

Red-fronted Macaw Conservation Program Update Report - 2024



Pair of Red-fronted Macaws in a natural nest in a Janchicoco Palm tree in El Palmar National Park: Ernst Udo Drawert

In 2024, Armonía continues to expand Red-fronted Macaw conservation across key regions in Bolivia. In March, our team successfully monitored natural nests and nestboxes in the Red-fronted Macaw Community Reserve, El Palmar National Park, and Torotoro National Park. We continued protecting Bolivia's most important breeding cliff at the Red-fronted Macaw Community Reserve, supporting a record number of 24 active nests in 2023-2024 breeding season. Tourism flourished post-pandemic, setting a new record in 2023 with over \$24,000 in income directly benefiting local Quechua communities. We also expanded habitat restoration by planting 3,000 native Janchicoco palms and created fenced protection sites. Our efforts in 2023 included the monitoring of 50 nestboxes in El Palmar National Park. With Red-fronted Macaw showing an interest in using the El Palmar nestboxes, will 2024-2025 be the year the Macaws truly adopt the nestboxes? In the Caine region we reached 131 families who received direct support in sustainable development through beekeeping, macaw friendly crop production and new bird watching routes. Additionally, our country-wide "We Want Them Free" anti-trafficking campaign brought national attention to protect this Critically Endangered species. Come and see the Red-fronted Macaw for yourself!

The Red-fronted Macaw Conservation Program in 2024 is supported by:



Project photos can be downloaded from:

<https://flic.kr/s/aHBqjBtYdD>

Introduction and goals

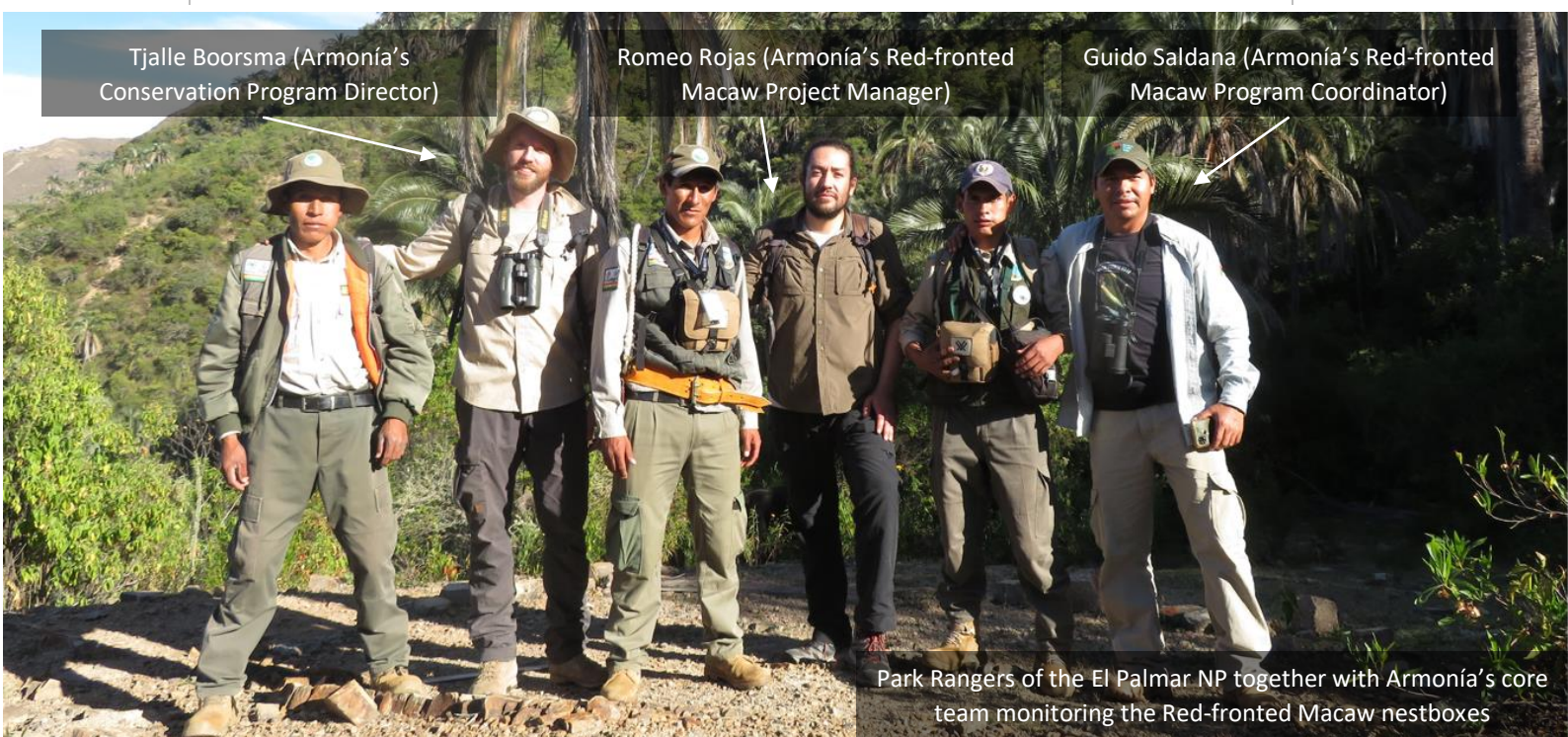
The Red-fronted Macaw (*Ara rubrogenys*) is one of two macaws endemic to Bolivia, found only in a small region of the dry inter-Andean valleys in the heart of the country. Unfortunately, it is **Critically Endangered**, with a population of about 1,200 individuals according to the 2021 population census conducted by Armonía (Herzog *et al.*, 2023 - more information [[HERE](#)]).

