LAGUNA SECA FOREST CARBON PROJECT

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GHG Accounting/ Crediting Period	VCS and CCB Accounting Period January 1st, 2011 to December 31st, 2040
Monitoring Period of this Report	VCS and CCB Accounting Period January 1st, 2014 to December 31st, 2020
History of CCB Status	CCB Validation 2016
Gold Level Criteria	Biodiversity Gold

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1 SUMMARY OF PROJECT BENEFITS

This section highlights some of this project's important benefits. Section 1.1 (Unique Project Benefits) should be aligned with a project's causal model and is specific to this project. Section 1.2 (Standardized Benefit Metrics) is the same quantifiable information for all CCB projects. This section does not replace the development of a project-specific causal model or the monitoring and reporting of all associated project-specific impacts (positive and negative) in Sections 2-5 of this document.

1.1 Unique Project Benefits

Outcome or Impact	Achievements during the Monitoring Period	Section Reference	Achievements during the Project Lifetime
Contiguous forest area protected creating the "Jewel" of Central America	During the monitoring period no forest area was cleared, conserving continuous forest cover that expands across three countries.	3	This project is part of the Mesoamerican ecosystem which is now the largest contiguous block of rainforest north of the Amazon, safeguarding treasures of incalculable value.
Number of vertebrate species under the IUCN Red List of Threatened Species	Two Endangered species are present in the Project Area, the Baird's tapir and the Yucatan Black Howler Monkey. None of them would be able to occupy the area in the baseline scenario since their habitat requirements cannot be fulfilled in a sugarcane plantation. The white-lipped peccary and the great curassow, both under the Vulnerable category are also present in the project area.	5.4.1	More species under the Endangered and Vulnerable categories will be present inside the Project Area.
Number of vertebrate species	The species richness in the Project Area is outstanding. In the November - December 2021 monitoring period 12 large/medium	5.3.1.3	The vertebrate species richness will increase in the Project Area

Outcome or Impact	Achievements during the Monitoring Period	Section Reference	Achievements during the Project Lifetime
	mammals where detected; in some cases, like the jaguar, the trap rates are higher within the Project Area than in its surroundings. In the same monitoring period total of 115 bird species were detected inside the Project Area. This means that over 20% of the bird species present in Belize can be found in an area smaller than 0.4% of the total surface of the country.		

1.2 Standardized Benefit Metrics

Category	Metric	Achievements during Monitoring Period	Section Reference	Achievements during the Project Lifetime
GHG emission reductions & removals	Net estimated emission removals in the project area, measured against the without-project scenario	N/A	N/A	N/A
	Net estimated emission reductions in the project area, measured against the without-project scenario	1,397,402 tCO2e	3.2.4	1,885,496 tCO2e
Forest[1] cover	For REDD[2] projects: Number of hectares of reduced forest loss in the project area measured against the without-project scenario	824 ha per year totaling 5,768 ha during the monitoring period.	3.2.4	8,240 ha
	For ARR[3] projects: Number of hectares of forest cover increased in the project area measured against the without-project scenario	N/A	N/A	N/A
Improved land management	Number of hectares of existing production forest land in which IFM[4]	N/A	N/A	N/A

[1] Land with woody vegetation that meets an internationally accepted definition (e.g., UNFCCC, FAO or IPCC) of what constitutes a forest, which includes threshold parameters, such as minimum forest area, tree height and level of crown cover, and may include mature, secondary, degraded and wetland forests (*VCS Program Definitions*)

[2] Reduced emissions from deforestation and forest degradation (REDD) - Activities that reduce GHG emissions by slowing or stopping conversion of forests to non-forest land and/or reduce the degradation of forest land where forest biomass is lost (*VCS Program Definitions*)

[3] Afforestation, reforestation and revegetation (ARR) - Activities that increase carbon stocks in woody biomass (and in some cases soils) by establishing, increasing and/or restoring vegetative cover through the planting, sowing and/or human-assisted natural regeneration of woody vegetation (*VCS Program Definitions*)

[4] Improved forest management (IFM) - Activities that change forest management practices and increase carbon stock on forest lands managed for wood products such as saw timber, pulpwood and fuelwood (*VCS Program Definitions*)

Category	Metric	Achievements during Monitoring Period	Section Reference	Achievements during the Project Lifetime
	practices have occurred as a result of the project's activities, measured against the without-project scenario			
	Number of hectares of non-forest land in which improved land management has occurred as a result of the project's activities, measured against the without-project scenario	N/A	N/A	N/A
Training	Total number of community members who have improved skills and/or knowledge resulting from training provided as part of project activities	Data not available	N/A	N/A
	Number of female community members who have improved skills and/or knowledge resulting from training provided as part of project activities of project activities	Data was not disaggregated by gender for this metric	N/A	Data was not disaggregated by gender for this metric
Employment	Total number of people employed in project activities,[5] expressed as	13 security team members worked full-time in the Project Area	4.1.1.1	13

[5] Employed in project activities means people directly working on project activities in return for compensation (financial or otherwise), including employees, contracted workers, sub-contracted workers and community members that are paid to carry out project-related work.

Category	Metric	Achievements during Monitoring Period	Section Reference	Achievements during the Project Lifetime
	number of full time employees[6]			
	Number of women employed in project activities, expressed as number of full time employees	Data was not disaggregated by gender for this metric	N/A	Data was not disaggregated by gender for this metric
Livelihoods	Total number of people with improved livelihoods[7] or income generated as a result of project activities	13 full time employees provided income generated to these households	4.1.1.1	13
	Number of women with improved livelihoods or income generated as a result of project activities	Data was not disaggregated by gender for this metric	4.1.1.1	Data was not disaggregated by gender for this metric
Health	Total number of people for whom health services were improved as a result of project activities, measured against the without-project scenario	This was not a project activity.	N/A	This was not a project activity.
	Number of women for whom health services were improved as a result of project activities, measured against the without-project scenario	Data was not disaggregated by gender for this metric	N/A	Data was not disaggregated by gender for this metric

[6] 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])

[7] Livelihoods are the capabilities, assets (including material and social resources) and activities required for a means of living (Krantz, Lasse, 2001. *The Sustainable Livelihood Approach to Poverty Reduction*. SIDA). Livelihood benefits may include benefits reported in the Employment metrics of this table.

Category	Metric	Achievements during Monitoring Period	Section Reference	Achievements during the Project Lifetime
Education	Total number of people for whom access to, or quality of, education was improved as a result of project activities, measured against the without-project scenario	Approximately 250 people in Sylvester Village and beyond experienced improved education services through internships provided, forestry education and local school improvements, as well as improved transportation for school.	4.1.1.2	Approximately 250
	Number of women and girls for whom access to, or quality of, education was improved as a result of project activities, measured against the without-project scenario	Data was not disaggregated by gender for this metric	4.1.1.2	Data was not disaggregated by gender for this metric
Water	Total number of people who experienced increased water quality and/or improved access to drinking water as a result of project activities, measured against the without-project scenario	N/A - Not a focus of this project	N/A	N/A - Not a focus of this project
	Number of women who experienced increased water quality and/or improved access to drinking water as a result of project activities, measured against the without-project scenario	N/A - Not a focus of this project	N/A	N/A - Not a focus of this project
Well-being	Total number of community members	Based on the project community impact indicators that are mapped to well-being, it is clear that the project is improving the wellbeing of the project communities and that in the	4.1.3	Approximately 250

Category	Metric	Achievements during Monitoring Period	Section Reference	Achievements during the Project Lifetime
	whose well-being[8] was improved as a result of project activities	HHS most respondents reported these impacts. Thus, we believe that all people have improved wellbeing ~250		
	Number of women whose well-being was improved as a result of project activities	Data was not disaggregated by gender for this metric	4.1.3	Data was not disaggregated by gender for this metric
Biodiversity conservation	Change in the number of hectares significantly better managed by the project for biodiversity conservation,[9] measured against the without-project scenario	In the Project Area the hectares of reduced deforestation plus hectares of increased reforestation was 8,432 ha for this monitoring period over the baseline	3.2.4	
	Number of globally Critically Endangered or Endangered species[10] benefiting from reduced threats as a result of project activities,[11] measured against the without-project scenario	2 IUCN EN listed species present in Project Area and described in Section 5.3.1 The number of trigger species present is described in 5.4.1	5.3	2 IUCN EN listed species present in Project Area

[8] Well-being is people's experience of the quality of their lives. Well-being benefits may include benefits reported in other metrics of this table (e.g. Training, Employment, Health, Education, Water, etc.), but could also include other benefits such as empowerment of community groups, strengthened legal rights to resources, conservation of access to areas of cultural significance, etc.

[9] Biodiversity conservation in this context means areas where specific management measures are being implemented as a part of project activities with an objective of enhancing biodiversity conservation.

[10] Per IUCN's Red List of Threatened Species

[11] In the absence of direct population or occupancy measures, measurement of reduced threats may be used as evidence of benefit

2 GENERAL

2.1 Project Description

2.1.1 Implementation Description

During the monitoring period the project area was owned by The Forest Land Group (TFG), who managed it as part of a larger parcel managed under the guidelines of the Forest Stewardship Council (FSC). The larger parcel, including the Project Area, was sold to BMFT at the end of 2020 by TFG. The Nature Conservancy is committed to working with the Government of Belize to establish a local non-governmental organization (NGO), Belize Maya Forest Trust (BMFT) similar to Programme for Belize (PfB), responsible for developing and implementing a management plan that ensures the long-term financial stability for the protection of the forest, while effectively integrating it into the larger trinational Maya Forest that spans Belize, Guatemala, and Mexico.

The overall goal of the project was to avoid planned deforestation (conversion to agriculture) in the project area. The project activities prevented the land use change from primary forest to sugar cane plantations. The project maintains or enhances any high conservation values present in the project zone that are of importance in conserving biodiversity. No timber has been cut in the Project Area during this monitoring period. Patrols have occurred and the protection of the project area has been accomplished.

Monitoring of the project has been conducted per the monitoring plan with some supplemental data coming from additional monitoring conducted by the University of Belize Environmental Research Institute (UB ERI) after the purchase by BMFT. Remote sensing analysis has been conducted on the project area to detect any deforestation. In addition, remote sensing on the leakage area has been conducted to detect deforestation from sugar cane agricultural development. Permanent Sampling plots have been remeasured throughout the Project Area. No deforestation due to sugarcane was detected in the leakage area nor the project area.

In December 2020, the ownership of the property changed from the TFG, an independent Timberland Investment Management Organization, to BMFT through the efforts of TNC, a global conservation organization committed to preserve biodiversity and wildlife, and its partners. Net Emission Reductions and VCUs by Monitoring Period are presented in Section 3.2.4

This Monitoring Report is to be verified under CCB Version 3.0 and VCS Version 3.4.

2.1.2 Project Category and Activity Type

This project is certified as compliant with the Verified Carbon Standard Version 3.5 as an Agriculture, Forestry, or Land Use (AFOLU) Project using a strategy of Reduced Emissions from Deforestation and Degradation (REDD) and assuming a baseline of planned deforestation. This project is not a grouped project. Project type of activity is Avoided Planned Deforestation (APD).

2.1.3 Project Proponent(s)

Following the property's acquisition by BMFT, from TFG, in December 2020, the Project Proponent for Laguna Seca 1326 REDD is now TNC, given that TNC is now the owner of the carbon rights.

The Nature Conservancy is a global conservation organization dedicated to conserving the lands and waters on which all life depends.

Organization name	The Nature Conservancy, USA
Contact person	Roberto Pott
Title	Carbon Specialist
Address	The Nature Conservancy Unit # 14B Garden City Plaza Mountain View Boulevard Belmopan, Belize
Telephone	
Email	roberto.pott@tnc.org

2.1.4 Other Entities Involved in the Project

The Belize Maya Forest Trust is a Belizean non-profit organization for the conservation and is responsible for the management of the Project Area.

Organization name	Belize Maya Forest Trust
Contact person	Elma Kay
Title	Managing Director
Address	14B Garden City Plaza, Mountain View Blvd., Belmopan, Belize
Telephone	+501 610 3982
Email	ekay@bmft.org.bz

Terra Global acts as an implementing partner for the development and on-going management of the emission reductions generated under the Project, supporting the registration, issuance and marketing of emission reductions.

Organization name	Terra Global Capital, USA
Contact person	Leslie L. Durschinger
Title	Founder, CEO
Address	325 27th Street, Unit 745 Oakland, CA 94612

Telephone	+1 415 215 5941
Email	info@terraglobalcapital.com
Website	http://www.terraglobalcapital.com

University of Belize Environmental Research Institute (UB ERI) provides specialized technical support for the field work to assess biodiversity, biomass, social and local administration support where needed for this monitoring period.

Organization name	University of Belize Environmental Research Institute – UB ERI
Role in the project	Project Lead
Contact person	Leandra Cho-Ricketts
Title	Administrative Director
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Telephone	501-822-2701 or 501-610-9214
Email	lricketts@ub.edu.bz

2.1.5 Project Start Date (G1.9)

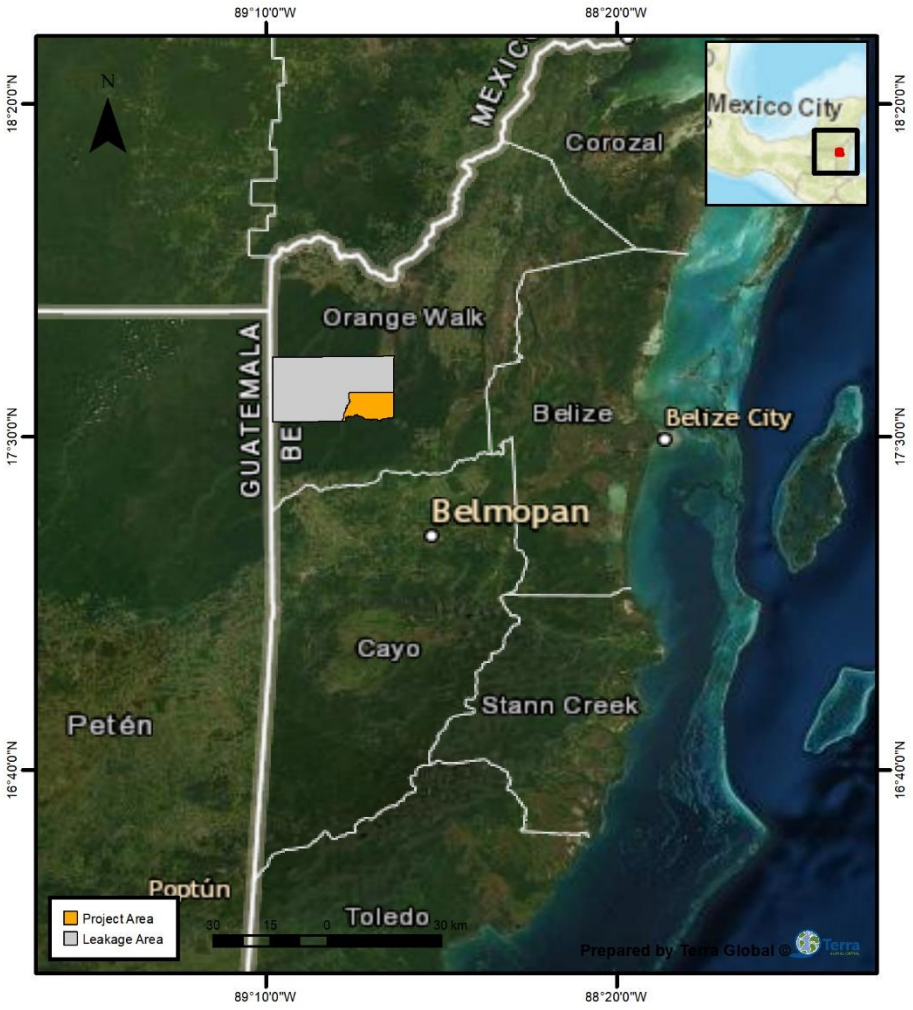
The project start date is January 1, 2011

2.1.6 Project Crediting Period (G1.9)

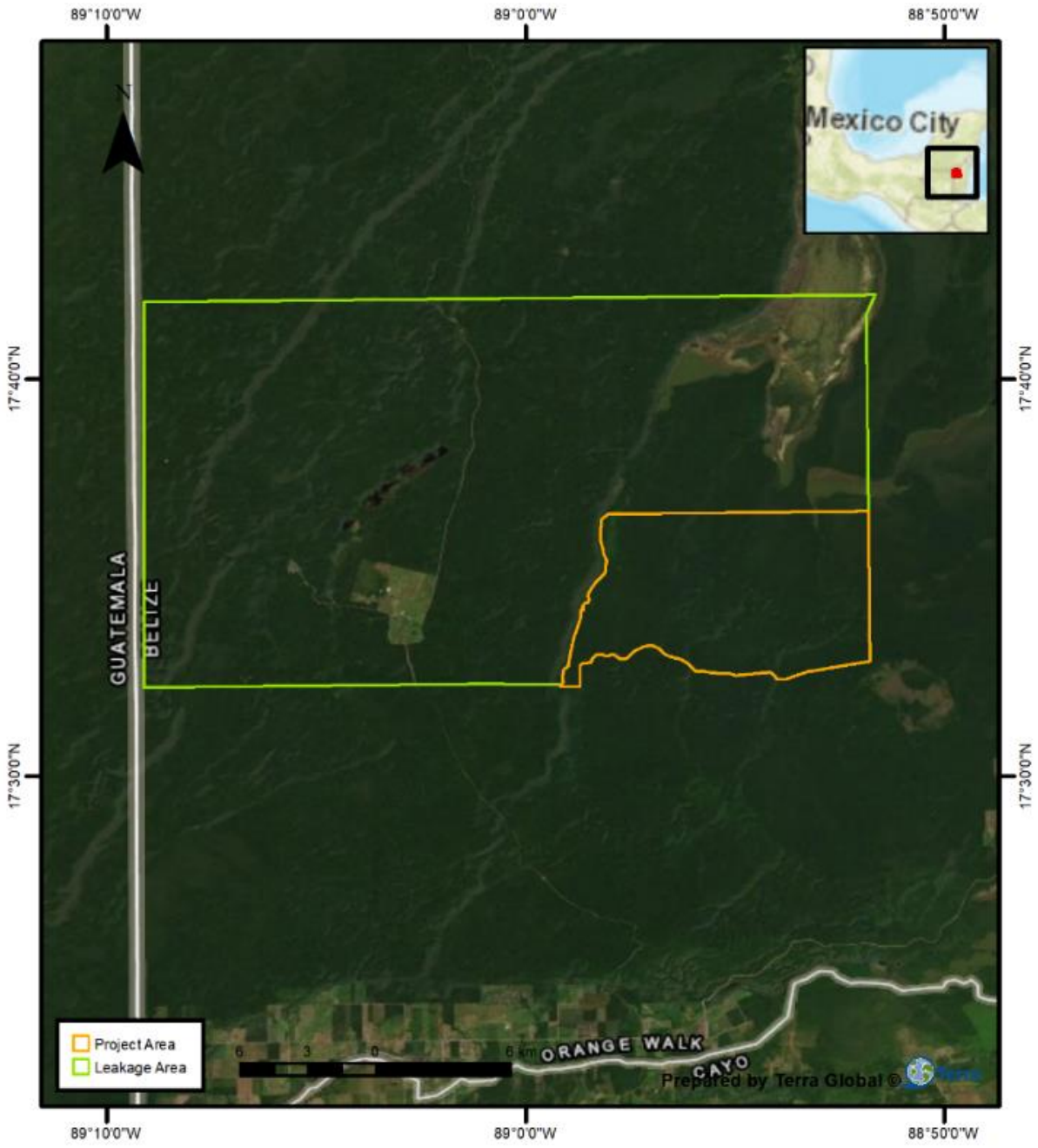
The project's initial crediting period is 30 years, starting 1 January 2011 and ending 31 December 2040.

2.1.7 Project Location

The project area is located in the Orange District, Belize, 47.5 km northwest of Belmopan, Belize, in the coordinates Latitude 17°34'38" N and Longitude 88°55'06" W, 47.5 km northwest of Belmopan, Belize (Map 1 and Map 2). The Project boundary encompasses 8,432 ha of which 8,240 ha are available and suitable for conversion to agricultural uses in the absence of finance from a carbon trade program.



Map 1. General location of Laguna Seca Forest Carbon Project in Belize



Map 2. Specific location of Laguna Seca Forest Carbon Project in Belize

The project area exhibits a typical semi-tropical climate, possessing distinct wet and dry seasons beginning around May/June and December/January, respectively (Meerman J. , 2007). March and April are the driest months and temperatures rise during this period, peaking in May, reaching temperatures around 40.5°C (105°F). During the wet season, the region receives approximately 150 millimeters (mm) of rain per month, while dry seasons will typically see less than 100 mm of rain per month (Meerman J. , 2007) with daytime temperatures average approximately 28°C (82°F). Hurricanes and tropical storms peak in September and can have a significant effect on rainfall totals (Sandrock, 2017).

Soils in the project area consist of the Yaxa Suite (Cambisol, Vertisol; Tropept, Mollisol, Vertisol) and specifically soils that are formed under constant lime enrichment (Baillie, 1993). Elevation ranges from 10-20 m, with a topography that includes level and gently rolling areas, hills, valleys, and escarpments cut by deep ravines (Sandrock, 2017).

Vegetation consists mainly of Upland Forest and Bajo forest (or "bajo"). The Upland Forest occurs on well-drained soils, with its upper canopy ranging between 15-20 m high, with some taller trees. The Bajo forest (or "bajo") is found on clay soils that are waterlogged in the wet season and edaphically dry (holding moisture too tightly for plants to extract it easily) in the dry season, this is a dense forest of small stems mostly 3-8 m tall (Nick Brokaw, 2021).

Given the fact that the area is contiguous with the Belizean components of the larger trinational Maya Forest (Aguas Turbias National Park, Rio Bravo Conservation and Management Area (RBCMA), Gallon Jug, and Spanish Creek Wildlife Sanctuary), it can be assumed that the project area has a fauna similar to these better studied areas (Meerman J. , 2007). The most important characteristic is that wildlife occurs in fully functioning communities' characteristic of the area. This is most clearly demonstrated by the presence of key species such as Baird's Tapir, Black Howler Monkey, Spider Monkey, Great Curassow, Ocellated Turkey and Crested Guan. On top of that is the diversity and relative commonness of top predators e.g. large cats and birds of prey (The Forestland Group, 2012).

The project area has also archeological sites that are considered important community HCV areas, which are described in Section 4.1.4 and Map 9.

2.1.8 Title and Reference of Methodology

This project is designed for validation under the Verified Carbon Standard Version 3.5, AFOLU

Requirements Version 3.4 and utilizing methodology VM0007 REDD Methodology Modules (http://www.v-c-s.org/methodologies/redd-methodology-framework-redd-mf-v15) for planned deforestation. In particular, the following methodology modules were used for this project:

Title	Version
VCS Methodology VM0007: REDD Methodology Modules (REDD-MF)	1.6
VMD0015 Methods for Monitoring of GHG Emissions and Removals (M-REDD)	2.2
VT0001 Tool for the Demonstration and Assessment of Additionality in VCS Agriculture, Forestry, and Other Land Use (AFOLU) Project Activities (T-ADD)	3.0
VMD0017 Estimation of Uncertainty for REDD Project Activities (XUNC)	2.2
VMD0016 Methods for Stratification of the Project Area (X-STR)	1.2
VMD0006 Estimation of Baseline Carbon Stock Changes and Greenhouse Gas Emissions From Planned Deforestation and Planned Degradation (BL-PL)	1.3
VM00009 Estimation of Emissions From Activity Shifting for Avoided Planned Deforestation and Planned Degradation (LK-ASP)	1.3
VMD0011 Estimation of emissions from market-effects (LK-ME)	1.1

Title	Version
VMD0001 Estimation of Carbon Stocks in the Above- and Belowground Biomass in Live Tree and Nontree Pools (CP-AB)	1.1
VMD0005 Estimation of Carbon Stocks in the Long-Term Wood Products Pool (CP-W)	1.1
Tool for testing significance of GHG emissions in A/R CDM project activities (T-SIG): This module is used to determine if sources or activities are de minimis based on the contribution of that source or activity to the overall project.	
VMD0013 Estimation of greenhouse gas emissions from biomass and peat burning (E-BPB)	1.2
AFOLU Non-Permanence Risk Tool	4.0

2.1.9 Other Programs (G5.9)

Emission Trading Programs and Other Binding Limits: Emissions reductions or removals generated by the project will not be used for compliance with an emissions trading program or to meet binding limits on GHG emissions. Belize currently does not have a national, legally binding limit on greenhouse gas emissions, and there is no compliance emissions trading program which accepts forestry emission reductions or removals.

Other Forms of Environmental Credit: No other environmental credit has been created by this project. The co-benefits of the project have been validated at project start by the Climate, Community, and Biodiversity Alliance using the Climate, Community and Biodiversity Standard (CCB) 3rd Edition. This monitoring report is also to be verified under the CCB 3rd Edition

Gold level verification is proposed based on exceptional biodiversity benefits.

Participation under Other GHG Programs: The project does not participate in any other GHG Program.

2.1.10 Sustainable Development

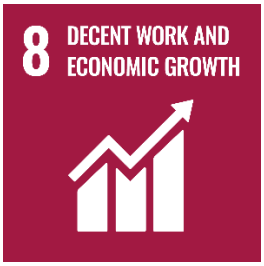
Belize has been committed to sustainable development through various nationally developed strategies and priorities that have been introduced over the last decade. Beginning with the National Sustainable Tourism Master Plan in 2012, to the Growth and Sustainable Development Strategy from 2016-2019, to the current plan, Belize's National Development Framework – Horizon 2030. These priorities implemented by Belize demonstrate an increasingly motivated government to generate sustainable development for the people of Belize.

This project, by the end of the monitoring report, became part of a much larger program, that was structured and implemented between TNC and the Government of Belize. At this time, there has not been a formal plan agreed with the government for reporting the contributions to Belize's sustainable development goals, other than through the on-going monitoring and verification under the VCS and CCB.

