



*Women for
Biodiversity*

**MANAGEMENT
REPORT YEAR**

2021

**WOMEN FOR
BIODIVERSITY ORG**



LETTER OF PRESIDENT

We are pleased to present the Management Report for the year 2021, which includes the main actions and projects carried out in this area during those mentioned exercises. In the WOMEN FOR BIODIVERSITY ORG, a Colombian non-profit organization, leader in the protection of the biodiversity and ecosystems of the Sierra Nevada de Santa Marta, Colombia, we work so that all our sustainable form and integrate the conservation and promotion of the natural heritage in The strategy of the entity. This work also extends to promoting awareness actions that contribute to the promotion of biological diversity.

The WOMEN FOR BIODIVERSITY ORG corporation has had a Biodiversity Policy, approved by the Board of Directors, which, together with those of Sustainability, Environment, and Against Climate Change, establish the basic principles of action of the group in environmental management.

In this same sense, the company has incorporated into its strategy the Sustainable Development Goals (SDGs), defined by United Nations for the year 2030. In the case at hand, WOMEN FOR BIODIVERSITY ORG focuses its effort in the life of terrestrial ecosystems (objective 15), contributing indirectly to the rest of the objectives. During 2021, our organization carried out 6 projects with activities that ensure full compatibility between its development plans and conservation and respect for the environment.



Additionally, WOMEN FOR BIODIVERSITY ORG has important future plans to continue contributing to the improvement of the environment and the fight against climate change. Thanks to the professionalism and dedication of its human team, WOMEN FOR BIODIVERSITY ORG will continue to act responsibly, respecting the environment and promoting sustainable economic and social development of all those regions in which it is present.

President of WOMEN FOR BIODIVERSITY ORG

EXECUTIVE SUMMARY

WOMEN FOR BIODIVERSITY ORG Corporation is a non-profit non-governmental organization (NGO) based in Santa Marta, Colombia, which has worked since 2014 to advance the understanding of the biodiversity of the Sierra Nevada de Santa Marta. During 2021, we were carrying out research and education programs in different parts of the region with the objective of contributing to the conservation of biodiversity and the ecosystems on which its existence depends.



Initially, the main purpose of WOMEN FOR BIODIVERSITY ORG was biodiversity research. Over the months, the projects expanded, it became necessary that the creation of a group of 50 volunteers. After completing all contractual requirements, WOMEN FOR BIODIVERSITY ORG used its legal capabilities to implement 6 conservation projects funded by international cooperation. Since then, WOMEN FOR BIODIVERSITY ORG has developed and supported several movements that support birdlife and key ecosystem conservation. Environmental education has been one of the work areas that has expanded most dramatically with the growth of the organization. The development of such educational projects has given WOMEN FOR BIODIVERSITY ORG a close relationship with the communities located in important conservation sites. Throughout this process, WOMEN FOR BIODIVERSITY ORG has expanded its lines of action in different initiatives. One of them is the Focal species, which is a research group within the organization and its main objective is to answer biological and ecological questions of endangered species to contribute to their conservation. This initiative works mainly in wetlands and cloud forests on the western slope of the Andes. Recently, our efforts have expanded to cover different areas to carry out our actions; one is humid forest of the western slope. This has become one of our main objectives because this region has several species that present high threats due to habitat loss, hunting and illegal traffic.

Mission (2021): Promote the conservation of the biodiversity of the Sierra Nevada de Santa Marta, through research, education, conservation and other activities that contribute to this purpose.

Vision (2018-2025): to become a Colombian leader in the conservation of species and their habitats through conservation, research and education.

Geographical area of the project: Sierra Nevada de Santa Marta. The study area is an important water reserve that houses 270 species of birds, 13 are endemic to the Santa Marta bioregion and 8 are threatened. However, information on the status of endangered species is not accurate and is not updated. Considering the particular diversity of the area, the monitoring of populations and the evaluation of the possible impact of present and future threats is of great interest for conservation. Target species: Species classified as vulnerable (VU), endangered of extinction (EN) and critically endangered hazard (CR), according to IUCN criteria.

