

Laney Rickman Blue-throated Macaw Reserve

Annual Report – July 2020



Breeding Blue-throated Macaw's at the Laney Rickman Blue-throated Macaw Reserve: Bennett Hennessey

A staggering 12 Blue-throated Macaw chicks have successfully fledged into the wild from Armonía's nestboxes during the 2019-2020 breeding season. This is the second year in a row with the highest ever reproduction result since Armonía started the nestbox program in 2005. The 9 Blue-throated Macaw breeding attempts resulted in the longest ever recorded breeding season from the 16th of December (first egg) until the 7th of July (last chick fledged). It is also the first year we recorded a clutch size of an astounding 4 eggs! A total of 93 Blue-throated Macaws have now fledged Armonía's nestboxes, which is around 25% of the global wild Blue-throated Macaw population.

Project photos can be downloaded from:

<https://www.flickr.com/photos/128583429@N05/sets/72157691397221540>

Laney Rickman Reserve 2019-2020 conservation program was supported by:



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1. Laney Rickman Blue-throated Macaw Reserve

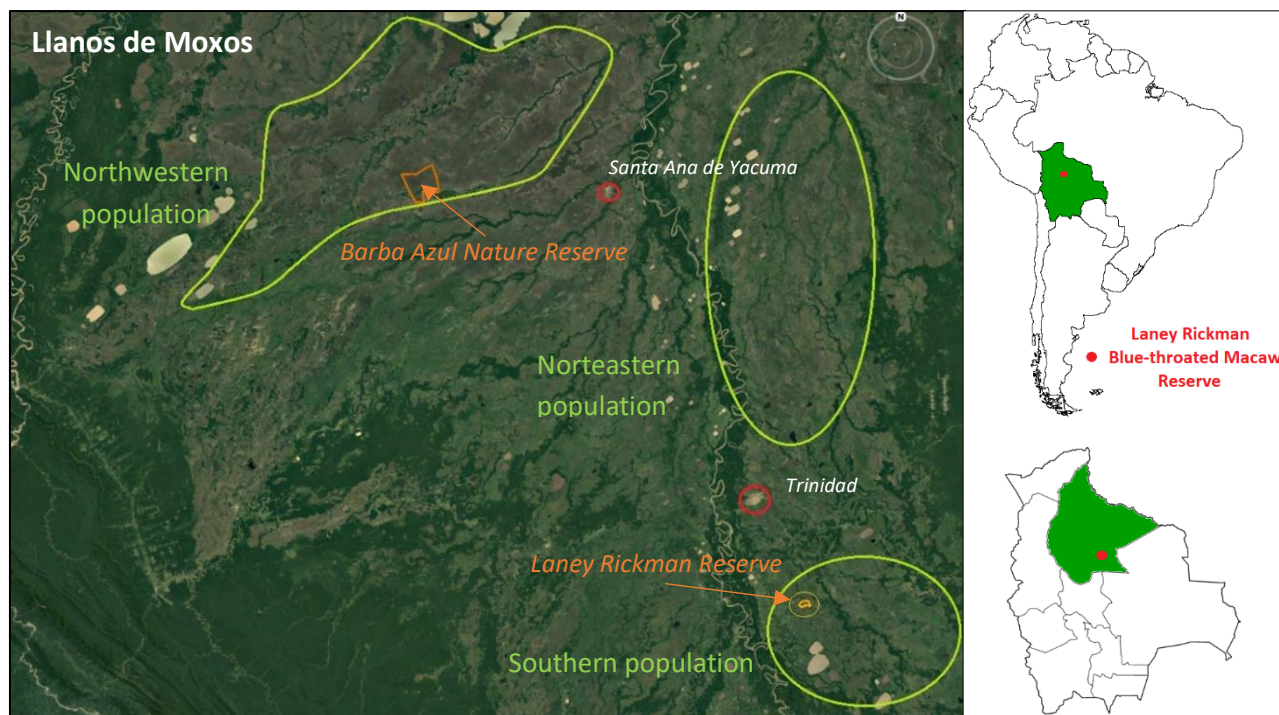
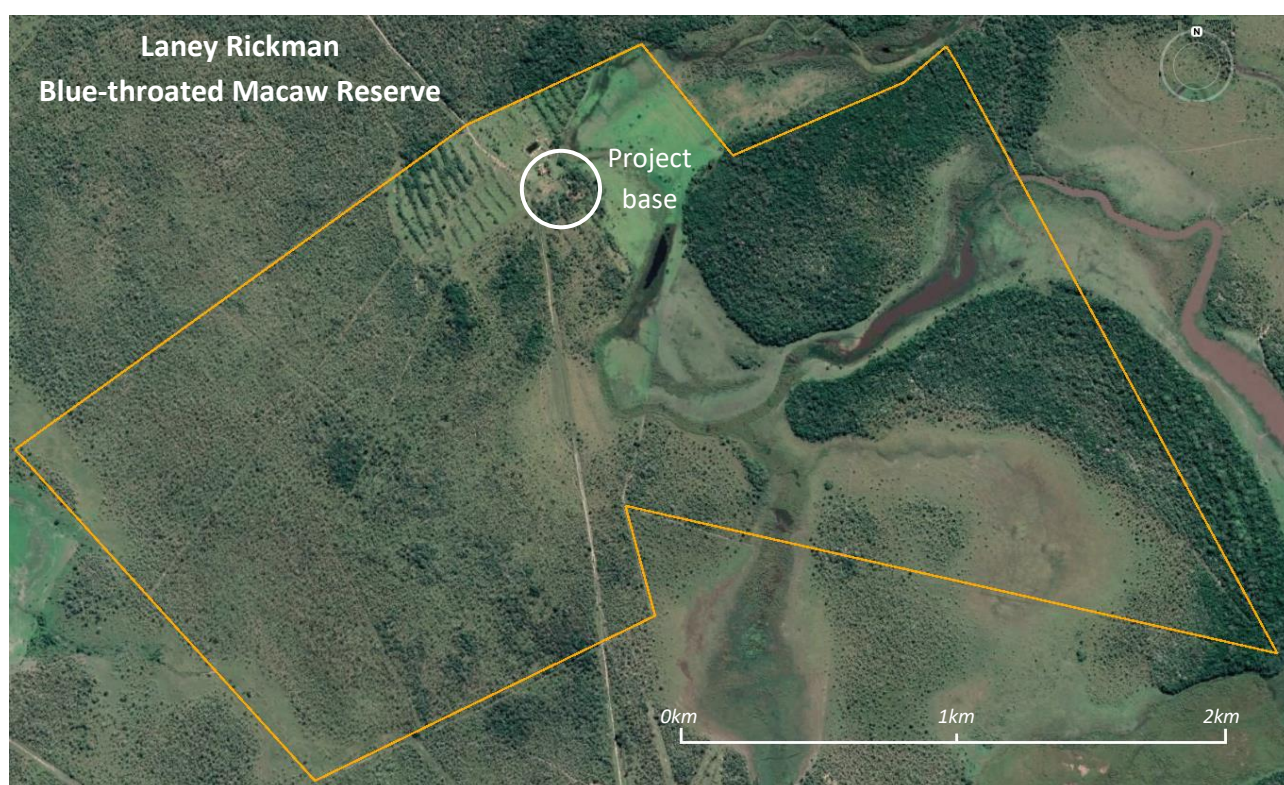