Table 1. National Development Strategies and How Program Contributes

National Development Strategy	Description	How Program contributes
National Sustainable Tourism Master Plan (NSTMP), 2012-	This NSTMP is a development action plan for Belize's tourism industry, that directly related to its natural resources and the management of these key features. It was approved by the Cabinet in 2012 and aimed to reposition Belize as a unique and highly competitive player in the regional eco-tourism market. The NSTMP further conceptualized Belize's tourism products into six areas: cultural, nature-based, sun and beach, cruise, nautical, and leisure and entertainment. The idea was to strengthen tourism governance, improve tourism marketing, increase tourism product development, and promote sustainable tourism in all of these six areas.	The program contributes to this strategy because it enhances and protects natural and cultural areas of high conservation value and significance and brings awareness to the conservation of these resources through program activities. This provides the country with more basis on which to market its nature-based resources.
Growth and Sustainable Development Strategy (GSDS), 2016-2019-	The GSDS was Belize's sustainable development strategy from 2016-2019. This represented one of Belize best efforts in fulfilling the economic aspirations of the people of Belize. This strategy was aimed at bringing economic, social, and environmental policies into a synergistic balance. It would strengthen the resiliency of the economy in four success factors: optimal national income and investment, enhanced social cohesion and resilience, sustained or improved health of natural, environmental, historical, and cultural asset, and enhanced governance and citizen security.	The program contributes to this strategy by strengthening the resilience of environmental policies and providing income and investment for local communities, improved health of natural environment through increased patrolling and gates around the property, and preservation of historical assets, such as the areas of high conservation value.
Horizon 2030 – Belize's National Development Framework	This is the vision of a Belize in which it's citizenry would desire to reside. The Horizon 2-3- articulated 4 key objectives that would deliver to the future of Belize: democratic governance for effective public administration and sustainable development, education for development, economic resilience, and healthy citizens and healthy environment.	The program contributes to this agenda through awareness and education for development, economic resilience through employment provided and improved health of environment through the protection of the Project Area.

The Program also contributes to these Sustainable Development Goals in the interest of the people of Belize:

#	Sustainable Development Goal	How Program Contributes
4	**Quality education** 	One of the program's objectives is to benefit the communities of influence in the project area. To achieve this goal, the program sought to promote education through a series of activities: 1) Three all-inclusive internships offered to young professionals interested in forest management, 2) Over 100 students from the University of Belize Natural Resources Management Program to attend field trips to TFG's operations and be hosted at Laguna Seca and Gallon Jug by TFG, 3) TFG financially supported the Gallon Jug elementary school from the sale of slab-ends from their operation.
5	**Gender quality** 	The program upheld anti-discrimination policies and Belize Law, which prohibits discrimination based on gender, race, or religion. Further, social surveys conducted in the region included women and under-represented minorities to participate to tailor the program activities to promote equality and improve the livelihoods of traditionally underserved groups. For internships and job opportunities, the program encouraged the participation of women, and two of the three internships were offered to women. Belize Maya Forest Trust is woman led and TNC is dedicated to supporting a new generation of women leaders and has a gender policy that supports women in leading roles in conservation including management.
8	**Decent work and economic growth** 	The Laguna Seca Program sought to provide employment opportunities through the operations that occurred on the Laguna Seca land during the monitoring period. There were also employment opportunities at the Gallon Jug and Yalbac sawmills, including logging operations. New employees were trained to maintain local skills and knowledge and implement these features to complement operations on the Laguna Seca land. Employees were generally chosen from the local populations for their knowledge of the environment. The program took considerable efforts to increase capacity development of employees, and therefore local communities where employees were sourced from. Belize Maya Forest Trust is dedicated to working with the same community, providing jobs in conservation and promoting sustainable livelihoods.

#	Sustainable Development Goal	How Program Contributes
13	**Climate action** 	The Laguna Seca Forest Carbon Project educated community members on systemic and individual ways to implement adaptation, mitigation and teaches safe technology transfer for reducing deforestation and helping create resilient communities. The program protected the forest avoiding the conversion to sugarcane, preserving the wildlife and species in IUCN Red list.
15	**Life and land** 	REDD+ works to directly reduce deforestation and create sustainable landscapes; the program is fundamentally structured to sustainably manage forests and halt deforestation in the region. The Laguna Seca Project directly reduced deforestation through avoiding the conversion to sugarcane. The project area is part of the largest contiguous forest in Mesoamerica that encompass three countries, with a high diversity of fauna and flora, that are highly important to preserve the ecosystems, that provide key environmental services such as water used for agriculture. This is essential for national food security and supports the National Agriculture and Food Policy 2015-2030. During this Monitoring Period, the program was originally structured by TFG to support project actions that directly improve the livelihoods and increase opportunities for local stakeholders. Under the program's new ownership, the program will be structured to preserve the ecosystem services and to keep the forest intact, which will in turn contribute to the overall health and well-being of all the surrounding communities, as well as industries located nearby, including tourism and agriculture. During this Monitoring Period, communities targeted by the program acted to prevent poaching by patrolling to deter poachers from entering the forest. Under the program's new ownership, poaching is already being be mitigated, through a Ranger Team that will continue being strengthened to be able to respond to mitigate threats to the reserve and biodiversity; potentially the threats may be further mitigated through the creation of a community steward's program.

#	Sustainable Development Goal	How Program Contributes
17	**Partnership for goals** 	Belize Maya Forest was protected through a partnership between TNC and several other organizations; currently, partnerships between BMFT and others, including TNC, Gallon Jug, Programme for Belize, several universities and others assist in protecting the forest and biodiversity. Implementation of the new management plan for Belize Maya Forest, which is inclusive of the Laguna Seca Project Area will require partnerships between TNC, BMFT, the Government of Belize and other key neighbors and stakeholders. REDD+ is a partnership, where climate finance directly supports implementation activities to create sustainable systems promoting global environmental health.

2.2 Project Implementation Status

2.2.1 Implementation Schedule (G1.9)

Date	Milestone(s) in the project's development and implementation
January 2011	Project start date
From 2013 to 2019	Biological Monitoring activities were carried out in the surrounding parcels of the project area by local contractors to identify wildlife species that go through the project area. These activities were conducted to complete the FSC requirements and certifications (see annual biodiversity reports for details)
April 2013 to November 2013	Camera traps installed for biodiversity surveys to identify wildlife species that go through the project area, and to complete the FSC requirements and certification
2013	Social surveys were conducted to in some of the communities around the project area to identify the impacts that the project could cause. These surveys were carried out to meet and complete the FSC requirements and certification (see Socio-economic FSC report)
2014 UB Academic year	TFG hosts 15-28 Students from the University of Belize's Tropical Forest Ecology and Management Field Course. Students' stays were fully paid for by TFG, over multiple days students gain hands-on experience for technical forestry operations including

Date	Milestone(s) in the project's development and implementation
	sustainable timber management, timber operations, and FSC certification.
March 2014 to February 2015	Camera traps installed for biodiversity surveys to identify wildlife species that go through the project area, and to complete the FSC requirements and certification
2015 UB Academic year	TFG hosts 15-28 Students from the University of Belize's Tropical Forest Ecology and Management Field Course. Students' stays were fully paid for by TFG, over multiple days students gain hands-on experience for technical forestry operations including sustainable timber management, timber operations, and FSC certification.
2015	The Forestland Group hosts three interns to gain deep forestry skills and learn about sustainability. These positions were paid, and all interns gain valuable skills and continue working in the forestry/natural resource sector.
2015	Social surveys were conducted to in some of the communities around the project area to identify the impacts that the project could cause. These surveys were carried out to meet and complete the FSC requirements and certification (see Socio-economic FSC report)
April 2015 to January 2016	Camera traps installed for biodiversity surveys to identify wildlife species that go through the project area, and to complete the FSC requirements and certification
2016 UB Academic year	TFG hosts 15-28 Students from the University of Belize's Tropical Forest Ecology and Management Field Course. Students' stays were fully paid for by TFG, over multiple days students gain hands-on experience for technical forestry operations including sustainable timber management, timber operations, and FSC certification.
March 2016	Validation under VCS and CCB
March 2016	First verification, only VCS
January 2016 to December 2017	Camera traps installed for biodiversity surveys to identify wildlife species that go through the project area, and to complete the FSC requirements and certification
2017 UB Academic year	TFG hosts 15-28 Students from the University of Belize's Tropical Forest Ecology and Management Field Course. Students' stays were fully paid for by TFG, over multiple days students gain hands-on experience for technical forestry operations including

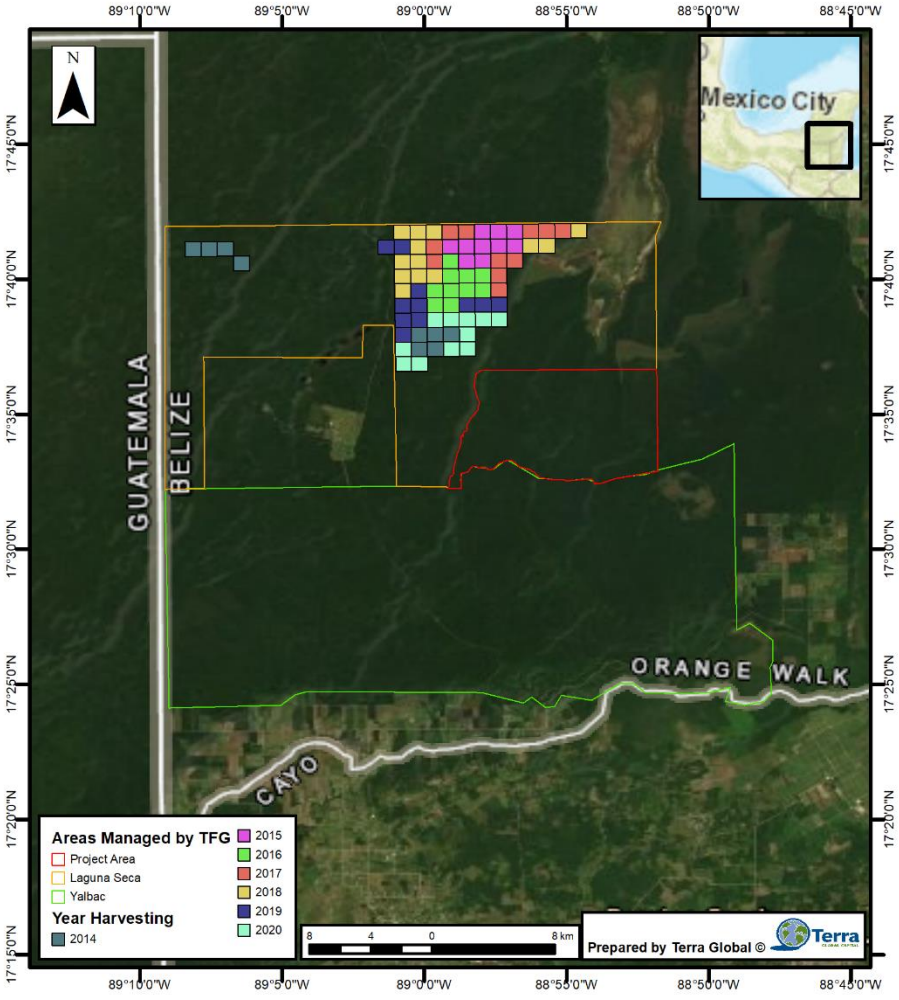
Date	Milestone(s) in the project's development and implementation
	sustainable timber management, timber operations, and FSC certification.
January 2017 to January 2018	Camera traps installed for biodiversity surveys to identify wildlife species that go through the project area, and to complete the FSC requirements and certification
2018 UB Academic year	TFG hosts 15-28 Students from the University of Belize's Tropical Forest Ecology and Management Field Course. Students' stays were fully paid for by TFG, over multiple days students gain hands-on experience for technical forestry operations including sustainable timber management, timber operations, and FSC certification.
January 2018 to December 2018	Camera traps installed for biodiversity surveys to complete the FSC requirements and certification
2019 UB Academic year	TFG hosts 15-28 Students from the University of Belize's Tropical Forest Ecology and Management Field Course. Students stays' were fully paid for by TFG, over multiple days students gain hands-on experience for technical forestry operations including sustainable timber management, timber operations, and FSC certification.
2019	Social surveys were conducted to in some of the communities around the project area to identify the impacts that the project could cause. These surveys were carried out to meet and complete the FSC requirements and certification (see Socio-economic FSC report).
February 2019 to December 2019	Camera traps installed for biodiversity surveys to identify wildlife species that go through the project area, and to complete the FSC requirements and certification
2020 UB Academic year	TFG hosts 15-28 Students from the University of Belize's Tropical Forest Ecology and Management Field Course. Students' stays were fully paid for by TFG, over multiple days students gain hands-on experience for technical forestry operations including sustainable timber management, timber operations, and FSC certification.
December 2020	Change of owner from TFG to BMFT and end of Second Monitoring Period.

The Project Area is within a larger parcel that was owned and managed by TFG group. Each either this whole larger area completed the requirements of FSC and certification.

2.2.1.1 Harvesting Activities

Based on harvesting reports and the spatial information of the harvesting compartments for Laguna Seca, between 2014 and 2020 there was not any harvesting activity within the project area that would impact GHG emission reductions or removals during the monitoring period. Map 3 shows each of the compartments that were permitted for harvest between 2014 and 2020.

Logging records from TFG confirmed logging in the Project Area did not happen during the monitoring period, which was further verified by the field teams that carried out collecting surveys in the Project Area.



Map 3. Harvesting Compartments in the larger Laguna Seca Parcel between 2014-2020, and other areas owned by TNC

2.2.1.2 Management and Patrolling Activities

Regular patrolling activities were undertaken not only in the project area but also in a larger area also called Laguna Seca and an adjacent parcel called the Yalbac. The Forestland Group managed all the areas they controlled in a similar manner. The patrols were reported monthly, and TFG's reports are not explicit as to where these happened. The patrolling activities were mainly focused on controlling the poaching and wildfire incidents which occur along the southern boundary of the Yalbac parcel (shown in Map 3) that is closest to communities in the area.

The patrolling reports confirm the use of spotlights and gun shots by the poachers, among other signs of illegal activities such as poachers' camps, trails, trash, and creek crossings. These incidents occurred during both day and night hours along the southeast TFG boundary in the parcel called Yalbac and are directly linked to illegal wildlife poaching activities and trespassing. The action taken against the poachers was to take them into custody and transport them to a police station. Potential property encroachments incidents were part of the activities that have to be addressed by patrolling. These were linked to illegal wildlife poaching involving spotlighting by patrollers and gunshots by poachers. In addition, the patrols included control over illegal timber extraction, which are reported to the Forestry Department.

The implementation of WhatsApp groups has become a very dynamic and functional communications tool. The groups have enhanced the sharing of active operational information amongst the security team members and have also improved the efforts to include the community, and Forest Department in controlling the poaching and wildfire problem.

Standard reports were produced that include date, time, personnel, specific objectives for the patrol, operational overview, nature of incident, actions taken and comments. Evidence of the following was recorded:

1. Entry (e.g. vehicle and horse tracks, footprints, cut trails)
2. Hunting (e.g. camps, torch batteries, cartridge cases)
3. Logging (e.g. stumps, logs, extraction trails)
4. Wildfire signs

2.2.1.3 Community Activities

Laguna Seca was purchased from the Bowen and Bowen Company by TFG in 2008. Between 2008-2020, TFG implemented new initiatives that were directed towards maximizing the operations of the Laguna Seca area. Part of this process was the acquisition of a forty-year Long Term Sustainable Timber License from the Government of Belize, which requires a socio-economic assessment of the license holder's activities on its primary buffering communities. Regular monitoring reports documented that TFG engaged in implementing a grievance policy at the request of local communities and worked to provide benefits described.

Activities that TFG implemented related to or involving the communities in and around the Laguna Seca property included:

1. Providing community employment and internships opportunities.
2. Providing support for local students at the elementary school and University level.
3. Providing in kind donations in various instances
4. Increasing protection of high conservation value natural resources through regular patrols, therefore decreasing incidences of illegal logging, hunting and harvesting
5. Providing increased road transportation to communities into neighboring towns.

During the monitoring period, low level selective harvesting in Laguna Seca (leakage area) supported the mill workers and their families and increased access to local employment for these nearby communities. This harvesting occurred outside of the Project Area, and therefore these benefits were not accounted for in this project. Hunting and fuelwood collection was not allowed on the property, and due to the restricted access and monitored gates these activities were made difficult (Boomsma T. , 2015).

Another goal of the program was to create a high school scholarship fund available for those students looking to attend high school. But as this scholarship fund was largely supported by Bowen and Bowen Ltd, TFG supported other educational endeavors reported in Section 4.1.1 Community Impacts (CM2.1).

Increased protection of high conservation value areas through regular patrols was evidenced by data collected during the last social survey in October 2021, with 88% of respondents reporting not collecting timber from the forest, and 83% of respondents reporting not knowing anyone who collects timber from the forest. For the questionnaire, the question was general for forest areas managed by TFG, and not specifically 1326. Further, only 4% of respondents reporting being aware of any poaching in the area.

This provides evidence that the patrolling and management activities of Laguna Seca were successful and supports the case that this small part of the overall parcel was truly managed like the rest.

2.2.2 Methodology Deviations

The following methodologies deviations are used during the monitoring period:

2.2.2.1 Extension of Monitoring period

This monitoring period covers a total of 7 years and covers vintages from 1 January 2014 to 31 December 2020. This is an exemption to Section 6.2 of the M-REDD and CCB rule under Section 1.5 requiring that the Verification must be performed at least every five years. As this project avoids planned deforestation and the results of the monitoring demonstrate that the forest is still conserved after 7 years, this deviation does not negatively impact the conservativeness of the quantification of GHG emission reductions. This deviation is only for the extension of the monitoring and no other parts of the methodology.

2.2.2.2 Palm Allometric Equations

The same Methodology Deviation for palm biomass that was used for the PD and first monitoring period was used during this monitoring period as well. This led to comparable results. The following description of this palm biomass methodology deviation is taken from the Project Document:

> Palm biomass is significant in these systems and palm equations for the three most common palms, cohune (*Attalea cohune*), give-and-take (*Chrysophylla stauracantha*), and botan (*Sabal mauritiiformis*) are included based on equations developed at a neighbouring property in 2000 (Brown 2015). This report indicates that data for 15 of each species were collected and measured to develop site specific equations for these three species. The methodology calls for a minimum of 30 individuals to qualify. Based on the close proximity and the exact species match, these equations are considered more appropriate than family level equations from elsewhere despite the low sample size. The data from the study was evaluated and qualifies as representative following

the instructions in CP-AB. The equations were available at project validation. Palm biomass is treated as a component of tree biomass using parameter $C_{AB\_tree,i.}$

2.2.2.3 Calculation of Ex Post Emissions from Fuelwood Collection

There is no extraction of fuelwood from the Project Area. This is clearly understood by the Project Proponents as well as the communities living in the Project Zone. The same Methodology Deviation used for the PD and first monitoring report were also applied during this monitoring period. The following text is from the Project Document and was used for this monitoring period:

> Based on the very low number of people in the community that have access to the Project Area, the large area of forest available to the community, and the availability of free firewood from the local sawmill, a PRA was not conducted but rather an indisputably conservative assumption regarding the number of fuelwood users and the amount of fuelwood used (described in Section 5.4.1). The total emissions predicted using this approach was found to be de minimis and removed from further consideration. The following parameters are affected:

Parameter	Description	Value
$\Delta C_{P,DegW,i,t}$	Net carbon stock changes as a result of degradation in stratum i in the project area at time t; tCO_2e	2,275
$A_{DegW,i}$	Area potentially impacted by degradation processes in stratum i; ha	8,240
$C_{DegW,i,t}$	Biomass carbon of trees cut and removed through degradation process from plots measured in stratum i at time t; tCO_2e	0.27607
A_{Pi}	Total area of degradation sample plots in stratum i; ha	0
i	1, 2, 3 …M strata	1
t	1, 2, 3, … t* years elapsed since the start of the REDD project activity	10

> An indisputably conservative assumption was made to arrive at $A_{degW,i}$. It was assumed that 150 people use fuelwood from the project area, and that each uses .55 m^3/person-year FAO (2008) for 30 years. Each m^3 of wood weighs a conservative 1600 kg/m^3. A fraction of carbon of .47 (IPCC 2006) is used to convert greenwood to dry wood. A ratio of 44/12 is used to convert carbon to CO_2. Calculate for the baseline period of 10 years. Multiplying these numbers (.55 * 1,600/1,000 * 150 * 10 * .47 * 44/12) arrives at a total of 2,275 tCO_2e emissions as a result of fuelwood collection or 0.276 tCO_2e/ha.
>
> Although this methodology deviation was originally applied to the first monitoring period it is still applicable and used during this monitoring period. Furthermore, although the deviation used during the first monitoring period conservatively demonstrated that even if up to 150 people had used firewood from the Project Area, the emissions would be de minimus, there is no evidence that anyone collected firewood from the Project Area during the second monitoring period.

A methodology deviation has been used for this Monitoring Period.

There is no fuelwood gathering in the Project Area. This was observed at project start and this trend continues through this monitoring period. Specifically, the M-MON module states: "The first step in addressing forest degradation is to complete a participatory rural appraisal (PRA) of the communities inside and surrounding the project area to determine if there is the potential for illegal extraction of trees to occur. If this assessment finds no potential pressure for these activities then degradation *(ΔCP,DegW,i,t)* can be assumed to be zero and no monitoring is needed. At Project Start it was identified that there are is no fuelwood gathering.

The PRA was not repeated every two years, as there is no fuelwood gathering, and a methodology deviation is requested. The only community living within the Project Zone, which had the potential to access the Project Area without passing through guarded gates was Sylvester Village, where the Gallon Jug employees live with their families as a condition of their employment. As Sylvester Village has electricity, these community members do not use fuelwood. There are gates and patrols that highly limited access to the Project Area by nearby communities in the Project Zone. For this reason, it can be determined there was no critical need to monitor fuelwood collection as the Project Proponent understood that there was no access to the property by these other communities. Three social assessments (2014, 2015, and 2019) were conducted for FCS certification. Community members were asked some questions, but none related directly to fuelwood use or degradation because it was known that they did not have access to the property. Other reports gathered during the second monitoring period, and referenced below, demonstrate that illegal fuelwood gathering did not happen. In addition, although only Sylvester Village is within the Leakage Area, a general analysis of other villages in proximity to the property was also conducted during the Monitoring Period.

Qualitative description of a reduction of illegal activities from the Boomsma 2019 report:

> *"With the establishment of South Block, the Yalbac lands no longer directly border the communities of Yalbac Village, La Gracia and Los Tambos. Instead of having to deal with multiple small landowners, now there are three leaders of the Spanish Lookout Community (SLO) to communicate with. Between Yalbac management and the SLO leadership exists a lot of common ground regarding opposing illegal activities (logging, poaching) and business-like approaches in the management of their lands. Since the new land ownership effectively creates a buffer between the YRCC and the various villages, YRCC is now less exposed to illegal activities although these still occur"*

This demonstrates that illegal activities have been reduced as now the South Block parcel is owned by the Mennonite famers reducing illegal activities from Yalbac Village, La Gracia and Los Tambos. The Yalbec Parcel acts as a buffer between Laguna Seca Project Area and communities as it relates to forest resources, fuelwood collection etc.

> *"With the establishment of South Block, the Spanish Lookout Community doubled the length of their border with YRCC. South Block also included the southern entrance road and South Gate. This means that several villages (Los Tambos, Yalbac Village and La Gracia) are not direct neighbors of YRCC anymore."*

This change in ownership that is described here proves even more so that communities living in the Program Zone did not have access to the Laguna Seca Program Area.

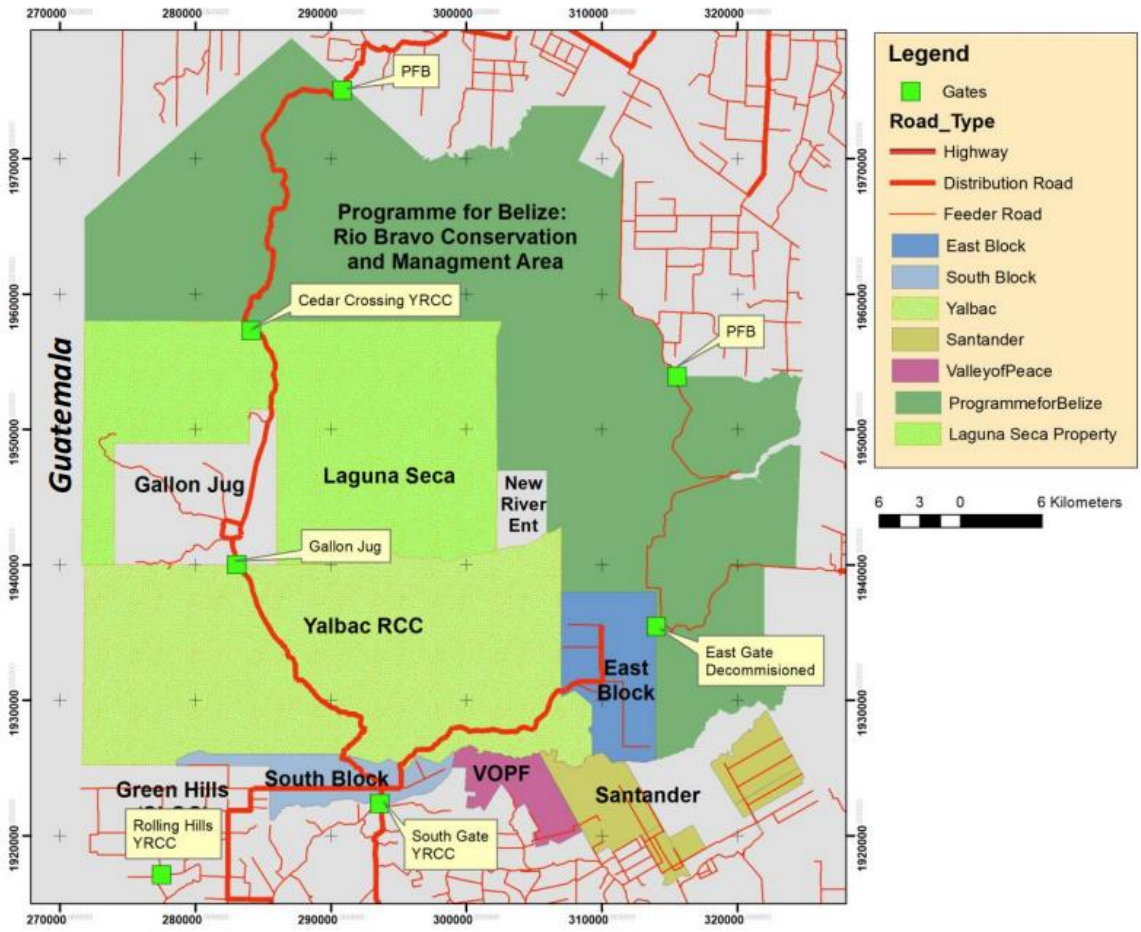
> *"Access to YRCC and LSL Road access to YRCC and LSL is by means of a set of gravel roads, the entrances of the roads are secured by staffed gates. The location of the gates remains the same as in the 2013/2014 reports (Map 4).*
>
> *If family members or friends wished to visit the property or relatives living in Sylvester Village/Gallon Jug, they were required to obtain a pass. This demonstrates the active patrolling and monitoring of visitors on the land was significant and demonstrates further that very few people had access to the land. "Issuing of passes: Family members of Gallon Jug staff need a formal written pass which must be procured through the Yalbac Office at least 2 days before planned visit"*

This demonstrates that there is very limited access to the project area, and only by formal advance approval.

