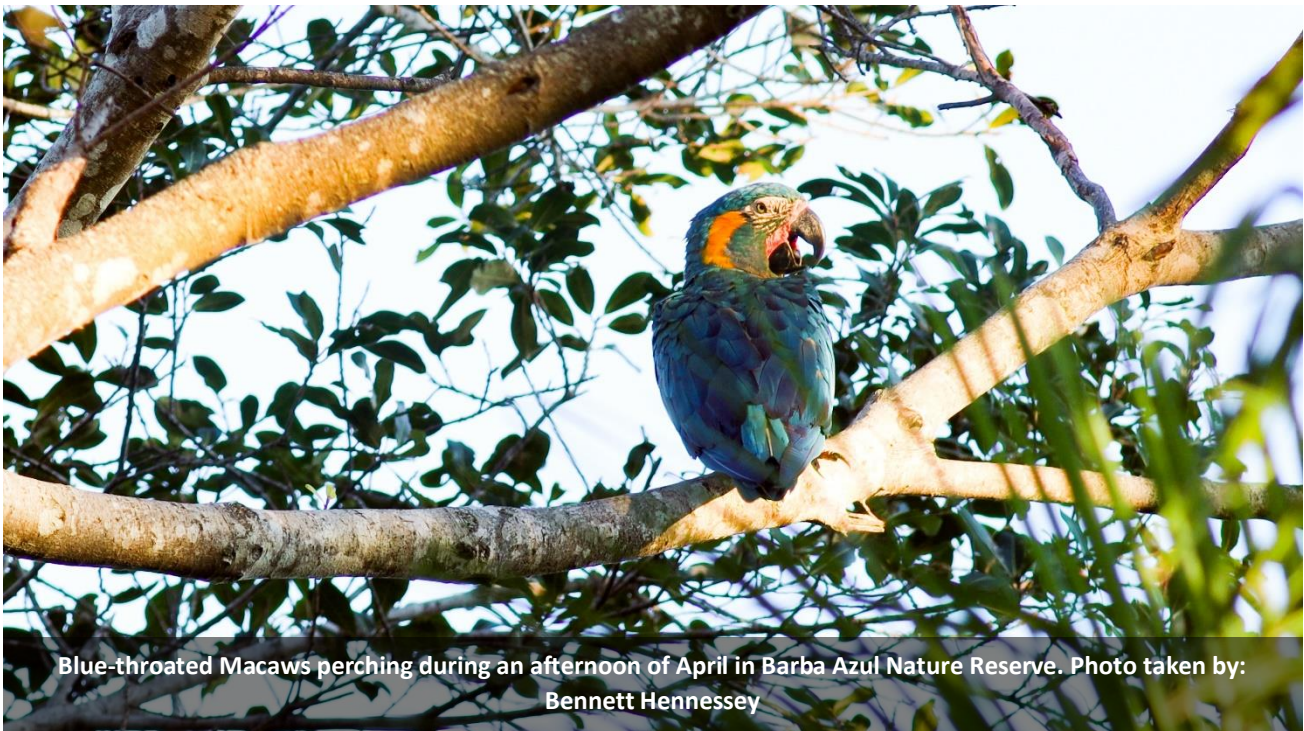


## Barba Azul Nature Reserve September 2021 Update Report



Dry season is here and even though flooding levels seemed to be slowing decreasing due to some late rains during July we are moving forward with our protection and development activities. Our 7.4 mile (12 km) main firebreaks that protect the foraging forest for the Blue-throated Macaws are finished. As well, a 1.8 mile backburned defense line is in place to increase protection thanks to firefighter experts who trained our complete staff. As this new dry season comes with fire risks, natural and man-made, we considered it a priority having our whole new team at Barba Azul trained and prepared for any threat. Besides training, our new staff continues monitoring and counting activities of Blue-throated Macaw which have reached peak numbers of 127 Macaws arriving to their distant night roosts. As every year, Buff-breasted Sandpiper monitoring team is now on the ground gathering more data for the long-term understanding of this species migrating patterns and habitat preferences (Click [HERE](#) to watch more information about *Buffies* from the reserve). Many exciting activities are taking place at the reserve in this small window of time that is the dry season and many are to come to reach our goals for this year.

