

Barba Azul Nature Reserve May 2018 update report



Barba Azul Nature Reserve finds itself in the heart of the rainy season with horse-belly high water levels. Picture taken by Tjalle Boorsma

The annual rainy season (November to March) flooding of the Beni savanna tall-grass in the Barba Azul Nature Reserve is an important phenomenon of this unique ecosystem. At the start of the dry season in May, the savannas remain flooded until July, which is followed by an extreme dry period lasting for 4 months. During the rainy season, few heavy vehicle reserve management activities can be executed as the only means of transportation is on horseback. This is also the time that the macaws return to Barba Azul in small groups, often pairs with juveniles. The first Blue-throated Macaws arrived on the 20th of February. The group increased to 18 macaws by mid-March and over 50 by mid-April containing at least 5 successfully raised chicks. It is always a thrill to have large numbers of macaws return to Barba Azul.

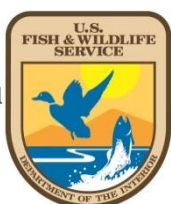
Project photos can be downloaded from:

<https://www.flickr.com/photos/128583429@N05/albums/72157657123371838>

Conservation and development of the Barba Azul Nature Reserve in 2018 is supported by:



A grant from the
Neotropical
Migratory Bird
Conservation
Act

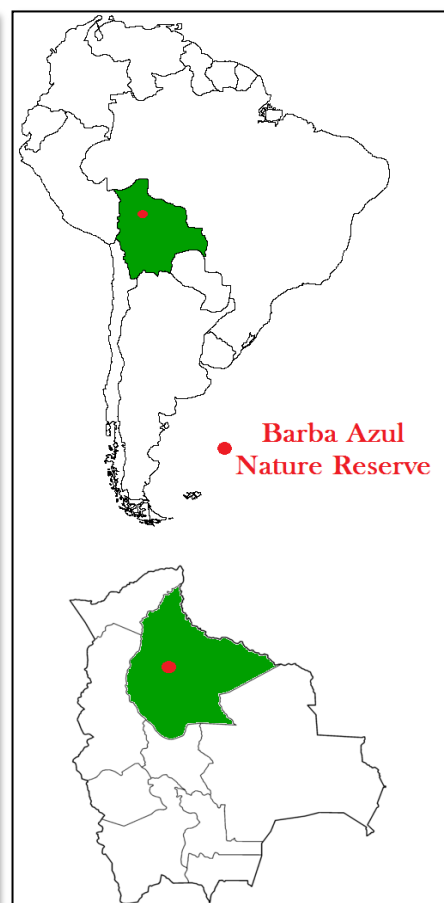


Barba Azul Nature Reserve 2018 goals

We have set the following goals to ensure a continuous development of Barba Azul Nature Reserve and its infrastructure.

1. Establish Blue-throated Macaw breeding habitat at Barba Azul Nature Reserve
2. Establish live fencing
3. Complete tourism infrastructure.
 - Finish dining facility
 - Finish cabin improvements (interior and exterior design)

4. Maintain impenetrable firebreaks throughout the reserve.
 - Parallel backburn firebreaks for perimeter (60m width)
 - Establish firebreaks Barba Azul East
5. Research
 - Blue-throated Macaw movement and breeding site research
 - Savanna habitat research
 - Buff-breasted Sandpiper habitat improvement and research
6. Complete cattle ranching infrastructure
 - Paddock and perimeter fencing of Barba Azul East
 - Corral creation
 - Establish herd of 500 head of cattle
7. Establish solar energy
8. Barba Azul Nature Reserve infrastructure
 - Worker house for part-time staff and visiting construction workers
 - Maintenance of staff house, water system and field station



Introduction

Welcome to the big infrastructure completion year for Barba Azul Nature Reserve. Through years of work, fundraising and wonderful supporters, we have finally raised support to finish-off most of the infrastructure for firebreak protection, tourism, and sustainable cattle ranching.

