

MAYA FOREST CORRIDOR REDD PROJECT - SUMMARY OF FIRST MONITORING REPORT

Project title	Maya Forest Corridor REDD Project
Monitoring period	1 January 2022 – 31 December 2023
Project location	Belize, Belize and Cayo Districts
Project proponent(s)	Maya Forest Corridor Trust (MFCT) Nicole Auil Gomez, MFCT Secretary/ Wildlife Conservation Society Belize Director +501 223-3005; nauilgomez@wcs.org
Validation/verification body	TÜV SÜD America, Inc. Paulina Fernández, paulina.fernandez@tuvsud.com , +52 55 22343394
Prepared by	Anna McMurray, Wildlife Conservation Society Sherlene Neal Tablada and Marydelene Vasquez, Compass Communication and Research Verl Emrick, Virginia Tech Conservation Management Institute

CONTENTS

1	INITIALS AND ACRONYMS	3
2	INTRODUCTION	4
3	SUMMARY OF PROJECT BENEFITS	4
4	PROJECT DETAILS	6
4.1	Project Implementation Status	6
4.2	Stakeholder Engagement & Safeguards	8
5	CLIMATE	12
5.1	Monitoring GHG Emission Reductions.....	12
5.2	Quantification of GHG Emission Reductions and Removals	13
6	COMMUNITY	15
6.1	Net Positive Community Impacts	15
6.2	Other Stakeholder Impacts.....	19
6.3	Community Impact Monitoring	19
7	BIODIVERSITY	27
7.1	Biodiversity Impact Monitoring	27

1 INITIALS AND ACRONYMS

CBSWCG - Community Baboon Sanctuary Women's Conservation Group

CCB - Climate, Community, and Biodiversity Standard

GHG - Greenhouse gas

GRM - Grievance Redress Mechanism

HCV - High Conservation Value

MFC - Maya Forest Corridor

MFCT - Maya Forest Corridor Trust

MR - Monitoring report

PD - Project Description

REDD - Reducing Emissions from Deforestation and Forest Degradation

t CO_{2e} - tonnes of carbon dioxide equivalent

VCS - Verified Carbon Standard

VCU - Verified Carbon Unit

2 INTRODUCTION

This document provides a summary of the first monitoring report for the Maya Forest Corridor (MFC) REDD project for 2022 and 2023. It complements the longer, more detailed Monitoring Report (MR). This report was developed concurrently with the Project Description (PD). As such, more information about the project itself can be found in the summary of the MFC REDD project along with the complete PD. The results presented in this summary are preliminary. They are subject to change, particularly upon verification by TÜV SÜD America Inc, the company that will provide an independent auditing of the project. The final verified results of the monitoring report will be used as the basis for the issuance by Verra of Verified Carbon Units (VCUs) that have a Climate, Community, and Biodiversity (CCB) label.

3 SUMMARY OF PROJECT BENEFITS

Table 1 presents the benefits generated by the project in 2022 and 2023 expressed through standardized metrics required by Verra. Table 2 presents the unique benefits that the project generated during this time period that are not captured through the standardized benefits metrics.

Table 1. Standardized project benefits in 2022-2023

Category	Metric	Achievements during Monitoring Period
GHG emission reductions & removals	<i>Net estimated emission reductions in the project area, measured against the without-project scenario</i>	127,868 t CO _{2e}
Forest cover	<i>For REDD projects: Number of hectares of reduced forest loss in the project area measured against the without-project scenario</i>	2,373 ha
Training	<i>Total number of community members who have improved skills and/or knowledge resulting from training provided as part of project activities</i>	Firefighting: 51 persons Ranger training: 10 persons Sustainable livelihoods: Currently none but trainings on sustainable livelihoods will occur in subsequent monitoring periods
	<i>Number of female community members who have improved skills and/or knowledge resulting from training provided as part of project activities of project activities</i>	Firefighting: 10 females

Category	Metric	Achievements during Monitoring Period
		Ranger training: Currently none but expected to increase in future monitoring periods. Sustainable livelihoods: Currently none but trainings on sustainable livelihoods will occur in subsequent monitoring periods
Employment	<i>Total number of people employed in project activities, expressed as number of full-time employees¹</i>	10 people employed in project activities: 4 rangers, 4 technical/ managerial staff, and 2 field assistants in forest carbon measurements
	<i>Number of women employed in project activities, expressed as number of full-time employees</i>	3 women employed in project activities in the roles of technical/ managerial staff
Biodiversity conservation	<i>Change in the number of hectares significantly better managed by the project for biodiversity conservation, measured against the without-project scenario</i>	The entire project area of 10,795 was better managed by the project for biodiversity conservation. In addition to the protection of 2,373 ha of forests that would have been converted to agricultural production during the time period, the whole area was managed for conservation during the time period including through robust patrols of the property by trained local ranger to prevent illegal activities such as hunting, and to detect, mitigate, and control wildland fires.
	<i>Number of globally Critically Endangered or Endangered species benefiting from reduced threats as a result of project activities, measured against the without-project scenario</i>	The conservation of project area as well as the regular patrolling in the area during the monitoring period helped protect the critically endangered Central American river turtle (<i>Dermatemys mawii</i>) and the endangered Baird's tapir (<i>Tapirus bairdii</i>)

¹ Full time equivalency is calculated as the total number of hours worked (by full-time, part-time, temporary and/or seasonal staff) divided by the average number of hours worked in full-time jobs within the country, region, or economic territory (adapted from UN System of National Accounts (1993) paragraphs 17.14[15.102]; [17.28])

Table 2. Unique project achievements in 2022-2023

Outcome or Impact	Achievements during the Monitoring Period
1) Protects and encourages the dispersal of wildlife through connecting the Selva Maya of Belize, Guatemala, and Mexico and the Maya Mountains of southern Belize which are the largest tracts of intact forest in the Mesoamerica Biodiversity Hotspot.	The conservation of project area that would have otherwise been cleared for agriculture during the monitoring period has helped ensure the integrity of the Maya Forest Corridor and protects the wildlife that use the corridor.
2) Protects wildlife and wildlife habitat through patrols that limit poaching, control, and mitigation of wildfire, monitoring of wildlife occurrence, and habitat use.	333 patrols in the project area were conducted over the course of the monitoring period. These patrols helped identify hotspots for illegal hunting activities and areas prone to fires. Because of this proactive approach, the area and quality of the wildlife habitat in the project area have been maintained, ensuring early response to fire and safeguarding the ecosystems.
3) Improves communities' resilience by improving local fire management systems and supporting sustainable livelihoods and climate change adaptation.	51 people were trained in fire management in and near the MFC, 25 fires were contained by persons trained in fire management during the monitoring period. The achievements associated with this outcome are expected to increase significantly in following monitoring periods.

4 PROJECT DETAILS

4.1 Project Implementation Status

The implementation status of the project activities is described as follows:

- In February of 2022, the construction of the ranger station in the MFC REDD project area was finalized allowing for the regular patrolling of the area by WCS rangers.
- 333 patrols in the project area were conducted over the course of the monitoring period. Rangers patrolled for approximately 837 man-hours in 2022 and 2249 man-hours in 2023. These included enforcement patrols to monitor and secure the project area, reconnaissance patrols where areas were explored for illegal activities, and research patrols that focused on collecting biological

information in the project area. These patrols helped identify hotspots for illegal hunting activities and areas prone to fires. In these patrols, the rangers also recorded 387 fauna sightings or tracks.

