The Tambopata Macaw Project: 2012 Update

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The end of the year is rapidly approaching and the macaws are gearing up for another nesting season. This year in the life of the Tambopata Macaw Project was marked by a variety of unforgettable milestones. The most memorable of these was the birth on 23 July of Don and Gaby's daughter, Ms. Amanda Lucile Brightsmith. "Mandy Lu" as she is affectionately known spent her first summer in her rainforest-theme bedroom surrounded by macaw and parrot artwork watching the antics of Samantha our captive bred Yellow-headed Amazon. So once she makes it to the field, she will take the parrots and rainforests of Peru right in stride. Starting in December, Gaby and Mandy Lu will stay in Lima with grandma while Don heads back to Tambopata Research Center (TRC) for the breeding season.

Sorry the proud parents could not resist including this shot of Amanda Lucile Brightsmith born 23 July 2012

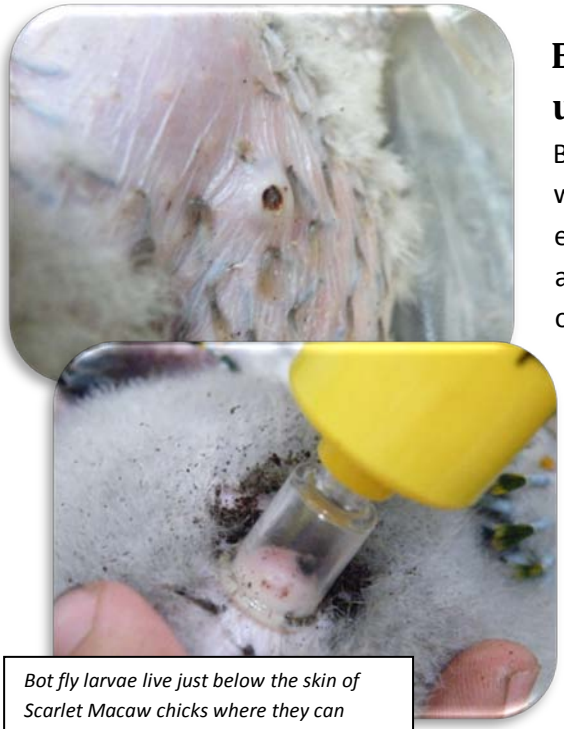
The Chicos: 20 years old and showing their age!

In 1991 – 1993, then project director Eduardo Nycander and his team hand-raised a group of some 30 macaws and released them at TRC. These birds known as "the Chicos" have provided an endless source of distraction and enjoyment as they fly in and out of the lodge at meal times ready to rob from any unguarded plate. However, they have also proven to be an incredibly valuable scientific resource. They have provided important information on macaw health, survival and reproduction. Over the last year, it has become clear that the Chicos are getting old. In April of this year, a staff member at TRC found one of the females, Chuchuy, very sick and sitting on the ground in the middle of the forest. She and her mate, Innocencio, still had one chick in the nest. When Chuchuy dropped out of sight, Innocencio apparently had given her up for dead and immediately began to hang around with a new unknown female. This female helped him defend the nest from a marauding pair of Green-winged Macaws who were looking to take the nest over so they could use it. Within a few days the antibiotics and round the clock TLC given by the macaw project crew started to pay off and Chuchuy began to recover. Once she was strong enough to call, Innocencio heard her and immediately began to make daily visits to her in the lodge. Fortunately after about a week Chuchuy was strong enough to return to the nest and help Innocencio raise the chick to fledging. However, once the chick fledged, the pair lost the nest to the Green-winged Macaws who look to be gearing up to breed there this season.

Another Chico, Tabasco and his wild mate have raised three chicks each year for the last 3 years making him not only the most reproductively successful chico, but the only pair at TRC ever known to fledge three chicks. However, as this new nesting season began last month, Tabasco's nest was occupied by another pair of macaws. When Tabasco finally showed up he was limping, suggesting that he put up a fight before losing his nest. But it looks like he has not given up completely, in mid-November he arrived at the lodge looking terrible. His limp was worse and he had a new cut over his right eye. We are not sure what nest he is fighting for, but it is beginning to look like the most productive macaw we know may not be able to breed this year.

The Chicos at age 20 are getting old. Tabasco showed up in mid-November with a limp and cut over his eye showing he is in a battle for a nesting site. The data suggest that these birds may be passing their reproductive peaks.

When you add this to the disappearance and presumed death of the two Green-winged Macaw Chicos (Matias in 2009, and Asencio in 2011), the loss of one eye by Avecita in 2010, and the quiet disappearance of other Chicos, it becomes clear that these birds are showing their age. In fact by age 20 the birds may already be past their prime. However, we will continue to monitor them closely and see what new lessons we can learn from this incredible group of birds.



Bot fly larvae live just below the skin of Scarlet Macaw chicks where they can occasionally cause serious harm to the birds. We have developed a quick and easy method for removing these parasites using a venom extractor.

