

## Barba Azul Nature Reserve Annual report 2020



In November 2020, through years of effort, Bolivia declared **Barba Azul Nature Reserve** a **Private Natural Heritage Reserve**. We can now dedicate our activities purely to protect nature without the threat that we have to justify why this is important. This protective status helps to protect the most vulnerable species and benefits wildlife that has long been absent from the region.

As Barba Azul habitat improves, more species arrive to take advantage of this offering like the South American Tapir (*Tapirus terrestris*), observed by Teodoro Camacho in September.

Conservation and development of the Barba Azul Nature Reserve in 2020 is supported by:



ARTIS



A grant from the  
Neotropical  
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Act



Project photos can be downloaded from:

[www.flickr.com/photos/128583429@N05/albums/72157657123371838](https://www.flickr.com/photos/128583429@N05/albums/72157657123371838)

## Summary

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It is impossible to think of the year 2020 without the context of the COVID-19 pandemic. Bolivia responded with a dramatic shutdown where for most of the year travel was seriously restricted. But given the crisis and Bolivian ingenuity, we were able to continue to safely protect Barba Azul and the Blue-throated Macaws, and we managed to advance on many of our projects.

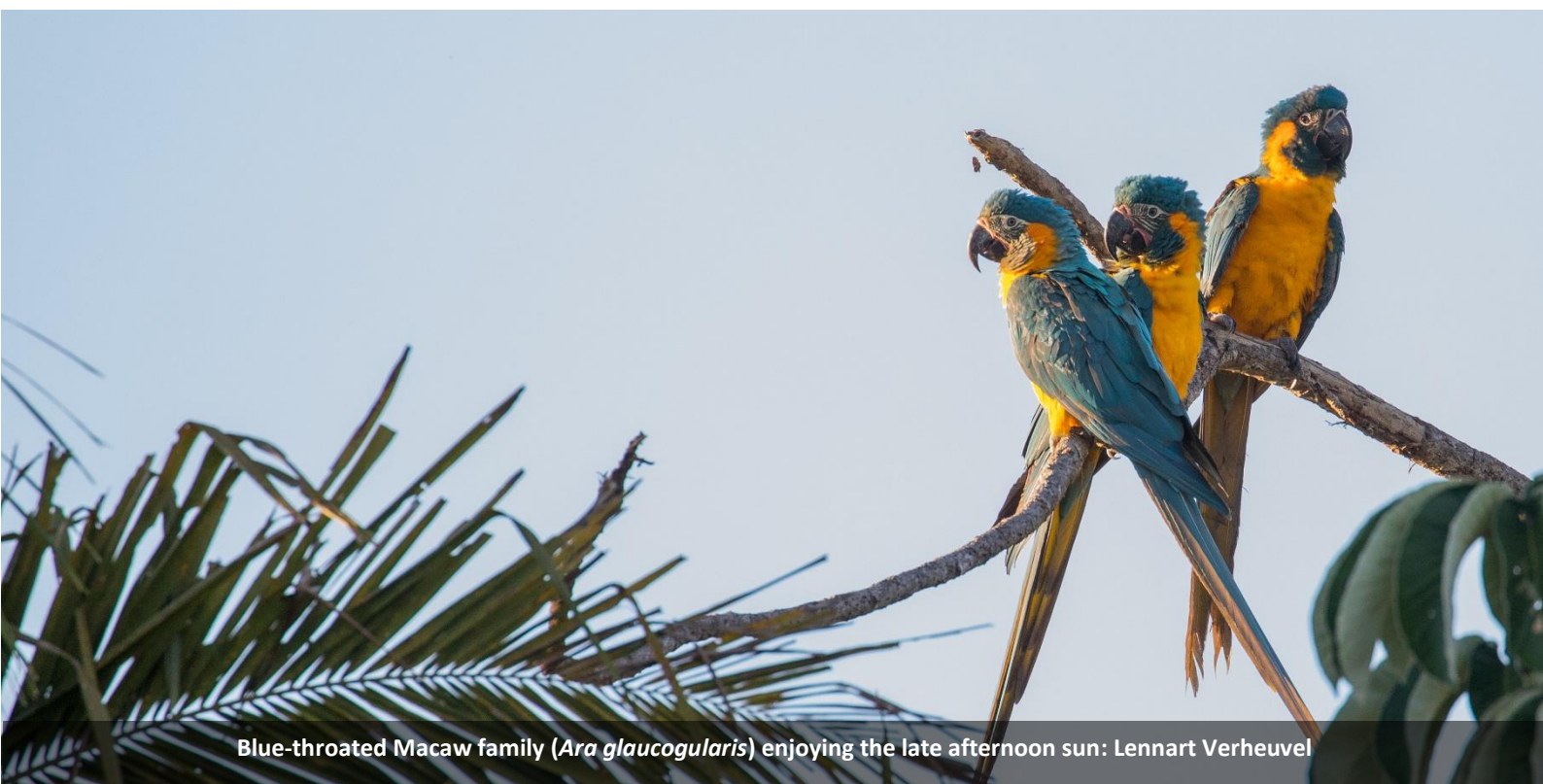
Armonia succeeded to have the Barba Azul Nature Reserve declared a Private Natural Heritage Reserve (RPPN) after a decade long struggle. This is the first RPPN in the Beni savannas protecting vital habitat for the Critically Endangered Blue-throated Macaw. This endemic parrot was only declared a National Heritage Species protected under national law in 2014.

