intensively studied provinces in the country is Misiones (Massoia 1980; Crespo 1982; Barquez 1987; Massoia and Chebez 1989; Barquez 2004; Sánchez 2011). However, the majority of these studies were conducted inside Iguazú National Park, a protected and undisturbed area. This province is the most diverse in Argentina, with 38 reported species of bats (Barquez and Díaz 2009), representing more than half of the total diversity in the country. The province also has great biogeographic value due to its similar and continuous vegetation with more tropical countries like Brazil and Paraguay, both potential providers of fauna towards the southern areas (Barquez 2004). According to the distribution of *E. bonariensis*, its presence in Misiones Province is not surprising. However, this new record shows the importance of field surveys on peripheral sites of protected areas, especially in phytogeographical regions so limited and fragile like the Paranean Forests in Argentina.

In conclusion, with this report of unpublished distributional data for five species of bats, we want to highlight the necessity for further studies in poorly known regions. This is needed in order to make a more complete inventory of mammals from the country, which will enable the development of management plans that contribute to the conservation of the environment and its fauna. This becomes critical as the natural areas of the country are rapidly disappearing due to the progress of agriculture and livestock, among others factors, so records from these disturbed areas would be considered historical. Finally, it is imperative and necessary to stress the importance of biological collections as a fundamental resource of data to conduct studies about local fauna.

ACKNOWLEDGEMENTS

We wish to acknowledge all the members of PIDBA for extending their support during our field collection trips, and the two anonymous referees for their helpful suggestions on the draft version of this article.

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Author contributions: SGA, RTS, RMB and MMD wrote the text; SGA, RTS and MMD collected the new specimens in the field; MMD and RMB reviewed the specimens at CML; MMD drew the maps.

Received: 7 October 2015

Accepted: 30 March 2016

Academic editor: Sergio Solari

APPENDIX I

Collection localities. The localities are listed alphabetically by province and then by specific site and coordinates. The new localities are showed in first place, and their reference number in maps is indicated in parentheses (Figures 2, 4, 6, 8 and 10).

Molossops temminckii

New localities. **CATAMARCA:** Puente Ruta Prov. 11 km NE from Ruta Prov. 22, 28°25'57.66" S, 66°43'34.31" W, 526 m a.s.l. (5). LA RIOJA: Tama, 30°30'22.3" S, 66°31'24.6" W, 663 m a.s.l. (9).

