

NEST BOXES FINAL REPORT

LORETO AREA

2015-2016



Two chicks of BTM in Nest Box A3

Introduction

The Blue-throated Macaw (BTM) is an endemic bird species of Bolivia that inhabits only in the Llanos de Mojos (Beni department). This species is one of the most threatened birds of the world, being the limited availability of nesting holes one of the most important factors that limit their reproduction in wild. Moreover, the BTM must compete with Blue-and-Yellow Macaw (BYM) which is slightly larger, and frequently wins fights over nesting holes.

With the support of Loro Parque Fundación, Armonía started the artificial nests program in 2005. This program was initially implemented in the Loreto area, where the southern population of the BTM occurs. Twenty artificial nests were installed in 2005. Today we have 80 artificial nests in the Loreto Area. We expanded the initiative to the Santa Rosa del Yacuma (El Ciervo) area where we installed 15 artificial nests, and 74 artificial nests in the Barba Azul Nature Reserve (BANR) (Figure 1) The expansion of this initiative was only possible thanks to the support of the Bird Endowment. This year Bird Endowment helped us to find sponsors for 55 (65%) artificial nests through the “nido adoptivo” initiative



Figure 1 The Artificial Nest Zone in Beni

The nest design

The design of artificial nests varied across the years we are conducting, as it is shown in figure 2 to 4. They were initially 100 cm long x 30 cm wide, and an entrance hole of 10 cm of diameter. Each nest has a small door (on the right side) that helps monitoring the development of chicks inside the nest (Figs 2 to 4). For the season 2015-2016 we used 2 types of nests. Octagonal ones which are 120 cm long (Fig 4), and are covered with palm bark to emulate palms. Hexagonal ones, which are also 120 cm long (Fig 3). All nest's entrance are 10 cm diameter.



Fig.2 Traditional design Nest



Fig.3 Hexagonal Nest



Fig. 4 Octagonal Nest

Nests are made of Ochoó tree (*Hura crepitans*) and Palo Maria (*Calophyllum brasiliense*). As Palo María wood is much harder than Ochoó, it is used to build the front side of nests. Thus Blue-and-Yellow Macaws cannot destroy the wood and make a larger hole.

Nest boxes in the Loreto area (2015-2016) are monitored every 15 days. Monitoring of nests starts in December and lasts until May. Data is collected following an established protocol where pictures are taken during each visit to each nest

Results

Three nest boxes were used by Blue-throated Macaws and 20 by a variety of other bird species (Table 1) and sixty were not used by any bird species whatsoever.

Table1. Nest boxes used by bird species in Loreto (southern area) 2015-2016

Donors Code	Sponsor Name	PBA Code	Location	Species breeding in artificial nests
AA	Avalon Aviary/Susanne Cochran	PBA15	15°11'31.50"S, 64°43'8.70"O	White-eyed Parakeet, 3 eggs laid. Only 1 hatched and fledged
AZ	Arizona Seed Cracker Society	PBA9	15°11'24.80"S 64°43'10.40"O	White-eyed Parakeet, 4 eggs laid. Only 3 hatched and fledged.
A2	Avitech Exotic Birds	PBA28	15°11'43.80"S 64°43'22.10"O	Black-bellied Whistling-Duck, 43 eggs laid. All hatched and fledged.
A3	Avitech Exotic Birds	PBA33	15°11'41.70"S 64°43'22.40"O	Blue-throated Macaw, 3 eggs laid. Only 2 hatched and 2 fledged.
CP	Cleveland Parrot Education & Adoption Center	PBA47	15°12'51.30"S 64°40'43.92"O	White-eyed Parakeet, 3 eggs laid. None hatched. Mother found killed by an unknown predator.
ED	Earlene (Elle) Douglas	PBA4	15°18'16.80"S 64°38'8.60"O	Chestnut-fronted macaw, 2 eggs laid. Only 1 hatched and fledged.
E2	Earth Limited @ Southwick's Zoo	PBA51	15°13'3.60"S 64°40'50.60"O	White-eyed Parakeet, 3 eggs laid. All eggs disappeared. A Blue-and-Yellow Macaw took the nest over and laid 2 eggs. Only one hatched and fledged.
E4	Earth Limited @ Southwick's Zoo	PBA12	15°11'30.00"S 64°43'7.80"O	Blue-throated Macaw, 3 eggs laid. All hatched. One died and two fledged.
E5	Earth Limited @ Southwick's Zoo	PBA23	15°11'37.40"S	Black-bellied Whistling-Duck, 63 eggs laid. 40 hatched and

