



# Annual Report 2020

Ya'axché Conservation Trust





Apiary honey-comb inspection in Maya Mountain North Forest Reserve.

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Ya'axché Conservation Trust

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Honey-producing bees  
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### In the Report

Pages i-v, 1, 2, 5, 6, 10, 11, 14, 20, 22  
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Page 9: Ya'axché/Maximiliano Caal

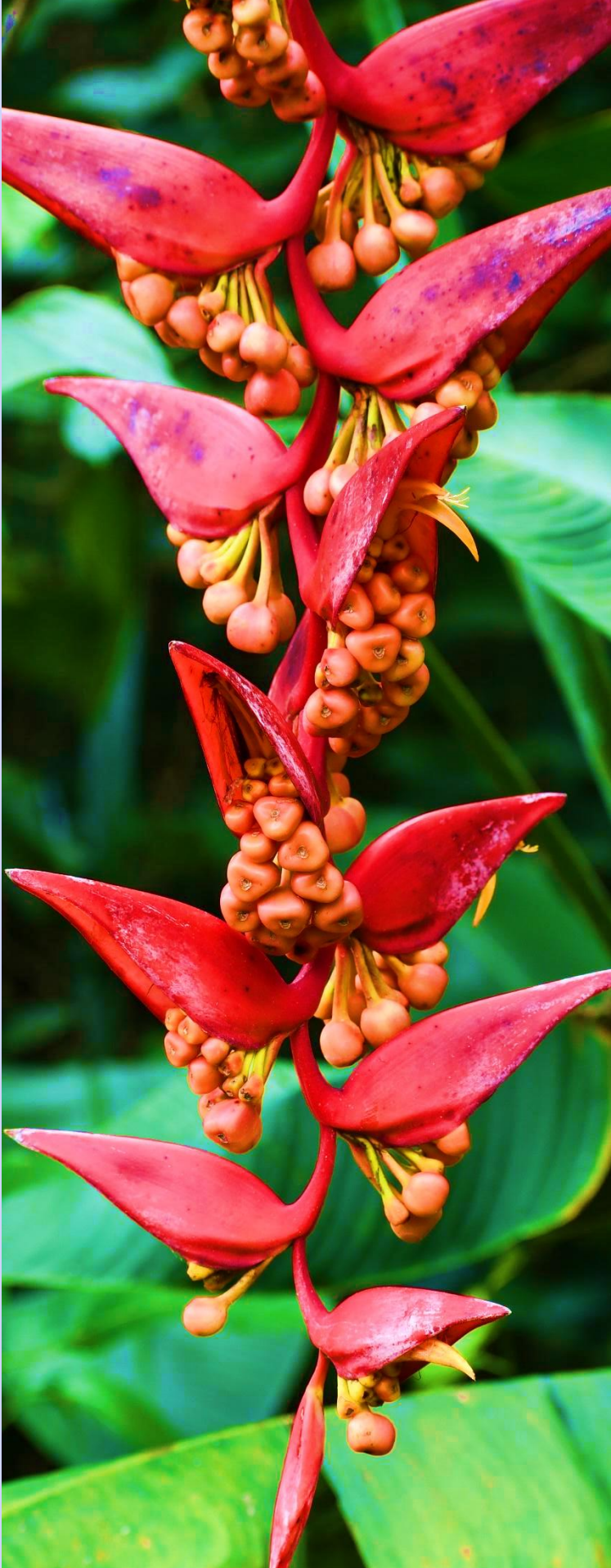
Page 18, Marcelia Assi

### Maps by Ya'axché

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Saplings at GSCP Nursery  
Ya'axché/Sayuri Tzul

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*Heliconia* spp. flowering in MMNFR.

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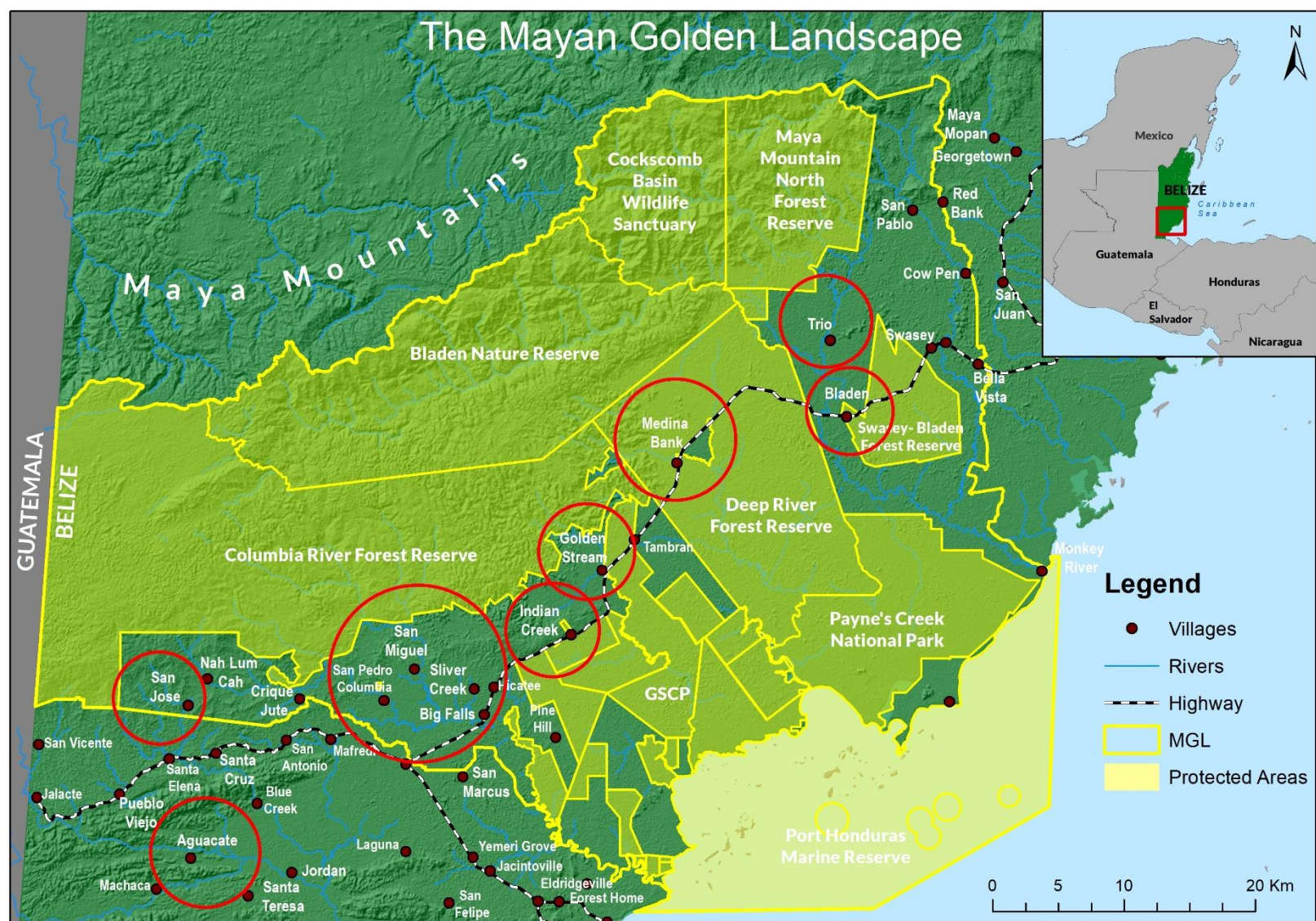
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## Acronyms