Additional localities. **BUENOS AIRES:** La Plata, 34°55'16.5" S, 57°57'15.6" W. **CHACO:** Establecimiento La Mestiza, Finca Masin, 5 km al SW de la ruta 82, 25°49'34" S, 61°33'11.3" W; Estancia San Miguel, along Hwy 90, 15 km NW jct, 26°57'21.81" S, 58°59'46.26" W; Finca Buratovich, 65 km al NE de Los Frentones, 3.5 km al E de 4 Bocas, 25°55'50" S, 61°11'54.6" W; Finca Popovich, 65 km al NE de Los Frentones, 3.5 km al E de 4 Bocas, 25°56'01.4" S, 61°12'14.9" W; Machagay, 15 km al S desde ruta 16 entre Machagay y Quitilipi, 27°01'57.47" S, 60°11'11.6" W; Misión Nueva Pompeya, 24°55'52.61" S, 61°28'59.89" W; Pozo del Gato, 3 km al E de Punta del Agua, 24°38'13.92" S, 61°55'12.55" W; Río Teuco, 10 km al W de Tartagal, 24°10'27.77" S, 62°11'41.39" W; Tartagal, 24°13'19.22" S, 62°08'54.3" W. **CORDOBA:** 10 km al noreste de La Para, 30°50'02.95" S, 62°53'37" W; Villa de María, 29°54'09" S, 63°43'13.98" W. **CORRIENTES:** Corrientes Capital, Barrio Lomas, 27°28'53.25" S, 58°45'48.76" W; Estancia Dolores, 15 km al E de Capiguari, 28°45'00" S, 57°44'00" W; Estancia La Blanca, 10 km al N de Santo Tomé, sobre Río Uruguay, 28°28'59.61" S, 55°57'00.86" W; Goya, 29°08'39.5" S, 59°15'51.56" W; Laguna Galarza y Lago de Luna, 28°06'40.94" S, 56°43'36.37" W; San Borgita, 27°29'33.15" S, 56°05'39.5" W. **FORMOSA:** Colonia El Pavao, 41 km N Comandante Fontana on Rd 95, 25°00'39.75" S, 59°36'59.58" W; El Churcal, approx. 10 km SSE Buena Vista, 23°24'00.9" S, 61°31'35.72" W; El Colorado, 26°18'32.89" S, 59°22'18.18" W; Estancia Santa Catalina, 5 km S, km 64, 24°52'13.48" S, 59°15'52.99" W; Estanislao del Campo, 40 km N, 24°47'36.42" S, 60°13'52.44" W; Ibarreta, 15 km al O por ruta nacional 81, 25°10'50" S, 59°56'42.2" W; Parque Nacional Río Pilcomayo, 25°07'00" S, 58°02'00" W; Puesto Divisadero, 35 km S, 5 km E Ing. Guillermo N. Juárez, 24°08'12.93" S, 61°54'30.09" W; Reserva El Bagual, 26°10'53" S, 58°56'39" W. **JUJUY:** 3 km N Oyereros, camino entre rutas 61 y 43, 24°30'07.75" S, 64°59'34" W; Calilegua, 23°46'07.7" S, 64°46'26.64" W; Finca Las Capillas, sala 1, 24°05'28.88" S, 65°10'31.79" W; Laguna La Brea, 25 km W Palma Sola, 23°51'22.48" S, 64°26'40.53" W; Ledesma, 23°49'46.89" S, 64°47'29.6" W; Palma Sola, 23°58'36" S, 64°18'29.42" W; Río Las Capillas, 15 km N Las Capillas por ruta 20, 24°02'00.38" S, 65°06'41.91" W; Río Lavayén, app. 1 km N Santa Rita, 24°27'41.6" S, 64°50'45.28" W; San Lorenzo, 23°33'00" S, 64°40'00" W; Yuto, 23°38'36.06" S, 64°28'12.51" W; Yuto, Río San Francisco, altura de Estación, 23°39'16.41" S, 64°26'49.39" W. **MISIONES:** Apóstoles, 27°54'51.6" S, 55°45'17.72" W; Arroyo Urugua-í, 25°54'00" S, 54°36'00" W; Osonunu Teyu Cuaré, 27°16'45.56" S, 55°34'41.83" W; Parque Provincial Cañadón de Profundidad,

