

Barba Azul Nature Reserve May 2021 Update Report



Blue-throated Macaw pair feeding on Motacu palm at the Barba Azul Nature Reserve: Suzanne Vargas

The world is still in the grip of the global Covid-19 pandemic. Currently, Bolivia finds itself in the third wave but life continues in the new normal. Armonía's staff are following strict biosecurity protocols and we are able to continue the majority of our activities.

Barba Azul Nature Reserve started 2021 with new staff. We contracted Luz Natalia Mercado as our new Barba Azul Coordinator. In April, Miguel Martinez (Head Park Ranger), Jesus Araúz (Assistant Park Ranger) and Tania Daza (Tourism Service) joined the Barba Azul team. Staff received a 10-day training course in Barba Azul on reserve management, patrols, monitoring and tourism attendance. Camera traps were placed and large experimental enclosures were installed in Cerrado habitat to study large mammal habitat impact. Blue-throated Macaw monitoring showed the arrival of the macaws in March with successfully fledged chicks.

In the dry season we will create backburn and raised firebreaks, increase the number of "penthouse" nestboxes, experiment with bird friendly grazing and monitor Macaws and Buff-breasted Sandpipers.

Please watch our Barba Azul video update on 2021 management results [HERE](#)

Conservation and development of the Barba Azul Nature Reserve in 2021 is supported by:



A grant from the
Neotropical
Migratory Bird
Conservation
Act



Project photos can be downloaded from:

www.flickr.com/photos/128583429@N05/albums/72157657123371838

Barba Azul Nature Reserve

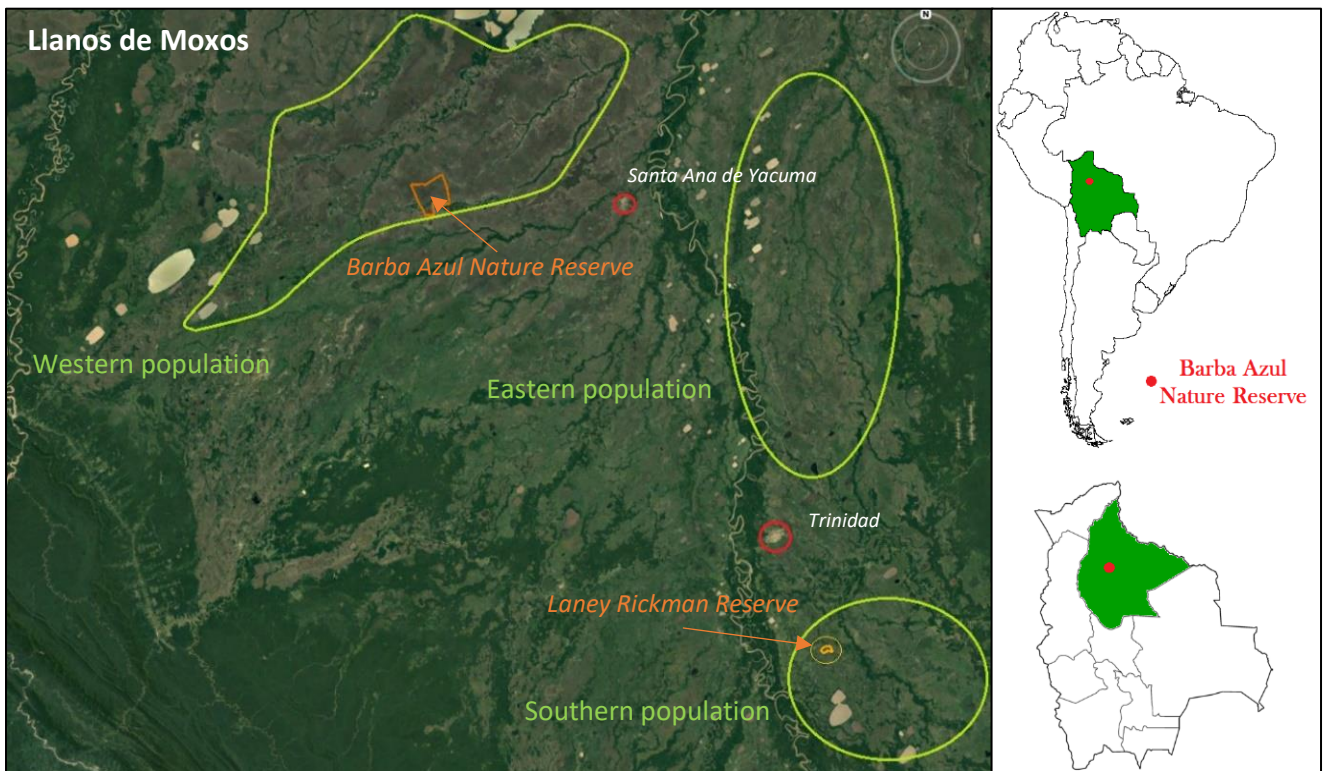


Figure 1. Light green lines indicate Blue-throated Macaw subpopulation ranges. The Barba Azul Nature Reserve is located in the western population, 75 kilometers west of Santa Ana de Yacuma and 213 kilometers northwest of the Laney Rickman Blue-throated Macaw Reserve. Armonía protects vital Blue-throated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

Barba Azul Nature Reserve 2021 goals

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 a continuous development of Barba Azul:

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



Introduction

The world's largest Blue-throated Macaws population is slowly returning to the Barba Azul Nature Reserve (11,000 ha/27,181 ac) after breeding outside this protected area during the rainy season (November to May). This is always an exciting period to see how many chicks successfully fledged their nests. Even though we find ourselves at the start of the dry season, the reserve will be flooded until July. Therefore, our main activities at the start of the year are focused around patrolling of forest islands, weekly monitoring of Blue-throated Macaws and maintaining the surroundings of our headquarters. Simultaneously we are planning all our 2021 activities so when the short 4-month window of the dry season starts (July), we are ready to complete all our development and protection activities in the reserve.

Key Personnel: Armonia has built a strong team with new members dedicated to the protection of Barba Azul (left to right): Luz Natalia Mercado (Barba Azul Coordinator; new), Jesus Araúz (Assistant Park Ranger; new), Bennett Hennessey (Development Director), Luis Miguel Ortega (Assistant Reserve Coordinator), Tania Daza (Tourism Service; new), Tjalle Boorsma (Conservation Program Director), Miguel Martinez (Head Park Ranger; new), and Suzanne Vargas (Communications Officer and Tourism Manager).



Luz has worked for Armonia in 2019 coordinating conservation activities at the breeding grounds of the Blue-throated Macaws. Now she is full time coordinator of the Barba Azul Nature Reserve supervised by Bennett Hennessey and Tjalle Boorsma. Luz is assisted by Luis Miguel Ortega and Suzanne Vargas whom together manage the Barba Azul field team. Both Miguel and Tania (partners) have a degree in wildlife and resource management and have experience in wildlife monitoring, guiding tourists and park guard activities in National parks of Venezuela. They were selected after a

long evaluation process and started in Barba Azul in April. Jesus Araúz was actually born at the Juvena ranch now called Barba Azul South where he lived for 5 years. He has a deep knowledge of the area and has helped Armonía for over 2 years creating firebreaks, placing fencing and minor construction activities. Jesus has now been contracted as an Assistant Park Ranger and tractor driver (firebreak maintenance).

Barba Azul East cattle management team stays unchanged with Edson Lopez as Ecofriendly Ranching Coordinator, managing all the ranching activities together with Luis Enrique Flores and temporary assistants that are hired during peak season.

Team building and training: The complete Barba Azul Nature Reserve team received a 10-day training course at Barba Azul on reserve protection, wildlife monitoring and tourism attention. Bennett Hennessey, Tjalle Boorsma and Suzanne Vargas trained the new staff and discussed all the planned activities for 2021.

Time was spent in the field to place camera traps, getting acquainted to all the existing trail systems for patrolling and train the new staff on weekly Blue-throated Macaw monitoring. Our first monitoring session resulted in 41 macaws including recently fledged chicks. Counting the number of individuals in large groups is always a challenge and was therefore a perfect experience on what to expect in the field.

Barba Azul has satellite internet!!

This is a big step in the modernization of our communication system. Luz Natalia created a patrolling and monitoring application for cell phones that is now being tested in Barba Azul on its functionality. This will secure a quick response system to potential fire threats in the future.