- From March to June 2022, WCS Belize conducted a comprehensive survey confirming the presence of the critically endangered Central American river turtle (*Dermatemys mawii*) within the Cox Lagoon in the project area.
- Starting in July 2022, the WCS Belize team engaged in community outreach and environmental education activities in local communities. They informed nearby communities about the change in management of the MFC REDD project area (formerly known as the Big Falls Farm and currently referred to locally as the MFCT property) and the importance of the MFC. The team employed different strategies to engage stakeholders such as in-person meetings, focus groups, and an exchange trip.
- In August of 2022, the formal Management agreement was signed between the MFCT and WCS in which the MFCT assigns the management of Trust Properties, including the MFC REDD project area, to WCS for a term of 50 years commencing on October 11, 2021 with the option to extend the agreement beyond this period.
- Field measurements were conducted from February through June 2023 to estimate forest carbon stocks in the project area. With regards to the estimated carbon stocks in the project area, it is important to note that, in November 2022, Hurricane Lisa (Category 1) hit the MFC project area leading to some damage to its forests. However, because the forest carbon measurements were conducted after the hurricane, the reductions in carbon stocks are already accounted for in the field measurements.
- MFCT members engaged in firefighting activities during the fire season in 2023. The team detected 29 fires, although the fires had no impact on the forests of the MFC REDD project area. All the fires were human-induced and were lit as a hunting strategy. The team identified different hotspots where the team verified fires occurring within the MFC, and the Maya Forest Corridor Fire Working Group (MFCFWG) worked closely to control and extinguish fires in these hotspots. The team also used drone technology to monitor the fire behavior and make informed decisions.
- Fire management training was initiated in local communities in June 2022 and continued through the remainder of the monitoring period. For more details, refer to the community impact monitoring results in section 4.3.1.
- As described in detail in section 3.1.3 and 3.2.2, four hectares of forest loss occurred during the monitoring period leading to carbon stock losses totaling 746 t CO_{2e}. This loss was the result of damage from Hurricane Lisa in November 2022.

The following project activities began to be implemented after the monitoring period ended including: formal stakeholder consultations, the formal stakeholder impact assessment, implementation of the grievance redress mechanism, the implementation of fire hazard alert systems, work with communities to design and adopt climate smart plans and community conservation plans, and trainings in

community-owned sustainable livelihoods and nature-based solutions. These activities will be included in subsequent monitoring reports.

4.2 Stakeholder Engagement & Safeguards

4.2.1 Stakeholder Consultation

Formal stakeholder consultations related to the MFC REDD Project were carried out in 2024 after the monitoring period ended. These consultations are the same as those discussed in the section “Summary of Stakeholder Engagement to Date” in the project summary document. These consultations are described in detail in **Error! Reference source not found.** and Table 4.

Table 3. Initial stakeholder consultations for the MFC REDD project

Ongoing consultation	Eight Community-level meetings were held with 35 community leaders in the 12 target communities to share information on the REDD proposal, secure commitment, and support from community leaders, identify key stakeholders and vulnerable groups within communities and channels for communication with communities, and discuss specific opportunities for community participation, including participation in the socioeconomic household survey to inform the REDD Proposal. Formal letters, in English and Spanish, were sent to community leaders. Letters were followed by in-person visits to each community leader to explain the purpose of the meeting and to solicit their participation. Community members were provided with information on the Maya Forest Corridor and target communities of the MFC, utilizing a map of the area. The significance and use of the MFC by target communities was discussed. This was followed by a discussion on REDD Projects, what a REDD Project is, and plans to design a REDD Project for the MFC. Communities were informed of how the project intended to engage communities, the benefits to communities from the project, and the potential risks. Discussion was held on the Household Survey planned to gather socio-economic data and to collect monitoring information for the community monitoring report. Communities were informed of what to expect during the survey. Discussions were held on stakeholder groups within the community, and community leaders supported the identification of additional stakeholder/stakeholder groups, including vulnerable groups.
------------------------------------	--

	Finally, discussions were held on the Monitoring Plan for the REDD Project Proposal
Date(s) of stakeholder consultation	29 May 2024 to June 9, 2024
Communication of monitored results	As discussed in section 2.3.4, the results of these engagements and the entire monitoring period will be communicated to all stakeholders through the following strategies: • Presentations of the monitoring results will be made to community leaders at suitable community venues. • A booklet with a summary report of the monitoring results, presented in language appropriate to the target audience, will be disseminated at community meetings. Additional copies will be left at multiple community venues which are regularly frequented by community members for all interested community members to read. • Government and non-government partner agencies will receive electronic versions of the monitoring report via email from the MFCT. • The results of each monitoring and verification exercise will be published on the Verra Registry. Beneficiary communities, as well as government and non-government partners, will be allowed a 30-day comment period at the start of the verification audit. All relevant public comments received during this period will be addressed appropriately.
Stakeholder input	Communities expressed support for the project and asked that information be shared with the communities in a timely manner. Communities did not request any modification to the project information shared. The communities of Hattievillie and Gracie Rock indicated that Freetown Sibun should be a part of the project. It was noted that Freetown Sibun does not fall within the MFC target communities. Community members provided valuable information on how to engage communities to secure maximum input in household surveys. They recommended using enumerators from the community to collect the data and also recommended that surveys be conducted during the evenings and weekends. These recommendations were implemented. Community members also assisted in mapping the communities based on existing

clusters. Community recommendations and guidance on existing clusters were implemented during the household survey exercise

Table 4. Follow-up stakeholder consultations to present findings from household survey, community monitoring report, and findings from the social impact assessment

Ongoing consultation	Four community meetings were held with 54 community leaders and community members from the 12 target communities to present the findings from the household survey, the community monitoring report, and findings from the Social Impact Assessment. Invitations were disseminated in English and Spanish through community leaders, mobilizers, and other established channels of communication with communities. Community leaders were asked to invite a careful balance of men, women, and youth. Three meetings were held in English and one meeting was held in Spanish to cater to the Spanish-speaking communities. PowerPoint presentations were made in English and Spanish on the key findings from the household survey and community monitoring report as well as the stakeholder impact assessment. Spaces were provided for community members to validate findings from the survey findings and community monitoring report findings. A booklet summarizing key information was also disseminated to community members to solidify the information shared. The communities agreed with the findings presented as well as with the stakeholder impact assessment. The key feedback from communities included: • A call from the CBSWCG for increased coordination with WCS in the implementation of livelihoods activities to avoid duplication of efforts • Community members in the Belize River Valley recommended including support for the establishment of a market in the river valley as part of the project. • Community members in La Democracia indicated that they will not benefit from agriculture activities planned as part of the project as community members do not have agricultural lands.
Date(s) of stakeholder consultation	23 August 2024 to 28 August 2024

Communication of monitored results	As discussed in section 2.3.4, the results of these engagements and the entire monitoring period will be communicated to all stakeholders through the following strategies: • Presentations of the monitoring results will be made to community leaders at suitable community venues. • A booklet with a summary report of the monitoring results, presented in language appropriate to the target audience, will be disseminated at community meetings. Additional copies will be left at multiple community venues which are regularly frequented by community members for all interested community members to read. • Government and non-government partner agencies will receive electronic versions of the monitoring report via email from the MFCT. • The results of each monitoring and verification exercise will be published on the Verra Registry. Beneficiary communities, as well as government and non-government partners, will be allowed a 30-day comment period at the start of project validation and verification events. All relevant public comments received during this period will be addressed appropriately.
Stakeholder input	WCS has increased efforts to strengthen coordination with the CBSWCG in planning and implementing livelihood activities. The request for a market in the Belize River Valley is not currently within the scope of the project, however, can be considered in the future. For the community of La Democracia, applicable activities such as backyard gardens will be implemented.