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



A grant from the  
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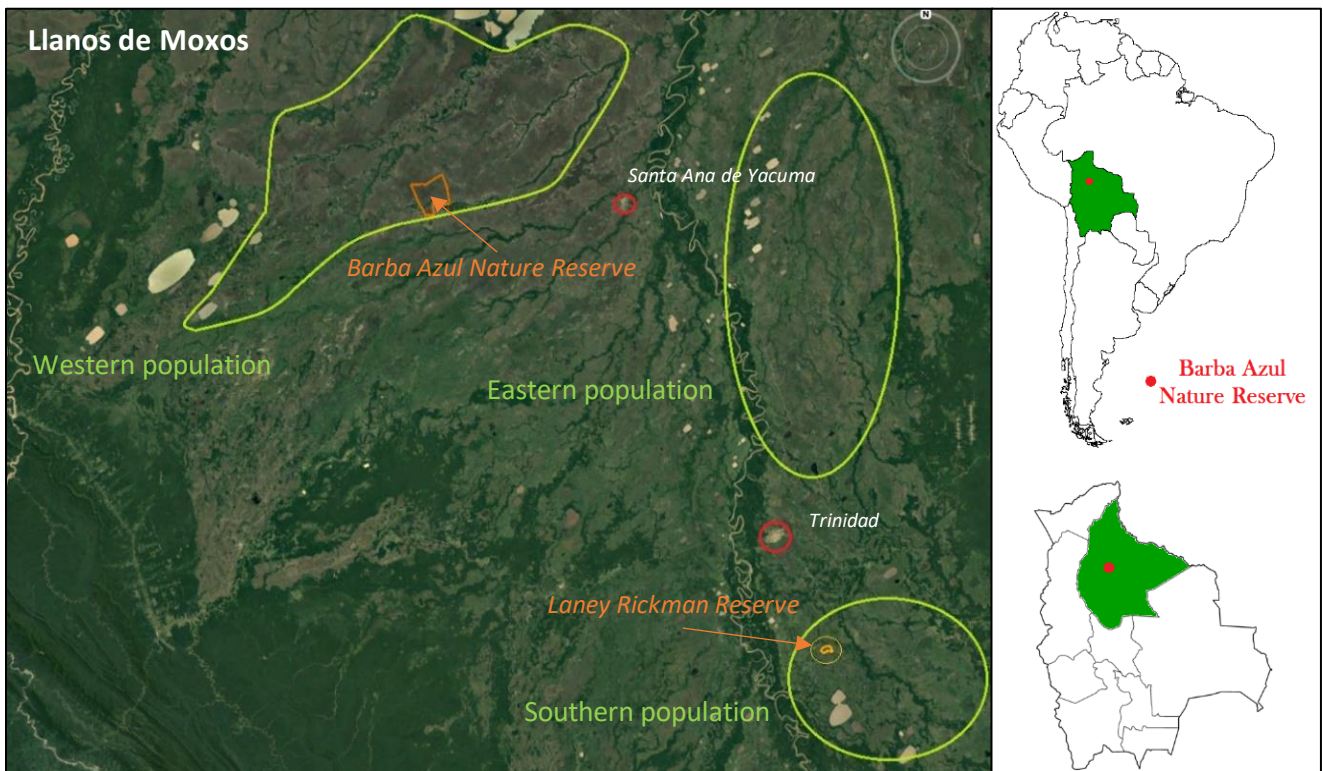


Project photos can be downloaded from:

