> The World Parrot Trust's objective for the critically endangered Blue-throated Macaw is to maximize the reproductive output of wild pairs....
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[1]
Photo: © Benoit Gangloff


[2]
Photo: © Gonzalo Daniele


[5]
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[4]
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Mother of Invention

Some say "necessity is the mother of invention". A clear necessity and the World Parrot Trust's objective for the critically endangered Blue-throated Macaw (*Ara glaucogularis*) is to maximize the reproductive output of wild pairs. Our recovery plan is quite straightforward as well – to identify the species' limiting factors and respond to each with solutions. During the past breeding season (2009/10) we believe we have reached our maximum level of both manipulation and monitoring.

One of the first limitations identified for Blue-throats was a lack of suitable nesting cavities. We responded by introducing nest-boxes. After several attempts, we finally identified different nest-box models that the birds would accept. We have tried vertical and horizontal boxes; wooden and PVC; with large entrance holes and small ones. Macaws showed interest in almost all models, but they laid eggs mostly in wooden, vertical boxes with large entrance holes. Since 2007, 4 pairs have used nest-boxes in seven different attempts. Now we have set up boxes in all the areas where Blue-throats are breeding. Nest-boxes are safer than natural nests as they don't flood and experience lower predation rates. We still have problems with bees, but we have found that bees abandon the nest-boxes, especially those made of PVC, after a short period of 2-3 months.

The causes of nest failure have included flooding, predation and botflies. We have almost solved the flooding problem by identifying the most risky nests and using drainage holes at the bottom of the cavity. In some nests we have installed roofs to keep water out of the cavity. No nests have flooded since 2008.

Predation has historically been the main cause of nest failure. It has also been historically hard to deal with because of the difficulty in positively identifying the predators. During the last breeding season we installed anti-predator defenses in every nest. Those defenses included installing metal flashing around tree trunks and pruning back nearby branches. Thanks to the volunteer's efforts, we also maintained a high level of daily monitoring. In order to identify the visitors and potential predators during the night, this season we installed surveillance and trap cameras. In some nests, we used surveillance cameras inside the nests. Those cameras revealed intense activity of other animals at Blue-throated Macaw cavities. The most common neighbours are cockroaches, frogs and bats.

[1] A 2 month old Blue-throated Macaw chick is quickly and carefully weighed, measured and checked over while parent birds [2] look on. [3] A 2-year old juvenile remains with its parents and suppresses their breeding during the last season. [4] An adult Blue-throat perches on the edge of a nest cavity in a burned palm stump. [5] This is a family of five – a rare sight only documented for the first time on this project in January 2008. All five remained together as a family group until the arrival of 3 more eggs in January 2010. All 3 of those chicks hatched and fledged this season.

Photo: © José Antonio Díaz Luque

Blue-throated Macaw

Ara glaucogularis

By Igor Berkunsky

In order to maximize the parent's ability to defend their nests we also sought to reduce the time they needed to be foraging far from the nest. We did this by offering bunches of motacú palm nuts near some of the active nests. This was the first year in the history of Blue-throat nest monitoring with zero predated nests.

Botflies are still a problem. The only nest we lost this year was because the two chicks were infested early by botflies. Fortunately we had a veterinary volunteer with us and she was able to conduct necropsies. She found botfly larvae inside the body cavity of the two dead chicks which died very young – five days after hatching. We saw botflies in 2007, but they attacked the chicks at 45 days old. Because the chicks were older and larger, it was possible to remove the larva without hurting the chicks. Unfortunately in this case, the damage was faster and more serious due to the chick's small size.

Another important cause of low reproductive output is brood reduction. Brood reduction occurs when weaker, later hatching chicks die because they are out competed by the first chick. It is a common consequence of hatching asynchrony in parrot species. Unfortunately, to raise only one chick per clutch is not really helping the recovery of the Blue-throated Macaw. Since 2007, and thanks to our manipulation, no chicks have died because of brood reduction and we have increased the average number of fledglings per nest from one to two. As a result of daily monitoring, we now identify those chicks that are not growing normally and help them by hand feeding. In some cases we need to hand raise chicks for one week.

During the last three years, 20 new Blue-throated Macaws have successfully fledged. We are still seeing most of the fledglings from the 2007/08 season. In half those cases the young are still with their parents, and those parent birds have not yet returned to breeding.

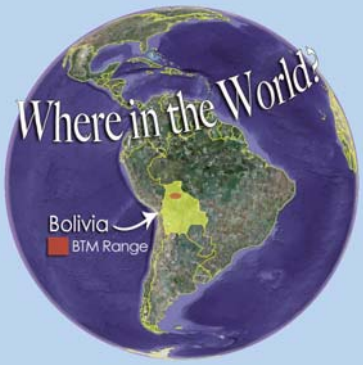
Unico, the lone surviving chick from 2008/09, is in captivity due to a wing deformity and is still waiting for a companion. He has some injuries on his breast because of his flight difficulties. He has problems landing and continues to receive extra help and training. Our veterinary volunteer takes care of Unico and has been focusing on improving his diet by offering motacú fruits.

All of these actions are making a difference for the Blue-throated Macaw. In the last two breeding seasons we have lost only one nest per season. We will continue to use these techniques to maximize fledgling success in the future. With management actions in wild nests working well, now is the time to incorporate more conservation actions. During the last two years we have been intensively working on the repatriation of some individual Blue-throats from the US to Bolivia. We are still working through the paperwork to obtain final authorization and we are hoping to move the first birds before the end of the year.

We also need to better understand how this species is using the habitat. The Beni savannahs remain flooded for six months every year, making it impossible to follow the flocks during the non-breeding season. As a result, we have no information about bird movements. To know where the birds are during the rest of the year will help us to propose protected areas for Blue-throats. We hope to start a monitoring project to track the birds' movements during the breeding and non-breeding season.

By the Numbers (2009-2010)

- 12 Blue-throat pairs monitored
- 2 Pairs that haven't bred in 2 seasons due to their 2-year old fledglings (above)
- 8 Nests with eggs
- 20 Eggs laid
- 4 Eggs that didn't hatch
- 16 Chicks hatched
- 9 Chicks fledged
- 5 Chicks due to fledge at last check from four nests
- 2 Chicks died from botfly infestation
- 8 Seasons WPT has been studying, protecting and supporting wild Blue-throats



The World Parrot Trust Blue-throated Macaw project has been on-going since 2002 and has resulted in a wealth of knowledge about the species' limitations in the wild and the most effective ways to bolster their population.

>> www.parrots.org/bluethroats.