4.2.2 Grievances

No grievances were raised during the monitoring period. It is important to note that the Grievance Redress Mechanism (GRM) was not designed until after the end of the monitoring period. That being said, formal stakeholder consultations were conducted in 2024 after the end of the monitoring period during which grievances could have been raised. While the stakeholders provided feedback as presented in Table 3 and Table 4, they did not have any specific grievances related to the project.

Moving forward, affected communities and other interested stakeholders may raise a grievance at any time to the MFCT. Therefore, information about the GRM and contact information of the focal point for the GRM will be made publicly available to all affected communities and interested stakeholders in prominent, accessible locations in all project sites.

A grievance form will be prepared, for completion by complainants or by the GRM focal point for grievances raised orally (in person, by phone, or at meetings). Grievance forms will be available in local languages in a prominent and accessible location in all 12 target communities. Grievances can be submitted orally to the GRM focal point (in person or by telephone), by email, or by mail, or online by completing the required form.

5 CLIMATE

5.1 Monitoring GHG Emission Reductions

For the 2022-2023 monitoring period, the indicators described below were monitored through analyses of satellite imagery and on-the-ground ranger patrols.

5.1.1.1 Forest area and forest loss in the project area

Of the 10,795 hectares of forests in the project area, 10,791 ha remained standing during the monitoring period (Figure 1). The loss of 4 hectares was due to hurricane winds and flooding.

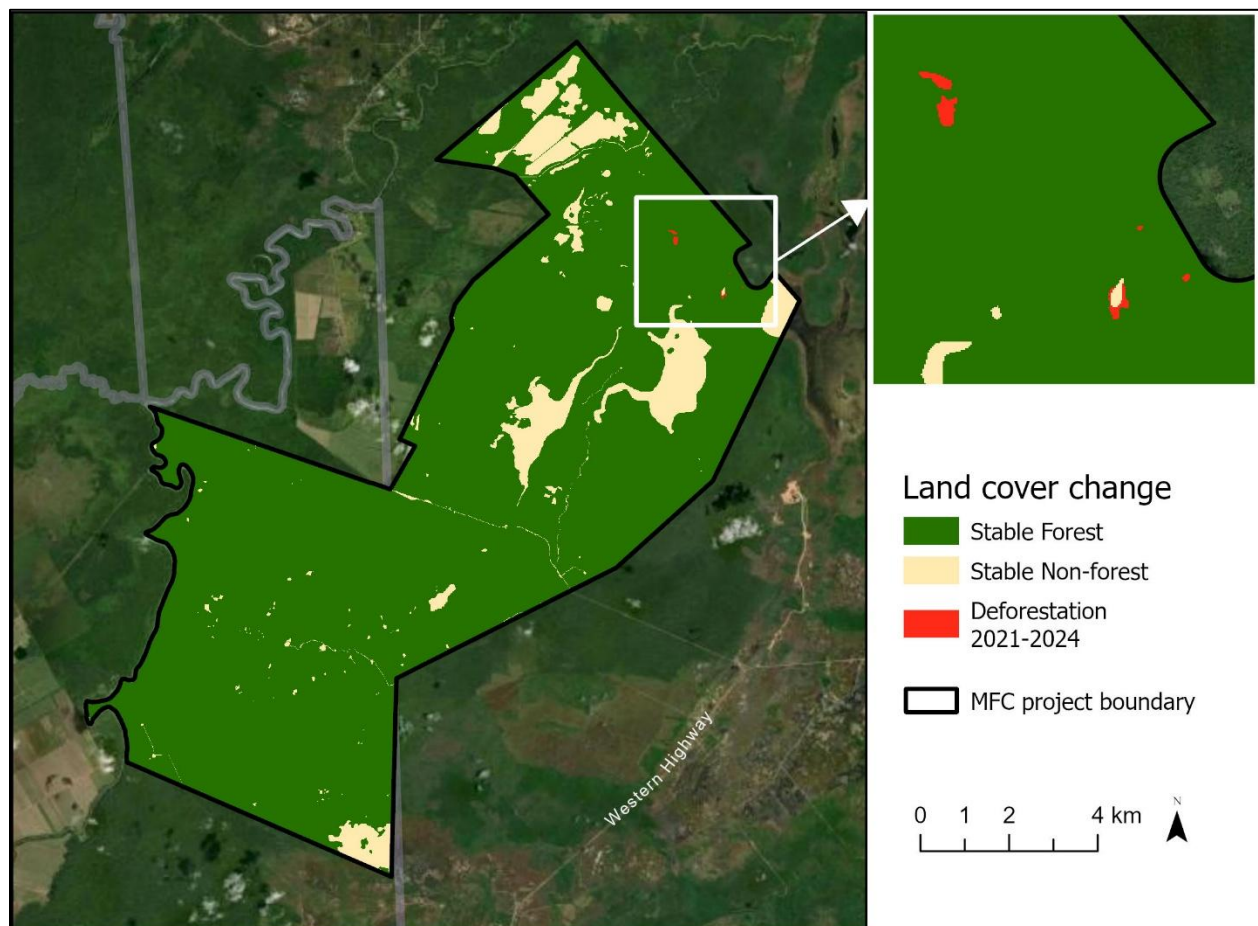


Figure 1. Forest Cover Monitoring Map 2021-2024

5.1.1.2 Monitoring areas undergoing natural disturbance (M-REDD)

During the monitored period, the project was affected by hurricanes. Hurricane Lisa made landfall near Belize City in November 2022 as a Category 1 Hurricane with maximum winds of 145km/hr. The eye of the hurricane passed roughly 20km to the south of the project area.

As mentioned above, four hectares of forests were lost due to hurricane damage. Aside from these four hectares, initial field surveys indicated that some damage was apparent, mostly in the form of broken limbs. Review of remote sensing before and after the hurricane did not reveal any particular spatial pattern, indicating that any impact lacked localized severe events.

This hurricane occurred prior to completing forest carbon field inventory of the entire site, and therefore any potential impact from the storm on the standing forest is already accounted for in the baseline carbon stocks. Accounting for additional emissions from the storm would be double counting the same loss, so was not undertaken.

While there were some grasslands and shrublands within the project boundary impacted by wildfires, NASA Fire Information for Resource Management System (FIRMS) did not indicate any fires in the project area forests during the monitoring period. Ground patrols also did not identify any evidence of fires in the forests.

5.1.1.3 Monitoring degradation from illegal logging

During the monitoring period, rangers conducted regular reconnaissance patrols that included detecting potential incidents of illegal logging. Twelve potential incidents were detected. However, these incidents were determined by the rangers to have happened before the project area was under conservation management when the property was still being selectively logged. This was determined based on the condition of the tree stumps which were covered in moss and showing substantial decay.

5.2 Quantification of GHG Emission Reductions and Removals

5.2.1 Project GHG Emissions

The GHG emissions produced in the project area during 2022-2023 were the result of forest loss. As described in section 4.1.1, no emissions from natural disturbances or illegal logging are included. These emissions are presented in Table 5.