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

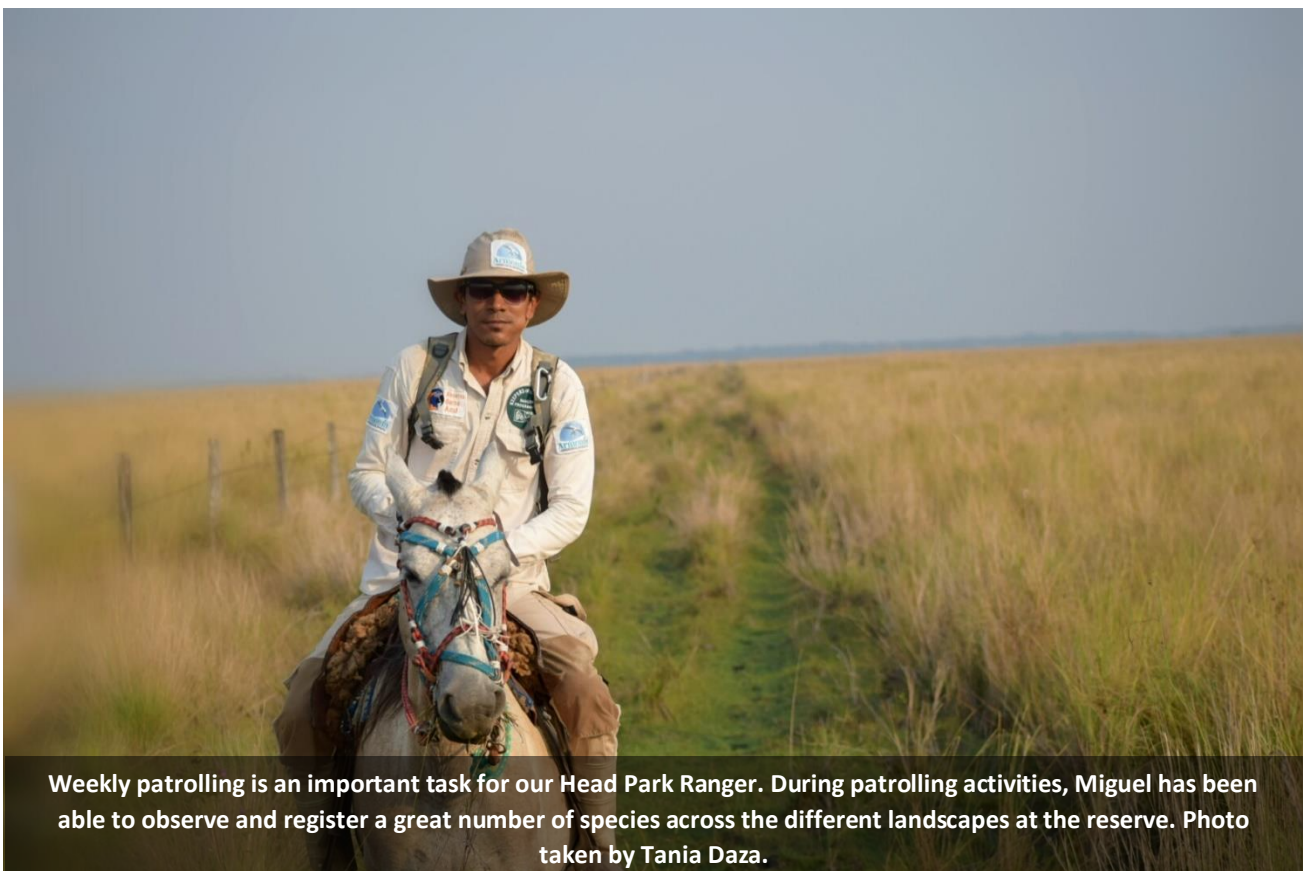


**Figure 2.** The Barba Azul Nature Reserve is divided into two main land-use zones: Barba Azul (5,000 ha; 12,350 ac) designated for pure conservation and declared Private Natural Heritage Reserve (RPPN); Barba Azul East (6,000 ha; 14,820 ac) where 40% is designated for sustainable cattle ranching for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