This year has started as is typical in the Beni, very wet, resulting in flooding throughout the Llanos de Moxos savanna ecoregion. Most of the building work will have to wait until July when heavy vehicles can actually get to Barba Azul. We have been preparing everything, so that once the dry season arrives, we can move finished items to Barba Azul. We have been constructing new nest boxes, buying eucalyptus posts for the nest boxes, collecting timber for corral construction and finding contractors to purchase 2,000 fencing posts. Also, the first contact was made with 5 Wageningen University student from the Netherlands, interested in conducting their MSc thesis at Barba Azul. We also await the return of Jo Kingsbury who will be continuing her PhD study on the forest-savanna gradient.

We would like to introduce Luis Miguel Barbosa the new Barba Azul coordinator assistant. who has been working for over 3 years with Armonía and assisted Tjalle during the breeding site searches in January and April 2017. He has been in charge of planning and purchasing activities in the first months and will play an important role in logistics and supervising activities within Barba Azul.



Figure 1. Luis Miguel Barbosa our new team member for The Barba Azul Nature Reserve. Picture taken by Aiden Maccormick.

Protection

Patrolling Barba Azul

The main protection activity during the rainy season is patrolling the reserve's boundaries. As most of the reserve is flooded, the main form of transportation is horseback. As accessibility is difficult, illegal hunting is a low threat. Patrols review the state of fencing, firebreaks and other maintenance activities. Patrolling takes up to 3 days in the rainy season to fully survey Barba Azul's 11,000-hectare, usually wading through horse-belly high flooded savanna.



Figure 2. Patrolling Barba Azul Nature Reserve during the rainy season Picture taken by Tjalle Boorsma.

The patrolling activities are combined with Blue-throated Macaw monitoring, noting location, numbers, juvenile presence and movements. Patrols this year discovered a change in late afternoon Blue-throated Macaw movement patterns to roosting islands east in Rio Tiniji, and not in the typical roosting area at the height of the dry season. This data is important for future research activities to better understand the biology of the macaws and pinpoint conservation priority sites.

Fire protection

Though we had no fires entering Barba Azul last year, we want to make sure Barba Azul is protected for the worst fire situation, which we have seen in past years. We need to prepare for a possible fire at the height of the dry season during a hot windy day. Also, once we can establish an excellent fire protection system, then we can start working more intensely on savanna management for the wildlife in the area. For this reason, we have designed what we believe to be the best firebreak system, which includes two new firebreak types, two parallel firebreaks with a central backburn, and a raised firebreak.

