

Laney Rickman Blue-throated Macaw Reserve

Annual Report – June 2019



Asociación Armonía created a second Blue-throated Macaw Reserve in August 2018, the Laney Rickman Reserve (681ha/1.683ac). This reserve is protecting vital breeding habitat in the Southern subpopulation. The 2018-2019 breeding season was highlighted with the highest ever reproduction result since Armonía started the nest box program. A total of 9 nest boxes were used and 12 Blue-throated Macaw chicks fledged into the wild population. A total of 81 Blue-throated Macaws left Armonía's nest boxes to date.

Project photos can be downloaded from:

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

The creation of Laney Rickman Reserve was supported by:

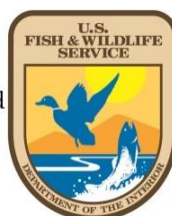


Laney Rickman Reserve 2018-2019 conservation program was supported by:

ARTIS



A grant from the
Neotropical
Migratory Bird
Conservation
Act



1. Laney Rickman Reserve Goals

Our main goals for 2019-2020 to ensure a continuous development and protection of the Laney Rickman Blue-throated Macaw Reserve are:

1. Protect and increase vital breeding habitat for the Blue-throated Macaw
2. Increase nest cavity availability (nest boxes)
3. Establish Visitor/Interpretation Centre for local education
 - Quarterly visits from local schools learning about conservation
 - Establish basic visitor infrastructure (toilets & research dormitory)
4. Create impenetrable firebreaks throughout the reserve
5. Create wildlife friendly fencing around the reserve's perimeter
6. Begin small scale ranching (100 head of cattle) to fulfill governmental requirements
7. Establish a Blue-throated Macaw monitoring protocol
8. Study southern subpopulation Blue-throated Macaw local movement



Blue-throated Macaw (*Ara glaucogularis*): Marton Hardy

2. Reserve Creation

The Laney Rickman Blue-throated Macaw Reserve was established on the 28th of August 2018 to protect the most important breeding habitat of the endemic and Critically Endangered Blue-throated Macaw (*Ara glaucogularis*) southern subpopulation. The reserve measures 681ha/1.683ac and is located in the Loreto municipality, Beni Department, Bolivia (fig. 1).