Figure 1 & 2. The Laney Rickman Blue-throated Macaw Reserve (681ha/1,683ac) is located in the Southern Llanos de Moxos, 42 kilometers south of Trinidad and 213 kilometers south of the Barba Azul Nature Reserve. Armonía protect vital Blue-throated Macaw habitat in 2 isolated subpopulations (estimated Blue-throated Macaw subpopulation range indicated in light green circles).



2. Laney Rickman Reserve Goals

Our main goals for 2020-2021 to ensure a continuous development and protection of the Laney Rickman Blue-throated Macaw Reserve are:

1. Increase protected breeding habitat for the Blue-throated Macaw
2. Increase nest cavity availability (nest boxes)
3. Maintain and increase impenetrable firebreaks throughout the reserve
4. Establish Visitor/Research Centre
5. Create wildlife friendly fencing around the reserve's perimeter
6. Begin small scale ranching (100 head of cattle) to fulfill governmental requirements
7. Study southern subpopulation Blue-throated Macaw local movement
8. Study Great-billed Seed-finch distribution in Laney Rickman Reserve
9. Develop Laney Rickman Reserve management plan



The Laney Rickman Birdlist count 224 different bird species including this Rusty-backed Antwren (male): Sebastian Herzog

3. Reserve Protection

Asociación Armonía created a second Blue-throated Macaw Reserve in August 2018, the Laney Rickman Blue-throated Macaw Reserve (681ha/1.683ac; read more about the creation [HERE](#)). This reserve is protecting vital breeding habitat for the Southern subpopulation (fig. 1).

Key Personnel: Our main park guard Cesar Flores (Armonía's Keeper of the Wild supported through World Land Trust) is assisted by his oldest son Cesar Flores junior who has worked for Armonía since February 2019. Both are in charge of monitoring Blue-throated Macaw nests, patrolling the reserve by horse or quadbike, fight wildfires, maintaining the station, maintaining fencing, and supervising contractors working within the reserve to maintain our firebreaks. Luis Miguel Barbosa is coordinating logistics and supervising on ground activities at Laney Rickman and Barba Azul Nature Reserve, while Tjalle Boorsma and Bennett Hennessey are supervising the Blue-throated Macaw Program.



Luis Miguel Barbosa and Cesar Flores preparing Blue-throated Macaw nestboxes: Marton Hardy

2019 protection results: Through the support from World Land Trust, we created 12 kilometers of firebreaks, renewed 2 kilometers of main road (functioning as firebreak) and maintained 4.7 kilometers of existing fencing (page 5). We invested significant tractor time during the 2019 dry season (July to November) to create clean firebreaks. Maintaining firebreaks is a key activity for every dry season to prevent man-made fires from entering.



The first fire breaks were created in September 2019. As we have learnt from managing fires in the Barba Azul Nature Reserve, we make professionally recommended firebreaks, but the true test is in the field. On the 24th of July a fire entered the reserve, but was quickly controlled by our reserve guards. The fire burnt open savanna tall-grass habitat and fire-resistant trees, only affecting 28ha (4% of Laney Rickman Reserve). Due to a quick response of our team and traveling to the fire with Armonía's quad bike, this fire was quickly tamed.

We also maintained a total of 4.7 kilometers of already existing fencing to ensure a closed perimeter on the north and south side and a division within the Laney Rickman Reserve itself. Wires had to be replaced as the two bottom lines deteriorate quickly from flooding during the rainy season. A total of 50 fence posts have been renewed with timber already present at the Laney Rickman Reserve.