			64°43'15.90"O	fledged.
EV	Eva Dicker	PBA11	15°11'28.40"S 64°43'8.40"O	White-eyed Parakeet, 4 eggs laid. Only 2 hatched and fledged.
PC	Cleveland Parrot Education & Adoption Center	PBA26	15°11'41.20"S 64°43'16.80"O	Black-bellied Whistling-Duck, 25 eggs laid. Only 20 hatched and fledged.
S4	Sacramento Zoo Conservation Fund	PBA30	15°11'43.10"S 64°43'23.50"O	Blue-throated Macaw, 3 eggs laid. All hatched. One chick died and two fledged.
S7	Sacramento Zoo Conservation Fund	PBA72	15°18'0.10"S 64°38'6.30"O	Blue-and-Yellow Macaw, 3 eggs laid. Only two hatched and fledged.
KJ	In Memory of Cheeko, by Karen C. Justice	PBA40	15°11'46.00"S 64°43'22.30"O	Black-bellied Whistling-Duck, 36 eggs laid. 35 hatched and fledged.
RO	Roger O'Connell	PBA6	15°11'23.30"S 64°43'12.70"O	Chestnut-fronted macaw, 2 eggs laid. All disappeared.
MH	J. E. J. Moore Middle School Hurricanes	PBA16	15°11'32.10"S 64°43'9.00"O	Black-bellied Whistling-Duck, 14 eggs laid. All hatched and fledged.
GEN	St. Augustine Alligator Farm Zoological Park	PBA64	15°18'16.30"S 64°38'9.60"O	Blue-and-Yellow Macaw, 3 eggs laid. Only 2 hatched and fledged.
PBA44	Programa de Conservación de la Paraba Barba Azul	PBA44	15°12'48.00"S 64°40'41.40"O	White-eyed Parakeet, 3 eggs laid. One hatched and the other remains unhatched.
PBA48	Programa de Conservación de la Paraba Barba Azul	PBA48	15°12'53.80"S 64°40'48.70"O	Black-bellied Whistling-Duck, 25 eggs laid .

PBA55	Programa de Conservación de la Paraba Barba Azul	PBA55	15°12'52.50"S 64°40'27.90"O	White-eyed Parakeet, 4 eggs laid . two hatched and to remain unhatched.
PBA59	Programa de Conservación de la Paraba Barba Azul	PBA59	15°15'8.70"S 64°41'31.32"O	White-eyed Parakeet, 3 eggs laid. All were predated by an unknown predator.
PBA68	Programa de Conservación de la Paraba Barba Azul	PBA68	15°18'15.48"S 64°38'6.32"O	Black-bellied Whistling-Duck, 27 eggs laid. All hatched.
PBA73	Programa de Conservación de la Paraba Barba Azul	PBA73	15°17'54.40"S 64°38'4.20"O	Black-bellied Whistling-Duck, 29 eggs laid. All hatched, but 5 chicks were found died. The rest fledged.

Eight Blue-throated Macaw chicks were born from a total of twelve eggs laid in three nest boxes (Figure 5 and Table 2). By the end of the monitoring period, only six chicks fledged, while two were found dead from unknown cause.