Table 5. Project emissions during the monitoring period

Year	Project emissions (tCO ₂ e)
2022	746
2023	0
Total	746

5.2.2 GHG Emission Reductions and Carbon Dioxide Removals (VCS, 3.15, 4.1)

As described in the project summary, the project's climate benefits are the greenhouse gas (GHG) emission reductions resulting from the project activities, specifically the conservation of the forest area that would have otherwise been cleared for agricultural production. The quantification of these climate benefits is the basis for the number of Verified Carbon Units (VCUs) the project can generate. Each VCU represents the reduction of one tonne of carbon dioxide equivalent (t CO₂e). The issuance of these VCUs will enable the MFCT to generate revenue from the sale of these VCUs to help cover project costs.

The estimated net GHG emission reductions are based on carbon stock changes and GHG emissions estimated in the baseline scenario (i.e., the scenario in which the project area forests would have been cleared for agriculture) minus net GHG emissions in the project scenario minus emissions due to leakage.

To ensure that the VCUs generated from the project are conservative (i.e., not overestimating the total amount of GHG reductions that the project actually produces), following VCS requirements, deductions from the total VCUs were taken to account for the potential activity-shifting leakage risks, non-permanence risks, and uncertainty associated with the GHG emission reduction calculations. In the case of this project, activity-shifting leakage is the risk that the agricultural production that would have otherwise taken place in the project area was displaced to another forested area in Belize. Non-permanence risk is the risk that the carbon stored in the project area is released back into the atmosphere due to a variety of reasons. In the case of the MFC REDD project, the primary non-permanence risk is the potential damage to the forests caused by hurricanes and wildfires. The emission reductions that the project is required to deduct to account for non-permanence risks are deposited into a pooled buffer account that Verra manages.

Table 6 shows the VCUs that the project has generated during the monitoring period.

Table 6. VCUs generated during the 2022-2023 monitoring period

Period of time in which the VCU is generated	Baseline emissions (tCO ₂ e)	Project emissions (tCO ₂ e)	Leakage emissions (tCO ₂ e)	Buffer pool allocation (tCO ₂ e)	Reductions VCUs (tCO ₂ e)
01-Jan-2022 to 31-Dec-2022	103,803	746	13,287	12,456	61,063
01-Jan-2023 to 31-Dec-2023	112,439	0	14,392	13,493	66,805
Total	216,243	746	27,679	25,949	127,868

6 COMMUNITY

6.1 Net Positive Community Impacts

6.1.1 Community Impacts

The following is a summary of project's community impacts during the 2022-2023 monitoring period:

- **Decreased vulnerability to wildfires.** Fire management training began in the last quarter of 2022, and firefighting activities began in 2023. In 2023, 29 local wildfires were detected of which 25 (86%) were contained.
- **Increased knowledge of critical environmental conservation and climate adaptation issues relevant to their communities.** Since project initiation in January 2022, different MFCT partners have been engaging with different communities in the project zone to create awareness of the critical ecological function of the MFC, the present-day impacts of climate change on their daily lives, and the REDD project and its importance. These community and school engagements have served to establish foundations for future collaborations, build support for MFC conservation, and gain an understanding of community needs and aspirations. This increased awareness and familiarity with the MFC REDD Project has empowered communities to participate actively in realizing the community benefits of conserving the MFC and to actively implement climate adaptation measures in their communities.

In future monitoring reports, additional beneficial impacts to communities will be reported from the project activities that started after the end of the monitoring period focused on providing training, material, and technical support for community owned sustainable livelihoods and nature-based solutions for climate adaptation.

6.1.2 Negative Community Impact Mitigation

The MFCT REDD Project's strategy to avoid deforestation involves the acquisition and management of private land. Since the communities in the project zone neither owned, occupied, nor used the land prior to the project, they have not experienced a loss of access to natural resources. Furthermore, they did not lose opportunities for land purchase or agricultural expansion since in the most likely without-project scenario, the lands would have been purchased by large commercial agricultural interests outside of the target communities.

It is important to mention there is one local family who has been using a small area (12 hectares) for cattle ranching and harvesting of fruit trees outside of the MFC REDD project area but within the property that the MFCT purchased for conservation since prior to the purchase of the property. During the 2022-2023 monitoring period, this individual continued to conduct these activities in this area. To

mitigate negative impacts to this individual, after the monitoring period ended, the MFCT began working to engage with the individual with the goal of understanding his perspective and circumstances, while working collaboratively toward a voluntary and dignified resolution to the situation. Emphasis is being placed on minimizing conflict, upholding his rights and well-being throughout the process, and informing the individual of the MFCT legal rights to the land.

In addition to this issue, surveillance activities in the project area have identified a very small number of illegal intrusions: one hunting incident in 2022 involving five males, six incidents in 2023 involving six males and one female. These incidents were dealt with by advising the persons that the property is now under conservation management by WCS. The low number of incidents indicates that the project area is an insignificant source of subsistence for communities on the whole. Community education sessions to raise awareness of the location and protected status of the REDD Project Area are expected to decrease illegal encroachments. Additionally, signs have been installed along the boundary lines of the property in which the MFC REDD project is located to deter further incursions.

The project poses no threat to existing livelihoods or lifestyles, since community participation in project activities will be entirely voluntary. Where sustainable livelihood opportunities are offered, orientation sessions and field visits will be organized for interested community members before they embark on the activity. This ensures that participants are well-informed before commencing any project-related activities. The project promotes environmentally sustainable livelihood activities, reducing the risk of negative environmental impacts, such as pollution or damage to areas of high conservation value. Sustainable livelihood activities did not take place in the 2022-2023 monitoring period but will occur in subsequent monitoring periods beginning in 2024.

In compliance with the precautionary principle, the project conducts community outreach and education activities to maintain community awareness about project activities and outcomes and proactively addresses any concerns regarding potential negative impacts.

Furthermore, the project's stakeholder engagement strategy includes effective means for information sharing and includes an accessible grievance redress mechanism to ensure that community and non-community stakeholders have the opportunity to register concerns, which are then appropriately addressed by WCS.

6.1.3 Net Positive Community Well-Being

The community impacts described above indicate net positive impacts to communities. No negative community impacts have been recorded.

To measure net positive community well-being that is directly attributable to project activities, WCS established a baseline assessment of livelihoods, income, gender participation, social cohesion, education attainment, and natural capital with direct beneficiaries when they are engaged for livelihood activities and employment. In this first monitoring period, livelihood activities had not yet begun so this baseline is not available.

The Community Household Survey conducted as a part of this Community Monitoring Event provided a baseline assessment of communities in terms of livelihoods, income, gender participation, social cohesion, education attainment, and natural capital. The survey results indicate the following community perceptions of well-being in terms of physical well-being, financial security, and community cohesion (which comprises trust in community members, participation in activities that benefit the community, and perception of the community as a good place to live).