PROJECTS EXECUTED DURING 2021

Title: BOTANICAL GARDENS WITH DRINKERS WITH 20% SACAROSE, AS A CONSERVATION STRATEGY OF THE BEARDED HUMMINGBIRD (*Oxypogon cyanolaemus*), IN COLOMBIA

The BEARDED HUMMINGBIRD (*Oxypogon cyanolaemus*) is a bird endemic to Colombia, listed as Critically Endangered (CR, 2015) by the IUCN. Before its rediscovery in March 2015, this recently divided species had not been registered since 1946 despite several recent surveys. Excessive burning and grazing have severely degraded their high altitude wasteland habitat, and it follows that the remaining population is very small and decreasing. For these reasons, the species has been classified as Critically Endangered.

This species has been severely damaged by climate change, because it is prematurely attracted by the high temperatures of the Sierra Nevada de Santa Marta, in seasons without flowers, resulting in the death of most specimens (less than 250 mature individuals are calculated).

In turn, this species of hummingbird is hunted by Arahuac Indians, for santeria rituals "to achieve true love", generating hunting, consumption and illegal trafficking of the species (This species appears in Appendix II of CITES).

This study will prove that the strategic disposition of wild botanical gardens, with drinkers with 20% sugar solution (equivalent to 1,500 flowers), effectively attract and feed this species; strategy to conserve this species whose extinction is imminent.

The moorland of the Sierra Nevada de Santa Marta has suffered a high degree of destruction and degradation through the conversion to cattle pastures and logging for agricultural cultivation (Cortes-Herrera & Villagran 2016). The habitat is severely affected by grazing herds of cattle and pigs belonging to indigenous communities, who repeatedly burn the moorland for grazing (WWF 2013, Rojas and Vásquez 2015). In March 2015, almost all natural vegetation, except pastures, in the locations where the species was observed, had been destroyed by fire; Therefore, food resources are likely to extend over a very wide area of possibly hundreds of hectares (Rojas and Vásquez, 2015). Indigenous communities collect *L. occultus* for firewood and for use in the construction of houses (Cuatrecasas 2013, in Collar and Salaman 2013; Cortes-Herrera & Villagran 2016), drastically reducing the population of this frailejón, which is classified as Critically Endangered in the Red List of Colombia (García et al. 2005) and that can be a key food source for *O. cyanolaemus*.



Amount: US \$ 5,000

Beneficiaries: Sierra Nevada community

Period: 2021

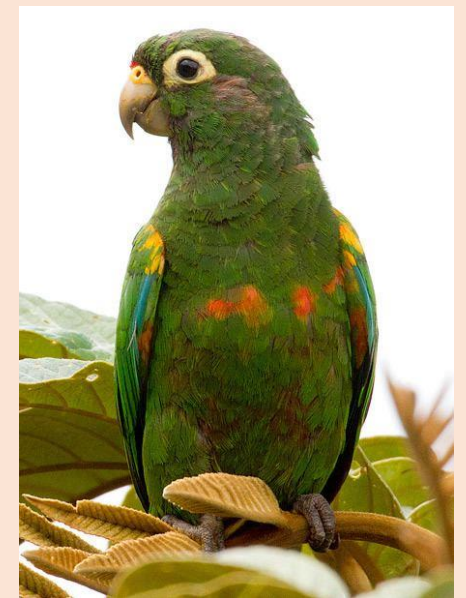
Title: COMMUNITY CONSERVATION TO PROTECT THE SANTA MARTA PARAKEET (PYRRHURA VIRIDICATA) IN DANGER OF EXTINCTION

SANTA MARTA PARAKEET (PYRRHURA VIRIDICATA) is an iconic bird species in the mountains of Colombia, classified as endangered. Its reach exceeds 200 km² and the world population is estimated between 4,500 and 6,500 specimens. The Sierra Nevada is home to approximately 1,000 of them (the highest concentration after Sucre). They face numerous threats and anthropogenic pressures, such as the increase of the human population, the raising of livestock and the development of human activities (such as mining).

