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

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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. 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	*Net estimated emission reductions in the project area, measured against the without-project scenario*	117,483 t CO_2e
Forest cover	*For REDD projects: Number of hectares of reduced forest loss in the project area measured against the without-project scenario*	2,416 ha
Training	*Total number of community members who have improved skills and/or knowledge resulting from training provided as part of project activities*	61 in total including 51 in fire safety and management and 10 in environmental enforcement. Trainings on sustainable livelihoods will occur in subsequent monitoring periods.
	Number of female community members who have improved skills and/or knowledge resulting from training provided as part of project activities of project activities	22 in total all trained in fire safety and management.

Category	Metric	Achievements during Monitoring Period
Employment	*Total number of people employed in project activities, expressed as number of full-time employees*[1]	6.30 people employed (full-time equivalency) • 2 technical/managerial post including 1 full-time position and another position with only 33% of time dedicated to the MFC project: 1.33 full-time equivalency; • 4 full-time rangers; • 9 temporary field assistants in forest carbon measurements who cumulatively worked 210 days[2]: 0.97 full-time equivalency
	Number of women employed in project activities, expressed as number of full-time employees	1.38 women employed in project activities • 2 technical/managerial post including 1 full-time position and another position with only 33% of time dedicated to the MFC project: 1.33 full-time equivalency; 1 field assistants in forest carbon measurements who cumulatively worked 10 days[3]: 0.05 full-time equivalency
Biodiversity conservation	*Change in the number of hectares significantly better managed by the project for biodiversity conservation, measured against the without-project scenario*	The entire project area of 10,977 was better managed by the project for biodiversity conservation. In addition to the protection of 2,416 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 project area by trained local ranger to prevent illegal activities

[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])
[2] Cumulative days worked by temporary assistants was 210 days. The total number of work days for WCS Belize staff is 217.
[3] The total number of work days for WCS Belize staff is 217.

Category	Metric	Achievements during Monitoring Period
		such as hunting, and to detect, mitigate, and control wildland fires.
	Number of globally Critically Endangered or Endangered species benefiting from reduced threats as a result of project activities, measured against the without-project scenario	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 (*Dermatemys mawii*) and the endangered Baird's tapir (*Tapirus bairdii*)

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

Stakeholder engagements related to the project can be categorized into two (2) distinct phases: Phase 1 (2020-2023) and Phase 2 (2024-2025). The focus of Phase 1 was on consultations related to community sensitization on the MFC and data gathering to inform the development of interventions in the MFC and ultimately the Project Document. These were led by MFCT members.

Phase 2 constituted stakeholder consultations specific to the project description development, guided by a Stakeholder Engagement Plan. Activities included engagement of community leaders, data collection, and sustained community engagement geared towards ensuring community and stakeholders' understanding of and engagement in project development activities. These were led by WCS.

During Phase 1, communities were consulted to establish baseline data and design interventions for the MFC. In 2020, community leaders were consulted on plans to conduct a household survey to guide the development of interventions in the MFC. Following endorsement of community leaders, the MFC Household survey was conducted with 421 households. Communities were consulted on the survey findings and given opportunities to validate them. In 2022, stakeholders were also consulted in an exercise to identify, discuss, and prioritize environmental threats.

In 2021 and 2022, stakeholders were consulted on the design of strategies and interventions for the MFC, leading to the development of three specific documents outlining priorities for the protection and conservation of the MFC, as well as for sustainable livelihoods development in MFC communities. The outcomes are documented in the Analysis and Prioritization of Sustainable Livelihood Alternatives for

the Central River Valley Communities, the MFC Compliance Plan, and the draft MFC Conservation Action Plan. Table 3 presents the details of the Phase 1 consultations.

During Phase 2, communities were consulted on the development of the project document. In April 2024, a socioeconomic survey plan and monitoring plan were designed for the MFC REDD Project. These were presented to the communities for their input and finalized based on the feedback provided. Communities were also consulted on effective channels for communication and engagement to ensure sustained communication with communities. Considerations were given to language barriers in some communities. Consequently, consultations in two communities were conducted in Spanish. In mobilizing participants, gender balance and inclusion of youth participants were also key considerations. Table 4 presents the details of these initial Phase 2 consultations.

All 12 communities participated in the socioeconomic survey and community monitoring event, 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. The outcome of these studies also informed the Theory of Change and the project implementation plan.

