



Bats living in caves, Barra Honda National Park

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Since January 2015, the Staff members and volunteers of Projects Abroad are working in the Bat Project, which consist on catching bats in four different caves located in Barra Honda hill (La Trampa, Nicao, Pozo Hediondo and Taponeada). Those places are the shelter of many bats because most of the caves offer very good conditions for their subsistence needs through the year. In the last years we were more focused on mist nets monitoring in the forest, collecting specific data about fruit-eaters bats (because those are easier to catch with the mists net than other groups of bats, as the insect eaters bats).

When is necessary to work with bats that are living in caves, is recommended to catch them with the harp trap, which is very friendly with them, because they do not get much stress in this trap compared with the mist net, and is use full because large populations will be easier to release. However we decide to set the harp trap in the entrance of the caves, in the place where we saw the bats flying in greater groups going out of the cave. To collect the bat data we trapped them during three months in the dry season and, in fact, we still doing the three months for the rainy season.

We set the trap once per month in each cave, starting at 6:00 pm and finish at 9:00pm, because at this hour is when the bats get more active during the night. The data collected from the bats was; the species name, forearm expansion, tibia bone expansion, sex, sexual activity and if they have any external parasite. Collect this data for a few years will help us to say how the species are occupying the caves, through the year and the characteristics of the different populations of species which are living in the caves. In the following paragraph we will discuss the results that we already collected during this few months.

A total of 16 species were found into the caves during this short time of study. The cave with more number of species was La Trampa (11 species), followed by Nicao (5 species), and finally Pozo Hediondo and Taponeada (4 species each). In La Trampa cave we found a domination of species from the American Leaf-nosed bats family (Phyllostomidae) represented by 9 species, followed by the Mouse-eared bats (Vespertilionidae) and the Mustached bats (Mormoopidae) with 1

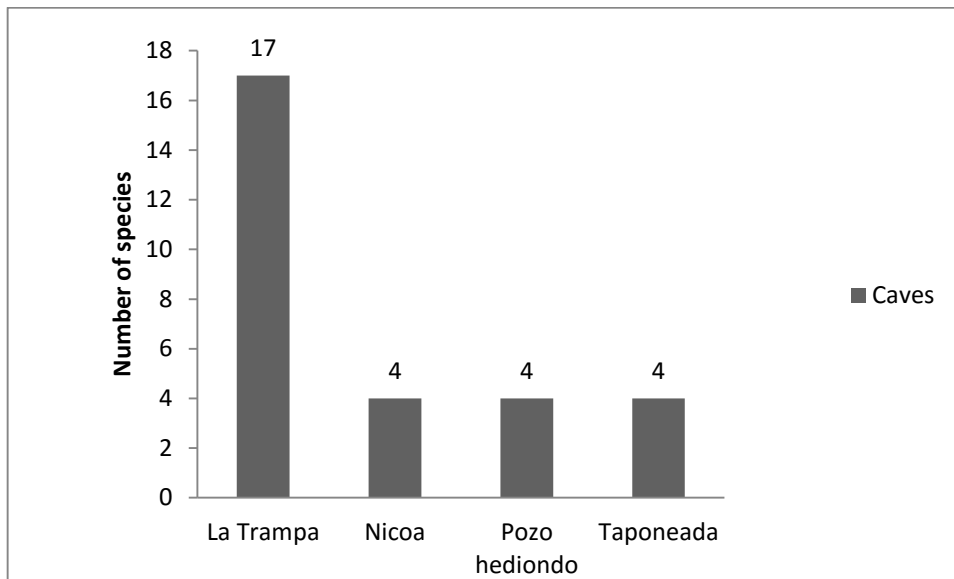
species each. The species that we recorded more times in this cave was the Jamaican fruit-eating bat (*Artibeus jamaicensis*), which is the most common bat in the tropical forest of America.