## Introduction

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As the year moves forward, Blue-throated Macaw counts are steadily increasing and our new Head Park Ranger, Miguel Martínez, has been doing a remarkable job monitoring numbers and closely observing their behavior, particularly around the penthouse nestboxes we have placed since 2018. On different occasions, pairs of curious macaws have been seen inspecting cavities and perching on top of boxes. This keeps our hopes high that maybe this year we can observe the first pair choosing our boxes to breed. Another great observation made by Miguel was of an individual wearing a tracking device. This is one of the three macaws we were able to track migrating from Barba Azul to their breeding grounds in 2019, when we were able to understand some of their movement patterns during this important time of the year. We are happy to see this macaw returning this year to the reserve and accompanied (probably) by its breeding partner.



Weekly patrolling is an important task for our Head Park Ranger. During patrolling activities, Miguel has been able to observe and register a great number of species across the different landscapes at the reserve. Photo taken by Tania Daza.

Our system of trails for tourism and monitoring purposes is set to include as many different types of vegetation, animals and landscapes in short and medium length walks. Walking trails, new and old, are on place. This maintenance hard work has allowed Miguel to quickly understand the different habitats in order to find the best locations to set camera traps across the reserve. He has proposed and implemented a systematic monitoring scheme with set points that will rotate to gather as much information as possible on wildlife abundances and behavior. We are looking forward to all the new sightings and data the cameras will provide based on Miguel's observations and analysis of key locations.





**Our improved communication system is having results:** We have come a long way since the Barba Azul Nature Reserve was created to protect critical habitat for the Blue-throated Macaw in 2008. Apart from having qualified staff who are prepared to rapidly respond to any fire threats that we might come across, we also have invested in a communication system with satellite internet for both Barba Azul South and Barba Azul East (cattle ranching area) to secure better communication within and outside the reserve. Thanks to our improved communication system and trained staff we were able to monitor and rapidly react to a wildfire that started in a neighboring ranch in July. A rapid response of the team from the field, real-time remote monitoring and assistance from firefighting experts from FAN to predict fire behavior took place in no time. The gathered information enabled the team to take action building a firebreak and getting ready in case the fire would come close to the reserve. Thankfully, climatic conditions restrained fire movement until it stopped by itself two days after it was first observed.

## Barba Azul 2021 Development and Conservation Plans

**1. Fire management:** Now being in the core of the dry season our main efforts have been focused on protecting the most important foraging habitat of the reserve for the Blue-throated Macaw from fires coming from neighboring ranches. This year we count with a complete team trained to respond to fire threats and to create low fuel areas with prescribed burning techniques.

The first training in firefighting and prescribed burning techniques was carried out in early July in the Barba Azul Nature reserve through a collaboration with expert forest firefighters (Carlos Pinto and Pedro Pablo Ribera) from the Friends of Nature Foundation (FAN). FAN firefighters started the workshop with multiple presentations on basic wildfire combating techniques and how to conduct prescribed burning based on their overall experiences in dry forests and grasslands in the Eastern part of Bolivia. We trained in total 9 people including the entire Barba Azul Nature Reserve team: park rangers, Barba Azul East cowboys, coordinators and the program director.



FAN Forest Firefighters giving a presentation on basic techniques fire combat in Barba Azul Nature Reserve. FLTR: Pedro Ribero (FAN), Carlos Pinto (FAN), Tania Daza (Tourism Service), Luis Poggi (Regional Government), Miguel Martinez (Head Park Ranger), Tjalle Boorsma (Director), Luis Ortega (Assistant coordinator), Cesar Flores Jr. (Assistant Park Ranger Laney Rickman Reserve) and Herlan Lopez (Interim Assistant Park Ranger). Picture taken by: Luz Natalia Mercado (Program coordinator)

We were able to test and use all the firefighting equipment we have at the Barba Azul Nature Reserve purchased in 2020 through the support from World Land Trust. We also put in use the Barba Azul tractor to transport the 1,000-liter water tank to have access of water on site where the prescribed burnings took place.