The species faces threats from habitat destruction in the inter-Andean dry forests, persecution by local farmers due to crop feeding (corn and peanuts), and poaching for the illegal pet trade. Asociación Armonía began working with the Red-fronted Macaw in 2003, collecting key data on its distribution and nest locations. We found Red-fronted Macaws in four departments (**Cochabamba, Chuquisaca, Santa Cruz, and Potosí**) breeding along the Mizque, Grande, Caine, and Pilcomayo River basins. The majority of Red-fronted Macaws nest in cavities located steep cliffs in these main river basins, as well as in those of their tributaries.

Our work stopped illegal trafficking of the Red-fronted Macaw in the Mizque river basin over a four-year period through an intensive program of environmental education, tourism development, and community agricultural development. We are now replicating this success across the entire distribution of the species.

To protect the Red-fronted Macaw we have set the following goals for 2023:

1	Implement a country-wide anti-trafficking campaign	Achieved
2	Improve community living standards in the Caine region to halt trafficking of macaws	Achieved
3	Monitor Red-fronted Macaws at the Red-fronted Macaw Community Reserve	Achieved
4	Monitor Red-fronted Macaw nestboxes in the El Palmar National Park	Achieved
5	Restore Bolivian Mountain Coconut forests in the El Palmar National Park	On-going
6	Improve and further develop the Red-fronted Macaw nestbox program	On-going
7	Extend conservation efforts to the Pilcomayo Red-fronted Macaw population	On-going
8	Restore Red-fronted Macaw native foraging habitat in the Mizque population	To be fundraised for



Park Rangers of the El Palmar NP together with Armonía's core team monitoring the Red-fronted Macaw nestboxes

