



# MORCEGOS do PAMPA



# Bats from Brazil



**182**  
species

in Brazil

**25%**  
of mammals  
in Brazil are  
**bats**



## Bat families in Brazil

**EMBALLONURIDAE**

7 GENERA, 17 SPECIES



**FURIPTERIDAE**

1 GENUS, 1 SPECIES



**MOLOSSIDAE**

8 GENERA, 31 SPECIES



**MORMOOPIDAE**

1 GENUS, 4 SPECIES



**NATALIDAE**

1 GENUS, 1 SPECIES



**NOCTILIONIDAE**

1 GENUS, 4 SPECIES



**PHYLLOSTOMIDAE**

44 GENERA, 93 SPECIES



**THYROPTERIDAE**

1 GENUS, 5 SPECIES



**VESPERTILIONIDAE**

5 GENERA, 28 SPECIES



**1421**

bat species in the  
world

Distributed across the  
globe, except at the poles

**single**  
mammal  
that flies



**Make sounds**  
to locate  
yourself in  
space and hunt

The bat menu includes various items, such as:  
seeds, fruits, leaves, pollen, nectar, flowers,  
insects, fish, blood and other animals



**MORCEGOS**  
do PAMPA



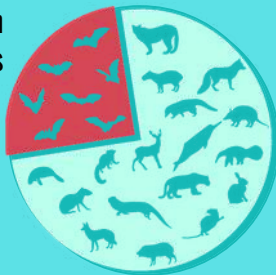




# Bats from Brazil

**182**  
species  
in Brazil

**25%**  
of mammals in  
Brazil are bats





# Bats from Brazil

The Brazilian list of bats is composed of **182** species, belonging to **69** genera and **nine** families

**EMBALLONURIDAE**

**7 GENERA, 17 SPECIES**



**FURIPTERIDAE**

**1 GENUS, 1 SPECIES**



**MOLOSSIDAE**

**8 GENERA, 31 SPECIES**



**MORMOOPIDAE**

**1 GENUS, 4 SPECIES**



**NATALIDAE**

**1 GENUS, 1 SPECIES**



**NOCTILIONIDAE**

**1 GENUS, 2 SPECIES**



**PHYLLOSTOMIDAE**

**44 GENERA, 93 SPECIES**



**THYROPTERIDAE**

**1 GENUS, 5 SPECIES**



**VESPERTILIONIDAE**

**5 GENERA, 28 SPECIES**





# Bats are unique and amazing

**Single** flying  
mammal

**1421**  
bat species in  
the world  
**occur** across the  
globe, except at the  
poles



**Healthy aging**  
reports of bats that lived at  
least 41 years in the wild

**Big diversity**  
great morphological variation



15 cm  
wing to wing



180 cm  
wing to wing



1600g



**Make sounds** to  
locate and hunt  
in complete  
darkness



# Echolocation

The Sixth Sense

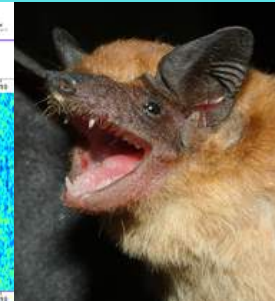
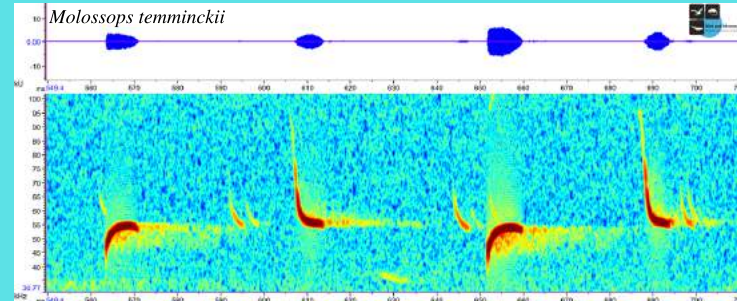


Bats **are not blind**. However, navigate and hunt in the dark does not seem easy! So, they perfected the use of sound



**Like a sonar**, bats emit high-frequency sounds (**humans cannot hear**), which upon encountering an obstacle or prey, return to the bat in the form of **echos**