Most of SANTA MARTA PARAKEET (PYRRHURA VIRIDICATA) habitats are located outside protected areas and centrally managed programs have limited applicability in the harsh landscapes of the Sierra Nevada, which are traditionally used by subsistence grazing communities. Indigenous people depend almost entirely on their livestock to survive and families suffer great difficulties when valuable cattle are lost due to the predation of the snow leopard. The murder by retribution is one of the most critical threats to the SANTA MARTA PARAKEET (PYRRHURA VIRIDICATA) these days.

The WOMEN FOR BIODIVERSITY ORG collaborated with 2 rural pastoral communities in the Sierra Nevada regions where the SANTA MARTA PARAKEET (PYRRHURA VIRIDICATA) are present. Through an ecotourism program, indigenous people earn regular and reliable income using their traditional skills to work in forests in exchange for conservation commitments that protect SANTA MARTA PARAKEET (PYRRHURA VIRIDICATA) and its habitat. The project was carried out throughout seven Arahuac indigenous cities.

The natives use the forests of the Sierra Nevada de Santa Marta of local origin, to make high quality tours that are sold internationally. WOMEN FOR BIODIVERSITY ORG gives women access to training workshops and product design to improve their craft skills, microcredits for the purchase of equipment and supplies, and a guarantee of reliable travel purchases. They also organize design / training workshops on new products to keep the route line fresh and attractive to international buyers, as well as training for existing products to maintain / improve their quality. In return, each community signs



Amount: US \$ 8,000

Beneficiaries: Sierra Nevada coastal community



annual conservation contracts, agreeing to stop the hunting of SANTA MARTA PARAKEET (PYRRHURA VIRIDICATA), making the conservation of SANTA MARTA PARAKEET (PYRRHURA VIRIDICATA) a cooperative and community concern.

Each year, the indigenous community makes two orders with the participating communities, collects and pays for the finished products. Finally, they run a microcredit program to help program participants buy wool processing equipment and other necessities.

Period: 2021

Title: INTEGRATION OF RESEARCH AND DEVELOPMENT OF LOCAL CAPACITIES FOR THE CONSERVATION OF TAN PARAKEET (*Brotogeris jugularis*)

TAN PARAKEET (*Brotogeris jugularis*) is a Neotropical Frugivorous bird that lives exclusively in the humid forests of the Sierra Nevada. A small number of remaining fragmented populations of this species persists in Colombia; within the Magdalena River basin each generally limited to less than 250 individuals. Of these populations, it seems that the parakeet could be the largest (estimated in almost 1,000 individuals), although there is no updated or accurate information on its current status.

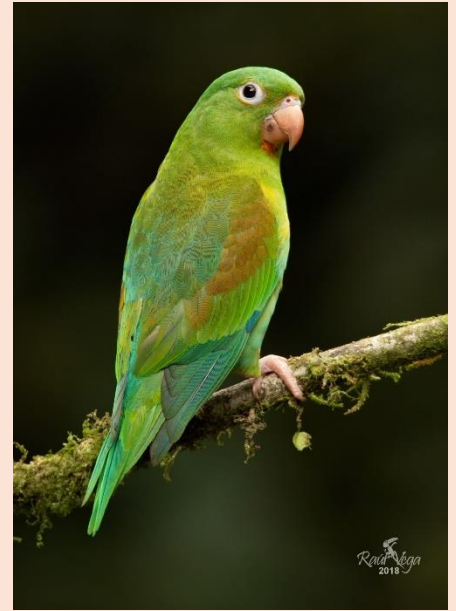
The causes of this decline in the population of endangered species are overhunting, loss and habitat degradation, since wetland forests are preferred areas for human settlement and agriculture. The ecological requirements of the species and the current conservation status are also very little known.

This project was carried out in the Sierra Nevada de SantaMarta, which includes one of the largest well-preserved protected habitats remaining in the south of the Magdalena River, and therefore could be a globally important site for the species. In addition, when recently decreed (in 2003), the participatory management plan of the reserve is still in progress, for which there is a need to carry out ecological studies, especially in those species of higher subsistence value for local communities and build Participation capacity of the local population. The study area will be in the northern section of the reserve and the field work will focus on three local communities.