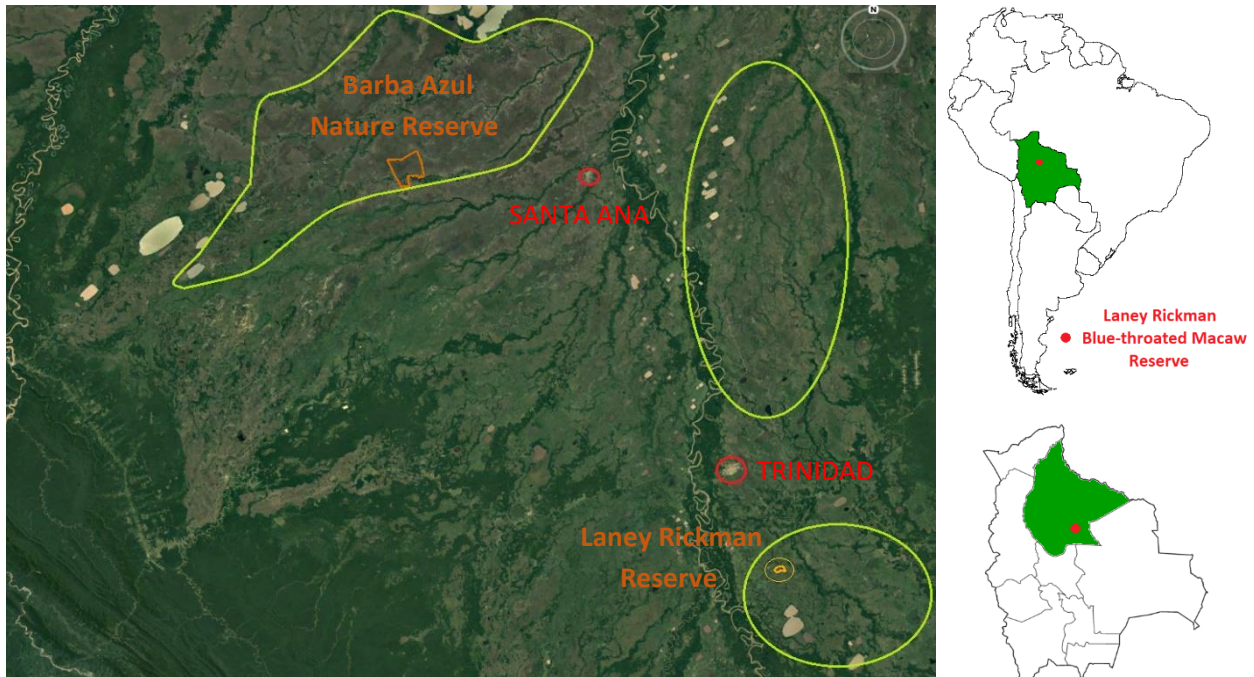


Figure 1. Laney Rickman Blue-throated Macaw Reserve is located 42 kilometers south of Trinidad (Beni department capital), and 213 kilometers southeast of the Barba Azul Nature Reserve (Armonía's first reserve to protect Blue-throated Macaw habitat). Armonía protect vital Blue-throated Macaw habitat in 2 isolated subpopulations (estimated subpopulation range indicated in light green).

With the support from the **Parrot Society UK**, **Van Tienhoven Foundation** and **Susan Hillard**, Armonía was able to kickstart this new Blue-throated Macaw Reserve with many management activities: contracting our new park guard Cesar Flores (world's most knowledge expert on Blue-throated Macaw nest box monitoring) (fig.2), the placement of the "Laney Rickman Reserve sign" (fig.3), patrolling the reserve with our newly purchased quad-bike (fig.4), and helping to gain local support through presenting our conservation actions at municipal and departmental events.



Figure 2. Cesar Flores, Armonía's new park guard for the Laney Rickman Blue-throated Macaw Reserve who has been working for Armonía since 2009. Picture taken by Marton Hardy.



Figure 3. With support from the **Van Tienhoven Foundation** we kickstarted management activities within the Laney Rickman Reserve including the placement of the “Laney Rickman Reserve entrance sign”, thanking the donors who helped purchasing this new reserve. Picture taken by Tjalle Boorsma.



Figure 4. Armonía’s park guard Cesar Flores (left) and Tjalle Boorsma (right) planning patrolling activities with the newly purchased quad-bike (supported by **International Conservation Fund of Canada**, **IUCN-NL**, **Parrot Society UK** and **World Land Trust**). Picture taken by Marton Hardy.

3. Nest box Program (2018-2019 breeding season)

Summary

The 2018-2019 breeding season resulted in the best nest box year ever: highest number of occupied nest boxes (9) and highest number of successfully fledged chicks (12) (table 2). This year's nest box program received support from **ARTIS Amsterdam Royal Zoo, International Conservation Fund of Canada, IUCN-Netherlands** and **Parrot Society UK**. The 12 chicks fledged from 6 different nest boxes, and were all located in the Laney Rickman Reserve. Through Armonía's 14-year nest box program, 81 Blue-throated Macaw chicks successfully fledged into the wild.

A total of 5 breeding birds were confirmed to be ringed individuals, fledged from Armonía's nest boxes in previous years, returning to breed. These are important indicators of increasing population recruitment where fledged birds survive and reproduce, showing the successfulness of this program. The first ringed individuals used our nest boxes in 2015 (for more information watch: <https://www.facebook.com/AFABirds/videos/460776861070056/>).

Also, Armonía created a nest box that stopped competition for breeding cavities between the common and abundant Blue-and-yellow Macaw (*Ara ararauna*) and the endemic Blue-throated Macaw (fig.9). In 2013 we decreased the entrance hole to 10 by 10 cm, preventing Blue-and-yellow Macaws from using them. The 3 Blue-and-Yellow Macaws that did use the nest boxes this year, literary made their own entrance through destroying the walls.



Figure 7. Successfully fledged Blue-throated Macaw chicks in nest box PBA18 (SA1: St Augustine Alligator Farm). The largest chick fledged on the 9th of march, followed by the other two chicks on the 18th of March. Picture taken by Cesar Flores.



Figure 5. Luis Miguel Barbosa (Reserve Coordinator Assistant) installing new nest boxes in the Laney Rickman Reserve for the 2018-2019 breeding season. A total of 10 new nest boxes were placed, 8 refurbished and 60 made ready for the Macaws to occupy. Picture taken by Marton Hardy.

Results 2018-2019 breeding season

A total of 60 nest boxes were prepared (fig.5) for the 2018-2019 breeding season: 43 in Laney Rickman Reserve; 12 in La Cantina ranch; and 5 in Las Trancas ranch. We decided not to prepare nest boxes in the Santa Rosa ranch (low costs benefit) monitored in previous years, due to low success rates in the past and logistical difficulties faced during the rainy season (extreme flooding). Preparation of nest boxes included the placement of 10 new boxes, refurbishing 8 boxes, removing wasp and bee nests and putting timber scrapings in all 60 boxes used for breeding bed.