|          |   |
|----------|---|
| ACDC     | Aguacate Conservation and Development Committee         |
| BIOPAMA  | The Biodiversity and Protected Areas Management Program |
| BNCF     | Belize Nature Conservation Foundation                   |
| BR&M     | Biodiversity Research and Monitoring                    |
| BNR      | Bladen Nature Reserve                                   |
| CFLI     | Canada Fund for Local Initiatives                       |
| COL      | Community Outreach and Livelihoods                      |
| EU       | European Union  |
| FD       | Forest Department                                       |
| GCFC     | Green Creek Farmers' Cooperative                        |
| GSCP     | Golden Stream Corridor Preserve                         |
| ICCA     | Indigenous Community Conserved Area                     |
| MGL      | Maya Golden Landscape                                   |
| MMNFR    | Maya Mountain North Forest Reserve                      |
| NPAS     | National Protected Areas System                         |
| PAM      | Protected Areas Management                              |
| PAs      | Protected Areas   |
| SCF      | Sustainable Conservation Financing                      |
| SMART    | Spatial Monitoring and Reporting Tool                   |
| TFCG     | Trio Farmers Cacao Growers Limited                      |
| Ya'axché | Ya'axché Conservation Trust                             |
| YICE     | Ya'axché Institute for Conservation Education           |

**The Endangered Yucatan Black  
Howler Monkey (*Alouatta pigra*).**

# The Mayan Golden Landscape



**"Empowering Communities,  
Conserving Biodiversity,  
Connecting the World."**



## From the Executive Director

### *Remembering 2020 ...*

As I look back at 2020, I can't help to think about the unusual year it has been. It was a time of many uncertainties, unknowns, and fear. As we navigated through the COVID-19 crisis, Ya'axché was able to become creative and innovative in the execution of its program activities. As measures became more stringent for the country leading to a national lockdown, Ya'axché staff were forced to work from home adjusting to the new realities. Almost everything was converted to virtual connection (meetings, forums, workshops, training). Despite all of that, Ya'axché was still able to accomplish a lot of what it had planned for.

The work done in Protected Areas Management was an important one especially in 2020. Records showed an increase in illegal activities especially in the Maya Mountain North Forest Reserve and the Bladen Nature Reserve. Patrols increased significantly in 2020, but also, enough attention was given to build capacity of the ranger team especially in case filing and prosecution. Ya'axché also saw the opportunity to incorporate the use of technology. Ample training opportunities presented itself with the Forest Department to get personnel trained in the usage of drones and GIS applications. This we believe will assist the ranger team a lot in deciphering illegal activities especially in hotspot areas.

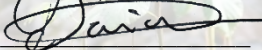
In tandem with the PAM work, the Science Program also had its work cut out for the monitoring was still ongoing. Camera traps were deployed on farmlands and within protected areas while much concentration was given on the monitoring of key timber species as well as the inventoring of native bee species. In addition to this, key partnerships were formed with different researchers from Universities abroad. The work accomplished in 2020 certainly is an unforgettable one; however, we can see how the year is preparing for better opportunities in 2021.

The Community Outreach and Livelihoods Program also had its share of accomplishments. Although COVID-19 paralyzed almost everything including community gatherings, the COL team was able to still meet farmers individually and provide the necessary technical support. One of the greatest feeling was the distribution of COVID-relief baskets to over 300 needy families in the MGL. We knew that many were without jobs and needed some kind of assistance. In light of that, extension officers and other field personnel embarked on a delivery mobile to all ten communities, distributing the COVID-relief baskets to single households. Nothing was more gratifying that to see satisfied MGL residents receiving food assistance during a difficult time. Despite the difficulties, the COL team managed to maintain an ongoing relationship with all farmers and beekeepers in the MGL providing monitoring consultations, provision of equipment and weekly visits to farms.

I must say that 2020 was a very good year for Ya'axché. Thanks to the tireless and dedicated team we overcame the challenges and flourished with successes. I take the opportunity to thank the Ya'axché staff for maintaining calmness, but overall showing that strong passion to fulfil the work despite the uncertainty.

Lastly, I would like to give a special thanks to our partners, especially Fauna & Flora International, our supporters and our donors. Thank you for continuously believing in us. It is my sincere hope that we continue to collaborate and dream even bigger for the MGL and a better Belize. I look forward to an awesome 2021.

Sincerely,



**Christina Garcia,**  
Executive Director



## Strategic Plan

The work carried out by Ya'axché is guided by a strategic plan that sets out the goals of the organization and the means to achieve them.

The strategic plan for the period 2018 to 2020 was finalized in December 2017 and includes updated mission statements, as well as updated organizational values.

### Vision statement of the organization

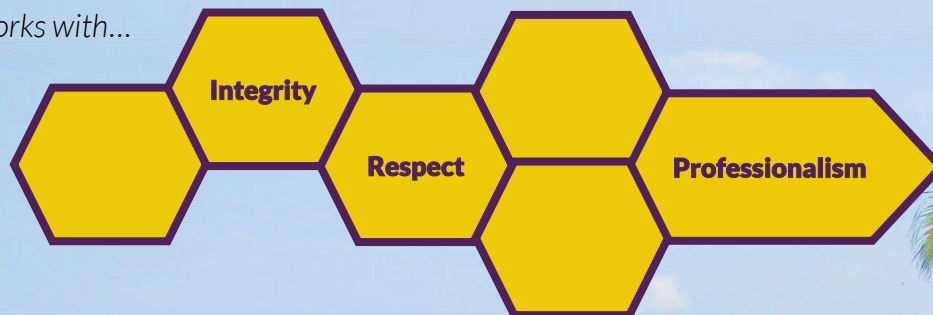
***Harmony between nature and human development for the benefit of both.***

### Mission statement of the organization

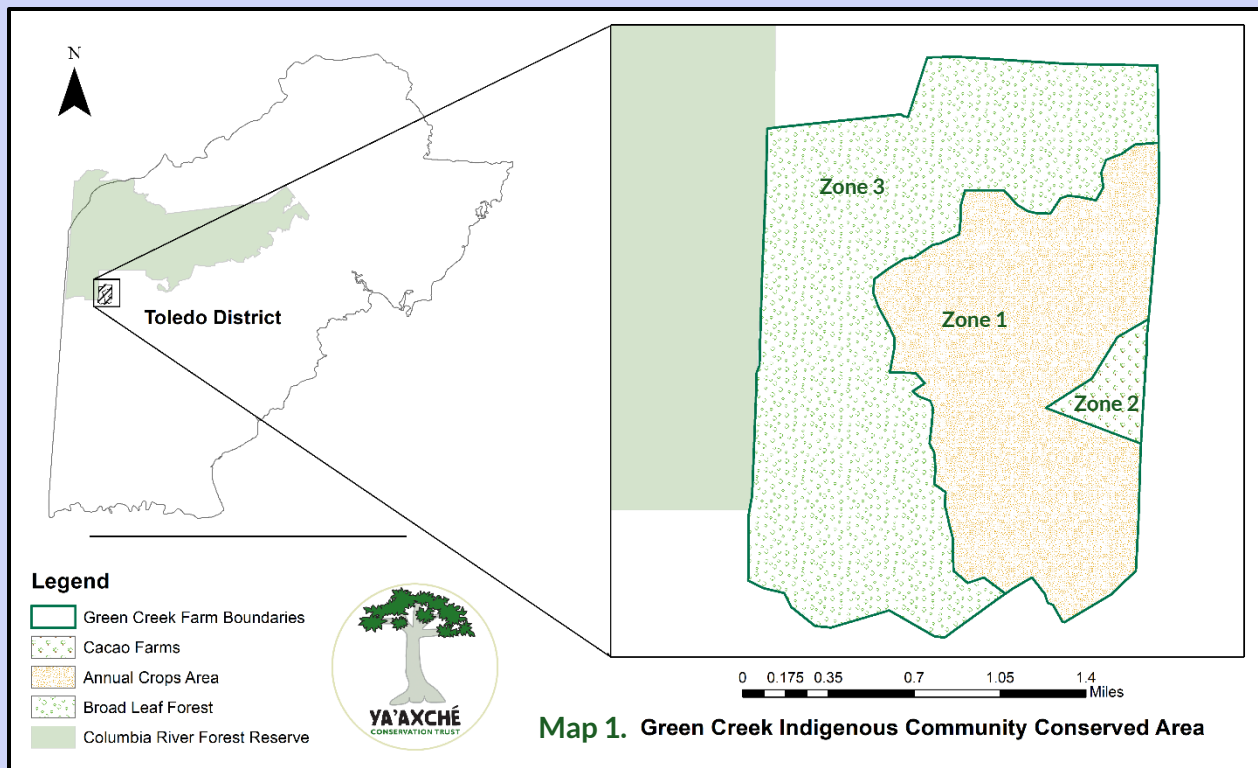
**Ya'axché is a Belizean organization which aims to maintain a healthy environment with empowered communities by fostering sustainable livelihoods, protected area management, biodiversity conservation and environmental education within the Maya Golden Landscape.**