Armonía's Red-fronted Macaw Conservation Work Areas

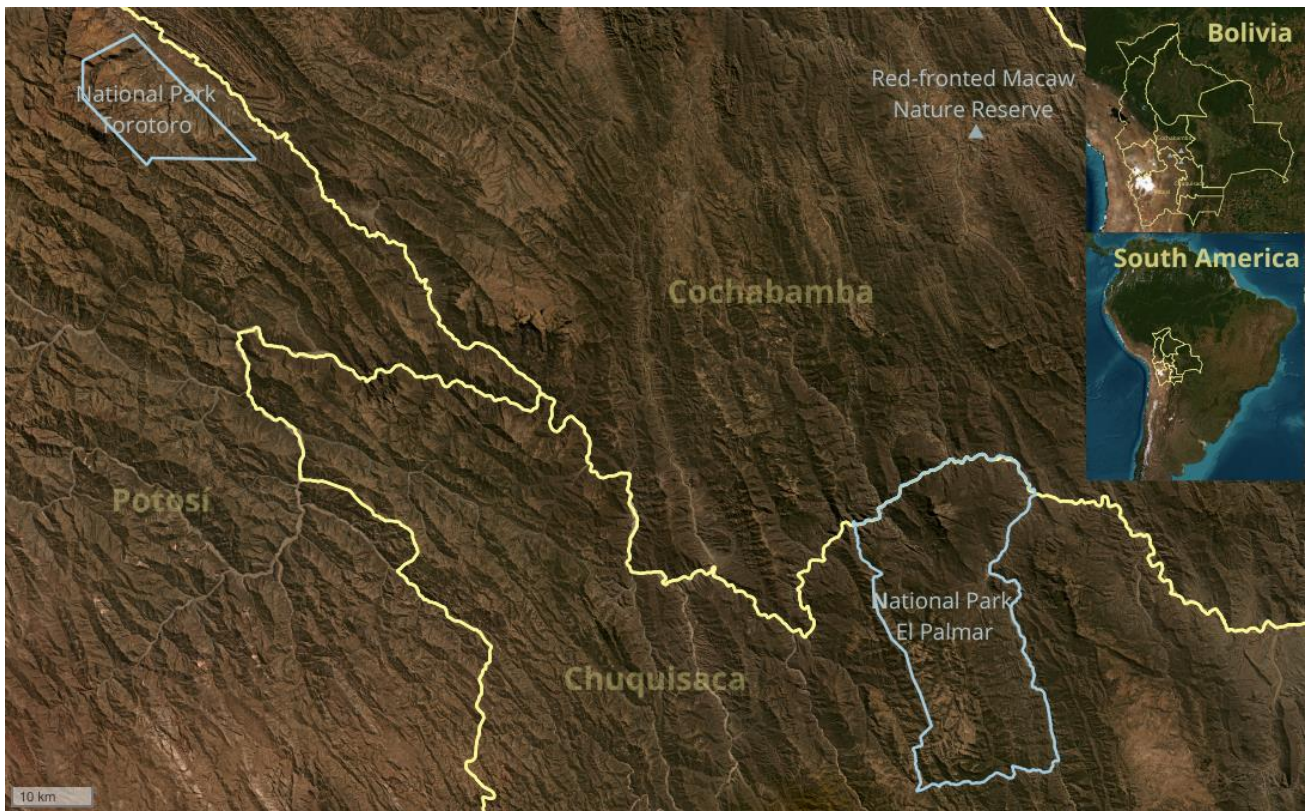


Figure 1. Armonía is currently working at three locations within the Red-fronted Macaw's distribution to prevent its extinction: Torotoro National Park, Red-fronted Macaw Community Reserve, and El Palmar National Park. The Red-fronted Macaw is native to the dry inter-Andean valleys of Bolivia, found in four departments: Cochabamba, Chuquisaca, Santa Cruz, and Potosí. The main breeding sites are located along the Mizque, Grande, Caine, and Pilcomayo River basins.



Program Results

Protecting Bolivia's Most Important Breeding Cliff

The Red-fronted Macaw Community Natural Reserve is the most important breeding site for the species, with at least 20 breeding pairs per year (12.5% of the total breeding population) using the cavities of the cliffs along the Mizque River. Since Armonía established this reserve in 2006, it has remained the primary site for the reproduction of the species, according to the 2021 population census. To protect this cliff from poachers, Armonía supports community tourism, trained local park rangers in nest monitoring, placed nestboxes, and restored native habitat.