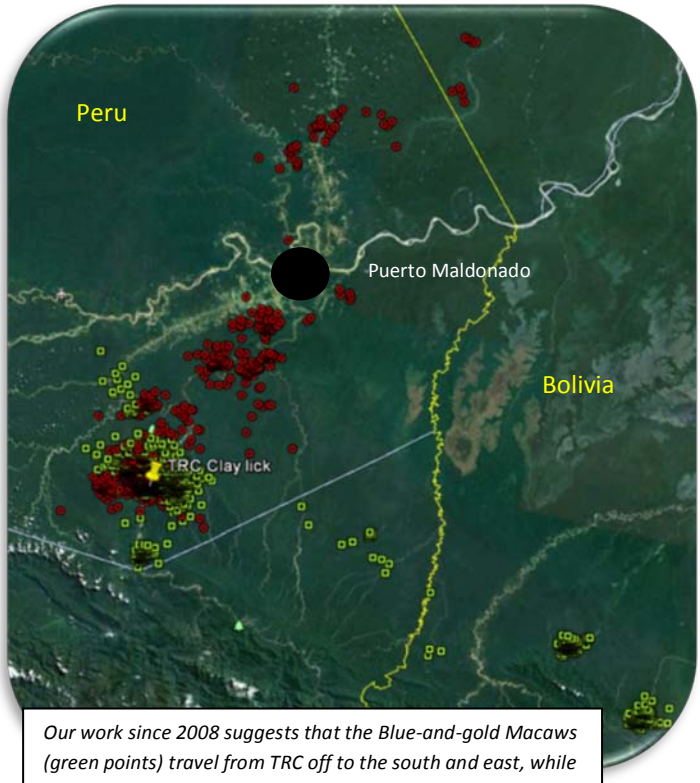
Bot flies and macaws: more than just getting under your skin?

Bot flies (genus *Philornis*) are flies whose larvae are parasites on a wide variety of tropical birds, including parrots. When the flies' eggs touch the skin of a bird, like a baby macaw, the eggs hatch and the larvae burrow in. Here the larvae develop over a period of 1 – 2 weeks before emerging from the skin and flying off to lay eggs on other birds. Since Nov 2000, the researchers of the Tambopata Macaw Project have been collecting data on the bot flies in the macaw chicks and killing or removing the larvae whenever possible. But removing them either required a toxic insecticide or special veterinary procedures. However, in 2010 we had a Eureka! moment, we realized that we could use our trusty snake bite venom extractor. With it, we could suck the bot fly larvae right out of the bird! And the best part is that it required no chemicals, no cuts and the birds didn't mind at all. We also analyzed our 12 nesting seasons of data on the bot flies. Overall we found that almost 30% of all Scarlet Macaw chicks had at least one bot fly, and those that had bot flies got an average of 5 bot flies before they fledged. In three cases the infestations were so bad or the larvae damaged critical organs and the chick was actually killed by the bot flies. But now with our easy method of removing the larvae, we hope that our project and others which are threatened by these parasites can help prevent chick death from these nasty little larvae.

Satellite telemetry: Macaws movements remain a puzzle

In order to better understand how macaws use their rainforest homes, we have been using satellite telemetry collars to track birds since 2008. During this time we have been helping to develop and test the hardware, determining the error of the locations, and creating a mechanism to allow the collars to fall off after the batteries die. It has been lots of work, but we have made great strides and discoveries during this process, and now we are ready to focus on the biology of the birds!

In January of 2012 we were able to collar three Scarlet Macaws: the males at the nests Angeles, Ceiba and Franz. With this we now have 6 years' worth of data on Scarlet Macaws and 4 years' worth of data on Blue-and-gold Macaws. Each year we have made exciting new discoveries, showing with each insight that we have much more to learn. In 2011 the male from Angeles worked his way off to the north east of TRC through April and May. By late May he had crossed over in to Bolivia and was over 150 km from TRC. In 2012, the same bird moved up to the northeast again, but this time he stopped just on the edge of Puerto Maldonado and never traveled more than about 50 km from TRC.



Our work since 2008 suggests that the Blue-and-gold Macaws (green points) travel from TRC off to the south and east, while Scarlet Macaws (red points) travel mostly to the north and east. Hopefully our ongoing habitat analysis will give us insight in to why the species show such different movement patterns.

Our three Scarlet Macaw males in 2012 all moved to the north east after breeding ended at TRC. This confirmed the pattern from previous years and revealed an interesting larger pattern: after breeding the Blue-and-gold Macaws from TRC moved to the southeast, while the Scarlet Macaws all move to the northeast. The big question now becomes what is driving these movements? We are not sure, but this winter we are initiating a detailed habitat based analysis of these data and hopefully this will provide more insight in to these dramatic movements.