Table 7. Perceptions of physical well-being

Physical well-being compared to 2 years ago	Count
1) Better Off Now	207
2) No Change	109
3) Worse Off Now	82
4) No Response	5
5) Household Was Not Formed 2 Years Ago	5
Total	408

Table 8. Perceptions of financial security

Financial security compared to 2 years ago	Count
1) Better Off Now	196
2) No Change	106
3) Worse Off Now	91
4) No Response	13
5) Household Was Not Formed 2 Years Ago	2
Total	408

Table 9. Perceptions of Community Cohesion

Do you trust people in the community?	Count
1) Yes	212
2) Partly, Trust Some but Not Others	127

3) No	69
Total	408
Do community members actively participate in community actions/events that benefit the community?	Count
1) Yes	159
2) Sometimes but Not Always	97
3) No	152
Total	408
Do you consider your community a good place to live?	Count
1) Yes	353
2) Partly	39
3) No	16
Total	408

6.1.4 Protection of High Conservation Values

The continued conservation of the REDD project area forests during the 2022-2023 monitoring period help maintain the four identified areas with high conservation values related to community well-being in the following ways:

- For the Community Baboon Sanctuary and the Spanish Creek Wildlife Sanctuary, the maintenance of nearby wildlife habitat space that would have otherwise been lost enables migration between the areas and prevents genetic isolation. Further, the project efforts to detect, mitigate, and control wildfires in and around the MFC help reduce wildfire risks in the sanctuaries.
- The conservation of the broadleaf forests and lowland savanna of the MFCT-owned property in which the MFC REDD project serve has a spillover effect by preserving wild populations of game species and freshwater fish that local communities hunt and fish outside the property to supplement their weekly diet.
- The conservation of the MFC REDD project area will contribute to maintaining the integrity of the Belize and Sibun River watersheds since standing forests contribute to the overall health of watersheds in a number of ways such as controlling water flow and filtering out pollutants (Ellison et al., 2017).

6.2 Other Stakeholder Impacts

6.2.1 Net Impacts on Other Stakeholders

Due to its critical role in consolidating the Maya Forest Corridor and protecting natural ecosystems, project activities are expected to have a net positive impact on other stakeholders which include government partners and protected area managers across Belize. Project activities will support national commitments and strategies for low emissions development, biodiversity protection, climate resilience and sustainable development.

6.3 Community Impact Monitoring

6.3.1 Community Monitoring Plan (CCB, CM4.1, CM4.2, GL1.4, GL2.2, GL2.3, GL2.5)

The first Community Monitoring Exercise was held between May to July 2024. It involved the following activities:

- 1) A series of sensitization meetings were held with community leaders of the 12 target beneficiary communities to inform communities that a community household survey would be conducted. Since this was the first community monitoring event, coinciding with the project validation and first verification, the opportunity was taken to introduce the MFC REDD Project, its rationale, and its intended benefits to communities, within the context of climate change impacts being experienced by communities. The planned Community Household Survey exercise was described to the community leaders. Their feedback and advice on how best to approach the community was solicited and adopted. They were asked to identify capable local enumerators with whom the community would feel comfortable. Finally, their cooperation was solicited in spreading the word to community members. For this purpose, a written and electronic notice was provided to them for onward dissemination. For communities with a large percentage of Spanish speakers, the notice was provided in Spanish as well.
- 2) A Community Household Survey was conducted between June 15 and July 15, 2024, in the 12 target communities. Prior to launching the survey, WCS secured approval by the Wildlife Conservation Society's Institutional Review Board and Belize's Institute for Social and Cultural Research. Local enumerators from the target communities were trained in the technique and ethics of conducting household surveys, emphasizing the respect for human rights and diversity as well as the safety of both enumerators and community members. All 12 communities participated in the socioeconomic survey which provided valuable information to establish starting conditions for the project and to identify key interventions to be implemented in communities based on current knowledge, attitudes, and practices regarding the use of forest resources, livelihoods, and other key project indicators.

Of the planned 492 household surveys, 453 surveys (92%) were conducted. Several households were abandoned, a few were inaccessible due to heavy rains and localized flooding, and some households had no one present during initial and follow up visits. Of the 453 households sampled,

408 surveys were completed (90.1%), 2 were partially completed (0.4%), 36 households refused (7.9%), and 7 households had no suitable respondent at home (1.5%).

The Community Household Survey provided the opportunity for community members to participate in the evaluation, describing their lives using their own knowledge and experiences. It provides a critical baseline of the socioeconomic status at the start of project activities, against which future community impacts and well-being will be measured.

- 3) WCS staff members completed surveys on REDD Project activities conducted during this monitoring period. These covered activities in the areas of (a) wildfire management, (b) patrolling and surveillance, (c) community outreach and environmental education, (d) community planning for conservation and climate adaptation, (e) forest restoration, and (d) promoting sustainable livelihoods. These surveys were conducted between July 29 and August 9, 2024. Survey results are being securely stored by WCS Belize.

6.3.1.1 Monitoring Indicator Framework

Detailed monitoring results for this community-related project activities are presented within the monitoring indicator framework below.

Table 10. Community benefits from Project Activity 2: Maintain natural ecosystems and current forest cover for the conservation of native biodiversity.

Activity Area: Detection, mitigation, and control of wildfires in and around the MFC			
No.	Monitoring Indicator	Means of Verification	Monitoring Results
1	# of persons trained in fire safety and management by community and organization	- Attendance sheet - Training agenda - Photos	51 persons trained: 22 women, 29 men including: 4 communities - Mahogany Heights, La Democracia, Franks Eddy, and Cotton Tree; and 10 organizations - WCS, Monkey Bay Wildlife Sanctuary, Foundation for Wildlife Conservation, Belize Maya Forest Trust, The Belize Zoo and Tropical Education Center, Belize Forest Department, Program of Belize, Belize Audubon, Karst Hills, and Health Department
2	# of communities with a Fire Hazard Alert System	- Early Warning System Protocols - Photos of signage	No activity was conducted in the current monitoring period. Activities have started in 2024 and will be reported in the next monitoring event.
3	# of MFC communities served by fire brigades	Fire Management Records	No activity was conducted in the current monitoring period. Activities will start in 2026 and will be reported from then on.
4	Annual % of fires contained by persons trained	Fire Management Records	2022: None. Fire management training began in the last quarter of 2022. Firefighting activities began in 2023. 2023: 29 fires detected/ 25 contained; 86% of fires contained.
Activity Area: Protected Area Management			
5	# of persons trained in environmental enforcement by community and organization	- Attendance sheet - Training agenda	10 persons: 0 females, 10 males including: 4 organizations: WCS, MBWS, FWC, BMFT; and 2 community participants from Mahogany Heights and La Democracia
6	# of special constables certified for enforcement by community and organization	Special constable certification	11 persons - 2 women, 9 men certified representing: 3 conservation organizations (WCS, MBWS, BMFT) and 1 community member from Rancho Dolores

7	# of persons employed in protected area management	• Employment letters	1 permanent managerial post - female 4 permanent rangers - male 10 temporary male field assistants employed in carbon measurements. New staff appointments in 2024 will be reported in the next monitoring event.
8	# of persons employed in forest restoration activities	• Employment letters	No staff were hired for this activity area in the current monitoring period. New staff appointments in 2024 will be reported in the next monitoring event.
9	% change in illegal intrusions	• SMART data	<u>2022</u> : 1 hunting incident involving 5 males <u>2023</u> : 4 incidents (hunting and fishing) involving 6 males and 1 female 300% increase in intrusions. The increase in intrusions detected may be attributed to the increased surveillance capacity during 2022 and 2023. Surveillance activities began in March 2022 with two rangers. Ongoing community education on the protected status of the REDD Project Area is expected to decrease illegal encroachments.