27°33'34.5" S, 55°42'29.39" W. **SALTA:** 15 km S Orán, sobre Río Santa María, 23°17'46.28" S, 64°14'02.17" W; 40 km NW cruce ruta 50 y ruta provincial 18, sobre camino a Isla de Cañas, 23°05'23.29" S, 64°39'12.39" W; Algarrobal, 20 km E Gral. Güemes, 24°38'41.14" S, 64°53'32.22" W; Antilla, 26°07'09" S, 64°35'38" W; Dique Itiyuro, 22°06'01.13" S, 63°44'14.51" W; El Breal, 6 km SW Santa Victoria Este, 22°20'05.16" S, 62°43'49.34" W; El Galpón, 8 km NE por ruta 16 y 10 km E, camino a Aguas Calientes, 25°21'22.02" S, 64°29'50.06" W; El Potrero, 26°03'03.92" S, 64°38'53.03" W; Estancia Las Mercedes, 25°58'46.27" S, 64°38'31.14" W; Finca El Guayacán, 9 km E ruta 34 a la altura de Antilla, 26°07'08.76" S, 64°34'58.81" W; Laguna de Los Panzones, Retiro, 22°52'48.35" S, 63°12'13.86" W; Parque Nacional El Rey, 24°43'20" S, 64°38'39.93" W; Quebrada de Acambuco, 5 km W Dique Itiyuro, 22°07'05.13" S, 63°46'25.45" W; Río del Valle, 24°38'00" S, 64°15'00.16" W; Río Los Sauces, 12 km NW del Jardín ruta 6 km 110, 26°04'33" S, 65°28'58.76" W; Rosario de la Frontera, 25°48'00.96" S, 64°58'07.73" W; Santa María, 120 km E Aguaray, 22°09'37.92" S, 62°48'26.9" W; Santa Victoria Este, 22°16'23.07" S, 62°42'45.97" W; Tabacal, 23°15'19.95" S, 64°14'51.42" W. **SANTA FE:** Malabrigo, 29°20'52.23" S, 59°58'06.7" W; Santa Fe, 31°37'56.6" S, 60°41'58.05" W. **SANTIAGO DEL ESTERO:** Pampa Lajta, 28°31'59.58" S, 63°45'29.83" W; San Antonio, 26°46'00.19" S, 64°35'59.99" W; San Félix, 26°37'58.03" S, 63°23'53.29" W; Santa Isabel, 26°19'46.02" S, 64°20'17" W; Simbolar, 26°09'00.06" S, 63°47'00.25" W; Tacañitas, 28°37'27.47" S, 62°36'16.95" W. **TUCUMAN:** 1 km al E de Monteagudo, 27°30'42.74" S, 65°15'46.51" W; Cerro del Campo, 26°21'54.73" S, 64°47'50.72" W; El Cadillal, 26°37'42.31" S, 65°12'35.86" W; El Corte, 26°48'25.51" S, 65°19'39" W; El Paraíso, 26°48'20.46" S, 65°20'11.6" W; Estación Piscicultura, El Cadillal, 24 km NW Tucumán, 26°37'51" S, 65°12'03.72" W; La Higuera, 26°23'16" S, 65°27'53.82" W; Las Mesadas, 26°17'04" S, 65°29'39.32" W; Puesto Cortaderas, 26°16'59.68" S, 64°28'30.06" W; San Miguel de Tucumán, 26°49'50.26" S, 65°12'13.52" W; San Pedro de Colalao, 26°14'10.16" S, 65°29'39.24" W; Santa Inés, 26°52'45" S, 65°06'23" W.

Eumops bonariensis

New locality. **MISIONES:** Aristóbulo del Valle, 10 km W by road along Río Cuñapirú, 27°05'42.32" S, 54°58'32" W, 196 m a.s.l. (2).

Additional localities. **BUENOS AIRES:** Bajo Delta del Río Paraná, 34°25'33" S, 58°31'27" W; Bella Vista, 34°33'49.24" S, 58°41'25.38" W; Canal 6, Delta bonaerense, 34°10'50.49" S, 58°51'09.09" W; Canal Arana, 34°08'29.65" S, 58°31'36.42" W; El Pato, 34°53'01.56" S, 58°10'42.28" W; Granja 17 de Abril, 34°45'00" S, 58°58'00" W; Isla Martín García, 34°11'00" S, 58°15'10" W; La Balandra, 34°55'45.7" S, 57°43'05.49" W; La Plata, 34°55'16.5" S, 57°57'15.6" W; Moreno, 34°39'00" S, 58°47'00" W; Municipalidad de La Plata, Colonia Urquiza, Establecimiento Los Tilos, 34°55'54.42" S, 58°08'14.76" W; Municipalidad de La Plata, Gonnet, República de los niños, 34°53'20.92" S, 58°01'13.13" W; Municipalidad de La Plata, Villa Elisa, Parque Ecológico Municipal, 34°51'36" S, 58°05'10.53" W; Municipalidad de Magdalena, Reserva Pearson, 35°08'04.34" S, 57°23'31.34" W; Punta Lara, 34°48'21.45" S, 57°59'01" W; Río Carabelas, 34°14'43.48" S, 58°42'40" W. **CATAMARCA:** El Durazno, 8 km S cruce rutas 38 nueva y vieja, por ruta vieja, 28°06'04" S, 65°35'55.58" W. **CORDOBA:** Segunda Usina, 32°13'00" S, 64°31'00" W. **CORRIENTES:** Cerro "El Chico" Estancia Las Marías, Paraje Tres Cerros, Municipio de La Cruz, 29°09'09.01" S, 56°51'43.07" W; Ita-ibaté, fondo de una iglesia, 27°25'40.18" S, 57°20'18.62" W. **ENTRE RIOS:** Brazo Largo, 33°46'32.42" S, 58°36'28.03" W; Estación Experimental Agropecuaria Paraná del Instituto Nacional de Tecnología Agropecuaria en Oro Verde, 31°51'22.65" S, 60°31'31.56" W; Estancia San Carlos, 42 km al NW de Colonia Los Sauces, 31°06'58.71" S, 58°37'20.49" W; Gualaguaychú, 33°00'27.8" S, 58°30'40" W; Paraná, 31°44'28.75" S, 60°30'41.57" W; Parque Nacional El Palmar, 31°52'43.49" S, 58°16'08" W; Quinta