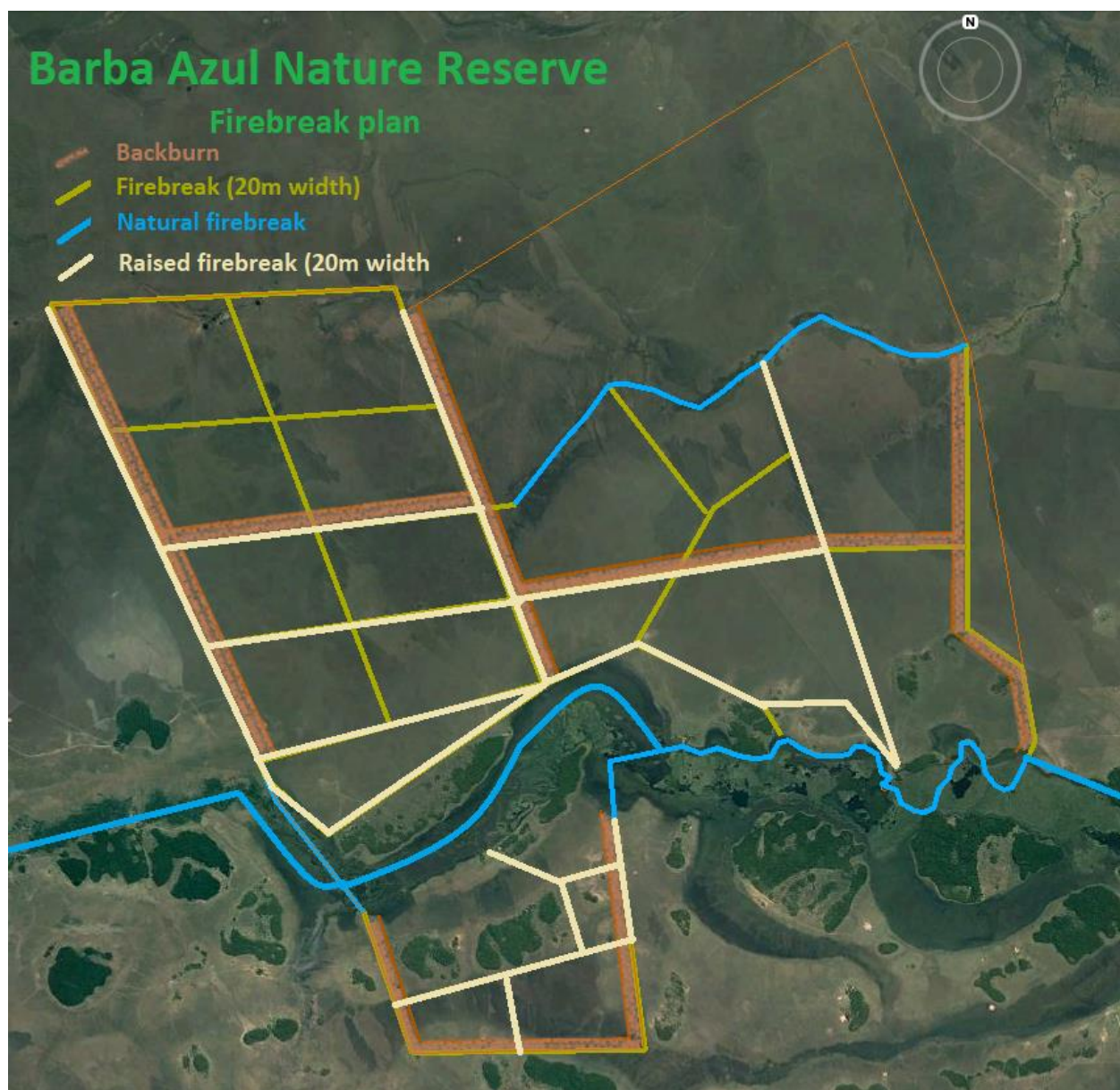


Figure 3. Four types of Firebreaks will be used: 1) Bare soil. 2) raised dirt. 3) Parallel back burn. 4) and waterbodies.

Tourism

“Unbelievable place, we saw about 30 of the world’s rarest Macaws but our highlights were seeing Giant Anteaters and a spectacular encounter with a Maned Wolf which was the main reason to the visit. Barba Azul is the best place to see the Maned Wolf in Bolivia”.

Nicks Adventures Tourism Agency

Nick made his first visit to Barba Azul in September 2017. Nick will be returning to Barba Azul this year as will **WINGS**, our first big birding tour agency visiting the reserve with their first tour in September.

Complete tourism infrastructure

With **International Conservation Fund of Canada** and **American Bird Conservancy** support, we are planning to complete all tourism infrastructure this year. We expect to start all transportation of construction material in the last week of June. We also planned for cabin improvements to ensure full comfort for tourists. The first tourist from **Bird Bolivia**, the main bird tourism organization in Bolivia, will enjoy the wildlife spectacle of the Barba Azul Nature Reserve in May

Barba Azul solar system

Presently all housing electricity on Barba Azul comes from a gasoline burning generator. This is a constant problem for our remote location where each year heavy vehicle cannot bring fuel to Barba Azul. In this modern day, this is not necessary and we want to stop polluting our environment, A professional long-term solar system that will cover the all housing would cost US \$17,500. This includes additional batteries to store power to ensure electricity during several clouded days. In 10 years, it would pay for itself in the cost of fuel spent on the reserve. We are actively seeking support for this effort presently.