We were able to maintain our firebreaks, compartmentalizing a potentially very dangerous fire caused by a rare electric storm. Eight penthouse nestboxes were established with another 10 to be raised early 2021. The Barba Azul East section has increased our eco-friendly cattle herd to 383, 40% of our goal. In order to better understand wildlife impact and Motacu Palm regeneration, all exclusion zone fencing material is at Barba Azul and will be established early 2021. And a team of 5 biologists monitored the Buff-breasted Sandpiper in September, with impressive results. With restricted travel, our tourism development plans and some research plans had to be put on hold until 2021.

This year was also highlighted by the discovery of new Blue-throated Macaw breeding sites and understanding the migration from Barba Azul to their nesting grounds. We discovered 10 nests, 3 previously unknown breeding sites, found 100 birds and confirmed breeding requirements to be tall dead Moriche palms as a nesting tree near Motacu palms as an easy food source.

We thrive to manage the natural tall-grass savanna with livestock for threatened grassland birds (Cock-tailed Tyrant, Black-masked Finch & Sharp-tailed Tyrant) and long-distance migratory shorebirds (Buff-breasted Sandpiper & Upland Sandpiper). This year was marked with a daily high-count of over 300 Buff-breasted Sandpipers in sites correlated to grazing livestock.

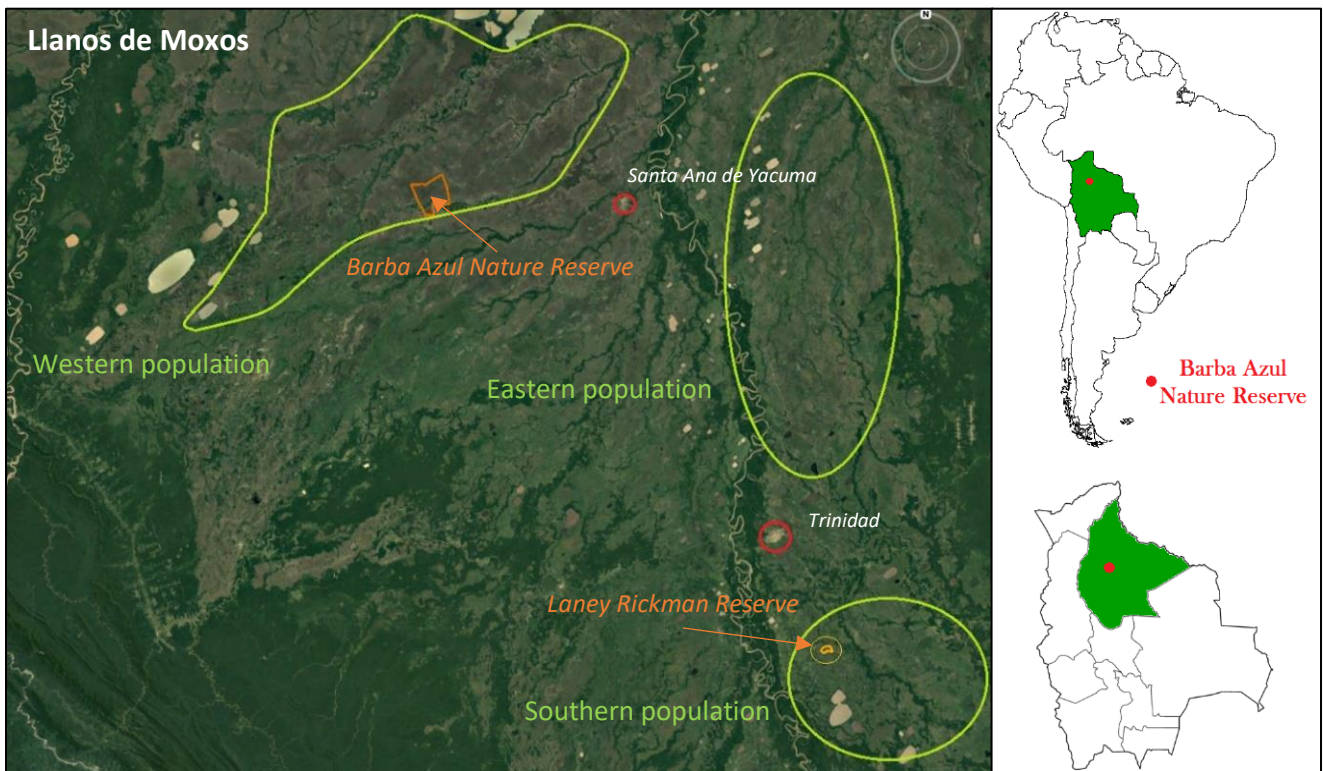
**Please watch our Barba Azul video update on 2020 management results [HERE](#)**