Arco Iris, 33°47'02.27" S, 058°33'01.99" W. **SALTA:** Copo Quile, Finca San Juan, 26°00'45.54" S, 064°41'30.11" W. **SANTA FE:** Esperanza, 31°27'00" S, 060°56'00" W; Santa Fe, 31°37'56.6" S, 060°41'58.05" W. **TUCUMAN:** 28 km NE San Miguel de Tucumán, 26°36'59.94" S, 065°06'55.09" W; 29 km NE San Miguel de Tucumán, 26°36'29.81" S, 065°07'10.24" W; Aguas Chiquitas, Sierras de Medina, 26°36'28.63" S, 065°10'35.01" W; Banda del Río Salí, Establecimiento Ingenio Concepción, 26°50'39.6" S, 065°08'52.3" W; Bella Vista, 27°01'53.81" S, 065°18'12.85" W; Ciudad de Lules, 26°55'05.63" S, 065°20'52.71" W; Dique San Ignacio, 27°44'32" S, 065°40'25.06" W; El Aserradero, 26°32'23.45" S, 064°59'41.25" W; Las Talas, 4 km N Bella Vista, 26°59'11.38" S, 065°17'01.69" W; Piedra Buena, 26°44'17.47" S, 064°38'55" W.

Eumops glaucinus

New locality. **CHACO:** Finca Popovich, 65 km NE from Los Frentones, 3.5 km E from 4 bocas, 25°56'01.4" S, 061°12'14.9" W, 140 m a.s.l. (1).

Additional localities. **JUJUY:** Río Las Capillas, 15 km N Las Capillas por ruta 20, 24°02'00.38" S, 065°06'41.91" W; Río Lavallén, app. 1 km N Santa Rita, 24°27'41.6" S, 064°50'45.28" W; Yuto, 23°38'36.06" S, 064°28'12.51" W. **MISIONES:** Caragatay, 26°39'27.71" S, 054°44'21.53" W. **SALTA:** 5 km al Este de Tonono (sobre Río Itiyuro), 22°24'47.88" S, 063°26'53.07" W; Santa Victoria Este, 22°16'23.07" S, 062°42'45.97" W; Tonono, 1 km E sobre Río Itiyuro, 22°23'56.56" S, 063°28'23.65" W; Tonono, 1 km W, 22°23'42.28" S, 063°29'36.28" W. **TUCUMAN:** Ciudad de Lules, 26°55'05.63" S, 065°20'52.71" W; San Miguel de Tucumán, 26°49'50.26" S, 065°12'13.52" W.

Histiotus macrotus

New localities. **LA RIOJA:** Paraje El Chiflón, across from Reserva Provincial El Chiflón, 30°12'33.4" S, 067°33'29.9" W, 1,132 m a.s.l. (7); Quebrada de Santo Domingo, 30 km SW of Jagüé, 28°31'34.7" S, 068°46'13.8" W, 3,140 m a.s.l. (6).