In both, the Nicoya cave and La Trampa cave, the family of bats which is more common to find is the American Leaf-nosed bats (Phyllostomidae) represented by four species and followed by the Mouse-eared bats (Vespertilionidae) with 1. In this cave we found an uncommon species of bat, which is called the Hairy-legged Vampire bat, it is known that this species present little populations in the Caribbean and Pacific slopes in Costa Rica, this shows that Barra Honda is having success in the conservation of uncommon species in the country

In the Pozo Hediondo and Taponeada caves there is a big population of Mustached bats (Mormoopidae), because of this we decide to record the bats going out of the caves with a nocturnal video recorder, to estimate the number of the bats that are using the cave as a shelter. The Pozo Hediondo cave has around 4000-5000 bats, in this cavern the species with the biggest population is the Mustache bat (*Pteronotus mesoamericanus*) 97.49%, which is an insect eater bat, the other species that is found in la Trampa, is the Mexican funnel-eared bat (*Natalus mexicanus*)xxx, the Lesser naked-backed bat (*Pteronotus davyi*) and the Yellow-throated bat (*Micronycteris brachyotis*).

In the Taponeada cave, we did not expect that the population of bats that is living there is that big, around 11 000-12 000 were counted in two hours of video, this is the cave with the biggest populations of bats in the National Park known until now. Here we found the three species of the Mustache bats with the smallest population in Costa Rica. The Big naked backed bat (*Pteronotus gymnotus*) n=71.13% was the species with more abundance followed by the lesser naked-backed bat (*Pteronotus davyi*) n=27.66% and Wagner's mustached bat (*Pteronotus personatus*) n=1.03%, which is the most uncommon in the country.

Figure 1.



Those species are difficult to find in Costa Rica because they use to live mostly in caves, it is their habitat of preference and in our country the caves system are not as big as in other countries in America, where is possible to find those types of bats in bigger populations. The data that we are collecting is very important for the bat conservation; with this information Barra Honda can be in to the places in America where people is making conservation about an important place which give shelter to many species in large numbers.

The Latin-American Network for Bat Conservation (RELCOM for its acronym in Spanish) give a category called SICOM (in Spanish means Important Place for Bat Conservation) to a place who preserve an important place that give shelter for a lot of species. Barra Honda caves is doing this, with the information that we are collecting we should obtain this category in the national park because we are collecting data of species with little information and populations in the country.