Blue-throated Macaw family (*Ara glaucogularis*) enjoying the late afternoon sun: Lennart Verheuel



## Barba Azul Nature Reserve



**Figure 1.** Light green lines indicate Blue-throated Macaw subpopulation ranges. The Barba Azul Nature Reserve is located in the western population, 75 kilometers west of Santa Ana de Yacuma and 213 kilometers northwest of the Laney Rickman Blue-throated Macaw Reserve. Armonía protects vital Blue-throated Macaw habitat in 2 isolated subpopulations.



**Figure 2.** The Barba Azul Nature Reserve is divided into two main land-use zones: Barba Azul (5,000 ha; 12,350 ac) designated for pure conservation and declared Private Natural Heritage Reserve (RPPN); Barba Azul East (6,000 ha; 14,820 ac) where 40% is designated for sustainable cattle ranching for species and habitat conservation.



Edson Lopez (Ranching Coordinator)



Luis Miguel Ortega (Assistant Reserve Coordinator)



Luis Enrique (Livestock Manager)



Suzanne Vargas (Tourism Coordinator)



Tjalle Boorsma & Bennett Hennessey (Program Director & Development Director)



Jesus Teco (Interim Park Guard)



## Barba Azul Nature Reserve 2020 goals

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Our main goals for 2020 to ensure the continual development of Barba Azul Nature Reserve:

1. Complete raised firebreak system with backburns (Barba Azul North & South)
2. Improve and create Blue-throated Macaw breeding habitat (penthouse nestboxes)
3. Barba Azul Nature Reserve declared Natural Heritage Private Reserve
4. Complete cattle ranching infrastructure (Barba Azul East)
  - Complete worker house, deposit area and roofed tractor parking
  - Complete corral improvements (gathering pens & gates)
  - Establish a total herd of 1,000 head of cattle
5. Fenced exclusion zones in regeneration deprived forest systems
6. Complete trail signage and create Barba Azul hiking map
7. Buff-breasted Sandpiper research
  - Migration monitoring
  - Cattle stocking rate experiment studying foraging habitat preference
8. Research
  - Continue savanna habitat research
  - Camera trap monitoring of each habitat type



Giant Anteater with her progeny carried along on her back: Teodoro Camacho

## Barba Azul 2020 Results

Barba Azul Nature Reserve is part of Armonía's large scale conservation program to protect the endemic and Critically Endangered Blue-throated Macaw and its habitat, deep in the heart of the Beni Savanna ecoregion. The reserve is extremely isolated and only accessible over land during the dry season (July to November). The COVID-19 pandemic and strict lockdown regulations prevented traveling to Barba Azul for 7 months for staff based in Santa Cruz de la Sierra. Luckily, our staff based in the department of Beni, were able to travel to Barba Azul from Trinidad in August to start coordinating key protection activities. But given the crisis we managed to advance on many of our projects and goals.

### Goal 1 - Complete raised firebreak system with backburns

We were able to improve our fire management systems with equipment, and maintained firebreaks, but due to COVID-19 travel restrictions we could not create a raised firebreak system. Through World Land Trust support, we purchased important firefighting equipment. In order to quickly respond to fire, we now have a trailer with a 1,000-liter tank, water pump and spray mechanism. This trailer can be attached to the back of our quadbike to drive it to all corners of the reserve. We purchased protective clothing, a drip torch for controlled burning and a leaf blower to direct and suffocate fire. This is important equipment to control and quickly manage fires in tall grass savanna.