Qualitative description from the 2015 Boomsma Laguna Seca Socio-Econ Report notes:

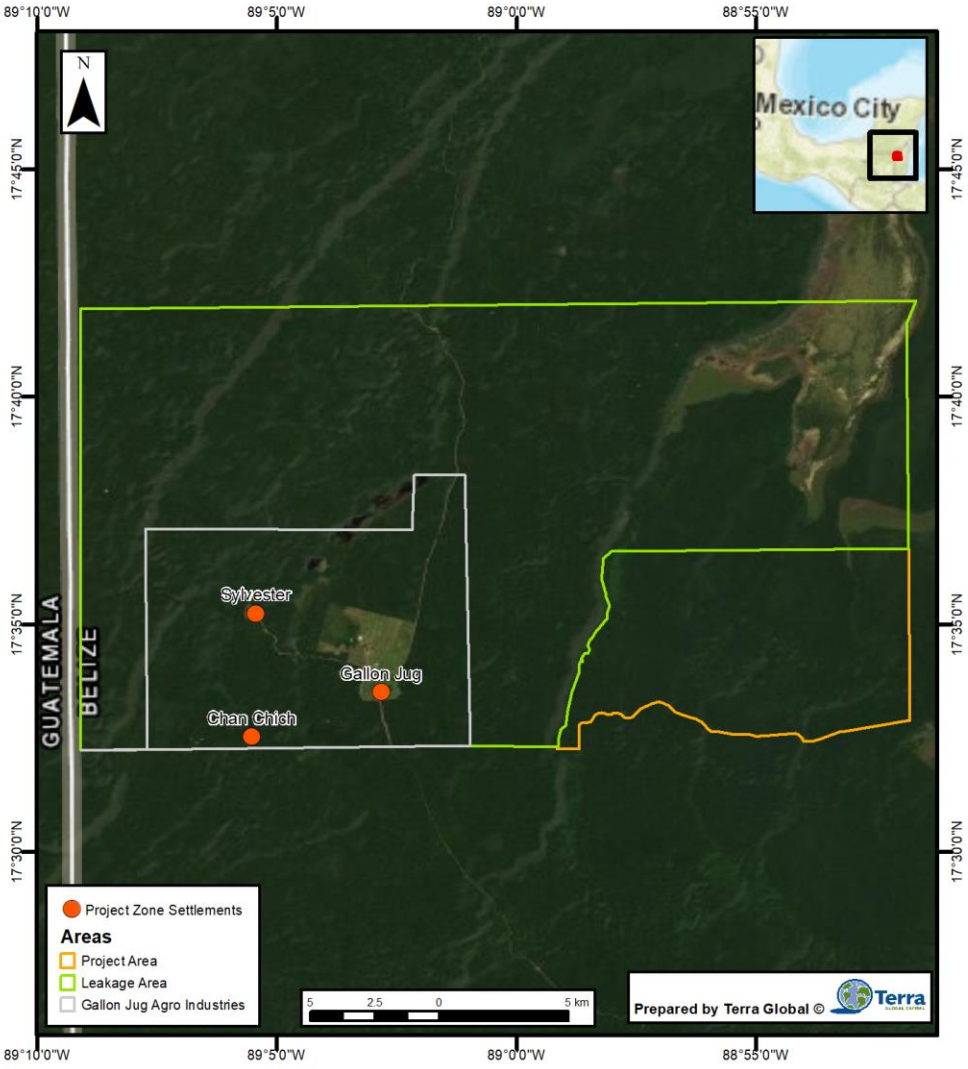
> "Access to Laguna Seca and neighboring land is controlled by eight manned gates, managed by three different entities."
>
> "Villages near Laguna Seca. The following local communities were identified: Sylvester Camp, La Gracia, Yalbac Village and Buena Vista. Although the access road to Laguna Seca is leading over the Spanish Lookout South Block, this area is used for agriculture and there are no plans to start a new settlement on this land."
>
> "The right of access over Laguna Seca land for Gallon Jug Agroindustry Ltd. with its operations Chan Chich lodge, the Gallon Jug sawmill, logging operations, the farming of grain and the cattle rearing is described in a written bi-lateral agreement between the Bowen and Bowen Company Ltd. and Laguna Seca Land LLS. This agreement addresses only traffic movements and the maintenance of this road. Users of the road have no right to access and use the forest. This right was passed to Laguna Seca Land LLS when the land was sold."

Spatial Distribution of Communities in relation to the Project Area



Map 4. Laguna Seca and Surrounding Landholdings, Access Roads and Gates

As reported in the PD, Gallon Jug and Sylvester Village are the only communities within the Project Zone that could potentially use the area for fuelwood collection, but as they have access to electricity, they do not use wood for fuel. Below is a map showing gates that other communities must pass through to get to the Project Area.



Map 5. Map demonstrating the area between Sylvester Village/Gallon Jug and Laguna Seca #1326

The only communities that would have access to the project area, without passing through guarded gates, are Sylvester Village and Gallon Jug, as indicated in the PD. In order to collect fuelwood, these community members would have to cross through significant forest land to access the Project Area. Members of the Sylvester Village and Gallon Jug communities would have to cross approximately 8 km of land owned by Gallon Jug Agro Industries and then through approximately 5 additional km of land formerly owned by The Forestland Group and currently owned by BMFT in order to reach the Project Area. Even if community members did desire to illegally collect firewood, community members would not go through this trouble and take this risk to collect fuelwood from the Project Area, given that other forested areas are far more accessible and in closer proximity to the communities.

Conclusion

This methodology was written for communities who commonly practice fuelwood collection, an activity which is not carried out by the communities in proximity to the Laguna Seca Carbon Project. Although a PRA was not carried out every two years, (ΔCP,DegW,i,t) can be determined, as demonstrated above, that even if very conservative assumptions were made about potential fuelwood use, the result would be in emissions that do not meet the de minimis threshold; therefore this Monitoring Report applies a methodology deviation.

2.2.3 Minor Changes to Project Description (*Rules* 3.5.6)

This project received an extension from Verra to both extend the monitoring period as well as that the verification be performed longer than five years.

2.2.4 Project Description Deviations (*Rules* 3.5.7 – 3.5.10)

2.2.4.1 Deviation to 1.1 Summary Description of the Project and 1.4 Project Proponent

In December 2020, the ownership of the property changed from TFG, an independent Timberland Investment Management Organization, to BMFT through the efforts of TNC funding BMFT's purchase of two large parcels Laguna Seca (which includes this project area) and Yalbec. And, TNC, as the new owner of the carbon rights, is now the new Project Proponent.

This Project Description Deviation falls under Section 3.20.2 (2) of the Standard, as the change of ownership of the property does not impact the 1) applicability of the methodology, 2) additionality or the 3) appropriateness of the baseline scenario, and the project remains in conformance with the applied methodology. The change of ownership does not impact the project's conformance with the applicability criteria of the applied methodology and each module. Not one of the applicability criteria relates to the type of project owner.

The purchase of the project area by BMFT also does not impact the project's additionality analysis as established in the PD. For avoided planned deforestation projects the demonstration of additionality is done once at project start based on conditions that exist at that time. Once additionality is determined in the Project Description at project start there is no requirement to establish additionality at the time of land sale as any sales after a project is protected from conversion to agriculture do not impact the additionality as determined at project start. That is, once protected (and additional) always protected. This is in line with how projects are not required at each monitoring period to re-establish additionality. And by changing the property owner after the project has been proven additional (and third-party validated as such), it cannot change the fact that it was additional at project start. Finally, the change in property ownership does not impact the appropriateness of the baseline scenario that was determine at project start. The baseline conditions established at project start are not impacted by the new owner.

2.2.4.2 Deviation to Section 1.5 of the PD

The Virginia Tech Conservation Management Institute and the Ecosystem Services ERA/Offsetters were not involved during the second monitoring report.

The other entities involved, which are described in section 2.1.4, are:

- The Belize Maya Forest Trust is a Belizean non-profit organization for the conservation and is responsible for the management of the Project Area.

- Terra Global acts as an implementing partner for the development and on-going management of the emission reductions generated under the Project, supporting the registration, issuance and marketing of emission reductions.
- University of Belize Environmental Research Institute (UB ERI) provides specialized technical support for the field work to assess biodiversity, biomass, social and local administration support where needed for this monitoring period.

2.2.4.3 Deviation to Section 8.1.1 of the PD

There is a small deviation in the way the land cover types were assessed for this monitoring period. We implemented a machine learning algorithm to make the classification, based on ~400 reference points selected by an interpreter. Then a post-processing was carried out to filter the image (clumping and sieving, and majority filtering). The resulting classified image was adjusted manually performing a visual cross-referencing with high-resolution imagery from Google Maps.

The implementation of a machine learning algorithm allows us to identify possible patterns that are not always easy to recognize visually, since the algorithm is able to relate all the spectral bands with the reference data based on mathematical approach.

During the monitoring period biomass plots were measured in a 25 m x 25 m square, which differed from the circular plots measured at Project Start and described by (Pearson, 2005). Circular plots are generally used for boreal and temperate forests (GOFC-GOLD, 2016), whereas rectangular plots have been traditional in some tropical countries to accommodate other concerns (Kleinn, 2003), (McRoberts RE et al, 2016) and have been recommended by FAO (Saket, 2002). Square Plots are much more manageable and have higher accuracy in thick jungle such as that found in the project area. In addition, this square-plot method is used by the country of Belize in standard biomass measurements and the biomass teams are more experienced in the square plot design. These square plots are assumed to have higher accuracy. No tree tags were added to measured trees during this monitoring period, otherwise measurements were consistent with procedures described in the PD.

2.2.4.4 Deviation to Section 2.2, 4.5.2, and 6.1, 7.3 of the PD

Originally the project activities included giving financial support to the Gallon Jug-Chan Chich High School Scholarship Fund to defray the cost of high school tuition for children in the community. Although this scholarship was still given out, finances came from Bowen and Bowen Ltd. As Gallon Jug Agroindustries is run by Bowen and Bowen Ltd., the Bowen and Bowen company wanted to cover these costs. However, The Forestland Group did support other educational endeavors as reported in sections 2.1.10 and 4.3.1 .

2.2.4.5 Deviation to Section 1.7 of the PD

The implementation schedule indicates that selective harvesting would occur in 2017. However, no harvesting happened during the monitoring period within the project area. Harvesting occurred in the Laguna Seca Parcel as shown in Map 3. As guided by FSC principles, timber harvesting was carried out in areas already accessible, near past harvests. FTG practices adaptive management, and planned timber management shifted based on best practices. This change of location for possible planned timber harvest had no effect on emissions or leakage nor did it have any financial impact. This shift of location did improve habitat as less roads were opened within the larger TFG area. No benefits or drawbacks from logging were accounted for in this project.

2.2.5 Grouped Projects

Not applicable, this is not a grouped project.

2.2.6 Risks to the Project (G1.10)

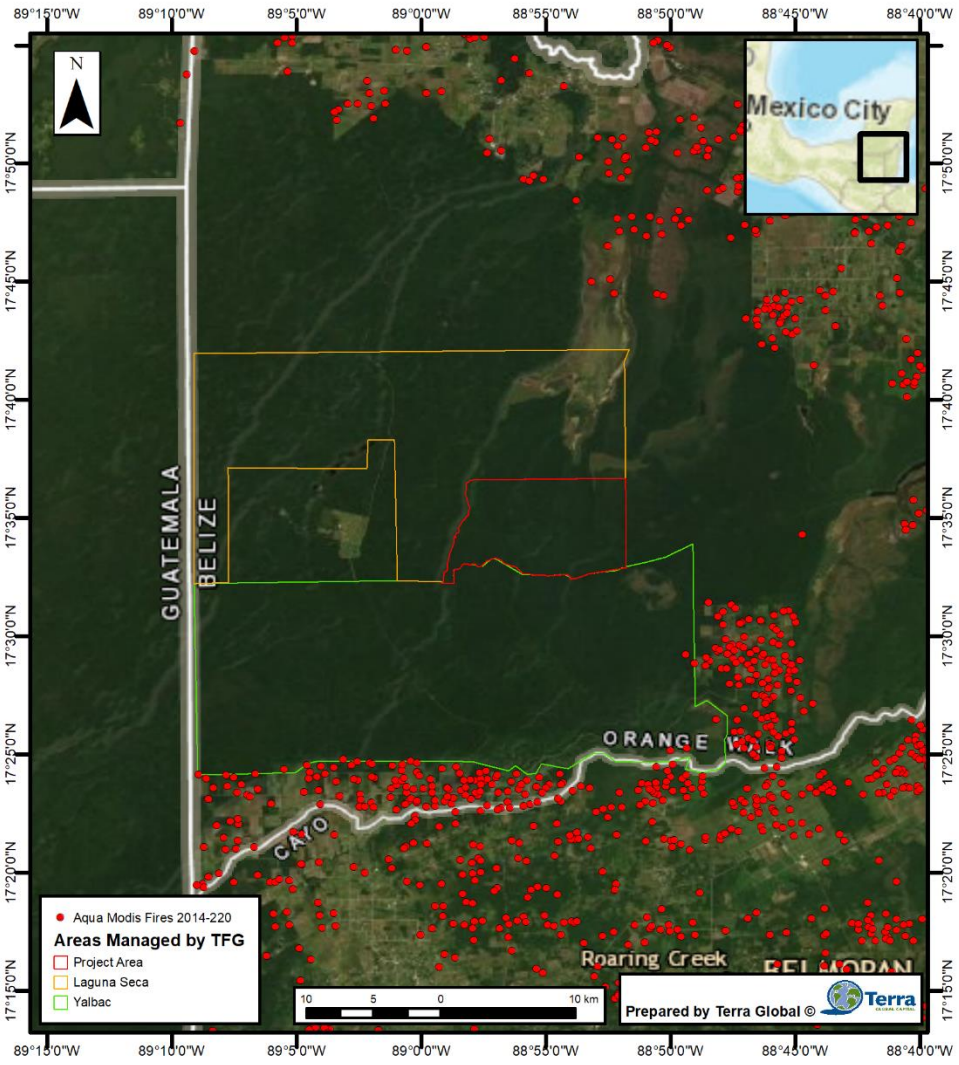
The risks to the project that can be mitigated include poaching of wildlife, timber and fires.

2.2.6.1 Poaching – Mitigation Actions

Poaching is a minor risk in the Project Area that would affect the biodiversity by illegal hunting, and the conservation of the forest by illegal wood extraction. The Laguna Seca Project Area is surrounded by timberland, of which 86% was managed by TFG during the monitoring period. As TFG patrolled all areas they controlled, most of all the reported incidents occurred in the land closest to villages in the southern boundary of TFG properties. Poachers would have to cross though all of the Yalbac parcel to reach the Project Area. The patrolling reports stated that most of the poaching incidents were mainly for wildlife, representing less risk for illegal timber harvesting. In addition, the access roads to the property have gates controlling all vehicle and foot traffic (Figure 1), making it nearly impossible to extract anything bigger than what can be carried by hand. The risk has been mitigated by patrolling that occurred constantly not only in the Project Area, but also in the larger Laguna Seca and Yalbac. See section 2.2.1.2. The patrolling reports are available to the VVB by request.

2.2.6.2 Fires Mitigation Actions

Fires are unlikely to happen in the Project Area. The patrolling reports only referred to a few fire incidents that were human-caused and that they were originated mainly in the southern boundary of Yalbac, representing no risk of forest lost in the Project area. In addition, the sensor MODIS Aqua did not detect any fire incident inside the Project Area during the monitoring period, with a confidence greater or equal to 70% and confirmed the incidents in the south boundary of Yalbac. Also, most of the fire incidents occurred in populated areas and agriculture lands (Map 6).



Map 6. Fire Incidences in the Project Area 2014-2020

2.2.7 Benefit Permanence (G1.11)

The project area is now preserved by the local Belize Maya Forest Trust in partnership with The Nature Conservancy, the Government of Belize, key neighbors such as Gallon Jug and PfB and other key stakeholders. The actions taken by these entities will guarantee the conservation of the forest and biodiversity in the area.

2.3 Stakeholder Engagement

2.3.1 Stakeholder Access to Project Documents (G3.1)

The Forestland Group provided information to the various project stakeholders regarding access to project documents, including participating in the comment period through a variety of avenues. TFG provided direct mail and phone contact to PfB that manages the Rio Bravo, the Yalbac Ranch, Belize Forest Department, Ministry of Natural Resources, and the Gallon Jug/Chan-Chich

high school scholarship fund organizers. The Project Document (PD) Posters were placed at the Gallon Jug Post Office and the Sylvester Village store to advertise the project documents online, as well as a copy of the PD was provided at the Gallon Jug Post Office for review by local stakeholders. Public comment periods were held from May 30-June 29, 2014, and June 5-July 5, 2015 for the PD and first monitoring report. Additionally, the employees of the Yalbac and the Gallon Jug mills were made aware of the project through a presentation made to employees.

Notification of public meetings at the post office and general store is a cultural standard for Belize. The communities residing in the project area are small and word of mouth has been effective at sharing information. For the communities and other stakeholders, with access to project documents as well as information on Grievance Procedures follow communication channels that rely on a combination of formal and traditional ways of communication and conflict resolution in Belize.

2.3.2 Dissemination of Summary Project Documents (G3.1)

Results of the second monitoring report, and other relevant summary project documents were made publicly available directly through the Verra website. Monitoring data results are also made available to stakeholders through community meetings and verification events as well as through communication avenues described in Section 2.3.1 Stakeholder Access to Project Documents (G3.1). Communities are informed of monitoring results through informal interviews and meetings that were held during social assessments in 2014, 2015 and 2019. In addition, during the Household Survey conducted in 2021, local communities were reminded of the project once again. Table 2. Public Summary Reports Available in YRCC Sawmill Office provides a list of the documents that were made available to communities. These documents, including the social impact reports provided monitoring results to communities. Communities were generally informed that the documents were available for review in the YRCC office during community meetings (Boomsma, 2019).

Table 2. Public Summary Reports Available in YRCC Sawmill Office

Other public summary reports available in the Sawmill office.
Belize Laguna Seca HCVF 2015 and 2011
Annual Plan of Operations for Laguna Seca and Yalbac
Laguna Seca Social Impact Report 2014
Yalbac Ranch Social Impact Report 2012
Biological and Resource Security Report (Annual)
Sustained Forest Management Plan for Laguna Seca 2016-2025
Results of the 2016 Valley of Peace Archeology Project
Biodiversity Monitoring YRCCC and Laguna Seca (Annual)
Preliminary Report on Sak Mut and Xma Ha Ak'al 2017
Laguna Seca Forest Carbon Project
Community Donations and Charitable Contributions
Employee Relations Training
Staff Training: Overheating and dehydration
Staff Training: Basic Life Support
Staff Training: Patrol schedules
Random spot checks to audit safety equipment and clothing
The 2012- 2016 Annual Seasons of the Chan Chich Archeological Project

Source: (The Forestland Group, 2018)

Related to the future dissemination of summary project documents, including this monitoring report, all project stakeholders have collaboratively provided input for this combined VCS/CCB second Monitoring Report. For the second VCS/CCB Monitoring Report, UBERI will support the distribution of the summary of the Monitoring Report to relevant stakeholders, including the relevant updates that will be made to the CCB Monitoring Plan for the Project Area. During meetings with project stakeholders in preparation for this report, TNC provided information regarding past summaries of project documents to support the solicitation of feedback and discussion of the impacts of the project.

UB ERI will communicate about the VCS/CCB Monitoring Report through a summary document that will be shared via email to all relevant and interested project stakeholders, including communities. This stakeholder communication will include direct email and phone contact with PfB and the RBCMA, Belize Forestry Department Ministry of Natural Resources REDD Coordinator, and UNFCCC Belize Focal Point and Designated National Authority. As per Belize custom, the information about accessing project document online, including the summary report, was posted at the Sylvester General Store. In addition, UBERI is in communication with all relevant stakeholders to present the VCS/CCB Monitoring Report, gather feedback and notify them of the 30-day comment period so that they may submit commits privately to the CCB via the website CCBstandards@v-c-s.org.

All relevant Public Comments submitted to the CCB during the public comment period will be addressed.

2.3.3 Informational Meetings with Stakeholders (G3.1)

In 2014, informational meetings included further stakeholder engagement to neighboring landholdings near the Laguna Seca Project Area, including Gallon Jug Agroindustries, PfB and the RCBMA.

In 2015 and 2019, additional meetings with all relevant stakeholder groups were held. Meetings were publicized through emails, telephone calls, and informational posters and handouts in the Sylvester General Store and Gallon Jug. Table 3 Informational Meetings and Interviews with Stakeholders summarizes the timeline of information meetings with stakeholders. Note that these stakeholders are not specific to the Laguna Seca Carbon Project, but are broader stakeholders who may have an interest in TFG operations.

Table 3 Informational Meetings and Interviews with Stakeholders

Date	Persons Attended	Stakeholder Group	Topics Discussed
2014			
November 2014	Eddy De La Rosa, Village council chairman	Buena Vista	• Transport of logs and milled lumber via the Buena Vista Road, through the village Employment opportunities for villagers • Benefits for the community

Date	Persons Attended	Stakeholder Group	Topics Discussed
October 2014	Byron Miranda and Harrison McCullock, Village council chairmen	La Gracia	• Activities at Laguna Seca (logging) • Transport of logs and milled lumber via the Buena Vista Road
October 2014	Norman P. Reimer, President Spanish Lookout, Clarence P. Dueck, Vice-President, Otto R. Penner, Secretary, Allen Reimer, Chairman Road Committee, Tineke Boomsma, consultant	Spanish Lookout	• Transportation of milled timber and/or logs • Relations • Use of roads
October 2014	Alan Jeal, General Manager	Gallon Jug Agroindustry Ltd.	• Logging activities in Laguna Seca • Transportation of milled timber and/or logs • Relations • Use of roads • Gate access • Management plans for continued logging • Sawmill operations
October 2014 Telephone conversation	Ramon Pacheco, Programme for Belize	Programme for Belize (PfB), RBCMA	• Logging activities in Laguna Seca • Hunting Transportation going to and coming from Laguna Seca, in particulars the transportation of milled timber and/or logs • Gate policy
2019			
May 2019	Edilberto Romero, Executive Director	Programme for Belize, RBCMA	• Realignment of boundaries between Spanish Lookout and YRCC • Gate policies • Use of private roads • Community involvement • Transportation issues • Trespassing

Date	Persons Attended	Stakeholder Group	Topics Discussed
			• Water quality
May 2019	Alan Jael	Gallon Jug Agroindustry	• Processing requests for passes by locals for family visits • Realignment of boundaries between Spanish Lookout and YRCC • Gate policies • Transportation issues
Unknown	Joseph Loskot	New River Enterprises	• Realignment of boundaries between Spanish Lookout and YRCC • Gate policies • Use of private roads Transportation issues
April 2019	Ruben Menendez	La Gracia	• Transportation of logs • Maintaining relations with stakeholders • Community involvement • Transportation issues
April 2019	David Requena	Yalbac Village	• Transportation of logs • Maintaining relations with stakeholders • Community involvement • Transportation issues
April 2019	Juan de la Rosa and Irma de la Rosa	Buena Vista	• Transportation of logs • Maintaining relations with stakeholders • Community involvement
May 2019	Erwin Thiessen, Harry Letkeman and Jacob Dyck	Spanish Lookout	• Transportation of logs • Maintaining relations with stakeholders • Community involvement • Gate management • Traffic issues • Hunting Issues
April 2019	Gilly Canton Jr.	Cayo Grain Growers, Valley of Peace Farms, Ltd.	• Realignment of boundaries between Spanish Lookout and YRCC • Gate policies • Use of private roads

Date	Persons Attended	Stakeholder Group	Topics Discussed
			• Transportation issues • Wildfire control
April 2019	Beverly Burke	Santander	• Gate policies • Use of private roads • Transportation issues
April 2019	Juan de la Rosa, chairman village council Irma de la Rosa, secretary village council Jose Ramirez, driver school bus	Buena Vista	• Transportation of logs • Maintaining relations with stakeholders • Community involvement
April 2019	David Requena, chairman village council	La Gracia	• Transportation of logs • Maintaining relations with stakeholders • Community involvement
April 2019	Dario Ruben Menendez, chairman village council Nectaly Zepeda, villager	Yalbac Village	• Transportation of logs • Maintaining relations with stakeholders • Community involvement

Source: (Boomsma T. , Socio-economic assessment of YRCC Stakeholders-Including Laguna Seca, 2013) (Boomsma T. , Laguna Seca: Indigenous Rights and Community Relations, 2015) (Boomsma, 2019)

Based on community monitoring reports, meetings were held with individuals at Chan Chich Lodge, the sawmill, and the Sylvester Village Community Center, Gallon Jug Farm, the TFG Lumber Camp during the monitoring period. Additional meetings were held with TFG staff at Busby Camp and Yalbac Sawmill. Many stakeholders were informed of these meetings through email and telephone communications, as well as informational posters and handouts to promote the time and date of the meetings. Stakeholder meetings were also held informally through email and telephone calls throughout the monitoring period. In instances where landowners and other local stakeholders were not able to attend the meetings held, TFG would email the agenda and meeting minutes, with the opportunity to respond. This email correspondence was filed with the proceedings of the stakeholder meetings.

When the project area was purchased by BMFT, a public announcement was made by TNC, reaching global stakeholders about the conservation of the Belize Maya Forest including the Laguna Seca Carbon Project Area. The following stakeholders were informed of the land ownership change that occurred during the Monitoring Period: PfB/RBCMA, TFG staff, Belize Forest Department Ministry of Sustainable Development Resources REDD+ Coordinator, and UNFCCC Belize Focal Point and Designated National Authority.

2.3.4 Community Costs, Risks, and Benefits (G3.2)

The communities identified in the Project Zone include only Sylvester Village/Gallon Jug community (employees and their families who reside on the property) and the Yalbac Mill community. These communities do not participate actively in the Program but are engaged on program design and are kept informed of the program. Initial community meetings to discuss community costs, risks, and benefits, as well as the CCB verification process, as it relates to these communities were held in January 2012 at Gallon Jug and Sylvester Village and again in January 2014 at the Yalbac Mill prior and just after program start and implementation. These communities were not reliant on the Project Area for livelihoods as of the project start date, therefore, there have been minimal costs and risks recorded, as compared to conditions at the project start date.