Table 11. Community benefits from Project Activity 3: Conduct community outreach and environmental education to foster support for MFC conservation and to create awareness of critical environmental and climate adaptation issues.

Activity Area: Community outreach and environmental education to foster support for MFC conservation and create awareness of climate change impacts			
No.	Monitoring Indicator	Means of Verification	Monitoring Results
10	# of community residents partaking in community outreach and education activities	• WCS Community Outreach Database • Social media posts	<u>2022</u> : 528 community members engaged. ▪ 385 children and youth ▪ 143 adults <u>2023</u> : 930 community members engaged. ▪ 755 children and youth ▪ 175 adults (Gender disaggregation not available for this monitoring period. Data collection from 2024 onwards will include gender.)

11	Level of knowledge and support for the MFC	Household survey	Survey responses: 27% have heard of the MFC, of which 46% know where it is 11% have heard of the MFC Trust 56% have heard of the WCS 20% are aware that the REDD Project Area is now being managed by WCS 11% could name at least one MFC Trust member other than WCS working to protect the MFC
12	# of young participants from target communities participating in continuous engagement sessions to strengthen conservation stewardship as well as introduce a variety of STEM oriented themes and professional and career building skills	- Attendance sheet - Engagement session agenda	No activity was conducted in the current monitoring period. Activities are expected to start in upcoming years.
13	Community perception of benefits of protecting the MFC	Household survey	Survey responses on the importance of protecting the MFC: 13.7% - Absolutely essential 65.7% - Very important 14.7% - Of average importance 3.7% - Of little importance 2.2% - Not important at all

14	Level of knowledge of climate change impacts and adaptation	• Household survey	Survey responses: 90% have heard about climate change 77% could identify at least one climate change impact affecting them Respondents ranked the top three climate change impacts that were affecting them and indicated whether they have sufficient knowledge to understand and cope with these impacts.				
			Climate change impact	#of respondents affected	% of total respondents (n=368)	% with enough information on how this impact is affecting them	%that with enough information to cope with impact
			Increase in Temperature	287	78%	77%	69%
			Drought	184	50%	76%	31%
			Increased Rainfall	159	43%	55%	19%
			Flooding	109	30%	39%	19%
			Storms/ Hurricanes	80	22%	5%	9%
			Changes in the Agriculture Calendar	55	15%	15%	9%
			Pests & Insects	46	13%	13%	17%
			Diseases	28	7%	11%	4%
			Erosion	16	4%	94%	31%
15	# of communities that have adopted Climate Smart Plans	• Community Climate Smart Plans	No activity was conducted in the current monitoring period. Activities have started in 2024 and will be reported in the next monitoring event.				
16	# of communities that have adopted Community Conservation Agreements	• Community Conservation Agreement documents	No activity was conducted in the current monitoring period. Activities have started in 2024 and will be reported in the next monitoring event.				

Table 12. Community benefits from Project Activity 4: Provide training, material and technical support for community-owned sustainable livelihoods and nature-based solutions for climate adaptation.

Activity Area: Provide training, material and technical support for community-owned sustainable livelihoods and nature-based solutions for climate adaptation			
No.	Monitoring Indicator	Means of Verification	Monitoring Results
17	• # of persons who receive training in sustainable livelihoods in the communities (e.g., climate smart agriculture, production of sustainable products like coconut oil, cohune oil, honey, etc.)	• Attendance sheet • Training agenda • Regenerative Agriculture Technical Guide	No activity was conducted in the current monitoring period. Activities have started in 2024 and will be reported in the next monitoring event.
18	• # of households or community agencies that establish sustainable livelihoods in the communities (e.g., climate smart agriculture, production of sustainable products like coconut oil, cohune oil, honey, etc.)	• Log of extension visits	No activity was conducted in the current monitoring period. Activities have started in 2024 and will be reported in the next monitoring event.
19	• # of extension service visits per household/farm/agency per quarter	• Log of extension visits	No activity was conducted in the current monitoring period. Activities have started in 2024 and will be reported in the next monitoring event.
20	• % increase in self-sufficiency in food production	• Log of extension visits	Not measured since no activities were conducted in the current monitoring period. Baseline will be established with direct beneficiaries at the start of engagement in livelihood activities.
21	• # of farms improved through climate-smart agriculture practices	• Farm maps	No activity was conducted in the current monitoring period. Activities have started in 2024 and will be reported in the next monitoring event.
22	• # of acres of agricultural land converted to climate-smart management	• Farm maps	Not measured since no activities were conducted in the current monitoring period.
23	• # of nature-based community-owned livelihood solutions in MFC communities	• Project progress reports	No activity was conducted in the current monitoring period. Activities have started in 2024 and will be reported in the next monitoring event.

Activity Area: Provide training, material and technical support for community-owned sustainable livelihoods and nature-based solutions for climate adaptation

- | | | |
|----|---|--|
| 24 | <ul style="list-style-type: none"> % increase in household income through implementation of sustainable livelihoods | <ul style="list-style-type: none"> Household survey |
| 25 | <ul style="list-style-type: none"> Livelihood diversification index | <ul style="list-style-type: none"> Household survey |
| 26 | <ul style="list-style-type: none"> Gender parity index of economic contributions to households (both income and non-income activities) | <ul style="list-style-type: none"> Household survey |

Not measured since no activities were conducted in the current monitoring period. Baseline will be established with direct beneficiaries at the start of engagement in livelihood activities.

Employment and Livelihoods of Heads of Household:

85% of heads of households are employed or engaged in some livelihood activity. Of these 29% stated that they had a secondary source of income. 62% of households were headed by males; 38% headed by females. 87% of male heads of households were employed; 81% of female heads of households were employed.

Only 78% of employed persons (270 respondents) provided an income range. The survey indicated the following gender parity across income ranges:

Gender	Count	BZ\$0 to \$1,500	BZ\$1,501 to \$3,000	Above BZ\$3,000
Male	178	110	60	8
Female	92	65	21	6
Parity		0.59	0.35	0.75

The overall gender parity across all income ranges is **0.56**.

These results demonstrate a notable gender disparity in income, particularly in the middle income range, where a significantly larger proportion of males are earning higher incomes compared to females. Insufficient data on non-income economic activities was available to include that data in the results.

- | | | |
|----|--|--|
| 27 | <ul style="list-style-type: none"> Holistic Well-being Index (composite of physical, social and economic factors) | <ul style="list-style-type: none"> Household survey |
|----|--|--|

Section 4.1.3 above provides the survey responses for each of 5 well-being questions posed.

6.3.2 Monitoring Plan Dissemination (CCB, CM4.3)

For project transparency, accountability, and building community trust, it is essential that monitoring reports are easily accessible to a wide range of stakeholder groups. Key stakeholder groups targeted for the dissemination of monitoring results include direct project beneficiaries, target communities, government agencies, NGO partners, and external auditors. In compliance with the Monitoring Plan outlined in the Project Description Document, the results of this monitoring event have been made accessible to targeted beneficiary communities, key stakeholder groups, and the public using the following methods:

- 1) In August 2024, four community meetings were held to share the findings from the Community Household Survey and the community monitoring event, in the context of the project's objectives and intended medium- to long-term impacts.
- 2) Government and non-government partner agencies received electronic versions of the final monitoring report via email from the MFCT.
- 3) The results of each monitoring and verification event are published on the Verra Registry.
- 4) A 30-day comment period will be provided to beneficiary communities, government and non-government partners, and the public at the beginning of the validation audit. All relevant public comments received during this period will be addressed appropriately.