A section of the parallel firebreak created during the workshop in July. Photo taken by: Tjalle Boorsma



By August, our prioritized firebreaks in Barba Azul North were completed (7.4 miles). This allowed us to put together our Barba Azul team again to continue the parallel backburn firebreak for a five-day practice. With all the equipment and counting on the full team we were able to create a 1.8 mile “black line” to protect the main foraging habitat of the Blue-throated Macaw. The strategy was to create 65 feet wide black lines where all grass (fuel load) was reduced with the use of fire. When a neighboring fire hits this low fuel area, it will go down in intensity and eventually dies as there is no grass to burn.

Our plan to improve of firebreak system in the far north of Barba Azul North has been set in motion. Metal drainage pipes were purchased and sent to the reserve in late June. We are waiting until soil conditions are sufficiently dry to start building raised firebreaks and secure a susceptible section of the reserve with a high fire risk.



Barba Azul Nature Reserve Team on the fifth and last day of backburning practice at the 20-meter-wide plough firebreak with all the fire combat equipment. FLTR: Tania Daza (Tourism Service), Tjalle Boorsma (Director), Luz Natalia Mercado (Program coordinator), Gary Cuellar (Cowboy assistant Barba Azul East), Luis Enrique Araúz (Cowboy Barba Azul East) Miguel Martínez (Head Park Ranger), Herlan Lopez (Interim Assistant Park Ranger) and Jesús Araúz (Tractor and machinery operator)

**2. Improve and create Blue-throated Macaw breeding habitat:** Soil conditions are getting sufficiently dry for the team to complete our goal to erect 10 more new penthouse nestboxes to reach 18 in total. With the aid of technicians, we are designing the most effective arrangement of lightning rods to protect the complete radius of where the nestboxes will be placed. Mimicking the natural breeding grounds that we discovered during expeditions, the distances between nestboxes that we are experimenting are considerably large and arranging lightning rods without losing effectiveness is a challenge that will be able to overcome by designing a suitable arrangement. Thanks to the support from ARTIS, we will be purchasing the needed equipment to prevent lightning from reaching our nest boxes and to climb the high posts when nests need replacement or repairment.



**3. Savanna management and protection:** We are confident that we are on the right path to develop a comprehensive fire management plan for the reserve. We are working on the basis of a robust strategy for fire management and patch burning based on conservation priorities. The experience doing backburning with our team has thought us the best and safest techniques adapted to our local conditions. As well, gathering data on weather information and fire behavior is helping us filling gaps of information needed to propose a detailed plan. With the support of the US Forest Service and local experts of FAN next year we will set in motion our idea to create a mosaic of grass habitats with diverse age classes that can benefit biodiversity.



As we are starting to better understand the complex relationships between fire and grasslands and it is opening new opportunities for conducting new research. How is fire affecting soil biodiversity? are communities of insects different among patches of different age classes? How bird species interact with fire (as we observed groups of birds overflying burnt areas)? Many questions raised during our burning practices that we will develop further for the fire management plan for the reserve.

Groups of coatis are easy to spot roaming around the Cerrado and gallery forest areas of the reserve. Photo taken by: Steffen Reichle



An important part of the savanna and forest protection comes with the installment of a strong perimetral fencing around the reserve. With the support of the U.S. Fish and Wildlife Service (NMBCA) we have purchased and sent more than 1,000 wood posts to establish 3.1 miles of fencing in Barba Azul North. Fencing works have started and expected to be finish in a few weeks.