2.3.5 Information to Stakeholder on Verification Process (G3.3)

Communities and other stakeholders were informed of the process for CCB during the various informational meetings that were held in 2012, 2013, 2014 and 2019. These meetings are described in Table 3 Informational Meetings and Interviews with Stakeholders. During these meetings, community leaders, and other stakeholder representatives were informed about the Validation and Verification process that would occur.

The Nature Conservancy and the Belize Maya Forest Trust are engaged more fully in the sharing of information, specifically as it relates to verification processes. The Project Proponent has informed the communities of the verification process and what their participation will involve and that they will be visited by a VVB at least a week before the visit. Other forms of communication will be posting the information at the Post Office at Sylvester Village and stakeholder representatives via email, telephone, and informational posters about relevant meetings. They are welcome to communicate directly to the VVB.

2.3.6 Site Visit Information and Opportunities to Communicate with Auditor (G3.3)

Site visit information and opportunities to engage with the Auditor were initially disseminated to communities and other relevant stakeholders through in person meetings, phone calls and emails. During these initial informational notices, UB ERI also informed communities and other relevant stakeholders of about this monitoring report. UB ERI also posted information regarding the monitoring report results and the verification site visit by posting notices at local centers, including the Sylvester General Store.

2.3.7 Stakeholder Consultation (G3.4)

Table 4. Stakeholder Consultation Meetings

Stakeholder Consultation Meeting	Approximate Date	Location
Consultation Meetings	January 2014	Gallon Jug, Sylvester Village
Consultation meetings	January 2014	Chan Chich at Gallon Jug (14 pp) and Yalbac Sawmill (13 pp), Sylvester Village Community Center (60 pp)
Consultation with TNC and TFG	January 2014	Busby Camp

Stakeholder Consultation Meeting	Approximate Date	Location
Consultation with TFG Staff	January 2014	Yalbac Sawmill

These consultations resulted in the incorporation of community components into the development plans of the program. The procedure for gathering and incorporating stakeholder comments into project design is outlined below (Boomsma T. , Laguna Seca: Indigenous Rights and Community Relations, 2015).

There are no communities living within the project area, but Gallon Jug/Sylvester village and Yalbac Mill community are within the Project Zone. These communities are not directly reliant on the Project Area for their livelihoods, but some of them are employed by TFG and live and have access to the area solely based on their employment. The communities were consulted in these meetings using the following procedure:

Step 1: Review social baseline study with community and other stakeholder participants, determine areas of concern for communities and stakeholders, including potential impacts, as well as areas where the project might present opportunities for them (benefits). **Outcome:** During meetings, a list of community opportunities for the project scenario and a list of concerns were developed.

Step 2: Assess potential impacts and opportunities and identify areas needing impact management programs. **Outcome**: No negative impacts were suggested by the stakeholders for the project scenario

Step 3: Propose measures to manage and if necessary, mitigate the identified impacts and enhance opportunities. **Outcome:** No negative impacts of the project were suggested.

Step 4: Reassess the impacts and opportunities, taking proposed management measures into account. **Outcome:** Opportunities suggested by the stakeholders are reflected in the project plan.

Step 5: Work with community and other partners on participatory development plans that address community priority programs (enhancing opportunities) as well as required mitigation programs (mitigating impacts). **Outcome:** The community suggested the project plan components:

Short term components that were incorporated include continued and increased employment opportunities, transportation to be provided to town, scheduled preventative health care, easier access to cash checks, housing improvements/maintenance, increased pay, fund school scholarship program.

Long term components included in the program implementation plan involved developing a high school and a health clinic on the property to support residents.

2.3.8 Continued Consultation and Adaptive Management (G3.4)

There were several meetings throughout the monitoring period that provided communities an opportunity to share input and continue to strengthen communication and consultation channels. Many of these meetings are documented in Section 2.3.3 Informational Meetings with Stakeholders (G3.1). These meetings provided a space for TFG to gain insight into the impact the program was having on the community and consider this input with the revisions of the development plans.

Additionally, there were social assessments that were conducted in 2015 and 2019 (Boomsma T. , 2015) (Boomsma, 2019) regarding communities that reside in the Project Zone and nearby neighboring communities. These assessments provided critical feedback and input to TFG to shift the direction of the program to meet the needs of the communities more closely.

During these social assessments, community members were asked to identify new and effective project activities and describe the risk of implementation each. Specific issues that were identified through the assessments that need attention for future years include:

- Agricultural fire awareness and trainings, including manuals on health and safety, fire prevention and fire fighting
- Training of staff on poisonous snakes of Belize and their mimics, protective gear
- Formalization of gate policies and wide sharing of these policies with stakeholders
- When burial grounds are found, ensure if they have been included in the HCV areas of concern and develop a policy to allow family members to visit
- Development of an employee recruiting policy that will provide reasonable opportunities for employment to local communities. This will include a way of notification of the villagers in the three villagers about existing/upcoming vacancies.
- Laguna Seca should develop a 'community involvement policy'.

2.3.8.1 Adaptive Management Plan Summary

These inputs were integrated into an updated Adaptive Management Plan that addressed how to redirect program design and implementation for this next cycle. Monitoring of all activities is a crucial element for the successful implementation of an adaptive management.

At each step, the aim is to remain well within safety margins indicated by the existing levels of information, experience and institutional capacity. The adaptive management assumes that the outcome of a given action cannot be predicted with accuracy, that circumstances change, that there is a learning process based on experience and provision of further information, and that institutional capacity develops over time. There is therefore a need for a mechanism by which new experience and information is regularly fed back into the management regime, which is adapted accordingly. Monitoring is extremely essential for adaptive management. Four types of monitoring can be distinguished:

1. Identifying and assessing threats and problems: general patrolling to identify encroachment, fire risk, invasive species, illegal activities and other problems;
2. Implementation monitoring: supervising and checking whether planned biodiversity-friendly activities have been implemented as prescribed;
3. Effectiveness monitoring: checking that prescribed activities and interventions have had the desired effects, and that threats have been dealt with adequately; and
4. Inventories and monitoring of selected aspects of biodiversity: conducting research and studies and monitoring key trends in forest biodiversity.

2.3.9 Stakeholder Consultation Channels (G3.5)

Stakeholder groups included:

- TFG owners and staff
- Gallon Jug farm residents
- Sylvester Village

- PfB/RCBMA
- Belize Forestry Department Ministry of Natural Resources REDD Coordinator-UNFCCC Belize Focal Point and Designated National Authority

Depending on the stakeholder the channel of communications varied. Through the various community consultations described in Section 2.3.7 Stakeholder Consultation (G3.4) and informational meetings held between 2014 and 2019 outlined in Section 2.3.3 Informational Meetings with Stakeholders (G3.1), many of the consultation channels were developed and utilized throughout the monitoring period. Many stakeholders were informed of meetings and contacted regularly for various inputs and discussions through informational posters, handouts, phone calls, email correspondence, or in person meetings. These rather informal consultation channels served TFG to the extent that they needed it to during their time as landowners, but moving forward, TNC is refining the relationships, including the consultation channels that govern the Project Area and neighboring landowners (Laguna Seca Stakeholder Report, 2014)

2.3.10 Stakeholder Participation in Decision-Making and Implementation (G3.6)

The Laguna Seca Program through a series of social assessments was able to demonstrate that stakeholder participation influenced decision making and implementation of the program. As communication back from stakeholders was required for their FSC certification, TFC engaged communities for feedback beyond those identified in the Project Zone. Communities were able to provide feedback to inform the implementation of the program as it was occurring through these assessments in 2015 and 2019. The communities and other stakeholders were able to inform the design of TFGs grievance and feedback process, transportation of logs through community roads, driver safety, gate policies, relationships with communities and dissemination of monitoring results. Through these reports, TFG was able to receive feedback on its land acquisition and how to best meet the needs of the various stakeholders affected by their operations in the area. Stakeholders were further identified through these reports and were contacted directly by TFG staff to gather critical feedback that was incorporated into development plans moving forward. The surveys provided a series of questions that addressed a variety of topics including:

- Changes in land ownership
- Operation of the gates and gate policies
- Effects of increased hurricane activity and natural disasters
- Use of private roads
- Community involvement
- Community relations
- Transportation issues

These topics discussed in these reports enabled effective participation, as appropriate, of all stakeholders. To ensure that women and underrepresented groups were involved in the Program design, implementation and decision making, women and underrepresented groups were encouraged to participate in the surveys. Positions with Gallon Jug were also advertised to women and underrepresented groups, and they were encouraged to apply (Boomsma, 2019) (Laguna Seca Stakeholder Report, 2014).

2.3.11 Anti-Discrimination Assurance (G3.7)

Throughout the monitoring period, TFG had an anti-discrimination policy that was in effect in the Laguna Seca Project Area while program activities were occurring, this is required for their FSC

certification. TNC also has in place an anti-discrimination policy that is now in effect in the Project Area. Both have upheld their perspective Anti-discrimination policies and Belize Law, which prohibits discrimination based on gender, race, or religion. There were no complaints or grievances received during this monitoring period about discrimination, and recent social surveys also suggest this has been upheld by all landowners.

TFG included women in the planning stages of the program, as based on the Project Description, therefore, gender discrimination was not likely to occur during this initial phase. Employment opportunities were primarily generated for patrols and monitoring, and culturally, these are positions that are not often held by women. TFG included anti-discrimination statements in job vacancy announcements to encourage women to apply for these positions, even though culturally, they are more likely to attract men. TFG provided assurances that if women were to apply, they would be treated equally, trained, equipped and supervised as their male counterparts would. There was also a statement made regarding the high school scholarship funds that no gender discrimination would be tolerated regarding the program, although there is insufficient data to demonstrate this, as Bowen and Bowen Ltd were the financial supporters of the scholarship.

2.3.12 Grievances (G3.8)

During all but the last weeks of the monitoring period, The Forestland Group managed the feedback and grievance mechanism. In the social assessments of 2015 and 2019 grievances were recorded in the form of feedback or suggestions to TFG but the grievances recorded were for the whole of the area managed by the Forest Land Group and these grievances did not relate to directly to the Laguna Seca project area. They were related to logging activities of TFG's operations. Some of the feedback, included:

- Wear and tear of the roads to and from the Laguna Seca
- Noise and dust pollution of passing trucks, excess use of jake brakes, broken mufflers, high risk of accidents
- Work accidents during fieldwork, in particular the logging operations, increased worker training
- Provide increased employment opportunities and benefit to the community
- Maintaining increased relations with stakeholders

During the interviews with stakeholders no significant concerns were brought forward. Most stakeholders knew the former in country manager, Mr. Jeff Roberson of TFG. They explained that if there were any issues, they know how to contact TFG (Boomsma T. , Socio-economic assessment of YRCC Stakeholders-Including Laguna Seca, 2013) (Boomsma T. , Laguna Seca: Indigenous Rights and Community Relations, 2015) (Boomsma, 2019).

During the last three weeks of the monitoring period, the Project Proponent changed to TNC as the new owner of the carbon rights in the property and as funder of the Belize Maya Forest Trust's Conservation Action Plan (CAP) for implementation and management of the Project Area during the next monitoring period. As part of this process stakeholder and community outreach and engagement was conducted. Given that there were only three weeks between BMFT's purchase of the property and the end of the monitoring period, a formal written feedback and grievance mechanism could not be immediately implemented.

The information below provides the status of the new owner and long-term manager of the parcel Belize Maya Forest Trust who is in the process of establishing the formalize feedback and grievance mechanism.

2.3.12.1 BMFT Feedback Grievance and Redress Procedure (FGRM)

The establishment of a new Conservation Action Plan (CAP) for the BMF property began after TNC's acquisition of the property and will be completed by June 2022. This process began with the identification, by BMFT, of communities and other stakeholder groups which may be affected by the project, either positively or negatively.

Each stakeholder group was consulted and invited to designate representatives to participate in the CAP process and future meetings, where strategic objectives, threats, actions and indicators would be identified, for purposes of developing and implementing a five-year management plan for the conservation initiative.

At the initial meetings with stakeholder groups, Dr. Elma Kay was introduced as both the leader of the CAP process and Director of BMFT, as well as a point of contact for any concerns about the BMF that might arise within a community, including her contact information. At the time of this report in May 2021, the communities are aware that they may approach Dr. Kay directly, or through their community representative, with concerns, or they or their community representative may approach BMFT's Head Ranger, in the event that the concerns relate to security or patrolling issues.

In cases where a community's concern cannot be addressed by either Dr. Kay, or the Head Ranger, BMFT may seek assistance from third-party experts to resolve issues. This process for receiving feedback and addressing community grievances will be formalized within the next few months, as the CAP is completed and implemented, and as BMFT expands its workforce, to potentially include a Community Engagement Leader.

It is important to note that BMF is privately owned; no community members live within the boundaries of BMF, and members of stakeholder communities near the project do not have legal or customary rights to the land or resources within BMF. As such, BMFT's grievance response mechanism builds upon relationships with communities that were established through the CAP development process, and provides community members, through their community representative, an "open-door" option for friendly resolution of issues directly with BMFT staff. Grievances that cannot be immediately resolved in this manner may be addressed through support from third-party experts. And, community grievances related to any violation of laws by BMFT staff, should they occur, can be directed to law enforcement by community members. Updates to the feedback and grievance mechanism will be made to ensure that the FGRM is “fit for purpose” and that it is aligned with the CAP and its specific targeted activities with communities.

2.3.13 Worker Training (G3.9)

The Forestland Group provided employment opportunities through the operations that occurred on the Laguna Seca land during the monitoring period. Local staff are trained by TFG as rangers for patrolling the land, for biodiversity data collection, and firefighting primarily. Due to the often-challenging conditions of the forestry management activities, the training provided to employees was a critical element to their safety and security. New employees were trained to maintain local skills and knowledge and implement these features to complement operations on the Laguna Seca land. Employees are generally chosen from the local populations for their knowledge of the environment. Women and underrepresented minorities were encouraged to apply for positions and staff was selected based on ability. All employees were local and typically trained on safety on an individual basis. The Forestland Group met all local, district, and national workplace

standards and reported that their regulations and safety concerns are addressed individually with each staff member.

The Forestland Group took considerable efforts to increase capacity development of employees, and therefore local communities where employees were sourced from. Activities that TFG employees were trained and actively engaged in included permanent sample plot measurements, setting up remote camera traps, conducting forest patrols, and engaging in other knowledge transfer activities regularly. Worker training was provided during onboarding related to fire safety management, wildlife encounters, areas of high conservation value, and sustainable logging and conservation. TFG provided annual updates in written form to all stakeholders describing project status as a method to continue communication and consultation between stakeholders and project managers. TFG sought out stakeholder consultation whenever possible through regular meetings and aimed to increase capacity related to the long term conservation of the area (The Forestland Group, 2018) (Boomsma T. , Laguna Seca: Indigenous Rights and Community Relations, 2015) (Boomsma, 2019).

2.3.14 Community Employment Opportunities (G3.10)

TFG provided community employment opportunities through a variety of options, including Yalbac Mill and Sylvester village enterprises. TFG showed their commitment to communities within, or adjacent to, the forest management area by providing opportunities for employment, training and other services. Employees were typically a wide range of ethnic and age groups, and all employees in Laguna Seca were chosen from the local population to leverage traditional forestry management knowledge with the forest operations. New employees were trained to maintain local skills and knowledge and encouraged to build local capacity through sharing of resources and skills with others. Local community members hired were trained by TFG for patrolling and ranger stations, biodiversity monitoring and data collection and firefighting (Boomsma T. , Laguna Seca: Indigenous Rights and Community Relations, 2015).

Communities were informed of employment opportunities through a variety of mechanisms, including official job postings as local community centers, including the Yalbac Mill and Sylvester Village. Communities were also made aware of any opportunities at community gatherings and regular meetings, and informal communications with community leaders via email or telephone if there are positions to be filled. Women and other underrepresented groups are encouraged to apply for positions that they have skills for. All community members are invited to apply for open positions. Below is a breakdown of the employment opportunities provided to communities within and adjacent to the Laguna Seca landholding (Boomsma T. , Socio-economic assessment of YRCC Stakeholders-Including Laguna Seca, 2013).

Sylvester Village: This is a small village of approximately 40 houses that are for the workers at Gallon Jug. Supplies for these families are provided through a small store, two churches, and a community center that provides a space for employment opportunities to be posted, grievances to be filed, and community gatherings regarding forest management operations. This village did not exist until the operations of Gallon Jug began after TFG bought the land. Electricity and water are provided. None of the community members at Sylvester Village depended upon the project area for material sustenance (Boomsma T. , Laguna Seca: Indigenous Rights and Community Relations, 2015).

Gallon Jug School: Children from Sylvester Village and Chan Chich are transported to a school building on the property on the days that school is in session. This school serves approximately 75 children in grades K-8. There are teachers affiliated with the school that tend to the children

during school hours. There is no high school on or near the property for students who wish to continue (Boomsma, 2019).

2.3.15 Relevant Laws and Regulations Related to Worker's Rights (G3.11)

TFG complied with all applicable local, district, and national laws and labor standards. All employees were required to sign a contract that is witnessed by a Labor Officer. The contract informs them of their rights by referring to specific labor laws that govern the country of Belize. TFG followed all applicable environmental laws related to worker's rights in the sector, including the Belize Environmental Protection Act Chapter 328, Revised Editions 2000. TFG complied with the labor laws that are implemented in Belize and are described in Table 5. TNC and BMFT also comply with the laws described below.

Table 5. Relevant Labor Laws Applicable to Laguna Seca

Statute	Relevance and Compliance
International Labor Organization Conventions	Belize is a signatory to many of the International Labor Organization's conventions[12]. Those conventions are addressed in Belize labor laws. The ILO Conventions Act commits Belize to following the ILO conventions.
Labor Act and Labor (Subsidiary Laws) Chapter 297 of 2011 (Revised)	Addresses labor laws and regulations. Compliance with this law ensures that the project proponent and all other entities involved in project design and implementation are not involved in or complicit in any form of discrimination or sexual harassment with respect to the project.
Protection Against Sexual Harassment Act and Protection Against Sexual Harassment Commencement Act Order	Compliance for this law ensures that TFG provides protection against sexual harassment for employees and for the communities through awareness and training to employees on the laws that govern them.
Trade Unions Act, Trade Unions Regulations Trade Unions and Employers Organizations	Addresses the rights of workers to organize. Compliance involves informing workers of their right to unionize outlined in worker's agreements.
Belize Private Forests (Conservation) Act, Chapter 217,	This is a revised edition of the law, prepared by the Law Revision Commissioner under the authority of the Law Revision Act, Chapter 3 of the Laws of Belize, Revised Edition 1980 - 1990. Requires permit on private land to fell mahogany or cedar. Compliance involves obtaining permit for these species.

[12] See ILO web site at www.ilo.org

Statute	Relevance and Compliance
Revised Edition 2000	
Forests Act, Chapter 213, Revised Edition 2003 and Forests Act, Chapter 213S Forest Act - Subsidiary	Provides rights of the government to reserve land, regulate forest operations, and require royalties, as well as prohibit the import or export of wildlife and plants. A permit is required to acknowledge all necessary regulations as stipulated by the regulation.
Forest Fire Protection Act, Chapter 212, Revised Edition 2000	Addresses national forest fire protection program. Compliance includes training workers on fire safety and prevention on a regular basis and installing fire prevention measures in Laguna Seca.
Water and Sewage Act, Chapter 222	Defines riparian protection as "that the flow of the stream does not fall below the minimum quantity necessary to secure the interest of public health and the protection of the rights of riparian and other land-owners." (p. 46). Compliance involves maintaining minimum quantity flow of the stream and other water sources for water health.
Timber Industry Act, Chapter 341	Regulates sawmills and wood products. Sets export levy. Compliance requires permits to be obtained related to timber harvesting and extraction.
Land Utilization Act, Chapter 188.	The Minister may, for the better utilization of land, make regulations- to demarcate areas, water catchment areas or watersheds and prohibiting the clearing of any vegetation within those areas; to provide for such other measures as may be required to prevent soil erosion; restricting the construction of buildings within stipulated distances from the middle line of any road or street; to demarcate specific areas as special development areas and to stipulate the type of development that will be permitted within those areas; for the clearing of any forest or the felling of any trees; and to provide for all such other things as may be necessary for the better carrying out of the provisions of this Part of the Act. Compliance involves obtaining necessary permits for forest management plans.
National Institute of Culture and History Act, Chapter 331, Revised Edition 2000	This act addresses ex-post discovery of ancient artifacts or sites and prohibits the possession or destruction of artifacts without a permit. Regulates the disposition and care of Mayan artifacts. Ex ante permits are not required to clear land, however if sites are found they must be protected until a permit can be obtained to modify or destroy the site. Compliance involved identifying any sites of cultural significance and not performing land operations on them.

Statute	Relevance and Compliance
Environmental Protection Act Chapter 328 and Environmental Impact Assessment (Amendment) Regulations 2007.	The Environmental Protection Act establishes the Department of the Environment, addresses prevention and control of pollution, establishes a prohibition against dumping, and institutes the environmental impact assessment requirement. Powers of officers and penalties are established. Nutrient releases, investigation powers, and various administrative requirements and functions are addressed. Specific to the baseline scenario. All lands cleared over 300 acres in Belize are subject to the environmental impact assessment requirement based on the amended regulations promulgated in 2007. The Government of Belize recognizes that a situation exists, where this rule is not always applied under certain management plans approved and is working with the World Bank and others to close the loophole. This law has clearly not been a barrier to clearing land for other activities as evidenced by the extensive land clearing that has gone on in the country since 2001 when the law was first passed. Given the monumental effort Belize is undergoing to support agriculture and the national policy supporting the expansion of agriculture including technical, financial, and international development assistance, it is unlikely that any undo restriction would be placed on land clearing for agriculture if an EIA or study were required. If an EIA or environmental study were required, it would be conducted and approved given that no EIAs have been publicly declined. From this analysis, it is clear that the tropical hardwood component of the TFG property could have easily been converted legally to an agricultural plantation after performing the necessary EIA in accordance to generally accepted practices in Belize. The only caveat is that there should be a one-chain riparian buffer on either side of permanent streams (personal communication with the Ministry of Natural Resources and Environment, Belize). There are no property disputes within the Project area

Discrimination by gender, race, or ethnicity is both illegal in Belize and against the policy of TFG, TNC and BMFT. TFG took the following actions to eliminate the possibility of discrimination:

- Hiring advertisements include an explicit statement regarding discrimination to let potential applicants know that they are welcome to apply regardless of gender, race, or ethnicity.
- Managers were instructed in the importance of avoiding the act or the appearance of favoritism based on gender, race, or ethnicity.
- Hiring and promotions were reviewed for potential discrimination by human resources specialists and upper management in the US to confirm fair treatment of potential hires and staff eligible for promotion.

2.3.16 Occupational Safety Assessment (G3.12)

TFG met all local, district and national workplace standards and provided training to each new staff member upon hiring on the occupational safety management approaches. Besides local

labor laws being outlined and provided to each worker upon hiring, safety concerns are also discussed at this time to understand each individual's needs as it relates to the safety of their job, guaranteeing workplace safety according to Belizean Law. Risks to worker safety and activities used to mitigate are described in Table 6. Risks to Worker Safety and Mitigation Strategies.

Table 6. Risks to Worker Safety and Mitigation Strategies

Hazard	Safety strategy and equipment
Snake bites	• Provide access to a staff emergency medical technician • Helicopter evacuation is provided as required • First aid training and first aid kits are placed in all common areas • Adequate boots are provided to workers • Radios to contact in an emergency are provided to all workers • Minimum two person crews are established to enhance worker safety and security
Poachers	• Radios are provided to inform of poaching events or sightings • Minimum two person crews are established to enhance worker safety when encountering dangerous situations
Fire	• Staff emergency medical technician is available to workers • First aid kits are provided in common areas • Radios to contact in an emergency are provided to all workers • Gloves and eye protection for extreme heat events are provided to workers
Vehicle accidents	• Staff emergency medical technician is available to workers • Helicopter evacuation. • First aid training and First aid kits are provided in common areas • Radios to contact in an emergency are provided to all workers
Machete cuts	• First aid training and First aid kits are provided in common areas • Radios to contact in an emergency are provided to all workers • Minimum two person crews are established to enhance worker safety • Gloves and eye protection and boots are provided
Chainsaw cuts	• Staff emergency medical technician is available to workers • Helicopter evacuation is provided as required • First aid training and First aid kits are provided in common areas • Radios to contact in an emergency are provided to all workers Minimum two person crews. • Gloves and eye and ear protection and boots are provided • Adequate boots are provided
Lightning strike	• Develop procedures for avoiding lightning strikes • Radio

Sources: (Boomsma T. , Socio-economic assessment of YRCC Stakeholders-Including Laguna Seca, 2013) (Boomsma T. , Laguna Seca: Indigenous Rights and Community Relations, 2015) (Boomsma, 2019)

2.4 Management Capacity

During the majority of the monitoring period, until December 2020, the project was managed by TFG. The Forestland Group is an independent Timberland Investment Management Organization (TIMO). The Forestland Group is headquartered in Chapel Hill, North Carolina. They manage forests for a mix of institutional, foundation, endowment, and family office clients. TFG delivers large-scale climate change mitigation, strategic conservation outcomes, and portfolio returns through the ownership and management of working forests.

This project was managed by a local team under the Laguna Seca Land, LLC which was wholly owned by The Forestland Group, LLC.

2.4.1 Required Technical Skills (G4.2)

Key technical skills required to implement the program successfully include experience in developing and implementing carbon development programs that positively impact social and biodiversity elements of critical forest ecosystems. TFG has a proven track record of forest excellence in Forest Stewardship Conservation (FSC) certification. They have done meaningful work in biodiversity and community engagement.

Moving forward, TNC, BMFT and TGC are able to bring a more technical lens to the program and participate in enhancing the existing Program to provide increasing climate, community and biodiversity benefits in the area. TNC has an exceptional position in biodiversity conservation and community engagement and has shown success in program design, implementation, and management all over the world. TNC's focus on forest protection and biodiversity is a key technical contribution that enables the program to engage in exceptional wildlife monitoring and conservation, local species knowledge, and ability to run anti-poaching programs. TNC is also leading the program in stakeholder engagement and social impacts, which are enabled by its strong institutional and financing mechanisms that provide support for the program.

Terra Global Capital contributes key technical skills in greenhouse gas quantification, carbon measurement and monitoring, implementation of programs to stop deforestation and degradation, and providing critical contributions to financial mechanisms that help the program operate. TerraGlobal Capital and The Nature Conservancy work with the land manager, BMFT, in order to achieve the objectives of the verification of the second monitoring period.