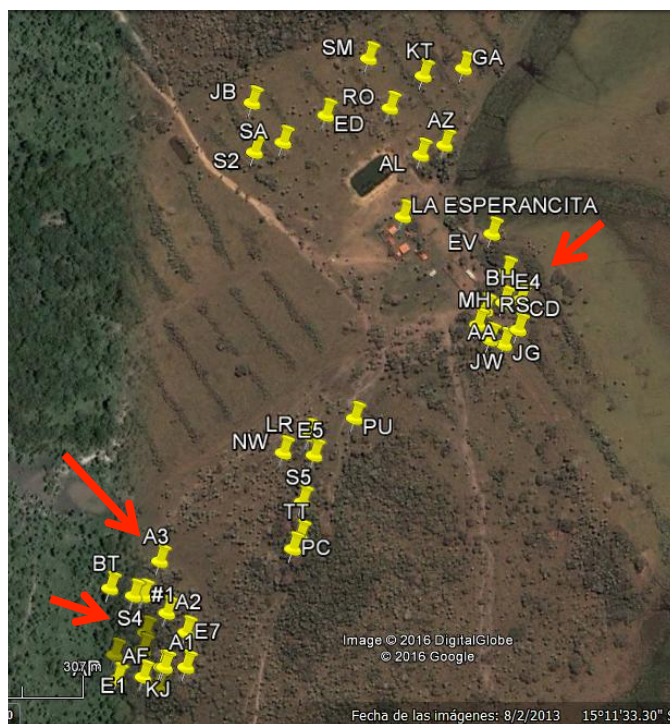




Figure5. Three nest used by BTM (Esperancita)

White-eyed Parakeet and Black-bellied Whistling-Duck occupied eight nests each. Three nests were used by the Blue-and-yellow Macaw (one nest was previously occupied by a White-eyed Parakeet), and 2 nests occupied by Chesnut-fronted Macaws (Table 3).

Table2. Artificial Nest used by Blue-throated Macaws in Loreto December to March 2015-2016

CODE	DESCRIPTION	PICTURE
A3	<p>Blue-throated Macaw 3 eggs laid. One did not hatch. Two healthy chicks fledged.</p>	
E4	<p>Blue-throated Macaw, Three eggs laid. All hatched. The smallest chick died. Two healthy chicks fledged.</p>	






		 
S4	<p>Blue-throated Macaw, Three eggs laid. All hatched. The smallest chick died and two healthy chicks fledged.</p>	  

Table 3. Artificial Nest use in Loreto Area-Marban Province






Scientific name	English name	Number of nest boxes used
<i>Aratinga leucophthalma</i>	White-eyed Parakeet	8
<i>Dendrocygna autumnialis</i>	Black-bellied Whistling-Duck	8
<i>Ara glaucogularis</i>	Blue-throated Macaw	3
<i>Ara ararauna</i>	Blue-and-yellow Macaw	3*
<i>Ara severus</i>	Chestnut-fronted Macaw	2
<i>Total</i>		<i>24</i>






* One of the nests used by this species was previously used by a White-eyed Parakeet.






We hope to find new nesting sites to install artificial nests for the species in 2017 . We recently found a potentially good site called Chaleco. We are planning to install new nest boxes in this site during 2017.






Annexes




Pictures of 80 artificial nests in Loreto Area






Nro.	Nest	Donor
1		#1 Katy Secor
2		A1 Avitech Exotic Birds
3		A2 Avitech Exotic Birds
4		A3 Avitech Exotic Birds
5		A4 Avitech Exotic Birds






6		AA Avalon Aviary / Susanne Cochran
7		AF American Federation of Aviculture
8		AH April Hoera
9		AL Amanda Lafond
10		AP Arlene Powers






