

Empowering indigenous conservation leaders to protect endangered Amazon River turtles - 2019



Photo: Local Conservation Groups

FINAL REPORT

Reporting period: July 2019 to March 2020

Species involved: giant South American turtle (*Podocnemis expansa*), yellow spotted river turtle (*P. unifilis*) and six-tubercled river turtle (*P. sextuberculata*).

Project location: Colombian and Peruvian indigenous communities of the Amazon River. Conservation beaches along the Colombian-Peruvian Amazon River. Coordinates: -4.047472, -70.110932

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Other researchers involved: Javier Díaz (PhD), Andrés Felipe Aponte (MSc), Valentina Franco (Social geography student, UDCA, Colombia)

Organization name: Fundación Biodiversa Colombia

Web-page: <https://www.fundacionbiodiversa.org/wordpress/community-based-conservation-program-of-river-turtles/>

Total Project Budget: COP 57.000.000 / USD 17.500 / GBP 13.900

Funds received: World Land Trust: GBP 4.000 / Columbus Zoo: USD 3.712 / GEF - Corazón de la Amazonía: COP 38.746.420



Executive summary

The 2019 phase of the program continued with its good results in terms of participation and effective conservation actions. 103 turtle guardians (13 more than in 2018) from five communities of Colombia and Peru protected the five main nesting beaches of the area from July to December. There was an atypical 15-days delay in the nesting season due to late appearance of beaches in the River, which mainly affected *P. sextuberculata*, the first species to nest on the beaches (17 nests and 264 hatchlings compared to 72 nests and 948 hatchlings in 2018). However, there was a significant increase in protected nests and hatchlings of the other two species: *P. unifilis* (56 nests and 2057 hatchlings compared to 34 nests and 1226 hatchlings in 2018) and *P. expansa* (7 nests and 869 hatchlings compared to 5 nests and 522 hatchlings in 2018). It was actually the season with the highest number of protected nests and hatchlings for *P. expansa* since the start of the program, and the second highest for *P. unifilis*. (57 nests and 2370 hatchlings in 2017). The number of infertile eggs was 5.4% in total (176 out of 3275), being highest for *P. expansa* (10.9%), compared to *P. sextuberculata* (2.3%) and *P. unifilis* (3.5%), which might suggest lower fertilization rates due to smaller populations.

For the last four seasons, there has not been any poached nest or female on the nesting beaches. Furthermore, 0 nests and only 0.3% of the eggs (10 out of 3275) were lost due to natural causes. This proves the high effectiveness that the guardians have acquired in protecting the beaches, females and nests.

Regarding the gathering of biological data, more than 97% of the information of the nests was fully recorded without errors, and 10 mothers were correctly marked and measured. This shows the proficiency and understanding of the process by the turtle guardians.

Four awareness raising events were carried out with neighbour communities and authorities: 1) in two occasions, children from two schools were invited to witness hatching on the beaches; 2) communities and environmental police were invited to the release of a *P. expansa* individual on a conservation beach; and 3) an environmental education activity was carried out in one of the main schools of the area. A Social Geography student accompanied the protection and awareness-raising activities for her Bachelor thesis, which was presented in May 2020.

Finally, three institutions were involved and committed to the acai processing community plant project, including the regional environmental authority. The GEF-Corazón de la Amazonía Program coordinated by Patrimonio Natural supplied part of the equipment for the processing plant. We carried out three meetings with the communities and the participating organisations to set up a work plan for the plant's implementation. Samples of acai were processed and analysed for biochemical content, and a brand and labels for the acai of the program were designed.

Activities carried out during the period

Objective 1. To reduce poaching of eggs and females on the main nesting beaches of the area, through protection and monitoring by Local Conservation Groups during the peak of the nesting season, with support of environmental authorities.

Activity 1.1 Effective nesting surveillance

This season, 103 turtle guardians from six Local Conservation Groups (LCG) guarded the five most important nesting beaches of the area, two in the Peruvian side and three in the Colombian side of the Amazon River. Monitoring started as soon as the beaches appeared (31st of July) and continued every night until nesting events ended (30th of September). Mixed teams of 17-22 monitors per night, including new and experienced members, protected the nests and nesting females from poachers, and erased turtle tracks to avoid egg loss during the day.