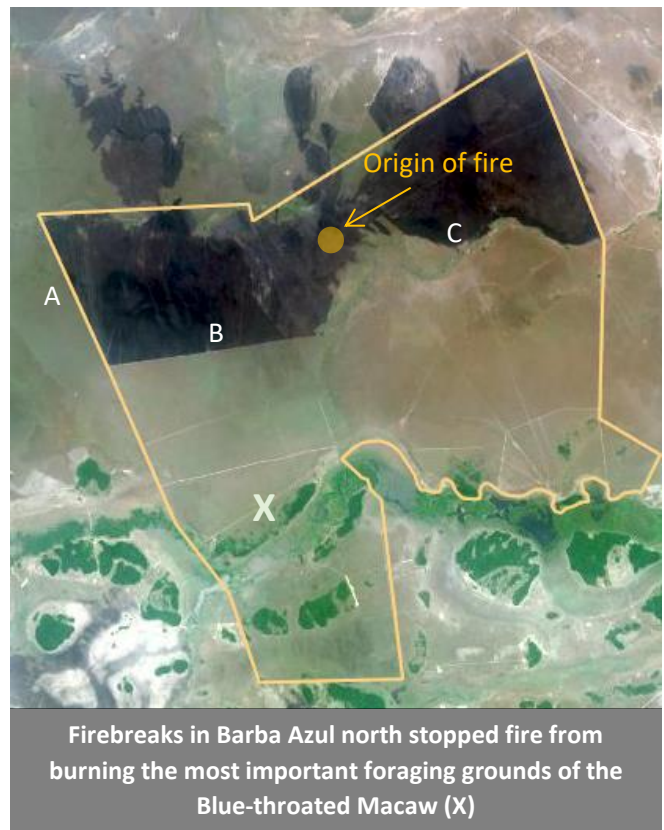
Training on how to use our new firefighting trailer with pump and spray mechanism: Guido Saldaña



A total of 24.4 kilometers of firebreak have been maintained and improved in Barba Azul in August before the start of the fire season. These northern firebreaks are the main priority as the prevailing winds are from the north-west. Our key objective is to protect important Blue-throated Macaw foraging forests. Also, in Barba Azul North, tall grass is abundant as we have been controlling fires since 2016. Due to the quarantine restrictions, we were not able to create a backburn system firebreak. We are postponing expert firefighter training until 2021. Preferably backburns are created in June when soil conditions are still moist.

On September 7<sup>th</sup> a fire originated within Barba Azul East caused by lightning. Soil conditions in the northern section of Barba Azul remain soft and moist until late in the dry season, complicating the development of firebreaks.

The maintained firebreak A and B blocked the fire from reaching the important Blue-throated Macaw foraging Motacu Palm island “Barba Azul” (X) and crossing to neighboring ranches. Firebreak C, the Tiniji river, a natural firebreak, prevented the burning of southern grassland which would also be for cattle grazing. Each year we have been learning how to improve the firebreaks. We need to create raised firebreaks in the northern section of Barba Azul to control fire in the most difficult section of the reserve. We will be seeking support to carry out these activities.



Marsh Deer are clearly not shy to also roam the Barba Azul forest in contrary to their name: Asociación Armonía



## Goal 2 - Improve and create Blue-throated Macaw breeding habitat

A total of 8 penthouse nestboxes have been raised and through the support from ARTIS Zoo, an additional 10 penthouse nestboxes have arrived in Barba Azul and will be put up by early 2021. It is again an exciting year to see whether the Blue-throated Macaws will breed and occupy for the first time ever Armonía's penthouse nestboxes. Luis Miguel has observed a Blue-throated Macaw pair on top of one of the nestboxes almost on a daily basis. Also, a pair of Blue-and-yellow Macaws have been observed checking out this new type of breeding site. Maybe the Blue-and-yellow Macaw can trigger the Blue-throats to use them as well. We are experimenting with placing a second opening in the roof of the nestbox mimicking their natural nests with the preferred 2 entrances (top and side opening). The top opening will also allow the macaws to comfortably sit on top of the nestbox.



New technique to quickly raise penthouse nestboxes with our tractor and soil scraper: Luis Miguel Ortega

## Goal 3 - Barba Azul Nature Reserve declared Natural Heritage Private Reserve

Bolivia declared Armonía's Barba Azul Nature Reserve a Private Natural Heritage Reserve in October 2020. The creation of the nationally recognized private reserve is the result of decades of work by Armonía to have the Blue-throated Macaw nationally recognized. This began in 2003 with our intensive Blue-throated Macaw pride campaign run for years in the Beni, and includes our nationwide illegal trade campaign.