Findings from the socioeconomic survey and community monitoring report, along with the Social Impact Assessment, inclusive of the Theory of Change and project activities, were presented to the community for their feedback and input. The details of these follow-up stakeholder consultations are presented in Table 5.
Consultations were also conducted with representatives from stakeholder organizations within the MFC. At least 6 in-depth interviews were held with WCS staff and members of the Maya Forest Corridor Trust to secure information on activities being implemented and planned within the MFC, project risks and benefits to communities, and other information relevant to the project.

Table 3. Initial stakeholder consultations for the MFC REDD project

Ongoing consultation	During phase 1, 2020 to 2023, ongoing consultations took place with stakeholders to provide information on the MFC, gather data, identify risks and threats, and design interventions for
Date(s) of stakeholder consultation	July-August 2022: Stakeholder consultations to identify priorities for sustainable livelihoods February 2022 stakeholder consultations to develop MFC Compliance plan February-March 2020: Consultation with community leaders on the MFC Household Survey October 2020-March 2021: Conduct the MFC Household Survey

	January-December 2022: Presentation of findings of the MFC Household Survey to Communities November-December 2021, Consultations to develop the Draft Conservation Action Plan for the MFC
Communication of monitored results	Presentations on findings from the household survey and the prioritization exercise. The findings from the MFC Sustainability Goals consultations were compiled into a booklet that was widely disseminated to stakeholders.
Stakeholder input	Stakeholders identified threats and mitigative actions and established objectives for the conservation and protection of the MFC as part of the MFC Compliance Plan, the MFC Community Sustainability Goals Meetings, and the drafting of the MFC Conservation Action Plan. Stakeholders identified priority actions for sustainable livelihoods development as part of the consultations to establish priority sustainable livelihoods alternatives.

Table 4. Phase 2 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	The results of these engagements and the entire monitoring period were communicated to all stakeholders through the following strategies: • Presentations of the monitoring results were 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, were disseminated at community meetings. Additional copies were 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 received electronic versions of the monitoring report via email from the MFCT. • The results of each monitoring and verification exercise were published on the Verra Registry. Beneficiary communities, as well as government and non-government partners, were allowed a 30-day comment period at the start of the verification audit. No comments were received.
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 Hattieville 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 5. 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	The results of these engagements and the entire monitoring period were communicated to all stakeholders through the following strategies: • Presentations of the monitoring results were 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, were disseminated at community meetings. Additional copies were 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 received electronic versions of the monitoring report via email from the MFCT. • The results of each monitoring and verification exercise were published on the Verra Registry. Beneficiary communities, as well as government and non-government partners, were allowed a 30-day comment period at the start of project validation and verification events. No comments were received.
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.

The MFC REDD Project's four core activities are the product of an iterative, multi-year stakeholder engagement process that ran from 2020 through 2025. At each stage, communities, the MFC Coalition, and government and non-government partners identified the threats facing the corridor and recommended the actions needed to address them. These inputs were documented progressively in the Feasibility Study (2020 to 2021), the Conservation Action Plan (2021), the MFC Compliance Plan (2022), and the Community Sustainability Goals meetings (2022), and were then carried forward into the project design. The four project activities and the Theory of Change presented in the PD consolidate

these recommendations rather than introduce a new direction. During Phase 2 (2024 to 2025), the resulting activities were presented back to all 12 target communities and to stakeholder organizations for validation, and community feedback was used to refine specific elements.

4.2.2 Grievances

While a formal, structured grievance redress mechanism was designed in 2024 and is articulated as part of the project description, since 2022, informal channels for providing feedback and lodging grievances have been established with communities and stakeholders. During visits and presentations to the communities, contact information and email for the MFC Site Manager were shared with the community, and community members were reminded that any feedback or concerns could be channeled via the Site Manager.

Further in the MFC household survey developed and conducted in 2020 and 2021 as part of Phase 1 of the project's stakeholder engagement, consistent with WCS Institutional Review Board for Research with Human Subjects protocol, all participants were provided contact information for WCS to raise any questions or concerns about the project and to provide feedback.

Grievances received	Resolution and outcome
In 2023, using the informal channel, one grievance was raised. The situation occurred during the first Maya Forest Corridor Storytelling Competition, which was held in the last quarter of 2023, with a total of six schools from buffer communities participating; namely, Hattieville Government, Seventh Day Adventist, and Pilgrim Schools; St. Ann's Anglican in La Democracia (which also serves students of Mahogany Heights); Cotton Tree Roman Catholic, and Belize Rural Primary School. At the end of the award ceremony, where the top three placements were announced, Cotton Tree Roman Catholic was declared the winner, while Belize Rural Primary School, which placed second, expressed concerns to the Communications Assistant regarding the results. They stated that they should have been the winner, having placed a lot of effort into making costumes, and were outstanding in the Belize Festival of Arts.	The concern was reported to the WCS Communications Assistant by teachers and students of the Belize Rural Primary School and immediately relayed to the Communications Coordinator and the MFC Site Manager. The criteria for judging were explained to representatives from the Belize Rural Primary School, and it was concluded that, while fair, judging should have included parties external to WCS and other members of the MFC working group. A suggestion was made to include persons with a performing arts background, such as individuals from the Ministry of Education, and similar affiliates, to judge future competitions. The concern was acknowledged during the conversation and was given due consideration. However, it was determined that the original scoring and winner selection would remain unchanged, as it was in accordance with the established evaluation criteria. The Communications Coordinator and MFC Site Manager agreed that for future competitions, WCS, where feasible, either recuse itself from