11		<p>AS</p> <p>In Memory of Peggy Sanford & Dot Slator, by Andy Sanford</p>
12		<p>AZ</p> <p>Arizona Seed Cracker Society</p>
13		<p>BH</p> <p>Brenton Head</p>
14		<p>BL</p> <p>Blu Lu, by Barbara Heidenreich's Force Free Animal Training</p>
15		<p>BT</p> <p>Birblr, Bird Blogging Community on Tumblr</p>






16		CD Claire Dicker
17		CP Cleveland Parrot Education & Adoption Center
18		CZ Cincinnati Zoo & Botanical Garden
19		E1 Earth Limited @ Southwick's Zoo
20		E2 Earth Limited @ Southwick's Zoo






21		E3 Earth Limited @ Southwick's Zoo
22		E4 Earth Limited @ Southwick's Zoo
23		E5 Earth Limited @ Southwick's Zoo
24		E6 Earth Limited @ Southwick's Zoo
25		E7 Earth Limited @ Southwick's Zoo





26		ED Earlene (Elle) Douglas
27		EV Eva Dicker
28		GA ACE / Gabriele Alexander
29		GEN St. Augustine Alligator Farm Zoological Park
30		JB John Brasaemle

31		JG Jim & Ginger Payant
32		JW Jennifer White
33		KJ In Memory of Cheeko by Karen C. Justice
34		KT Kathryne Thorpe
35		LR Laurel Rohrer

36		MH J. E. J. Moore Middle School Hurricanes
37		MZ Memphis Zoo Chapter AAZK
38		NW Northwest Exotic Bird Society
39		PC Cleveland Parrot Education & Adoption Center
40		PU Parrot University

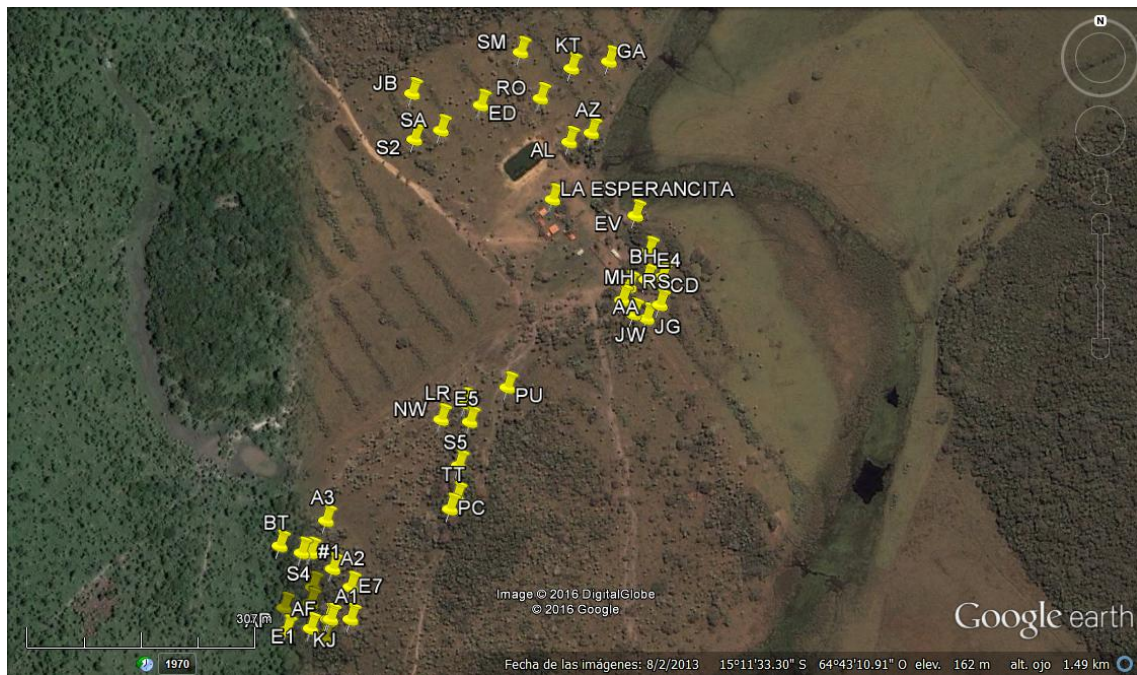
41		RO Roger O'Connell
42		RS In Memory of Dr. Robert Stonebreaker
43		S1 Sacramento Zoo Conservation Fund
44		S2 Sacramento Zoo Conservation Fund
45		S3 Sacramento Zoo Conservation Fund