Tourism:

After the pandemic, the highest number of tourists recorded in the Reserve was in 2022. This record was broken in 2023 and we experienced the highest income ever recorded in the history of the Reserve, with a total of \$24,346, which was received by the three local Quechua communities (read more [HERE](#)). With the support from Zoological Society for the Conservation of Species and Populations (ZGAP) we will improve the lodge to continue providing high standard tourism.

Table1. Red-fronted Macaw Community Reserve tourism statistics from 2019 to 2023.

Tourism Results Red-fronted Macaw Community Reserve					
	2019	2020	2021	2022	2023
Number of visitors	35	8	24	94	104
Number of tourist nights	61	17	36	155	218
Income (USD)	9,195	1,379	2,588	22,444	33,202
Costs USD	2,161	934	1,278	7,129	8,856
Costs (%)	23%	67%	49%	32%	73%
Total Community Profit (USD)	7,033	445	1,310	15,315	24,346

Please see our Red-fronted Macaw Community Reserve Tourism Video: [HERE](#)



Russell Mittermeier, Re:wild's Chief Conservation Officer, visited the Red-fronted Macaw Community Reserve watching and ready to photograph the Red-fronted Macaws at the breeding cliff: Romeo Rojas

Red-fronted Macaw Nest and Nestbox Monitoring:

In 2023, we implemented a new monitoring system using the KoboToolBox application. This application allows us to maintain a real-time updated database. It is being used in the Red-fronted Macaw Community Reserve (Mizque River basin), Torotoro National Park (Caine River basin), and El Palmar National Park (Grande River basin). This is a significant step forward in monitoring the Red-fronted Macaw populations (read more [HERE](#)). In 2024 in the Red-fronted Macaw Reserve we counted a record number of 24 active nests that produced chicks. A pair was found flying with three successfully fledged chicks. This year we will study on how to improve the nestboxes to make them successful as they have not yet been used by the Red-fronted macaw.



Inspecting Red-fronted Macaw nestboxes for breeding activity: Romeo Rojas

Table 2. Red-fronted Macaw breeding activity at the red-fronted Macaw Community Reserve from 2019 to 2023.

Red-fronted Macaw Nest Monitoring (Red-fronted Macaw Reserve)						
	2019	2020	2021	2022	2023	2024
Active nests	Pandemic	20	21	23	20	24
Possible nests	Pandemic	3	1	7	1	7
Active nestboxes	Pandemic	0	-	0	0	0
Total Breeding Pairs	-	23	22	30	21	31



Cliff with Red-fronted Macaw nests in the Red-fronted Macaw Community Reserve: Romeo Rojas

Habitat Restoration:

One of the threats to the Red-fronted Macaw is the destruction of its habitat, the inter-Andean dry forests. The Reserve has been the pilot centre for implementing the restoration of these dry forests. In 2020, together with the communities, we protected more than 4 hectares and planted 200 seedlings of native species: *Geoffroea decorticans* (**Chañarillo**), *Opuntia ficus-indica* (**Tuna**), *Neltuma chilensis* (**Cupesí**), and *Ziziphus mistol* (**Chañara**). These plants will produce fruits for the Red-fronted Macaw in the future. Additionally, we planted peanut that help fertilize the soil and serve as food for the macaws in the dry season.



Rojas Guido Saldaña (left) and Simon Pedrazas (right) proudly display the survival success of Chañara plants after four years (2020 vs 2024) of growth in the Red-fronted Macaw Community Natural Reserve: Romeo Rojas

78% of the reforested plants have successfully developed with the support of Zoo Dresden. Additionally, with funds generated from tourism, we purchased equipment (tanks, motor pumps, pipes, etc.) to assist with irrigation during the dry season. Currently, the trees are 3 meters high, and we hope they will soon produce their first flowers and fruits. We are launching an ambitious habitat restoration program, establishing professional forest nurseries, creating goat-free enclosures, and restoring 2,000 hectares of degraded forest. Help us turn this vision into reality.



