Project Update: August 2022

Project progress percentage

Milestone	Activity	Situation
1	Conclusion of the 1st and 2nd field expeditions	100% completed
2	Organisation of bat functional traits and phylogeny	100% completed
3	Organisation of insect field data	50% completed
4	Organisation of data on environmental variables	50% completed
5	Organisation of acoustic data	50% completed
6	Data analysis	50% completed
7	Preparation of reports	50% completed
8	Preparation of manuscripts	50% completed

Milestone 1. Field expeditions were carried out in January 2022 (dry season) and in July and August 2022 (rainy season).

Milestone 2. Functional traits and phylogeny data have already been calculated.

Milestone 3. Insect data has already been collected with UV light traps in each habitat type. We enrolled a biology student (Yuri Chantre) at the Pedagogical and Technological University of Colombia (UPTC), and she is identifying these samples. She will use this data to carry out her undergraduate thesis in biology.

Milestone 4. The environmental variables and a study area map are being analysed and prepared.

Milestone 5. Acoustic data are being analysed.

Milestone 6. The statistical codes for the first article are already developed, and the second article is being prepared.

Milestone 7. This would be the first project report of updates for Rufford. After, we will deliver the final report.

Milestone 8. Two scientific articles are being prepared based on the data collected.

Species	Conventional rice crops	Organic rice crops	Riparian forest	Unflooded forest	Savannahs	Total
Artibeus planirostris	4	0	32	214	3	253
Artibeus lituratus	22	0	23	41	8	94
Uroderma bilobatum	8	1	8	65	4	86
Carollia perspicillata	3	1	34	40	5	83
Noctilio albiventris	9	0	15	23	32	79
Eumops nanus	6	0	25	38	3	72

Molossops temminckii	2	1	22	16	0	41
Molossus rufus	0	0	36	1	0	37
Eptesicus orinocensis	0	0	19	12	1	32
Sturnira lilium	0	0	1	27	0	28
Cynomops planirostris	0	0	6	17	0	23
Saccopteryx canescens	4	1	6	3	8	22
Uroderma magnirostrum	5	0	5	6	2	18
Lophostoma brasiliense	0	0	11	5	0	16
Myotis riparius	0	0	5	10	0	15
Platyrrhinus angustirostris	2	0	2	10	1	15
Desmodus rotundus	0	0	10	3	1	14
Glossophaga soricina	0	0	10	2	0	12
Myotis nigricans	0	0	2	6	4	12
Micronycteris minuta	0	0	12	0	0	12
Phyllostomus hastatus	0	0	4	6	0	10
Eumops glaucinus	0	1	2	6	0	9
Phyllostomus discolor	0	0	0	6	0	6
Platyrrhinus helleri	1	0	1	4	0	6
Phyllostomus elongatus	0	0	2	2	1	5
Molossus	2	0	0	0	2	4
Carollia brevicauda	0	0	3	0	0	3
Dermanura gnoma	1	0	2	0	0	3
Trachops cirrhosus	0	0	3	0	0	3
Lampronycteris brachyotis	0	0	3	0	0	3
Chiroderma villosum	0	0	2	0	1	3
Saccopteryx bilineata	0	0	1	1	0	2
Platyrrhinus brachycephalus	0	0	0	2	0	2
Mesophylla macconnelli	1	0	1	0	0	2
Choeroniscus minor	0	0	0	1	0	1
Rhogeessa minutilla	0	0	0	1	0	1
Micronycteris microtis	0	0	1	0	0	1
Platyrrhinus cf. *matapalensis*	0	0	1	0	0	1
Myotis albescens	0	0	0	0	1	1
Total	**70**	**5**	**310**	**568**	**77**	**1030**

Table 1. Bat species and number of captures using mist nets in five habitats in the Colombian Llanos: conventional rice crops, organic rice crops, riparian forests, unflooded forests, and savannahs. Same-site recaptures (= 35) were included. Data are sorted from the highest to lowest total species abundance. These data include information taken during 2020-2021 samplings.