Laney Rickman Reserve perimeter firebreak fully constructed: Luis Miguel Barbosa

4. Nest box Program (2019-2020 breeding season)

Summary

The 2019-2020 breeding season resulted in 12 successfully fledged Blue-throated Macaw chicks from a total of 9 breeding attempts in 7 nestboxes. The Laney Rickman Blue-throated Macaw Reserve nestbox program has fledged a total of 93 Blue-throated Macaws into the wild. This is the second year in a row where Armonía's nestbox program produced 12 chicks and witnessed so many breeding attempts. But this breeding season is highlighted by the longest recorded breeding period of 207 days (48 days longer than the 2018-2019 breeding season). And, for the first time ever a clutch size of four eggs from a single breeding pair was recorded. Sadly all 4 eggs were predated by a Chestnut-eared Aracari.

An additional 12 nestboxes were inspected by Blue-throated Macaws but not used. A total of 7 breeding individuals were identified with rings, indicating that these individuals fledged from Armonía's nestboxes in the past.

Through Armonía's 15-year nestbox program, 93 Blue-throated Macaw chicks successfully fledged into the wild in the southern subpopulation alone. That is around 25% of the entire global Blue-throated Macaw population that is estimated to hold 312-455 individuals. This proves the successfulness of this conservation approach saving the species from extinction.



Blue-throated Macaw chicks in nestbox PBA18 (LA2). All chicks successfully fledged: Cesar Flores

Nestbox PBA33 (E4) is the programs most occupied nestbox (5 times) and produced 3 chicks this season: Asociación Armonía



Results 2019-2020 breeding season

A total of 50 new nestboxes were placed in the Laney Rickman Reserve, replacing 40 old boxes and adding 10 new nestboxes placed in new areas within the reserve. A total of 65 nestboxes were made ready for the 2019-2020 breeding season (53 in the Laney Rickman Reserve and 12 on the neighboring La Cantina ranch). We put all our efforts in the two most important breeding sites that have shown the highest nestbox success rate throughout the program (las Trancas and Santa Rosa ranch were not used due to low success rates in the past).

A total of 12 nestboxes (18.5% occupancy) were used by 4 different bird species: Blue-throated Macaw (7); Chestnut-fronted Macaw (1); White-eyed Parakeet (1) and Black-bellied Whistling Duck (3) [table 1 and annex 1]. Seven nestboxes were occupied by bees of which three were previously inspected by Blue-throated Macaws.

Seven nestboxes were occupied by Blue-throated Macaws with a total of 9 breeding attempts (2 nestboxes were re-occupied by Blue-throated Macaws after clutch failure). All occupied nestboxes were within the Laney Rickman Reserve. A total of 25 eggs were produced, 14 chicks hatched and 12 chicks successfully fledged (table 2; annex 1; annex 2). This is the first year where a clutch size of 4 eggs was recorded. Sadly, these 4 eggs were all predated (potentially by a Chestnut-eared Aracari). After predation, a second clutch was laid, probably the same pair, from which two chicks fledged.

A total of 7 breeding individuals in nestboxes were observed to have rings, indicating these birds have fledged Armonía's nestboxes in the past (table 2). Four from the seven nestboxes used by Blue-throated Macaws have been used in the past. One nestbox (PBA33; E4) has been used for the 5th time while nestbox PBA 6 (#1) was used for the 4th time.

Table 1. Summary of nestbox usage by different species in the reproductive period of 2019-2020. A total of 12 nestboxes were used all within the Laney Rickman Reserve. A total of 3 nestboxes were used for a second breeding attempt of which 2 occupied by Blue-throated Macaw and 1 by Chestnut-bellied Macaw (**more detailed information in annex 1**).

Nestbox usage 2018-2019		
Species	Scientific name	# Occupied nest boxes
Blue-throated Macaw	<i>Ara glaucogularis</i>	7*
Chestnut-fronted Macaw	<i>Ara severus</i>	1
White-eyed Parakeet	<i>Psittacara leucophthalmus</i>	1
Black-bellied Whistling Duck	<i>Dendrocygna autumnalis</i>	3
*2 nest boxes with two attempts		

Table 2. Summary of nestboxes used by the Blue-throated Macaw in the 2019-2020 breeding season. A total of 7 nestboxes were occupied (two nestboxes with 2 attempts), 25 eggs produced, 14 chicks hatched and 12 chicks successfully fledged. This makes 2019-2020 the second most successful breeding season in a row since Armonía started the Blue-throated Macaw nestbox program in 2005. LR is Laney Rickman Reserve (**more detailed information in annex 1 & 2**).

Sponsor (code)	Location	# Eggs	# Chicks	# Fledglings	Birds with rings
Rockie Mooney (RNM)	LR	2	0	0	2
Katy Secor (#1)	LR	5*	2	2	2
Los Angeles Zoo (LA2)	LR	3	3	3	0
Los Angeles Zoo (LA8)	LR	7**	3	2	1
EARTH Ltd @Southwick's Zoo (E4)	LR	3	3	3	1
Kathleen Hodges (MK)	LR	3	3	2	1
Dorothy Paterson in memory of Laney Rickman (LSR)	LR	2	0	0	0
Total		25	14	12	7
*First attempt 3 eggs (infertile); second attempt 2 eggs					
**First attempt 4 eggs (predated); second attempt 3 eggs					