A total of 20 nest boxes (33% occupancy rate) were used by 6 different birds species (table 1 & annex 1): Blue-throated Macaws (9); Blue-and-Yellow Macaw (3); Chestnut-fronted Macaw (2); White-eyed Parakeet (1); Black-bellied Whistling Duck (6); and an unidentified Woodpecker (1).

Of the 9 occupied nest boxes by Blue-throated Macaws (table 2 & annex 2), 8 were located in the Laney Rickman Reserve (fig. 6) and 1 in the La Cantina ranch. A total of 25 eggs were produced, 15 chicks hatched, of which 12 chicks successfully fledged. A total of 5 breeding individuals were ringed, fledged from Armonía's nest boxes in previous years. Three of the 9 occupied Blue-throated Macaw nest boxes have been used by Blue-throated Macaws in previous years, indicating favorable breeding conditions.

Table 1. Summary of nest box usage by different species in the reproductive period of 2018-2019. A total of 20 nest boxes were used divided over 2 locations (16 in Laney Rickman Reserve & 4 in La Cantina). A total of 2 nest boxes have been used by 2 different species (**more detailed information in annex 1**).

Nest box usage 2018-2019		
Species	Scientific name	# Occupied nest boxes
Blue-throated Macaw	<i>Ara glaucogularis</i>	9
Blue-and-yellow Macaw	<i>Ara ararauna</i>	3
Chestnut-fronted Macaw	<i>Ara severus</i>	2
White-eyed Parakeet	<i>Psittacara leucophthalmus</i>	1
Black-bellied Whistling Duck	<i>Dendrocygna autumnalis</i>	6*
Woodpecker spec.	<i>Picidae spec.</i>	1
*2 nest boxes first occupied by Blue-throated Macaw		

Table 2. Summary of nest boxes used by the Blue-throated Macaw in the 2018-2019 breeding season. A total of 9 nest boxes were occupied, 25 eggs produced, 15 chicks hatched and 12 chicks successfully fledged. This makes 2018-2019 the most successful breeding season since Armonía started the Blue-throated macaw nest box program in 2005. LR is Laney Rickman Reserve (**more detailed information in annex 1 & 2**).

Sponsor (code)	Location	# Eggs	# Chicks	# Fledglings	Observations
St Augustine Alligator Farm (SA6)	LR	2	0	0	2 ringed individuals
Lorrie Mitchell (LM)	LR	3	1	1	1 ringed individual
Brooke Stevens (BS)	LR	3	0	0	2 ringed individuals
Greater Los Angeles Zoo association (LA8)	LR	3	2	2	-
St Augustine Alligator Farm (SA5)	LR	3	3	2	-
St Augustine Alligator Farm (SA1)	LR	3	3	3	-
Kansas City Zoo (KC1)	LR	3	3	2	-
Peninsula Caged Bird Society (PC3)	LR	3	3	2	-
Suzanne Payne (SP)	La Cantina	2	0	0	-
Total		25	15	12	

