

Breeding the Blue-headed Macaw

at the Houston Zoo

Photography and article by Matt Schmit

Introduction

Found in palm groves, marshlands and river edges of the forests of eastern Peru, western Brazil and northern Bolivia, the Blue-headed Macaw (*Ara couloni*) is uncommon throughout most of its range. In 2006, BirdLife International suggested it to be rare with a declining population. The Blue-headed Macaw has also been uplisted to endangered in the 2007 IUCN Red List. It is listed on CITES Appendix I.

The Blue-headed Macaw is a small, mostly green bird with the head, primary flight feathers and primary coverts being blue. The tail feathers are maroon with blue tips. The bill is a grayish horn color and the small bare skin patch around the bright white-yellow eye is grey. It measures 16 inches (41 cm) in length and weighs 250–320 grams.

Blue-headed Macaws Come to Houston

In March 2005, the Houston Zoo received two pairs of Blue-headed Macaws from the Wildlife Conservation Society's Wildlife Survival Center on St. Catherine's Island (St. Catherine's Island). The birds consisted of a proven pair (a wild-caught female and a male that was captive bred at the Fundacion ARA, A.C. in Mexico—now closed), their female offspring that was hatched at St. Catherine's Island and a captive bred male which was hatched at Fundacion ARA. After an initial quarantine period, all four birds were placed



A 10-week-old Blue-headed Macaw chick enjoys his first day in the great outdoors. On warm days, the young macaws spend much of the day in a large outdoor enclosure where they are able to fly and explore prior to completely feeding independently

on public exhibit in the Fischer's Bird Gardens.

Housing

The outdoor exhibit measures 10.5' x 14.5' with a height of 11' in the night shelter section and up to 10' feet in the outdoor section (the roof portion of the wire slants downward towards the front of the exhibit to allow for better viewing by the zoo guests). The outdoor section of the exhibit is well planted with hibiscus (*Hibiscus ssp.*), Weeping Fig (*Ficus benjamina*) and Bamboo Palm (*Chamaedorea seifrizii*). The substrate of the outdoor section consists of soil covered by a thick layer of "filter sand" (gravel approximately .5—2mm in size) which allows for easy daily cleaning by raking and sifting.

In addition to the plants, several oak branches were strategically placed throughout the exhibit to provide for various perching areas.

The exhibit allows visibility for its inhabitants to view the inhabitants of the *neighboring enclosures*: King Vultures (*Sarcophampus papa*) and Collier's Magpie Jays (*Calocitta collieri*) on one side and a pair of Cuban Amazons (*Amazona leucocephala leucocephala*) on the other. All four Blue-headed Macaws remained together on exhibit in the enclosure until May 2007, when the younger pair was sent to another facility. Houston Zoo remains home to the proven pair.

Diet

The Blue-headed Macaws, along with the rest of the bird

collection, are fed daily each morning. Their daily diet consists of Mazuri Parrot Breeder pellets, chopped fruit (apple, papaya and grape) and chopped vegetables (corn, squash, carrot and sweet potato).

Rotational food items are provided weekly and include blueberries, cheese, raisins, peas and thawed frozen mixed vegetables. Additionally, sunflower seeds, peanuts and mixed nuts (almonds, walnuts, pecans, brazil nuts and filberts) are provided for enrichment.

Breeding

In the winter season of 2007/2008, a nest box was provided to the pair of macaws. A wooden "grandfather" style nest box measuring 10" x 10" x 36" high (inside dimensions: 9"x9"x 35") with a 4" entrance

hole 5.5" from the top of the box was positioned inside the exhibit. Due to their shy nature it was decided to hang the nest box high in the night shelter area of the exhibit, with the entrance hole facing away from the public view. The bottom of the box is almost six feet from the floor of the exhibit.

Initially, it appeared that the macaws were showing no interest in the nest box as neither bird was ever observed exploring the nest box. In fact, it wasn't until keepers discovered the pair incubating the clutch of eggs that it was determined that the pair accepted the nest box.

In July 2008, keepers discovered four eggs in the nest box. Upon candling, two of the eggs proved to be fertile. Common practice in the Bird

Breeding for the Future!