As in the case of birds, it is possible **to identify** some species of bats by the sounds they emit





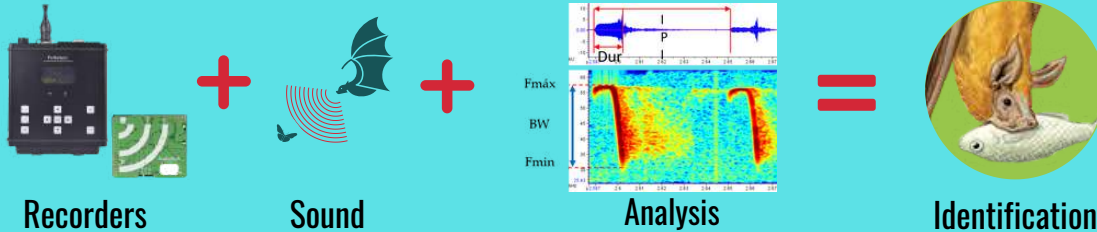
# Bioacoustics

The science of sound

**Bioacoustics** is a **science** that studies the importance of sounds and **communication** in the behavior of living beings



Through sound recording, which is a **non-invasive method**, we can register and subsequently identify the species that emitted the sounds



With this, we can study several aspects of the **ecology** of organisms, helping in the **conservation** of these species



# Most varied diet among mammals



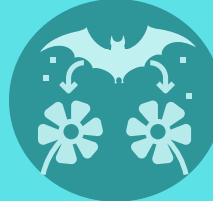
Bats perform a variety of **ecosystem services**. They act as: pollinators, seed dispersers, insect predators (including agricultural pests), nutrient suppliers in caves, source of new coagulants, among other functions.



**Insects**



**Fruits, leaves and seeds**



**Pollen, nectar and flowers**



**Other vertebrates**



**Blood**

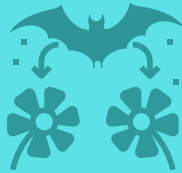




# Diet

Pollen, nectar and flowers

More than **700 flowers**  
are pollinated by bats  
around the world



They use their  
**tongue**, extremely  
long to consume  
nectar



The pollen grains end up  
sticking to your fur. They  
can **disperse pollen**  
over long distances

Pollinate **fruits**  
of our daily lives



They are the main  
pollinators of blue-agave,  
the main ingredient in the  
production of **Tequila**





MORCEGOS  
do PAMPA



Bird and Mammal  
Conservation and Biology Unit



SBEQ



Departamento  
de Ecologia



CNPq

PPGBAN

The Rufford  
Foundation  
www.rufford.org @ruffordgrants

# Diet

Fruits, leaves and seeds

Can eat **2.5** times  
their own weight  
in fruit per night



Scatter  
**thousands**  
of seeds  
every night



They fly great distances  
every night and have a  
accelerated digestive  
process



They are the largest  
**natural reforesters**  
on the planet







**MORCEGOS**  
do PAMPA



Bird and Mammal  
Conservation and Biology Unit

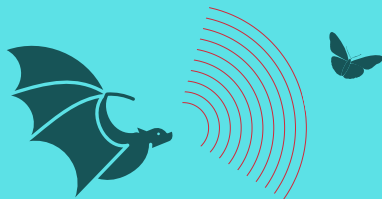


Departamento  
de Ecología



# Diet

## Insectívoros



Use echolocation

**2/3** of all bat  
species are  
**insectivorous**

Main **natural controllers** of  
insects



Provide **pest control service**  
for **farmers**, making it possible  
to reduce the use of pesticides,  
**saving billions**



In **Chile**, wine  
producers save up to  
**7%** of the annual  
production value due  
to the **help of bats**





# Diet

## Blood

In all world, **only 3 feed** on the **blood** of birds and mammals. They occur in the Americas



*Desmodus rotundus*



*Diphylla ecaudata*

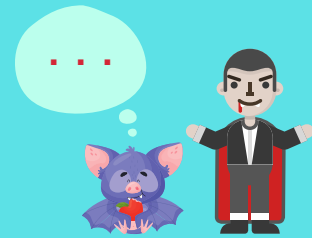


*Diaemus yongii*

The spittle of these animals has an enzyme, **draculin**, which inhibits blood clotting