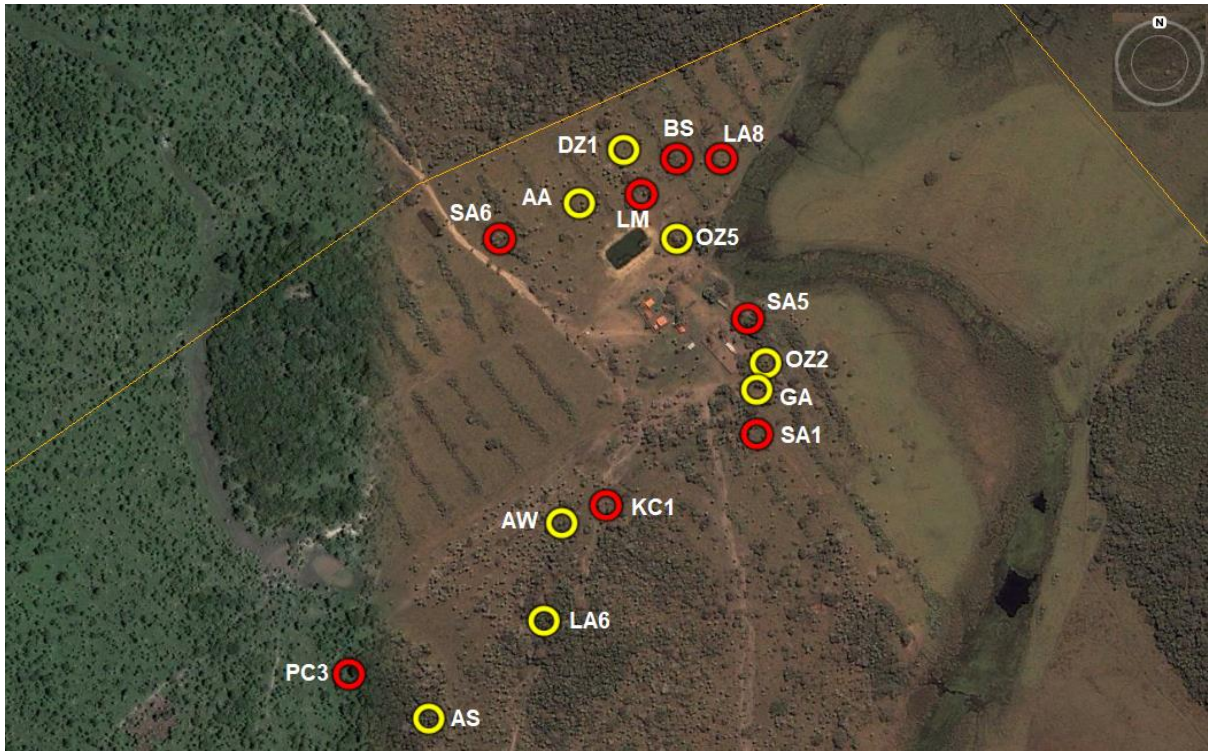


Figure 6. Location of occupied nest boxes in the Laney Rickman Reserve presenting the acronyms of the sponsors. Red indicator points show occupied Blue-throated Macaw nests of which 12 chicks successfully fledged. A total of 4 nest boxes were occupied in the La Cantina property of which 1 nest box was occupied by Blue-throated Macaw but failed (these nest boxes are not indicated in the map).



Long-term results Armonía's nest box program

Armonía's nest box program started 14 years ago through the support from **Loro Parque Fundación** and the **Bird Endowment with the Nidos Adaptivos Program**. In 2005 we placed 20 nest boxes which resulted in a 100% occupancy by a number of bird species including 1 Blue-throated Macaw pair. This clearly indicated limited natural cavity availability as well as the nest boxes being an attractive breeding environment. Since then a total of 55 nest boxes have been used by the Blue-throats. A total of 146 eggs were produced, 99 chicks hatched of which 81 Blue-throated Macaws successfully fledged into the wild (fig. 8).

Our 14-year nest box program showed on average a 31% egg loss (infertile eggs, damaged eggs or predated eggs) and an 11% mortality rate of hatched chicks. Chicks that died in the nest boxes were the smallest chicks often hatched long after the oldest individuals. Little information is available on the survival rate of the fledged birds, but the return of ringed individuals during the 2017-2018 and the 2018-2019 breeding season is a promising indicator demonstrating the success of this program.

Over time, Armonía created a nest box that stopped competition for breeding cavities between the common and abundant Blue-and-yellow Macaw (*Ara ararauna*) and the endemic Blue-throated Macaw. 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. Before 2013 between 15 to 27 nest boxes were occupied by Blue-and-yellows, while after 2013 we reduced it to a maximum occupancy of 3 nest boxes (including years with 0 nest box usage) (Fig. 9).