7 BIODIVERSITY

7.1 Biodiversity Impact Monitoring

The stated biodiversity objective of the project is the preservation of the MFC REDD project area to maintain its native biodiversity. As discussed in the project summary document, monitoring efforts are focused on the following indicators: 1) Total area of forest in the project area; 2) Continued occurrence of medium-large mammal and terrestrial birds in the project zone; and 3) Continued occurrence of the Central American river turtle in Cox Lagoon in the project area.

7.1.1 Monitoring the total area of forests

The results of this monitoring are presented in the Climate Monitoring Plan. Given the importance of these forests to biodiversity in addition to storing carbon, it is included in the biodiversity monitoring plan as well. As described in the previous section, 4 hectares of forests were lost in the project area due to natural disturbances that could not be mitigated. The other 10,791 ha of forests remained standing. As a comparison, in the baseline scenario, a total of 2,377 ha of these forests (1,188.6 ha per year) would have been cleared for agriculture during the monitoring period.

7.1.2 Monitoring the occurrence of large and meso-mammal species

From January to March 2024, the project team surveyed a grid of 17 camera traps in and around the MFC REDD project area, the results of which demonstrate continued occurrence of large and medium mammal species and terrestrial birds.

The team accumulated 943 total trap nights and 3,447 photographs of wildlife from 17 camera stations in and near the MFC REDD project area. From the 3,447 total photographs, 492 were independent events of wildlife (not including human events). A total of 32 wildlife species were captured, consisting of 4 carnivores, 10 herbivores (including 2 domestics), 9 omnivores, 1 insectivore, and 8 bird species (Table 13).

The Baird's tapir was detected 54 times at 13 of the 17 camera stations and had an average trap rate of 5.52 per 100 trap nights (TN), evidence of the occurrence of this endangered species in and near the MFC REDD project area.

Aside from humans, the highest number of detections was exhibited by ocelots (98) followed by Baird's tapir (54) (Table 13). Several species were only detected once including: collared peccary, Mexican hairy dwarf porcupine (*Coendou mexicanus*), greater grison (*Galictis vittata*), northern raccoon (*Procyon lotor*), and striped hog-nosed skunk (*Conepatus semistriatus*) (Table 13). Figures Figure 2 Figure 5 include select photos of different species from the camera traps.

With regards to terrestrial birds, the Great curassow was detected 11 times at 3 of the 17 camera stations and had an average trap rate of 1.24 per 100TN. The Great tinamou was detected 2 times at 1 of the stations with an average trap rate of 0.19 per 100TN.

Error! Reference source not found.

Table 13. Numbered (No.) species list, with common name, scientific name, total detections, and average trap rate, of all captured species during camera trap survey in the Maya Forest Corridor from January-March, 2024.

No.	Common Name	Scientific Name	Total Events	*Avg Trap Rate	No. of Stations Detected Out of 17
Carnivore					
1	Jaguar	<i>Panthera onca</i>	14	1.46	9
2	Jaguarundi	<i>Herpailurus yagouaroundi</i>	11	1.13	7
3	Ocelot	<i>Leopardus pardalis</i>	98	9.91	12

No.	Common Name	Scientific Name	Total Events	*Avg Trap Rate	No. of Stations Detected Out of 17
4	Puma	<i>Puma concolor</i>	12	1.37	7
Herbivore					
5	Baird's Tapir	<i>Tapirus bairdii</i>	54	5.52	13
6	Central American Agouti	<i>Dasyprocta punctata</i>	34	3.52	10
7	Collared Peccary	<i>Dicotyles tajacu</i>	1	0.09	1
8	Domestic Livestock	<i>Bos taurus</i>	41	4.15	3
9	Horse	<i>Equus caballus</i>	6	0.61	2
10	Mexican Hairy Dwarf Porcupine	<i>Coendou mexicanus</i>	1	0.1	1
11	Lowland Paca	<i>Cuniculus paca</i>	13	0.31	6
12	Central American Red Brocket	<i>Mazama temama</i>	8	0.85	4
13	White-lipped Peccary	<i>Tayassu pecari</i>	3	0.31	2
14	White-tailed Deer	<i>Odocoileus virginianus</i>	8	0.80	6
Omnivore					
15	Deppe's Squirrel	<i>Sciurus deppei</i>	9	0.66	1
16	Gray Four-eyed Opossum	<i>Philander opossum</i>	3	0.33	2

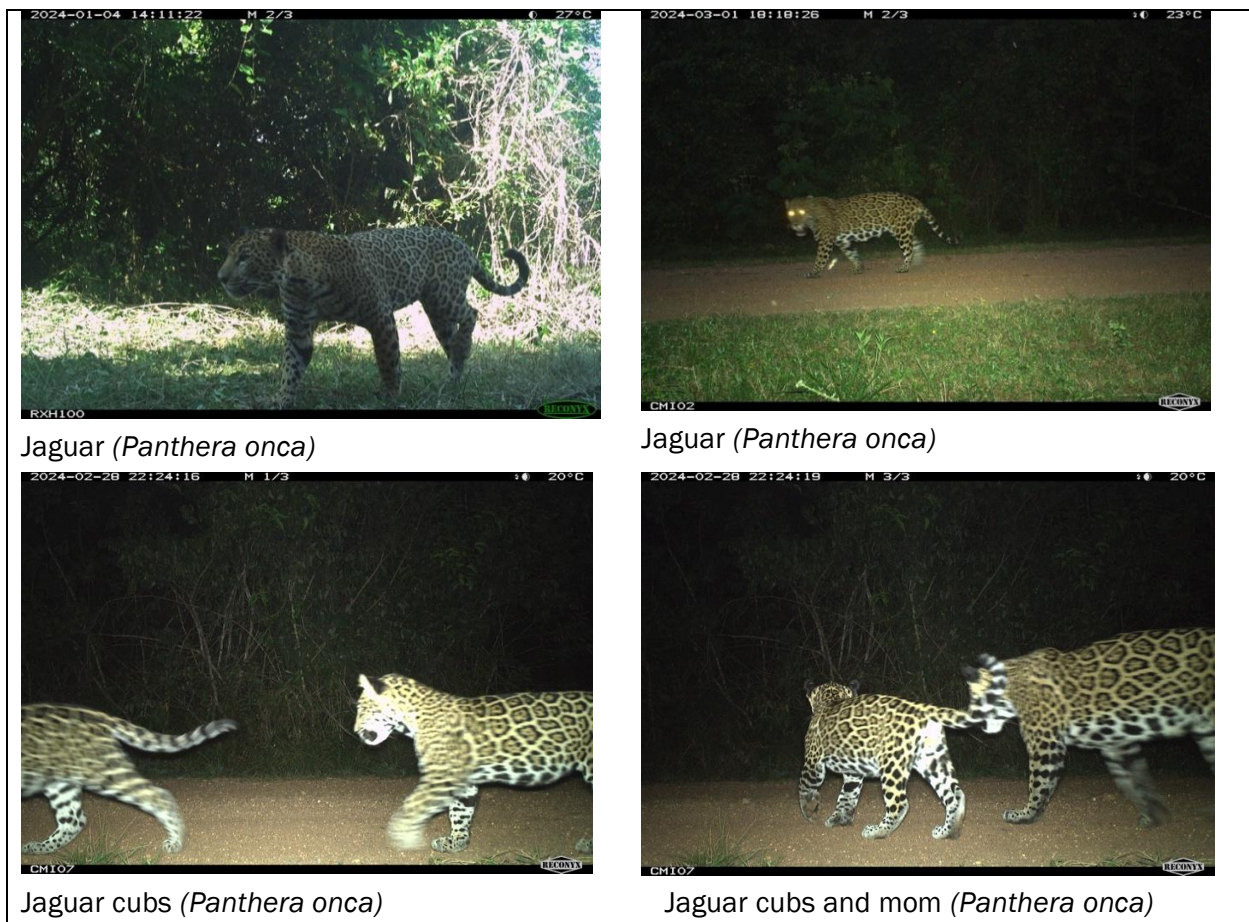
No.	Common Name	Scientific Name	Total Events	*Avg Trap Rate	No. of Stations Detected Out of 17
17	Gray Fox	<i>Urocyon cinereoargenteus</i>	32	3.26	6
18	Greater Grison	<i>Galictis vittata</i>	1	0.1	1
19	Northern Raccoon	<i>Procyon lotor</i>	1	0.1	1
20	Opossum sp.	<i>Didelphis spp.</i>	9	0.92	4
21	Striped Hog-nosed Skunk	<i>Conepatus semistriatus</i>	1	0.1	1
22	Tayra	<i>Eira barbara</i>	6	0.61	3
23	White-nosed Coati	<i>Nasua narica</i>	7	0.76	5
24	Human	<i>Homo sapiens</i>	116	10.8	9
Insectivore					
25	Nine-banded Armadillo	<i>Dasypus novemcinctus</i>	5	0.67	2
Bird					
26	Bare Throated Tiger Heron	<i>Tigrisoma mexicanum</i>	5	0.51	2
27	Bird sp.	<i>Aves</i>	48	5.06	9
28	Common Pauraque	<i>Nyctidromus albicollis</i>	3	0.31	2
29	Dove	<i>Columbidae</i>	6	0.76	4
30	Gray-necked Wood-rail	<i>Aramides cajaneus</i>	28	1.22	5
31	Great Curassow	<i>Crax rubra</i>	11	1.24	3

