

## **First Register of Giant Armadillo Reproduction and Birth in the Wild: A step forward in understanding one of South America's most cryptic species**

- For the first time, a team of Brazilian researchers have registered the mating and subsequent birth of a baby giant armadillo providing the first pictures and videos of this event.
- Giant armadillos are one of the rarest and least known large mammals of the Neotropics. No data previously existed on this species reproduction. This data is key to any conservation planning efforts for giant armadillos.

### **Documented and Registered for the First Time: THE BIRTH OF A GIANT ARMADILLO**

Since July 2010, the Pantanal Giant Armadillo Project has successfully established the first long-term ecological study of giant armadillos at the Baía das Pedras Ranch in the Nhecolândia sub-region of the Brazilian Pantanal. The main goal of the project is to investigate the ecology and biology of the species and understand its function in the ecosystem using radio transmitters, camera traps, burrow surveys, resource monitoring, resource mapping and interviews. Today, there is virtually no information on giant armadillo reproduction. The species has never bred in captivity and no observations have ever been made in the wild. Acquiring reproductive information on the species is crucial to understanding its population dynamics and for any type of conservation planning for giant armadillos. Gestation period, number of young and maternal behaviors of giant armadillos are vital pieces of information for the conservation of this rare species.

Since November 2011, the Pantanal Giant Armadillo Project team has been using both radio-telemetry and camera-traps to monitor, amongst others, an adult female giant armadillo. In January 2012, an adult male began sporadically appearing in camera-trap photos and visiting old burrows that the female had left unoccupied. In June 2011, for the first time, the female was observed sharing a burrow with this adult male and they remained in close proximity for a couple of days. This was the first time the study registered two animals together or in close proximity.

The adult female continued to be monitored, but the adult male disappeared from the area. The female resumed her regular behavior consisting of feeding at night and changing burrows every night or couple of nights. **Quote Arnaud Desbiez, Project Coordinator:** *Our team believed she was getting bigger, but honestly this was more wishful thinking than anything else.* Suddenly, in early November 2012, almost exactly five months after being seen with the male, the female began to re-use the same burrow for over 30 days. Although she left the burrow at night to forage, she always returned to the same burrow. It was only after three weeks that our camera-traps took a picture of the nose of the baby giant armadillo reaching out to its mother as she returned to the burrow. The first picture of the baby giant armadillo was taken four weeks after its estimated birth and we registered it as it changed burrows and accompanied its mother for the first time to another burrow 200 meters away. **Quote Danilo Kluyber, Project Veterinarian – Being part of this exclusive moment in the history of this species conservation and Seeing the first picture of a baby giant armadillo was one of the most exciting moments of my career as a wildlife professional.** **Quote Arnaud Desbiez, Project Coordinator** - *Documenting the birth of a giant armadillo is an exciting step forward to helping us better understand the biology and reproduction of this cryptic species and ultimately help us conserve it.*

On two other occasions in other areas of the study area we observed tracks of a giant armadillo followed by smaller giant armadillo tracks, potentially confirming that only one young is born at a time. Many key questions still remain such as birth intervals. **Quote Arnaud Desbiez, Project Coordinator** - *This illustrates*

*the importance of long-term studies and a dedicated hard working team in order to gather the necessary information to conserve this rare species.*

## **Giant Armadillos: One of South America's Most Mysterious Mammals**

The giant armadillo (*Priodontes maximus*) is the largest species of the Xenarthra Superorder and can reach up to 150 centimeters (including the tail) and weigh up to 50 kilograms. The species is highly fossorial, nocturnal and most of the available information is anecdotal. One of the most striking features of the species is the large scimitar-shaped fore claws, the third of which is greatly enlarged and can up to 20 centimeters. Although widespread, giant armadillos are rare over their entire distribution range. They range over much of South America in a diversity of habitats ranging from tropical forests to open savannas. The species is distributed east of the Andes from Colombia and Venezuela, South to Paraguay and Northern Argentina. Due to its cryptic behavior and low population densities, the giant armadillo is one of the least studied species of the Dasypodidae family.

The giant armadillo is Threatened with Extinction and is currently classified as "Vulnerable" (A2cd) by the IUCN/SSC Red List of Threatened Species (IUCN, 2012). Estimates for population declines based on habitat loss and hunting were considered to be at a level of at least 30% in the past 25 years. The species is listed on Appendix I of CITES (CITES, 2005). In Brazil, the species is classified as "Critically Endangered" in many State lists. Habitat loss and hunting are the main threats to the species. Due to their low population densities and assumed low reproductive rates they can rapidly become locally extinct. A recent search on the *International Species Information System* (ISIS) revealed that currently no giant armadillos are held in captivity, although there may be unregistered individuals in some South American Zoos.