Each LCG was in charge of one beach, under the supervision of the coordinating group, formed by the most experienced members of each community.

From the end of the nesting season, the coordinating group continued to protect the nests and the eggs until every hatchling arrived safely to the river. When necessary, nests were transplanted within the beaches to avoid loss by flooding or other natural threats.

The Colombian environmental police supported the activities with occasional patrols along the beaches and constant communication with the monitors. The Peruvian Captainship also issued a support letter to the guardians, and the activities were carried out under the framework agreement with Corpoamazonia, the regional environmental authority.

Activity 1.2 Biological data gathering

For each nest they found, the monitors gathered basic biologic information (date, species and track width) and labelled the nest with a unique number. When a mother was found after nesting, they recorded also carapace size and marked it with an unique Inconel tag. After hatching, they recorded the date, the number of living hatchlings, and the number of dead and infertile eggs. The data was gathered by each group, under supervision of the coordinating LCG, and revised and compiled by the local field coordinator to check and correct possible errors. The data was then analysed and compared to previous nesting seasons. A Social Geography student accompanied the activities, supported data gathering and revision and trained some members in GPS use and geopositioning the nests.

Objective 2. To socialize the activities of the Local Conservation Groups and to raise awareness of the importance of river turtle conservation amongst the communities of the area, focusing especially on the children.

Activity 2.1 Socialization among institutions and communities

Prior to the start of the season, each LCG, supported by the Project Coordinator, socialised the activities with traditional authorities. Letters were sent to environmental or military authorities of both countries to ask for their support.

Activity 2.2 Awareness-raising activities

Four awareness-raising activities were carried out:

- The guardians invited community members and the environmental police to witness the release of a large *P. expansa* on one of the conservation beaches (<https://youtu.be/mkpOuAc-BtU>).
- On two occasions, children from two neighbouring schools were invited to witness hatching on a conservation beach. Children received an environmental education talk and then were invited to name one of the hatchlings and release it to the River. Unfortunately, due to limited funds, most of the funds were directed to the conservation activities and we were unable to involve more schools (<https://youtu.be/UAGeJRQCz4U>)
- An environmental education activity was carried out in one of the main schools of the area by the participating University student. Through drawings and questions to the children, she analysed how much they knew about the species, about the conservation activities carried out by the adults and about the threats to the species.

Activity 2.3 End-of-season event

Traditionally, the season ends with a special celebration where participating and neighbour communities are invited to socialise the results of the season, and award exceptional teams and guardians for their good results. Each year, the event is hosted by a different community. This year, the host community had an accident with the community boat when returning from the main city, which resulted in one missing person and material losses by most of the families. Therefore, we decided not to carry out the closure event, and use the resources for a gathering with communities and organisations to discuss the acai community processing plant (see below). Nevertheless, individual meetings were carried out with each LGC, who received a poster describing the season's results (see annex) and exceptional teams and guardians were rewarded.

Objective 3. Moving towards sustainable self-funding of the Program through community processing and fair trade of açai.

Activity 3.1 Producing açai samples.

Samples of açai pulp were transported and processed in Bogotá, to look for potential buyers and carry out biochemical analyses. The analysis showed a very good product quality with high content of antioxidants (polyphenols), proteins, oils and minerals, as well as excellent microbiological conditions.

Activity 3.2 Açai community pilot processing plant

Although we were unable to raise the funds for building the processing plant, three organisations were committed to participate in making the community processing plant a reality: Corpoamazonia, the regional environmental authority, the Sinchi Amazonian Research Institute and Patrimonio Natural with its Corazon de la Amazonia GEF Program. We carried out two meetings between the communities and the participating organisations to define responsibilities and commitments of each party. Patrimonio Natural donated part of the necessary equipment for the future plant, consisting of a fruit pulper, an industrial blender, a vacuum packing machine and a refrigerator. Sinchi Institute committed to building capacity and providing technical support for the processing process. Finally, Corpoamazonia, will support the sustainable harvesting plan and required permits. The communities chose the location for the plant and committed to provide labour for its rehabilitation. The four institutions will collaborate in raising the required funds to make the project a reality, with support of the communities. A committee was formed with one representative of each community, one for the turtle guardians and one for the participating organisations to develop a work plan for the project. They held their first meeting in March 2020, but due to the Coronavirus situation, all further activities have had to be postponed.