Field course given by Tjalle Boorsma on Blue-throated Macaw monitoring: Suzanne Vargas

Barba Azul 2021 Development and Conservation Plans

1. Fire management: With approximately 90% savanna habitat, Barba Azul's main annual protection activity is preventing uncontrolled man-made fires that enter from neighboring ranches. Through the support from World Land Trust, we will develop raised firebreaks in the northern most section of Barba Azul where a large fire entered in 2020. Due to continuous flooding of this area, we will place drainage pipes to secure the establishment of these raised firebreaks. In collaboration with Fundación Amigos de Naturaleza (FAN), backburn firebreaks will be created to protect the main foraging forest for the Blue-throated Macaw. A 20-meter-wide strip parallel to the established firebreaks will be created to secure a low full area where fire will decrease in intensity. These will be created in June when soil conditions are still moist to protect soil fauna.



Barba Azul controlled fire management is an important protection and conservation strategy

2. Improve and create Blue-throated Macaw breeding habitat: When ground conditions are sufficiently dry, we will erect 10 new penthouse nestboxes that arrived in Barba Azul late last year. With these 10 additional nestboxes, we will have a total of 18 nestboxes up in different microhabitats. We are experimenting with different entrance openings (top and side) to mimic natural nests and evaluate the macaw's preference. We aim to find more funding (\$US 15,000) to increase breeding availability throughout the reserve, improve the nestbox design and protect them from lightning.

3. Savanna management and protection: With the support from the US Forest Service, Luz Mercado and Tjalle Boorsma will develop a detailed fire management plan to control fires in Barba Azul. Apart from combating and preventing unwanted fires, we will develop a "Patch Burn Strategy Plan" where we will use fire as a management tool in this fire dependent ecosystem. This manual will help us prioritize protection and management actions that involve annual burning. Together with experts from FAN we will put in place patch burn areas to create a heterogeneous landscape of different grass age which benefits biodiversity. We are seeking (\$US 9,100) to create a savanna fire observation tower in Barba Azul North.

In Barba Azul East we are experimenting in managing tall-grass savanna through grazing. We have established seven large 90-150 ha plots that we can subdivide with use of electric fencing to experiment with different cattle stocking densities (support through the Neotropical Migratory Conservation Act from the US Fish and Wildlife Service). Through a rotational grazing system, we will secure best usage of tall-grass savanna for livestock food, while managing grass length to create habitat for different species without the usage of fire.

4 & 5. Barba Azul model ranch: Armonia currently manages 416 cattle in the Barba Azul Nature Reserve (296 reproductive cows & 120 steers). A total of 147 reproductive cows were purchased and arrived in Barba Azul East on the 15th of April 2021. We manage now 47% of the amount of cattle required in Barba Azul to meet our goal. Armonia aims to fundraise for the remaining 53% (465 cattle) in 2021 (\$US 249,000). This innovative Conservation Ranching model aims to show how best practices ranching techniques improve the habitat for threatened grassland birds and long-distance migratory shorebirds while generating income to pay for habitat protection.

6. Tourism development and promotion: This year we will complete the fine-tuning of Barba Azul cabins and dining facility through the support from International Conservation Fund of Canada. These activities were postponed in 2020 due to Covid-19 travel restrictions. With Tania Daza as our new tourism service manager supervised by Luz Natalia and Suzanne Vargas, we are ready to receive Covid-19 vaccinated clients at Barba Azul. Special time was dedicated by Bennett Hennessey to train the Barba Azul staff on the required service we want to provide our visitors. And with our reserve promotion video in place, we aim to increase our number of visitors in the near future. [LINK to Barba Azul Nature Reserve promotion video](#)

We also created this Cerrado Bird Walk video ([VIDEO LINK](#)) as part of a series to promote bird watching in the reserve. We plan to produce a video on each habitat type in the future: Forest, Tall grass Savanna, and Marsh ecosystems.



