

Update Report 47049-2_Thabata Cavalcante (June to December - 2025)

Conservation Strategies for the Vulnerable Bushmaster Snake (*Lachesis rhombeata*) in Forest Fragments, Northeastern Brazil: Ecology and Human-Snake Coexistence.

- Monitoring the population of bushmaster snake in the Baturité Massif, Ceará and Bonito, nordeste do Brasil (June to December to 2025).

We captured two bushmaster individuals for monitoring using transmitters. Both were adult males. The first individual, captured in September 2025 and named João, was recorded in the Baturité Massif, state of Ceará, measuring 1.365 m in total length and weighing 1.015 kg (Photo_1_Individual captured in Ceará). The second individual, also captured in September and named Kaíros, was recorded in the municipality of Bonito, state of Pernambuco, measuring 1.67 m in total length and weighing 1.66 kg (Photo_2_Kaíros captured in Pernambuco).

Both individuals were fitted with transmitters and released into their natural habitats for monitoring and data collection on movement, behavior, and habitat use (Photo_3 and 4_Individuals captured with attached transmitters). However, based on the initial data, we observed limited movement by the monitored individuals. Kaíros moved to three different locations: he was found resting within a tangle of fallen logs, then entered a burrow where he remained for one month and subsequently shifted his location to a grassland area. The individual from Ceará has remained close to the release site, showing no significant change in location.

We will continue monitoring these individuals and plan to capture additional animals to increase monitoring effort and obtain further data for the study.

- Environmental education activities and dissemination of the project's activities to local communities (September to October 2025).

We have continuously conducted environmental education activities and disseminated the project in the target locations. In Ceará, we visited schools to talk with students about our activities and also revisited local partners to discuss the new objectives of our actions (Photo 5 – Roundtable with local students). We also produced calendars to distribute to partners as a way to strengthen partnerships with citizen scientists (Photo 6 – Calendar displayed in the home of a local resident).

In Pernambuco, we met with representatives of the public sector, such as the local Environment Secretariat and its team, to present the project's objectives and seek support from local authorities (Photos 7 and 8 – Interaction with managers from the Environment Secretariat of Bonito, Pernambuco). In addition, we carried out activities with local residents and students addressing venomous snake species, accident prevention, and an introduction to the bushmaster and our project. These activities were conducted by our collaborator Marcos Augusto (Photos 9 and 10 – Environmental education activity for local residents in Bonito, PE).

- Organization of meetings for the development of the Human–Snake Coexistence Plan.

We began outreach and invitations to partners, interested stakeholders, and local residents who wish to participate in the development of the coexistence plan. We also initiated dialogue with them to understand their availability and the logistics required to ensure broad participation. The main venue identified for hosting the meetings was undergoing renovations, which delayed the schedule. However, the renovation has now been completed, and we will proceed with the start of the meetings to implement this activity.

On February 6, we will meet with the management of the protected area in the Ceará study site, the Baturité Massif, to seek local support and organize the logistics for the Human-Snake Coexistence Plan.

- **XI Brazilian Congress of Herpetology (August 25–29, 2025).**

We participated in the XI Brazilian Congress of Herpetology, held from August 25 to 29, 2025, where we presented three studies derived from results of the previously funded project (#37317-1) and the current project. The following studies were presented:

1. **“Are cephalic blotches unique? Description of the head blotch patterns of *Lachesis rhombeata* (Viperidae: Crotalinae) from a population in Ceará”**, in which we demonstrated that the shapes of the blotches on the top of the head can serve as criteria for individual identification, similar to human fingerprints (Photo_11_Thabata Cavalcante presenting the work).
2. **“Distribution and spatial overlap between *Lachesis rhombeata* and *Crotalus durissus* in a humid forest in the state of Ceará, Brazil”**, where we found a 68% overlap in the home ranges of these two species. *Crotalus durissus*, an invasive species in the region, may directly interfere with the quality of life of the native *Lachesis rhombeata* (Photo_12_Thabata Cavalcante presenting the work).
3. **“Identification and prioritization of areas with climatic suitability for *Lachesis rhombeata* (Viperidae: Crotalinae) in Ceará as strategies for conservation”**, in which we presented potential areas of occurrence for the target species (Photo_13_Robério Freire-Filho presenting the work).

In addition to the oral presentations, we participated in two symposia. The first addressed **“Environmental Education and Herpetofauna Conservation: Dialogues and Experiences”**, and the second, **“Atlantic Forest *Lachesis* Network (RELMA): Uniting efforts for the conservation of the threatened bushmaster *Lachesis rhombeata*,”** which was founded with the aim of increasing conservation efforts for the species and its natural habitats (Photos_14 and 15_Symposia presentations). The funds were not used to support attendance at the congress; this information was included in the report to demonstrate the deepening and consolidation of the project’s activities.

- **Publication of a study derived from the results of the first project cycle (#37317-1).**

We achieved the publication of the first product derived from the institution’s continuous support of my project: the scientific article *“Visual census versus citizen science: which is the best method for surveying an elusive and threatened snake?”* The study was published in the renowned biodiversity conservation journal *Oryx*, edited by Cambridge University Press (PDF_1_Cavalcante et al 2025 - Visual census versus citizen science which is the best).