Longest breeding season recorded

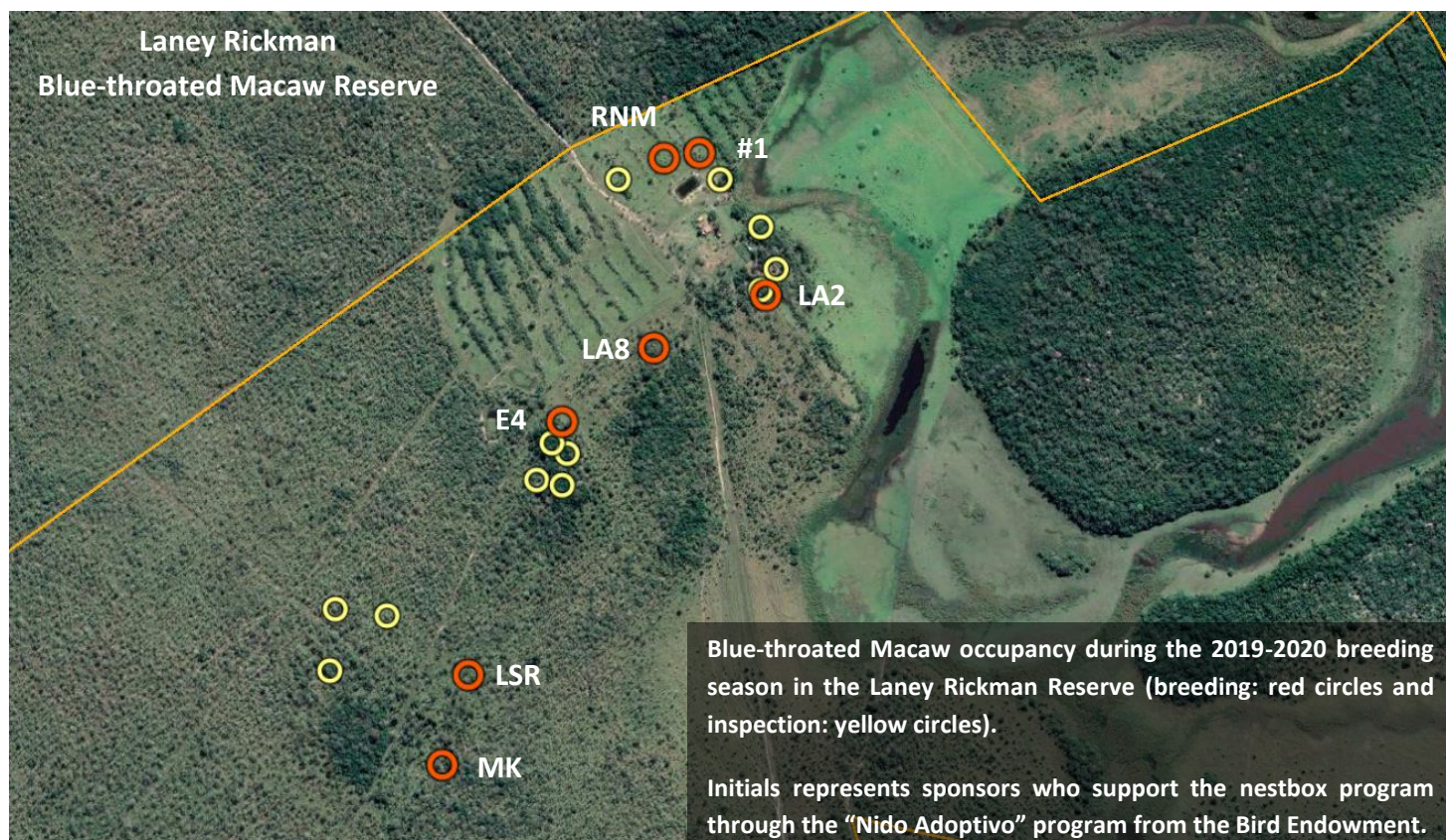
The 2019-2020 has been the longest breeding season recorded in Armonía's 15-year long nestbox program. The first eggs were produced on the 16th of December 2019 and the last chick that fledged the nestboxes was on the 8th July 2020; 207 days. For comparison, the 2018-2019 breeding season started with the first eggs on the 12th of November 2018 and ended with the last chick fledging on the 19th of April; 159 days (48 days shorter). The extended breeding season is because the last clutch was produced on the 29th of March 2020. Also, this season's first egg was produced 1 month later than last season's first egg.



Both #1 and LA8 were occupied twice by Blue-throated Macaws and each nest produced 2 fledglings: Asociación Armonía



Nestbox MK (left) and LA2 produced 2 and 3 chicks respectively: Asociación Armonía



Long-term results Armonía's nest box program

Armonía's nestbox program started in 2005 and has produced a total of 93 successfully fledged Blue-throated Macaw chicks. This is approximately around 25% of the global wild Blue-throated Macaw population that is estimated to hold 312-455 individuals. This proves the extreme successfulness of this in-situ conservation approach, preventing the species extinction. Since the start of the nestbox program in 2005, 63 Blue-throated Macaw breeding attempts were made, producing 171 eggs of which 113 hatched and 93 fledged.

Our 15-year nestbox program showed on average 33% egg loss (infertile/predation) and 12% mortality of chicks that have hatched (often the smallest individual). Little information is available on the survival rate of the fledged birds. We annually observe more individuals with rings returning to breed in our nestboxes, proving the successfulness of the program (7 banded individuals in 2019-2020 compared to 5 in 2018-2019).

Armonía has created a nestbox highly favored by Blue-throated Macaws while stopping competition for breeding cavities with the common and abundant Blue-and-yellow Macaw (*Ara ararauna*). Not a single Blue-and-Yellow Macaw occupied our nestboxes in the 2019-2020 breeding season. At the start of the program entrance holes measured 12 by 25 cm. In 2013 we changed the entrance hole to 10 by 10 cm, seriously halting competition.

