

## Project Update: March 2023

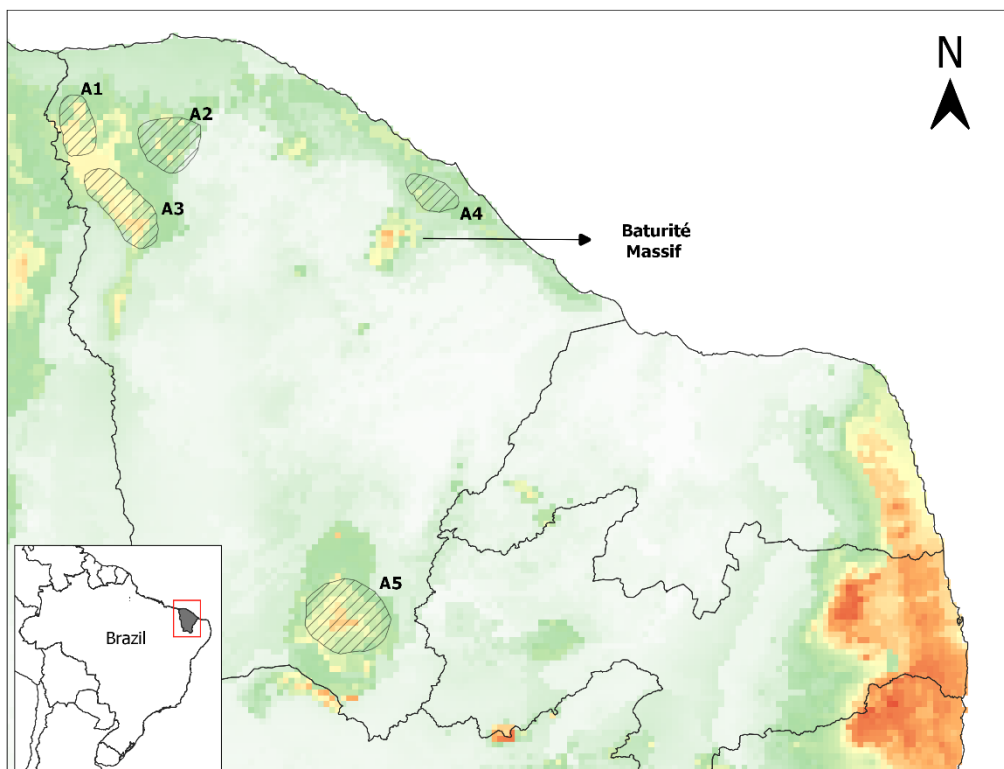
The project will be delayed by 2 months, as I had a medical emergency at the end of November and beginning of December 2022. My case resulted in an emergency surgery, in which I was rested for a month (December/2022). But we return to normal in January 2023.

### The potential distribution map.

We produced the suitability map for bushmaster (*Lachesis muta*) based on information from records, climatic and environmental variables (Photo\_1\_Mapa de suitability Bushmaster state Ceará). We used the Maxent algorithm to produce the map and select the 5 areas that showed suitability. On the map, the areas with the greatest suitability are represented by the warmest colors (yellow and red).

### The 5 selected areas:

- **A1** – Chapada da Ibiapaba baixa, cities of Granja e Viçosa do Ceará.
- **A2** – Serra da Meruoca, cities of Meruoca, Massapê e Alcântaras.
- **A3** – Chapada da Ibiapaba alta, cities of Tianguá e Ubajara. Incluindo Parque Nacional de Ubajara.
- **A4** – “Brejos de Altitude”, cities of Pacatuba e Maranguape.
- **A5** – Chapada do Araripe, cities of Nova Olinda, Caririçu e Farias Brito.
- **Baturité Massif** – bushmaster population monitoring area.



Now we will carry out field campaigns in these areas, in search of the subspecies *Lachesis muta rhombeata*. Also interviews with local residents to understand the community-snakes relationship.

### **Monitoring the population of bushmaster snake in the Baturité Massif, Ceará, Brazil.**

In January and February 2023, we conducted field campaigns to monitor the population of the subspecies in the Baturité Massif, Ceará, Brazil. These campaigns are also part of my master's project for data collection and monitoring of the already known population of the species in the state. We have already obtained 25 records, 17 individuals were captured alive and eight were received dead. The local community has actively contributed to the project's actions based on the contacts made available in our publicity folders. (Photo\_2\_Individual bushmaster monitored by the project). We continued to collect ecological and biological data from captured bushmasters (Photo\_3\_Removal of ticks from bushmaster captured by the project).

### **Conversations and conducted interviews with members of the local community.**

We continued interviews with members of the local community to understand their relationship with snakes, in particular bushmasters. To start environmental education and awareness activities aimed at poisonous snakes in Ceará (Photo\_4\_Interview with a family in Pacoti - Ceará), (Photo\_5\_Interviews with local residents in Guaramiranga – Ceará) and (Photo\_6\_Interview with a trail guide in Baturité – Ceará). In the area of monitoring the known bushmaster population, we interviewed a total of 53 people.