This project carried out the following conservation actions:

Current status of the TAN PARAKEET (*Brotogeris jugularis*) population assessment: this action provided the first quantitative assessments of the TAN PARAKEET (*Brotogeris jugularis*) populations and one of the most up-to-date estimates of the status of the species population in Colombia. For this, monthly surveys were conducted over a year using a standardized methodology of census of linear transects in the forests of Várzea.

Improvement of local conservation capacity by training local people to survey Arahuac populations: a team of local inhabitants, mainly qualified hunters, will receive continuous training in several standardized field techniques (namely, telemetry monitoring and survey surveys). Arahuac population) as "conservation monitors", during workshops and monthly field sessions. This will lay the groundwork for implementing a long-term Arahuac community-based conservation program in these communities.



Amount: US \$ 18,000

Beneficiaries: Sierra Nevada community

Period: 2021

Title: CONSERVATION OF HAWKSBILL TURTLE (ERETMOCHELYS IMBRICATA) IN CRITICAL DANGER OF EXTINCTION IN TAYRONA PARK, IN SANTA MARTA.

Once widely distributed through mangroves in Tayrona Park, in Santa Marta, the Hawksbill turtle (*Eretmochelys imbricata*), is now restricted to only 30 hectares, after extensive population reductions since the beginning of the 21st century. The current success of nesting is extremely low due to the high mortality of turtle babies.

The main objective of this project was to lead intensive conservation management to reduce the risk of extinction of the Hawksbill turtle (*Eretmochelys imbricata*), by increasing the success of baby turtles every season, by reducing the mortality of baby turtles due to predation, introduced at the beginning of clutch eggs laid early (collection of eggs laid early with little or no chance of survival in situ, artificial incubation, manual turtle breeding and gentle release of juveniles in natural habitat, while wild couples must nest again and potentially raise their young late in the season when the survival of baby turtles is higher). At the same time, the capacity of the indigenous people of the area will be developed, through practical training in the field of conservation of birds in danger of extinction and planned in manual breeding techniques. Meanwhile, the project raised awareness about Hawksbill turtle (*Eretmochelys imbricata*), within the local community and used Hawksbill turtle (*Eretmochelys imbricata*) as an emblematic species to highlight the importance of protecting mangrove habitat, such as the wetland of the Sierra surrounding the municipality.

Hawksbill turtle eggs (*Eretmochelys imbricata*) were incubated and raised by hand in Arahuc indigenous territory. Once this was done, the offspring were transferred to the pre-liberation coast located within the natural habitat, to be released. Telemetry monitoring was carried out after short-term launch, as well as population monitoring and nest success. Predators, previously identified as a cause of nest failure and successfully monitored by the past, were also controlled.

Field assistants and coastal volunteers were employed during the start season and GNPD field rangers were involved. Outreach products focused on the Hawksbill turtle (*Eretmochelys imbricata*) were produced and distributed by the community. Videos and slide shows were presented to students and local naturalist guides in this community. Finally, peer-reviewed reports and articles related to the conservation of Hawksbill turtle (*Eretmochelys imbricata*) were published.



Amount: US \$ 15,000

Beneficiaries: Sierra Nevada community

Period: 2021

OTHERS SPECIES BENEFITED FROM THE PROJECT					
Common name	Latin name	Main taxonomy	UICN Redlist / CITES conservation status	Cases of illegal traffic reported annually	Number of beneficiaries
Tortuga hikota	Trachemys callirostris	Reptile	Endangered (EN)/ appendix II	233 per year	2,500 Specimens
River Magdalena turtle	Podocnemis lewyana	Freshwater reptile	Critically Endangered (CR)/ appendix II	227 per year	250 Specimens
Hawksbill turtle	Eretmochelys imbricata	Marine reptile	Critically Endangered (CR)/ appendix II	114 per year	48 Specimens
Santa Marta Parakeet	Pyrrhura Viridicata	Bird	Critically Endangered (CR)/ appendix II	132 per year	230 Specimens
Tortuga morrocoy	Chelonoides carbonaria	Reptile	Endangered (EN)/ appendix II	43 per year	900 Specimens
		Bird	Endangered (EN)/ appendix II	189 per year	152 Specimens
Iguana	Iguana Iguana	Reptile	Endangered (EN)/ appendix II	405 per year	322 Specimens
Cedro Americano	Cedrela odorata	Plant	Vulnerable (VU)/ appendix II	129 per years	769 Specimens
Caoba	Swietenia macrophylla	Plant	Vulnerable (VU)/ appendix II	189 per years	290 Specimens
Guayacán	Guaiacum officinale	Plant	Endangered (EN)/ appendix II	240 per years	290 Specimens