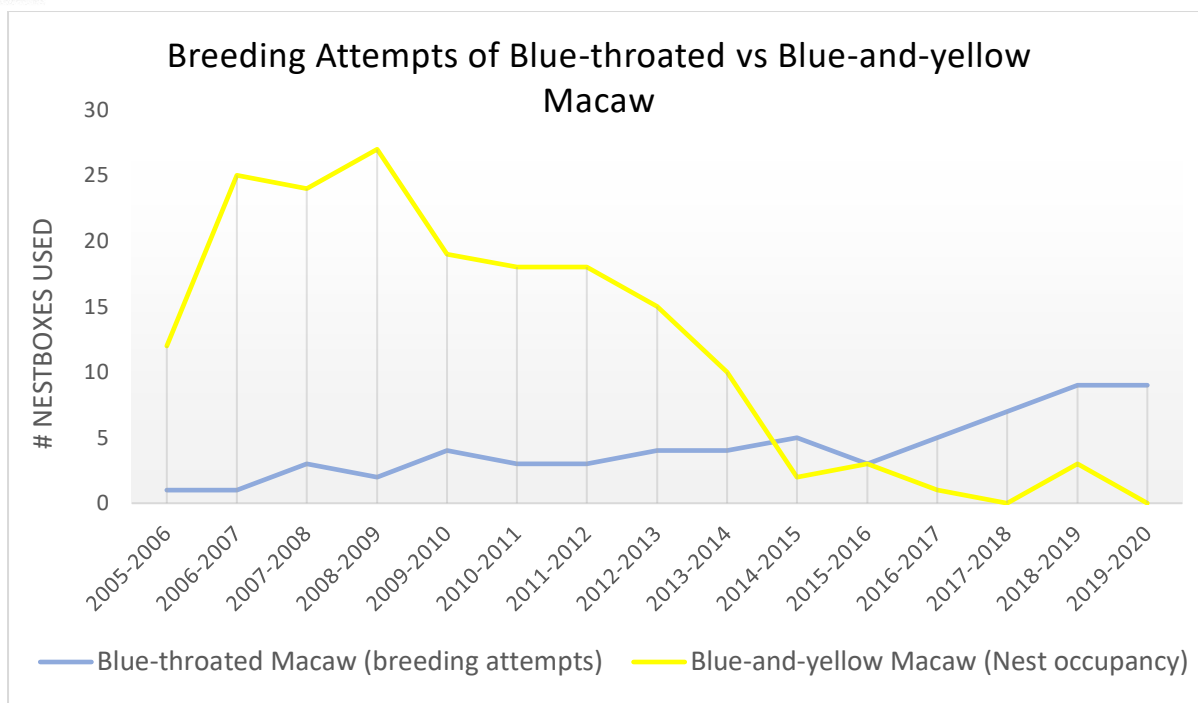


Figure 3. Nestbox occupancy of Blue-throated Macaw vs Blue-and-yellow Macaw presented over the 15 years of Armonía's nest box program. Since Armonía started experimenting with entrance size (from 12 by 25cm to 10cm) between 2013 and 2015, competition between these large macaws significantly dropped.

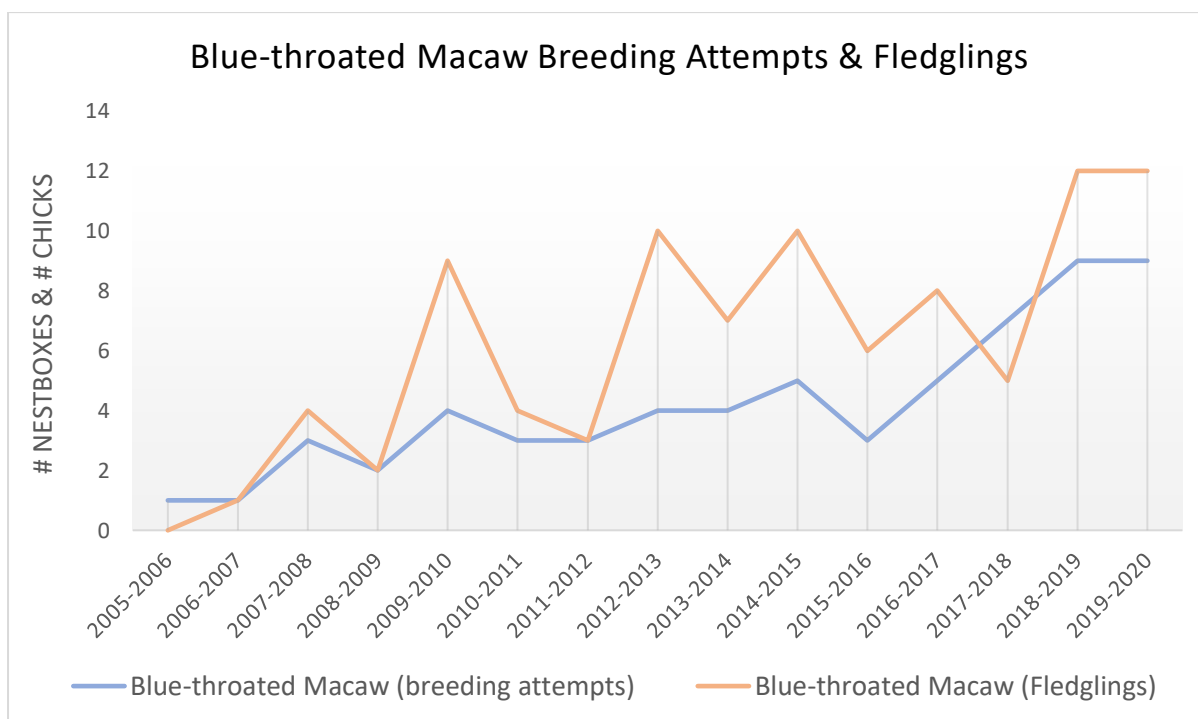


Figure 4. Nestbox breeding attempts of Blue-throated Macaw and number of fledglings presented over the 15 years of Armonía's nest box program. The 2018-2019 & 2019-2020 breeding season resulted in the highest ever Blue-throated Macaw breeding attempts (9) and the highest number of successfully fledged chicks (12). Over the 15 years, a total of 93 Blue-throated Macaws successfully fledged Armonía's nest boxes