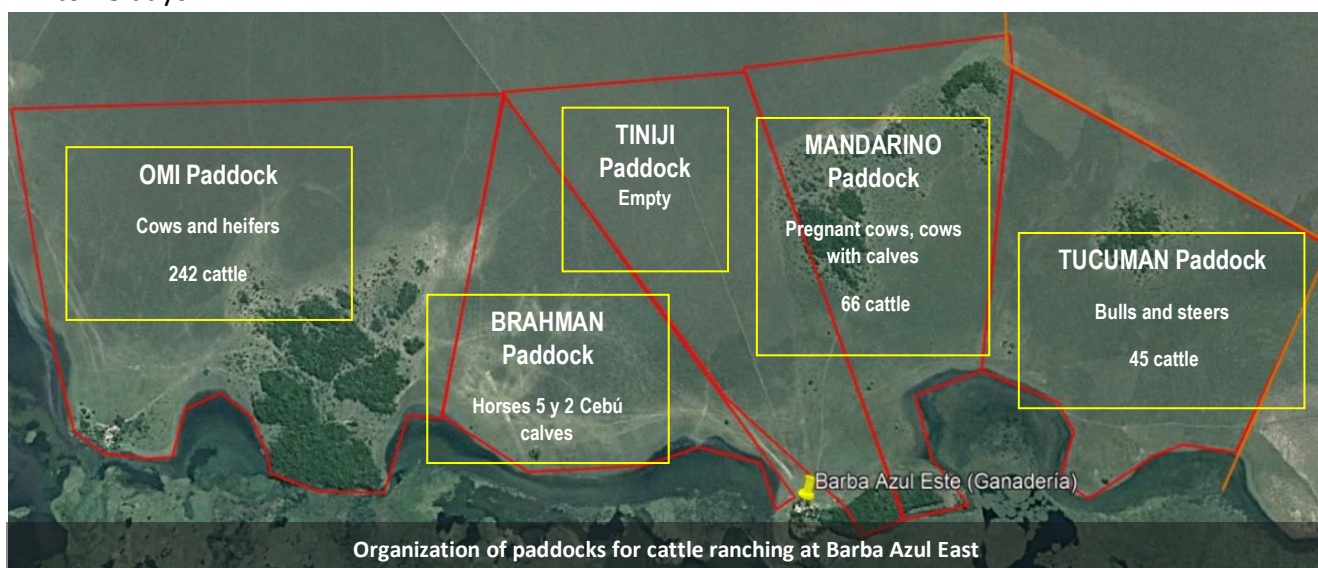


**4 & 5. Barba Azul model ranch:** By early 2021, Armonia sold 194 bulls after they increased in size for over 1 year. With the income Armonia can buy approximately 240 cattle to steadily increase the Barba Azul herd. Due to and extended rainy season, smuggling of livestock to Brazil due to the COVID-19 pandemic and ranchers reluctant to sell as cattle prices were fluctuating, it has been difficult to purchase one-year old bulls to continue the cycle of weight increment. So far, we have purchased 32 one-year old bulls and 4 work horses. By the end of September, we aim to have purchased to full quote. A total of 60 Brahman Yacumeña reproductive cows have been selected and separated from the herd as they are pregnant or recently received their first calves (12 in total so far). Our reproductive herd including the recently born calves count 355.



Care of a new born calf, critical for its survival. Luis Enrique (Barba Azul East Cowboy) is cutting and cleaning the calf's navel string. Photo taken by Edson Lopez.

The system of intensive rotation of paddocks for a more efficient management of the pasture and to increase the carrying capacity of the soil with respect to the number of cattle in Barba Azul, will begin this spring (somewhat delayed due to the decrease of very slow and late water that is happening this year 2021). From the end of September, we will start implementing this new system with the daily subdivision of enclosures created with solar-powered electric fencing. During this first phase, we will implement continuous rotational grazing enclosing two groups of 100 adult heads in 4-hectare paddocks for 2 to 3 days depending on soil and pasture state, considering paddock resting times of 24 to 28 days.







**6. Tourism development and promotion:** We are happy to inform that Barba Azul Nature Reserve has received its first visitors since the beginning of the pandemic. Our fully-vaccinated staff welcomed the first fully-vaccinated tourists, a group of photographers and biologists that were excited to encounter all types of fauna of the Beni Savannahs.



Miguel (Park Ranger) and Tania (Tourism Services) prepared all the cabins with the recently arrived furniture thanks to the support of ICFC and received the visitors with enthusiasm. Visitors stayed for four days and after their visit expressed gratitude for the attentions received during their stay.