Grievances received	Resolution and outcome
.	participating as judges in future competitions or engage external judges to avoid any perception of bias.

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 10,977 hectares of forests in the project area, 10,976 ha remained standing during the monitoring period (Figure 1). The loss of one hectare was due to hurricane winds and flooding.

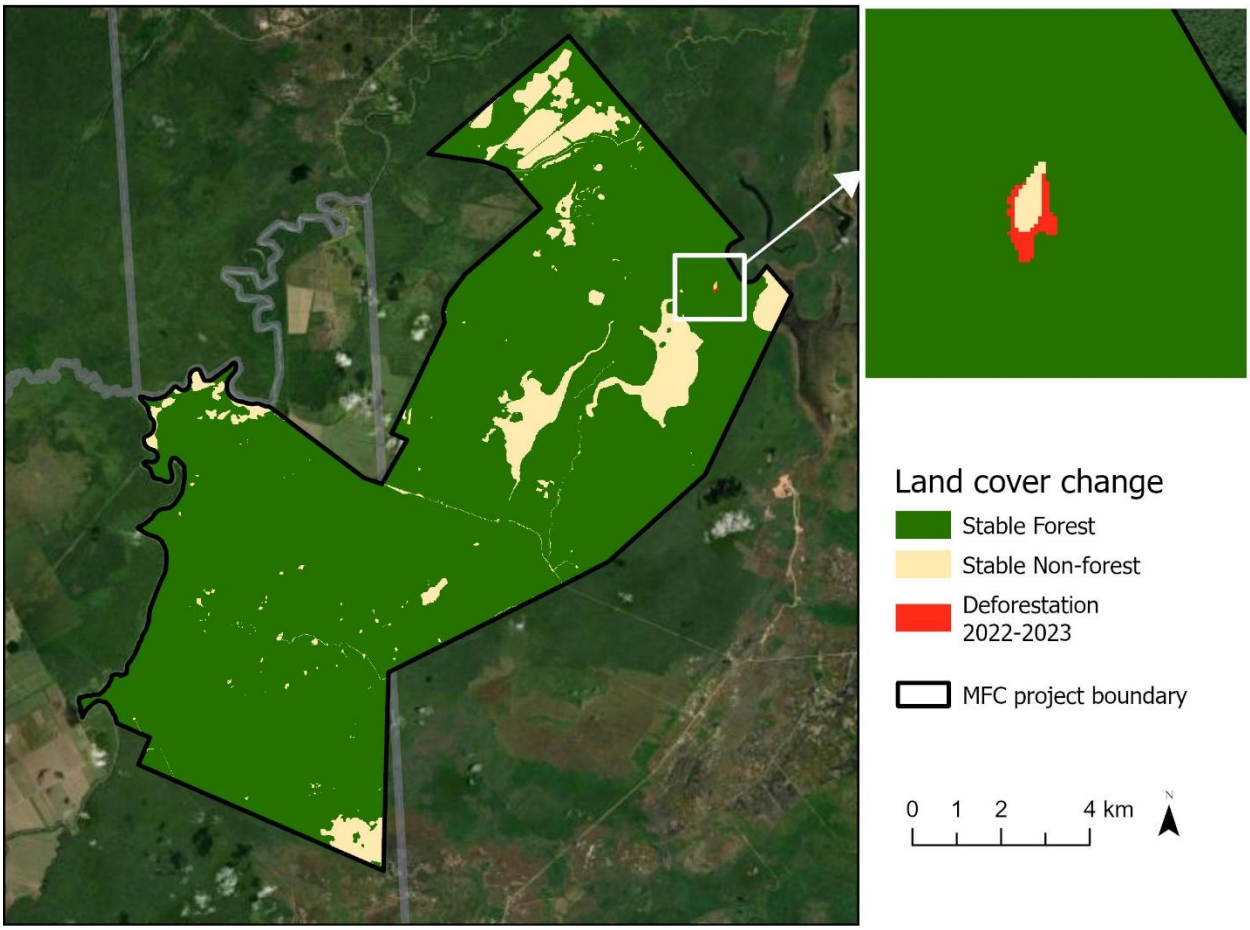


Figure 1. Forest Cover Monitoring Map 2021-2024

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, one hectare of forest were lost due to hurricane damage. Aside from this, 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.