### Organizational values

Ya'axché works with...



**A farmscape view in the community of San Jose.**



## Indigenous Community Conserved Areas

### San Jose's community-based forest governance model

The replication of a community-based forest governance model has been a major highlight for the year 2020. Ya'axché has been strengthening good governance practices with communities in the MGL since the publication of the "Building Resilient Communities" (2018) paper. In an effort to establish an intermediary approach for project implementation, Ya'axché partnered with Green Creek Farmers' Cooperative (GFCG) from the San Jose community to implement a GEF SGP-funded project that promotes the ICCA concept for livelihoods alleviation and forest resources conservation. The project focused on rehabilitating the group's 35-year-old cacao agroforestry system that had been unproductive in recent years. This has been the first time the group sought funding

assistance from a donor to support the management of their 2,500 acres of lands.

The first objective of the project resulted in a zonation scheme of GCFC's 2,500 acres of land designating the areas with the preferred land-use types. Through consultative and capacity-building approaches, Ya'axché facilitated a 3-day training session for GPS use and mapping exercising to demarcate the ICCA. About 20 field days were logged to ground-truth the area, where three main zones were mapped: (i) an annual crop zone; (ii) a cacao agroforestry zone; and (iii) a conservation zone.

For the second objective, a small bridge was constructed over a creek as part of road access improvement towards the groups ICCA. GFCG garnered labour assistance



**Photo 1.** GPS use and mapping exercise.  
Photo by Elmer Burgos.

from the community of San Jose in liaison with the Village Council. The group also lobbied the Ministry of Works for engineering supervision and provision of steel beams for the bridge. Via collaborative efforts, the group was able to allocate 8 hours of bulldozer time to upgrade degraded roads within the community of San Jose. The GCFC was not only designed for the group itself, but this community-oriented initiative also accounts for indirect beneficiaries amounting to about 80% of the San Jose community. Farmers can now commute to their farmland and residences through an accessible pathway with the bridge being the group's highlight and a reason to celebrate stewardship.

Farmers participated in a 7-day sustainable agricultural techniques training program expanding on agroecology concepts for organic farming and to hone cacao plot maintenance. Fifteen men and 12 women interacted with Ya'axché's COL team and Cuban agroecology expert, Professor José Rubén Sánchez Curiel, to learn more about the climate-smart practices that contribute to an increase in crop production. Identification and treatment of pests and



**Photo 2.** ICCA boundary line demarcation.  
Photo by GCFC

diseases were addressed, showing farmers how to implement proper control measures for farm management. This training program also included an exchange in Aguacate with ACDC. GCFC had the opportunity to learn first-hand experience from ACDC's ecotourism venture and the role and involvement in the group. This session allowed ACDC to highlight the need for GCFC to identify their cultural assets and attractions for tourism. The challenges Aguacate faces from neighbouring communities' encroachments were also discussed.

GCFC has an exceptionally active membership with the capabilities of mobilizing its own group members and other individuals to participate in the community development activities. Youth involvement



**Photo 3.** Bridge construction—a community effort. Photo by GCFC.

was achieved through the establishment of two nurseries for the group's reforestation efforts in the community. The primary school students received timber tree species such as mahogany and cedar seedlings. The group continues to seek assistance to improve its community-based management capacities. Similarly, to ACDC, the group is paving their institutional strengthening to better manage their ICCA by placing an enforcement scheme as they aim to periodically maintain the boundary lines open and properly monitored to protect their lands and livelihoods.

**Table 1.** Project achievement summary.

| Activity              | Participants | No. | Note  |
|-----------------------|--------------|-----|---|
| Road Access Upgrade   | Men          | 115 | Bridge construction   |
| Capacity Building     | Women        | 12  | Agroecology & women's group exchange  |
| Nursery Establishment | Youth        | 50  | 2 nurseries:<br>-300 seedling for education awareness<br>-1200 for ICCA reforestation |

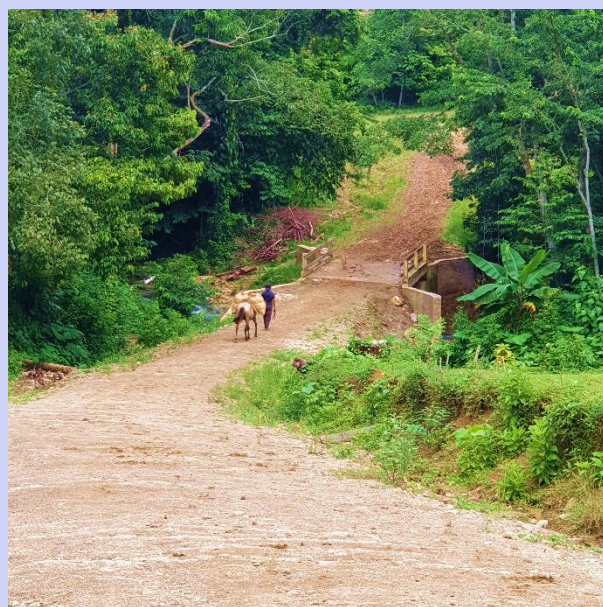
| ICCA Zoning Scheme | Area (acres) | Description   |
|--------------------|--------------|---|
| Zone One           | 885          | Annual crop: subsistence farming using sustainable farming techniques |
| Zone Two           | 63           | Rehabilitation of cacao-based agroforestry                            |
| Zone Three         | 1125         | Broadleaf forest conservation area, inclusive of archaeological sites |



**Photo 4.** Youth support to establish nurseries. Photo by GCFC.



**Photo 5.** Sustainable farming techniques capacity building participants. Photo by Elmer Burgos.



**Photo 6.** Farmer commuting home across the newly constructed bridge with farm produce. Photo by Marvin Vasquez.



Young female beekeepers from the community of Trio.