No.	Common Name	Scientific Name	Total Events	*Avg Trap Rate	No. of Stations Detected Out of 17
32	Great Tinamou	<i>Tinamus major</i>	2	0.19	1
33	Plain Chachalaca	<i>Ortalis vetula</i>	11	1.68	4





Figure 2. Select photographs of Baird's Tapir (*Tapirus bairdii*) from the 2024 camera trap monitoring event



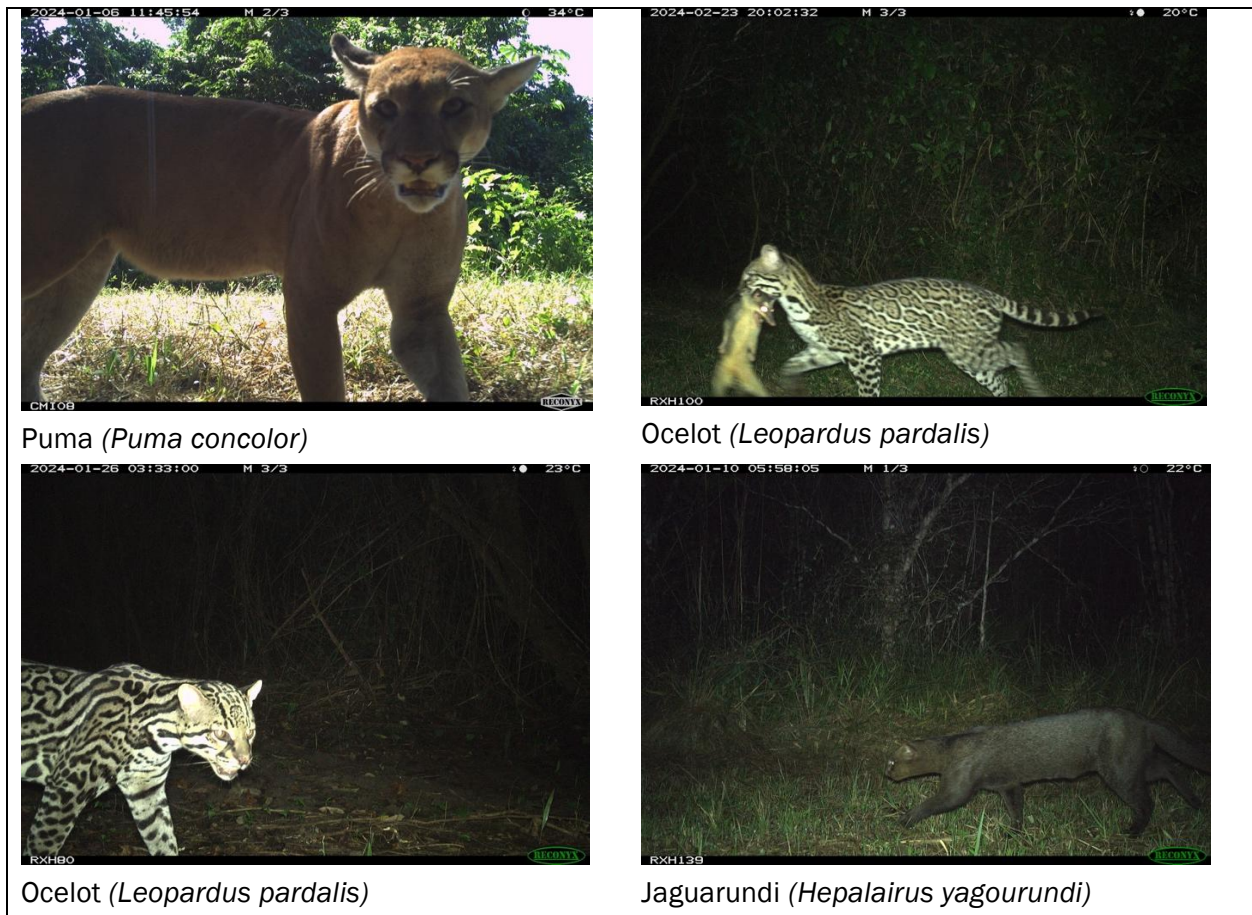


Figure 3. Select photographs of carnivores from the 2024 camera trap monitoring event



Figure 4. Select photographs of terrestrial birds



Figure 5. Select photographs of other species from the 2024 camera trap monitoring event

7.1.3 Monitoring the occurrence of the Central American River Turtle

From March to June 2022, WCS conducted the first monitoring event of the occurrence of the Central American River Turtle or the “Hicatee” (*Dermatemys mawii*) in Cox Lagoon, located in the heart of the project area. The project used nets to capture individual turtles to determine occurrence. The results of this monitoring also confirm the continued occurrence of the Central American river turtle in the lagoon.

A total of 29 *D. mawii* were captured during the survey. The distribution of gender was 9 female, 3 male, and 17 undetermined sexes, which was based on carapace size and head coloration and were classified as juveniles. The high % capture of juveniles suggests a young population or that Cox Lagoon is serving as a nursery ground for the species.



Male *D. mawii*



Female *D. mawii*

Figure 6. Selected photos of hicatee turtles captured during the survey