Additional localities. **CATAMARCA:** 5.2 km NW Chumbicha, 28°50'26.65" S, 066°17'57.58" W; 22 km al SE de Villa de Escaba sobre ruta provincial N° 9, 27°47'47.52" S, 065°46'56.64" W; Andalgalá, 27°36'01.35" S, 066°18'58.12" W; Balneario El Caolín, 6 km NW Chumbicha, 28°49'01.32" S, 066°14'46.16" W; Choya, 13 km NNW Andalgalá, 27°31'16.79" S, 066°22'59.65" W; Chumbicha, 1 km NW balneario by rd, 28°48'27.09" S, 066°15'13.7" W; Confluencia entre ríos Mina y Candado, 27°23'38.61" S, 066°15'34.76" W; Cuesta del Clavillo, 3 km W La Banderita, 27°20'53.45" S, 065°57'47.55" W; Cuesta del Clavillo, 5 km S La Banderita, 27°20'51.27" S, 065°58'31.65" W; El Durazno, 8 km S cruce rutas 38 nueva y vieja, por ruta vieja, 28°06'04" S, 065°35'55.58" W; El Rodeo, 28°12'38" S, 065°52'40.43" W; La Banderita, 27°19'50.13" S, 065°57'07.61" W; Las Estancias, 27°29'55" S, 066°01'26" W; Los Nacimientos, ruta 40, km 869, 27°10'10.64" S, 066°44'40.05" W; Potrero River Dike, 27°29'49.38" S, 066°18'40.86" W; Sierra de Ancasti, ruta 2, 28°33'24.58" S, 65°37'09.61" W; Tinogasta, 28°03'02.34" S, 067°33'57.01" W. **CHUBUT:** Escuela de idioma Gales Ysgol Gymaraeg ty Andes a orillas del río Percey, cerca de Tevelín, 43°05'54.92" S, 071°28'15.12" W; Esquel, 42°54'49" S, 071°18'39" W; Estancia El Principio, app a 10 km al SW de la ciudad de Esquel, sobre ruta prov. 259, 42°59'30.67" S, 071°25'13.91" W; Reserva Coihue, E provincial road 70 between Epuén and El Maitén, 42°09'44.4" S, 071°18'35.4" W. **CORDOBA:** Copina, 31°34'38" S, 064°40'26.15" W; Cura Brochero, 31°42'13.79" S, 065°01'11.73" W; Río Cuarto, 33°07'18.12" S, 064°20'48.12" W. **JUJUY:** 6.8 km SE Suripujies, sobre ruta provincial 5, 22°13'27" S, 065°16'12.2" W; Parque Provincial Potrero de Yala, 24°06'26.38" S, 065°28'53.35" W; Tres Cruces, 8 km S, sobre ruta 9, 22°56'18.82" S, 065°31'16.59" W; Yavi, 22°07'00" S, 065°27'00" W. **NEUQUEN:** Parque Nacional Nahuel Huapi, Seccional Villarino sobre ruta nacional 234,

50 km al NE de Villa La Angostura, 40°29'25.35" S, 071°35'57.33" W; Villa La Angostura, 19 km N along Hwy. 234, 40°45'48.04" S, 071°38'46.21" W. **RIO NEGRO:** Bariloche, 20 km E, 41°04'40.28" S, 071°06'57.03" W; Estancia El Condor, 22 km ESE Bariloche, 41°07'00.13" S, 071°13'00.11" W. **SALTA:** 3.5 km S Angastaco, 25°41'13.3" S, 066°08'25.6" W; App. 15 km W Escoipe, sobre ruta provincial 33, 25°10'25.2" S, 065°49'31.6" W; Cafayate, 20 km NW, 25°57'56.05" S, 065°55'33.85" W; Laguna El Brealito, 25°17'22.5" S, 066°22'04.08" W. **SAN JUAN:** Complejo Astronómico El Leoncito, 7 km W, 31°48'00.52" S, 069°21'30.77" W. **SAN LUIS:** Paso del Rey, 1 km N, along Arroyo de la Cañada Honda, 32°56'18" S, 066°00'04.71" W; Río Quinto, 33°12'07.87" S, 065°51'17.09" W. **TUCUMAN:** Anta Mapu, 26°31'11.77" S, 064°42'53.71" W; El Cadillal, 26°37'42.31" S, 065°12'35.86" W; El Mollar (casa familia Saracho), 26°57'47.6" S, 065°42'46.8" W; El Naranjo, 26°40'34.82" S, 65°02'43.82" W; El Siambón, 26°42'15.51" S, 065°26'14.98" W; La Ciénaga, frente a escuela n 338, 26°46'29.76" S, 065°38'50.28" W; Parque Provincial El Cochuna, Camping, 27°19'14.25" S, 065°54'51.43" W; Reserva La Florida (Pueblo Viejo), 27°11'30" S, 065°40'06.6" W; Ruta 307, km 43, 26°58'51.82" S, 065°39'50.8" W; Ruta 307, km 46, 26°57'36.72" S, 065°39'32.47" W.