Activity 3.3 Commercialization of the product

A volunteer graphic designer donated the logo and product design for the acai products of the Program (see annex). The biochemical analyses and the processed samples were used to present to potential clients in the national market and abroad, which already provided some modest funds for the 2020 season. In 2020, samples production and commercialisation had to be interrupted due to the Coronavirus restrictions.

Main challenges faced

The main difficulty was the late appearance of the nesting beaches this season, which was delayed by nearly 15 days on average, compared to previous seasons. This mostly affected nesting of *P. sextuberculata*, which is the first species to nest and has very specific habitat requirements for nesting. This caused a 76% decrease in nesting events (17 compared to 72 in 2018) and 72% decrease in hatchlings (264 compared to 948 in 2018). Furthermore, the water

level started rising and beaches started disappearing sooner than usual, which forced the coordinating group to transplant some nests to higher locations, sometimes up to two or three times. Fortunately, their active surveillance and their rapid response avoided nest or egg loss by flooding and, despite transplanting, hatchlings were not affected in their development and were able to complete their cycle. Unfortunately, due to climate change these atypical variations will be more and more frequent.

Natural predators, particularly ants and crickets, are also frequent. However the guardians have learned to detect and manage threats, either by digging and eliminating the threat before it reaches the nest, in the case of crickets, or by transplanting nests that are overgrown by vegetation, where they are more vulnerable to ants.

The number of infertile eggs was highest for *P. expansa* (10.9%), compared to *P. sextuberculata* (2.3%) and *P. unifilis* (3.5%), which might suggest lower fertilization rates due to a smaller population. If that is the case, a progressive reduction on infertile eggs is expected with the population's recovery.

This season, due to limited funding we were unable to include a new conservation beach and a new participating community. Furthermore, we had to direct available funding to conservation, thus we were unable to include more schools in the environmental education activities. We were also unable to carry out most of the planned activities for the acai community processing plant, which will require further time to raise the necessary funding. Furthermore, due to Coronavirus, all further meetings of the committee formed between the communities and the participating organizations and the production and commercialisation of açai samples were interrupted.

Currently our main concern is to support the communities that have been heavily affected by the coronavirus situation, due to their proximity with Brazil. Via our Facebook page we have raised more than USD 1000 in cash or in supplies to buy emergency equipment such as masks, sanitizers thermometers and oximeters and create an emergency fund. So far, the packages have been sent.

Principal outcomes

The 2019 season showed the highest participation of turtle guardians from the start of the program, with 103 guardians, including 36 women. There was a 14% increase of participants compared to 2018 (90 participants). This shows greater involvement and commitment from participating communities, and awareness about the importance of the conservation activities.