2.4.2 Management Team Experience (G4.2)

2.4.2.1 The Nature Conservancy

The Nature Conservancy is a global environmental nonprofit which began in 1951 when leading scientists, committed citizens and dedicated leaders came together with a shared vision to protect and care for nature. It is now one of the most effective and wide-reaching environmental organizations in the world. Our mission is to conserve the lands and waters on which all life depends. Today, as we take on the most complex environmental challenges of our lives, our diverse staff, partners and members impact conservation across more than 70 countries and territories. The Nature Conservancy is a global environmental organization, headquartered in

Arlington, Virginia, United States. As of 2021 it works via affiliates or branches in 79 countries and territories.

Hamilton Hardman

Mr. Hardman joined the Conservancy in 2005, and is currently based in Virginia, USA, as *Sr. Advisor, Carbon Markets*. During his tenure with TNC, Mr. Hardman managed the development of the first VCS/CCB certified REDD project in Chile (Valdivian Coastal Reserve) and the development of the Conservancy's three VCS-certified reforestation projects in Louisiana, USA including the first VCS-certified grouped afforestation project on private lands in the United States. He has established numerous public and private sector partnerships to advance natural climate solutions, and currently serves on the Steering Committee for the Climate, Community and Biodiversity Standard. He holds an M.S. Conservation Biology and Sustainable Development (University of Maryland), EMBA (Georgetown University), M.S. (George Washington University), and B.A. (University of Virginia).

Roberto Pott, Carbon Specialist

Roberto started his career in terrestrial ecology and helped to install Belize's first carbon project in 1995. He is trained in avian ecology, phenology research, sustainable timber harvest operation, land management, eco-tourism and infrastructural development for parks and ecotourism. He worked on assessing land use change in the Selva Maya using remote sensing tools. Roberto is experienced with marine protected area design, planning and management, artisanal fisheries management and coastal development policy and advocacy. He has coordinated regional coral reef conservation efforts and climate change impacts mitigation in coastal Belize through Healthy Reefs Initiative, Mesoamerican Reef Fund and World Wildlife Fund. Roberto holds a Masters in Environmental Management working in terrestrial and marine resources management for over 15 years.

Julie Robinson, Director, Belize Program

Julie oversees the Belize Program which includes Carbon, Aquaculture and Fisheries programs. Recently, she worked to secure Belize's Blue Bond. Over the last twenty-five years, Julie has focused her work on marine research and conservation off the coast of Belize. Julie was integrally involved in the negotiating the land deal that secured over 100,00 hectares for the Belize Maya Forest, and the soon to be largest carbon project in the Belize and possibly in the region. Julie joined the Conservancy in 2006 and worked as the marine program manager, building research and management capacity of local partners. She has led multi-disciplinary planning and science teams and built partnerships across diverse sectors and disciplines including government, private sector and non-profit organizations. Julie's considers the approach of inclusive consultation crucial for cultivating and building consensus amongst resource users and managers. Julie has a BSc in Biology from the University of South Florida.

2.4.2.2 Belize Maya Forest Trust

The Belize Maya Forest Trust (BMFT) is a registered and incorporated not for profit, limited liability company formed in December 2020 under the Companies Act, Chapter 250 of the substantive laws of Belize, Revised Edition 2011. In August 2021, BMFT was also registered as a Non-governmental Organization (NGO) under the NGOs Act, Chapter 315 of the substantive laws of Belize, Revised Edition 2011, as amended. The BMFT was established as the trustee, manager, and steward for the Belize Maya Forest (BMF) that is protected in perpetuity for the people and Government of Belize as registered under the Trust Act, Chapter 202 of the Substantive Laws of Belize, Revised Edition 2011, as amended. The 236,000 acres of lowland tropical broadleaf forest

and associated wetlands that comprises the BMF were previously privately-owned and at risk of conversion to large-scale, mechanized agriculture. The Nature Conservancy (TNC) and partners worked to safeguard this highly biodiverse area that is home to all five cat species found in Belize, critically endangered Central American River turtle, endangered Baird's tapir, and many other species of local and global concern. The BMF also comprises the main watershed in Belize for the Rio Hondo, a binational watershed shared with Mexico. Together with the neighboring Rio Bravo Conservation and Management area, the BMF consolidates half a million acres of Belize's last remaining lowland forests and makes up 9% of the Belize's land territory. As the legal guardian and manager of the BMF, the BMFT has an already established protection program and is working with stakeholders from nine neighboring communities, academia, government, non-government, and private sectors to develop a conservation action plan that will allow it to define and implement additional programs. The BMFT currently has a Board of Trustees comprised of local and international Directors, a Managing Director and nine rangers. Its staff is expected to grow once the participatory process to develop the BMF conservation action plan is completed.

Elma Kay

Dr. Elma Kay is the first Managing Director of the Belize Maya Forest Trust, a non-governmental organization (NGO) entrusted with the stewardship and management of Belize's second largest private protected area, the Belize Maya Forest. Dr. Kay is also the co-founder of the University of Belize Environmental Research Institute where she previously served for a decade as both Science Director (Terrestrial) and Administrative Director. Dr. Kay is a biologist who combines 20 years of experience in research, teaching, administration, policy formulation and conservation in Belize and the Latin American/Caribbean region. As a leader and advocate for sound natural resources management in Belize, she has assisted the recent protection of more than a quarter million acres of the country's most threatened forests, in the Belize Maya Forest and Maya Forest Corridor. Dr. Kay has served in numerous regional and national councils, Boards and expert groups that include the Regional Executive of the Mesoamerican Society for Biology and Conservation, the Belize National Climate Change Committee, the Belize National REDD+ Technical Expert Group, the Protected Areas Conservation Trust Advisory Council and Board of Trustees, the National Steering Committee for the Global Environment Facility's Small Grants Programme, and others. Dr. Kay continues to mentor undergraduate and graduate students, young professionals and community-based conservation groups, and currently serves as the Chairperson of the Maya Forest Corridor Trust, Chairperson of Belize's Scientific Authority for the Convention on the International Trade in Endangered Species of Wild Fauna and Flora, Member of the Steering Committee of the Belize Network of NGOs, Board Director of the Silk Grass Wildlife Preserve and Vice President of Friends for Conservation and Development, co-manager of Belize's single largest National Park.

2.4.2.3 Terra Global Capital

Terra Global is the global leader in forest and land-use carbon advisory and finance. Terra was founded in 2006 to provide governments, NGOs and private companies with support for market and payment-for performance-based approaches that benefit rural communities. As proven innovators, Terra provides both technical advisory in the measurement and commercialization of emissions reductions and carbon finance through our dedicated Terra Bella Investment Fund and separately managed investment vehicles. Terra has established itself as a valued partner to a global client base by supporting the sustainable management of natural resources and through the development of rural livelihoods.

Leslie L. Durschinger - Founder, CEO

Conservation Finance, Sustainable Landscape Program Development

Leveraging 20 years of experience and a proven track record in the financial services industry, Ms. Durschinger founded Terra Global Capital in 2006 to promote results-based approaches to sustainable landscape management through climate smart agricultural and reducing deforestation. Ms Durschinger is recognized as a pioneer and innovator in alignment of development values and financially viable approaches to sustainable landscape management. Terra is now the leader in forest and agriculture program development, GHG analytics and business model development, providing technical expertise their global client base of governments, NGOs, and private companies in a collaborative and participatory manner. Under Durschinger's leadership Terra has structured risk mitigation instruments, trust funds and private equity funds to drive investment capital to sustainable agricultural production and forest management. Prior to Terra, Ms. Durschinger held senior management positions in the areas of derivatives trading, investment management, algorithmic trading, risk management, and securities lending. She the co-Chair of the International Emission Trading Associations Natural Capital Solutions working group, and is a member of the Verified Carbon Standard (VCS) AFOLU Steering Committee, REDD+ Social & Environmental Standards Committee, VCS JNR Permanence Work Group, Coalition on Agricultural Greenhouse (C-AGG) Advisory Committee and W+ Standard Advisory Council. Ms. Durschinger and her family make small production olive oil on their farm in Mendocino County. Among her previous employers are JP Morgan, Merrill Lynch, Barclays Global Investors and Charles Schwab.

Erica Meta Smith, M.F., RPF – Managing Director

Forestry, Field Training, GHG Quantification

Ms. Smith, M.F., RPF. Forest Carbon Field Development Specialist, Joined Terra Global Capital in 2009. Ms. Smith provides technical forestry knowledge, on-ground carbon quantification expertise, and specializes in forest mensuration programs. She has firsthand knowledge of a forestry-based income the experience of depending on natural resources as a livelihood. Before working with Terra Global Capital Ms. Smith worked in forest policy and on forestry technical operations. She received her undergraduate degree in forestry and Master of Forestry from University of California-Berkeley in 2005 and 2007. Her master's work reviewed California Climate Action Registry's Forestry Protocols and implications of carbon markets in California. Ms. Smith is a Certified Ecologist through the Ecological Society of America and a Registered Professional Forester in the State of California. Ms. Smith has worked extensively in the REDD+ sector training communities and working with in-country experts for excellence in MRV across Africa and Asia.

David Montoya González

Remote Sensing Analysis and GIS

Mr. Montoya has a widely experience in remote sensing and GIS. He holds a bachelor's degree in Forest Engineer from the National University of Colombia (UNAL) and a master's degree in remote sensing from Federal University of Rio Grande do Sul (UFRGS) – Brazil. Mr. Montoya has worked with multiple Colombian government entities, such as the national department of statistics (DANE), supporting the 3rd National Agricultural Census, and the National University of Colombia in research projects in the Andean Region, focused in geomorphometry, and in the Sibundoy Valley with the indigenous communities Inga and Kamentsá analyzing the land cover changes and natural resources sustainability. Mr. Montoya has also worked in the private sector developing GHG assessments and quantification in Latin America,, Australia and the United States.

Krysla Grothe, M.S., Program Manager

Natural Resource and Climate Change Mitigation Program Manager

Ms. Grothe is a natural resource and climate-smart agriculture specialist focusing on improving economic and environmental outcomes through innovative, market-based approaches, and evidence-based policy and program implementation. She holds a bachelor's in science in international agricultural development from University of California, Davis, a master's in science in global health policy and management, and a masters in sustainable international development from Brandeis University. With 9+ years of experience in sustainable agricultural and climate change mitigation program implementation in Asia, Africa, and Latin America, she has led projects to be effective through building meaningful partnerships among various stakeholder groups and leveraging indigenous knowledge into program design. Prior to working with Terra Global, Ms. Grothe worked for MIT's Development Lab (D-Lab) researching participatory action and humanitarian innovation design methods and analysis. Utilizing complex policy and market-based strategy and supporting gender and racial equity through participatory program design, she is effective at strengthening strategic focus by using evidence-based methodologies to advance program development for improved socio-economic and environmental outcomes.

2.4.3 Project Management Partnerships/Team Development (G4.2)

The Forestland Group held extensive experience in FSC certification and management of their program for the three-legged-stool-of-sustainability (Social, Environmental, and Economic). They have a proven track record in forest excellence and have contributed greatly to implementing the program for this purpose. They did however lack specific technical expertise in to maintain the climate, community, and biodiversity standards that the Program aimed to hold. For this reason, TNC and TGC have become engaged in Program management, implementation, and support to carry the Program through this verification and document exceptional climate, community and biodiversity benefits. TNC is moving into the next phase of the Program with much more of the required technical skills that will enable the Program to be successful in achieving CCB verification. The Program herein has all the partnership needed to make this program successful and where new activities would require new technical or key expertise, the Program is able to source them.

2.4.4 Financial Health of Implementing Organization(s) (G4.3)

The Nature Conservancy is a global leader in conservation and is involved in more than 70 countries and territories around the world. TNC's financial statements are available online and can be found at; https://www.nature.org/en-us/about-us/who-we-are/accountability/annual-report/. This project, which has been purchased along with the larger Belize Maya Forest Area will share the on-going maintenance costs, which will be covered, in part, through the sale of VCUs. For this project, a detailed financial analysis was created to understand the financial stability and is presented in the Non-Permanence Risk Report.

2.4.5 Avoidance of Corruption and Other Unethical Behavior (G4.3)

All the formation documents and agreements that are put in place the support the Program include requirements that participants conduct the operations of the Program in an ethical manner and without corruption. TFG has a history of compliance with applicable local, district, and national labor standards. All employees hired by TFG committed to not be involved in any form of corruption such as bribery, embezzlement, fraud, favoritism, cronyism, nepotism, extortion, and

collusion. TFG also successfully passed the verification audit in 2015 indicating that they had complied with the laws surrounding corruption. TNC has an anti-corruption policy which also applies to BMFT.

2.4.6 Commercially Sensitive Information (*Rules* 3.5.13 – 3.5.14)

The annexes listed in (Appendix 3: Additional Information) indicate what data and information are commercially sensitive.

2.5 Legal Status and Property Rights

2.5.1 Recognition of Property Rights (G5.1)

The Forestland Group (TFG) purchased this property in 2008, and it was sold to BMFT in December 2020. TFG owned the property in fee simple. Fee simple ownership in Belize represents absolute ownership of real property. Titles have been provided and reviewed by auditors during verification of the project in 2016.

Copies of the current land titles for the Laguna Seca program are available for review by the auditors of the project. Legal rights to the Laguna Seca property in Belize include all potential development and use rights, with the exception of mineral extraction. Project area rights during the monitoring period, until December 2020, were held with TFG. Rights to changes in land use, including impacts on carbon pools were owned fee simple by The Forestland Group.

2.5.2 Free, Prior and Informed Consent (G5.2)

Based on social assessments that interviewed various stakeholders related to the Laguna Seca property in 2014, 2015 and 2019 (Boomsma T. , Laguna Seca: Indigenous Rights and Community Relations, 2015) (Boomsma T. , 2013) (Boomsma, 2019) none of the neighboring stakeholders mentioned the project encroaching on private, community or government property in its operations. Therefore, it can be determined that the Project does not encroach upon private property, community property, or government property. The property is privately held, and no additional approvals are required from the Government of Belize or the local communities to conduct project activities. A license was required to sell timber and that license was premised on TFG's forest management plan, which was approved, and the license granted. The property has not been associated with any Maya communal land claims. There are no current land disputes regarding the project area. For properties who are affected by the selective logging operations that have occurred, TFG obtained consent from these neighboring properties and maintained communication to learn of grievances and complaints that developed.

2.5.3 Property Right Protection (G5.3)

During the first verification and validation of this project, the project document developers verified by direct observation that the Project area did not have human inhabitants and that no involuntary migration occurred due to project activities. It was further observed that the Project did not involve any form of relocation or inward migration of any populations. I

2.5.4 Identification of Illegal Activity (G5.4)

Protecting the forest from illegal activities on the property was one of the main objectives of TFG. Project activities included regular patrols to address illegal hunting, timber poaching, and wood

gathering in the project area. During the 2014 social assessment, a series of activities were planned to prevent further illegal activity in the area. This included facilitating discussions and coordinating across neighbors to regularly monitor and patrol to mitigate the activities. There was put in place a gate policy that was formalized and shared with various stakeholders, including the monitoring of visitors. Signs were placed along vulnerable borders with neighboring stakeholders indicating the ownership of the land and points of entry. Field crews were instructed be to alert and patrol for illegal activities, particularly near archaeological remains and to report any incidents or evidence. Data was maintained through patrols and analyzed regularly to determine where the vulnerable areas for illegal activities were found to be. Concentration of patrols was then directed to these areas. Strict control of hunting was enforced and there was no evidence found during verification of 2016 that these illegal activities were occurring at a significant rate (Boomsma T. , 2013).

2.5.5 Ongoing Disputes (G5.5)

There are no on-going disputes of property rights in the project area, thus there is no activity that could prejudice the outcome.

2.5.6 National and Local Laws (G5.6)

The national and local laws that are relevant to the project activities are described in detail in Table 7. National and Local Laws Relevant to Laguna Seca.

Table 7. National and Local Laws Relevant to Laguna Seca

Law or Regulation	Relevance and Compliance
Belize Private Forests (Conservation) Act, Chapter 217, Revised Edition 2000	This is a revised edition of the law, prepared by the Law Revision Commissioner under the authority of the Law Revision Act, Chapter 3 of the Laws of Belize, Revised Edition 1980 - 1990. Requires permit on private land to fell mahogany or cedar. Compliance involves obtaining permit for these species.
Forests Act, Chapter 213, Revised Edition 2003 and Forests Act, Chapter 213S Forest Act - Subsidiary	Provides rights of the government to reserve land, regulate forest operations, and require royalties, as well as prohibit the import or export of wildlife and plants. A permit is required to acknowledge all necessary regulations as stipulated by the regulation.
Forest Fire Protection Act, Chapter 212, Revised Edition 2000	Addresses national forest fire protection program. Compliance includes training workers on fire safety and prevention on a regular basis and installing fire prevention measures in Laguna Seca
Water and Sewage Act, Chapter 222	Defines riparian protection as “that the flow of the stream does not fall below the minimum quantity necessary to secure the interest of public health and the protection of the rights of riparian and other land-owners.” (p. 46). Compliance involves maintaining minimum quantity flow of the stream and other water sources for water health.

Law or Regulation	Relevance and Compliance
Timber Industry Act, Chapter 341	Regulates sawmills and wood products. Sets export levy. Compliance requires permits to be obtained related to timber harvesting and extraction.
Land Utilization Act, Chapter 188.	The Minister may, for the better utilization of land, make regulations- to demarcate areas, water catchment areas or watersheds and prohibiting the clearing of any vegetation within those areas; to provide for such other measures as may be required to prevent soil erosion; restricting the construction of buildings within stipulated distances from the middle line of any road or street; to demarcate specific areas as special development areas and to stipulate the type of development that will be permitted within those areas; for the clearing of any forest or the felling of any trees; and to provide for all such other things as may be necessary for the better carrying out of the provisions of this Part of the Act. Compliance involves obtaining necessary permits for forest management plans.
National Institute of Culture and History Act, Chapter 331, Revised Edition 2000	This act addresses ex post discovery of ancient artifacts or sites and prohibits the possession or destruction of artifacts without a permit. Regulates the disposition and care of Mayan artifacts. Ex ante permits are not required to clear land, however if sites are found they must be protected until a permit can be obtained to modify or destroy the site. Compliance involved identifying any sites of cultural significance and not performing land operations on them.
Environmental Protection Act Chapter 328 and Environmental Impact Assessment (Amendment) Regulations 2007.	The Environmental Protection Act establishes the Department of the Environment, addresses prevention and control of pollution, establishes a prohibition against dumping, and institutes the environmental impact assessment requirement. Powers of officers and penalties are established. Nutrient releases, investigation powers, and various administrative requirements and functions are addressed. Specific to the baseline scenario, all lands cleared over 300 acres in Belize are subject to the environmental impact assessment requirement based on the amended regulations promulgated in 2007. The Government of Belize recognizes that a situation exists, where this rule is not always applied under certain management plans approved and is working with the World Bank and others to close the loophole. This law has clearly not been a barrier to clearing land for other activities as evidenced by the extensive land clearing that has gone on in the country since 2001 when the law was first passed. Given the monumental effort Belize is undergoing to support agriculture and the national policy supporting the expansion of agriculture including technical, financial, and international development assistance, it is unlikely that any undo restriction would be placed on land clearing for agriculture if an EIA or study were required. If an EIA

Law or Regulation	Relevance and Compliance
	or environmental study were required, it would be conducted and approved given that no EIAs have been publicly declined. From this analysis, it is clear that the tropical hardwood component of the TFG property could have easily been converted legally to an agricultural plantation after performing the necessary EIA in accordance to generally accepted practices in Belize. The only caveat is that there should be a one-chain riparian buffer on either side of permanent streams (personal communication with the Ministry of Natural Resources and Environment, Belize). There are no property disputes within the Project area.

3 CLIMATE

3.1 Monitoring GHG Emission Reductions and Removals

3.1.1 Data and Parameters Available at Validation

Data Unit / Parameter:	*Project Forest Cover Benchmark Map*
Data unit:	Ha, minimum mapping unit 1 ha.
Description:	Map showing the location of forest land within the reference region at the beginning of the project crediting period
Source of data:	Remote sensing in combination with GPS data collected during ground-reference.
Value applied:	See map graphic in Section 5.1 of the PD.
Justification of choice of data or description of measurement methods and procedures applied:	Map accuracy tested and found to be 95.1%. Accuracy by class included in Appendix A. Methods described in Appendix A.
Purpose of Data:	Calculation of baseline emissions.
Comment:	

Data Unit / Parameter:	*u*

Data unit:	List of post deforestation land uses.
Description:	The intended use of land deforested either in the project area or leakage area.
Source of data:	Based on the deforestation plan for the baseline.
Value applied:	1 use: sugar cane
Justification of choice of data or description of measurement methods and procedures applied:	According to the methodology the approved baseline deforestation plan defines the post deforestation land use. That land use is the land use monitored in the leakage belt.
Purpose of Data:	Calculation of baseline emissions.
Comment:	

Data Unit / Parameter:	*i*
Data unit:	List of strata
Description:	Forest vegetation strata based on statistical analysis described in XSTR.
Source of data:	Remote sensing and inventory data.
Value applied:	1
Justification of choice of data or description of measurement methods and procedures applied:	Based on comparison of inventory data permanent plots. Two possible strata (bajo and high forest) were identified and compared, and the statistical difference was too minor to justify separate strata.
Purpose of Data:	Calculation of baseline emissions.
Comment:	

Data Unit / Parameter:	*t*
Data unit:	Years

Description:	Number of years in the project.
Source of data:	Minimum number of years required to pass risk assessment is 30 years.
Value applied:	30
Justification of choice of data or description of measurement methods and procedures applied:	Based on methodology and standard and preference of Project Proponent.
Purpose of Data:	Calculation of baseline emissions.
Comment:	Calculations for validation are based on the first baseline period of 10 years. *t* is set to 7 for the purposes of this monitoring period.

Data Unit / Parameter:	$A_{planned,i}$
Data unit:	Ha
Description:	Total area of planned deforestation over the baseline period for stratum i
Source of data:	Validated deforestation plan.
Value applied:	8,240 ha total for 10 years; 7 * 824/year or 5,768 ha for monitoring period.
Justification of choice of data or description of measurement methods and procedures applied:	Based on validated deforestation plan.
Purpose of Data:	Calculation of baseline emissions.
Comment:	

Data Unit / Parameter:	$AA_{planned,i,t}$
Data unit:	Ha
Description:	Area of planned deforestation in the project area for stratum *i* at time *t*

Source of data:	Validated deforestation plan.
Value applied:	824 ha/year for 10 years. Seven years addressed in this report.
Justification of choice of data or description of measurement methods and procedures applied:	Based on validated deforestation plan.
Purpose of Data:	Calculation of baseline emissions.
Comment:	

Data Unit / Parameter:	$A_{Enh,PL,i,t}$
Data unit:	Ha
Description:	Project area in stratum *i* in which carbon stocks are accumulating but that would have undergone planned deforestation in the baseline scenario at time *t*; ha
Source of data:	Validated deforestation plan. Three years addressed in this report.
Value applied:	824 ha/year for 10 years.
Justification of choice of data or description of measurement methods and procedures applied:	Based on validated deforestation plan.
Purpose of Data:	Calculation of project emissions.
Comment:	

Data Unit / Parameter:	$D\%_{planned,i,t}$
Data unit:	% year
Description:	Projected annual proportion of land that will be deforested in stratum *i* during year *t*
Source of data:	Validated deforestation plan.
Value applied:	10%/year

Justification of choice of data or description of measurement methods and procedures applied:	Based on validated deforestation plan.
Purpose of Data:	Calculation of baseline emissions.
Comment:	

Data Unit / Parameter:	$C_{BSL,planned}$
Data unit:	tCO_2e
Description:	Net greenhouse gas emissions in the baseline from planned deforestation.
Source of data:	Calculated based on equations in Section 4.1.
Value applied:	2,887,000 for the life of the project.
Justification of choice of data or description of measurement methods and procedures applied:	Per methodology for planned deforestation
Purpose of Data:	Calculation of baseline emissions.
Comment:	

Data Unit / Parameter:	$C_{BSL,i,t}$
Data unit:	tCO_2e ha-1
Description:	Carbon stock in all pools in the baseline in stratum *I* at time *t*
Source of data:	Calculated based on equations in Section 5.6 of the PD.
Value applied:	Annual values provided in Table 11 of the PD.
Justification of choice of data or description of measurement methods and procedures applied:	Per methodology for planned deforestation

Purpose of Data:	Calculation of baseline emissions.
Comment:	

Data Unit / Parameter:	$GHG_{BSL-E,l,t}$
Data unit:	tCO_2e ha-1
Description:	GHG emissions other than from carbon stock change in the baseline in stratum *i* at time *t*
Source of data:	Calculated based on equations in Section 5.6.of the PD.
Value applied:	Annual values provided in Table 11 of the PD.
Justification of choice of data or description of measurement methods and procedures applied:	Per methodology for planned deforestation.
Purpose of Data:	Calculation of baseline emissions.
Comment:	Nitrogen fertilizer use and fossil fuel use are conservatively excluded pools in the baseline and project. This parameter only includes biomass burning.

Data Unit / Parameter:	$L\text{-}D_i$
Data unit:	%
Description:	Likelihood of deforestation in strata *i*
Source of data:	Validated deforestation plan.
Value applied:	100%
Justification of choice of data or description of measurement methods and procedures applied:	Based on validated sugarcane plan (Gallon Jug Agroindustries 2010), common practice review, financial additionality comparison with other feasible land use practices, and documentary evidence of planning.
Purpose of Data:	Calculation of baseline emissions.