Due to the **anticoagulant and anesthetic properties** of their spittle, they are models in the development of drugs **to treat** vascular diseases







# Diet

## Other vertebrates

Some species **feed on vertebrates**, such as amphibians, reptiles, rodents and even other bats (**rare** species)



*Chrotopterus auritus*



In Brazil, there is a species that **feeds on fish** and aquatic insects, which is why it is called the fisher-bat



There are also species that eat everything, including insects, fruits, nectar and even small vertebrates, which is why they are called **omnivores**





**MORCEGOS**  
do PAMPA



Bird and Mammal  
Conservation Units



# Pampa biome

Second most devastated biome, with only **3.3%** of its area protected by conservation units



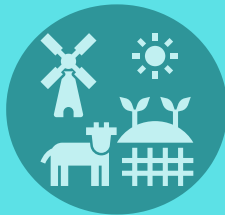
**45%**

Original vegetation



**14%**

Forest



**42%**

Agriculture



**9%**

Water



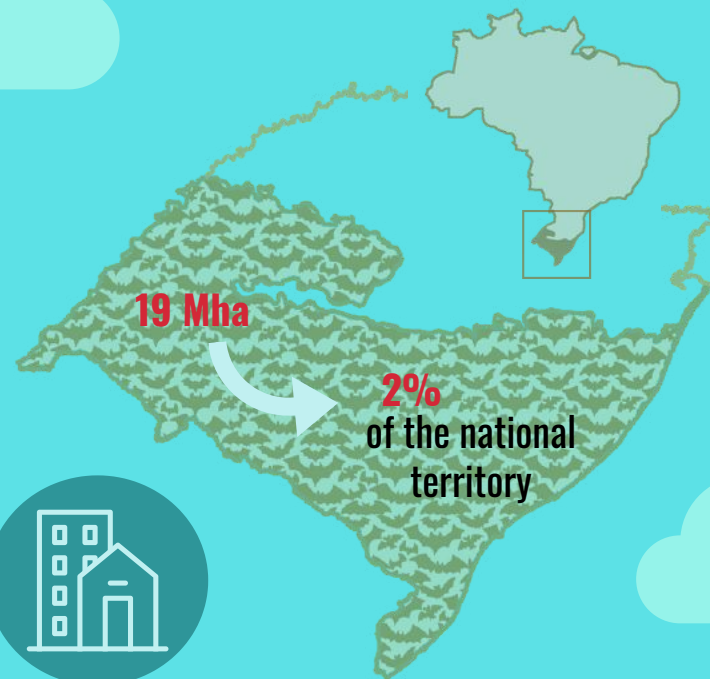
**33%**

Grassland



**1%**

Urban area



MAPBIOMAS





# Biodiversity

Pampa Biome



151

Mammals



566

Birds



97

Reptiles



3530

Plants



272

Fish



63

Amphibians



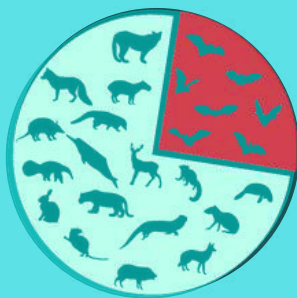
500

Butterflies



# Bats of the Pampa

**36**  
Species



**24%**  
of Pampa mammals are  
**bats**

## MOLOSSIDAE

6 GENERA, 12 SPECIES



## NOCTILIONIDAE

1 GENUS, 1 SPECIES



## PHYLLOSTOMIDAE

8 GENERA, 10 SPECIES



## VESPERTILIONIDAE

4 GENERA, 13 SPECIES





*Eumops bonariensis*

**MOLOSSIDAE**

**LC**

**Status**  
Least Concern

**Kg**

**Weight**  
11 - 20g



**Length**  
8.9 - 12.9cm



**Diet**  
Insectivorous

**Habitat**  
Open areas

They can use foliage, bridges or building ceilings as shelters. They form small colonies and there are reports of fidelity to the shelters