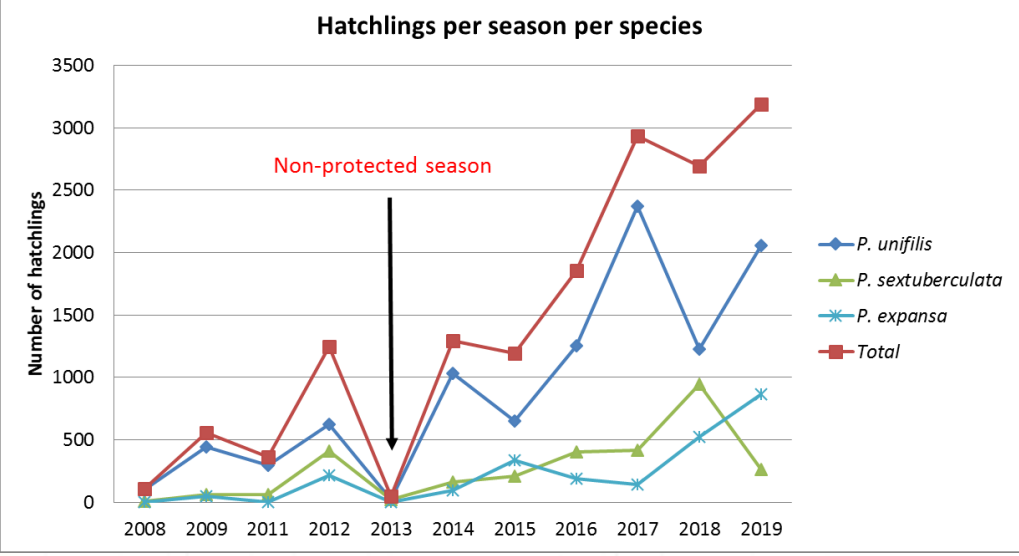
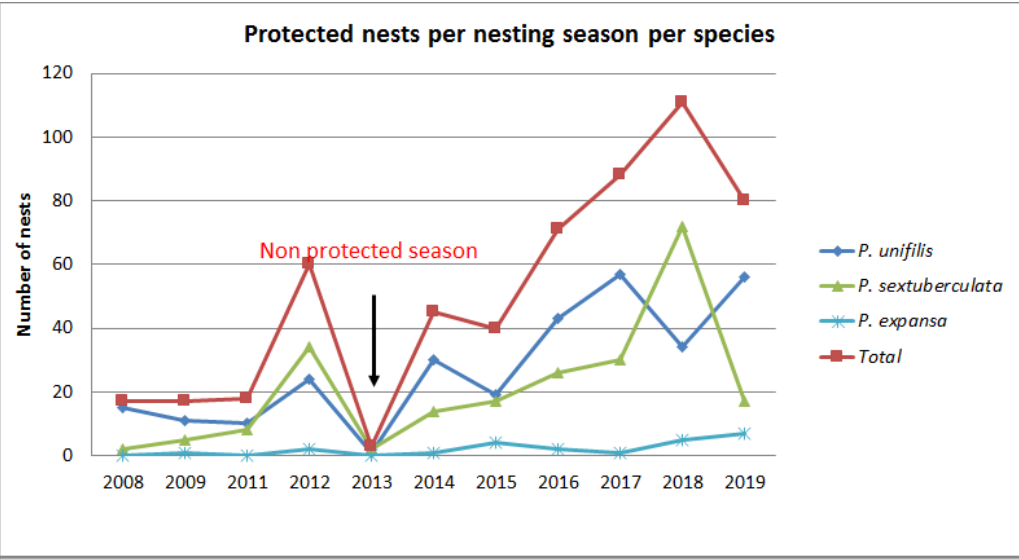
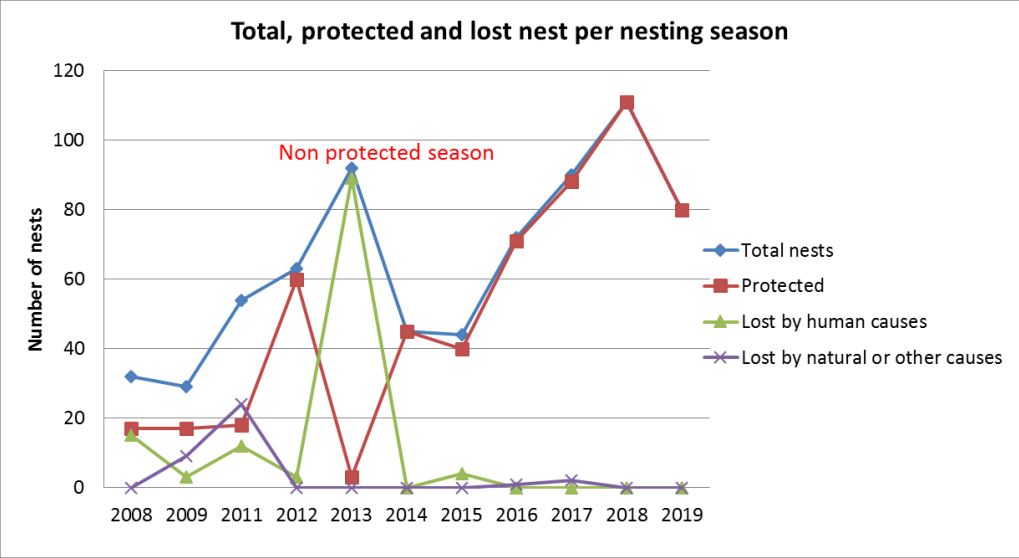
For four consecutive seasons, the guardians have completely prevented nests and females poaching on the beaches. Furthermore, for two consecutive seasons, no nests were lost due to natural causes, such as flooding or natural predators. Nests surveillance and management of natural predators (ants, crickets) also prevented egg loss by natural causes, with only 10 eggs out of 3275 that were eaten by crickets.