Illiger's Macaw, Red-fronted Macaw, Golden Conure,
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Unrelated parent reared (through weaning)
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Department at the Houston Zoo is to allow most parent birds to rear their own offspring, so we left the eggs with the adults to incubate. Despite their shyness, both birds proved to be excellent sitters, incubating their eggs even with the presence of large groups of zoo visitors only 16 feet away. On August 11, 2008, the first of two Blue-headed Macaw chicks entered the world. The second chick hatched two days later. Opportunistic nest inspections were done when both birds voluntarily came out of the nest box. Over the next several weeks, the chicks were fed well by their parents. The nest box shavings were changed as needed during the nest inspections. It appeared that our goal to have fully parent-reared Blue-headed



Adult Blue-headed Macaws on exhibit at the Houston Zoo.

Macaws was well on its way.

Disaster Strikes

On September 12, 2008, four weeks after the chicks hatched, Hurricane Ike made landfall on the Texas Gulf Coast and proceeded to make its way through Houston.

Luckily, the Houston Zoo suffered only minor damage. However, several trees and large branches fell in the vicinity of the Blue-headed Macaws' exhibit, requiring chainsaws and large numbers of people to clear the area. Initially following the hurricane, it appeared

that the parent Blue-headed Macaws showed no signs of distress from either the hurricane or the resulting activity during the zoo cleanup. Unfortunately, daily nest inspections revealed that the chicks were either not being fed enough by one or both parents, or the parent birds stopped feeding their offspring altogether. We remained hopeful that the parents would resume caring for their chicks once they settled down again, so the chicks were hand fed and placed back in the nest box.

Continued inspection proved that the parents were not going to feed the chicks. We had also noticed an increased amount of parental over-preening and were concerned that it could lead to permanent feather follicle





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damage, so it was decided to pull both chicks to be reared by the keepers.

Hand-rearing

The Blue-headed Macaw chicks were 38 and 36 days old when they were pulled for hand-rearing. The chicks were placed in an artificial “nest” - a large high-sided bowl filled with shavings (the same shavings that were used in their parents’ nest box) - in the bottom of a portable ice-chest style brooder. The temperature of the brooder was initially set to 87°F, but was adjusted to 84°F three days later. The chicks were hand fed four times each day, with the first feeding at 7 a.m. and the last feeding at 9:30–10:30 p.m.

We used ZuPreen Embrace Plus hand-feeding formula for our hand-rearing diet. Since the chicks had been parent-reared for the first month of their lives and were fed large chunks of food, we mixed the ZuPreen Embrace Plus a little thicker than the directions indicate in order to provide the chicks with a thicker formula. The chicks seemed to adjust quite well to this consistency of formula and digested it normally. At each feeding, which was done using a syringe and feeding tube, the chicks were given approximately 10% to 15% of their current body weight.



Around 50 days of age, the chicks began perching on the side of their “nest”, so we moved the chicks and their “nest” into a large clear Rubbermaid style plastic tub to allow them more room to explore and exercise.



Four-week-old Blue-headed Macaw chicks shortly after being pulled for hand-rearing. Notice the damaged pin feathers because of the parental over-preening. Parental over-preening was just one of the reasons zoo staff chose to hand-rear these two chicks.

At this time, hand-feeding was reduced to three times per day. We added a small food bowl and a low perch to the tub, which they immediately began to investigate. A few days later, it became apparent that their activity level was so great that they really needed to be moved into a cage to allow even more room to exercise.

The chicks began eating quite a bit on their own, began interacting with toys and started flying around the room when allowed out of the cage at 70 days. We reduced their syringe feedings to two daily feedings. Corn on the cob was the initial favorite for both chicks. Eventually, their absolute favorite food item was grapes, which were limited to encourage the chicks to sample other food items.

Over the next week, the chicks’ activity level increased even more and we began to let them to spend the nice warm days in a much larger outdoor enclosure. Each morning we would take the chicks outdoors, and each evening we would return them to the small indoor weaning cage. It was also at this time that they began eating more on their own so we reduced the syringe feeding to one feeding in the late afternoon when they were brought indoors.

Around 100 days of age, we moved them to a large indoor flight cage where they could spend the night. Within a week of being moved to the larger indoor flight cage, both chicks were weaned and eating completely on their own. We continued to monitor their

weight and food intake for another week after their last syringe feeding.

Conclusion

The Blue-headed Macaw has been one of my favorite macaws from the first time I saw a picture of this species. Upon seeing my first live Blue-headed Macaw, my enchantment with this species has only grown. These chicks proved to be such a delight to raise. Their dolphin-like vocalizations as babies were unlike any other macaw I have ever raised. The chicks were always very alert of their surroundings and interacted with their keepers and other birds in the brooder room on a daily basis. This experience has only further cemented my love of this species.



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