Two Blue-throated Macaw chicks about to fledge in nestbox LA8
on the 16th of May 2020: Cesar Flores

5. Endangered Great-billed Seed-Finch Discovery

New discovery of threatened species in the Laney Rickman Blue-throated Macaw Reserve! The Endangered Great-billed Seed-Finch (*Sporophila maximiliani*), a species that has disappeared from a large part of its range in Brazil due to capture as a prized caged bird for its attractive song, was recently documented in the Laney Rickman Reserve. During an informal avifaunal review in February 2020, Sebastian Herzog documented the Great-billed Seed-finch in the reserve. This is the third time the species has been documented in the general area around Trinidad and Loreto, but the first record of its presence within a protected area.

Even out-of-focus pictures of an uncooperative bird can be valuable. Despite the blur, the photo clearly shows the outstanding bill size with an inflated upper mandible distinctive of this species. The Great-billed Seed-Finch gives us one more reason to focus on conservation at Laney Rickman.



Endangered Great-billed Seed-finch discovered breeding in the Laney Rickman Reserve: Sebastian Herzog

6. Reserve Sustainability

To honor Laney Rickman’s legacy, her family, the Bird Endowment, Asociación Armonía, and American Bird Conservancy established the “**Laney Rickman Blue-throated Macaw Fund**” in September 2017. **Dorothy** (Laney’s sister) and **Audrey Paterson** (Laney’s niece) have been leading the fundraising efforts for this special Fund to continue Laney’s amazing work protecting the Blue-throated Macaws of Bolivia. Through the generosity and support of an incredible number of people, more than 235,000 USD has raised to date.

This Fund, managed by the American Bird Conservancy, is of critical importance to assure reserve sustainability. Disbursements of the investment income of the Fund will provide an important part of the Reserve’s annual protection costs. Donations are welcome and provide vital long-term support for the Nido Adoptivo™ nest box program, as well as habitat conservation and reserve management to help save the Blue-throated Macaw and the vital ecosystem in which it lives.

<https://abcbirds.org/rickman-fund/>

We are also extremely grateful to **World Land Trust** for including Cesar Flores in their “Keepers of the Wild” program, supporting park rangers for the Laney Rickman Reserve. These long-term funding sources are crucial to continue our conservation measures in the most important breeding ground of the Blue-throated Macaw southern subpopulation.



White-eyed Parakeet at Laney Rickman Reserve: Sebastian Herzog

Annex 1: Summary of nestboxes used

Table 3. Summary of the 12 occupied nestboxes (65 nest boxes in total) in the Laney Rickman Reserve by birds during the 2019-2020 breeding season. The sponsor code column contains the initials of the sponsor (person or institution) that sponsored the nest during this breeding season. The nest code column is a fixed code that identifies each nest, and remains permanent across the breeding seasons. The column “historic BTM use” indicates the number of times the nest was occupied by Blue-throated Macaws (BTM) in the past. Nest type indicates the form of nestbox (square, hexagonal or octagonal), and tree species indicated to which type of tree the nestbox was located. A total of 7 nestboxes were used by Blue-throated Macaws of which nestbox PBA 6 and PBA 21 were occupied twice. BTM results: 25 eggs, 14 hatched and 12 chicks fledged.