**MORCEGOS**  
do PAMPA







*Eumops patagonicus*  
**MOLOSSIDAE**

**LC**

Status  
Least Concern

**Kg**

Weight  
7 - 16g



Length  
6.4 - 7.2cm



Diet  
Insectivorous

Endemic to Latin America, found in both forests and urban areas, it may occupy house ceilings

Habitat  
Open areas



**MORCEGOS  
do PAMPA**





*Molossops temminckii*

**MOLOSSIDAE**

**LC**

**Status**  
Least Concern

**Kg**

**Weight**  
5 - 10g



**Length**  
5 - 5.4cm



**Diet**  
Insectivorous

**Habitat**  
Forest edge

Endemic to South America, it shelters in hollows of trees, poles and ceilings of buildings. Individuals form groups rarely larger than three individuals



**MORCEGOS**  
do **PAMPA**



**PPGBAN**



Departamento  
de Ecologia



Bird and Mammal  
Evolution, Systematics and Ecology Lab

**The Rufford**  
Foundation  
www.rufford.org @ruffordgrants







*Molossus molossus*

**MOLOSSIDAE**

**LC**

**Status**  
Least Concern

**Kg**

**Weight**  
12 - 18g



**Length**  
5.8 - 7cm



**Diet**  
Insectivorous

They take shelter in hollows of trees, caves, under palm leaves, ceilings, tunnels and under bridges. Individuals form large colonies

**Habitat**  
Open areas



**MORCEGOS**  
do PAMPA







*Molossus rufus*

**MOLOSSIDAE**

**LC**

**Status**  
Least Concern

**Kg**

**Weight**  
21 - 43g



**Length**  
7.1 - 9.8cm



**Diet**  
Insectivorous

**Habitat**  
Open areas

Commonly found in urban centers, it shelters in hollows of trees, buildings and cracks. Individuals can form large colonies



**MORCEGOS**  
do PAMPA







*Nyctinomops laticaudatus*

**MOLOSSIDAE**



**Status**  
Least Concern



**Weight**  
9 - 16g



**Length**  
10 - 11cm



**Diet**  
Insectivorous

**Habitat**  
Open areas

It shelters under leaves, hollows of trees, cracks in rocks, caves and buildings. It can form groups of 150 to a thousand individuals



**MORCEGOS**  
do PAMPA





*Nyctinomops macrotis*

**MOLOSSIDAE**

**LC**

**Status**  
Least Concern

**Kg**

**Weight**  
22 - 30g



**Length**  
7.5 - 8.4cm



**Diet**  
Insectivorous

**Habitat**  
Open areas

It takes shelter in hollows of trees, caves, cracks in rocks and buildings. Form colonies that can reach up to 150 individuals



**MORCEGOS**  
doPAMPA







*Promops centralis*

**MOLOSSIDAE**

**LC**

Status  
Least Concern

**Kg**

Weight  
18 - 25g



Length  
5.6 - 8.8cm



Diet  
Insectivorous

It is usually solitary and shelters in palm leaves, hollow trees and under roofs of houses

Habitat  
Open areas



**MORCEGOS  
do PAMPA**





*Promops nasutus*

**MOLOSSIDAE**

**LC**

**Status**  
Least Concern

**Kg**

**Weight**  
12 - 22g



**Length**  
7 - 7.4cm



**Diet**  
Insectivorous

It takes shelter in hollow trees, cracks in rocks and buildings, roofs and attics. Features fidelity to shelter

**Habitat**  
Open areas



**MORCEGOS**  
doPAMPA







*Tadarida brasiliensis*

**MOLOSSIDAE**

**LC**

**Status**  
Least Concern

**Kg**

**Weight**  
8 - 15g

  
**Length**  
5.2 - 6.2cm

  
**Diet**  
Insectivorous

Individuals use large cracks, building ceilings, bridges, culverts and caves as shelters, where they can group by the thousands