Panoramic view of the Red-fronted Macaw Community Natural Reserve: Ernst Udo

Halting Illegal Red-fronted Macaw Trafficking in the Caine Region

The Caine River basin is Bolivia's third most important breeding area for the Red-fronted Macaw. However, due to rapid agricultural growth, most native habitats have been destroyed and converted into agricultural fields. Peanut and corn producers are in direct conflict with the Red-fronted Macaw, as the birds feed on corn and peanuts due to the decimation of their native food sources. According to local information, the Caine region is the primary area where macaws are currently being trafficked. Through local research, we identified the macaw/producer conflict as the root cause of the trafficking problem.

To address this issue, Armonía initiated a three-year program to combat the illegal trade and killing of Red-fronted Macaws in the Caine River basin (Caine region and Torotoro National Park), supported by the Illegal Wildlife Trade Challenge Fund (IWT) from the United Kingdom. We are currently in the final year of the project and are very pleased with our achievements; you can read the annual reports [HERE](#).

"We Want Them Free" Campaign - countrywide anti-trafficking campaign:

An important goal was to launch a nationwide campaign for the conservation of the Red-fronted Macaw. In April 2023, the "We Want Them Free" campaign was officially launched in the city of La Paz, attended by UK Ambassador Jeff Glekin, Spanish Ambassador Javier Gassó, as well as several national and municipal authorities, scientific institutions, and members of the general public (read more [HERE](#)). This event was repeated in Santa Cruz, Cochabamba and Sucre in early 2024. The event also featured a dance performance dedicated to the Red-fronted Macaw, choreographed by a nationally renowned choreographer and performed by a professional dancer. A special costume representing the Red-fronted Macaw was created for this performance (read more [HERE](#)). We also distributed an antitrafficking poster to report wildlife trafficking (see image next page)

You can watch the dance performance: [HERE](#)





Denuncia el tráfico de fauna silvestre

Ayúdanos a
visualizar el tráfico



**EN PELIGRO
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Paraba Frente Roja

Única en el mundo

El tráfico de animales silvestre
es un **Delito de tipo penal**

**Solo quedan menos de 1200
Parabas en vida silvestre**





Con el apoyo:




*Financiado por el Gobierno Británico a través
de Illegal Wildlife Trade Challenge Fund*

En coordinación:




Gobierno
Autónomo
Departamental
Santa Cruz




Eco-agriculture, beekeeping and birdwatching tourism in the Caine Region:

To stop the illegal trafficking of the Red-fronted Macaw, it was important to improve the living standards of the communities in the Caine region. Therefore, we developed proposals for eco-agriculture, beekeeping, and birdwatching tourism that benefited more than 131 families.

The eco-agriculture proposal consisted of three components: pest control, agroforestry, and the Toro Toro ecological production brand. The work was carried out over three years in close collaboration with community members and authorities from various community unions, helping to select committed and motivated families to participate in these initiatives. To showcase the project's achievements, we developed a mini-documentary where you can see the results.

Watch chapter 1 of the project documentary: [HERE](#)



Guido Saldaña in peanut crops friendly to the Red-fronted Macaw and expert consultant in eco-agriculture: Romeo Rojas

The development of the beekeeping actions with the beneficiary families began in its initial stages with socialization workshops, training sessions, and the purchase of complete bee boxes and necessary equipment. Additionally, the first formally established association of beekeepers in Potosí was created. This initiative aims to empower local communities by providing them with sustainable livelihoods while promoting the conservation of the Red-fronted Macaw's habitat.