## Community Outreach and Livelihoods

### Strengthening programmatic efforts

One of the main highlights was the implementation of the GCFC-ICCA project. The engagement with GCFC paved an excellent opportunity to foster the partnership with the “Instituto de Investigaciones Fundamentales en Agricultura Tropical” (INIFAT) in Cuba. This collaboration facilitated Professor José Rubén Sánchez Curiel’s participation in the



**Photo 7.** Professor Curiel conducting agroecology training with GCFC.

follow-up exchange visit to share his vast knowledge and experience in Agroecology with farmers in southern Belize. The core emphasis of the capacity-building sessions focused on the best practices for cacao farm rehabilitation, organic fertilizer production, and organic pesticide formulation. Additionally, Professor Curiel contributed to the completion of an Agroecology manual for MGL farmers. This field guide encompasses organic best practices for the management of harmful insects and other organisms that affect crops, basic artisanal seed production, and storage.

In the advent of the COVID-19 pandemic, the COL program remained involved in as many community activities and training as the national regulations permitted. COVID-19 also presented the opportunity for Ya'axché to assist many of the needy families from our beneficiary communities. The covid-relief emergency response was possible through the EU/ICCO Forest



**Photo 8.** COVID-relief food baskets for communities.

Governance project, giving the opportunity for Ya'axché to support 300 families in the MGL. This has been a humbling experience for Ya'axché staff partaking in the effort to share food supplies, sanitation, and hygiene products.

In its fourth and final year, the project supported Ya'axché's efforts in the dialogue to establish an agroforestry policy for Belize. In the main thematic areas of forest governance and REDD+ initiatives, Ya'axché continues to share its experience of the cacao-based community concession model and small business with women's groups, where the first state actor capacity building took the form of a national symposium. Ya'axché has worked closely with six (6)



**Photo 9.** Christina Garcia at the 2020 State Actors Symposium opening.

direct beneficiaries, also giving them the opportunity to welcome two new villages as a part of the MGL communities under our programs.

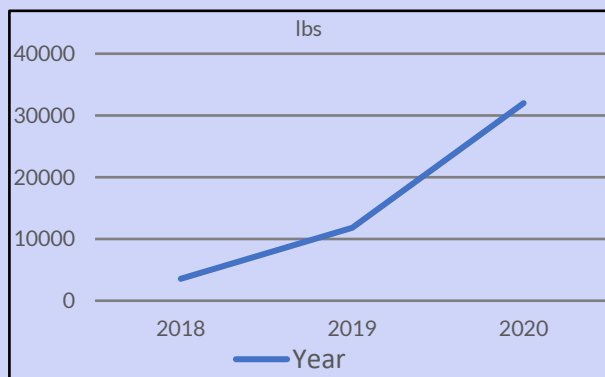
Ya'axché achieved the participation of 200 community members, 50 youths, 25 state actors. Resulting from these participations, two (2) business models (inclusive of entrepreneurship seed funds) were developed. Two (2) local and two (2) international exchanges with community-based organizations were carried out. The forest governance project strengthened Ya'axché's summer camp program and improved the capacity-building programs for good governance and organizational practices. One key example has been the drafting of TFCG Bylaws which is elemental for the organizational monitoring and compliance to the Conservation Agreement and the Concession Management Plan in place for access to the use of land in MMNFR.

Additionally, amidst all the unforeseen challenges, Ya'axché was able to strengthen its partnership with GCFC promoting the ICCA model of forest governance in the San Jose community. With a couple of success stories under our sleeves, the grounds

remain active to continue advancing and strengthening mechanisms that generate higher engagement with our communities at large, within and surrounding the MGL. New potential partnerships have been identified to continue pioneering the climate-smart green solutions that address food security, water and biodiversity conservation, livelihoods alleviation, and climate change in an effort to sustain resilient communities.

### Tracking production in the MGL

An increase in wet cacao beans harvested from the concession was observed in 2020. Over 34,000 pounds of wet cacao beans were harvested, however, there were challenges in marketing this bean as the COVID-19 pandemic negatively affected the buy and sale. Using their creativity, members of TFCG resorted to producing sun-dried cacao beans, sold locally.



**Graph 1.** Cacao production in the concession.

The COL program also had the opportunity to diversify the inga alley agroforestry in the farmscapes of the MGL. The Canada Fund for Local Initiatives (CFLI) funded a six-month project to further support inga alley cropping practices in three communities. In the last quarter of 2020, four (4) farmers received annual crop variety of seeds for Inga vegetable gardens and twelve (12)

prepared their farms to plant fruiting trees (Inga fruiting demo plots)—a new element to strengthen the potential of the inga alley system as a climate-smart agricultural practice. A total of sixteen (16) farmers have benefitted from capacity building in agroecology training.



**Photo 10.** Inga vegetable garden establishment. Photo by Erwin Tush.



**Photo 11.** Distribution of saplings for Inga fruiting trees demo-plots.



**Photo 12.** COL team visiting farms for farm maps and profiling exercise.

There was also an outstanding production of honey in the MGL. The total amount of honey produced was 1,992 pounds with 500 pounds produced in the MMNFR. There has been much emphasis placed on beekeepers to increase their honey production, and in 2020 we saw one beekeeper producing 900 pounds from his apiary. The increase in production is excellent since the local demand for honey keeps increasing.

To understand the management effectiveness of Ya'axché's interventions in the MGL, 2020 marked the undertaking of two large grants to strengthen the integrated landscape management system that has been evolving for the past 20 years. The use of disruptive technologies (Inter-American Development Bank project) and the strengthening of sustainable community enterprises (Inter-American Foundation project) in the MGL complement each other under the COL program, but also integrating the PAM, SCI, and SCF in a holistic approach towards sustainable development and climate action. Though community gatherings were affected by the pandemic, field activities in targeted farmscapes were responsibly coordinated to advance project implementation. Twenty farms were mapped, contributing towards the farmer profiles for their customized farm management plans.

TFCG started its business development process to develop a plan for their cacao production from the concession. As the pandemic has affected market value and demand, the group is closely working with Ya'axché to establish their business model, understanding the potentials of the concession once they follow the

recommended cacao plot management practices. The cacao agroforestry and beekeeping climate-smart practices have been structured into a curriculum, further strengthening Ya'axché's FFS methodology. The creation of the curriculum contains two main sections, categorizing lesson plans into basic, intermediary, and advanced units of the capacity building training program, targeting 100 farmers in the MGL. Moreover, the curriculum will be complemented by videos in 2021, documenting the processes from farm establishment to harvesting raw material and identifying potential value-added products with future funding opportunities.

## Fire management strategies

In 2019, Ya'axché developed its fire management strategy, putting a plan in place that had already been set in motion through the 2017 Sustainable Land Use Handbook. This gave the opportunity to Ya'axché's Fire Boss to prioritize the fire response mechanisms for the MGL whether it be managing fire for community livelihoods or suppressing wildfires for ecosystem protection.

A couple of major fire incidents of grave concern captured the attention of Ya'axché's fire monitoring team. In the MGL, an escaped fire in the community of San Pedro Columbia burnt down cacao farmlands, unknowingly. The community raised many concerns on fire management strategies for the provision of emergency responses in the case of recurring incidences. The 2020 fires outside of the MGL also affected other areas, notably in the Cayo District. The City of Belmopan was severely impacted by dense smoke from

the nearby forest fires. The Vaca Forest Reserve experienced an imminent fire threat, where the firefighting response team contacted Ya'axché to provide assistance.

Ya'axché mobilized its COL team, inclusive of the Executive Director, to provide impromptu fire training and guide the community fire crews to sweep the fires off the terrains.

