

Project Update: October 2018

Up to date the next activities have been done.

- **Fire-affected sites selection:** spatial analysis was carried out over the sites that presented fire-affected vegetation. These analyses were done with thermal anomalies and burned area information.

The results were corroborated in the field, allowing the selection of the sampling sites. Sampling sites were stratified as follows: 1. Forest strip burned 3 years ago, 2. Forest strip with annual fires at the edge and 3. Unburned forest (control) (Figure. 1)

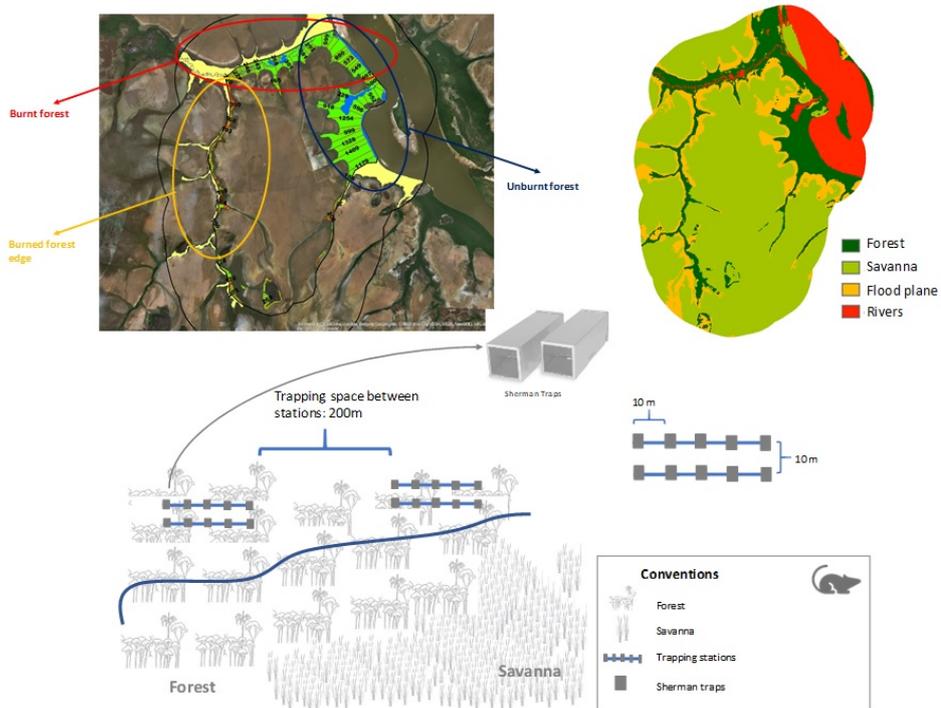
Additionally, a remote sensing analysis was done with satellite images; this analysis yielded the general vegetation cover classification in the study area. This information was used to measure the width and length of the riparian vegetation strips improving the small mammals sampling design (Figure 1)

- **Mammals sampling:** the spatial analysis for the study area have serve to improve the non-flying small mammals sampling. Since the patches of riparian forest strips at the burned and control zones vary between 200 and 1400 m of width and 4000 m of length at each site, it was designed to use 4 – 6 sampling stations, with 10 Sherman traps per station, distributed in two rows and spaced every 10 m. Each station will be spaced every 200 m and will be pair with a control station. This sampling design will yield 4 -6 replicas per site (Figure 1)
- **Other activities:** with ECOLMOD, the research group I make part of, I attended the international forest degradation and restauration seminar from 27th to 28th September, 2018. The event organised by the Department of Agrarian Sciences of the National University of Asunción, Paraguay. I contributed with an oral presentation about my PhD research project.

