



Giant Armadillo and Anteater Project

December 2018

THE TEAM WITH 'TEX'

Dear Supporters of the Giant Armadillo Conservation Program,

I am a bit late in sending my December update with the news of the past three months. I think I might have avoided sending this update, because I do not feel I have the right frame of mind to celebrate our work with you as I usually do. We have so much great news to share, have made so much progress, but since the elections in October I find it harder to celebrate. We are hearing things, seeing things that are undoing decades of work. We are witnessing such insane things! I am truly horrified and very worried. I know many of you will share my feelings and may have been going through something similar. How do you do it?

More than ever, we need to focus on grassroots efforts, community engagement and communication with stakeholders. Like a mantra, I keep repeating to myself that more than ever our work matters... I repeat to myself that we have reasons to stay hopeful. I want to share two recent events that make me feel hopeful, before discussing our results in the field: (1) the new action plan for giant anteaters and giant armadillos; (2) Public schools that came together in December to share with our project their journey celebrating giant armadillos.

In November, we were invited, by the now previous government, to create a National Action Plan for the giant anteater and giant armadillo. This meeting was many months in the making. For the first two days myself and Nina Attias (Post doc analyzing our data) and several leading specialists in Xenarthra met to evaluate the National Red list for all species of Xenarthra in Brazil (armadillos, sloths and anteaters). I am happy to report that during the red list evaluation our data really changed some of the key assumptions made about giant armadillos. The status of both of the species we focus on, the giant armadillo and the giant anteater, continue being listed nationally as Vulnerable to extinction. For the following three days new participants arrived and a diversity of stakeholders came together to create the National Action Plan for the giant anteater and giant armadillo through a process designed and facilitated by the Government Brazilian Primate Center ICMbio CPB. Three other members of ICAS (our NGO) came to participate. Danilo Kluyber (head veterinarian), Mari Catapani (social scientist doing her Ph.D with us) and Andreia Figueiredo (our new educator). A total of 8 conservation objectives and 31 actions were created by the group. ICAS members are responsible or collaborating in 24 of the 31 actions!

So what does the change in government mean for the new action plan? I am still not sure. There is of course a big chance that it will never be recognized. Every effort was made to get it recognized and published officially before January 1st. It got very close, but did not happen.... However, the Action Plan brought together many interested parties, spelled out a national strategy and provides a clear vision of what needs to be done. Government approval does not change our

commitment to make initiatives set out happen. We have many responsibilities within the plan, and we will make them happen. I really enjoyed the experience of being surrounded by likeminded people from all kinds of backgrounds who share our interest and passion for giant armadillos and giant anteaters. It gives me hope.

On the 4th of December, public school teachers from 20 schools and some of their students put together a beautiful event to show the Giant Armadillo team results of their work during the past two years learning about giant armadillos and the biodiversity in our state thanks to the materials we provided. I cannot begin to describe how impressed I was with quality, diversity and beauty of the presentations, artwork and crafts created. It was so cute seeing these kids present their knowledge about giant armadillos and incredible to see what the teachers had created. These teachers are my heroes. I felt such a profound sense of gratitude towards them for their unbelievable dedication. This event really demonstrates the far-reaching impact our project is having. Now that we have hired an educator, we can and will do more and better. Andreia has many new ideas on how we can expand this work to the whole state in both small cities and rural areas. I really believe this grassroots effort to engage teachers and their students will have a positive long term impact on biodiversity conservation. It gives me hope.

So let me share some news from our projects. We have accomplished a lot in the past three months. In the Pantanal, we continue to make progress. In October, Gabriel Massocato (Project biologist), Danilo, myself and veterinarian Trainee Mateo Silva set out for the field. Highlights of the October expedition include finding Emanuel a male giant armadillo that had eluded us since last December (10 months!). He is healthy and well, but almost impossible to locate. His home range is insanely large. We cannot explore it all in a single day and since he can cover a great distance during the night, finding him is a huge challenge. He was finally fitted with a GPS. Female giant armadillo Mafalda was also fitted with a GPS and she seems to be expanding her home range. Unfortunately, during the December expedition we were not able to retrieve that GPS and believe it failed and must have broken. This is very frustrating because this was the second time in a row that the GPS unit fitted on her broke. What she doing with them? Why and how is she breaking them? Despite so much work we do not have a GPS track for Mafalda in 2018. All other animals were monitored and are doing fine.

During the October expedition, we received many visitors. We had a group of senior mammal watchers come specifically to see the giant armadillo. They were such a delightful group of passionate people. One of the gentlemen came out one night with me to try to capture Emanuel. We returned empty handed at 1 am. The next night we took the whole group and they witnessed his capture! We had never taken a group out with us like this. Danilo and I focused on the capture while Gabriel and our volunteer Mateo using flashlights carefully guide the group once the alarm set off. Unforgettable group experience! It is wonderful to share the experience of being with a giant armadillo with others. What a treat for all involved. We also had guests from the Embassy of Taiwan in Brazil. It was a huge pleasure to welcome the ambassador, his wife and another member of their embassy. The Forestry Bureau of Taiwan has been a supporter of our work for many years and it was great to show them our work first hand. Finally, we also welcomed a TV crew for a national Nature program. They worked with us for three days. The program should be aired in February.