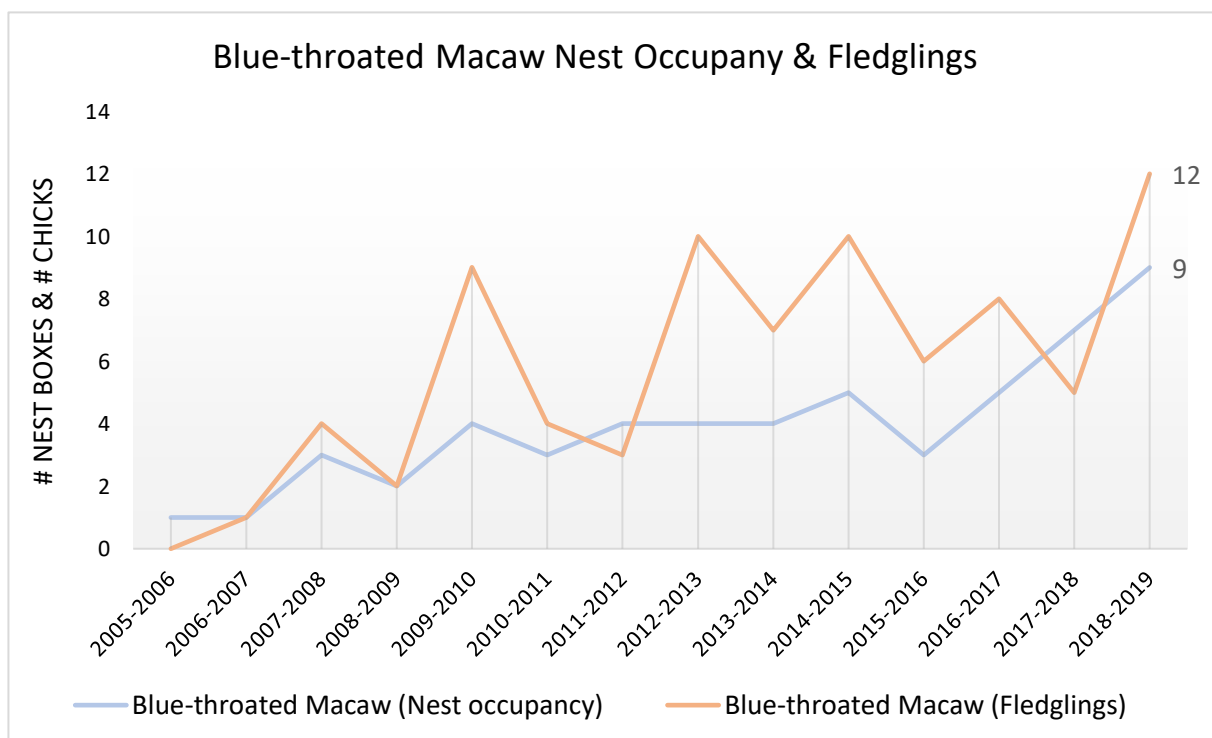


Figure 8. Nest box occupancy of Blue-throated Macaw and number of fledglings presented over the 14 years of Armonía's nest box program. The 2018-2019 breeding season resulted in the highest ever Blue-throated Macaw nest box occupancy (9) and the highest ever number of successfully fledged chicks (12). Over the 14 years, a total of 81 Blue-throated Macaws successfully fledged Armonía's nest boxes

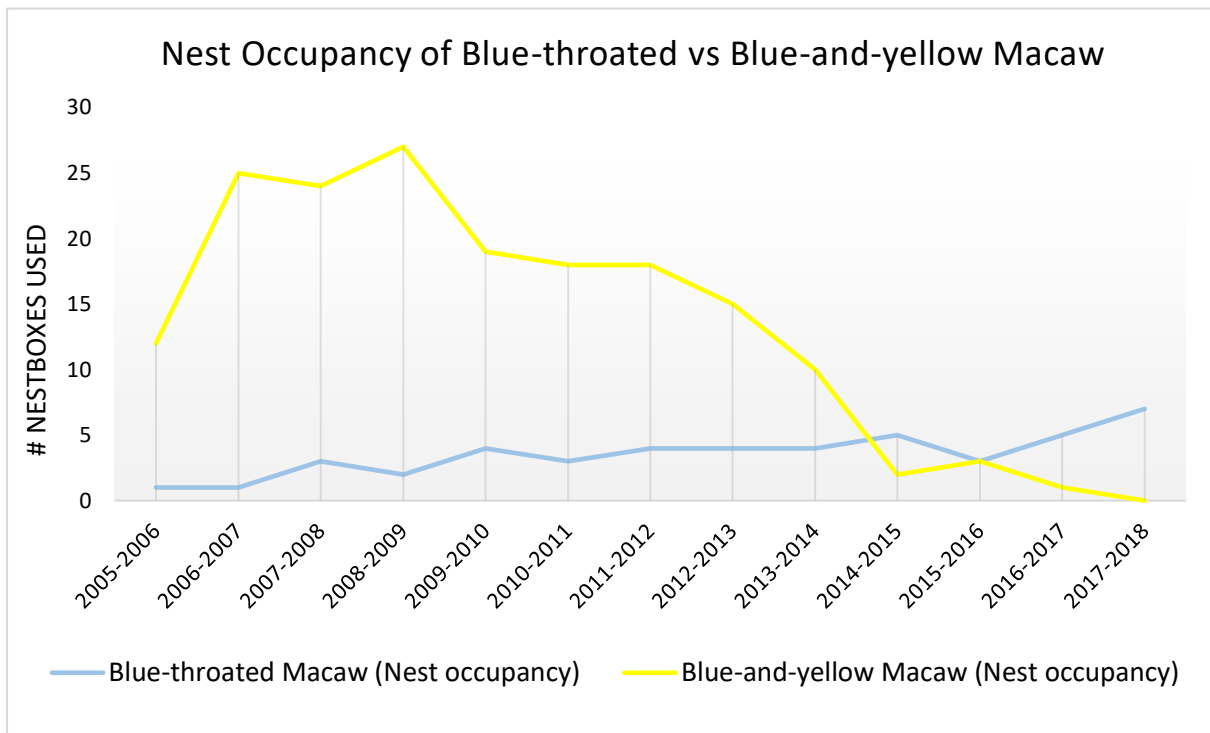


Figure 9. Nest box occupancy of Blue-throated Macaw vs Blue-and-yellow Macaw presented over the 14 years of Armonía's nest box program. Since Armonía started experimenting with entrance size (from 12 by 25cm to 10 by 10cm) between 2013 and 2015, competition between these large macaws significantly dropped.