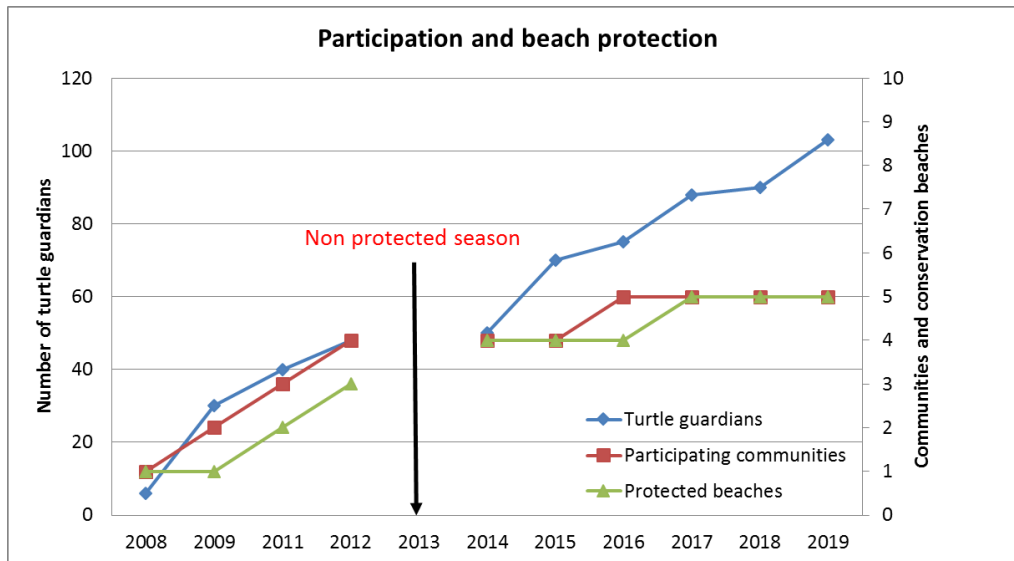
Despite the reduction of nesting events of *P. sextuberculata*, there was a significant increase in protected nests and hatchlings of the other two species compared to 2018: for *P. unifilis*, a 65% increase in nests (from 34 to 56) and 68% in hatchlings (from 1226 to 2057); and for *P. expansa*, 40% increase in nests (from 5 to 7) and 66% increase in hatchlings (from 522 to 896). This was actually the season with the highest number of protected nests and hatchlings for *P. expansa* since the start of the program, and the second highest for *P. unifilis*. (57 nests and 2370 hatchlings in 2017).

These accomplishments are the result of a combination between their acquired experience in protecting the nests and females, their empowerment and appropriation of the conservation actions and the raised awareness of neighbouring communities in the area.

Regarding biological information gathering, more than 97% of the information of the nests was fully collected without mistakes, and 10 mothers were correctly marked and measured, which shows proficiency and understanding of the process by the turtle guardians.

The following graphs show conservation and participation results along the years of the Program.





Even though we could only carry three environmental education activities, the nearly 60 attendants from different communities, local schools and environmental police participated enthusiastically. These activities contribute to raise awareness about the importance of the guardians' work and of turtle conservation.

The environmental activity at one of the most important schools in the area carried out by the University student showed high awareness and knowledge about the turtles and the activities carried out by the guardians. This was particularly evident with children of guardians who had visited the beaches and were familiar with their knowledge. It is also important to point out that some young new members of the LCGs had participated in environmental education activities as children in the beginning of the program.

Regarding recognition of the importance of the guardians' activities, two results can be highlighted: first, for the third consecutive year, Decameron Hotel donated funds to the project; and second, the achieved results drew the attention of the three important Colombian organisations who committed to collaborate to making the açai community processing plant a reality. We are currently working with the Sinchi Institute to raise the required funds to carry out the project, which include infrastructure, remaining equipment, capacity-building and harvest and commercialisation permits.