46		S4 Sacramento Zoo Conservation Fund
47		S5 Sacramento Zoo Conservation Fund
48		S6 Sacramento Zoo Conservation Fund
49		S7 Sacramento Zoo Conservation Fund
50		S8 Sacramento Zoo Conservation Fund

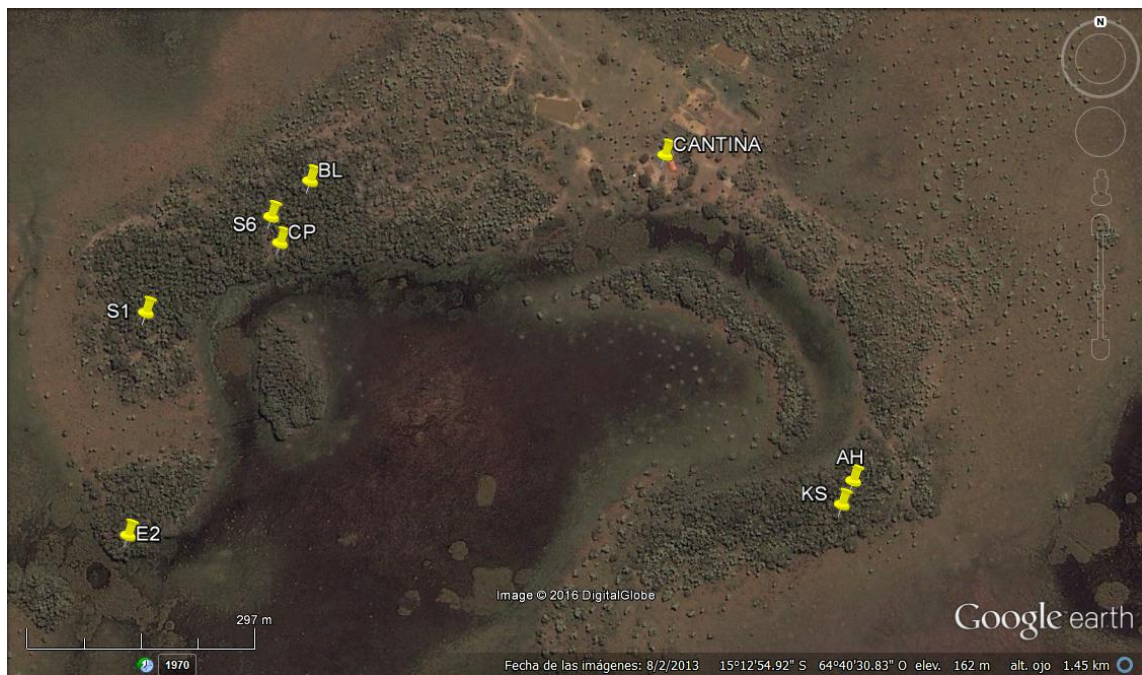
51		<p>SA</p> <p>St. Augustine Alligator Farm Zoological Park</p>
52		<p>SB</p> <p>South Bay Bird Society</p>
53		<p>SM</p> <p>In Memory of Santana Malowski</p>
54		<p>TT</p> <p>Tomi Takemoto / Animal Lovers</p>

55		<p>KS</p> <p>East Wings Free Fligth, Pet Bird Assn. Virginia, Kelley Story</p>
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Distribution of Nests in Esperancita.



Distribution of Nests in Cantina.



Distribution of Nests in Santa Rosa de Justiniano.