Histiotus montanus

New localities. **CATAMARCA:** El Rodeo, 28°12'38" S, 065°52'40.43" W, 1,290 m a.s.l. (4); Las Estancias Yunka Suma, 27°23'16.14" S, 065°58'57.76" W, 1,480 m a.s.l. (3). **SAN JUAN:** Posta El Balde (Ruta Nacional 40, km 240), en ruinas de la estación de tren, Veg. Monte, 30°55' 40.16" S, 068°37'57.46" W, 937 m a.s.l. (8). **SAN LUIS:** Cortadera, 32°30'21.21" S, 064°59'28.92" W, 948 m a.s.l. (10).

Additional localities. **BUENOS AIRES:** Balcarce, 37°50'45.29" S, 058°15'19" W; Buenos Aires, 34°36'13.4" S, 058°22'53.73" W; Laguna Chasicó, 38°38'40.33" S, 063°05'46.94" W; Sierra de la Ventana, 38°08'20.85" S, 061°47'38.72" W. **CHUBUT:** El Maitén, 2 km N, 42°02'09.63" S, 071°09'02.28" W; Golfo San José, 42°25'13.83" S, 064°30'59.87" W; Leleque, 42°24'46.87" S, 071°04'16.37" W; Pico Salamanca, 45°24'37.37" S, 067°25'01.44" W. **CORDOBA:** Alpa Corral, la unión de los ríos, 32°39'33" S, 064°44'27.84" W; Capilla del Monte, 30°51'17.58" S, 064°31'32.9" W; El Carrizal, Córdoba Range, 31°57'00" S, 065°12'00" W; Espinillo, 33°00'33.44" S, 64°21'16" W; Espinillo, Estancia La Cautiva, 32°59'37.29" S, 064°15'25.96" W; La Cumbre, 30°59'00" S, 064°30'00" W; La Falda, Pampa de la Olaen, Caverna, 31°05'46.26" S, 064°34'32.45" W; Pampa de Achala, 31°40'55.72" S, 064°50'13" W; Punilla, Valle Hermoso, 31°06'41.67" S, 064°29'36.4" W; San Esteban, 30°55'19" S, 064°32'10" W; Segunda Usina, 32°13'00" S, 064°31'00" W; Sierras de las Peñas, 32°36'14.19" S, 064°18'34.15" W. **LA RIOJA:** Aimogasta, 28°33'16.67" S, 066°49'02.59" W; San Isidro, 31°47'17.67" S, 066°19'30.59" W; Villa Unión, 29°18'53.19" S, 068°13'34.56" W. **MENDOZA:** Zanjón Bermejo, 32°53'23.97" S, 068°50'36" W. **NEUQUEN:** Codihué, 38°28'12.05" S, 070°29'42.5" W; Isla Victoria, 40°56'30.09" S, 071°32'28.91" W; Las Coloradas, 39°33'21.56" S, 070°35'39.26" W; Neuquén, 38°57'09.1" S, 068°03'50.21" W. **RIO NEGRO:** El Bolsón, 41°58'04.38" S, 071°32'06.17" W; El Cóndor, Lago Perito Moreno, 41°04'11.36" S, 071°01'59.4" W; Lago Perito Moreno, 41°06'08.95" S, 071°27'55.57" W. **SANTA CRUZ:** Lago Belgrano, Parque Nacional Perito Moreno, 47°48'53.26" S, 072°13'39.11" W; Laguna Grande, 49°30'23.04" S, 070°09'38.08" W; Parque Nacional Los Glaciares: Seccional Río Mitre, 50°27'53.19" S, 072°48'04.37" W; Punta Loyola, S. Patagonia, 51°36'44.36" S, 069°00'11.63" W; San Julián, 49°18'23.77" S, 067°43'44.09" W. **SANTIAGO DEL ESTERO:** Río Saladillo, 28°52'36.38" S, 063°58'51.02" W; San Pedro de Guasayán, 27°57'15.58" S, 065°09'48.24" W; San Salvador, 27°46'27.39" S, 063°40'34.86" W.