Watch chapter 2 of the project documentary: [HERE](#)



Beehives in the community of Inca Corral in the Caine Region, Potosi: Romeo Rojas

To improve birdwatching tourism, we implemented two brand new trails focused on the Red-fronted Macaw. The Matanseria - Jala Jala trail was developed in collaboration with the community of Matanseria (Cuñurani, Torotoro), where we worked diligently to promote community tourism through training and workshops. This trail ends at the Jala Jala cliff, where visitors can observe Red-fronted Macaw nests. The Julo Grande trail features a striking sculpture of the Red-fronted Macaw that attracts tourists for selfies. This trail culminates in a view of the Caine River, where Red-fronted Macaws can be seen flying. This work was carried out in close collaboration with the community of Julo Grande. In addition to these efforts, we created the first local bird guide for the entire Caine region, which serves as a key tool for birdwatching tourism in the area (read more [HERE](#)).

Watch chapter 3 of the project documentary: [HERE](#)



Revealing of the Red-fronted Macaw sculpture in the Julo Grande Community: Margarita Palacios



Brand new Red-fronted Macaw sculpture in the Julo Grande Community: Romeo Rojas



Armonia team promoting tourism and pushing environmental education in the Caine region: Romeo Rojas

Protecting the Palm Breeding Red-fronted Macaw population

During the 2021 population census of the Red-fronted Macaw, Asociación Armonía found seven nests in Janchicoco palm trees (*Parajubaea torallyi*, a **threatened** and **endemic palm species**) in El Palmar National Park, Chuquisaca. This is the only site where the Red-fronted Macaw breeds in palm trees; they typically breed on cliffs. In 2022, Armonía installed nestboxes in palm trees for the first time to increase the number of available nesting cavities and facilitate the reproduction of this Critically Endangered species. With the support from ZGAP, Bioparc, and Cougar Mountain Zoo we have been monitoring these nestboxes and will continue doing this for the 2024-2025 breeding season.



View of a natural Red-fronted Macaw nest in a Janchicoco palm forest in El Palmar National Park: Ernst Udo

Nestbox Program: Through the new monitoring system using the KoboToolBox application, we maintain a database that is updated in real time. In collaboration with the park rangers of El Palmar National Park, we are monitoring the 50 nestboxes installed, along with the natural nests of the Red-fronted Macaw in Janchicoco palms. This is the second year of monitoring and the first using the application. During the 2023-2024 breeding season 8 active nests were found.



Park Rangers (Felix Laime, Eleuterio Yucra and Juanito Escalante) monitoring nestboxes in El Palmar National Park:
Ernts Udo Drawert

In May 2023, we conducted monitoring of nestboxes and natural nests with the entire Red-fronted Macaw Conservation Program team (Tjalle Boorsma, Guido Saldaña, and Romeo Rojas). For the first time, we directly observed a Red-fronted Macaw chick. This milestone highlights the success of our conservation efforts and the importance of our ongoing initiatives to protect this Critically Endangered species (read more [HERE](#)).



Two Red-fronted Macaw chicks in a natural nest in a Janchicoco palm: El Palmar National Park.

In December 2023, we recorded the first signs of a nestbox being adopted by a pair of Red-fronted Macaws, which is exciting news for the project and for the conservation of the species. This achievement is part of a larger effort to monitor and protect the Red-fronted Macaw population.



Nestbox in Janchicoco palm with signs of presence of Red-fronted Macaw: Ernts Udo Drawert

Restore the Janchicoco palm forests in El Palmar National Park: Habitat destruction is one of the reasons why the Red-fronted Macaw is Critically Endangered. We coordinated with the National Park, the Municipality of Presto, Chuquisaca, and communities living within the protected area to carry out a campaign of direct planting of Janchicoco seeds under the slogan "Sowing life and hope for a better future of El Palmar National Park." We managed to sow 3,000 Janchicoco palm seeds. This initiative was supported by BIOPARC, Cougar Mountain Zoo, and the Mohamed Bin Zayed Species Conservation Fund (read more [HERE](#)).



Members of the Joya Charal community sowing Janchicoco seeds: Guido Saldaña

In addition to direct sowing, we supported the community of Molani, in coordination with the National Park, to protect a community property with the sole objective of preserving the Janchicoco palm tree. This effort is crucial for maintaining the habitat necessary for the Red-fronted Macaw's survival.