Nest monitoring: our fears assuaged

For quite some time we have been worried that climbing up to the nests was having a negative impact on the hatching and survival of the Scarlet Macaws we study. However, this year we conducted detailed statistical analyses on nearly 150 nesting attempts over 12 years to determine how different factors like nest type, tree type, nest history and climbing affect the nesting success of the Scarlet Macaws we study. Fortunately, this analysis has shown that the number of times we climb up to the nest has no significant effect on the number of eggs that hatch and the number of chicks that fledge. What we did find is that there were no major differences between the success of birds in natural nests, PVC nest

boxes and wooden nest boxes. We also found that birds preferred to use larger diameter nests which were successful the year before.

Gaby and Don working on the new cement nest box named "Cuba" in honor of the technique's creator Cuban biologist Maikel Cañizares.

Cement nests: a new take on the old nest box

This past year we made our first artificial nests out of cement based on ideas graciously shared by Maikel Cañizares a parrot researcher in Cuba. However, these were not heavy poured concrete structures, but more like a cement-based "paper mâché" which used burlap cloth soaked in cement. We were a bit worried, as the cement was not as sturdy as hoped. In addition it looks like the cement may have a fair amount of sodium in it. As a result we worry that the macaws might actually eat the nests as a substitute for the clay lick! However we hung our first two cement nests in the forests around TRC and took our chances. As of mid-November 2012, the field crew reports that both nests are holding up well with no signs of damage by macaws or other rainforest creatures. More importantly, both have been explored by Scarlet Macaws and we are hoping that the birds will use them soon.

On the home front: Research at the Schubot Exotic Bird Health Center

Back in Texas, research on captive birds and avian diseases has continued in earnest. In November we published a new scientific article entitled "Nutritional Levels of Diets Fed to Captive Amazon Parrots: Does Mixing Seed, Produce, and Pellets Provide a Healthy Diet?" In this we show that a diet made up of approximately equal parts seed, Zupreem Pellets and vegetables still contained too much seed, too much fat and an incorrect nutrient balance. Once the seeds were reduced or eliminated, the diets became much more appropriate for captive parrots. This paper along with all our other publications is available on our web page at http://www.macawproject.org/scientific-publications.

In order to improve the welfare of the captive birds at the Schubot Aviary, our collaborators Dr. Sharman Hoppes and Kelsey Daugette with a little help from Don conducted a program of Positive Reinforcement Training. Over eight weeks we trained nine birds twice a day for 10 minutes each. During this time most learned to touch a target (a stick), stay in one spot for 30 seconds, accept liquid from a syringe, and step up on to a T-perch. After the eight weeks, we were able to bring in a new trainer and get all birds to work with the new trainer in only a few days. We were very impressed with the progress of the birds, but even more than that, we were impressed by how the rates of alarm calling, pacing in the cage, biting the cage bars, and wing flashing has dropped dramatically when researchers and veterinarians enter the aviary. As a result we feel that the overall level of stress caused by human presence has been reduced through this program. A paper on this project has been accepetd and will be

published soon. Check back at www.Macawproject.org in a few months for the final article or watch for the announcement on Facebook.

New work at the Chuncho Clay lick

This December the project staff with help from Dr. Bruce Nixon will launch our first major data collection trip to the Chuncho clay lick. Located only 18 km from the lick at TRC, we have seen this lick many times as we travel up and down the river. Each year there are more and more large macaws here and as a result, there are more and more tourists as well. As the number of tourists increases, so does the possibility of negative impacts on the birds. This first trip will be to get basic data on how many macaws are using the area and what the tourism numbers and tourist behavior are like in the "low season" with the plan of using this preliminary info to launch a larger project next summer.

For more information on this effort and how to help support this new initiative click here.

Scarlet, Green-winged, and Blue-and-gold Macaws at the Chuncho clay lick. Each year more macaws and more tourists are visiting this lick.

Volunteer opportunities

Over the past year we have instituted a new volunteer policy, and it has been a wonderful success. We can now take volunteers for visits as short as 2 weeks up to trips as long as 3 months. Students and young biologists, veterinarians, and wildlife managers have always made up the back bone of our data collection teams, and we continue to work closely with such volunteers. However, we can now accept a much wider range of volunteers, so the more mature parrot lovers and even physically fit retirees can now help us do the research that has allowed us to learn so much about the biology and conservation of macaws and other parrots. The fees paid by the short term volunteers help fund our research and the food and lodging for the Peruvian volunteers and staff. Opportunities are available year round, so if you would like to join us as a volunteer please contact Gaby at proyectoguacamayo@gmail.com or visit us at www.macawproject.org.

Thanks

Thanks to the Schubot Exotic Bird Health Center, Texas A&M University, the Wildlife Protection Foundation, The Parrot Conservation Fund, Kaytee Avian Foundation, Zupreem, the Morris Animal Foundation, PEAC, Phoenix Landing and all the private donors who have supported us in the past year. Thanks also to Gustavo Martinez and all the other employees and volunteers who worked so hard to collect this year's crop of valuable data.