The low number of bats captures in organic rice crops (Table 1) is because we could visit only one organic field from the two initially planned in the dry season. In the wet season, only one of the owners planted organic rice. However, we only did the acoustic monitoring in this rice crop because the field conditions did not allow the installation of the mist nets. Visit the organic crop each night to open and check the mist nets was logistically impossible. To reach this crop, we had to cross a stream; doing this every night was risky for the team (Figure 1).

Fig. 1. Stream where we would have to cross during the rainy season to reach the organic rice field.

Some bat species recorded have great conservation importance or significant expansion of the actual distribution range, such as *Platyrrhinus matapalensis* (Near Threatened, according to the IUCN red list) and *Rhogeessa minutilla* (Vulnerable) (**Figure 2**).

Left: © Aída Otálora Ardila. Right: © Alfonso Arguero.

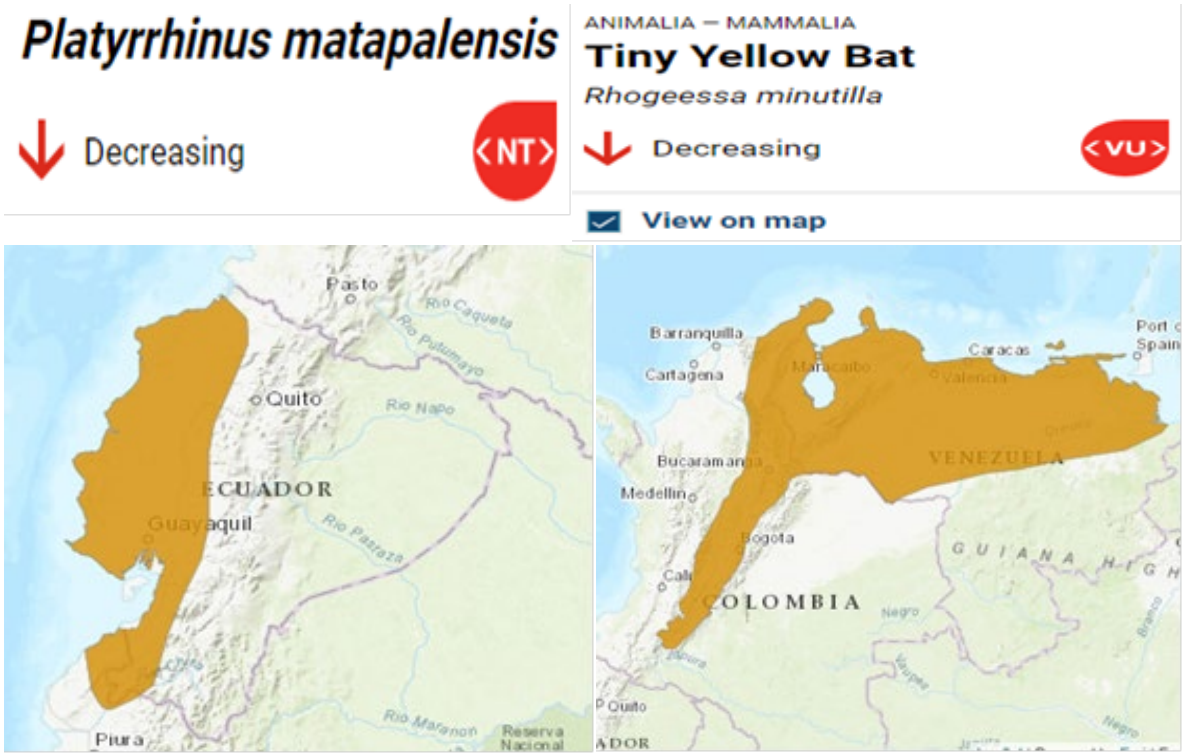

Fig. 2. Conservation status and distribution area of Platyrrhinus matapalensis and Rhogeessa minutilla.