Comment:	

Data Unit / Parameter:	$E_{BiomassBurn,i,t}$
Data unit:	tCO_2e
Description:	Non-CO_2 emissions due to biomass burning that results in deforestation in stratum *i* in year *t* (tCO2e)
Source of data:	Calculated based on equations in Section 5.6. of the PD.
Value applied:	Annual values provided in Table 11 of the PD.
Justification of choice of data or description of measurement methods and procedures applied:	Methods are described in "Estimation of greenhouse gas emissions from biomass burning (E-BPB)".
Purpose of Data:	Calculation of baseline emissions.
Comment:	

Data Unit / Parameter:	$B_{i,t}$
Data unit:	t d.m./ha
Description:	Average aboveground biomass stock before burning stratum *i*, year (t d.m. ha^{-1})
Source of data:	Field inventory
Value applied:	165.8
Justification of choice of data or description of measurement methods and procedures applied:	Inventory described fully elsewhere. Field methods and calculations follow CP-AB and BL-PL following techniques described in Pearson et.al. (2005).
Purpose of Data:	Calculation of baseline emissions.
Comment:	

Data Unit / Parameter:	GWP_g
Data unit:	tCO_2e
Description:	Global warming potential for gas *g* (tCO2/t gas g)
Source of data:	IPCC https://www.ipcc.ch/publications_and_data/ar4/wg1/en/ch2s210-2.html
Value applied:	310 for nitrous oxide and 21 for methane
Justification of choice of data or description of measurement methods and procedures applied:	Methodology instructions.
Purpose of Data:	Calculation of baseline emissions.
Comment:	

Data Unit / Parameter:	$COMF_i$
Data unit:	unitless
Description:	Combustion factor for stratum i (unitless)
Source of data:	Default values in Table 2.6 of IPCC, 2006 (Appendix 2)
Value applied:	0.5
Justification of choice of data or description of measurement methods and procedures applied:	The combustion factor is a measure of the proportion of the fuel that is actually combusted, which varies as a function of the size and architecture of the fuel load (ie, a smaller proportion of large, coarse fuel such as tree stems will be burnt compared to fine fuels, such as grass leaves), the moisture content of the fuel and the type of fire (ie, intensity and rate of spread). Default values must be updated whenever new guidelines are produced by the IPCC.
Purpose of Data:	Calculation of baseline emissions.

Comment:	

Data Unit / Parameter:	$G_{g,i}$
Data unit:	kg t^{-1}d.m. burnt
Description:	Emission factor for stratum i for gas g (kg t^{-1} d.m. burnt)
Source of data:	Defaults can be found in Volume 4, Chapter 2, of the IPCC 2006 Inventory Guidelines in table 2.5 (see Appendix 2: emission factors for various types of burning for CH4 and N2O)
Value applied:	6.8 for CH_4 and 0.2 for N_2O
Justification of choice of data or description	Defaults can be found in Volume 4, Chapter 2, of the IPCC 2006 Inventory Guidelines in table 2.5 (see Appendix 2: emission factors
of measurement methods and procedures applied:	for various types of burning for CH4 and N2O). Default values must be updated whenever new guidelines are produced by the IPCC.
Purpose of Data:	Calculation of baseline emissions.
Comment:	

Data Unit / Parameter:	*g*
Data unit:	unitless
Description:	List of greenhouse gases included in analysis
Source of data:	Methodology
Value applied:	CH_4 and N_2O
Justification of choice of data or description of measurement methods and procedures applied:	As indicated in methodology. CO_2 emissions from biomass burning excluded in this analysis, but included in analysis of biomass change as a result of burning.
Purpose of Data:	Calculation of baseline emissions.
Comment:	

Data Unit / Parameter:	$C_{AB\_tree,i}$,
Data unit:	tCO_2e ha-1
Description:	Carbon stock in aboveground biomass in trees in the baseline case in stratum *i.*
Source of data:	Field measurements applied with allometric equation published in Pearson et. al. (2005)
Value applied:	Annual values presented in Table 11 of the PD.
Justification of choice of data or description of measurement methods and procedures applied:	Computer and spreadsheet software. Additional equipment required for field data collection.
Purpose of Data:	Calculation of baseline emissions.
Comment:	Key variable used to calculate with project carbon stocks

Data Unit / Parameter:	$C_{BB,tree,i}$,
Data unit:	tCO_2e ha-1
Description:	Carbon stock in belowground biomass in trees in the baseline case in stratum *i.*
Source of data:	Field measurements applied at plot level with root to shoot equation
Value applied:	Annual values presented in Table 4.
Justification of choice of data or description of measurement methods and procedures applied:	Not measured. Calculated based on root to shoot ratio. For belowground biomass, the root-to-shoot ratios indicated in the methodology CP-AB was used which results in a ratio of .24 for plots with a mean aboveground biomass of 125 tons/ha or greater and a ratio of .2 for plots indicating a mean aboveground biomass of less than 125 tons/ha.
Purpose of Data:	Calculation of baseline emissions.
Comment:	

Data Unit / Parameter:	$C_{AB\_non\text{-}tree,i}$,
Data unit:	tCO_2e ha-1
Description:	Carbon stock in aboveground biomass in nontrees in the baseline case in stratum *i.*
Source of data:	Dewalt and Chave (2004)
Value applied:	Annual values presented in Table 11 of the PD.
Justification of choice of data or description of measurement methods and procedures applied:	Methodology permits use of peer-reviewed literature that is appropriate to the species in the project area or to the geographic region, elevation and precipitation regime in the project area. Data from study areas in Costa Rica and Panama averaged.
Purpose of Data:	Calculation of baseline emissions.
Comment:	

Data Unit / Parameter:	$C_{BB,non\text{-}tree,i}$,
Data unit:	tCO_2e ha-1
Description:	Carbon stock in belowground biomass in nontrees in the baseline case in stratum *i.*
Source of data:	Dewalt and Chave (2004)
Value applied:	Annual values presented in Table 11 of the PD.
Justification of choice of data or description of measurement methods and procedures applied:	Not measured. Calculated based on root to shoot ratio. For belowground biomass, the root-to-shoot ratios indicated in the methodology CP-AB was used which results in a ratio of .24 for plots with a mean aboveground biomass of 125 tons/ha or greater and a ratio of .2 for plots indicating a mean aboveground biomass of less than 125 tons/ha.
Purpose of Data:	Calculation of baseline emissions.
Comment:	

Data Unit / Parameter:	$fj(X,Y)$

Data unit:	Functions return AGB tree^{-1}
Description:	Allometric equation for aboveground and belowground biomass. Dry matter estimate is calculated for each tree at each plot within each strata and carried over time. Sum of dry matter estimates generate sum for plot. Mean of plots result in dry matter estimate for project.
Source of data:	Pearson et. al. (2005) and Brown (2015)
Value applied:	The equations used are: Aboveground Tree Biomass: AGB = 0.2035 * DBH$^{2.3196}$ Palm aboveground biomass (AGB) from Brown 2015: Chrysophylla stauracantha : AGB = ((0.8966 * H) – 0.37988) Attalea cohune: AGB = (302.6 * ln(H)) + 276.93) Sabal mauritiiformis: AGB = (302.6 * ln(H)) + 276.93) Belowground Biomass: If AGB is > 125 t/ha then BGB = AGB x .24 else BGB = AGB x .2
Justification of choice of data or description of measurement methods and procedures applied:	Pearson equation was an acceptable fit based on independent test as prescribed in methodology. Allometric validation conducted on equation comparing largest tree at each plot against hypothetical biomass (volume * D) and found to predict 67.5% higher than test and 32.5% lower than hypothetical biomass. Brown (2015) equations developed at contiguous site on the three species in inventory.
Purpose of Data:	Calculation of baseline emissions.
Comment:	

Data Unit / Parameter:	*R*
Data unit:	t root d.m. t -1 shoot d.m.
Description:	Root to shoot ratio appropriate to species or forest type / biome.
Source of data:	IPCC GL AFOLU per methodology
Value applied:	.24 when 125 tons/ha AGB or greater is indicated and .2 when less than 125 tons/ha.

Justification of choice of data or description of measurement methods and procedures applied:	Required by methodology.
Purpose of Data:	Calculation of baseline emissions.
Comment:	

Data Unit / Parameter:	$D_{,tree}$
Data unit:	g/cm^3
Description:	Density of dry wood for each species
Source of data:	Published source; Zanne et. al. 2009.
Value applied:	See database of tree measurements.
Justification of choice of data or description of measurement methods and procedures applied:	Required by methodology to test allometric equations. Must be reviewed at baseline reset.
Purpose of Data:	Calculation of baseline emissions.

Comment:	D was applied using the reference in all but 22 trees in the initial inventory. If the species was listed from Mexico or Central America (CA) that value was used. If there were multiple values, they were averaged. If values weren't available from Mexico/CA then the South America values were used, again averaging if necessary. If the species wasn't available, the Genus was averaged. If the Genus wasn't available, the Family was averaged. The decision criteria in order of precedence: 1. Species-M,CA 2. Species-SA 3. Genus-M,CA 4. Genus-SA 5. Family-M,CA 6. Family-SA Trees where D could not be determined were assigned a value of .651 based on the lower 95% confidence limit of the mean of the remaining trees that could be identified, weighted by frequency. Weighting by frequency is employed to take into account the patchy nature of tree distribution that is evident in the inventory data, and the presumption that unidentified trees are most likely to be species already identified elsewhere in the inventory.

Data Unit / Parameter:	D_{mn}
Data unit:	g/cm^3
Description:	Mean wood density of commercially harvested species.
Source of data:	Published source; Zanne et. al. (2009). Used mean of D for
	commercial species listed in sustainable forest management plan (Cho 2007) and found in inventory.
Value applied:	0.712
Justification of choice of data or description of measurement methods and procedures applied:	Required by methodology. See parameter $D_{,tree}$ for explanation of data priorities.
Purpose of Data:	Calculation of baseline emissions.
Comment:	

Data Unit / Parameter:	*CF*

Data unit:	t C t-1 d.m.
Description:	Carbon fraction of dry matter
Source of data:	
Value applied:	.47
Justification of choice of data or description of measurement methods and procedures applied:	Based on published value (IPCC 2006).
Purpose of Data:	Calculation of baseline emissions.
Comment:	

Data Unit / Parameter:	$Ht_{,tree,i,}$
Data unit:	meters
Description:	Height of the tree from the ground based on measurements with a clinometer or other device. See monitoring plan for field methods.
Source of data:	Field measurements
Value applied:	See database of tree measurements.
Justification of choice of data or description of measurement methods and procedures applied:	See field methods section of monitoring plan. Must be monitored at least every 5 years or if verification occurs on a frequency of less than every 5 years examination must occur prior to any verification event.
Purpose of Data:	Calculation of baseline emissions.
Comment:	This variable is collected, but not necessary for allometric equation used. This variable is used to validate the allometric equation.

Data Unit / Parameter:	$DBH_{,tree,i,}$

Data unit:	Cm
Description:	Diameter at 1.3 meters above the ground of each tree on each plot.
Source of data:	Field measurements. See procedures for measurement in the monitoring plan.
Value applied:	See database of tree measurements.
Justification of choice of data or description of measurement methods and procedures applied:	Required by methodology. See field methods section of monitoring plan. Must be monitored at least every 5 years or if verification occurs on a frequency of less than every 5 years examination must occur prior to any verification event.
Purpose of Data:	Calculation of baseline emissions.
Comment:	

Data Unit / Parameter:	$SLFt_y$
Data unit:	Fraction of wood products that will be emitted to the atmosphere within 5 years of production by class of wood product.
Description:	Winjum et. al. (1998) give the following proportions for wood products with short-term (<5 yr) uses after which they are retired and oxidized (applicable internationally). In Belize there are no markets for products other than Sawnwood therefore SLF = 0.2 as indicated.
Source of data:	CP-W 1.1 and Winjum et. al. (1998).
Value applied:	0.2
Justification of choice of data or description of measurement methods and procedures applied:	Per methodology.
Purpose of Data:	Calculation of baseline emissions.
Comment:	

Data Unit / Parameter:	OF_{ty}
Data unit:	dimensionless
Description:	Fraction of wood products that will be emitted to the atmosphere between 5 and 100 years of timber harvest by class of wood product ty; dimensionless
Source of data:	CP-W 1.0 methodology
Value applied:	0.84
Justification of choice of data or description	Winjum et al. (1998) gives annual oxidation fractions for each class of wood products split by forest region (boreal, temperate and tropical).
of measurement methods and procedures applied:	This methodology projects these fractions over 95 years to give the additional proportion (OF value) that is oxidized between the 5th and 100th years after initial harvest. Based on sawnwood and tropical regions, the value provided is .84.
Purpose of Data:	Calculation of baseline emissions.
Comment:	Note that this parameter was inadvertently omitted in CP-W 1.1 and the value from CPW 1.0 is used.

Data Unit / Parameter:	*WWty*
Data unit:	WW = Fraction of extracted biomass effectively emitted to the atmosphere during production by class of wood product ty
Description:	Winjum et al. (1998) indicate that the proportion of extracted biomass that is oxidized (burning or decaying) from the production of commodities to be equal to 19% for developed countries, 24% for developing countries. WW is therefore equal to 0.24 for Belize.
Source of data:	CP-W 1.1 and Winjum et. al. (1998).
Value applied:	.24
Justification of choice of data or description of measurement methods and procedures applied:	Per methodology.
Purpose of Data:	Calculation of baseline emissions.

Comment:	

Data Unit / Parameter:	*ty*
Data unit:	Class of wood product
Description:	Per CP-W methodology classes are defined as sawnwood, woodbased panels, other industrial roundwood, paper and paper board, and other.
Source of data:	CP-W 1.1
Value applied:	sawnwood
Justification of choice of data or description of measurement methods and procedures applied:	Based on inspection of the mill and sales records only one product class can be produced.
Purpose of Data:	Calculation of baseline emissions.
Comment:	

Data Unit / Parameter:	G_{gi}
Data unit:	g kg^{-1} dry matter burnt
Description:	Emission factor for stratum *i* for gas *g*,
Source of data:	Defaults can be found in Volume 4, Chapter 2, of the IPCC 2006 Inventory Guidelines in table 2.5 (see Annex 2: emission factors for various types of burning for CH_4 and N_2O).
Value applied:	6.8 for CH_4 and .2 for N_2O
Justification of choice of data or description of measurement methods and procedures applied:	Methodology requirement.
Purpose of Data:	Calculation of baseline emissions.
Comment:	Default values shall be updated whenever new guidelines are produced by the IPCC

Data Unit / Parameter:	$C_{XB,i}$
Data unit:	tCO_2e ha-1
Description:	Mean stock of extracted biomass carbon by class of wood product ty from stratum i; tCO_2e ha-1
Source of data:	Calculated in CP-W based on merchantable volume estimated on project area from inventory.
Value applied:	10.64
Justification of choice of data or description of measurement methods and procedures applied:	Best available data is recent inventory. Merchantability standards and species based on sustainable forest management plan that is the basis for license to sell timber from property. BCEF based on methodology default. $Pcom_i$ based on commercial volume percentage of total volume.
Purpose of Data:	Calculation of baseline emissions.
Comment:	

Data Unit / Parameter:	$C_{XB,ty,i}$
Data unit:	$tCO_2e\ ha^{-1}$
Description:	Mean stock of extracted biomass carbon by class of wood product *ty* from stratum i; $tCO_2e\ ha^{-1}$
Source of data:	Methodology default
Value applied:	10.64
Justification of choice of data or description of measurement methods and procedures applied:	Stock of extracted biomass based on inventory data, and merchantability standards in sustainable forest management plan. Presumes only one product, sawnwood, based on mill capabilities and sales records.
Purpose of Data:	Calculation of baseline emissions.
Comment:	

Data Unit / Parameter:	$C_{WP,i}$
Data unit:	$tCO_2e\ ha^{-1}$
Description:	Carbon stock entering the wood products pool from stratum i; $tCO_2e\ ha_{-1}$
Source of data:	Calculated in CP-W based on merchantable volume estimated on project area from inventory.
Value applied:	0
Justification of choice of data or description of measurement methods and procedures applied:	Best available data is recent inventory. Merchantability standards and species based on sustainable forest management plan that is the basis for license to sell timber from property. WWty based on methodology default.
Purpose of Data:	Calculation of baseline emissions.
Comment:	

Data Unit / Parameter:	$C_{WP,i,t}$
Data unit:	$tCO_2e\ ha^{-1}$
Description:	Carbon stock entering the wood products pool from stratum i; $tCO_2e\ ha^{-1}$ in year t
Source of data:	Calculated in CP-W based on merchantable volume estimated on project area from inventory. Values by year are found in the PD Table 14.
Value applied:	Varies by year based on requirement to apply 1/20 each year for 20 years. Table by year in Section 5.6 of the PD.
Justification of choice of data or description of measurement methods and procedures applied:	Best available data is recent inventory. Merchantability standards and species based on sustainable forest management plan that is the basis for license to sell timber from property. WWty based on methodology default.
Purpose of Data:	Calculation of baseline emissions.
Comment:	

Data Unit / Parameter:	$C_{WP100,i}$
Data unit:	$tCO_2e\ ha^{-1}$
Description:	Carbon stock entering the wood products pool at the time of deforestation that is expected to be emitted over 100-years from stratum i; $tCO_2e\ ha^{-1}$
Source of data:	Calculated in CP-W based on merchantable volume estimated on project area from inventory.
Value applied:	7.05
Justification of choice of data or description of measurement methods and procedures applied:	Best available data is recent inventory. Merchantability standards and species based on sustainable forest management plan that is the basis for license to sell timber from property. SLF_{ty} and OF_{ty} based on methodology defaults.
Purpose of Data:	Calculation of baseline emissions.
Comment:	

Data Unit / Parameter:	*BCEF*
Data unit:	unitless
Description:	Biomass conversion and expansion factor (BCEF) for conversion of merchantable volume to total aboveground tree biomass; dimensionless
Source of data:	Methodology default
Value applied:	2.8
Justification of choice of data or description of measurement methods and procedures applied:	BCEF from IPCC 2006 is 4 (humid tropical forests with commercial volumes from 11-20 based on inventory data: 11.09 m3/ha).
Purpose of Data:	Calculation of baseline emissions.
Comment:	

Data Unit / Parameter:	$Pcom_i$
Data unit:	dimensionless
Description:	Commercial volume as a percent of total aboveground volume in stratum i; dimensionless
Source of data:	Methodology default
Value applied:	10.42%
Justification of choice of data or description of measurement methods and	$Pcom_i$ is based on the ratio of total commercial volume to aboveground tree volume based on inventory data.
procedures applied:	
Purpose of Data:	Calculation of baseline emissions.
Comment:	

Data Unit / Parameter:	$\Delta C_{BSL,i,t}$
Data unit:	tCO_2e ha-1
Description:	Net greenhouse gas emissions in the baseline from planned deforestation in stratum *i* in year *t* (tCO2e)
Source of data:	Calculated based on inventory data and project plan using multiple methodologies.
Value applied:	Annual values presented in Table 15 of the PD.
Justification of choice of data or description of measurement methods and procedures applied:	Per methodology for planned deforestation
Purpose of Data:	Calculation of baseline emissions.
Comment:	

Data Unit / Parameter:	$\Delta C_{pools,Def,u,i,t}$

Data unit:	tCO_2e ha-1
Description:	Net carbon stock changes in all pools in the project case in land use *u* in stratum *i* at time *t*; tCO2-e ha-1
Source of data:	Remote sensing and inventory data.
Value applied:	Ex ante estimation is provided in table form in Section 5.6 of the PD.
Justification of choice of data or description of measurement methods and procedures applied:	Formula and parameters provided in section 5.6 of the PD.
Purpose of Data:	Calculation of project emissions
Comment:	

Data Unit / Parameter:	$C_{P,post,u,i}$
Data unit:	tCO_2e ha-1
Description:	Carbon stock in all pools in post-deforestation land use *u* in stratum *i*; $tCO_2e\ ha^{-1}$
Source of data:	Literature
Value applied:	Annual ex ante estimation is provided in table form in Section 5.6 of the PD. Value set to zero.
Justification of choice of data or description of measurement methods and procedures applied:	Formula and parameters provided in section 5.6 of the PD
Purpose of Data:	Calculation of baseline emissions.
Comment:	

Data Unit / Parameter:	$C_{LG,i,t} + C_{LR,i,t}$

Data unit:	tCO_2e
Description:	Actual (projected) net project emissions arising in the logging gap in stratum i at time t; tCO_2e plus actual (projected) net project emissions arising from logging infrastructure in stratum i at time t; tCO_2e. The difference between $C_{LG,i,t}$ and $C_{LR,i,t}$ is not easily defined in Whitman et. al. (1997) but the combination of the two can be extrapolated.
Source of data:	Total damage estimate from Whitman et. al. (1997) of 4.8% x 3 to result in indisputably conservative assumption.
Value applied:	96,884 tCO_2e
Justification of choice of data or description of measurement methods and procedures applied:	Based on indisputably conservative assumptions, this pool is de minimis.
Purpose of Data:	Calculation of project emissions
Comment:	

Data Unit / Parameter:	$C_{tree,l,t}$
Data unit:	tCO_2e ha-1
Description:	Total AGBtree in tCO_2e
Source of data:	Total damage estimate from Whitman et. al. (1997) of 4.8% x 3 to result in indisputably conservative assumption.
Value applied:	2,354,810 tCO_2e
Justification of choice of data or description of measurement methods and procedures applied:	This is a derivative value based on other parameters.
Purpose of Data:	Calculation of project emissions
Comment:	

Data Unit / Parameter:	*ag*
Data unit:	unitless
Description:	Number of agents of deforestation
Source of data:	Deforestation plan (Gallon Jug Agroindustries 2010)
Value applied:	1: Gallon Jug Agroindustries
Justification of choice of data or description of measurement methods and procedures applied:	Per methodology, based on deforestation plan.
Purpose of Data:	Calculation of leakage emissions.
Comment:	

Data Unit / Parameter:	$HistHa_{i,ag}$
Data unit:	ha
Description:	Number of hectares of forest cleared by the baseline agent of the planned deforestation in the five years prior to project implementation in stratum i by agent ag within the country.
Source of data:	Remote sensing
Value applied:	0
Justification of choice of data or description of measurement methods and procedures applied:	Based on deforestation analysis performed using remote sensing analysis described in Appendix A of the PD.
Purpose of Data:	Calculation of leakage emissions.
Comment:	

Data Unit / Parameter:	*LDF*
Data unit:	t C m^{-3}

Description:	Factor for calculating the biomass of dead wood created during logging operations per cubic meter extracted
Source of data:	Default value provided
Value applied:	Default value for broadleaf and mixed forests of 0.53 t C m^{-3}
Justification of choice of data or description	Default value for broadleaf and mixed forests of 0.53 t C m^{-3} from 774 logging gaps measured by Winrock International in Bolivia, Belize, the Republic of Congo, Brazil and Indonesia.
of measurement methods and procedures applied:	
Purpose of Data:	Calculation of leakage emissions.
Comment:	

Data Unit / Parameter:	*LIF*
Data unit:	t C m^{-3}
Description:	Factor for calculating the emissions arising from the creation of logging infrastructure (roads, skid trails and decks) during logging operations per cubic meter extracted
Source of data:	Default value provided
Value applied:	Conservative default value of 0.29 tCO_2e m^{-3}
Justification of choice of data or description of measurement methods and procedures applied:	Conservative default value of 0.29 tCO_2e m^{-3} calculated from 1,839 hectares of logging concessions analyzed by Winrock International in the Republic of Congo and Brazil.
Purpose of Data:	Calculation of leakage emissions.
Comment:	

Data Unit / Parameter:	LF_{ME}
Data unit:	dimensionless

Description:	Leakage factor for market effects calculations.
Source of data:	Default value based on the proportion of total biomass in commercial species that is merchantable (PML_{FT}) compared to mean proportion of total biomass that is merchantable in each forest type (PMP).
Value applied:	.4
Justification of choice of data or description of measurement methods and procedures applied:	LF_{ME} is .4 when PMLFT is equal to +/- 15% compared to PMP. In this case there is just one merchantable forest type since of the two forest types on the project area, the bajo type is excluded from the forest license. Therefore the comparison yields a 0% difference between PM_{LFT} and PMP.
Purpose of Data:	Calculation of leakage emissions.
Comment:	

Data Unit / Parameter:	PML_{ft}
Data unit:	dimensionless
Description:	The mean proportion of total biomass that is merchantable for each forest type.
Source of data:	Default value based on the proportion of total biomass in commercial species that is merchantable (PML_{FT}) compared to mean proportion of
	total biomass that is merchantable in each forest type (PMP).
Value applied:	.4
Justification of choice of data or description of measurement methods and procedures applied:	LF_{ME} is .4 when PMLFT is equal to +/- 15% compared to PMP. In this case there is just one merchantable forest type since of the two forest types on the project area, the bajo type is excluded from the forest license. Therefore the comparison yields a 0% difference between PM_{LFT} and PMPi.
Purpose of Data:	Calculation of leakage emissions.
Comment:	

Data Unit / Parameter:	LK_{MAF}
Data unit:	Leakage management adjustment factor

Description:	If the leakage management areas produce an amount equal or higher than the expected baseline production of biomass in commercial species that is merchantable, leakage shall be assumed to be zero. In order to apply this factor, project proponent needs to demonstrate the production of the volume biomass in commercial species that is merchantable used to estimate this deduction, as well as evidence that such biomass has reached the relevant regional/national markets. Any increase in GHG emissions associated with the leakage management activities shall be accounted for, unless deemed de minimis or conservatively excluded.
Source of data:	No leakage management areas have been established.
Value applied:	1
Justification of choice of data or description of measurement methods and procedures applied:	Conservative default applied.
Purpose of Data:	Calculation of leakage emissions.
Comment:	

Data Unit / Parameter:	$PRODMB_{BL,t}$
Data unit:	tons per year
Description:	Production of biomass in commercial species that is merchantable in year *t* in the baseline case (t per year)
Source of data:	Based on inventory data
Value applied:	74,076
Justification of choice of data or description of measurement methods and	Best available data from inventory and commercial criteria from Cho (2007) cutting diameter and commercial species list.
procedures applied:	
Purpose of Data:	Calculation of leakage emissions.
Comment:	

Data Unit / Parameter:	$PRODMB_{LMA,t}$
Data unit:	tons per year
Description:	Production biomass in commercial species that is merchantable in year t in leakage management areas (t per year).
Source of data:	Project proponent.
Value applied:	Since no leakage management areas have been established this is set to 0.
Justification of choice of data or description of measurement methods and procedures applied:	Conservative default applied.
Purpose of Data:	Calculation of leakage emissions.
Comment:	

Data Unit / Parameter:	$V_{BSL,EX,i,t}$
Data unit:	m^3
Description:	Volume of timber projected to be extracted from within the project boundary during the baseline in stratum *i* in year *t*
Source of data:	Based on inventory data.
Value applied:	193,481
Justification of choice of data or description of measurement methods and procedures applied:	Estimates from inventory are highest priority data source if timber harvest records are unavailable.
Purpose of Data:	Calculation of leakage emissions.
Comment:	Gross AGB used.