**7. Create easy access river crossing:** We are coming up with the best solution to connect Barba Azul South and North. A board walk wide enough for the reserve's quadbike to cross the Omi River with the use of a pontoon seems like the most ideal option for the reserve. Although the initial idea considered building a bridge, after careful consideration of potential impacts it was agreed that a bridge in the area has the potential of increasing transit of people in the reserve. A way to avoid this issue is the use of a pontoon that only the reserve staff could manage. It is important for the protection of Barba Azul North that we secure permanent crossing for our staff when quick response to threats is needed.

**8. Develop Motacú regeneration methodology:** Being the Motacu palm fruit the main food for macaws and many species in the Beni Savannas, it is of great importance to develop tested solutions for cattle ranchers to restore their degraded Motacu Palm forest islands. Previous experiences have shown us the potential for natural restoration by excluding cattle from these islands, however, local herbivores like capybaras might be slowing down regeneration by grazing newly germinated Motacu seedlings. To test this hypothesis, we are currently in the process of partially fencing three forest islands with fine mesh. These exclusion areas will give data on Motacu regeneration factors, and in a few years, we can use these plots to test period these areas need to be excluded before cattle can enter without impacting Motacu recuperation.



Isla Manechi is one of the three islands we are partially and completely fencing this year to test how Motacu regeneration is affected by large herbivores and cattle. Photo taken by: Miguel Martinez.



**9a. Research and Monitoring; Exclusion zones:** We have set in place four 10x10 meter grazing and herbivore exclusion plots to understand vegetation changes in grassland and Cerrado vegetation in exclosures. With the help of our staff at the reserve we will be monitoring vegetation changes on the long-term considering control areas near plots. The first step for Miguel and Tania will be of measuring plant species richness and composition within the plots and outside in control areas that will serve as base information for future monitoring.

**9b. Buff-breasted Sandpiper monitoring:** Our team is in the field starting to monitor Buff-breasted Sandpipers that are arriving to the reserve by mid-August. Experimental plots using different cattle stocking are in place to study its effect on this migratory species habitat preferences. This will be the first year that monitoring gathers this important information and we hope it gives us a better understanding of the most suitable habitat for this species. Since cattle ranching is the most important land use in the Beni Savannahs, we have a special interest in developing informed management guidelines for ranchers that want to support the conservation of Buffies during this time of the year.



Buff-breasted Sandpiper monitoring started in late August and continues through September. The team is on the ground gathering valuable data while this migratory species is visiting the *bajíos* in the Reserve. Photo taken by: Teodoro Camacho

### 9c. Blue-throated Macaw research and monitoring:

We are increasing our efforts to monitor numbers of Blue-throated Macaws at the reserve. Monitoring activities are now being conducted twice a week from the strategic location near the foraging forest and once a month near their relatively distant evening roosts, when weather conditions are sufficiently suitable. Since 2018 we have been gathering information that has improved our understanding of the “local migration” patterns observed with the macaws. Currently we are at the peak of their congregation (May to September) and Miguel has observed the largest group so far while monitoring near their evening roosts, counting a total of 127 individuals coming from different parts of the reserve. This method of monitoring provides us of a better estimate of Blue-throated Macaw numbers currently at the reserve since it is located on one of the few gathering points roosts where they spend the night.



Blue-throated Macaws perching on a *Cecropia* tree before flying to their night roosting sites up north the Reserve. Photo taken by: Rodrigo Soria

With the purpose of improving monitoring efforts, we are looking for funding opportunities to build an elevated monitoring station. During weekly monitoring activities, Miguel has informed that lower counts might be due to restricted observation of the whole extension of the foraging forest, Isla Barba Azul. The point set for observation has tall grass and trees surrounding which difficult counting individuals going to their night roosts from other parts of the forest. A higher monitoring point will help us avoid any sub estimation and also would serve as a fire monitoring point in case of any emergency.



**Graph 1.** Blue-throated Macaw monitoring results systematically collected at the weekly observation point near 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 orange 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 (orange).