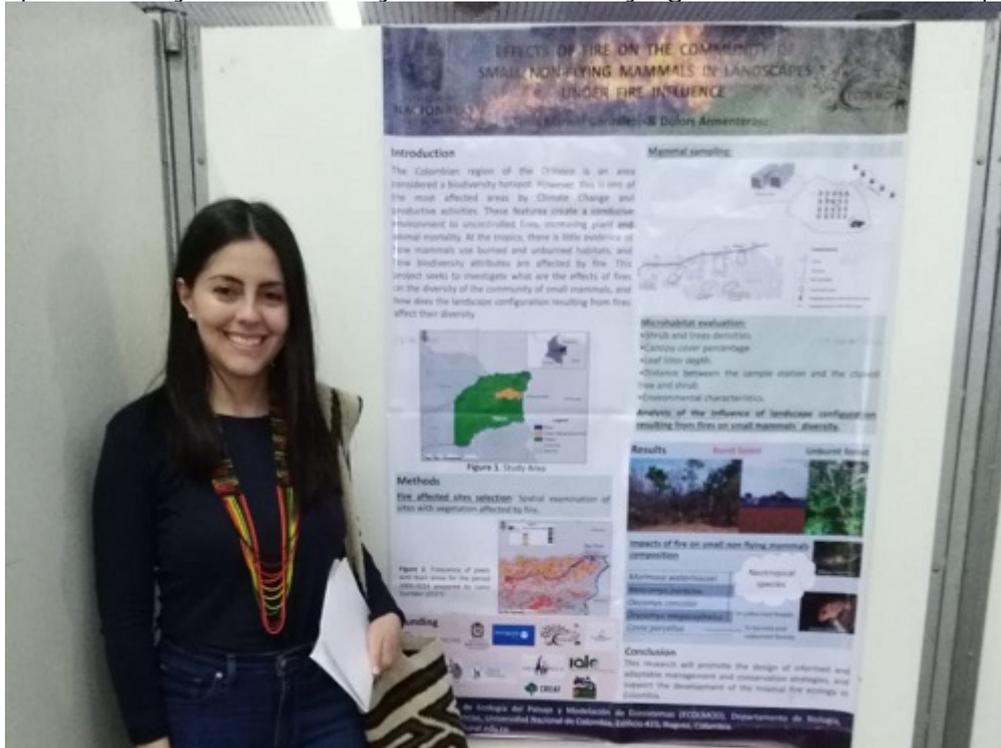
From the 1st to 5th October 2018 I attended the IUFRO conference on adaptative Management for forested Landscapes in transformation in Posadas, Argentina. I presented a poster about my PhD research project. To attend this conference, I had funding from the National University of Colombia and the International Association for Landscape Ecology (IALE) (Figures 2 and 3). At both events I acknowledge The Rufford Foundation for the funding for the field work, also the Foundation logo was used in a visible manner at the funding parts of the poster and presentation.

IUFRO: <https://iufro2018posadas.com/program/poster-sessions/>

- **Following steps:** during the upcoming month of November 2018 the first field work season will take place to take the first sample of the non-flying small mammals.



Spatial analysis of the study area and non-flying small mammals sampling design



Poster presented at the IUFRO conference 2018.



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EFFECTS OF FIRE ON THE COMMUNITY OF SMALL NON-FLYING MAMMALS IN LANDSCAPES UNDER FIRE INFLUENCE



Tania Marisol González^{1*} & Dolors Armenteras¹

Introduction

The Colombian region of the Orinoco is an area considered a biodiversity hotspot. However, this is one of the most affected areas by Climate Change and productive activities. These features create a conducive environment to uncontrolled fires, increasing plant and animal mortality. At the tropics, there is little evidence of how mammals use burned and unburned habitats, and how biodiversity attributes are affected by fire. This project seeks to investigate what are the effects of fires on the diversity of the community of small mammals, and how does the landscape configuration resulting from fires affect their diversity.



Figure 1. Study Area

Methods

Fire affected sites selection: Spatial examination of sites with vegetation affected by fire.

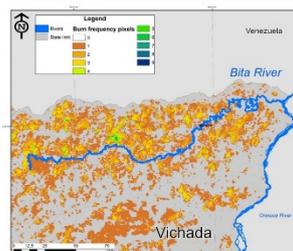
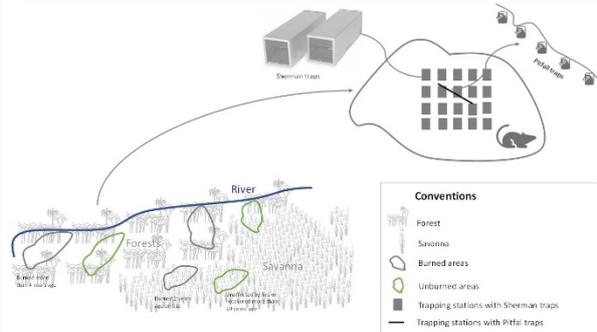


Figure 2. Frequency of pixels with burn areas for the period 2000-2014 prepared by Llano Corridor (2017).

Mammal sampling:



Microhabitat evaluation:

- Shrub and trees densities.
- Canopy cover percentage.
- Leaf litter depth.
- Distance between the sample station and the closest tree and shrub.
- Environmental characteristics.

Analysis of the influence of landscape configuration resulting from fires on small mammals' diversity.

Results

Burnt forest

Unburnt forest



Impacts of fire on small non flying mammals composition

Marmosa waterhousei

Neacomys paracou

Oecomys concolor

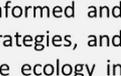
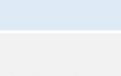
Oryzomys megacephalus

Cavia porcellus

Neotropical species

In unburned forests

In burned and unburned forests



Funding



Conclusion

This research will promote the design of informed and adaptable management and conservation strategies, and support the development of the tropical fire ecology in Colombia.

¹ Laboratorio de Ecología del Paisaje y Modelación de Ecosistemas (ECOLMOD), Departamento de Biología, Facultad de Ciencias, Universidad Nacional de Colombia, Edificio 421, Bogotá, Colombia.

*tmgonzalezd@unal.edu.co

Poster presentation of the PhD research Project at the IUFRO conference 2018.