#	Sponsor code	Nest code	Historic BTM use	Species	Nest type	Tree species	# (egg, chick and)	Dates (first egg, chick and)
1	RNM	PBA 4	0	Blue-throated Macaw	Square	<i>Acrocomia aculeata</i> (Palm)	Eggs: 2 (both infertile)	Eggs: 08/JAN/2020
2	#1	PBA 6	3 (2011-2012) (2017-2018) (2018-2019)	Blue-throated Macaw	Square	<i>Acrocomia aculeata</i> (Palm)	Eggs: 3 (all infertile)	Egg 1: 14/JAN/2020 Egg 2: 18/JAN/2020 Egg 3: 21/JAN/2020
2	#1	PBA 6	3 (2011-2012) (2017-2018) (2018-2019)	Blue-throated Macaw	Square	<i>Acrocomia aculeata</i> (Palm)	Eggs: 2 Chicks: 2 Fledged: 2	Egg 1: 29/MAR/2020 Egg 2: 30/MAR/2020 Chicks: 18/APR/2020 Fledged: 08/JUL/2020
3	MUN	PBA 10	0	Chestnut-bellied Macaw	Square	Japunaqui	Eggs: 2 (1 predated) Chicks: 1 Fledged: 1	Eggs: 30/JAN/2020 Chicks: 28/JAN/2020 Fledged: 29/MAR/2020
4	LA2	PBA 18	1 (2018-2019)	Blue-throated Macaw	Square	<i>Acrocomia aculeata</i> (Palm)	Eggs: 3 Chicks: 3 Fledged: 3	Eggs 1 & 2 & 3: 30/DEC/2019 Chicks 1: 14/JAN/2020 Chicks 2 & 3: 18/JAN/2020 Fledged 1: 16/APR/2020 Fledged 2 & 3: 26/APR/2020
5	LA8	PBA 21	2 (2016-2017) (2017-2018)	Blue-throated Macaw	Square	<i>Acrocomia aculeata</i> (Palm)	Eggs: 4 (all predated)	Eggs: 30/DEC/2019
5	LA8	PBA 21	2 (2016-2017) (2017-2018)	Blue-throated Macaw	Square	<i>Acrocomia aculeata</i> (Palm)	Eggs: 3 Chicks: 3 Fledged: 2	Eggs: 14/FEB/2020 Chicks: 10/MAR/2020 Fledged: 16/JUN/2020
6	AZ	PBA 22	1 (2014-2015)	White-eyed Parakeet	Square	<i>Acrocomia aculeata</i> (Palm)	Eggs: 3	Eggs: 14/FEB/2020
7	E4	PBA 33	4 (2012-2013) (2013-2014) (2015-2016) (2016-2017)	Blue-throated Macaw	Square	<i>Acrocomia aculeata</i> (Palm)	Eggs: 3 Chicks: 3 Fledged: 3	Egg 1: 16/DEC/2019 Egg 2 & 3: 30/DEC/2019 Chick 1 & 2: 14/JAN/2020 Chick 3: 18/JAN/2020 Fledged: 16/APR/2020
8	MK	PBA 81	0	Blue-throated Macaw	Square	<i>Acrocomia aculeata</i> (Palm)	Eggs: 3 Chicks: 3 Fledged: 2	Eggs: 30/DEC/2019 Chick 1 & 2: 18/JAN/2020 Chick 3: 21/JAN/2020 (dead) Fledged: 16/APR/2020
9	LA3	PBA 82	0	Black-bellied Whistling Duck	Square	<i>Acrocomia aculeata</i> (Palm)	Eggs: 30	Eggs: 14/FEB/2020
10	LSR	PBA 83	0	Blue-throated Macaw	Square	<i>Acrocomia aculeata</i> (Palm)	Eggs: 2 (all infertile)	Eggs: 14/FEB/2020
11	RN	PBA 84	0	Black-bellied Whistling Duck	Square	<i>Acrocomia aculeata</i> (Palm)	Eggs: 5	Eggs: 04/MAR/2020
12	L4	PBA 89	0	Black-bellied Whistling Duck	Square	<i>Acrocomia aculeata</i> (Palm)	Eggs: 20	Eggs: 05/MAR/2020

Annex 2: Description of nest boxes used by Blue-throated Macaws

Sponsor (code): Rockie Mooney (RNM)
Nest code: PBA4
Location: Laney Rickman Blue-throated Macaw Reserve

Adult birds were being observed chewing the entrance cavity on the 18th of November. Both adults were ringed individuals. Two eggs were laid by the 8th of January. By January 14th one egg was in a bad shape (decomposing) and the second egg was observed to be in a bad shape by the 30th of January. We expect that both eggs were infertile. As these birds were young individuals (ringed), we expect failure to be also related to bad parenting where often need several breeding attempts before they achieve success. Armonía takes strong measures to avoid disturbance by people during the egg laying period due to frantic escaping of the Macaws from the nests when being flushed, which have broken eggs in the past.



Sponsor (code): Katy Secor (#1)
Nest code: PBA6
Location: Laney Rickman Blue-throated Macaw Reserve

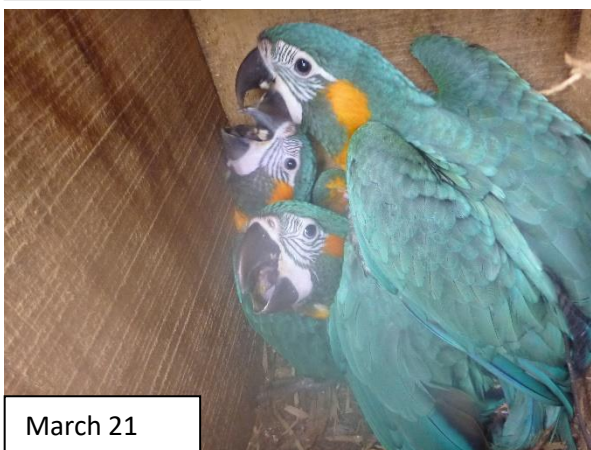
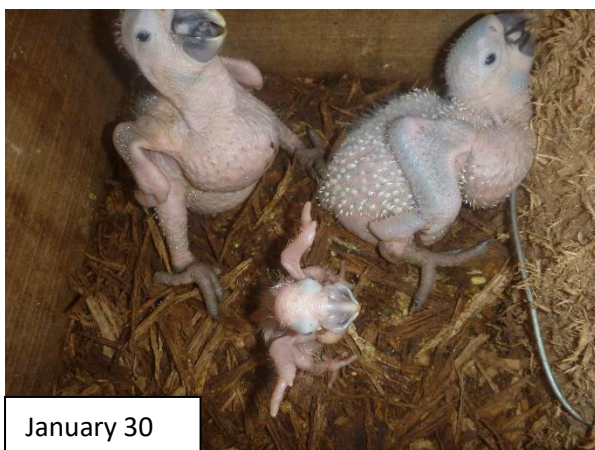
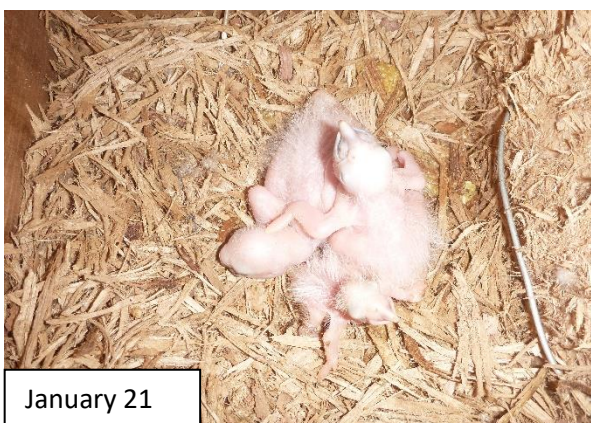
First breeding attempt: Two adult birds were observed on top of the nestbox on the 18th of November. The first egg was laid by the 14th of January followed by two more eggs on the 18th and 21st of January respectively. On the 14th of February the first decomposing egg was observed and removed, and by the 28th of February all eggs were observed to be decomposing. We expect they were infertile.