In 2023, the site was affected by wildfire in several locations. Figure 2 presents the total area – 219 ha - affected by these fires.

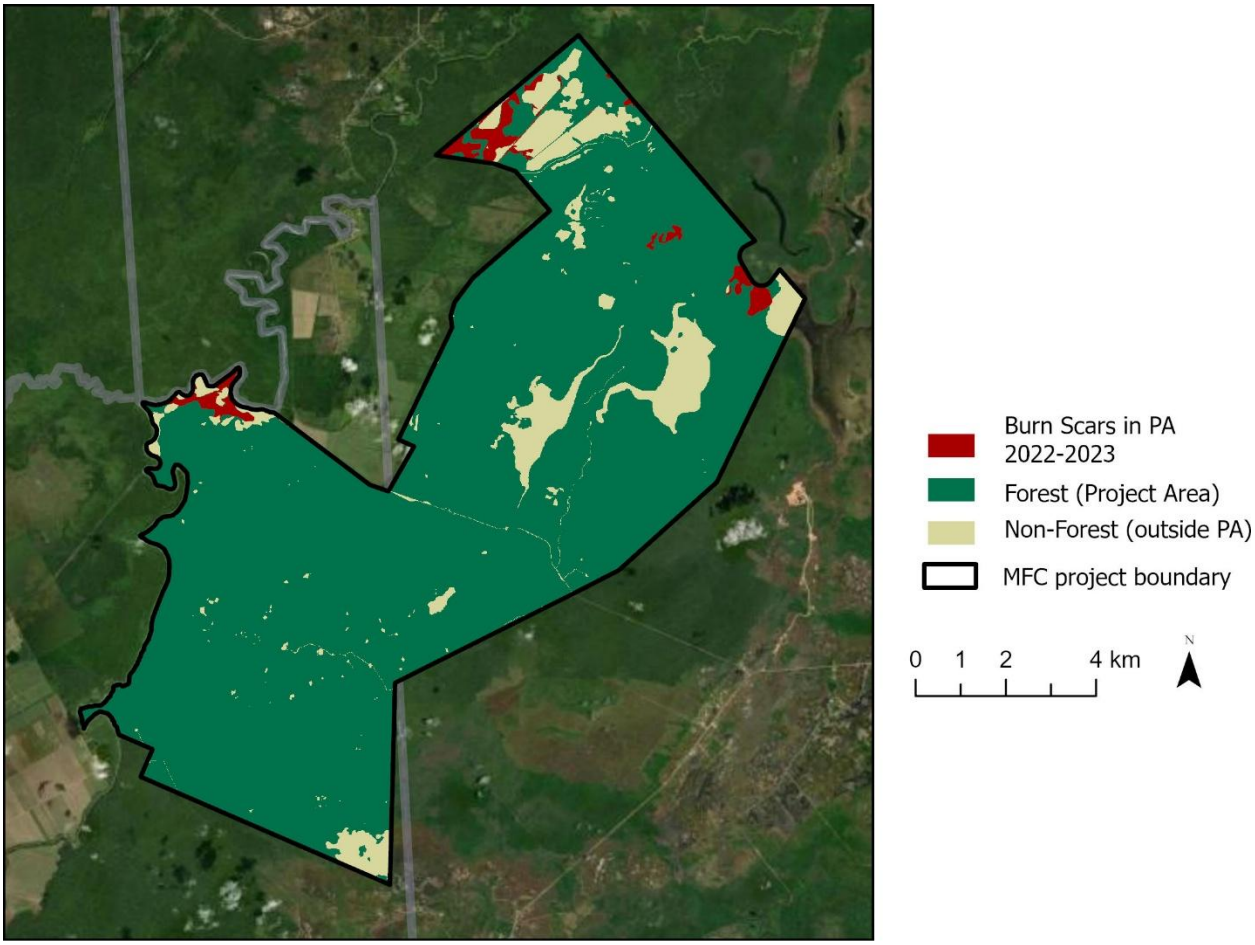


Figure 2. Burn scar tracing 2022-2023

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. Six 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 primarily the result of the wildfires in 2023 that impacted the carbon stocks of standing forest as well as due to the one hectare of forest loss in 2022. These emissions are presented in Table 6.