Blue-throated Macaw breeding pair: Marton Hardy

4. Research

Armonía started the first systematic research in the Laney Rickman Reserve, studying small to medium sized mammal diversity. Alba Fernandez (fig. 10), a graduated master's student from Spain, started her volunteer work in March, overcoming severe flooding conditions and identified 19 different species: 13 identifications through visual encounters and an additional 6 identifications through her tracking study (annex 3). Species like Giant Anteater, Southern Tamandua, Nine-banded Armadillo, Puma and five different monkey species were spotted.

Also, first efforts were made monitoring Blue-throated Macaw abundance and movement patterns. Alba observed a total of 19 individuals in March, flying to their night roost West of the reserve. In May, Rodrigo Soria-Auza together with Luis Miguel Barbosa studied the same site not observing a single individual, while Tjalle Boorsma and Cesar Flores counted 39 birds roosting Southeast of the reserve. These initial results clearly indicate different roosting sites over time and will be further studied to better understand their local movement patterns.



Figure 10. Alba Fernandez Navarro started the first systematic research in the Laney Rickman Reserve, studying small to medium sized mammal diversity. A total of 19 different mammal species were observed including this Crab-eating fox (*Cerdonyon thous*). Picture taken by Alba Fernandez Navarro.

5. 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** and **Audrey Paterson** (Laney's sister and 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 have been 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 costs each year. 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.

THANK YOU ALL SO MUCH FOR YOUR CRITICAL SUPPORT



Blue-throated Macaw in flight: Bennett Hennessey

Annex 1: Summary of nest boxes used

Table 4. Summary of the 20 occupied nest boxes (60 nest boxes in total) in the Laney Rickman Reserve (1 to 16) and La Cantina Ranch (17 to 20) by birds during the 2018-2019 breeding season. The sponsor code column contains the acronym 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 and the last time the nest was occupied by Blue-throated Macaws (BTM) in the past. Nest type indicates the form of nest box (square, hexagonal or octagonal), and tree species indicated to which type of tree the nest box was located. A total of 8 nests were used by Blue-throated Macaws in the Laney Rickman Reserve, 25 eggs and 12 chicks successfully fledged.

#	Sponsor code	Nest code	Historic BTM use	Species	Nest type	Tree species	Description (first egg, chick and fledgling)
1	SA6	PBA 1	0	Blue-throated Macaw	Square	<i>Attalea princeps</i> (Palm)	Eggs: 2 (1 broken 1 bad shape) Chicks: 0 Fledged: 0
2	AA	PBA 4	1 (2013-2014)	Blue-and-yellow Macaw	Hexagonal	<i>Acrocomia aculeata</i> (Palm)	Eggs: 2 (12-11-2018) Chicks: 1 (15-12-2018) PRED Fledged: 0
3	DZ1	PBA 5	0	Chestnut-fronted Macaw	Octagonal	Sujo	Eggs: 3 (30-11-2018) Chicks: 1 (30-12-2018) Fledged: 1 (14-3-2019)
4	LM	PBA 6	1 (2017-2018)	Blue-throated Macaw	Square	<i>Acrocomia aculeata</i> (Palm)	Eggs: 3 (26-12-2018) Chicks: 1 (24-1-2019) Fledged: 1 (19-4-2019)
5	BS	PBA 7	1 (2017-2018)	Blue-throated Macaw	Square	<i>Acrocomia aculeata</i> (Palm)	Eggs: 3 (Infertile) Chicks: 0 Fledged: 0
6	LA8	PBA 8	0	Blue-throated Macaw	Square	<i>Acrocomia aculeata</i> (Palm)	Eggs: 3 (15-12-2018) Chicks: 2 (12-1-2019) Fledged: 2 (12-4-2019)
7	OZ5	PBA 10	0	Chestnut-fronted Macaw	Square	Japunaqui	Eggs: 3 (30-12-2018) Chicks: 1 (19-1-2019) Fledged: 1 (14-3-2019)
8	SA5	PBA 11	0	Blue-throated Macaw	Square	<i>Acrocomia aculeata</i> (Palm)	Eggs: 3 (12-11-2018) Chicks: 3 (8-12-2018) Fledged: 2 (6-3-2019)
9	OZ2	PBA 12	(2017-2018)	White-eyed Parakeet	Square	<i>Acrocomia aculeata</i> (Palm)	Eggs: 3 eggs (20-02-2019) PRED
10	GA	PBA 14	0	Black-bellied Whistling Duck	Square	<i>Acrocomia aculeata</i> (Palm)	Eggs: 25 eggs (14-03-2019)
11	SA1	PBA 18	0	Blue-throated Macaw	Square	<i>Acrocomia aculeata</i> (Palm)	Eggs: 3 (26-11-2018) Chicks: 3 (15-12-2018) Fledged: 3 (9-3-2018)
12	KC1	PBA 20	0	Blue-throated Macaw	Square	<i>Acrocomia aculeata</i> (Palm)	Eggs: 3 (12-12-2018) Chicks: 3 (4-1-2019) Fledged: 2 (22-3-2019)
13	AW	PBA 21	2 (2017-2018)	Blue-and-yellow Macaw	Square	<i>Acrocomia aculeata</i> (Palm)	Eggs: 3 (3 eggs 19-01-2019) PRED Chicks: 0
14	LA6	PBA 25	0	Black-bellied Whistling Duck	Square	<i>Attalea princeps</i> (Palm)	Eggs: 20 (20-2-2019)
15	AS	PBA 27	0	Blue-and-yellow Macaw	Square	<i>Attalea princeps</i> (Palm)	Eggs: 3 (3 eggs 19-01-2019) BROKEN Chicks: 0
16	PC3	PBA 31	2 (2017-2018)	Blue-throated Macaw	Square	<i>Acrocomia aculeata</i> (Palm)	Eggs: 3 (17-11-2018) Chicks: 3 (6-12-2018) Fledged: 2 (19-2-2019)