In 2014, the national Bolivian government declared the Blue-throated Macaw a Natural Heritage species, and now, after 9 years of our diligent work, Bolivia has declared the first Natural Heritage reserve for the Blue-throated Macaw. This declaration was no easy endeavor. It has been nine years since the last Private Heritage Reserve was declared in Bolivia and this is the first declaration in the Beni department. The declaration means that we no longer need to prove that the area is important to protect nature. It has been accepted, so now we can do everything possible to protect nature without having to worry about justifying our activities. We have been accused many times of wasting good cattle foraging land, but now the government has declared its value is the protection of nature.



#### Goal 4. Complete cattle ranching infrastructure (Barba Azul East)

We have made significant progress in increasing the Barba Azul Nature Reserve livestock herd (40% of our goal met) but are still seeking support to modernize the Barba Azul East ranch.

We need to realistically find a sustainable way to pay for the protection of Barba Azul. One compromise we have found is to allow controlled, low impact grazing on one section of the reserve. Grazing cattle using a “best practices” model will allow us to protect the grassland ecosystem and its biodiversity, and generate funding for reserve protection. We will create a model cattle ranch, where we can show other ranchers’ ways to run cattle and protect important habitat for wildlife (please see the [LINK](#) for more information).

Barba Azul’s ranching for conservation program is developing well. We have sold 79 bulls from the 137 purchased in 2019 with a profit margin of 15%. With the profit we purchased again 75 steers (one-year old bulls) and used 17% to cover ranching expenses. We are extremely pleased that significant progress has been made to increase Armonía’s reproductive herd thanks to Anne Lambert and Tom Welch, American Bird Conservancy and Birdlife International. The Barba Azul herd will have 383 cattle by early 2021. In order to have an economically viable ranching system for our “best practices” and “model ranch” plans we need to have 880 cattle. We will be fundraising for the remaining US\$ 285,000 in 2021 with a “Cows for Conservation” campaign.

Recently approved law changes now allow 83% of the Beni natural savanna habitat to be ploughed and used for agriculture (soya and rice production). We believe that the promotion and implementation of sustainable ranching is key to counter large-scale land conversion. With eco-friendly ranching you can maintain nearly all biodiversity, while agriculture affects over 90% of all biodiversity. It sounds strange, but for the Beni savannas eco-friendly cattle ranching is really a conservation tool.