Ya'axché has launched its “*Building Community Fire Fighting Capacity in Southern Belize*” Global Giving campaign diversifying its funding strategy for fire management. Ya'axché's 2020 Fire Management Plan has been a team coordinated effort, understanding the importance of networking, inter-programmatic coordination, and devising a well-thought-out fire response mechanism to safeguard the natural landscape and protect community livelihoods.

## Adapting outreach efforts amidst a pandemic

As a challenging year—because of the COVID-19 pandemic—the activities under the COL program experienced setbacks due to the lockdowns and country-wide restriction in movements which negatively impacted Ya'axché's ability to deliver project-based activities. Unfortunately, despite the planning having been initiated with San Jose, our annual Ya'axché Farmer Expo was cancelled. Other annual events that experienced COVID-19 measures adaptation were the two-day BioBlitz (58 males + 51 females; 6-12 yrs.) and a one-week Summer Camp (28 males + 29 females, 12-18 years). The necessary adjustments were made to adhere to crowd size and other COVID-19 protocols which ensured the safety of all participants and staff.



Fire management strategies for livelihoods and landscape protection.



Summer Camp – participants visiting the Bladen Nature Reserve.



Summer Camp – environmental education outreach at the Bladen branch,  
Monkey River Watershed.

## Biodiversity Research & Monitoring (Science)

### Monitoring Threatened Trees

Ya'axché continues to monitor threatened tree species in the MGL. With assistance from GTC through the project “Conservation of Threatened Timber Species in the Maya Mountain North Forest Reserve”, the science team has conducted tree surveys for its 2020 field work season for its year one. The main aims of the survey have been (i.) to locate previously unrecorded individuals of the target tree species; (ii.) to make preliminary estimates of population size and age class distribution for the target tree species; and (iii) to identify locations of seedbearing trees and collect seeds for propagation. There are six (primary) target species, legally harvested in Belize. An additional ten (10) secondary target species are being monitored. All these tree species (Table 3) are threatened, which may benefit from improved zoning of the reserve.

**Table 2.** List of targeted tree species in MMNFR.

| Threatened Tree Species             |                                  |
|-------------------------------------|----------------------------------|
| <i>Aspidosperma megalocarpon</i>    | <i>Cedrela odorata</i>           |
| <i>Dalbergia stevensonii</i>        | <i>Chiangiodendron mexicanum</i> |
| <i>Zanthoxylum caribaeum</i>        | <i>Cymbopetalum mayanum</i>      |
| <i>Zanthoxylum ekmanii</i>          | <i>Persea schiedeana</i>         |
| <i>Zanthoxylum juniperinum</i>      | <i>Quercus insignis</i>          |
| (syn. <i>Zanthoxylum acuminatum</i> | <i>Quiina schippii</i>           |
| subsp. <i>juniperinum</i> )         | <i>Swietenia macrophylla</i>     |
| <i>Zanthoxylum mollissimum</i>      | <i>Trichilia breviflora</i>      |
|                                     | <i>Vitex gaumeri</i>             |
|                                     | <i>Vitex kuylenii</i>            |

**Table 3.** Main target blocks in MMNFR.

| Survey Locations     |                      |
|----------------------|----------------------|
| 1. Southwest Corner  | 4. Annual Crops      |
| 2. Concession Region | 5. Conservation Zone |
| 3. Broken Region     | 6. Cacao Zone        |

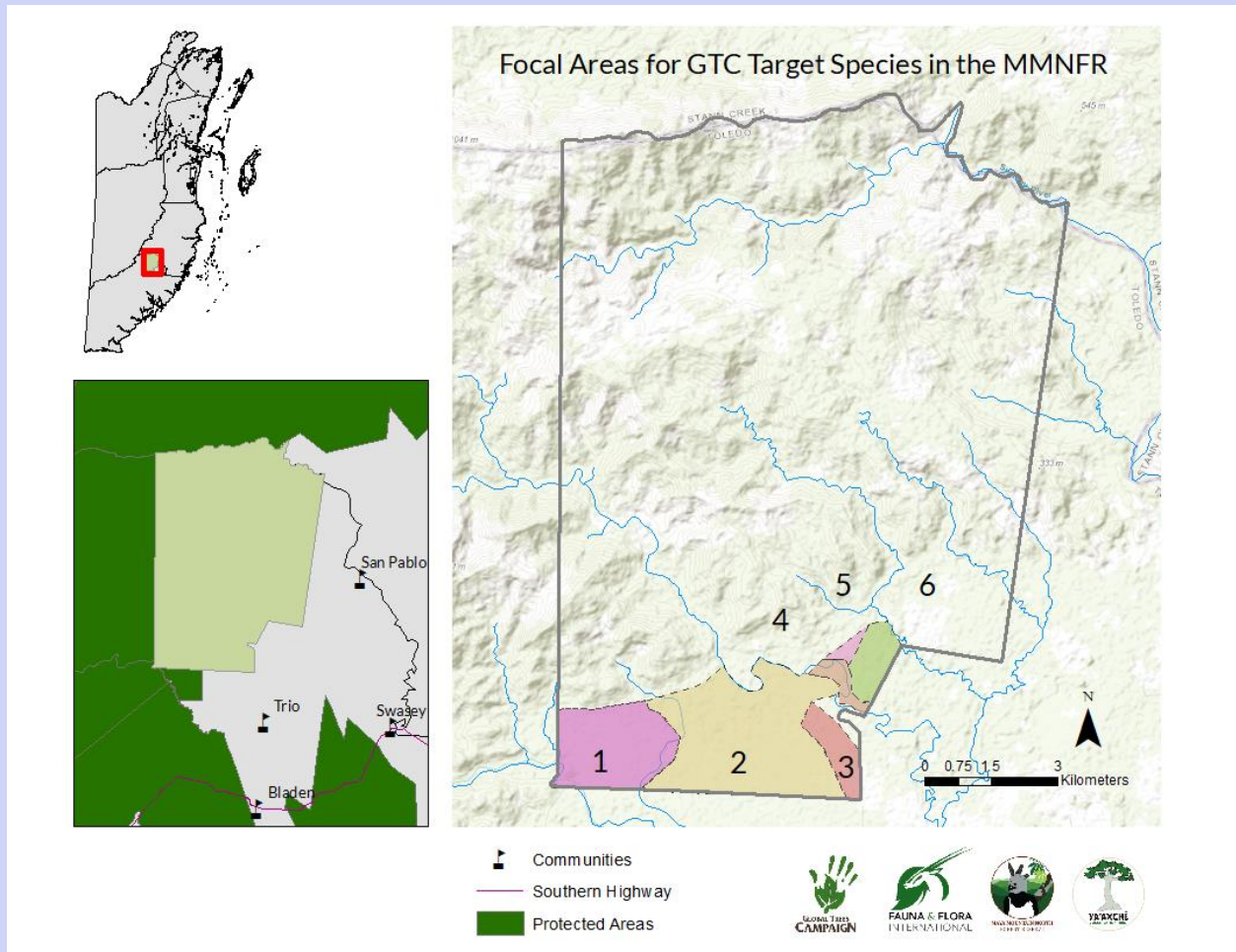
There was a total of 127 target trees recorded during a total of 22 survey days in six (6) priority habitat blocks within MMNFR.



**Photo 13.** Threatened tree species specimen collection.

The survey team also identified and recorded two (2) additional species of interest during the survey: *Zanthoxylum panamense*, (IUCN Red List Status: endangered) and *Zanthoxylum riedelianum* (IUCN Red List Status: least concern).