Table 6. Project emissions during the monitoring period

Year	Project emissions (tCO_2e)
2022	191
2023	19,481
Total	19,673

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 CO_2e). 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 7 shows the VCUs that the project has generated during the monitoring period.

Table 7. VCUs generated during the 2022-2023 monitoring period

Period of time in which the VCU is generated	Baseline emissions (tCO_2e)	Project emissions (tCO_2e)	Leakage emissions (tCO_2e)	Buffer pool allocation (tCO_2e)	Reductions VCUs (tCO_2e)
01-Jan-2022 to 31-Dec-2022	105,418	191	13,494	12,650	62,477
01-Jan-2023 to 31-Dec-2023	114,200	19,481	14,618	13,704	55,007
Total	219,619	19,673	28,111	26,354	117,483

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, of the 29 fires detected, persons with increased fire management capacity were successfully able to respond to 25 (86%).

- **Increased knowledge of critical environmental conservation and climate adaptation issues relevant to their communities.** During the monitoring period, different MFCT partners engaged with communities buffering the MFC to create awareness of the critical ecological function of the MFC, and the present-day impacts of climate change on their daily lives. These community and school engagements served to establish foundations for future collaborations, build support for MFC conservation, and gain an understanding of community needs and aspirations.

  Household survey respondents demonstrated the following levels of awareness of the MFC REDD Project in 2024:

  - 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

Household survey respondents expressed the following perceptions 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

Household survey respondents indicated that:

- 90% have heard about climate change.
- 77% could identify at least one climate change impact affecting them.

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.

During surveillance activities in the project boundary, WCS rangers documented encounters with people not authorized to be on the property (referred to as human encounters). In 2022, the rangers documented one human encounter incident, in which two persons were sighted on the boundary line of

the property, potentially engaged in hunting activities In 2023, the rangers documented seven human encounters including six related to unauthorized fishing or hunting as it was along the river boundary and the persons may have been engaged in both activities. The motives of the individuals detected in the additional seventh encounter were unclear. Human encounters with ”unclear motives“ occur when rangers visually detect individuals on the property but are unable to establish contact, typically because the individuals actively avoid interaction.

The increase in encounters between 2022 and 2023 may be attributed to the increased surveillance capacity during this time period. 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 over the project life. These incidents where verbal contact was established were dealt with by advising the persons that the property was now under conservation management by WCS; a map with property boundaries and GPS location of encounter was shown to individuals to facilitate transmitting the point that they were within a private property managed for conservation. Additionally, signs indicating that they were entering a privately protected area were installed in key locations along the boundary lines.

Ongoing community education sessions to raise awareness of the location and protected status of the REDD Project Area during the monitoring period and after 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.

The project's overall impact on community well-being is evident from the following findings established by the monitoring report.

Target communities' vulnerability to wildfires decreased through improved skills and knowledge of firefighting among 51 firefighters, including 22 females, from 4 communities, spanning 10 organizations, and the response to 86% of fires detected.

Target communities' resilience through livelihood diversification and increased self-sufficiency was increased through the employment of 14 persons, including 3 women, in project activities. 11 persons, including 2 women, were certified as special constables, and 10 persons were trained in environmental enforcement.

Additionally, a total of 44 community outreach and education activities, including social media activities, were conducted during 2022 and 2023, and the 2024 household survey results presented in 6.1.1 demonstrated positive perceptions of well-being as compared to the two years prior before the project had begun across three key areas of well-being.

Table 8. 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 9. 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 10. 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 Project has defined the following four (4) High Conservation Value areas (HCVs), which are all protected areas or natural ecosystems within the Project Zone:

- The Community Baboon Sanctuary
- The Spanish Creek Wildlife Sanctuary
- The broadleaf forests and lowland savanna of the MFCT-owned property in which the MFC REDD project is located
- The Belize River and Sibun Watersheds

Community Baboon Sanctuary, the Spanish Creek Wildlife Sanctuary, and the broadleaf and lowland savannas of the property qualified for the following HCVs as described by the HCV Network:

- 5: Community Needs: Sites and resources fundamental for satisfying the basic necessities of local communities or indigenous people (for livelihoods, health, nutrition, water, etc.) identified through engagement with these communities or indigenous peoples.
- 6: Cultural Values. Sites, resources, habitats and landscapes of global or national cultural, archaeological or historical significance, and/or of critical cultural, ecological, economic or religious/sacred importance for the traditional cultures of local communities or indigenous peoples, identified through engagement with these local communities or indigenous peoples.

The Belize River and the Sibun River Watersheds qualified for the following HCV as described by the HCV Network:

- 4: Ecosystem Services: Basic ecosystem services in critical situations, including protection of water catchments and control of erosion of vulnerable soils and slopes.