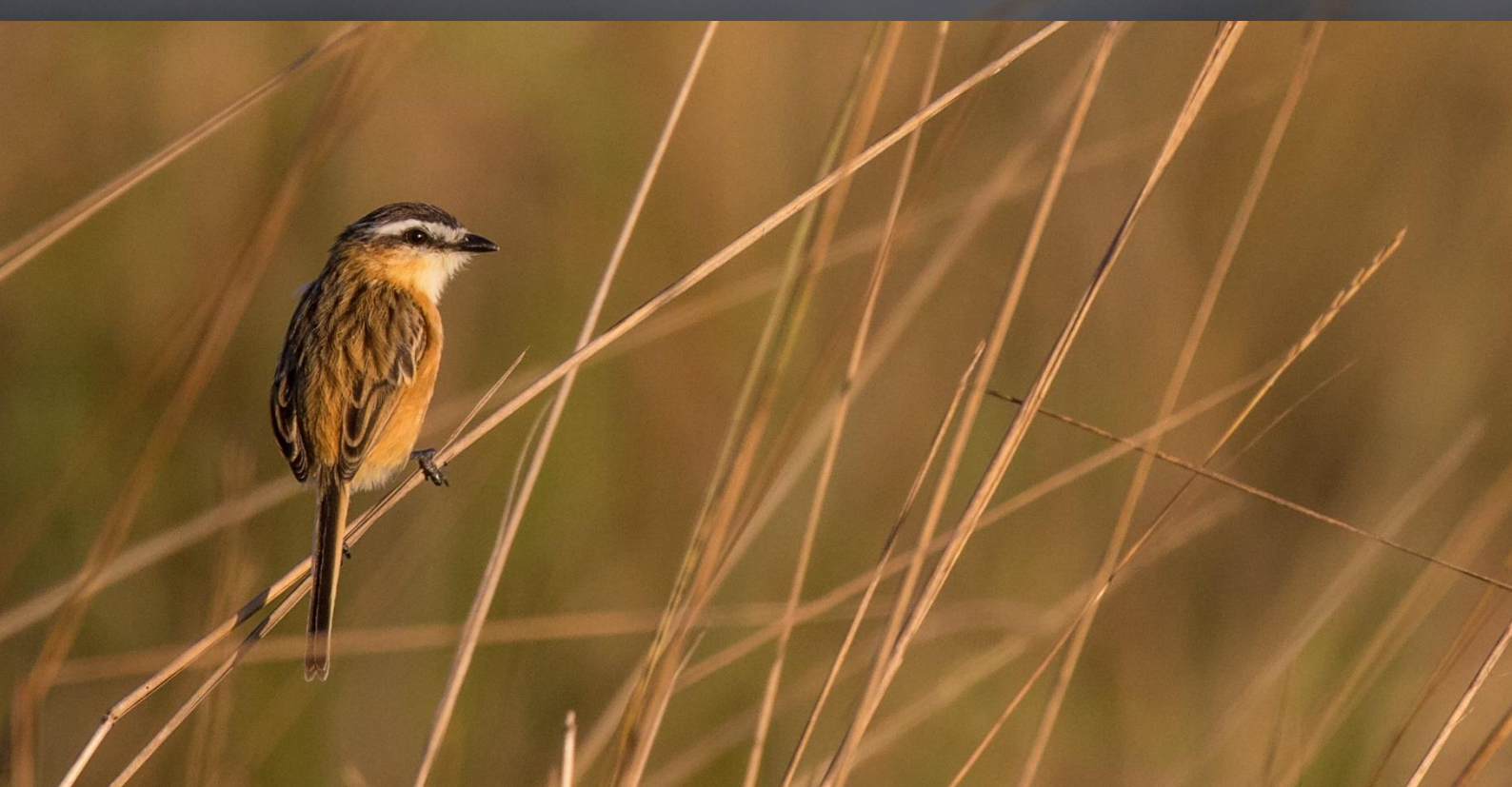


Reproductive livestock arrived in Barba Azul meeting the reserve sustainability strategy: Edson Lopez





Barba Azul threatened grassland birds: Black-masked Finch (top), Cock-tailed Tyrant (middle) & Sharp-tailed Tyrant (bottom):  
Lennart Verheuvell





### Goal 5 - Fenced exclusion zones in regeneration deprived forest systems

All fencing material has arrived in Barba Azul and fencing will be put up in early 2021. Sadly, due to the COVID-19 pandemic on-ground activities like exclusion fencing within Barba Azul have been postponed as staff was only able to start project activities in August. Thanks to David and Patricia Davidson we will place 4 exclusion zones in cerrado forest habitat and fence 2 small motacú dominated forest islands to study best management measures to restore regeneration deprived forest systems.

Motacu Palms are being decimated in the Beni Savannas due to unsustainable cattle impact (see video [HERE](#)). The Motacu palm fruit is the main nutrient source for macaws in the region. We fenced and reforested small Motacu forest islands in the Tiniji area of Barba Azul East in 2016. Monitoring these fenced and cattle free forest islands, it became apparent that not only cows, but also natural herbivores like capybaras were grazing on these newly planted and germinating Motacu trees. It might be the case that without jaguars the capybara population is too high for the environment.

We will create exclusion zones with chain link fencing at two Motacu forest islands (Isla Maneche at Barba Azul South & Isla Bajio at Omi River) to prevent all wildlife from entering and study the impact of wildlife on the recuperation of Motacu. We are searching for a method to offer to private ranchers in the Beni, so that they can easily block of a part of their forest islands to allow Motacu Palm tree regeneration



Motacu dominated forest islands in vast open savanna habitat in need to be protected to secure tree regeneration: Tjalle Boorsma



### Goal 6 - Complete trail signage and create Barba Azul hiking map

For 2020 we had 8 prebooked group visits that had to “postpone” their trip. Basically, everything tourism related had to be put on hold for 2020. That said, we did receive support from International Conservation Fund of Canada to complete the tourism infrastructure for the Barba Azul cabins and dining facility as well as improving minor details to make the lodge neat and tidy. Eight comfortable Muskoka chairs, 4 tables and 4 seats for the cabins have been custom made and are stalled in Santa Cruz until we can travel again over land to Barba Azul.



Barba Azul will open its doors for tourism business in May 2021: Bennett Hennessey (*top & bottom*)





### Goal 7 - Buff-breasted Sandpiper Research

Though the long-term support from the US Fish and Wildlife Service's Neotropical Migratory Bird Conservation Act (NMBCA) program, Armonía's shorebird monitoring continued to survey long distance migratory shorebirds. A team of 5 experts surveyed Buff-breasted Sandpipers and other shorebirds for 30 days (all of September) at 5 different location within the reserve. They have gathered not only data on presence/absence of shorebirds, but also gathered environmental factors to better understand shorebird foraging preference at specific sites (grass lengths, presence/absence of livestock, number of dung piles, distance to forest, grass cover, etc). This year was marked with a daily high-count of over 320 Buff-breasted Sandpipers in sites correlated to grazing livestock. Comparing cumulative daily observations between 2014 and 2020, this year counted the second largest number of Buff-breasted Sandpipers resting and foraging within Barba Azul.