The biodiversity and monitoring team are also working on the seed banking of these tree specimens to initiate the experimental propagation for tree conservation. As a strategy to reinforce populations by planting of saplings, careful site selection is being considered to ensure a high success rate. The general recommendations of the year one tree surveys indicate that the endangered status and presence in the MMNFR for species *Cymbopetalum mayanum*, *Swietenia macrophylla*, *Vitex gaumeri*, and *Zanthoxylum panamense* to be added to the primary targets list for the second and third years of the project. Additionally, *Z. riedelianum* is recommended to be incorporated along with all other target species into field guides and training materials for stakeholders.



**Map 2.** Focal areas for threatened tree species monitoring.

## Monitoring biodiversity across farmscapes

2020 was a spectacular year for camera trapping in the MGL. Although the onset of COVID-19 presented its challenges, we were able to continue our MGL agroforestry farm monitoring and expand to include 14 new farms and four (4) new communities, bringing our total monitored agroforestry farms to 19.

This year, we also trained ten (10) farmers to handle and deploy camera traps to become citizen scientists in their farms and, by extension, their communities. Farmers were thrilled with the ease of camera operation,



**Photo 14.** Citizen-science capacity building for MGL youths to monitor biodiversity.

installation and the marvellous wildlife captured on their farms. These photos will be used to print infographic guides for education and tourism purposes and provide valuable data about the species population on their farms.

Our surveys yielded 35 species of animals, including 20 mammal species, fourteen bird species, and one (1) reptile (Table 2). Three of the five big cat species in Belize were recorded: jaguar, jaguarundi, and ocelot. New game species that have been recorded include the red-brocket deer and curassow. These species had not previously been recorded in our four (4) years of monitoring in the agroforestry landscape of the MGL. We often capture them in our surveys in protected areas such as Maya Mountain North Forest Reserve and Bladen Nature reserve. The presence of these game species is good evidence of healthy forests existing outside of protected areas.

**Table 4.** List of species recorded.

| Mammals                 | Birds                    |
|-------------------------|--------------------------|
| Agouti                  | Brown jay                |
| <b>Baird's tapir *</b>  | Clay-coloured thrush     |
| Collared peccary        | <b>Great curassow *</b>  |
| Common opossum          | Dove <i>spp.</i>         |
| Deppe's squirrel        | Gray catbird             |
| Forest rabbit           | Great kiskadee           |
| Four-eyed opossum       | Lesson's motmot          |
| Gray fox                | Nighthawk <i>spp.</i>    |
| <b>Jaguar *</b>         | Plain chachalaca         |
| Jaguarundi              | Red-throated ant-tanager |
| Lowland paca            | Russet-naped wood-rail   |
| Nine-banded armadillo   | Trogon <i>spp.</i>       |
| Northern tamandua       | Turkey vulture           |
| <b>Ocelot *</b>         | Wood thrush              |
| Common racoon           |                          |
| Red-brocket deer        |                          |
| Striped hog-nosed skunk |                          |
| Tayra                   |                          |
| White-nosed coati       |                          |
| White-tailed deer       |                          |
|                         | <b>Reptiles</b>          |
|                         | Green iguana             |

\* Species of conservation concern



**Photo 15.** Training farmers in camera-trap installation for farm biodiversity monitoring.



**Photo 16.** Biodiversity research and monitoring online campaign—plant surveys.



**Photo 17.** Biodiversity research and monitoring online campaign—camera trap monitoring.

## Protected Areas Management

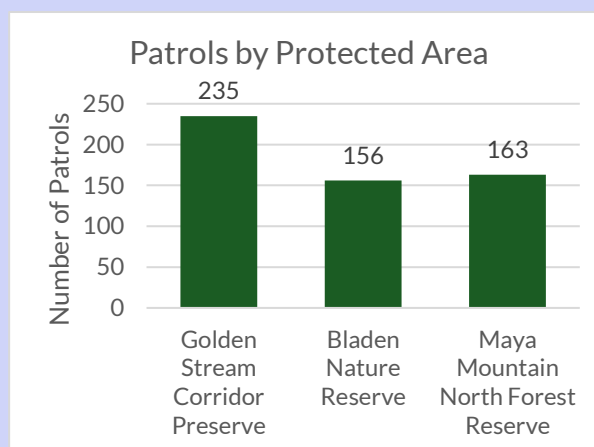
### Scaling-up enforcement efforts

A total of 554 patrols were registered for 2020 in the three protected areas managed by Ya'axché, covering approximately 49,000 km of terrains and about 3,800 hours of patrol efforts. The highly trained enforcement rangers logged 87 major observations with 9 encounters reporting contact with individuals carrying out illegal activities. The reports detail that two encounters were with armed individuals and that there were also 4 instances where timber was confiscated.

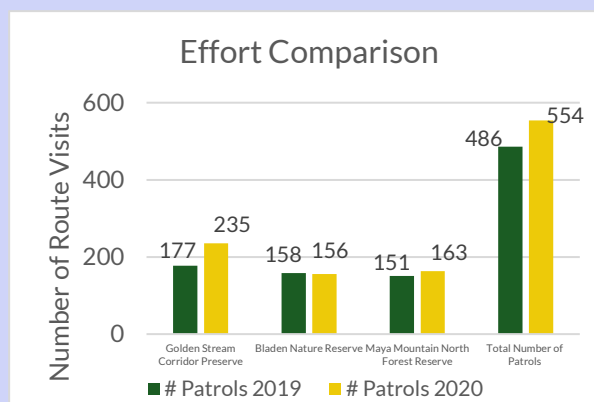
An expected repercussion from the pandemic that Ya'axché anticipated was the increase in illegal activities in the MGL as the need for resources increased with communities seeing an influx of individuals returning home from their jobs being terminated. Operation efforts were affected by the spread of the COVID-19 countrywide, with its effects also reaching southern Belize, the latter part of 2020 showing the most serious cases of illegal incursions. Mahogany and Hobillo lumber were removed from MMNFR, prompting also the confiscation of horses used to extract the illegal timber harvesting. Illegal fishing was also recorded in BNR, during the most serious national lock down the country experienced in the second quarter of 2020. Ya'axché detected that even minors had been involved in illegal incursions into the protected areas for the extraction of resources to sustain livelihoods.

Though all efforts were channelled to at best conduct enforcement patrols in the protected areas, the PAM team also focused

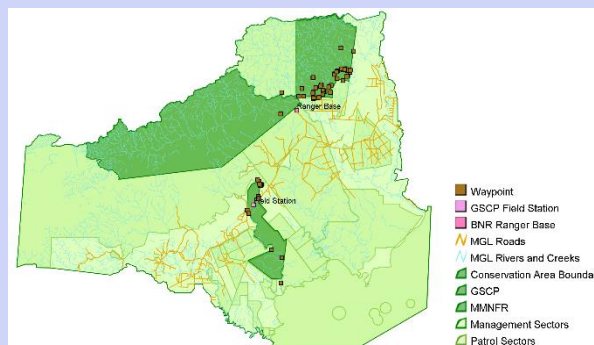
efforts on installing signs at major hotspots and entrances to PAs, and the clearing of the BNR boundary lines. Rangers also participated in capacity building sessions on



**Graph 2.** Enforcement efforts logged per PA.



**Graph 3.** Two-year comparison of patrol efforts.



**Map 3.** Distribution of infractions in three protected areas.



**Photo 18-20.** Signage installation for the PAs.

Even though incursions and illegal activities increased in 2020 and perhaps attributed to the pandemic, Ya'axché kept all its 12 rangers in their positions. COVID-19 became a threat to livelihoods and protected areas management. Ya'axché adopted all the necessary strategies to maintain the PAM and SCI teams safely within all possible

firearms handling, case filing and prosecution.

means. The enforcement teams coordinated efforts improved, revitalising team spirits to safeguard our resources as new challenges were faced upon detection of the most serious cases of illegal incursions and extractions.