Members of the Molani community receiving material to protect Janchicoco palm forests: Silvana Aviles

Environmental Education – First-ever Futsal Championship: To raise awareness about the conservation of the palm breeding red-fronted Macaws, Armonía, funded by Play for Nature, organized the first-ever Red-fronted Macaw Futsal championship on the anniversary of the El Palmar protected area. The championship was a tremendous success, with significant participation from communities in the protected area. As a result, 30 authorities from the 10 communities, 100 young participants in the tournament, and at least 300 families who watched the tournament are now aware of the conservation efforts for the Red-fronted Macaw and other threatened species.



This event influenced other protected areas, as we received a request from Torotoro National Park to assist in organizing a futsal championship within their protected area. As a first experience using sports to engage people in the conservation of critically endangered species, it has proven highly effective. We are excited to continue and expand the championship to the next level. Our goal is to seek support to extend this successful futsal championship to 3 municipalities located in 3 different Red-fronted Macaw subpopulations, increasing our conservation message throughout the species' range.



Armonia Proud Owner of New Project Vehicle



Staff of the Reserve, teams of the Red-fronted Macaw programs, and community members with the brand-new project vehicle: Margarita Palacios

Thanks to the "2023 Zoo Animal of the Year Campaign" organized by ZGAP, Armonía has become the proud owner of a brand-new Suzuki Jimny project vehicle. Delivered on March 12, 2024, the vehicle immediately joined our conservation efforts at the Red-fronted Macaw Community Reserve the following day, where our team continued monitoring Red-fronted Macaw nests. The invaluable support received through this donation is key to the success of our conservation efforts, as a reliable project vehicle is an indispensable asset in our work. We would like to express our gratitude for this generous contribution (read more [HERE](#)).



Red-fronted Macaw 2024-2025 Program Goals

In 2024 and 2025, we will expand our conservation efforts to include the Pilcomayo Red-fronted Macaw subpopulation. This will bring our activities to all four known subpopulations: Rio Mizque (Red-fronted Macaw Community Reserve), Rio Caine (Torotoro National Park), Rio Grande (El Palmar National Park), and Pilcomayo (Icla). Our goals are to significantly enhance conservation impacts including antitrafficking education campaigns, habitat restoration and promoting Macaw friendly development model to prevent the extinction of the Red-fronted Macaw.

Rio Mizque - Red-fronted Macaw Community Reserve

- Improve tourism infrastructure.
- Install arrival signage for self-driving tourists.
- Promote the Red-fronted Macaw Community Reserve lodge.
- Monitor natural Red-fronted Macaw nests and nestboxes.
- Place climate measurement tools in natural nests and nestboxes to better understand ideal breeding conditions.
- Launch a multi-year habitat restoration program to restore 2,000 hectares.

Rio Grande - El Palmar National Park

- Monitor 50 Red-fronted Macaw nestboxes in collaboration with El Palmar NP staff.
- Develop and test three new nestbox designs to evaluate macaw preferences.
- Restore 20 hectares of Janchicoco palm forest.
- Plant 2,500 Janchicoco trees.
- Develop a Janchicoco-based product to generate local income.
- Implement Armonía's Environmental Education and Awareness Plan.

Rio Caine – Torotoro National Park

- Monitor Red-fronted Macaws in cooperation with Torotoro NP staff.
- Develop a honey association to support local beekeepers.
- Assist families benefiting from Armonía's program in maintaining eco-friendly food production.
- Support the newly established Red-fronted Macaw tourism program.

Rio Pilcomayo – Icla

- Explore the Icla palm forest to locate breeding Red-fronted Macaws.
- Assess threats to the Red-fronted Macaw to develop a new conservation project for this isolated subpopulation.
- Implement Armonía's Environmental Education and Awareness Plan and distribute antitrafficking material.