Results dissemination

- The Program was included as a case study in the People not Poaching website (<https://www.peoplenotpoaching.org/>) and the publication "Community-led approaches to tackling illegal wildlife trade: case studies from Latin America".
- In October 2019, the project coordinator and the field coordinator presented the Program in a SuLI expert group meeting on wildlife illegal trade and in the First high level conference of the Americas on wildlife illegal trade.
- In May 2020, the Social Geography student from the UDCA University presented her Bachelor thesis dissertation entitled "Participatory action plan for turtle conservation in the Colombian-Peruvian Amazonia", based on the results of the 11 years of the Program.
- A scientific publication in the Acta Biológica Colombiana was submitted and accepted to be published in 2020 with the title "Community-based conservation of three River turtle species in the Colombian-Peruvian Amazonia" with an analysis of the results between 2008 and 2018.

PROJECT BUDGET AND EXPESES						World Land Trust		Columbus zoo		GEF-Corazón	
Category/Budget Item	Total Budget COP	Total spent COP	Difference	Total spent USD	Total Spent GBP	Spent COP	Spent GBP	Spent COP	Spent USD	Spent COP	Spent USD
Personnel	\$ 34.722.541	\$ 17.111.720	\$ 17.610.821	\$ 5.251	£4.170	\$ 3.950.000	£963	\$ 12.096.000	\$ 3.712	\$ 12.096.000	\$ 3.712
Personal incentives for 90 local turtle guardians	\$ 30.510.750	\$ 17.111.720	\$ 13.399.030	\$ 5.251	£4.170	\$ 3.950.000	£963	\$ 12.096.000	\$ 3.712	\$ 12.096.000	\$ 3.712
Travel	\$ 7.873.730	\$ 5.388.420		\$ 1.653	£1.313	\$ 5.357.420	£1.305	\$ 0	\$ 0	\$ 0	\$ 0
Round trips airfare from Bogota to Leticia for project coordinator	\$ 1.530.000	\$ 1.098.700	\$ 431.300	\$ 337	£268	\$ 1.098.700	£268				
Aquatic and terrestrial transport for project coordinator field trips	\$ 270.000	\$ 290.000	-\$ 20.000	\$ 89	£71	\$ 259.000	£63				
Fuel for monitoring	\$ 5.845.730	\$ 3.999.720	\$ 1.846.010	\$ 1.227	£975	\$ 3.999.720	£975				
Lodging and meals	\$ 1.430.000	\$ 487.590		\$ 150	£119	\$ 424.090	£103	\$ 0	\$ 0	\$ 0	\$ 0
Field rate per diem (lodging and meals) por project coordinator	\$ 1.050.000	\$ 487.590	\$ 562.410	\$ 150	£119	\$ 424.090	£103				
Supplies	\$ 7.383.500	\$ 6.351.616		\$ 1.949	£1.548	\$ 6.274.866	£1.529	\$ 0	\$ 0	\$ 0	\$ 0
Engine and boat rental for monitoring	\$ 4.385.000	\$ 4.391.000	-\$ 6.000	\$ 1.347	£1.070	\$ 4.391.000	£1.070				
Materials for monitoring	\$ 2.098.500	\$ 1.842.966	\$ 255.534	\$ 566	£449	\$ 1.842.966	£449				
Transport of materials	\$ 200.000	\$ 30.000	\$ 170.000	\$ 9	£7						
Fotocopies, printing and courier	\$ 100.000	\$ 87.650	\$ 12.350	\$ 27	£21	\$ 40.900	£10				
Communtiy açai productive project	\$ 27.591.785	\$ 27.591.785	\$ 0	\$ 8.466	£6.723	\$ 467.304	£114	\$ 0	\$ 0	\$ 26.650.420	\$ 8.177
Açai samples	\$ 265.000	\$ 265.000	\$ 0	\$ 81	£65						
Biochemichal analyses	\$ 467.304	\$ 467.304	\$ 0	\$ 143	£114	\$ 467.304	£114				
Packing materials	\$ 76.061	\$ 76.061	\$ 0	\$ 23	£19						
Samples transportation	\$ 133.000	\$ 133.000	\$ 0	\$ 41	£32						
Fruit pulper machine 300 Kg/h	\$6.050.420	\$6.050.420	\$ 0	\$ 1.857	£1.474					\$ 6.050.420	\$ 1.857
Industrial blender 15 lt	\$ 3.781.513	\$3.781.513	\$ 0	\$ 1.160	£921					\$ 3.781.513	\$ 1.160
Vaccum packing machine 20m3/h	\$ 11.596.639	\$ 11.596.639	\$ 0	\$ 3.558	£2.826					\$ 11.596.639	\$ 3.558
Vaccum packing bags 30 x 40 cm	\$ 600.000	\$ 600.000	\$ 0	\$ 184	£146					\$ 600.000	\$ 184
Gas/electricity refrigerator (200 l)	\$ 4.621.848	\$ 4.621.848	\$ 0	\$ 1.418	£1.126					\$ 4.621.848	\$ 1.418
Grand Totals	\$ 79.001.556	\$ 56.931.131	\$ 17.610.821	\$ 17.469	£13.873	\$ 16.473.680	£4.014	\$ 12.096.000	\$ 3.712	\$ 38.746.420	\$ 11.889