The attributes qualifying them as having high conservation values for communities are their rich biodiversity and ecosystem services. During the monitoring period, the protection of the broadleaf forests and lowland savannas of the property was achieved through WCS's ongoing conservation management activities of the property including patrols, enforcement, and wildfire management. These activities, in turn, helped maintain the area's livelihood and cultural values.

The conservation management activities within the project area also protected wildlife habitat space near the Community Baboon Sanctuary and the Spanish Creek Wildlife Sanctuary thereby enabling migration between the areas and preventing genetic isolation. Beyond the project area, the project activities to detect, mitigate, and control wildfires in and around the MFC also helped reduce wildfire risks in these sanctuaries. As such, these project activities contributed to the maintenance of the sanctuaries' livelihoods and cultural values.

Finally, the conservation management activities within the project area as well as the broader project activities to detect, mitigate, and control wildfires in and around the MFC also contributed to maintaining the integrity of the Belize and Sibun River watersheds. The protection of standing forests helps regulate water flow and filter out pollutants (Ellison et al., 2017). Therefore, these activities conducted during the monitoring period help maintain the watershed's role of providing basic ecosystem services.

In addition to the activities conducted during the monitoring period that actively contributed to the maintenance of the HCVs, it is also important to note that in the baseline scenario, 2,417 ha that would have been cleared for agriculture in the absence of the project during this period.

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 had a net positive impact on other stakeholders which include government partners

and protected area managers across Belize. Project activities supported 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 11. 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: Response to 25 of the 29 fires detected; 86% response to fires.
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 Note that additional trainings occurred during the monitoring period that are not counted because there were no attendance sheets. These include trainings on the use of the Spatial Monitoring and Reporting Tool (SMART) for effective monitoring and surveillance and Wilderness First Aid.

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 • 1 technical coordinator post including responsibilities in the MFC REDD project – female • 4 permanent rangers - male • 9 temporary field assistants - 8 males and 1 female 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 human encounters in the project boundary	• SMART data	2022: 1 encounter (human sighting) 2023: 27 encounters including 11 fishing, 15 human sighting, and 1 hunting The increase in encounters between 2022 and 2023 may be attributed to the increased surveillance capacity during this time period. 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 12. 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 outreach and education activities, including social media activities, conducted	• WCS Community Outreach Database • Social media posts	2022: 18 community engagement activities ▪ 5 activities targeting schools ▪ 11 community outreach activities ▪ 2 training activities 2023: 26 community engagement activities . ▪ 6 activities targeting schools ▪ 10 community outreach activities ▪ 10 Social media activities
11	Level of knowledge and support for the MFC	• Project beneficiary household survey	No results presented for the monitoring period as the baseline household survey (results below) was conducted in 2024. Results will be presented in subsequent monitoring reports. Baseline 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	• Project beneficiary household survey	No results presented for the monitoring period as the baseline household survey (results below) was conducted in 2024. Results will be presented in subsequent monitoring reports. 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	# 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.
15	# 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 13. 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**
16	• # 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.
17	• # 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.
18	• # 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.
19	• # 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.
20	• # of acres of agricultural land converted to climate-smart management	• Farm maps	Not measured since no activities were conducted in the current monitoring period.
21	• # 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			
22	• Holistic Well-being Index (composite of physical, social and economic factors)	• Household survey	Section 6.1.3 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 were published on the Verra Registry.
4) A 30-day comment period was provided to beneficiary communities, government and non-government partners, and the public at the beginning of the validation audit. No comments were received.

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; 3) Population trends of the Baird's tapir; 4) Continued occurrence and population trends of the hicatee in Cox Lagoon in the project area; and 5) the effectiveness of patrol efforts at detecting and deterring illegal hunting in the MFC project boundary.

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, one hectare of forests was lost in the project area due to natural disturbances that could not be mitigated. The other 10,976 ha of forests remained standing. As a comparison, in the baseline scenario, a total of 2,417 ha of these forests (1,208.6 ha

per year) would have been cleared for agriculture during the monitoring period. This is evidence of the effectiveness of the project's measures to maintain the natural ecosystems within the project zone that support populations of species classified as endangered and threatened in particular the project's trigger species: the Baird's tapirs and the hicatee.

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 14).

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 14). 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 14). Figures 2-5 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.