### **Production of material for environmental education activities.**

We are producing all informative material that will be used in lectures in communities, schools and associations. We will use didactic models of dentitions, informational banners and a bushmaster specimen fixed in formalin. In addition, we are finalising production of the mini-guide with information on poisonous snakes in the state, prevention and relief.

### **Hepatozoon parasites (Apicomplexa: Hepatozoidae) in viperid snakes from the Brazilian North and Northeast.**

We are collaborating with research to understand the hemoparasites present in Brazilian snakes. Together with the group of researchers from the Laboratory of Ecology of Transmissible Diseases in the Amazon (FioCruz – Manaus, Brazil), we discovered that the individuals captured by the project were infected by the Hepatozoon parasite. These discoveries are totally new for the subspecies *Lachesis muta rhombata* from Ceará state and were presented at the I International Congress of Venomous Animals in Roraima (I VenoRaima) in Boa Vista Roraima (Photo\_7\_Blood collection from bushmaster individual) and (PDF\_1\_Banner the congress with the data obtained).

### **Article publication (December/2022).**

With the effort to publicise the project in the communities, we were able to identify a new record of the green jararaca (*Bothrops bilineatus*) for the state of Ceará. The work was published in the magazine *Herpetologic Review*, on December 13, 2022. This finding was only possible due to the involvement of the community with the project, when we find poisonous snakes they contact us (Photo\_8\_Individual found of green jararaca in Guaramiranga-Ceará) and (Photo\_9\_Map with new record of the green jararaca for Ceará) and with all the support offered to the project. The study is available at <https://www.biotaxa.org/hn/article/view/75943>. (PDF\_2\_Cavalcante et al 2022\_Bothrops bilineatus).



Individual bushmaster monitored by the project.



Removal of bushmaster ticks captured by the project.





Interview with a family in Pacoti – Ceará.



Interviews with local residents in Guaramiranga – Ceará.





Interview with a trail guide in Baturité – Ceará.

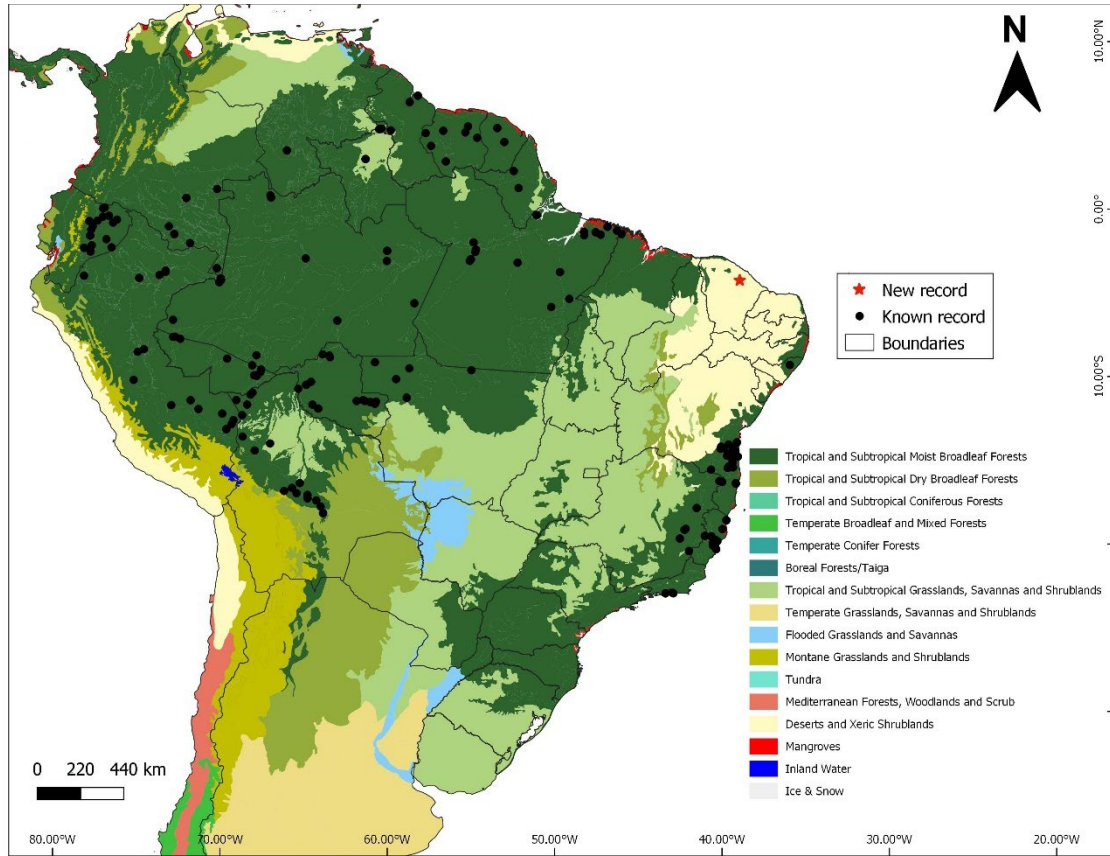




Blood collection from bushmaster individual.



Individual found of green jararaca in Guaramiranga-Ceará.



Map with new record of the green jararaca for Ceará.