As a pilot year, in collaboration with Science, the teams embarked on developing the first “State of the Park” report supported by IDB Disruptive Technologies and the Overbrook Foundation Protected Areas Management projects. In its final year of the 2-year Overbrook project, 100 individuals from the MGL communities learned about the importance of conserving BNR through the educational awareness sessions and the corresponding site visit into the protected area. Investing in innovative technologies has been a major milestone Ya'axché has been focusing on. This is taking shape into an integrated forest management database that will house the PAM and Science SMART data collected on enforcement and biodiversity monitoring.

## Human-jaguar conflict in the MGL

The Human-Jaguar Conflict subprogram under the Protected Areas Management Program aims at responding to calls from communities on jaguar conflicts across the MGL. Ya'axché continues providing support by encouraging farmers to implement mitigation measures and to follow advice on best husbandry practices to reduce livestock depredation. The outreach expands to a total of seven (7) cattle farmers from five (5) communities who manage jaguar-friendly farms by implementing the guided mitigation

measures as an alternative approach for securing livestock as the jaguar continues to thrive in disturbed and undisturbed lands.

Mid-2020, with the assistance and support of the Pat Gives Back/Milwaukee County Zoo/Zoological Society of Milwaukee, a Wildlife Conflict Officer was hired to implement the activities and to monitor the efforts placed towards the protection of farmers' livelihoods and jaguars' lives in a 'conserved' landscape. Ya'axché has been pilot testing the Kobo Collect for the data collection on jaguar attacks, and updating farmer's profiles. Two (2) calls from local communities on jaguar attacks were also investigated and camera traps were deployed to the area to detect jaguar presence. A local radio talk show targeting the indigenous communities of the MGL was hosted at Sunshine Raydio to increase awareness on the importance of the jaguar and their prey. The talk show also addressed the issues with human-jaguar conflicts, recommending mitigation strategies to reduce jaguar attacks.

Despite the COVID-19 pandemic, the subprogram conducted two (2) farm visits to

the cattle farmer beneficiaries in an effort to set up signs identifying the jaguar-friendly farms. Farmers have been embracing the efforts placed by Ya'axché to address wildlife conflicts. Ya'axché looks forward to expanding the work with farmers whose perspectives are changing towards finding a balance between sustainable land use practices and biodiversity conservation. The work will continue in 2021 as camera traps will be deployed around the cattle farms to monitor jaguar presence and wild prey species as well as hosting radio shows and school visits.



**Photo 21.** Setting up camera traps in jaguar-friendly farms.



**Photo 22.** A jaguar detected by a motion sensor camera trap in Eldridgeville. Photo © Ya'axché.

# Sustainable Conservation Financing

## Diversifying YICE

Ya'axché Institute for Conservation and Education (YICE), the sustainable financing initiative of Ya'axché Conservation Trust, continues to grow its program activities. Network expansion and partnership establishment contribute to successfully achieving its vision of *“Connecting nature, wildlife and communities for a more sustainable world.”*

Over a period of six (6) years, YICE has developed and improved the services it offers through its EcoTourism Belize (ETB) and Nursery components. EcoTourism Belize, the ecotour operator, continues to build new partnerships with Universities and other tour operators to offer them tour packages, eco-friendly accommodation services, and student service-learning programs.

In 2020, YICE gained a new partnership with Education First, a company that provides educational tours for US and Canadian study abroad groups. YICE's objective with current and new group partnerships is to collaboratively design a program that meets the partner's goals and objectives. At the same time, their students gain invaluable experience about theoretical models' real-world applications on conservation, ecotourism, and sustainable livelihoods. Similarly, ecotour guests are welcomed into an immersive experience of the unique culture, pristine nature, and the opportunity to support and learn about conservation in southern Belize.

Likewise, Ya'axché's Nursery continues to provide customers and the general public

with quality and affordable grafted and non-grafted seedlings. In 2020, through its partnership with Barefoot Children Ministries, the nursery has now provided eight (8) rural communities: Blue Creek, San Lucas, Otoxha, Dolores, Machakil Ha, Conejo, Sunday Wood, and Corazon Creek, with a total of 2,500 fruit trees. The nursery partnerships gear towards joining the fight against climate change through reforestation projects and improving community members' livelihoods.

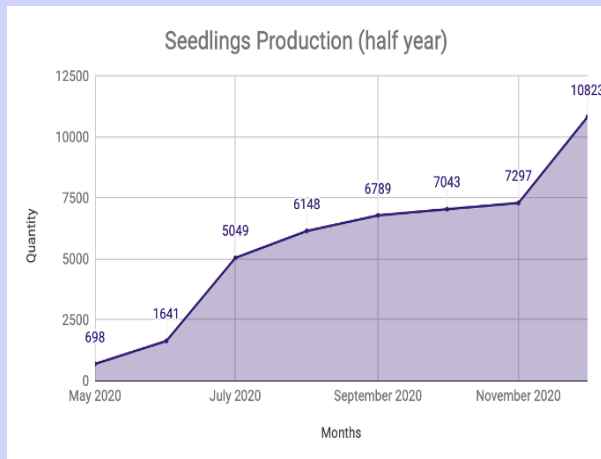


**Photo 23.** Supporting remote communities through reforestation initiatives.



**Photo 24.** Nursery replenishment to achieve maximum capacity.

Nursery staff gaining knowledge on propagation best practices and improving the production quality and quantity at the nursery facility has proven successful in



**Graph 4.** Nursery half-year trend of production.

2020. At the end of the year, a total of 10,823 seedlings were produced. Ya'axché's nursery has proven to be a vital structure that supports Ya'axché to continue supporting farmers in adapting climate-smart farming practices and supporting the expansion of conservation efforts such as reforestation across new communities in southern Belize.

While 2020 posed the challenges of the Coronavirus pandemic as everywhere else around the globe, YICE continued developing and improving its infrastructures and building the capacity of its team members to be prepared to reopen in the safe tourism corridor phases. YICE's director worked with the Belize Tourism Board quality assurance team to successfully achieve the Gold Standard Certification for Ya'axché. Therefore, EcoTourism Belize will



**Photo 25.** Gold Standard Certification to support YICE.

now continue its ecotour operations in 2021 with enhanced health and safety measures while minimizing the impact on guests' experience.

Through a Small Technical Grant project from BIOPAMA, secured by Ya'axché, YICE realizes significant renovations on its accommodation services and sanitary facilities. ETB will reopen in 2021 with newly constructed restroom facilities, new bedrooms, a new transportation services-tour van, and an overall renovated bunkhouse, thus creating a more welcoming ambiance to guests wanting to visit the Golden Stream Corridor Preserve and the Maya Golden Landscape that further provides a safer stay amidst the pandemic. Guests' safety has always been a priority but is now more critical than ever before.





Community Reforestation in Southern Belize.