PHOTOGRAPHIC MATERIAL

Photos: Local Conservation Groups, Valentina Franco, Fernando Arbeláez

Turtle conservation



A turtle guardian shows a *P. sextuberculata* to his son in a conservation beach



Hatching on a conservation beach



Tracking nests with GPS and counting egg shells after hatching

BI

COLOMBIA

Environmental education



Environmental education activity with one of the schools of the area



Children from one of the schools in the area are invited to witness hatching and adopt symbolically a hatchling

Poster with results of the Program given to Local Conservation Groups

PROGRAMA DE CONSERVACIÓN COMUNITARIA DE CHARAPAS, CUPISOS Y TARICAYAS (2008-) RESULTADOS TEMPORADA 2019



COMUNIDADES NUEVO JARDÍN, YAHUMA I, EL PROGRESO, SANTA SOFÍA, BARRANCO, COLOMBIA Y PERÚ



¿QUIÉNES SOMOS? SOMOS 103 GUARDIANES DE TARICAYAS, MUJERES Y HOMBRES DE TODAS LAS EDADES DE CINCO COMUNIDADES INDÍGENAS DE COLOMBIA Y PERÚ.

¿QUÉ HACEMOS? LOS GUARDIANES DE TARICAYAS CUIDAMOS LOS CUPISOS, LAS TARICAYAS Y LAS CHARAPAS PARA QUE NUESTROS HIJOS Y NUESTROS NIETOS PUEDAN CONOCERLAS.

¿CÓMO LO HACEMOS? DURANTE LA TEMPORADA DE ANIDACIÓN (JULIO A DICIEMBRE), USANDO NUESTRO CONOCIMIENTO TRADICIONAL, PROTEGEMOS A LAS MADRES Y A LOS NIDOS EN LAS CINCO PLAYAS PRINCIPALES DE LA ZONA PARA QUE LOS CHARITOS LLEGUEN A SALVO AL RÍO. TAMBIÉN EDUCAMOS A LOS FUTUROS GUARDIANES DE TARICAYAS.



¿QUÉ LOGRAMOS EN 2019?

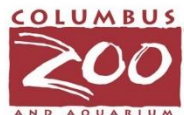
85 NIDOS PROTEGIDOS DE LAS TRES ESPECIES
85 MADRES PROTEGIDAS DE LAS TRES ESPECIES
3007 CHARITOS LIBERADOS

¿QUÉ HEMOS LOGRADO DESDE 2018?

555 NIDOS PROTEGIDOS DE LAS TRES ESPECIES
717 MADRES PROTEGIDAS DE LAS TRES ESPECIES
15305 CHARITOS LIBERADOS



EN 2019 NOS APOYARON:



Moving towards self-sustainability



Açaí harvest in one of the community plantations



Traditional transformation of açaí



Meeting held in February 2020 between participating communities and organisations to make the processing plant a reality



Location chosen by the communities for the processing plant



Packing and design of the Açai Taricaya (River turtle) brand