Tourism management training course was given by Bennett Hennessey in Barba Azul: Adam Hennessey

7. Create easy access river crossing: In order to move between Barba Azul South and North (fig.2) you need to cross the Omi river. This river is slowly filling with vegetation in the form of floating grass mats. The crossing is approximately 800 meters of which 750 m is marsh habitat and 50 m open river. We are urgently seeking funding to create a floating boardwalk through the marsh with a 50 m bridge to secure a permanent river crossing (estimated \$US 25,000). At times, crossing is not possible by boat as the dock is blocked by floating grass. This causes serious problems when a quick-fire patrol/response is needed in Barba Azul North, the section most susceptible to fire damage. In addition, the marsh boardwalk will provide a unique tourism attraction to observe wildlife in this hidden landscape.

8. Develop Motacu regeneration methodology: Through the 2020 support from David and Patricia Davidson, we are improving our Motacu regeneration methods. Many Motacú Palms will die in Beni in private ranches in the next 100 years if we cannot find a solution to offer ranchers (see our [Motacu Video HERE](#)). We have purchased fine-mesh fencing to partially fence (50%) two isolated Motacu dominated forest islands within an open savanna landscape. These forests are highly susceptible to herbivory from either livestock or natural wildlife. Decades of cattle pressure prevented natural regeneration of Motacu trees on these islands. Regular fencing turns out to be insufficient as we observe continuous herbivory, which could mean it is not just cattle that is stopping regeneration. When flooding levels drop, we will place these exclusion zones in forest islands to evaluate the natural recuperation of Motacu palm, the most important tree species for the Critically Endangered Blue-throated Macaw. Within these exclusion zones we can experiment with other restoration methods like reforestation and placing seeds.

9a. Research and Monitoring; Exclusion zones: David and Patricia Davidson also supported Barba Azul with the creation of 4 exclusion zones in the Beni Cerrado habitat. This habitat is a more forested savanna on nutrient poor soils (see [Beni Cerrado Video HERE](#)). With the absence of livestock, we want to understand the grazing pressure from natural wildlife. We will develop a research plan to continuously study the vegetation structure within these exclusion zones in comparison to none exclusion zones. Miguel has a natural science background and will collect data from these sites.



Exclusion zone in Cerrado Beniano habitat to study grazing impact from wildlife: Suzanne Vargas

9b. Buff-breasted Sandpiper monitoring: We will continue monitoring long-distance migratory shorebirds in Barba Azul in 2021 through the support from the Neotropical Migratory Conservation Act of the US Fish and Wildlife Service and the US Forest Service. We will create three rotational 10-hectare plots with electric fencing in river-edge shortgrass habitat during key migration (September) to evaluate how different cattle stocking densities affect foraging preference of Buff-breasted Sandpipers. This information is key to create preferable habitat for Buffies during their southbound migration that can be adopted by ranchers throughout the species stopover habitat. Armonía is managing 416 cattle so we are fully flexible and free to decide where our cows will forage. Our aim is to manage 1,000 cattle, so in the near future a more extensive experimental design can be developed.