**Habitat**  
Open areas



**MORCEGOS**  
do PAMPA







*Noctilio leporinus*

**NOCTILIONIDAE**



**Status**  
Least Concern



**Weight**  
50 - 65g



**Length**  
9.5cm



**Diet**  
Carnivorous

**Habitat**  
Forest edge

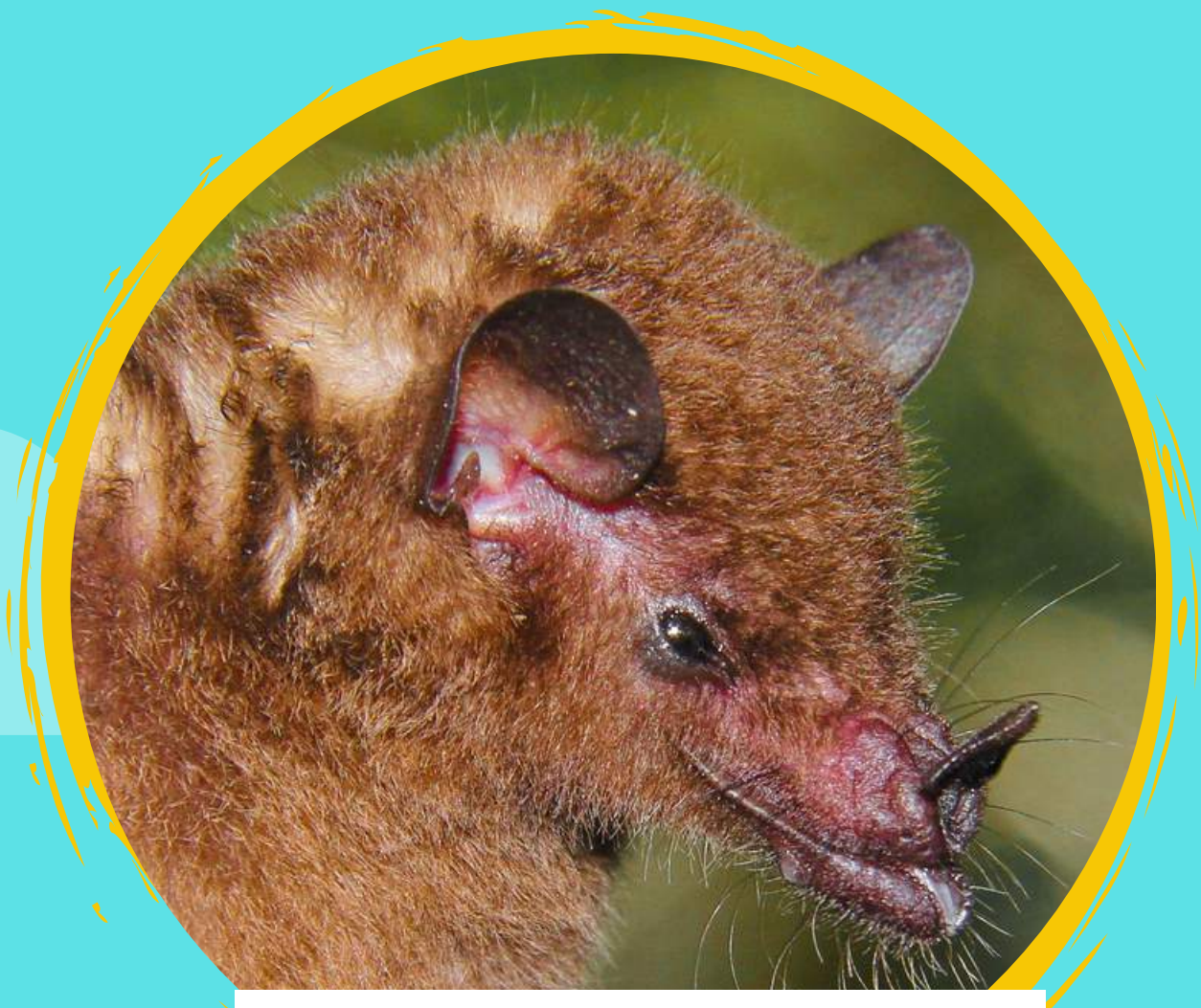
It lives in large colonies with up to hundreds of individuals. It is found in forested habitats, close to water sources