Data Unit / Parameter:	*Species List*

Data unit:	Species
Description:	List of detected species known to occur on the site.
Source of data:	Pictures, acoustic recordings, tracks, observations by trained observers.
Value applied:	Presence/Absence
Justification of choice of data or description of measurement methods and procedures applied:	Must be monitored at least every 5 years or if verification occurs on a frequency of less than every 5 years examination must occur prior to any verification event.
Purpose of Data:	Used to determine biodiversity impacts.
Comment:	Species list developed by Miller and Miller (2011)

3.1.2 Data and Parameters Monitored

Data Unit / Parameter:	*Project Forest Cover Monitoring Map*
Data unit:	Ha: minimum mapping unit 1 ha.
Description:	Map showing the location of forest land within the project area at the beginning of each monitoring period. If within the Project Area some forest land is cleared, the benchmark map must show the deforested areas at each monitoring event
Source of data:	Remote sensing in combination with GPS data collected during ground reference.
Description of measurement methods and procedures to be applied:	The minimum map accuracy should be 90% for the classification of forest/non-forest in the remote sensing imagery. If the classification accuracy is less than 90% then the map is not acceptable for further analysis. More remote sensing data and ground reference data will be needed to produce a product that reaches the 90% minimum mapping accuracy.
Frequency of monitoring/recording:	Must be monitored at least every 5 years or if verification occurs on a frequency of less than every 5 years examination must occur prior to any verification event
Value applied:	100%.
Monitoring equipment:	Computer and appropriate analytical software.

QA/QC procedures to be applied:	Based on plot remeasurements, and high resolution imagery verification.
Purpose of Data:	Calculation of project emissions.
Calculation method:	Head's up delineation using GIS and Landsat imagery (or higher resolution) using multiple images to get a cloud free image.
Comment:	This parameter was monitored at an interval greater than 5 years and is a methodology deviation. If stratification is required in the future, then new strata will be identified using module X-STR. Terra Global used the landcover map from the first monitoring report (2013) supplied by TFG and the landcover change analysis was completed and described the tables below:

Project Area			
LULC 2013	**LULC 2020**	**Area (ha)**	**Area (%)**
Other	Forest	0	0.00%
Other	Other	1	0.01%
Water	Forest	41	0.48%
Water	Water	33	0.39%
Forest	Forest	8,349	99.01%
Forest	Water	7	0.08%
Forest	Other	1	0.02%
Total		**8,432**	**100.00%**

Data Unit / Parameter:	*Leakage Belt Forest Cover Monitoring Map*
Data unit:	Ha: minimum mapping unit 1 ha.
Description:	Map showing the location of forest land within the leakage area at the beginning of each monitoring period. If within the leakage area some forest land is cleared, the benchmark map must show the deforested areas at each monitoring event
Source of data:	Remote sensing in combination with GPS data collected during ground reference.
Description of measurement methods and procedures to be applied:	The minimum map accuracy should be 90% for the classification of forest/non-forest in the remote sensing imagery. If the classification accuracy is less than 90% then the map is not acceptable for further analysis. More remote sensing data and ground reference data will be needed to produce a product that reaches the 90% minimum mapping accuracy.

Frequency of monitoring/recording:	Must be monitored at least every 5 years or if verification occurs on a frequency of less than every 5 years examination must occur prior to any verification event.
Value applied:	100%.
Monitoring equipment:	Computer and appropriate analytical software.
QA/QC procedures to be applied:	Based on plot remeasurements, and high resolution imagery verification.
Purpose of Data:	Calculation of project emissions.
Calculation method:	Head's up delineation using GIS and Landsat imagery (or higher resolution) using multiple images to get a cloud free image.
Comment:	This parameter was monitored at an interval greater than 5 years and is a methodology deviation. If stratification is required in the future, then new strata will be identified using module X-STR. Terra Global used the landcover map from the first monitoring report (2013) supplied by TFG and the landcover change analysis was completed and described the table below:

Leakage Area			
LULC 2013	**LULC 2020**	**Area (ha)**	**Area (%)**
Other	Forest	128	0.28%
Other	Water	0	0.00%
Other	Other	1,076	2.37%
Water	Forest	217	0.48%
Water	Water	3,872	8.52%
Water	Other	2	0.00%
Forest	Forest	39,897	87.78%
Forest	Water	76	0.17%
Forest	Other	181	0.40%
	Total	**45,450**	**100.00%**

Data Unit / Parameter:	$A_{DefPA,i,t}$
Data unit:	Ha
Description:	Area of recorded deforestation in the project area at time *t (if any occurs)*
Source of data:	Remote sensing imagery

Description of measurement methods and procedures to be	Head's up delineation using GIS and Landsat imagery (or higher resolution) using multiple images to get a cloud free image.
applied:	
Frequency of monitoring/recording:	Must be monitored at least every 5 years or if verification occurs on a frequency of less than every 5 years examination must occur prior to any verification event
Value applied:	0
Monitoring equipment:	Computer and appropriate analytical software.
QA/QC procedures to be applied:	Remeasurement of permanent plots.
Purpose of Data:	Calculation of project emissions.
Calculation method:	Head's up delineation using GIS and Landsat imagery (or higher resolution) using multiple images to get a cloud free image.
Comment:	This parameter was monitored at an interval greater than 5 years and is a methodology deviation.

Data Unit / Parameter:	$A_{DefLK,i,t}$
Data unit:	Ha
Description:	Area of recorded deforestation by the baseline agent of deforestation in Belize at time *t (if any occurs)*
Source of data:	Remote sensing imagery
Description of measurement methods and procedures to be applied:	Head's up delineation using GIS and Landsat imagery (30 meter or higher resolution) using multiple images to get a cloud free image.
Frequency of monitoring/recording:	Must be monitored at least every 5 years or if verification occurs on a frequency of less than every 5 years examination must occur prior to any verification event
Value applied:	0
Monitoring equipment:	Computer and appropriate analytical software.

QA/QC procedures to be applied:	Field observations where possible. Spot check with higher resolution imagery if available.
Purpose of Data:	Calculation of project emissions.
Calculation method:	Head's up delineation using GIS and Landsat imagery (30 meter or higher resolution) using multiple images to get a cloud free image.
Comment:	This parameter was monitored at an interval greater than 5 years and is a methodology deviation.

Data Unit / Parameter:	$A_{burn,i,t}$
Data unit:	Ha
Description:	Area burnt at time *t (if any occurs)*
Source of data:	Remote sensing imagery
Description of measurement methods and procedures to be applied:	Head's up delineation using GIS and landsat imagery (or higher resolution) using multiple images to get a cloud free image.
Frequency of monitoring/recording:	Areas burnt shall be monitored at least every 5 years or if verification occurs on a frequency of less than every 5 years examination must occur prior to any verification event
Value applied:	0
Monitoring equipment:	Computer and appropriate analytical software.
QA/QC procedures to be applied:	Remeasurement of permanent plots.
Purpose of Data:	Calculation of project emissions.
Calculation method:	Head's up delineation using GIS and Landsat imagery (or higher resolution) using multiple images to get a cloud free image.
Comment:	This parameter was monitored at an interval greater than 5 years and is a methodology deviation.

Data Unit / Parameter:	$E_{BiomassBurn,i,t}$
Data unit:	tCO_2e

Description:	Non-CO emissions due to biomass burning that results in ^{2} deforestation in stratum *i* in year *t* (tCO2e)
Source of data:	Calculated based on module EBPB
Description of measurement methods and procedures to be applied:	Remote sensing. Methods described in monitoring plan. Calculations based on module "Estimation of greenhouse gas emissions from biomass burning (E-BPB)".
Frequency of monitoring/recording:	Areas burnt shall be monitored at least every 5 years or if verification occurs on a frequency of less than every 5 years examination must occur prior to any verification event
Value applied:	0
Monitoring equipment:	Computer and appropriate analytical software.
QA/QC procedures to be applied:	Remeasurement of permanent plots.
Purpose of Data:	Calculation of project emissions.
Calculation method:	Calculated parameter.
Comment:	This parameter was monitored at an interval greater than 5 years and is a methodology deviation.

Data Unit / Parameter:	$B_{i,t}$
Data unit:	tCO_2e/ha
Description:	Average aboveground biomass stock before burning stratum i, year (t d.m. ha-1)
Source of data:	Field inventory and remote sensing.
Description of measurement methods and procedures to be	Field measurements applied with allometric equation published in Pearson et. al. (2005). Remote sensing procedures described in monitoring plan.
applied:	
Frequency of monitoring/recording:	Must be monitored at least every 5 years or if verification occurs on a frequency of less than every 5 years examination must occur prior to any verification event.

Value applied:	165.8
Monitoring equipment:	Computer and appropriate analytical software.
QA/QC procedures to be applied:	AGB is a calculated parameter. Input variables (DBH and HT) are checked by independent audit at verification events.
Purpose of Data:	Calculation of project emissions.
Calculation method:	Inventory described fully elsewhere. Field methods and calculations follow CP-AB and BL-PL following techniques described in Pearson et.al. (2005).
Comment:	This parameter was monitored at an interval greater than 5 years and is a methodology deviation.

Data Unit / Parameter:	ΔCWPS-REDD
Data unit:	tCO_2e
Description:	Net greenhouse gas emissions within the project area under the project scenario; tCO_2e
Source of data:	Calculated parameter at verification described in Section 4.2
Description of measurement methods and procedures to be applied:	Calculated parameter. See equations in Section 4.2
Frequency of monitoring/recording:	Must be monitored at least every 5 years or if verification occurs on a frequency of less than every 5 years examination must occur prior to any verification event.
Value applied:	0
Monitoring equipment:	Calculated
QA/QC procedures to be applied:	Calculated
Purpose of Data:	Calculation of project emissions.
Calculation method:	Based on equation in Section 4.2.
Comment:	This parameter was monitored at an interval greater than 5 years and is a methodology deviation. This parameter was described as ΔC_P in the PD ad MR1.

Data Unit / Parameter:	$\Delta C_{pools,Def,u,i,t}$
Data unit:	tCO_2e ha-1
Description:	Net carbon stock changes in all pools in the project case in land use *u* in stratum *i* at time *t*; tCO2-e ha-1
Source of data:	Remote sensing and inventory data.
Description of measurement methods and	Calculated parameter. See equations in Section 4.2
procedures to be applied:	
Frequency of monitoring/recording:	Must be monitored at least every 5 years or if verification occurs on a frequency of less than every 5 years examination must occur prior to any verification event.
Value applied:	0
Monitoring equipment:	Calculated
QA/QC procedures to be applied:	Calculated
Purpose of Data:	Calculation of project emissions.
Calculation method:	Formula and parameters provided in section 5.6.
Comment:	This parameter was monitored at an interval greater than 5 years and is a methodology deviation.

Data Unit / Parameter:	$\Delta C_{P,DefPA,i,t}$
Data unit:	tCO_2e
Description:	Net carbon stock change as a result of deforestation in the project area in the project case in stratum *i* at time *t*; tCO_2e
Source of data:	Remote Sensing
Description of measurement methods and procedures to be applied:	Calculated parameter. See equations in Section 4.2

Frequency of monitoring/recording:	Must be monitored at least every 5 years or if verification occurs on a frequency of less than every 5 years examination must occur prior to any verification event.
Value applied:	0
Monitoring equipment:	Calculated
QA/QC procedures to be applied:	Calculated
Purpose of Data:	Calculation of project emissions.
Calculation method:	Based on equation in Section 4.2
Comment:	This parameter was monitored at an interval greater than 5 years and is a methodology deviation.

Data Unit / Parameter:	$\Delta C_{P,DefLB,i,t}$
Data unit:	tCO_2e
Description:	Net carbon stock change as a result of deforestation in the project case in the leakage belt in stratum i at time t; tCO2-e
Source of data:	Remote Sensing and inventory plots.
Description of measurement methods and procedures to be	Calculated parameter. See equations in Section 4.2
applied:	
Frequency of monitoring/recording:	Must be monitored at least every 5 years or if verification occurs on a frequency of less than every 5 years examination must occur prior to any verification event.
Value applied:	0
Monitoring equipment:	Calculated
QA/QC procedures to be applied:	Calculated
Purpose of Data:	Calculation of project emissions.
Calculation method:	Based on equation in Section 4.2
Comment:	This parameter was monitored at an interval greater than 5 years and is a methodology deviation.

Data Unit / Parameter:	$A_{DefPA,u,i,t}$
Data unit:	ha
Description:	Area of recorded deforestation in the project area stratum *i* converted to land use *u* at time *t*; ha
Source of data:	Remote Sensing
Description of measurement methods and procedures to be applied:	See remote sensing methods in Monitoring Plan Section 3.2.
Frequency of monitoring/recording:	Must be monitored at least every 5 years or if verification occurs on a frequency of less than every 5 years examination must occur prior to any verification event.
Value applied:	0
Monitoring equipment:	Calculated
QA/QC procedures to be applied:	Calculated
Purpose of Data:	Calculation of project emissions.
Calculation method:	Based on equation in Section 4.2
Comment:	This parameter was monitored at an interval greater than 5 years and is a methodology deviation.

Data Unit / Parameter:	$A_{DefLB,u,i,t}$
Data unit:	ha
Description:	Area of recorded deforestation in the leakage belt stratum *i* converted to land use *u* at time *t*; ha.
Source of data:	Remote Sensing
Description of measurement methods and procedures to be applied:	See remote sensing methods in Monitoring Plan Section 3.2.

Frequency of monitoring/recording:	Must be monitored at least every 5 years or if verification occurs on a frequency of less than every 5 years examination must occur prior to any verification event.
Value applied:	0
Monitoring equipment:	Calculated
QA/QC procedures to be applied:	Calculated
Purpose of Data:	Calculation of leakage emissions.
Calculation method:	Based on equation in Section 4.2
Comment:	This parameter was monitored at an interval greater than 5 years and is a methodology deviation.

Data Unit / Parameter:	$\Delta C_{P,DistPA,i,t}$
Data unit:	tCO_2e
Description:	Net carbon stock change as a result of natural disturbance in the project area in the project case in stratum *i* at time *t*; tCO_2e
Source of data:	Remote Sensing
Description of measurement methods and procedures to be applied:	Calculated parameter. See equations in Section 4.2
Frequency of monitoring/recording:	Must be monitored at least every 5 years or if verification occurs on a frequency of less than every 5 years examination must occur prior to any verification event.
Value applied:	0
Monitoring equipment:	Calculated
QA/QC procedures to be applied:	Calculated
Purpose of Data:	Calculation of project emissions.
Calculation method:	Based on equation in Section 4.2
Comment:	This parameter was monitored at an interval greater than 5 years and is a methodology deviation.

Data Unit / Parameter:	$GHG_{P\text{-}E,i,t}$
Data unit:	tCO_2e
Description:	Greenhouse gas emissions as a result of deforestation and degradation activities within the project area in the project case in stratum *i* in year *t*; tCO_2e
Source of data:	Remote Sensing
Description of measurement methods and procedures to be applied:	Calculated parameter. See equations in Section 4.2
Frequency of monitoring/recording:	Must be monitored at least every 5 years or if verification occurs on a frequency of less than every 5 years examination must occur prior to any verification event.
Value applied:	0
Monitoring equipment:	Calculated
QA/QC procedures to be applied:	Calculated
Purpose of Data:	Calculation of project emissions.
Calculation method:	Based on equation in Section 4.2
Comment:	This parameter was monitored at an interval greater than 5 years and is a methodology deviation.

Data Unit / Parameter:	$\Delta C_{P,Enh,i,t}$
Data unit:	tCO_2e
Description:	Net carbon stock change as a result of forest growth and sequestration during the project in areas projected to be deforested in the baseline in stratum *i* at time *t*; tCO_2e
Source of data:	Remote sensing and inventory data.

Description of measurement methods and procedures to be applied:	Calculated parameter. See equations in Section 3.2
Frequency of monitoring/recording:	Must be monitored at least every 5 years or if verification occurs on a frequency of less than every 5 years examination must occur prior to any verification event.
Value applied:	0
Monitoring equipment:	Calculated
QA/QC procedures to be applied:	Calculated
Purpose of Data:	Calculation of project emissions.
Calculation method:	Based on difference between biomass since baseline reset or previous monitoring period.
Comment:	$\Delta C_{P,Enh,i,t}$ will capture growth in biomass if evident from inventory remeasurement in future monitoring events. No emissions reductions are claimed for $\Delta C_{P,Enh,i,t}$ in this monitoring period. This parameter was monitored at an interval greater than 5 years and is a methodology deviation.

Data Unit / Parameter:	$C_{P,i,t}$
Data unit:	tCO_2e
Description:	Carbon stock in all pools in the project case in stratum *i* at time *t*; tCO2-e
Source of data:	Remote sensing and inventory data.
Description of measurement	Calculated parameter. See equations in Section 3.2
methods and procedures to be applied:	
Frequency of monitoring/recording:	Must be monitored at least every 5 years or if verification occurs on a frequency of less than every 5 years examination must occur prior to any verification event.
Value applied:	49.62

Monitoring equipment:	Calculated
QA/QC procedures to be applied:	Calculated
Purpose of Data:	Calculation of project emissions.
Calculation method:	Equation and parameters described in Section 3.2
Comment:	This parameter was monitored at an interval greater than 5 years and is a methodology deviation.

Data Unit / Parameter:	$A_{distPA,q,l,t}$
Data unit:	Ha
Description:	Area impacted by natural disturbance in the project stratum i converted to natural disturbance stratum q at time t; ha *(if any occurs)*
Source of data:	Remote Sensing imagery combined with ground verification or GPS coordinates. Minimum monitoring unit shall be equal to a minimum of 11 Landsat pixels or one hectare.
Description of measurement methods and procedures to be applied:	Head's up delineation using GIS and landsat imagery (or higher resolution) using multiple images to get a cloud free image.
Frequency of monitoring/recording:	Must be monitored at least every 5 years or if verification occurs on a frequency of less than every 5 years examination must occur prior to any verification event
Value applied:	0
Monitoring equipment:	Computer and appropriate analytical software. Field equipment for plot measurements and GPS for ground level confirmation.
QA/QC procedures to be applied:	Remeasurement of permanent plots.
Purpose of Data:	Calculation of project emissions.
Calculation method:	Head's up delineation using GIS and Landsat imagery (or higher resolution) using multiple images to get a cloud free image.
Comment:	This parameter was monitored at an interval greater than 5 years and is a methodology deviation.

Data Unit / Parameter:	$C_{AB\_tree,i}$
Data unit:	tCO_2e ha-1
Description:	Carbon stock in aboveground biomass in trees in the project case in stratum *i.*
Source of data:	Field measurements applied with allometric equation published in Pearson et. al. (2005)
Description of measurement methods and procedures to be applied:	See field methods section.
Frequency of monitoring/recording:	Must be monitored at least every 5 years or if verification occurs on a frequency of less than every 5 years examination must occur prior to any verification event.
Value applied:	See Table 4 values.
Monitoring equipment:	Computer and spreadsheet software. Additional equipment required for field data collection.
QA/QC procedures to be applied:	Independent 3rd party audit of field measurements utilizing remeasurement of a sample of plots.
Purpose of Data:	Calculation of project emissions.
Calculation method:	Calculation method follows Pearson et. al. 2005.
Comment:	Key variable used to calculate with project carbon stocks. This parameter was monitored at an interval greater than 5 years and is a methodology deviation.

Data Unit / Parameter:	$C_{BB\_tree,i}$,
Data unit:	tCO_2e ha-1
Description:	Carbon stock in belowground biomass in trees in the project case in stratum *i.*
Source of data:	Field measurements applied with root to shoot equation
Description of measurement methods and procedures to be applied:	See field methods section.

Frequency of monitoring/recording:	Must be monitored at least every 5 years or if verification occurs on a frequency of less than every 5 years examination must occur prior to any verification event.
Value applied:	See Table for values.
Monitoring equipment:	Computer and spreadsheet software. Additional equipment required for field data collection.
QA/QC procedures to be applied:	Independent 3rd party audit of field measurements utilizing remeasurement of a sample of plots.
Purpose of Data:	Calculation of project emissions.
Calculation method:	For belowground biomass, the root-to-shoot ratios indicated in the methodology CP-AB was used which results in a ratio of .24 for plots indicating a mean aboveground biomass of 125 tons/ha or greater and a ratio of .2 for plots indicating a mean aboveground biomass of less than 125 tons/ha.
Comment:	Key variable used to calculate with project carbon stocks. This parameter was monitored at an interval greater than 5 years and is a methodology deviation.

Data Unit / Parameter:	A_{sp}
Data unit:	ha
Description:	Area of sample plots in ha
Source of data:	Recording and archiving of number and size of sample plots
Description of measurement methods and procedures to be applied:	Per field technique – square plots.
Frequency of monitoring/recording:	Verification plan calls for re-inventory no less frequently than every five years. QA/QC is addressed by periodic third party verification audits.
Value applied:	40 25m x 25m square plots. Plot area is 0.0025ha.
Monitoring equipment:	Tape measure or similar device
QA/QC procedures to be applied:	Plot diameters are independently confirmed at verification audits.

Purpose of Data:	Calculation of project emissions.
Calculation method:	Direct measurement of plot boundaries.
Comment:	During this monitoring period, square plots of 25mx 25m were used. This is a Project Description deviation as described in section 2.2.4

Data Unit / Parameter:	*N*
Data unit:	unitless
Description:	Number of sample points
Source of data:	Recording and archiving of number and size of sample plots
Description of measurement methods and procedures to be applied:	Direct count.
Frequency of monitoring/recording:	Must be monitored at least every 5 years or if verification occurs on a frequency of less than every 5 years examination must occur prior to any verification event.
Value applied:	40
Monitoring equipment:	None required
QA/QC procedures to be applied:	QA/QC is addressed by periodic third party verification audits. Based on the field inventory variability, the number of plots is considered adequate using module X-UNC.
Purpose of Data:	Calculation of project emissions.
Calculation method:	Based on power analysis conducted on data from Cho (2007) by Teets et. al. (2012).
Comment:	The number and location of plots may change in the future if a plot location becomes unreachable or hazardous to field crews. Justification for any changes must be documented and explained.

Data Unit / Parameter:	$Ht_{,tree,i,}$
Data unit:	Meters

Description:	Height of the tree from the ground
Source of data:	Field measurements
Description of measurement methods and procedures to be applied:	See procedures for measurement in the monitoring plan (Section 3.1.3).
Frequency of monitoring/recording:	Must be monitored at least every 5 years or if verification occurs on a frequency of less than every 5 years examination must occur prior to any verification event.
Value applied:	See database of tree measurements.
Monitoring equipment:	Clinometer, tape, or equivalent
QA/QC procedures to be applied:	A subset of heights are remeasured at verification audits.
Purpose of Data:	Calculation of project emissions.
Calculation method:	See field methods section of monitoring plan. Must be monitored at least every 5 years or if verification occurs on a frequency of less than every 5 years examination must occur prior to any verification event.
Comment:	This variable is collected, but not necessary for allometric equation used. This variable is used to validate the allometric equation.

Data Unit / Parameter:	$DBH_{tree,i,}$
Data unit:	Cm
Description:	Diameter at 1.3 meters above the ground of each tree on each plot.
Source of data:	Field measurements
Description of measurement methods and procedures to be applied:	See procedures for measurement in the monitoring plan (Section 3.1.3).

Frequency of monitoring/recording:	Must be monitored at least every 5 years or if verification occurs on a frequency of less than every 5 years examination must occur prior to any verification event.
Value applied:	See database of baseline tree measurements.
Monitoring equipment:	Diameter tape incremented in centimeters. Measuring tape to determine inclusion of trees on plots. GPS to navigate to permanent plots.
QA/QC procedures to be applied:	Independent 3rd party audit of field measurements utilizing remeasurement of a sample of plots. Field observation sheets will include DBH of each tagged tree for evaluation of reasonableness of measurement based on feasible growth rate.
Purpose of Data:	Calculation of project emissions.
Calculation method:	Direct observation.
Comment:	Key variable used to calculate with project carbon stocks

Data Unit / Parameter:	$\Delta C_{LK\text{-}AS,planned,E,i,t}$
Data unit:	tCO_2e
Description:	Net greenhouse gas emissions due to activity shifting leakage for projects preventing planned deforestation; tCO_2e
Source of data:	Calculated from $LKA_{planned,i,t}$, $\Delta C_{BSL,I,}$ and $GHG_{LK,E,i,t}$ per formula in LK- ASP
Description of measurement methods and procedures to be applied:	Calculated parameter. See equations in Section 3.2
Frequency of monitoring/recording:	Must be monitored at least every 5 years or if verification occurs on a frequency of less than every 5 years examination must occur prior to any verification event.
Value applied:	0
Monitoring equipment:	Remote sensing
QA/QC procedures to be applied:	Confirmation by interpretation of high resolution image such as Rapid Eye.
Purpose of Data:	Calculation of leakage emissions.

Calculation method:	Method for preprocessing, and analysis described in monitoring plan.
Comment:	

Data Unit / Parameter:	$LKA_{planned,i,t}$
Data unit:	ha
Description:	The area of activity shifting leakage in stratum i at time t; ha
Source of data:	Remote sensing.
Description of measurement methods and procedures to be applied:	Head's up delineation using GIS and landsat imagery (or higher resolution) using multiple images to get a cloud free image.
Frequency of monitoring/recording:	Must be monitored at least every 5 years or if verification occurs on a frequency of less than every 5 years examination must occur prior to any verification event.
Value applied:	0
Monitoring equipment:	Remote sensing
QA/QC procedures to be applied:	Confirmation by interpretation of high resolution image such as Rapid Eye.
Purpose of Data:	Calculation of leakage emissions.
Calculation method:	Method for preprocessing, and analysis described in monitoring plan.
Comment:	

Data Unit / Parameter:	$GHG_{LK,E,i,t}$
Data unit:	tCO_2e
Description:	Greenhouse gas emissions as a result of leakage of avoiding deforestation activities in stratum i in year t (tCO_2e)
Source of data:	Summation of emissions from biomass burning. Area data for biomass burning derived from remote sensing.

Description of measurement methods and procedures to be applied:	Calculated parameter. See equations in Section 3.2
Frequency of monitoring/recording:	Must be monitored at least every 5 years or if verification occurs on a frequency of less than every 5 years examination must occur prior to any verification event.
Value applied:	0
Monitoring equipment:	Remote sensing
QA/QC procedures to be applied:	Based on area and biomass estimates developed in other parameters.
Purpose of Data:	Calculation of leakage emissions.
Calculation method:	As indicated in methodology module LK-ASP.
Comment:	

Data Unit / Parameter:	*Species List*
Data unit:	Species
Description:	List of detected species known to occur on the site.
Source of data:	Pictures, acoustic recordings, tracks, observations by trained observers.
Description of measurement methods and procedures to be applied:	Observations made at CCB verification audit events using remote cameras, acoustic recordings, and transects. Anecdotal observations recorded during normal operations of project.
Frequency of monitoring/recording:	Must be monitored at least every 5 years or if verification occurs on a frequency of less than every 5 years examination must occur prior to any verification event.
Value applied:	Presence/Absence
Monitoring equipment:	Remotely triggered cameras, binoculars, camera.
QA/QC procedures to be applied:	None required.

