Project Update

Movement patterns and habitat requirements of Giant armadillos (Priodontes maximus) in the Chaco region of Argentina II

Application ID: 42014-B

Between February 2024 and July 2025, my team and I conducted seven field campaigns. During the second campaign of this period, in July 2024, we successfully captured a giant armadillo: a healthy young male, the first male of the project, weighing 27 kg. A GPS-VHF tracking device was externally attached to the animal's carapace while it was anesthetized. Once all procedures were completed and the animal had fully recovered in the containment box, it was transferred and released into the same burrow where it had been found.

The following field trips (August and October–November) were dedicated to locating the animal or the tracking device in order to retrieve the stored data. We extended the reach of our VHF receiver using a 9-meter-high antenna extension (Images 1 and 2) and even hired a local airplane to fly over the area (Image 3), but there were no signs of the device. Unfortunately, despite all our efforts, we were unable to recover any information from this individual.

The tagging and story of this first male giant armadillo were shared on our social media platforms and were well received by the community. A short documentary was produced featuring this individual, highlighting the threats that deforestation poses to the species (https://www.youtube.com/watch?v=tPhCR4TolPQ). This material was shared across various media platforms and has been viewed more than 35,000 times. The support of the Rufford Foundation is acknowledged in this video.

I was able to assess the movement patterns of the three giant armadillos previously captured. These data provided us with unprecedented insights into how three females of this species move in different impact and protection contexts within the region and in Argentina. Preliminary results suggest that home ranges tend to be larger in areas with human disturbance (Image 4), and that the animals' movement states are also influenced by such disturbances.

Preliminary results on giant armadillos' movements were presented at the 'XXXIV Conference of Mastozoology of Argentina,' held in November 2024. These findings, amongst others of my previous studies, were also presented at the International Congress for Conservation Biology (ICCB 2025), held in Brisbane, Australia, in June 2025.

In collaboration with other members of my team, especially Dr. Verónica Quiroga, we conducted an intensive camera trap survey between May and July 2025 (Image 5). We deployed 113 camera traps across our study area, which includes two national parks, two provincial parks, and other protected and private lands, to assess the status of giant armadillos and other mammal

species in the region. We are currently processing the camera trap photographs, and so far we can confirm that giant armadillos were recorded during the survey (Image 6). This information will be used in the near future to evaluate the influence of environmental variables on the species occupancy.

We must continue attempting to capture and tag giant armadillos to gain a better understanding of the spatial requirements of the species. This will ultimately allow us to identify conservation corridors that support the species both inside and outside protected areas. Further efforts to improve tracking methods and successfully recover GPS data are essential to gain more detailed insights into movement patterns and behaviour.

I now have a new PhD student, Malén Aluhé Rubini Pisano, who will focus on other aspects of the ecology and conservation of giant armadillos in Argentina and the Gran Chaco region (Image 7). She will be focused on update the current distribution map of the giant armadillo in Argentina and the region, evaluate the role of protected areas in its conservation, and assess the impacts of climate change based on future scenarios.

During this period, I also received support from remaining funds of a grant provided in 2023 by Fundación Williams, as well as from WeAreWildlife, who developed the short documentary and provided valuable assistance in several key activities. These included an aerial survey aimed at locating the tagged giant armadillo and the acquisition of field equipment such as a telemetry receiver and four camera traps.

Image Captions (Copyright: Proyecto Tatú Carreta):

Images 1 and 2. Radiotelemetry using an extension pole to reach 9 meters in height, maximizing the receiver's range.

Image 3. Aerial radiotelemetry survey conducted to extend the effective range of the receiver.

Image 4. Relative locations and GPS fixes of three monitored female giant armadillos. H1: in an unprotected area with fragmented forest; H2: partially within a provincial park and continuous forest; H3: inside a national park with more complex continuous forest.

Image 5. Start of the 2025 camera trap survey: Dr. Verónica Quiroga and the author testing one of the first stations in the study area.

Image 6. A giant armadillo (*Priodontes maximus*) captured by a camera trap in one of the study areas during the May–July 2025 monitoring survey.

Image 7. End of an outreach talk on giant armadillos (*Priodontes maximus*) given by PhD student Malén Aluhé Rubini Pisano to local residents in the Chaco region.