APPENDIX II

Marginal localities of distribution of the species in South America (see <https://www.idigbio.org/portal/records/ade505ee-c4e8-4647-bc0e-0bc6605bf850>); López González 1998; Cherem et al. 2004; Acosta and Venegas 2006; Fabián et al. 2006; Miranda et al. 2006; Gardner, 2008; Bernardi et al. 2009). For records from Argentina see Appendix I.

Molossops temminckii

BOLIVIA: Beni, San Joaquín, 13°04' S, 064°49' W; Santa Cruz, 5 km SW of Comarapa, 17°57' S, 064°32' W; La Paz, La Reserva, 15°45' S, 067°31' W. **BRAZIL:** Mato Grosso, Serra do Roncador, approximately 264 km N of Xavantina, 12°51' S, 051°46' W; Tocantins, Município Babaçulândia, 07°03' S, 047°36' W; Ceará, Floresta Nacional Araripe-Apodi, 8 km SSW of Crato, 07°18' S, 039°25' W; Bahia, Região de Conquista, 15°00' S, 040°50' W; Minas Gerais, Lagoa Santa, 19°38' S, 043°49' W; São Paulo, Nova Aliança, 21°02' S, 049°30' W; Paraná, Estação Ecológica do Caiuá, 22°39' S, 052°51' W. **COLOMBIA:** Tolima, Guamo, 04°01' N, 074°58' W; Chocó, Bahía Solano, 06°14' N, 077°25' W; Norte de Santander, Cúcuta, 07°54' N, 072°31' W. **ECUADOR:** Orellana, Onkone Gare, 38 km S of Pompeya Sur, 00°39' S, 076°27' W. **GUYANA:** Upper Takutu-Upper Essequibo, near Kuitaro River, 64 km E of Dadanawa, 02°50' N, 058°54' W. **PERU:** Loreto, Curaray River mouth, 02°22' S, 074°05' W. **URUGUAY:** Artigas, Río Cuareim, ca. 5 km above junction with Arroyo Yacaré, 30°05' S, 057°00' W; Paysandú, near Arroyo Negro, 15 km S of Paysandú, 32°27' S, 058°05' W. **VENEZUELA:** Aragua, Las Delicias, 10°15' N, 067°36' W; Guárico, Guyabal, 08°00' N, 067°24' W; Apure, Hato "El Frio" 07°43' N, 068°54' W.

Eumops bonariensis

BRAZIL: Paraná, União da Vitória, 26°13' S, 051°05' W; Rio Grande do Sul, Quinta, 32°05' S, 052°17' W; Rio Grande do Sul, Frederico Westphalen, 27°21' S, 053°23' W. **PARAGUAY:** Alto Paraguay, Estancia San José, 19°32' S, 060°31' W; Canindeyu, Estancia Itabo, 24°30.19' S, 054°38.28' W; Concepción, Parque Nacional Serranía San Luis, 22°37.91' S, 057°21.35' W. **URUGUAY:** Treinta y Tres, Treinta y Tres, 33°14' S, 054°23' W.

Eumops glaucinus

BOLIVIA: Santa Cruz, Ingeniero Mora, 18°10' S, 063°16' W; Beni, Espíritu, 14°13' S, 066°40' W. **BRAZIL:** Pará, Tauari, 03°05' S, 055°06' W; Bahia, Região de Conquista, 15°00' S, 040°50' W; Minas Gerais, Viçosa, 20°45' S, 042°53' W; Rio de Janeiro, Angra dos Reis, 23°00' S, 044°18' W; Paraná, Londrina, 23°18' S, 051°09' W. **COLOMBIA:** Magdalena, Santa Marta, 11°15' N, 074°12' W; Tolima, Espinal,