This is also the first year we observed Buff-breasted Sandpipers in large numbers in recently burned tall-grass savanna. This foraging behavior was known for Upland Sandpipers but not observed for Buff-breasted Sandpipers in Barba Azul. We are also witnessing a direct competition for food with Chimango Caracara (*Milvago chimango*), Great Kiskadees (*Pitangus sulphuratus*) and Chopi Blackbird (*Gnorimopsar chopi*).



Buff-breasted Sandpipers have arrived in Barba Azul for a quick stopover on their southbound migration: Teodoro Camacho



Buff-breasted Sandpipers foraging in recently burnt tall-grass savanna: Teodoro Camacho

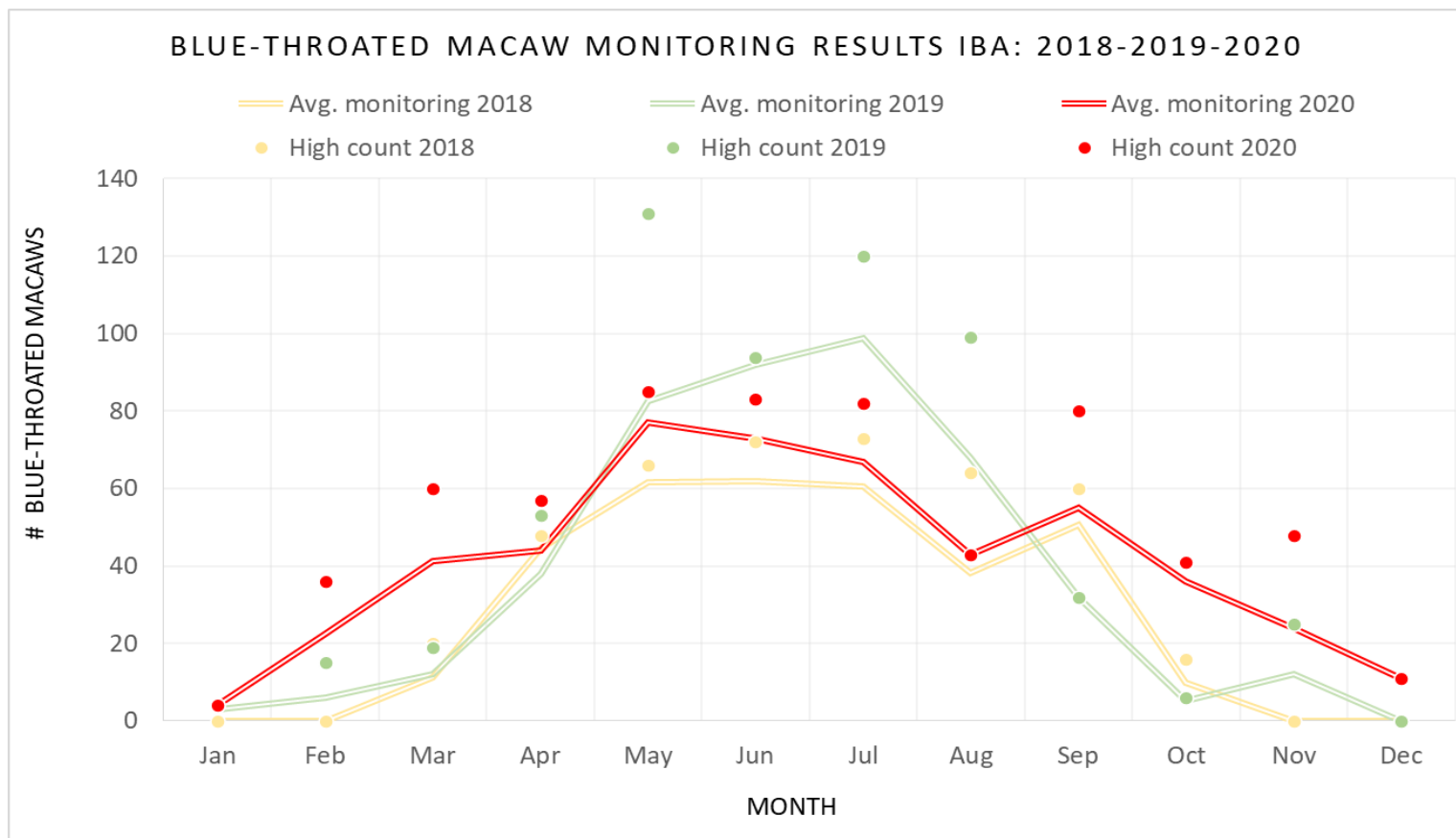


### Goal 8 – Research: Barba Azul Nature Reserve Blue-throated Macaw monitoring results

Armonia has gathered weekly systematical Blue-throated Macaw observation data for almost three years and in presented in figure 3. This species has a very peculiar behavior of gathering daily between 17:00 and 18:20 at the tip of their main foraging forest island before they are flying to their roosting site. When they gather, it is hard to count the birds. But little by little small groups will fly to their roost over the open savanna habitat, so they can be counted easily.