STAKE HOLDERS	ROLE IN THE PROGRAM	PREVIOUS WORK / RELATIONSHIP THREATS	COMMUNICATION
Arahuac indigenous community:	<ul style="list-style-type: none"> -Population beneficiary of the program. -We are strategic allies, linked through cooperation agreement. -The indigenous community will provide technical assistance, human resources and facilities in the execution of the program. -Knowledge of the territory to intervene. 	<ul style="list-style-type: none"> -During 2018, the project was successfully implemented: "Conservation of mangrove forests in Tayrona Park, Colombia". 1250 Arahuac indigenous people were beneficiaries and 200 hectares of mangroves were reforested; investment: US 3,000. -In Sierra Nevada of Santa Marta, the main threat of the Cotton-headed Tamarin monkey is the hunting, trafficking and the use of these primates as pets in the Arahuac community. Through this program, this threat will be attacked with training, technological inclusion and development of conservation capabilities. In addition, domesticated dogs will be delivered to replace the small primates as pets. 	The Arahuac indigenous community will be informed through management reports of weekly activities; publication of activities and results in social networks and the program's website;
WOMEN FOR BIODIVERSITY ORG	<ul style="list-style-type: none"> -Collaborator of the program. Contribution of human resources, infrastructure and travel expenses. Knowledge of the territory to intervene. -Experience in conservation and inter-institutional relationships with environmental entities. 	<ul style="list-style-type: none"> Through a cooperation agreement, the programs have been implemented together: <ul style="list-style-type: none"> - Conservation of mangrove forests in the Gulf of Morrosquillo. -Foundation of the conservation capacities of the Arahuac indigenous community, in Colombia. 	Presentation of monthly reports of management of joint activities, through email and monitoring.

University of Sucre ¹	-Collaborator of the program. Educational entity of the region. -Presting high quality consultancies through the faculty of biology; human resource and infrastructure. - International cooperation impact studies on the state of conservation.	Through a cooperation agreement, the programs have been implemented together: - Conservation of mangrove forests in Morrosquillo. -Foundation of the conservation capacities of the Arahuac indigenous community, in Colombia. For academic purposes, the conservation of the biodiversity is part of the curriculum of the faculty of biology of the University.	Presentation of monthly reports of management of joint activities, through email and monitoring.
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MANAGEMENT RESULTS 2021

1. Train 550 Arahuac indigenous youth (at least 275 women), in 12 months, on issues of biodiversity conservation, fight against illegal trafficking and administration of protected natural areas; of 30 trained youth, 550 trained youth.
2. Reduce by 80% the incidence of hunting, consumption and illegal trafficking of biodiversity in Arahuac indigenous territory, in 12 months; of 512 cases of illegal traffic annually, at 102 per year.
3. Declare 32 km² as protected natural areas, including the restoration of this area (deforestation, recycling, signaling), in previously prioritized territories, in 12 months; of zero km² of protected natural areas, 32 km².
4. Inform 50,000 people about the activities and progress of the project, in 12 months; from 300 people informed to 50,000.
5. Monitor 32 Km² of protected areas with high threat of illegal traffic, using unmanned vehicles, in Arahuac indigenous territory, in 12 months; from zero Km² monitored to 32 Km².

¹ This program consists of 30 young volunteers (> 18 years), students of last semester of Biology of the University of Sucre.