

# DO GPS-HARNESS INFLUENCE THE BEHAVIOR OF GIANT ANTEATERS (MYRMECOPHAGA TRIDACTYLA)?

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## RESUMO

Tracking devices are an important tool to collect spatio-temporal ecological data aiming to guide conservation actions and wildlife management. However, there are arguments around the influence of the equipment on the behavior of individuals. Therefore, we asked: Do GPS-harness on giant anteaters influence their behavior? To answer this question we applied focal animal sampling based on 36 behavioral acts from two standardized ethograms for the species. We observed three adult individuals, two females and one male, that were under the responsibility of the TamanduAsas project, from the State Forestry Institute of Minas Gerais. The behavioral frequencies were registered from 2019 May to June lasting 19 days, seven of them were prior to the GPS-harness placement and 12 were posterior. Each of the individuals was observed daily in rehabilitation enclosures of approximately 250 m<sup>2</sup> during the day-time. We used TGW-4570-4' GPS-harness from Telonics, which weighed an average of 765 g. The mean distributions of the animals' behavioral acts were compared using the Wilcoxon paired-test in the period "without GPS-harness" and "with GPS-harness". The test was chosen due to the nonparametric nature of the data. A paired ANOVA was applied to verify if the individuals performed behaviors at different frequencies in the "without and with GPS-harness" periods. Each individual was observed for an average of 190 hours. The GPS-harness influenced the frequency of the distributions of the behavioral acts when comparing both treatments, without and with the GPS-harness ( $V = 250.5$ ,  $p = 0.03$ ,  $\alpha = 0.05$ ). The graphical inspection of the behavioral repertoire shows an increase in the average frequency of the following behavioral acts: "walking", "scratching", "rubbing" and "stereotyping" after attaching on the GPS-harness and a decreasing trend in the frequency of other behavioral acts. Statistically, the execution of behaviors did not vary between individuals ( $p = 0.83$ ). We emphasize that although the GPS-harness influenced the behavior acts of giant anteaters, as expected, the general behavioral pattern remained the same. The animal did not fail nor did it face any problems to perform any of the behavioral acts in its repertoire. Furthermore frequency of behaviors such as feeding and foraging did not change due to the harness. In addition, we did not verify any new behavioral act or atypical behavior, when the animals were wearing the GPS-harness. A next step in advancing this understanding would be to extend the period with the GPS-harness and observe whether, over time, the individuals become accustomed to the equipment, matching the behavior acts frequency similar to the "without GPS-harness" treatment. Behavioral studies allied with the monitoring of individuals with telemetry devices show the behavioral plasticity of the species. This is a positive factor for the species adaptation both to the device and to the environmental changes. This behavior and this plasticity can be recorded by the GPSs attached to the individuals, however direct observations are essential to be able to document the influence of the harness on giant anteater behavioral acts.

**PALAVRAS-CHAVE:** Etogram, Experiment, Pilosa, Telemetry.

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