Barba Azul East cattle ranching

Complete cattle ranching infrastructure

All preparation steps have been taken to complete the cattle ranching infrastructure. Eighty percent of all timber for constructing the corral in Barba Azul East has been delivered and stored in Santa Ana de Yacuma. We also found a contractor who can deliver 2,000 fencing posts and 50 corner posts at once before July. With all the material delivered before the dry season, we can transport all timber and other construction material to Barba Azul East in July. As we already have paddocks in place, we will purchase the first 45 heads cattle right at the start of the dry season, initiating our sustainable cattle ranching program, with the amazing support from [March Conservation Fund](#) and [American Bird Conservancy](#).



Figure 4. Dramatic afternoon skies above the flooded savanna. Picture taken by Aiden Maccormick.

Management

Blue-throated Macaw breeding habitat development

Blue-throated Macaws have never used our nest boxes on Barba Azul. We have had 76 chicks fledge from wooden nest boxes in the southern population, but the northwestern population have not taken to the boxes. After Tjalle's research further north, we have noted that they are breeding higher up, and in isolated trees. So, we are going to give them what they want. (<http://armoniabolivia.org/2017/03/17/armonia-discovers-new-breeding-area-for-the-critically-endangered-blue-throated-macaw/>).



Figure 5. Hexagram nest boxes ready to be transported to the Barba Azul Nature Reserve to be placed on eucalyptus posts to mimic the Blue-throated Macaw breeding habitat. Picture taken by Luis Miguel Barbosa.

Blue-throated Macaws from the northwestern subpopulation tends to breed in tall, dead Moriche palm in isolated flooded habitat. This we would like to mimic with the placement of 12-meter-high eucalyptus posts with on top a hexagram nest boxes (Fig. 5). This project is supported by [ARTIS Amsterdam Royal Zoo](#), [IUCN Netherlands](#) and [Mohamed Bin Zayed Species Conservation Fund](#).

Aliso live fencing program

In November at the start of the rainy season, Aliso trees were planted for the live fencing project supported by **World Land Trust**. It is clear that not all trees have survived the transplantation. These are important results to perfect and increase future transplantation activities, understanding the right methods of planting, pruning and planting season. As drought is a limiting factor, and as Aliso thrives in flooded savanna, it was expected to plant Aliso at the start of the rainy season. As the trees develop their sap streams during this period, transplantation can have a negative effect on the development, resulting in higher mortality. Therefore, we need to experiment with planting in different seasons in order to learn more about the correct management activities related to the live fencing program.



Figure 6. Hernan Lopez monitoring the planted Aliso trees for live fencing posts to evaluate their development after they were planted just before the rainy season. Picture taken by Tjalle Boorsma.

Research

Nest box evaluation

Over 60 nest boxes have been placed throughout Barba Azul on small Motacu dominated forest islands. We initially placed nest boxes in the largest forest islands, but since then located more nest boxes in the isolated forest islands at the Rio Tiniji area, as the Blue-throated Macaws tend to use these islands for roosting. We mimicked the successful nest box program developed in the Loreto area (southern subpopulation). Copying the nest box strategy to the Barba Azul Nature Reserve was the logical step in order to increase breeding habitat for the northwestern subpopulation. During the 2017 breeding habitat exploration, we discovered that the Macaws have different breeding strategies, selecting nests in isolated tall dead Moriche palms, a palm species absent from the Loreto region.

In order to continue the evaluation of the Barba Azul nest boxes we visited all nest boxes throughout the reserve to study the use of these artificial nesting sites. Black-bellied Whistling Ducks and White-eyed Parakeets were the species using the nest boxes. Therefore, the new nest box program is of high importance to understand how to increase breeding habitat to ensure the survival of this Critically Endangered Macaw. Through trial and error, we will find the ideal nest box for this subpopulation breeding culture.