Annexed

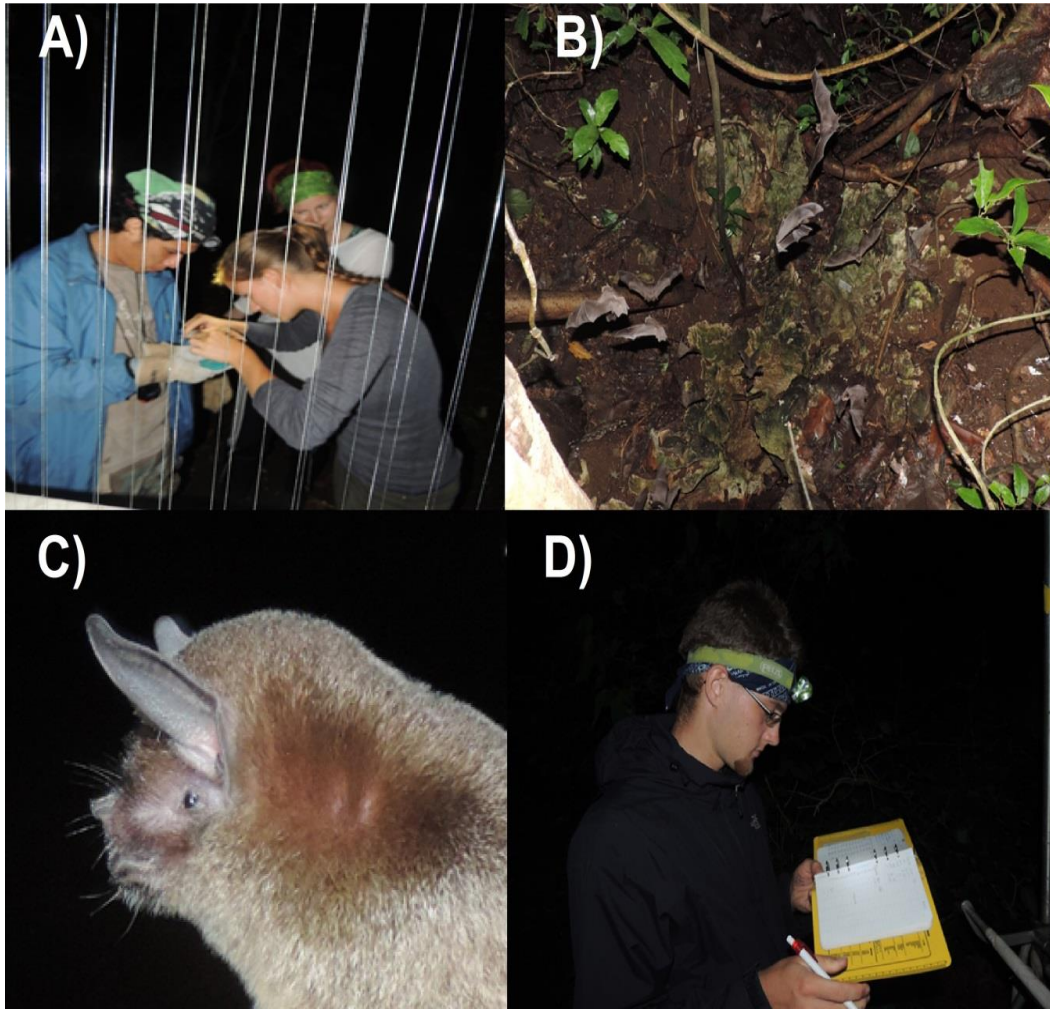


Figure 1. A. and D. Volunteers helping on bat data collection. B. Bats flying out of the Taponeada cave. C. Wagner's mustached bat (*Pteronotus personatus*) captured with the harp trap. D Volunteer taking data of bats

Species	Numbers of individuals	Abundance	English name	Cave
<i>Artibeus jamaicensis</i>	39	67,24%	Jamaican fruit-eating bat	La Trampa
<i>Artibeus lituratus</i>	3	5,17%	Big fruit-eating bat	La Trampa
<i>Carollia perspicillata</i>	1	1,72%	Seba's short-tailed bat	La Trampa
<i>Dermanura phaeotis</i>	2	3,45%	Pigmy fruit-eating bat	La Trampa
<i>Desmodus rotundus</i>	1	1,72%	Common vampire bat	La Trampa
<i>Diphylla ecaudata</i>	1	1,72%	Hairy-legged vampire bat	La Trampa
<i>Glossophaga leachii</i>	4	6,90%	Gray's long-tongued bat	La Trampa
<i>Glossophaga soricina</i>	2	3,45%	Pallas' long-tongued bat	La Trampa
<i>Lamproncycteris brachyotis</i>	3	5,17%	Yellow-throated bat	La Trampa
<i>Pteronotus davyi</i>	1	1,72%	Lesser naked-backed bat	La Trampa
<i>Rhogessa bickhami</i>	1	1,72%	Pigmy yellow bat	La Trampa
<i>Desmodus rotundus</i>	8	42,11%	Common vampire bat	Nicoa
<i>Diphylla ecaudata</i>	2	10,53%	Hairy-legged vampire bat	Nicoa
<i>Lamproncycteris brachyotis</i>	8	42,11%	Yellow-throated bat	Nicoa
<i>Natalus mexicanus</i>	1	5,26%	Mexican funnel-eared bat	Nicoa
<i>Lamproncycteris brachyotis</i>	1	0,42%	Yellow-throated bat	Pozo hediondo
<i>Natalus mexicanus</i>	3	1,26%	Mexican funnel-eared bat	Pozo hediondo
<i>Pteronotus davyi</i>	2	0,84%	Lesser naked-backed bat	Pozo hediondo
<i>Pteronotus mesoamericanus</i>	233	97,49%	Mustached bat	Pozo hediondo
<i>Glossophaga commisarisi</i>	1	0,17%	Commissaris' long tongued-bat	Taponeada
<i>Pteronotus davyi</i>	161	27,66%	Lesser naked-backed bat	Taponeada
<i>Pteronotus gymnonotus</i>	414	71,13%	Greater naked-backed bat	Taponeada
<i>Pteronotus personatus</i>	6	1,03%	Lesser mustached bat	Taponeada

Cubero and Artavia, 2015

Note: the abundance of the species is divided by caves

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