## Staff

The list below represents staff members (past and present) that have contributed to Ya'axché's achievements throughout 2020. As of July 2020, Ya'axché employs 33 full time staff. Volunteers/Interns, indicated by an asterisk (\*), fill key positions in the organization.

| CORE & Administration                                |  | Development                  |   |
|--|--|------------------------------|---|
| Christina Garcia <sup>L</sup>                        | Executive Director                                       | Megan Lopez                  | Development Officer Lead *                              |
| Ivanny Oliva <sup>L</sup>                            | Finance Director   | Diana Mai                    | Development Officer Asst. *                             |
| Marvin Vasquez <sup>L</sup>                          | Operations Director                                      | Rosalia Dominguez            | Development Officer *                                   |
| Dianne Gomez   | Finance Manager  | Marketing and Communications |   |
| Amira Palma  | Administrative Assistant                                 | Maximiliano Caal             | Marketing & Communications Manager (Exit February 2020) |
| Evarista Sho   | Education & Outreach Officer                             | Sayuri Tzul                  | Marketing & Communications Manager                      |
| Community Outreach & Livelihoods Program             |  |                              |   |
| Gustavo Requena <sup>L</sup>                         | Community Outreach & Livelihoods Program Director        |                              |   |
| Julio Chub   | Community Liaison Manager                                |                              |   |
| Eugenio Ah   | Sustainable Agriculture Coordinator                      |                              |   |
| Elmer Burgos   | Agroforestry Extension Officer                           |                              |   |
| Erwin Tush   | Agroforestry Extension Officer                           |                              |   |
| Eleanora Moeller*                                    | COL Intern from Brandeis University                      |                              |   |
| Protected Areas Management Program                   |  |                              |   |
| Said Gutierrez <sup>L</sup>                          | Protected Areas Management Program Director              |                              |   |
| Marchilio Ack  | Protected Areas Manager                                  |                              |   |
| Florentino Chiac                                     | Wildlife Conflict Officer                                |                              |   |
| Alex Vierod  | GIS Specialist   |                              |   |
| Hilberto Rash  | Ranger Team Leader, specialized in navigation            |                              |   |
| Vigilio Cal  | Ranger, specialized in navigation                        |                              |   |
| Juan Cal   | Enforcement Ranger                                       |                              |   |
| Ramon Sanchez  | Enforcement Ranger, and licensed tour guide              |                              |   |
| Delbert Pop  | Ranger Team Leader, Enforcement Ranger                   |                              |   |
| Roberto Tzib   | Enforcement Ranger                                       |                              |   |
| Benjamin Cal   | Enforcement Ranger                                       |                              |   |
| Israel Canti   | Enforcement Ranger                                       |                              |   |
| Biodiversity Monitoring & Research (Science) Program |  |                              |   |
| Elizabeth Dorgay <sup>L</sup>                        | Science Director   |                              |   |
| Oscar Requena Jr.                                    | Research Officer   |                              |   |
| Anignazio Makin                                      | Ranger Team Leader, specialized in freshwater monitoring |                              |   |
| Rosendo Coy  | BR&M Ranger; licensed tour guide                         |                              |   |
| Gerasimo Coc   | BR&M Ranger;   |                              |   |
| Andres Chen  | BR&M Ranger  |                              |   |
| Sustainable Conservation Financing Program           |  |                              |   |
| Marcelia Assi <sup>L</sup>                           | Conservation Business Manager                            |                              |   |
| Miguel Coc   | Nursery Technician                                       |                              |   |
| Petrona Coc  | Housekeeper  |                              |   |

<sup>L</sup> 2020 Leadership Team; Asst. = Assistant

## Funders and Partners

Ya'axché is grateful to its long-term institutional partner, **Fauna and Flora International** for its continuous support over the years and would also like to thank all those who have contributed to our work throughout 2020:

- Belize Nature Conservation Foundation
- BIOPAMA
- The Canada Fund for Local Initiatives
- Disney Conservation Fund
- European Union
- GEF Small Grants Programme
- Gesellschaft für Internationale Zusammenarbeit (GIZ-CATS)
- Global Giving
- Global Trees Campaign
- ICCO Cooperation
- Inter American Foundation
- Inter Development Bank
- Lotex Foundation
- Ministry of Agriculture, Fisheries, Forestry, Environment and Sustainable Development
- New England Biolabs Foundation
- Overbrook Foundation
- Protected Areas Conservation Trust
- Whitley Fund for Nature

## Members

Ya'axché would like to extend a heartfelt thank you to all our members who support our work through their kind monetary contributions!

## Partner Organizations

- Agriculture Department
- Association of Protected Areas Management Organization
- Belize Association for Privately Protected Areas
- Belize Audubon Society
- Belize Defence Force
- Belize Forest Department
- Belize Network of NGOs
- Belize Foundation for Research and Environmental Education
- Belize Police Department
- Brandeis University
- Colorado State University
- Maya Mountain Cacao
- Maya Mountain Research Farm
- Oceana Belize
- Panthera
- Toledo Institute for Development and Environment
- Trio Farmers Cacao Growers
- University of Belize - Environmental Research Institute
- University of New Mexico

## Financial Statement

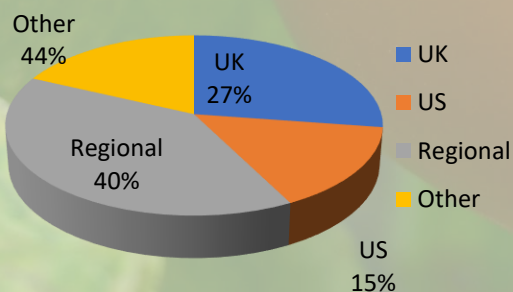
### STATEMENT OF COMPREHENSIVE INCOME

1<sup>st</sup> January to 31<sup>st</sup> December of 2020

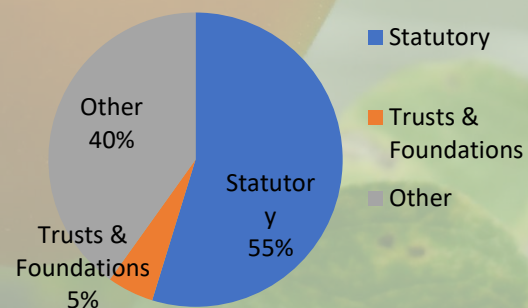
| <b>INCOME</b>                              | <b>2020</b>      |
|--|------------------|
| Grant Receipts                             | 1,655,052        |
| Other Income                               | 15,813           |
|  | <b>1,670,865</b> |
| <b>EXPENSES</b>                            |                  |
| Salaries, wages and allowances             | 831,974          |
| Training and development                   | 5,096            |
| Legal and professional fees                | 255,087          |
| Severance Provision                        | 4,627            |
| Depreciation                               | 75,503           |
| Materials and Supplies                     | 38,564           |
| Workshops                                  | 100,689          |
| Ya'axché Farmer's Expo                     | -                |
| Eco Tourism Belize                         | 16,277           |
| Advertising and Promotion                  | 200              |
| Communication                              | 2,130            |
| Building, Equipment Maintenance and Repair | 20,866           |
| Travel and transportation                  | 10,091           |
| Office expenses and equipment              | 34,302           |
| Field Supplies and equipment               | 70,099           |
| Vehicle, fuel, maintenance and repair      | 78,508           |
| Dues and subscriptions                     | 1,235            |
| Administration Fees                        | 8,290            |
| Nursery and garden                         | 7,605            |
| Interest and bank charges                  | 4,379            |
| Loss on Disposal                           | -                |
| Other Expenses                             | 4,299            |
| Total Expenses                             | <b>1,569,841</b> |
| <b>NET INCOME/(LOSS) FOR THE YEAR</b>      | <b>101,024</b>   |

All amounts are expressed in Belize Dollars

#### GEOGRAPHIC ORIGIN OF FUNDING



#### FUNDING SOURCE 2019





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