#	Sponsor code	Nest code	Historic BTM use	Species	Nest type	Tree species	Description (first egg, chick and fledgling)
17	#1	PBA 45	(2017-2018)	Black-bellied Whistling Duck	Square	<i>Attalea princeps</i> (Palm)	Eggs: 13 (30-3-2019)
18	KC4	PBA 47	1 (2011-2012)	Black-bellied Whistling Duck	Square	<i>Attalea princeps</i> (Palm)	Eggs: 25 (21-2-2019)
19	LA5	PBA 49	0	Woodpecker spec.	Square	<i>Attalea princeps</i> (Palm)	Eggs: 3 (3-1-2019) Chicks: 2 (20-01-2019) PRED Fledged: 0
20	S6	PBA 55	0	Blue-throated Macaw	Square	Cuchi	Eggs: 2 (1 PRED & 1 Infertile) Chicks: 0 Fledged: 0

Annex 3: Description of nest boxes used by Blue-throated Macaws

Sponsor code: St Augustine Alligator Farm (SA6)

Nest code: PBA1

Location: Laney Rickman Blue-throated Macaw Reserve

Two eggs were laid by the 12th and 26th of November. Adult bird was being observed on top and in the nest box. Both adults were ringed individuals. By January 31st one egg was in a bad shape (decomposing) and the second egg was broken. This nest was re-occupied by Black-bellied Whistling Duck on the 20th of February 2019 (28 eggs). As these birds were young individuals (ringed), we expect failure to be related to bad parenting and often take several attempts before success. 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.

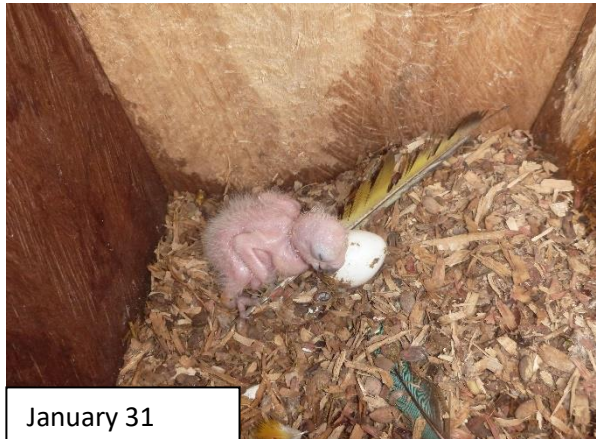


Sponsor code: Lorrie Mitchell (LM)

Nest code: PBA6

Location: Laney Rickman Blue-throated Macaw Reserve

Two eggs were initially laid by the 26th of December followed by a third egg around the 30th of December. One adult was a ringed individual. One chick was hatched by the 24th of January 2019 and the other two eggs turned out to be infertile. No complications were further witnessed and the chick successfully fledged on the 19th of April 2019. It was ringed with code number: 2020-BO-001.



Sponsor code: Brooke Stevens (BS)

Nest code: PBA7

Location: Laney Rickman Blue-throated Macaw Reserve

Two eggs were initially laid by the 15th of December followed by a third egg around the 26th of December. Both adults were ringed individuals. By January 12th, one egg was in a bad shape (decomposing) and by January 16th the nest was abandoned. As these birds were young individuals (ringed), we expect failure to be related to bad parenting and often take several attempts before success.