Luis Miguel Ortega and Jesus Teco have both been monitoring Blue-throated Macaws during the dry season (July-December) and discovered something very interesting. Many macaws are now spending the night at Isla Barba Azul where the macaws forage during the day. This is a new pattern and has not yet been observed in the past. It is great, because Isla Barba Azul is one of the best protected forest islands. But at the same time makes monitoring extremely difficult. Therefore, July, August and September so show somewhat low average numbers of macaws, but is based on low counts as macaws that stayed overnight at Isla Barba Azul were not counted. September however did show a high-count peak of 80 individuals and is the highest count for September at Isla Barba Azul.

We also observed larger numbers of Macaws staying within Barba Azul at the start of the rainy season (October-December) in comparison to previous years. In this period, they usually migrate to their breeding grounds. Is this because they are aware of potential breeding sites within the reserve?



**Figure 3.** Blue-throated Macaw monitoring results from 2018, 2019 and 2020, systematically collected at Isla Barba Azul in the Barba Azul Nature Reserve. The colors lines represent average Blue-throated Macaw numbers per month for the given years based on weekly Blue-throated Macaw monitoring. Dots represent the highest single count per month for the given years (yellow 2018; green 2019; red 2020).



### **Additional success: Search expedition finds unknown Blue-throated Macaw nesting sites**

Armonía's latest expeditions to study the Bolivian endemic Blue-throated Macaw in February 2020 have produced important species behavior and ecology discoveries. Three teams of Blue-throated Macaw experts set out to find unknown breeding sites of the northwestern subpopulation.

We discovered 10 nests of this Critically Endangered Macaw, 3 previously unknown breeding sites and confirmed approximately 100 macaws remain in the northern region during the rainy season (beyond the Barba Azul Nature Reserve). This is a tremendous result, as previously only 5 nests were known for the northern population, discovered by Armonía in 2017. We confirmed breeding requirements appear to be tall dead Moriche palms as a nesting tree, but they must be near Motacu palms as an easy food source.

All nests were found within a radius of 2.7 kilometers from the nearest motacú palm stand. Three Armonía teams completed a search through 26 ranches (survey area ~307 km<sup>2</sup>) of 566 km on horseback through flooded savanna from February 4<sup>th</sup> to March 17<sup>th</sup> 2020. During the project period, a total of 35 ranches owned by 29 ranchers were visited of which 21 received the best practices ranching booklet promoting eco-friendly cattle management. We created 254 ha of fire free breeding grounds where we discovered breeding Blue-throated Macaws in 2017. Please read more about this study and future plans [HERE](#).



Blue-throated Macaw pair discovered breeding in February 2020 in Moriche palm: Tjalle Boorsma



## Barba Azul Nature Reserve 2021 Goals

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In 2021, Armonía continues the successful Blue-throated Macaw conservation program in three main areas: 1) Barba Azul Nature Reserve, 2) Laney Rickman Blue-throated Macaw Reserve where we continue our long-term nestbox program and 3) the Yata region to work closely with cattle ranchers on sustainable ranching practices. We intend to organize a follow-up second Eco-friendly Ranching Meeting, after Armonía's successful meeting in 2016.

For 2021, we will continue to conduct protection, research, monitoring activities and working towards the sustainability of the Barba Azul Nature Reserve. We have set the following goals to ensure the continuous development of Barba Azul.

1. Back burn firebreak system established in conservation priority sites
  - Raised firebreaks and trails for quick fire inspection
2. Savanna Management implemented
  - Patch burn management to increase grass diversity
  - Complete fire observation towers
  - Rotational grazing in sub-paddock through electric fencing
3. Complete cattle ranching infrastructure
  - Complete worker house, deposit area and roofed tractor parking
  - Complete circular corral design
  - Increase fix paddock fencing
4. Establish livestock herd of 1,000 head of cattle
  - Manage livestock according best practices techniques
5. Fine tune tourism needs
  - Trail signage
  - International and local promotion of Barba Azul
  - Finetuning service
  - Wildlife watching vehicle
6. Create easy access river crossing
7. Develop Motacu Palm regeneration methodology
8. Research
  - Fenced exclusion zones in each habitat
  - Buff-breasted Sandpiper monitoring
  - Blue-throated Macaw DNA study between subpopulations