In November, Gabriel set out with Camila Luba (our reproduction specialist) and Amanda Carolina. The focus of that expedition was to capture, electro ejaculate, and measure the testes of two of our adult male giant armadillos: Richard and Robert. They were successful and managed to monitor all our animals. To our surprise, it started raining very hard. November is usually a very dry month, but the rainy season started early and once again we lost access to half our field site as the flood plain flooded.

December is usually my favorite expedition of the year as my wife Pati and I go to the field together with our kids. This year due to the early floods we were very sorry to have to change our plans. Pati had to cancel her expedition and we had to hire a plane to take us to and back from Baia das Pedras. I hate flying in small planes. I love the view, but feel so nauseous I find the whole experience a real challenge



During the flight we saw a lot of evidence of habitat expanses of pristine Pantanal



During the flight we also saw that there are still large changes occurring in the Pantanal

On the bright side Gabriel, Danilo and myself were joined by my friend and project supporter Tim Tetzlaff director of conservation from Naples Zoo at Caribbean Gardens and his colleague animal care manager Julie Bragovich. Our only goal during that week was to retrieve camera traps and GPS units fallen from animals. We had to do this by tractor, horse and foot!





I was a bit disappointed when we retrieved our cameras in Isabelle's territory not to have any pictures of her or her offspring Tim. However due to the floods this year we did not have many occasions to place camera traps and most of our cameras are being used in the Cerrado. Over all it was a fun and relaxing expedition with no long waits at night in burrows and crazy hours. The Pantanal is beautiful when it is flooded and I really enjoyed having the opportunity to spend time with Tim.

We have lots of exciting plans for the giant armadillo project next year: in the Pantanal testing new GPS units that will measure activity and take data points every 5 minutes (what do giant armadillos do during the day?), in the Cerrado growing the Armadillos and Honey project, expanding our work in the Atlantic forest to a new study area and most importantly many new education initiatives with schools and stakeholders. I will be sending a full progress report detailing our progress in 2018 to all our supporters before the end of January. Please send me an email if you would like to receive a copy.

Captures for the Anteaters & Highways Project finished in September. We had 24 animals to monitor (A male had been killed in August on the highway). Overall few of our anteaters are crossing the highway, but of the few that do another one was killed. This was a big male named Schwartz (named after the director of Nashville Zoo!). Also, two other animals broke off their collars. Overall all animals are doing fine and we are collecting fascinating data. For the road kill monitoring a total of 1,337 km of highways are surveyed every 2 weeks, now totaling 61,688 km of survey effort. We recorded 6,775 road-kills. These include 1,060 six-banded armadillos, 484 nine-banded armadillos, 462 giant anteaters, 371 Southern tamanduas, 44 Southern naked-tailed armadillos and 6 giant armadillos. This research is really valuable data, as it will help guide mitigation strategies in the state. Furthermore, samples were collected from 911 animals and of the 95 necropsies performed 55 were of giant anteaters. We sent over 3,500 samples to 27 partners.

Thanks to the efforts of Debora Yogui (Anteaters & Highways Project Veterinarian), we also started a new partnership with a private road concession in December. They have asked us to monitor and suggest mitigation strategies for a highway that has recently doubled in size. We want to test if this partnership could be a good strategy to push for mitigation measures in our state.

Thanks to Vinicius Alberici (PhD student), we also finished the camera trap study in the Cerrado near the MS-040. We worked on 30 rural properties and sampled a total of 60 landscapes, with 180 unique camera-trap locations and a total effort of approximately 5,400 camera days of sampling. Giant anteaters were recorded in more than half of the landscapes, along with giant armadillos (almost a third of the landscapes), nine-banded armadillos, six-banded armadillos, naked-tailed armadillos, tamanduas, pumas, ocelots, maned wolves, crab-eating foxes, crab-eating raccoons, tayras, tapirs, brocket deer, pampas deer, marsh deer, collared peccaries, white-lipped peccaries, capybaras, among other species of medium to large-sized mammals. I will send you a best of camera traps from this work soon. Next year this work will be conducted in the BR267 study area.

There is so much to report on the Anteaters & Highways project. In addition to our team we have two associate researchers, seven Ph.D students, seven MSc. Students and 25 collaborators. There is a lot going on. I am preparing the annual progress report for the supporters of this project. Please let me know if you would like to receive a copy.

Finally I would like to end this report to let you know that Gabriel will be participating in the EWCL program (Emerging Wildlife Conservation Leader <http://wildlifeleaders.org/>) Thanks to the sponsorship of the Houston Zoo. We are so proud of Gabriel for participating in this unique program from which the giant armadillo program has benefited so much in the past. In 2014 EWCL create many of the education materials we use to this day. I would also like to mention that we have put together our calendar for 2019. Please contact me if you are interested in visiting.

As always I want to end this update by expressing how grateful I am to all of you for supporting our work and believing in us. More than ever this is important. As I despair at our current political outlook, knowing we have so many people working with us, rooting for us and believing in us makes a huge difference. So thank you all so very much. It means the world to all of us. Thank you.

You will be getting detailed annual reports from us very soon and hopefully as I do, you will still feel hopeful for Brazilian biodiversity.

All the best,

Arnaud & teams.



Giant anteater sleeping in the Cerrado



Giant anteater in the Cerrado credit Tim Tetzalf



Giant anteater in the Cerrado credit Tim Tetzalf



Giant anteater in the Cerrado credit Tim Tetzalf



Giant anteater in the Cerrado credit Tim Tetzalf



Baia das Pedras view from a drone



Pantanal views



Female giant armadillo Mafalda in the holding box as she wakes up



Giant Armadillo release