Table 14. 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	*Panthera onca*	14	1.46	9

No.	Common Name	Scientific Name	Total Events	*Avg Trap Rate	No. of Stations Detected Out of 17
2	Jaguarundi	*Herpailurus yagouaroundi*	11	1.13	7
3	Ocelot	*Leopardus pardalis*	98	9.91	12
4	Puma	*Puma concolor*	12	1.37	7
Herbivore					
5	Baird's Tapir	*Tapirus bairdii*	54	5.52	13
6	Central American Agouti	*Dasyprocta punctata*	34	3.52	10
7	Collared Peccary	*Dicotyles tajacu*	1	0.09	1
8	Domestic Livestock	*Bos taurus*	41	4.15	3
9	Horse	*Equus caballus*	6	0.61	2
10	Mexican Hairy Dwarf Porcupine	*Coendou mexicanus*	1	0.1	1
11	Lowland Paca	*Cuniculus paca*	13	0.31	6
12	Central American Red Brocket	*Mazama temama*	8	0.85	4
13	White-lipped Peccary	Tayassu pecari	3	0.31	2
14	White-tailed Deer	Odocoileus virginianus	8	0.80	6
Omnivore					

No.	Common Name	Scientific Name	Total Events	*Avg Trap Rate	No. of Stations Detected Out of 17
15	Deppe's Squirrel	*Sciurus deppei*	9	0.66	1
16	Gray Four-eyed Opossum	*Philander opossum*	3	0.33	2
17	Gray Fox	*Urocyon cinereoargenteus*	32	3.26	6
18	Greater Grison	*Galictis vittata*	1	0.1	1
19	Northern Raccoon	*Procyon lotor*	1	0.1	1
20	Opossum sp.	*Didelphis spp.*	9	0.92	4
21	Striped Hog-nosed Skunk	*Conepatus semistriatus*	1	0.1	1
22	Tayra	*Eira barbara*	6	0.61	3
23	White-nosed Coati	*Nasua narica*	7	0.76	5
24	Human	*Homo sapiens*	116	10.8	9
Insectivore					
25	Nine-banded Armadillo	*Dasypus novemcinctus*	5	0.67	2
Bird					
26	Bare Throated Tiger Heron	*Tigrisoma mexicanum*	5	0.51	2
27	Bird sp.	*Aves*	48	5.06	9
28	Common Pauraque	*Nyctidromus albicollis*	3	0.31	2

No.	Common Name	Scientific Name	Total Events	*Avg Trap Rate	No. of Stations Detected Out of 17
29	Dove	*Columbidae*	6	0.76	4
30	Gray-necked Wood-rail	Aramides cajaneus	28	1.22	5
31	Great Curassow	*Crax rubra*	11	1.24	3
32	Great Tinamou	*Tinamus major*	2	0.19	1
33	Plain Chachalaca	*Ortalis vetula*	11	1.68	4



Adult tapir



Adult tapir



Adult and young tapir



Adult tapir



Adult tapir



Adult tapir

Figure 3. Select photographs of Baird's Tapir (Tapirus bairdii) from the 2024 camera trap monitoring event



Jaguar *(Panthera onca)*



Jaguar *(Panthera onca)*



Jaguar cubs *(Panthera onca)*



Jaguar cubs and mom *(Panthera onca)*



Puma *(Puma concolor)*



Ocelot *(Leopardus pardalis)*



Ocelot *(Leopardus pardalis)*



Jaguarundi *(Hepalairus yagourundi)*

Figure 4. Select photographs of carnivores from the 2024 camera trap monitoring event



Great currasow (*Crax rubra*)



Great tinamou (Tinamus major)

Figure 5. Select photographs of terrestrial birds



Red brocket deer *(Mazama temama)*

White-tailed deer (Odocoileus virginianus)

Tayra (*Eira barbara*)

White-nosed coati (*Nasua narica*)

Bare Throated Tiger Heron (*Tigrisoma mexicanum*)

Paca (*Cuniculus paca*)

Figure 6. Select photographs of other species from the 2024 camera trap monitoring event

7.1.3 Monitoring population trends of the Baird's tapir

The relative abundance index (RAI) of Baird's tapirs recorded during the 2024 camera trap survey was 5.52 detections per 100 trap nights. This was the first camera trap survey of the project.

This is higher than values reported in a previous camera trap study conducted in the Maya Forest Corridor (MFC) and nearby areas, which recorded RAIs of 2.62 in the wet season of 2020 and 4.71 in

the dry season of 2021. Given that the 2024 survey was also conducted during the dry season, this comparison suggests that tapir populations in and around the project area have remained at least stable, with a possible upward trend.