Sponsor code: Greater Los Angeles Zoo association (LA8)
Nest code: PBA8
Location: Laney Rickman Blue-throated Macaw Reserve

One egg was initially laid by the 15th of December followed by two more eggs around the 26th of December. One was chick hatched by the 12th of January and the second around the 16th of January. The third egg was found in a bad shape (decomposing). The largest chick was observed with a Botfly larva above his beak but caused no harm. The chicks successfully fledged on 12th and 14th of April 2019. They were ringed with code number: 2019-BO-010 and 2020-BO-002



Sponsor code: St Augustine Alligator Farm (SA5)
Nest code: PBA11
Location: Laney Rickman Blue-throated Macaw Reserve

One egg was initially laid by the 12th of November followed by two more eggs around the 26th of November. Two chicks were hatched by the 8th of December and the third chick around the 12th of December. The youngest chick was malnourished and was found dead by the 18th of December. No complications were witnessed and the chicks successfully fledged on the 6th of March 2019. They were ringed with code number: 2019-BO-003 and 2019-BO-004. This nest was re-occupied by Black-bellied Whistling Duck on the 29th of March 2019 (21 eggs).



Sponsor code: St Augustine Alligator Farm (SA1)
Nest code: PBA18
Location: Laney Rickman Blue-throated Macaw Reserve

Three eggs were laid by the 26th of November. Two chicks were hatched by the 15th of December and the third chick around the 21st of December. No complications were witnessed and one chick successfully fledged on the 9th of March followed by the other two chicks on the 18th of March 2019. They were ringed with code number: 2019-BO-005, 2019-BO-006, and 2019-BO-007.



Sponsor code: Kansas City Zoo (KC1)
Nest code: PBA20
Location: Laney Rickman Blue-throated Macaw Reserve

Three eggs were laid by the 12th of December and were all hatched by the 4th of January. The smallest chick was malnourished and was found dead by the 16th of January. No further complications were witnessed and both chicks successfully fledged on the 22nd of March 2019. They were ringed with code number: 2019-BO-008 and 2019-BO-009.



Sponsor code: Peninsula Caged Bird Society (PC3)
Nest code: PBA31
Location: Laney Rickman Blue-throated Macaw Reserve

Three eggs were laid by the 17th of November and were all hatched by the 6th of December. The smallest chick was malnourished and was found dead by the 12th of December. No further complications were witnessed and one chick successfully fledged on the 19th of February followed the second chick on the 20th of February 2019. They were ringed with code number: 2019-BO-001 and 2019-BO-002.



Sponsor: Suzanne Payne (SP)
Nest code: PBA55
Location: La Cantina

Two eggs were laid by the 21th of February 2019. This is the latest observed clutch in the 2018-2019 breeding season. The adult bird was observed on the nest until the 15th of March. By the 30th of March, one egg was found in a bad shape (decomposing) and the second egg was no longer present and possibly predated. No adult activity was further observed.



Annex 3: Mammal list Laney Rickman Reserve

Table 5. Mammal list Laney Rickman Reserve based from first systematic research in March 2019.

# Species	English Name	Scientific Name	Abundance Level
1	Nine-banded Armadillo	<i>Dasypus novencinctus</i>	Common
2	Yellow Armadillo	<i>Euphractus sexcinctus</i>	Uncommon
3	Giant Anteater	<i>Myrmecophaga tridactylia</i>	Uncommon
4	Southern Tamandua	<i>Tamandua tetradactyla</i>	Uncommon
5	Brown Capuchin Monkey	<i>Cebus libidinosus</i>	Common
6	Azara's Night Monkey	<i>Aotus azare</i>	Common
7	Titi Monkey	<i>*Callicebus sp.</i>	Common
8	Black Howler Monkey	<i>Alouatta caraya</i>	Common
9	Red Howler Monkey	<i>Alouatta sara</i>	Fairly Common
10	Crab-eating Fox	<i>Cerdocyon thous</i>	Fairly Common
11	Feline spec.	<i>*Leopardus sp.</i>	Uncommon
12	Puma	<i>Puma concolor</i>	Uncommon
13	Crab-eating Raccoon	<i>Procyon cancrivorus</i>	Uncommon
14	Collared Peccary	<i>Pecari tajacu</i>	Fairly Common
15	Gray Brocket Deer	<i>Mazama guazoubira</i>	Fairly Common
16	Spotted Paca	<i>Cuniculus paca</i>	Uncommon
17	Brown Agouti	<i>Dasyprocta punctata</i>	Fairly Common
18	Brazilian guinea pig	<i>Cavia aperea</i>	Uncommon
19	Capybara	<i>Hydrochaeris hydrochaeris</i>	Common