04°09' N, 074°53' W. **ECUADOR:** Guayas, Guayaquil, 02°10' S, 079°50' W. **GUYANA:** Upper Takutu-Upper Essequibo, Aroquoi Tributary, Rupununi River, 02°45' N, 059°30' W. **PARAGUAY:** Presidente Hayes, Rincón Charrúa, 23°18' S, 059°02' W; Boquerón, Base Naval Pedro P. Peña, 22°27' S, 062°21' W. **PERU:** Lambayeque, Cerro la Vieja, 06°13' S, 079°44' W; Piura, 6 km W of Suño, 04°33' S, 080°05' W. **VENEZUELA:** Amazonas, San Juan, 05°18' N, 066°13' W; Carabobo, Montalán, 10°13' N, 068°20' W; Falcón, Pedregal, 11°01' N, 070°08' W.

Histiotus macrotus

BOLIVIA: Cochabamba, Parque Nacional Tunari, 17°19' S, 066°08' W; Santa Cruz, Vallegrande, 18°29' S, 064°06' W; Pampagrande, 18°05' S, 064°07' W. **CHILE:** Atacama, Chañaral, 29°00' S, 071°25' W; Metropolitana de Santiago, Santiago, 33°27' S, 070°40' W; Biobío, Antuco, 37°20' S, 071°41' W; Biobío, Concepción, 36°50' S, 073°03' W; Valparaíso, near Valparaíso, 33°02' S, 071°38' W. **PARAGUAY:** Boquerón, Base Naval Pedro P. Peña, 22°27' S, 062°21' W; Estancia La Gama, approx. 200 km SW Colonia Neuland, 23°08' S, 061°25' W.

Histiotus montanus

BOLIVIA: Chuquisaca, Chuquisaca, 19°02' S, 065°17' W; Cochabamba, Pocona, 17°39' S, 065°24' W; La Paz, Cota Cota in La Paz, 16°33' S, 068°05' W; Tarija, San Francisco Mission, 21°15' S, 063°30' W. **BRAZIL:** Paraná, Município de Palmas, Fazenda São João, 26°34' S, 51°36' W; Rio Grande do Sul, Pinheiro Machado, 31°32' S, 053°22' W; Ilópolis, 28°55' S, 052°07' W; Santa Catarina, Lages, 27°48' S, 050°19' W. **COLOMBIA:** Antioquia, Poblado, 06°13' N, 75°34' W; Boyacá, Tunja, 05°31' N, 073°22' W; Cundinamarca, Choachí, 04°32' N, 073°56' W; Valle del Cauca, limekiln, vicinity of Cali, 03°27' N, 076°31' W. **CHILE:** Biobío, San Carlos, Hacienda Zemita, 36°25' S, 071°58' W; Ñuble, Chillán, 36°35' S, 072°05' W; Tarapacá, Putre, 18°12' S, 069°34' W; Valparaíso, Zapallar, 32°33' S, 071°28' W. **ECUADOR:** Chimborazo, Riobamba, 01°40' S, 078°38' W; Napo, Antisana Páramo, S slope Cerro Antisana, 00°30' S, 078°08' W; Morona-Santiago, Gualaquiza, 03°24' S, 078°33' W; Pichincha, Pichincha, 00°10' S, 078°33' W; Tungurahua, 1.5 km E of Mirador, 01°26' S, 078°14' W. **PERU:** Arequipa, Islay, 16°59' S, 072°07' W; Cusco, Huasampilla, 13°14' S, 071°26' W; Huancavelica, Huancavelica, 12°46' S, 075°03' W; Puno, Puno, 15°50' S, 070°02' W; Puno, Río Inambari, 13°55' S, 069°41' W; San Martín, Pampa del Cuy, 07°34' S, 77°27' W. **URUGUAY:** Canelones, Jaureguiberry, 34°48' S, 055°24' W; Rivera, Rivera, 30°54' S, 055°31' W; Soriano, Soriano, 33°24' S, 058°19' W. **VENEZUELA:** Mérida, Montes de la Hechicera, 08°40' N, 071°10' W.