Additional context is provided by unpublished Panthera camera trap studies conducted between 2009 and 2013 across both wet and dry seasons. Surveys conducted in adjacent areas reported relatively low RAIs, with 0.06 detections per 100 trap nights (2009–2010) and 0.05 detections per 100 trap nights (2011–2012). In contrast, surveys conducted within the project area recorded higher values, including 3.5 detections per 100 trap nights (2009), 5.66 detections per 100 trap nights (2012), and 14.51 detections per 100 trap nights (2012–2013).

While differences in survey designs limit direct comparability, the available data are broadly indicative of stable tapir population in and around the project area[4]. Future camera trap surveys conducted as part of the project will provide additional information on tapir population trends.

7.1.4 Monitoring the occurrence of the Central American River Turtle

During the monitoring period, two different monitoring events were conducted of the Central American River Turtle or the "hicatee" (*Dermatemys mawii*) in Cox Lagoon, located in the heart of the project area. The first event took place from March to June 2022, and the second took place from July to August 2023. The project used nets to capture individual turtles to determine occurrence and population trends.

In 2022, a total of 29 *D. mawii* individuals were captured during the survey. Figure 7 shows selected photos of captured individual turtles. The distribution of gender was 11 females, 3 males, and 15 individuals of undetermined sex, which was based on carapace size and head coloration and were classified as juveniles. In 2023, a total of 30 individuals were captured during the survey including 15 females, 5 males, and 10 individuals of undetermined sex.

[4] The 2012-2013 RAI is considered an outlier given how much higher it is compared to the values from the studies carried out both before and after.



Male *D. mawii*



Female D. mawii

Figure 7. Selected photos of hicatee turtles captured during the survey

The Catch Per Unit Effort (CPUE) was calculated for the entire system for the surveys in 2022 and 2023. The CPUE was calculated as the number of *D.mawii* caught divided by effort (net time). In 2022, the number of nets, trap nights and net times were the highest among all years as it was WCS's first comprehensive survey. In 2022, a total of 29 individuals were caught during 271 hours and 35 minutes resulting in a CPUE of 0.11. In 2023, a total of 30 D.mawii were caught during 156 hours and 52 minutes resulting in a CPUE of 0.19.

In summary, these surveys confirm the presence of D. mawii within the Cox Lagoon during the monitoring period. The high number of juveniles in both years suggests a young population or that Cox

Lagoon is serving as a nursery ground for the species. The CPUE rates indicate a stable if not growing population within the lagoon during the monitoring period.

7.1.5 Monitoring the effectiveness of patrol efforts at detecting and deterring illegal hunting in the MFC project boundary

To assess the effectiveness of patrols at reducing illegal hunting incidences, Catch Per Unit Effort (CPUE) is calculated. In this context, CPUE refers to the relationship between patrol effort and the frequency of illegal activities encountered on patrols (the "catch") (Stokes, 2010).

For this project, CPUE is calculated as the number of hunting-related activities detected per 100 km of patrol effort. Detected hunting-related activities include human encounters, hunting evidence, camps, and trails recorded during patrols. Human encounters are defined as direct encounters between rangers and individuals within the protected area engaged in, or suspected of, hunting[5]. Hunting evidence included indirect signs such as bullet casings, animal traps, and animal remains with evidence of hunting. Camps are identified through evidence including campfires, temporary shelters, and hunting platforms. For the trail category, ranger-constructed trails and vehicle tracks are excluded to ensure that only indicators directly associated with hunting activity were included in the analysis.

For each monitoring year, the total number of hunting-related activities is divided by the total patrol distance travelled, standardized to 100 km.

During the 2022-2023 monitoring period, the estimated CPUE increased marginally from 0.61 hunting-related activities per 100 km in 2022 to 0.65 activities per 100 km in 2023, representing an increase of approximately 6%. This minimal change occurred despite a substantial increase in patrol effort, with the number of patrols rising from 115 in 2022 to 328 in 2023. Expanded patrol coverage, increased patrol frequency, and improved access to previously under-patrolled areas in 2023 enhanced detection of hunting-related evidence. In addition, some forms of hunting evidence, such as spent shotgun shells, can persist in the environment long after hunting has occurred, increasing the likelihood of detection in these subsequent patrols. Hence, the increase in CPUE is more likely to reflect improved detection from enhanced patrol effort than an actual increase in hunting activity.

As patrol coverage stabilizes and enforcement activities continue to deter illegal hunting, CPUE is expected to decline over time. A reduction in CPUE would indicate a decrease in hunting-related activities and provide evidence that increased ranger presence is positively impacting biodiversity by reducing hunting pressure and contributing to the long-term elimination of illegal hunting within the project area.

[5] Encounters with individuals that were fishing, had fishing equipment, or were carrying fish they caught were excluded from the calculations.

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