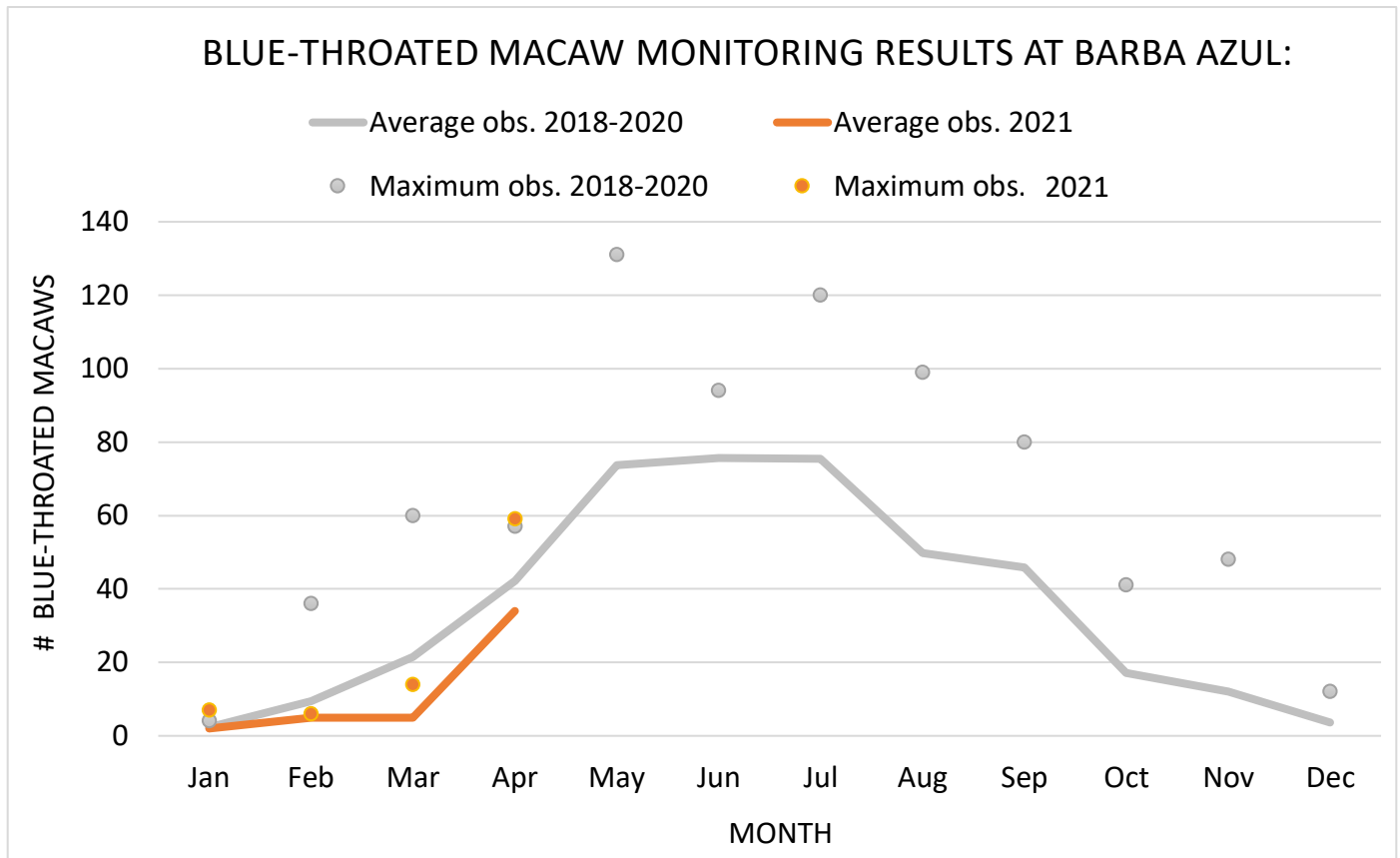


Buff-breasted Sandpiper using Barba Azul as critical stopover habitat during migration: Teodoro Camacho

9c. Blue-throated Macaw research and monitoring: A crucial form to evaluate implemented conservation efforts is through monitoring. Since 2018 we gather weekly Blue-throated Macaw presence data at a strategic location where Blue-throated Macaws gather before they fly to their evening roosts. This monitoring clearly showed the annual migration from Barba Azul to their breeding grounds in October/November, and the arrival of the Macaws in large numbers in March. Peak congregation is observed in the dry season from May to September.

In 2021 we observed on average less individuals in the first part of the year (graph 1). The arrival of macaws in Barba Azul is fully dependent on the length of the breeding season. In the Laney Rickman reserve where Armonía is managing a successful nestbox program, we observe an extended breeding season of at least 2 months in comparison to normal years. We did observe in January and April during a single monitoring observation more macaws than in the previous three years. Miguel, Barba Azul's new main Park Guard, received monitoring training from Tjalle Boorsma and is now managing an application on his phone where the results are uploaded directly in Armonía's database.

We are still seeking funding to conduct a DNA study between the 3 subpopulations to better understand their isolation and strategies necessary to prevent potential inbreeding (\$US 12,000).



Graph 1. Blue-throated Macaw monitoring results systematically collected at Isla Barba Azul in the Barba Azul Nature Reserve. The gray line represents average Blue-throated Macaw numbers per month based on weekly Blue-throated Macaw data gathered in 2018, 2019 and 2020. The red line represents average Blue-throated Macaw numbers per month for 2021. Dots represent the highest single count observations per month between 2018 and 2020 (gray) and 2021 (red).



Large Jabiru in the open savanna landscape at the Barba Azul Nature Reserve: Teodoro Camacho