**MORCEGOS**  
do PAMPA







*Anoura caudifer*

PHYLLOSTOMIDAE

LC

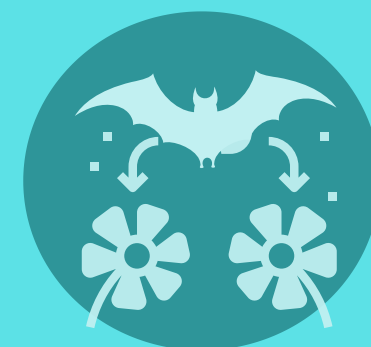
Status  
Least Concern



Weight  
8 - 13.5g



Length  
4.7 - 7cm



Diet  
Nectarivorous

Habitat

Cluttered environments

Endemic to South America, shelters in caves, tunnels, hollow trees, cracks in rocks, manholes and human constructions



MORCEGOS  
do PAMPA







*Anoura geoffroyi*

PHYLLOSTOMIDAE

LC

Status  
Least Concern



Weight  
13 - 18g



Length  
5.3 - 7.3cm



Diet  
Nectarivorous

Habitat

Cluttered environments

Indoor bat, shelters in caves and culverts under highways. It can form colonies of up to a thousand individuals



MORCEGOS  
do PAMPA







*Artibeus fimbriatus*

PHYLLOSTOMIDAE

LC

Status  
Least Concern

Kg

Weight  
48 - 60g



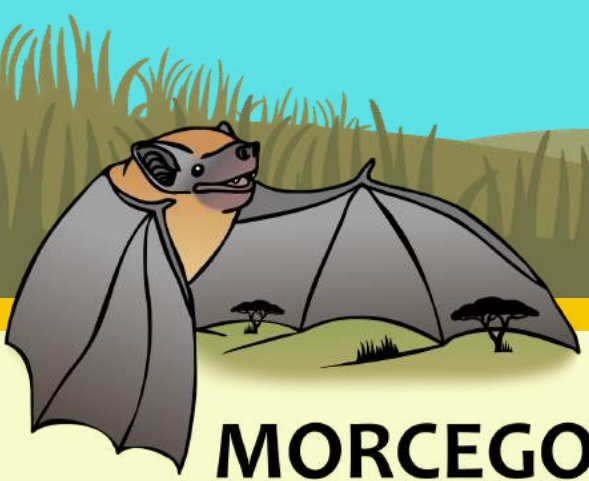
Length  
8.7 - 10cm



Diet  
Frugivorous

Shelters in treetops or in artificial shelters such as garages and basements

Habitat  
Cluttered environments







*Artibeus lituratus*

PHYLLOSTOMIDAE



Status  
Least Concern



Weight  
65 - 82g



Length  
9.3 - 11.3cm



Diet  
Frugivorous

Shelters in treetops or in original shelters  
such as garages and basements

Habitat  
Cluttered environments



MORCEGOS  
do PAMPA







*Chrotopterus auritus*

**PHYLLOSTOMIDAE**

**LC**

Status  
Least Concern

**Kg**

Weight  
59 - 94g



Length  
9.3 - 11.4cm



Diet  
Carnivorous

Habitat  
Cluttered environments

Among the three largest bats in the Neotropics. It forms small colonies at the entrance to caves and tree hollows. It is associated with well-preserved areas



**MORCEGOS  
do PAMPA**







*Desmodus rotundus*

PHYLLOSTOMIDAE

LC

Status  
Least Concern



Weight  
25 - 40g



Length  
6.9 - 9cm



Diet  
Hematophagous

Habitat

Cluttered environments

It has a social habit, forming large colonies.  
Shelters in caves, old wells, mines, tree  
hollows and abandoned buildings



MORCEGOS  
do PAMPA







*Glossophaga soricina*

PHYLLOSTOMIDAE

LC

Status  
Least Concern



Weight  
7 - 17g



Length  
4.5 - 6.1cm



Diet  
Nectarivorous

Habitat

Cluttered environments

It is sheltered in caves, tunnels, culverts, abandoned mines, hollow trees, logs, roofs and ceilings. Form colonies ranging from five to hundreds of individuals