Figure 7. Black-bellied Whistling Duck chicks hatched in one of the Barba Azul Nature Reserve nest boxes on small Motacu dominated forest islands. Picture taken by Luis Miguel Ortega.



Figure 8. Carlos Roca wading through flooded savanna with a ladder in order to evaluate all nest boxes on small Motacu dominated forest islands throughout the Barba Azul reserve. Picture taken by Luis Miguel Barbosa.

Blue-throated Macaw monitoring

Blue-throated Macaw monitoring activities executed by Carlos Roca from January, to April showed its first results. Due to previous monitoring efforts we are aware of the local movement patterns of the Blue-throated Macaw in the Barba Azul Nature Reserve. They forage, roost and mate at Barba Azul, and in November they all leave to their rainy season breeding grounds, arriving somewhere in March.

This year the first Blue-throated Macaws arrived on the 20th of February. A total of 7 individuals from which 1 juvenile was clearly identified. The first large group was observed almost one month later on the 16th of March, containing 18 individuals followed by over 50 individuals in April.

Carlos also observed that the birds most likely roost in small Motacu dominated forest islands in the Tiniji river area, as no birds have been observed flying to their main roost. This pattern was first discovered by the Glasgow University in 2014 and demonstrates the importance of roost monitoring to evaluate the macaws traditional roost use. These islands are of utmost importance to be protected, reforested and maintained



Figure 9 Carlos Roca, keeper of the wild, monitoring Blue-throated Macaw congregation at Isla Barba Azul. Picture taken by Tjalle Boorsma.

Blue-throated Macaw GPS tracking study

We are very pleased with the continues funding of **American Bird Conservancy** and **The Mohamed Bin Zayed Species Conservation Fund** to capture 3 Blue-throated Macaws to place GPS trackers to study their local movements within the reserve and their exact breeding grounds. This is crucial information to increase the knowledge of the little known northwestern subpopulation, which is expected to contain the largest number of Blue-throated Macaws.

Lisa Davenport, the main investigator, will return to Barba Azul mid-July to start the second phase of the project. Tjalle will explore the best method to get the Macaws gathering on the ground to ensure easy capturing. These activities are planned in May and June as river edge short-grass is drying up, the habitat where the macaws come down to drink.

Other discoveries at Barba Azul

A 7th macaw species has been observed for the Barba Azul Nature Reserve: The Red-and-green-Macaw (*Ara chloropterus*). This species is uncommon to fairly common in a range of humid to semi-humid forests. As Barba Azul does not have long continuous humid forest, it is expected that the birds only use this area as a stopover site. There is a lot of local movement taking place with both Blue-throated and Blue-and-yellow Macaw arriving at Barba Azul after breeding, so it can be expected that the Red-and-green-Macaw is on the move as well. The large macaws of Barba Azul are: Blue-and-yellow Macaw, Red-and-Green Macaw and Blue-throated Macaw. The smaller macaws observed at Barba Azul are: Yellow-collared Macaw, Chestnut-fronted Macaw, Red-bellied Macaw and Red-shouldered Macaw.



Figure 10. Red-and-green Macaw first recorded observation at the Barba Azul Nature Reserve. Picture taken by Asociación Armonía.



Figure 11. Over 8500 Swainson's Hawk (*Buteo swainsoni*) were observed migrating over the Barba Azul Nature Reserve returning to their summer grounds at the United States on the 18th of March. At peak migration, over 1000 individuals were counted within 4 minutes. Picture taken by Tjalle Boorsma.

The Swainson's Hawk (*Buteo swainsoni*) is a boreal migrant which passes through Bolivia in February and March to return to their summer breeding grounds in North America. An extraordinary high count of at least 8500 individuals travelled over the Barba Azul Nature Reserve returning to North America on March 18th, 2018. For over an hour, a continuous line of migrating hawks was observed with peak migration of over 1000 birds passing by within four minutes. This was an amazing spectacle where the hawks were accompanied by Wood Storks, Black Vultures, Anhinga's and other resident species. This is the highest Swainson's Hawk migration record in Bolivia.