

Dear Supporters of the Pantanal Giant Armadillo Project,

Lots of good news to share with all of you. Just one word: **BABIES** !!! The three species of armadillos we are currently monitoring all have babies! We are all extremely excited and feel so privileged. It is really humbling to have the opportunity to follow these animals we care so much about during such intimate moments. All this once again thanks to our camera traps. Lots of smiles and oohs and aahhs as the camera traps were checked... Sometimes you wonder if the team is made up of grown up men or teenage girls! I am really happy to share some of these pictures with you.

Since my last update early September we have run **three expeditions** and have had an almost continuous presence in the field. This is mainly because we wanted to keep a close eye on the giant anteaters and make sure they adapted well to the harness (they have!). For this reason the teams were small and their objective was monitoring rather than captures. Teams included Gabriel Massocato and a trainee Anderson de Carvalho Fonseca (Masters student, biologist), Danilo Kluyber and a trainee Nathalie da Norbrega Ruiz (Last year veterinary student) and again Gabriel and another trainee Guilherme Gustaldi (Biologist, recently graduated). We have now reached our objective to train at least five national scientists for 2014 and still have 2 more invited for the last two expeditions of the year.

Monitoring so many different species throughout various areas of the ranch requires a careful study design and a lot of energy! Some data is gathered at night and other during the day. The teams worked really hard and did a great job. The anteaters were regularly approached very closely for inspection, and also observed from a distance to look at their behavior. I am really happy to report that **the three anteaters are doing beautifully**. As for the armadillos, data points were collected through triangulation as well as by visiting burrows and using camera traps. Each species has a different sampling design so this means working both day and night. It is through the camera traps that the baby armadillos were observed.

You may remember that in July one of our adult female giant armadillos (Isabelle) had an adorable shiny baby we named Alex. Ever since that time we have been able to follow the mother and her son as they changed burrows. Basically they change burrows every 10 days. Although at first Isabelle spent most of her time in the burrow she now only returns every 3-4 days to spend one night with him and then leaves again. **Alex is now 4 months** old, but only ventures outside the burrow to follow his mother when they change burrows. He has never been out foraging with her, so we believe he still nursing. We don't know how long it will take before he disperses, but I think I should still be able to send pictures of him from our upcoming November and December expeditions. You can really tell from the pictures he is growing.

As for the **Southern Naked tailed armadillo**, Gabriel believed that one of the females had a baby since August. He registered that she kept returning to the same burrow. However it was only last week that we got the first picture from the camera trap. As you can see the baby is pretty big already. It seems they don't switch burrows (as the giant armadillos) until the young is bigger and stronger. As we observed last year, females only have one baby at a time.

The **nine banded armadillo** is the most studied armadillo since it occurs throughout the American continent and is found in the United States. In fact, it is colonizing new habitats and in the last 200 years has extended its distribution in the USA. Its reproduction is well studied and very interesting. A single egg is fertilized, but implantation can be delayed for

several months to ensure the young will not be born during an unfavorable time. Once the zygote does implant in the uterus, a gestation period of four months occurs, during which the zygote splits into four identical embryos. Four quadruplets are therefore always born. You can count in two of the pictures I am sending that there are 4 offspring! They are really cute. Nine banded armadillos do not breed well in captivity. You will hear some people say that they have bred them once and never again... Well this is because of delayed implantation, this comes from animals that have been brought in from the wild. There is very little information on nine banded armadillos in South America. It will be a very interesting species to study as there will be a wealth of information to compare our data to.

One of the reasons we are so interested in nine banded armadillos is that they were said to be plentiful in the study area in the past. However it seems that 15 years ago the population crashed and this armadillo has become rare in the area. There is talk amongst the local communities and experienced ranch hands that they were plagued by some disease and wiped out. We are therefore very interested in monitoring the health of this species.

Outside of the field a lot of exciting progress has been made in preparation for next year's **armadillo campaign**. You may remember we have partnered up with the **Brazilian Association of Zoos and Aquariums** and we are working hard to prepare many educational materials to distribute free of cost to all Brazilian zoos to help them full fill their important potential in raising environmental awareness. Lots of meetings, phone calls and a lot of work to coordinate. We will also be receiving help from the **Emerging Wildlife Conservation Leaders** who are preparing lots of exciting materials to be distributed. Remember, next year we will be counting on all our partner zoos to help promote armadillos! We hope the hype of the world cup and their mascot the three banded armadillo can be used to promote the cause. We will make sure that materials are available in English and French and will have a website where you can download all the materials. Exciting times ahead and I will keep you posted on our progress.

Finally, I am sharing with you our **publication on the giant armadillos as Ecosystem Engineers** which was published in September. I have added a few pictures illustrating animals that use giant armadillo burrows to this e-mail. I am really excited about this work and this paper as it shows the important role of giant armadillos and I really hope this work will help promote the species and the importance to conserve it.

Giant armadillos regularly dig deep burrows which provide new habitats and influence resources for many other animals. Using camera traps we photographed over 24 species using the burrows or its associated sound mound as a thermal refuge, shelter against predators, feeding ground or resting spot. Although rarely seen, giant armadillos play a key role in the ecological community. Once I gave a talk about giant armadillos in a rural school and one of the children summarized our work really well when he said : Wow giant armadillos are like the government! They give free housing to those who need it.

Here are some links from the press:

From Mongabay

<http://news.mongabay.com/2013/1024-hance-giant-armadillo-burrows.html#qL03ZVjMvAD6Ahmg.01>

BBC Nature

<http://www.bbc.co.uk/nature/24670137>

National Geographic Brazil

<http://viajequi.abril.com.br/national-geographic/blog/curiosidade-animal/projeto-tatu-canasta-animal-ameacado-de-extincao/>

The story is now running widely on many internet sites and getting a lot of attention in Brazil. If you are interested in spreading the story with your local media, please let me know. I can send you a press release and a drop box link to lots of high quality pictures. All the institutions that have funded us in 2010, 2011 and 2012 are mentioned in the acknowledgements. So thank you so much to all the listed institutions that have made our work possible and thank you to the new ones who are enabling us to continue this work and help the project grow.

Thank you so much to all of you for your support. If you need any materials, high resolution pictures or anything to promote your conservation department please let me know.

Thank you, thank you, thank you

All the very best,

Arnaud