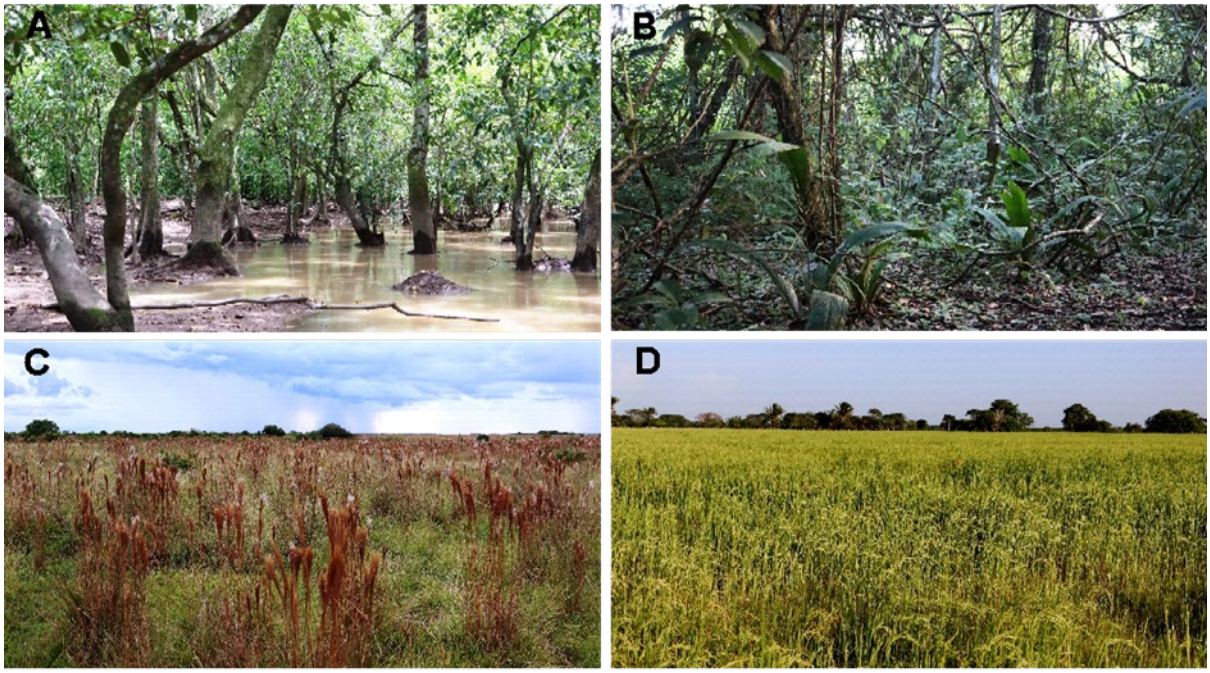

Fig. 3. Differences in vegetation structure among the habitats where mist nets and acoustic detectors were used to sample bats at Colombian *Llanos*. A = Riparian Forest at Reserva Esperanza (Photo: Fábio Z. Farneda), B = Unflooded Forest at Finca Bella Vista (Photo: Fábio Z. Farneda), C = Unflooded Savannahs at Reserva Esperanza (Photo: Fábio Z. Farneda), D = Rice Crops at Finca Bella Vista (Photo: Aída Otálora Ardila).

Some images of our fieldwork in the Colombian *Llanos*


Fig. 4. Researcher Aída Otálora Ardila handling a light trap to sample nocturnal insects**. Fig. 5.** Students Yuri Chantre and Jessica Blanco organizing the insect samples


Fig. 6. Structure used to set up a light trap in a rice field during dry season. **Fig. 7** Acoustic detectors in conventional rice crops to sample insectivorous bats.


Fig. 8. Researcher Aída Otálora Ardila handling a mist net to sample bats. **Fig. 9.** Researcher Fábio Z. Farneda taking biometric measurements of a bat.


Fig. 10. Researcher Aída Otálora Ardila recording a bat sound through zip line method. **Fig. 11.** Researcher Aída Otálora Ardila releasing bats at the same capture site.