Giant armadillos can go locally extinct without anyone noticing. Giant armadillos occur at low population densities, are secretive, nocturnal and can easily go undetected. In our study area in the Pantanal, almost many of the local people, some of them living in the area for their whole lives, have ever seen these animals. We simply know nothing about giant armadillos and may lose the species before we can understand its basic natural history and ecological role.

## **The Pantanal Giant Armadillo Project**

A long term project dedicated to giant armadillos was initiated in July 2010 in the Brazilian Pantanal at the Baía das Pedras Ranch. This project is a partnership between a Scottish Charity (the Royal Zoological Society of Scotland) a Brazilian NGO (IPÊ - Institute for Ecological Research), and a private cattle ranch (Baía das Pedras). The team includes Arnaud Desbiez (biologist, PhD in Biodiversity Management, project leader, Royal Zoological Society of Scotland and associated researcher with IPÊ), Danilo Kluyber (project veterinarian, associated researcher IPÊ) and Gabriel Massocato (biologist, associated researcher with IPÊ).

The project depends entirely on conservation grants and receives support from: Association Beauval Recherche et Conservation (France); l'Association Jean-Marc Vichard pour la Conservation (France); Bergen County Zoo (USA); CERZA Zoo (France); Chester Zoo (UK); Columbus Zoo (USA); CEPA - Conservation des Espèces et des Populations Animales (France); Idea Wild (USA); Fundação Parque Zoológico de São Paulo (Brazil); Oklahoma City Zoo (USA); Nashville Zoo (USA); Natural Resources (MMA) (UK); Papoose Conservation Wildlife Foundation (USA); Parque Zoológico Municipal Quinzinho de Barros (Brazil); Phoenix Zoo (USA); Prins Bernhard Fund for Nature (Holland); Sea World & Busch Gardens (USA); Taronga Zoo (Australia); Taiwan Forestry Bureau (Taiwan); Zoo Conservation Outreach Group (ZCOG) and its partners: Chattanooga Zoo, Jacksonville Zoo, Naples Zoo and Caribbean Gardens, Salisbury Zoo-Chesapeake AAZK, and San Antonio Zoo and Aquarium; and, a private donation from Dr. George Rabb.

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### **About RZSS - The Royal Zoological Society of Scotland**

The Royal Zoological Society of Scotland is one of the country's foremost conservation and education charities. Founded in 1909 by Thomas Gillespie 'to promote, facilitate and encourage the study of zoology and kindred subjects and to foster and develop amongst the people an interest in and knowledge of animal life', our aims remain broadly similar a full century later. Our mission statement is 'to inspire and excite our visitors with the wonder of living animals, and so to promote the conservation of threatened species and habitats'. RZSS runs two of Scotland's premier animal-based visitor attractions, Edinburgh Zoo and the Highland Wildlife Park, and is an independent Scottish charity (SC004064), receiving no core funding from local or national government. The revenue costs of all of our work are met through commercial income and philanthropic support. Since its inception, RZSS has placed great emphasis on the conservation of biodiversity and the contribution that scientific research must make. RZSS has undertaken several important research and conservation projects both within Scotland and internationally. In 2007, RZSS launched its second Conservation and Research Strategy. This Strategy builds on the scientific research that has been conducted for many years, the successful conservation breeding programmes to which our living collections contribute, and the role that RZSS plays in the conservation of species and habitats in the wild. Website: <http://www.rzss.org.uk/>

### **About IPÊ - Instituto de Pesquisas Ecológicas (Institute for Ecological Research), Brazil**

IPÊ is a non-profit Brazilian organization dedicated to the conservation of the country's biodiversity and to providing sustainable development for unprivileged people where the institution carries out its environmental and social programs. IPÊ was founded in 1992, by a group of people who believe that environmental conservation is only possible through scientific research and the participation of communities living near important natural areas. Today, IPÊ is considered one of Brazil's largest environmental NGOs. In 2009, IPÊ applied for and received an OSCIP title (*Organização da Sociedade Civil de Interesse Público*, a Brazilian category of NGOs), which provides a certification of our environmental and social activities in the country. At the moment, the IPÊ staff includes over 80 professionals working on over 45 environmental conservation and social projects throughout the country. Website: [www.ipe.org.br](http://www.ipe.org.br)

### **About Baía das Pedras Ranch**

The Baía das Pedras ranch is located in the Pantanal of Nhecolândia, Aquidauana District, in the heart of the Pantanal. It is 300 km from Campo Grande, the capital of Mato Grosso do Sul State. The ranch was founded in 1940 by José Coelho Lima and his wife Cyra Gomes Coelho Lima. Today it is run by their daughter and her husband Rita and Carlos Jurgielewicz. It is a traditional cattle ranch where Nelore cattle are raised in extensive native pasture. The family also welcomes eco-tourists and supports conservation research including the Pantanal Giant Armadillo Project and the Pantanal Tapir Program. Visitors are welcome to experience nature and culture as well as the research projects. Website: [www.baiadaspedras.com.br](http://www.baiadaspedras.com.br)