MORCEGOS  
do PAMPA







*Platyrrhinus lineatus*

PHYLLOSTOMIDAE

LC

Status  
Least Concern

Kg

Weight  
18 - 28g



Length  
6 - 7.8cm



Diet  
Frugivorous

Endemic to South America. Sheltered  
under foliage and branches

Habitat  
Cluttered environments







*Pygoderma bilabiatum*

PHYLLOSTOMIDAE

LC

Status  
Least Concern

Kg

Weight  
19 - 26g



Length  
5.2 - 6.5cm



Diet  
Frugivorous

Uses foliage as shelter, palm trees and even artificial shelters

Habitat  
Cluttered environments







*Sturnira lilium*

PHYLLOSTOMIDAE

LC

Status  
Least Concern



Weight  
15 - 25g



Length  
5.1 - 7.1cm



Diet  
Frugivorous

Shelters in hollows of trees, foliage and human buildings

Habitat  
Cluttered environments



MORCEGOS  
do PAMPA







*Eptesicus brasiliensis*

**VESPERTILIONIDAE**



Status  
Least Concern



Weight  
13 - 19g



Length  
10.2 - 11.7cm



Diet  
Insectivorous

Habitat  
Forest edge

They use hollows and bark of trees, caves, roofs of residences, among other natural or artificial shelters



**MORCEGOS**  
do PAMPA







*Eptesicus diminutus*

**VESPERTILIONIDAE**

**LC**

**Status**  
Least Concern



**Weight**  
4.9 - 6.5g



**Length**  
8.1 - 9.1cm



**Diet**  
Insectivorous

Shelters in bark and hollows of trees and human constructions

**Habitat**  
Forest edge



**MORCEGOS**  
do PAMPA







*Eptesicus furinalis*

**VESPERTILIONIDAE**

**LC**

**Status**  
Least Concern



**Weight**  
7 - 14g



**Length**  
8 - 14cm



**Diet**  
Insectivorous

**Habitat**  
Forest edge

It uses caves, bark and tree hollows, human buildings as a shelter. It can form large colonies



**MORCEGOS**  
doPAMPA







*Histiotus montanus*

**VESPERTILIONIDAE**

**LC**

Status  
Least Concern

**Kg**

Weight  
9 - 18g



Length  
10 - 12cm



Diet  
Insectivorous

Habitat  
Forest edge

It can form small colonies in crevices of rocks, hollows of trees, caves, roofs of residences and artificial shelters



**MORCEGOS  
do PAMPA**







*Histiotus velatus*

**VESPERTILIONIDAE**



Status  
Data deficient



Weight  
11 - 12g



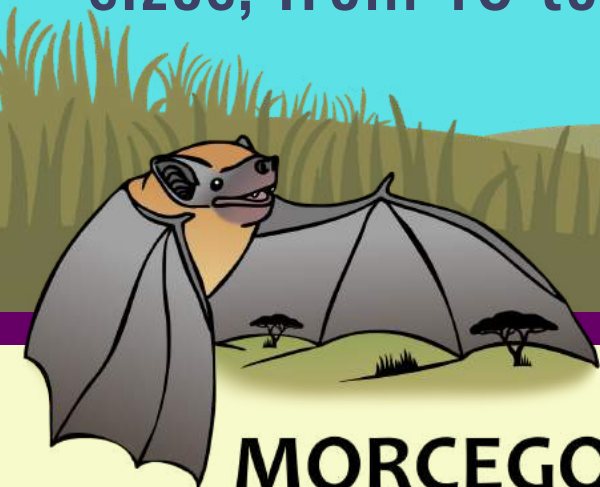
Length  
12 - 12.5cm



Diet  
Insectivorous

Habitat  
Forest edge

Synanthropic bats - inhabit roofs, blinds boxes, air conditioning niches and gaps between buildings. Colonies of varying sizes, from 10 to 70 individuals



**MORCEGOS**  
do PAMPA







*Lasiurus blossevillii*

**VESPERTILIONIDAE**

**LC**

**Status**  
Least Concern



**Weight**  
13 - 20g



**Length**  
9 - 15cm



**Diet**  
Insectivorous

**Habitat**

Forest edge

It is usually solitary and shelters in trunks, forks and denser foliage of palm and banana trees. Can use dense grass and human buildings