Second breeding attempt: Both adults were ringed individuals. The first egg was laid by the 29th of March followed by a second egg around the 30th of March. Both chicks hatched between the 16th and 18th of April. Both chicks were observed healthy throughout the breeding period. Two chicks successfully fledged on the 8th of July 2020. They were ringed with code number: 2021-BO-003; and 2021-BO-004 on the 14th of May (2020 rings were no longer available).



Sponsor (code): Los Angeles Zoo (LA2)
Nest code: PBA18
Location: Laney Rickman Blue-throated Macaw Reserve

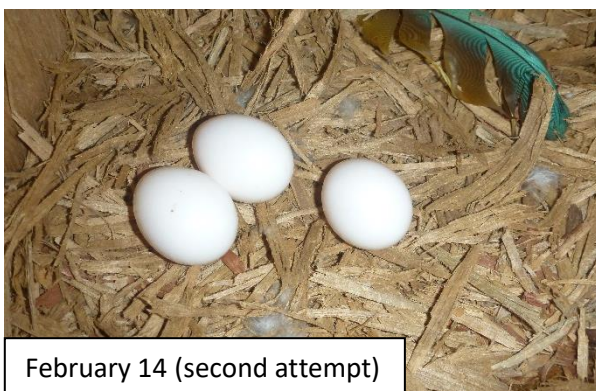
Two adults were observed inside the nestbox on the 18th of November. Adults without ring. Three eggs were laid by the 30th of December. The first chick hatched on the 14th of January followed by two more chicks between the 14th and 18th of January. All chicks were observed healthy throughout the breeding period. The first chick successfully fledged on the 16th of April 2020 followed by the remaining two chicks between the 16th and 26th of April 2020. Note the parents did not allow the last chick to die, or that there was not enough food to feed all three chicks. A perfect example that there is no need to force feed chicks in the nest. Chicks were ringed with code number: 2020-BO-006; 2020-BO-007; and 2020-BO-010 on the 17th of February (two largest chicks) and 28th of February (smallest chick).



Sponsor (code): Los Angeles Zoo (LA8)
Nest code: PBA21
Location: Laney Rickman Blue-throated Macaw Reserve

First breeding attempt: Two adult birds were observed on top of the nestbox on the 16th of December. Four eggs were laid by the 30th of December (largest ever observed clutch size). By the 18th of January two eggs were predated and by the 21st of January all eggs were gone. We expect a Chestnut-eared Aracari to have predated the eggs.

Second breeding attempt: One adult was a ringed individual. Three eggs were laid by the 14th of February. All chicks hatched around the 10th of March. On the 12th of March the smallest chick was observed dead and removed. Both chicks were observed healthy throughout the breeding period. The chicks successfully fledged on the 16th of June 2020. They were ringed with code number: 2021-BO-001; and 2021-BO-002 on the 30th of March (largest chicks) and the 6th of April (smallest chick). (2020 rings were no longer available).



Sponsor (code): EARTH Ltd @Southwick's Zoo (E4)
Nest code: PBA33
Location: Laney Rickman Blue-throated Macaw Reserve

Adult birds were being observed on top of the nestbox and chewing the entrance cavity on the 18th and 30th of November respectively. One adult was a ringed individual. First egg was laid by the 16th of December followed by two more eggs between the 16th and 30th of December. The first two chicks hatched on the 14th of January followed by third chick between the 14th and 18th of January. All chicks were observed healthy throughout the breeding period. The chicks successfully fledged around the 16th of April 2020. They were ringed with code number: 2020-BO-003; 2020-BO-004; and 2020-BO-005 on the 17th of February.



Sponsor (code): Kathleen Hodges (MK)
Nest code: PBA81
Location: Laney Rickman Blue-throated Macaw Reserve

Two adults were observed chewing the entrance cavity on the 20th of November. One adult was a ringed individual. Three eggs were laid by the 30th of December. Two chicks hatched on the 18th of January. On the 21st of January the third and smallest chick was observed dead and removed. Both chicks were observed healthy throughout the breeding period. Both chicks successfully fledged around the 16th of April 2020. They were ringed with code number: 2020-BO-008; and 2020-BO-009 on the 18th of February.



Sponsor (code): Dorothy Paterson in memory of Laney Rickman (LSR)
Nest code: PBA83
Location: Laney Rickman Blue-throated Macaw Reserve

Adult birds were being observed on top of the nestbox on the 31st of January. Two eggs were laid by the 14th of February. Both eggs were observed to be in a bad shape by the 4th of March. We have no data whether the birds were ringed individuals. We expect that both eggs were infertile. Armonía is taken strong measure to avoid disturbance by people during the egg laying period due to frantic escaping of the Macaws from the nests when being flushed, which have broken eggs in the past.