**MORCEGOS**  
doPAMPA







*Lasiurus villosissimus*

**VESPERTILIONIDAE**

**LC**

Status  
Least Concern

**Kg**

Weight  
13 - 23g



Length  
11.9 - 13.5cm



Diet  
Insectivorous

Habitat  
Forest edge

Solitary, shelters in the tops of palm and banana trees, hollow trees, trunks with lichens and moss, branches and dry foliage of fruit trees and also urban areas



**MORCEGOS  
doPAMPA**





*Lasiurus ega*  
**VESPERTILIONIDAE**

**LC**

Status  
Least Concern

**Kg**

Weight  
10.6g



Length  
10.8cm



Diet  
Insectivorous

Habitat  
Forest edge

Solitary, they shelter in the crowns of palm and banana trees, hollow trees, trunks with lichens and moss, branches and dry foliage of fruit trees and also urban areas







*Myotis albescens*

**VESPERTILIONIDAE**



Status  
Least Concern



Weight  
7 - 11g



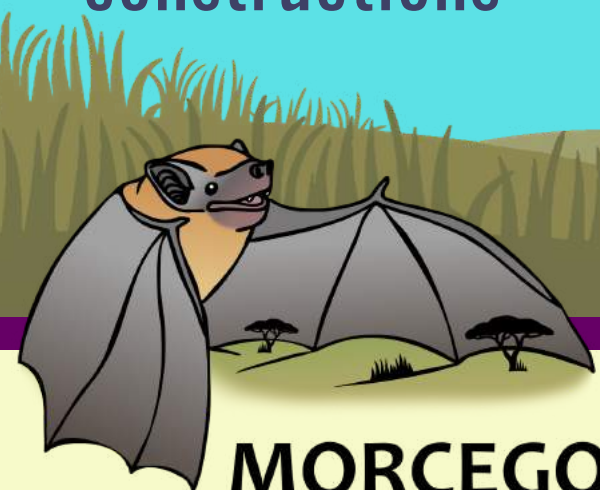
Length  
6.8 - 9.4cm



Diet  
Insectivorous

It occupies all types of shelter: caves, cracks in rocks, trees (tops, hollows and barks), river banks and human constructions

Habitat  
Forest edge



**MORCEGOS**  
do PAMPA





*Myotis levis*

**VESPERTILIONIDAE**

**LC**

Status  
Least Concern

Weight  
4 - 9g

Length  
7.7 - 9.9cm

Diet  
Insectivorous

Form small groups to large colonies and shelter in caves, hollow trees and even bark of trees

Habitat  
Forest edge



**MORCEGOS  
do PAMPA**







*Myotis riparius*

**VESPERTILIONIDAE**

**LC**

Status  
Least Concern



Weight  
5 - 6g



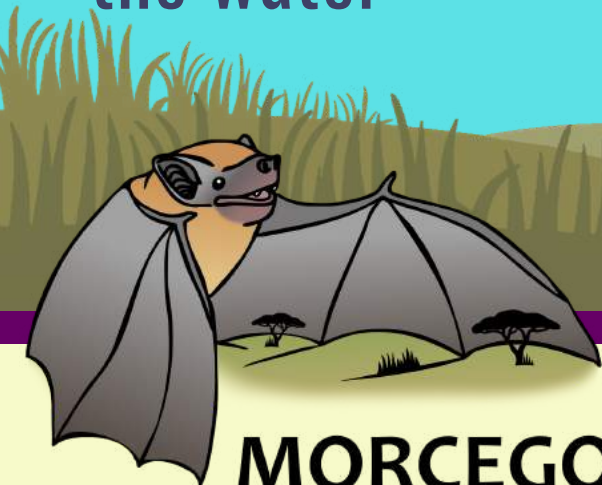
Length  
4.2 - 4.7cm



Diet  
Insectivorous

Habitat  
Forest edge

It shelters in human constructions, bark of trees, and roofs. It forms colonies with up to 50 individuals. Captures its prey on the water



**MORCEGOS**  
do PAMPA







*Myotis ruber*

**VESPERTILIONIDAE**

**LC**

Status  
Least Concern



Weight  
6 - 8g



Length  
8.5 - 8.9cm



Diet  
Insectivorous

Inhabits tree hollows, crevices in rocks or human constructions. Preferably solitary, it can form small colonies

Habitat

Forest edge



**MORCEGOS**  
doPAMPA