Purpose of Data:	Monitoring biodiversity on project area.
Calculation method:	No calculation required.
Comment:	

Data Unit / Parameter:	*Contributions to Gallon Jug-Chan Chich High School Scholarship Fund*
Data unit:	BZ dollars
Description:	Documentation of donations.
Source of data:	Written receipts.
Description of measurement methods and procedures to be applied:	Recording the receipts will indicate compliance with the CCB community benefits plan.
Frequency of monitoring/recording:	Must be monitored at least every 5 years or if verification occurs on a frequency of less than every 5 years examination must occur prior to any verification event.
Value applied:	This scholarship was financially supported by Bowen and Bowen Ltd. Although community members confirmed that the scholarships were offered, financial disclosures of scholarship funds from Bowen and Bowen were not received.
Monitoring equipment:	None required.
QA/QC procedures to be applied:	None required.
Purpose of Data:	Monitor community benefits plan.
Calculation method:	Simple sum of contributions.
Comment:	

Data Unit / Parameter:	*Observations of biodiversity species s at time t and location l*
Data unit:	observation
Description:	Observations of biodiversity
Source of data:	Based on camera traps or anecdotal observations (visual, auditory, or tracks) by field crews.

Description of measurement methods and procedures to be applied:	Observations made at CCB verification audit events using remote cameras, acoustic recordings, and transects. Anecdotal observations recorded during normal operations of project.
Frequency of monitoring/recording:	Must be monitored at least every 5 years or if verification occurs on a frequency of less than every 5 years examination must occur prior to any verification event.
Value applied:	Presumption is that current list of animal species will continue to occur at the project throughout the life of the project.
Monitoring equipment:	Remotely triggered cameras, binoculars, camera.
QA/QC procedures to be applied:	Observations without documentary evidence should only be recorded if observer is qualified and experienced.
Purpose of Data:	To provide updates to Species List.
Calculation method:	None required.
Comment:	

Data Unit / Parameter:	$\Delta C_{P,SelLog,i,t}$
Data unit:	tCO_2e
Description:	Net carbon stock change as a result of degradation through selective logging of FSC certified forest management areas in the project area in the project case in stratum i at time t; tCO_2e
Source of data:	Calculated based on harvested areas.
Value applied:	0
Justification of choice of data or description of measurement	Based on indisputably conservative assumptions, this pool was de minimis at Validation. During the monitoring period no logging took place in the project area.
methods and procedures applied:	Analysis of spatially explicit harvesting data.
Purpose of Data:	Calculation of project emissions
Comment:	

Data Unit / Parameter:	$\Delta C_{P,Deg,i,t}$
Data unit:	$tCO_2e\ ha^{-1}$
Description:	Net carbon stock change as a result of degradation in the project area in the project case in stratum i at time t; tCO_2e
Source of data:	Calculated based on indisputably conservative assumptions.
Value applied:	0
Justification of choice of data or description of measurement methods and procedures applied:	Based on indisputably conservative assumptions, these pools are de minimis.
Purpose of Data:	Calculation of project emissions
Comment:	

Data Unit / Parameter:	$\Delta C_{P,DegW,i,t}$
Data unit:	tCO_2e ha-1
Description:	Net carbon stock change as a result of degradation through extraction of trees for illegal timber or fuelwood and charcoal in the project area in the project case in stratum i at time t; tCO_2e
Source of data:	Calculated based on indisputably conservative assumptions described in section 2.2.2.3.
Value applied:	0 tCO_2e/ha
Justification of choice of data or description of measurement methods and procedures applied:	Based on indisputably conservative assumptions, this pool is de minimis.
Purpose of Data:	Calculation of project emissions
Comment:	

Data Unit / Parameter:	$A_{DegW,i}$

Data unit:	ha
Description:	Area potentially impacted by degradation processes in stratum i; ha
Source of data:	Conservative assumption that entire project area is available for fuelwood collection.
Value applied:	8,240 ha
Justification of choice of data or description of measurement methods and procedures applied:	Indisputably conservative assumption. In fact the community has little to no access to the project area.
Purpose of Data:	Calculation of project emissions
Comment:	

Data Unit / Parameter:	A_{Pi}
Data unit:	ha
Description:	Total area of degradation sample plots in stratum i; ha.
Source of data:	This part of the analysis is based on assumptions from the literature rather than measurement.
Value applied:	0 ha
Justification of choice of data or description of measurement methods and procedures applied:	Indisputably conservative assumption.
Purpose of Data:	Calculation of project emissions
Comment:	

Data Unit / Parameter:	*PRA Results*
Data unit:	Narrative, qualitative and quantitative descriptions of fuelwood use.

Description:	Social Assessment
Source of data:	PRA results may be used for the flowing parameters: $\Delta C_{P,Deg,i,t}$, $\Delta C_{P,DegW,i,t}$, $A_{DegW,I}$, A_{Pi}
Value applied:	N/A
Justification of choice of data or description of measurement methods and procedures applied:	There was no PRA conducted during the Monitoring Period, this is a methodology deviation and is described in detail in 2.2.2.3 Calculation of Ex Post Emissions from Fuelwood Collection.
Purpose of Data:	Calculation of project emissions
Comment:	There was no PRA conducted during the Monitoring Period as there is restricted access to the parcel as well as there are no communities nearby.

Data / Parameter	$E_{REDD,WPS,SS,i,Pool1}$
Data unit	t CO_2e
Description	Carbon stock (Aboveground and Belowground tree biomass) in the project scenario
Equations	10 of VMD0017-X-UNC_v2.2
Source of data	The terms denoting significant carbon stocks, GHG sources or leakage emissions used in calculating net emission reductions from the following relevant modules: *CP-AB*, *CP-D*, *CP-L*, *CP-S*, *CP-W*, E-BB, *E-FFC*, *E-NA*.
Value applied	309.25
Justification of choice of data or description of measurement methods and procedures applied	Followed description in VMD0001 Estimation of carbon stocks in the above- and belowground biomass in live tree and non-tree pools (CP-AB), v1.1 in VM0007 REDD Methodology Modules
Purpose of Data	Calculation of uncertainty
Comments	Note there is only one pool.

Data / Parameter	$U_{REDD,WPS,SS,i,pool1}$
Data unit	9.90%
Description	Percentage uncertainty (expressed as 95% confidence interval as a percentage of the mean) for carbon stocks in the project scenario.
Equations	10 of VMD0017-X-UNC_v2.2
Source of data	Calculations arising from field measurement data
Value applied	N/A
Justification of choice of data or description of measurement methods and procedures applied	Uncertainty in pools derived from field measurement with 95% confidence interval calculated as the standard error of the averaged plot measurements in each stratum multiplied by the t value for the 95% confidence level.
Purpose of Data	Calculation of uncertainty
Comments	Note there is only one pool.

3.1.3 Monitoring Plan

The overall objective of the Carbon Monitoring Plan was to detect any changes in project emissions and carbon stock enhancement/reduction.

This monitoring period took place over 7 years from 2014-2020. This exception of monitoring every 5 years was granted from Verra. During the monitoring period, ownership of the Project Area changed from TFG to BMFT. Monitoring of biomass measurement plots was conducted in 2021 in the 40 permanent sampling plots. Measuring of biomass plots was conducted by the University of Belize Environmental Research Institute (ERI) following a detailed Standard Operating Procedure (SOP) (available to the VVB).

3.1.3.1 Updating of Strata

During the monitoring period, there were no unexpected disturbances (e.g. due to fire, pests, storms, or disease outbreaks), affecting differently various parts of an originally homogeneous stratum. Although there were hurricanes and tropical storms that reduced the biomass in the forest, these events were not significant enough to justify a unique stratum as the damage was not uniform. In addition, there were no unplanned forest management activities that affect the existing stratification.

3.1.3.2 Biomass Plots

The 40 permanent sampling plots were monitored in the second monitoring period. The locations of the 40 plots were remeasured in the field, and the list below is the exact location of the biomass plots measured.

Table 1: Locations of re-measured forestry plots used to determine aboveground biomass (in UTM 16 N Zone Q)

Plot ID	Plot X Coordinates	Plot Y Coordinates
1	298135	1947134
2	300158	1943312
3	300039	1946389
4	300785	1946897
5	295046	1946339
6	301671	1943010
7	292868	1945947
8	290218	1942989
9	291218	1946793
10	301523	1941713
11	301157	1944880
12	293046	1947060
13	291677	1947278
14	296249	1943170
15	289869	1942468
16	299197	1940758
17	296123	1945721
18	292088	1943263
19	295367	1942321
20	294575	1945342
21	295187	1944135
22	289840	1941184
23	297736	1942804
24	297409	1944799
25	301076	1941410
26	297909	1943651
27	293437	1942851
28	300266	1942482
29	297652	1941918
30	296070	1947242
31	296352	1941183
32	294893	1946864
33	299991	1944570
34	299719	1946949
35	299493	1945807
36	301636	1944796

Plot ID	Plot X Coordinates	Plot Y Coordinates
37	292800	1944555
38	297511	1945843
39	298920	1943664
40	291844	1945535

Allometric equations and other parameters described in Section 3.1 of the PD were followed. These included measuring aboveground biomass of trees and palms. During the monitoring period, the biomass plot design was changed from a circular plot to a 25x25 square plot. This square plot design followed Belize's common practices for forestry measurements and was found to be more appropriate for tropical forests with non-uniform trees. The SOP is available to the VVB. Individual tree data was not used to monitor tree growth overtime, nor is it required for the methodology used or PD. Trees were not re-tagged during this monitoring period as it was unnecessary.

3.1.3.3 Plot Measurement Best Practices

Plot measurement best practices were followed to have quality field data. In addition, the Biomass SOP incudes QA/QC procedures in the field as well as during the data consolidation process.

3.1.3.4 Mapping Methods

Mapping methods were made from classified Landsat images following methods described in the GOFC-GOLD Sourcebook (2014). A forest/non-forest map of the project area and the leakage area was created for the end of the monitoring period.

3.1.3.5 Extracted Biomass and the Long-Term Wood Products Pool

The biomass change due to sustainable timber harvest was found to make a de minimis contribution to the project. No wood products were extracted from the project area during the monitoring period.

3.1.3.6 Degradation due to Sustainable Harvest of Fuelwood

The M-MON methodology module explicitly indicates that *"If this assessment finds no potential pressure for these activities then degradation ($\Delta C_{P,DegW,i,t}$) can be assumed to be zero and no monitoring is needed."* Since the result of the analysis at validation indicated that there is no potential impact from fuelwood collection i.e. the impacts are unlikely and conservatively they are de minimis if there are impacts, then no monitoring was required for degradation from fuelwood collection. During this monitoring period the household survey found that there is no significant use of fuelwood from the project area.

3.1.3.7 Field Records

Field records of biomass plots, biodiversity surveys and social surveys were scanned for safekeeping. Field data were transcribed from hard copy into spreadsheets for analysis. Entries on field sheets were done in English and as clearly and legibly as possible avoiding the use of abbreviations or codes unless those codes are clearly delineated on the field sheet. GPS locations, pictures, observer information, date and time, and field conditions were recorded and archived as a component of the field records.

3.1.3.8 Remote Sensing

A forest/non-forest map of the project area and the leakage area was created for the end of the monitoring period to detect any forest loss or to identify new strata (due to unforeseen forest change dynamics). A complete description of the data and methods used to conduct the remote sensing analysis, including the accuracy, can be found in section 3.2.1.1.

3.1.3.9 Monitoring of leakage

Monitoring of leakage followed the monitoring plan and is described below:

a) Technical description of the monitoring task.

Monitoring of activity shifting leakage (deforestation for the purpose of sugarcane agricultural production) took place through year 2020 since that is the period in the baseline when planned deforestation was to occur. The leakage for this project was determined using module LK-ASP, and found that the original baseline deforestation agent, Gallon Jug Agroindustries, did not deforest additional acres in Belize under its control for sugarcane production. Monitoring of forest lands under control of Gallon Jug Agroindustries using the remote sensing techniques can be found in section 3.2.1.1.. Monitoring of non-CO_2 emissions that result from burning biomass connected with deforestation in the leakage area was monitored using module E-BPB, and was found that there was no change in biomass from the deforestation activities.

b) Data collected.

Results of Remote Sensing of the Leakage Area can be found in Section 3.2.1.1..

c) Overview of data collection procedures.

Data collection methods are described in section 3.2.1.1..

d) Quality control and quality assurance procedure.

Data QA/QC is described in section 3.2.1.1.

e) Data archiving.

Data is stored on Terra Global's servers and is shared with Project proponents.

f) Organization and responsibilities of the parties involved in all the above.

Terra Global was responsible for climate monitoring tasks during this monitoring period.

3.1.3.10 Community Benefits

Community Benefits were monitored and are described in Section 4.3.

3.1.3.11 Biodiversity Benefits

Wildlife was observed during the monitoring period following the procedures in section 15.3 Biodiversity Impact Monitoring

3.1.3.12 Data Management

Field Records

Field records of monitoring of biomass, LULC, biodiversity and communities were made digitally and saved on Terra Global's server. This data is available for the VVB.

Wildlife Observations

Wildlife was observed during the monitoring period following the procedures in Section 15.3 Biodiversity Impact Monitoring.

Remote Sensing

Remote sensing data was used to analyze the forest cover of the project and potential leakage area. Procedures are described in Section 3.2.

3.1.4 Dissemination of Monitoring Plan and Results (CL4.2)

To meet the requirements of their FSC certification, TFG, informed communities, including Sylvester Village of monitoring results showing that the project has delivered net positive benefits. For the surveys conducted in 2014, 2015 and 2019 these results of positive climate, community and biodiversity benefits can be found on the FSC website at: https://fsc.org/en/fsc-public-certificate-search.

As per Belize custom, the information about access project document online, including the summary report, will be posted at the Sylvester General Store once the Monitoring Report is complete. In addition, UB ERI is in communication with all relevant stakeholders to present the VCS/CCB Monitoring Report, gather feedback and notify them of the 30-day comment period so that they may submit commits privately to the CCB via the website CCBstandards@v-c-s.org. All relevant Public Comments submitted to the CCB during the public comment period will be addressed.

3.2 Quantification of GHG Emission Reductions and Removals

3.2.1 Baseline Emissions

3.2.1.1 Area of Forest available for Conversion and Rate of Conversion

Of the total area of the property, 8,432 ha were slated for conversion to sugarcane. In the baseline, 8,240 ha would have been converted to sugarcane ($A_{planned,l}$ = 8,240). A 1-chain buffer around perennial streams and wetlands was excluded to comply with directives from the Belize Forest Department accounting for 118.3 ha.

3.2.1.2 Biomass Baseline Carbon Stocks

Baseline biomass carbon stocks consisted of aboveground biomass and belowground biomass in the sugarcane conversion area. Sugarcane is defined for this purpose as non-tree biomass, however since it is harvested annually, the average long-term carbon content value is used. Also, in the PD the baseline carbon stock of sugarcane is calculated to have the same biomass as non-

tree biomass in the project scenario ($C_{ABnon\text{-}treepost,I} = C_{BBnon\text{-}treebsl,i}$). This process is described in 4.1.4 Carbon stocks in agro-ecosystems and the non-tree biomass pool of the PD.

3.2.1.3 Rate of Deforestation and Agricultural Conversion in Baseline

The likelihood of conversion to sugarcane is considered 100% based on the expected profitability of the project and the lack of barriers. The annual rate of deforestation is derived using the following equation:

$$AA_{planned,i,t} = (A_{planned,i} * D\%_{planned,i,t}) * L\text{-}D_i$$

Where*:*

Parameter	Description	Result
$AA_{planned,i,t}$	Annual area of baseline planned deforestation for stratum i at time t; ha	824 ha/year for 10 years
$D\%_{planned,i,t}$	Projected annual proportion of land that will be deforested in stratum i during year t. If actual annual proportion is known and documented (e.g. 25% per year for 4 years), set to proportion; %	10%/year for 10 years
$A_{planned,i}$	Total area of planned deforestation over the baseline period for stratum i; ha	8,240 ha
$L\text{-}D_i$	Likelihood of deforestation for stratum i; %	100%

According to methodology module BL-PL "Where a valid verifiable plan exists for rate at which deforestation is projected to occur, this rate shall be used." Therefore, a rate of 10%/year is used for 10 years. At validation this rate was determined to be feasible and in line with common practice.

3.2.1.4 Carbon stocks in agro-ecosystems and the non-tree biomass pool

Carbon socks in the agro-ecosystems and the non-tree biomass pool did not change as they are set at the baseline.

3.2.1.5 Fate of Forest Resources Lost to Agricultural Conversion (Long-lived Wood Products)

Long-lived Wood Products did not change as they are set at the baseline.

Avoided emissions from fertilizer application

Nitrogen fertilizer application is a conservatively excluded pool and is set the baseline.

Avoided emissions from transportation fuel use

Emissions from transportation fuel use were conservatively omitted in both the baseline and project scenarios.

3.2.1.6 Baseline Emissions Summed

The baseline net GHG emissions are determined

$$\Delta C_{BSL,planned} = \sum_{t=1}^{t^*} \sum_{i=1}^{M} \left(\Delta C_{BSL,i,t} + GHG_{BSL-E,i,t} \right)$$

as:

Parameter	Description	Result
ΔC BSL,planned	Net greenhouse gas emissions in the baseline from planned deforestation; tCO2-e	2,886,997
ΔC BSL,i,t	Net carbon stock changes in all pools in the baseline stratum i at time t; tCO2-e	Reported by year in Table 8
GHG BSL-E,i,t	Greenhouse gas emissions as a result of deforestation activities within the project boundary in the baseline stratum i during project year t; tCO2-e year-1	Reported by year in Table 8
i	1, 2, 3, … M strata (unitless)	one strata
t	1, 2, 3 … t* time elapsed since the start of the project activity (years)	10 years

Table 8. Summary of Baseline Emissions

Year	Baseline Emissions (tCo2e)							
	Biomass Change AGB (ΔCAB_tree,i)	Biomass Change BGB (ΔCBB_tree,i)	Long Term Wood Products Pool (Cwp100,i,t)	Biomass Change (ΔCBSL,i,t)	Non-CO2 Biomass Burning (Ebiomassburn)	Total Baseline Emissions (GHGBSL,E)	Market Leakage Deductions (ΔCLK)	Total Baseline Emissions and Reductions (ΔCBSL, planned,I,t)
2011	235,481	5,541	290	247,785	13,992	13,992	32,766	261,777
2012	235,481	11,081	581	253,768	13,992	13,992	32,766	267,760
2013	235,481	16,622	871	259,750	13,992	13,992	32,766	273,742
2014	235,481	22,163	1,162	265,733	13,992	13,992	32,766	279,725
2015	235,481	27,704	1,452	271,716	13,992	13,992	32,766	285,708
2016	235,481	33,244	1,743	277,699	13,992	13,992	32,766	291,691
2017	235,481	38,785	2,033	283,682	13,992	13,992	32,766	297,674
2018	235,481	44,326	2,324	289,665	13,992	13,992	32,766	303,657
2019	235,481	49,867	2,614	295,648	13,992	13,992	32,766	309,640
2020	235,481	55,407	2,905	301,631	13,992	13,992	32,766	315,623
Project Total	2,354,810	304,740	15,975	2,747,077	139,920	139,920	327,660	2,886,997

3.2.2 Project Emissions

3.2.2.1 Monitoring of actual carbon stock changes and greenhouse gas emissions

The net carbon stock change as a result of deforestation is equal to the area deforested multiplied by the emission per unit area. The following equations and parameters were used to determine changes in carbon stocks during a monitoring period:

$$\Delta C_P = \sum_{t=1}^{t^*} \sum_{i=1}^{M} \left(\Delta C_{P,DefPA,i,t} + \Delta C_{P,Deg,i,t} + \Delta C_{P,DistPA,i,t} + GHG_{P-E,i,t} - \Delta C_{P,Enh,i,t} \right)$$

Where:

Parameter	Description
ΔC_P	Net greenhouse gas emissions within the project area under the project scenario; tCO_2e
$\Delta C_{P,DefPA,i,t}$	Net carbon stock change as a result of deforestation in the project area in the project case in stratum *i* at time *t*; tCO_2e
$\Delta C_{P,Deg,i,t}$	Net carbon stock change as a result of degradation in the project area in the project case in stratum *i* at time *t*; tCO_2e: This source of emissions was found to be de minimis and will not be monitored.
$\Delta C_{P,DistPA,i,t}$	Net carbon stock change as a result of natural disturbance in the project area in the project case in stratum *i* at time *t*; tCO_2e
$GHG_{P-E,i,t}$	Greenhouse gas emissions as a result of deforestation and degradation activities within the project area in the project case in stratum *i* in year *t*; tCO_2e
$\Delta C_{P,Enh,i,t}$	Net carbon stock change as a result of forest growth and sequestration during the project in areas projected to be deforested in the baseline in stratum *i* at time *t*; tCO_2e
i	1, 2, 3 …*M* strata
t	1, 2, 3, … *t** years elapsed since the start of the REDD project activity

For activity shifting leakage of baseline activities, the net greenhouse gas emissions in the project case will be equal to the sum of stock changes due to deforestation in the activity shifting leakage area. The leakage area consists of 40,177.7 ha of forest owned by the agent of deforestation, Gallon Jug Agroindustries, at project start in 2011.

$$\Delta C_{P,LB} = \sum_{t=1}^{t} \sum_{i=1}^{M} \Delta C_{P,DefLB,i,t}$$

Parameter	Description
$\Delta C_{P,LB}$	Net greenhouse gas emissions in the leakage belt in the project case; t CO_2-e
$\Delta C_{P,DefLB,i,t}$	Net carbon stock change as a result of deforestation in the leakage belt the project case in stratum *i* at time *t*; t CO_2-e
i	1, 2, 3 …*M* strata
t	1, 2, 3, … *t** years elapsed since the start of the REDD project activity

The net carbon stock change as a result of deforestation were equal to the area deforested multiplied by the emission per unit area.

$$\Delta C_{P,DefPA,i,t} = \sum_{u=1}^{U} \left(A_{DefPA,u,i,t} * \Delta C_{pools,P,Def,u,i,t} \right)$$

$$\Delta C_{P,DefLB,i,t} = \sum_{u=1}^{U} \left(A_{DefLB,u,i,t} * \Delta C_{pools,P,Def,u,i,t} \right)$$

Where:

Parameter	Description
$\Delta C_{P,DefPA,i,t}$	Net carbon stock change as a result of deforestation in the project area in the project case in stratum *i* at time *t*; tCO_2e
$\Delta C_{P,DefLB,i,t}$	Net carbon stock change as a result of deforestation in the project case in the leakage belt in stratum *i* at time *t*; tCO_2e
$A_{DefPA,u,i,t}$	Area of recorded deforestation in the project area stratum *i* converted to land use *u* at time *t*; ha
$A_{DefLB,u,i,t}$	Area of recorded deforestation in the leakage belt stratum *i* converted to land use *u* at time *t*; ha: note this parameter is equivalent in this case to $LKA_{planned,i,t}$ and therefore activity shifting leakage will be handled using module LK-ASP and the derived value $\Delta C_{LK\text{-}AS,planned.}$
$\Delta C_{pools,Def,u,i,t}$	Net carbon stock changes in all pools in the project case in land use *u* in stratum *i* at time *t*; t CO_2-e ha-1

Parameter	Description
u	*1,2,3,…U* post-deforestation land uses; in this case, only one post-deforestation land use, sugar cane agriculture.
i	1, 2, 3 …*M* strata
t	1, 2, 3, … *t** years elapsed since the start of the REDD project activity

During the Monitoring Period, no deforestation was detected by areas controlled by A Gallon Jug Agroindustries, so no additional quantitation was necessary to determine pos-deforestation classes.

In 2010, Hurricane Richard hit the project area and caused damage to the forest. It is expected that many trees died during the monitoring period after experiencing long-term damage. These dead trees were observed during the forest inventory as either standing deadwood or lying deadwood. As these deadwood carbon pools are not monitored in this project they are conservatively omitted. Changes in the carbon stock on live trees were accounted for during this monitoring period.

Changes in forest carbon stock were observed based on monitoring data and the following equation and parameters were used to quantify forest carbon loss:

$$\Delta C_{P,Enh,i,t} = \sum_{t=1}^{t}\sum_{i=1}^{M}\left(\left(C_{P,i,t} - C_{BSL,i}\right) * A_{Enh,PL,i,t}\right)$$

Where:

Parameter	Description
$\Delta C_{P,Enh,i,t}$	Net carbon stock changes as a result of forest carbon stock enhancement/loss in stratum *i* in the project area at time *t*; t CO_2-e
$C_{P,i,t}$	Carbon stock in all pools in the project case in stratum *i* at time *t*; t CO_2-e
$C_{BSL,i}$	Carbon stock in all pools in the baseline in stratum *i*; t CO_2-e ha-1
$A_{Enh,PL,i,t}$	Project area in stratum *i* in which carbon stocks are accumulating but that would have undergone planned deforestation in the baseline scenario at time *t*; ha
i	1, 2, 3 …*M* strata
t	1, 2, 3, … *t** years elapsed since the start of the REDD project activity

$A_{Enh,PL,i,t}$	Project area in stratum *i* in which carbon stocks are accumulating but that would have undergone planned deforestation in the baseline scenario at time *t*; ha

where

$D\%_{planned,i,t}$	Projected annual proportion of land that will be deforested in stratum *i* at time *t*; %
$A_{planned,i,}$	Total area of planned deforestation over the entire project lifetime for stratum *i*; ha
i	1, 2, 3 …*M* strata
t	1, 2, 3, … *t** years elapsed since the start of the REDD project activity

and where:

$$C_{P,i,t} = C_{AB\_tree,i} + C_{BB\_tree,i} + C_{AB\_non-tree,i} + C_{BB\_non-tree,i} + C_{DW,i} + C_{LI,i} + C_{SOC,i}$$

Parameter	Description
$C_{P,i,t}$	Carbon stock in all pools in the project case in stratum *i* at time *t*; t CO_2-e
$C_{AB\_tree,i}$	Carbon stock in aboveground tree biomass in the project case in stratum *i*; t CO_2-e ha-1
$C_{BB\_tree,i}$	Carbon stock in belowground tree biomass in the project case in stratum *i*; t CO_2-e ha-1
$C_{AB\_non-tree,i}$	Carbon stock in aboveground nontree vegetation in stratum *i*; t CO_2-e ha-1
$C_{BB\_non-tree,i}$ C	Carbon stock in belowground nontree vegetation in stratum *i*; t CO_2-e ha-1
$C_{DW,i}$	Carbon stock in dead wood in the project case in stratum *i*; t CO_2-e ha-1
$C_{LI,i}$	Carbon stock in litter in the project case in stratum *i*; t CO_2-e ha-1
$C_{SOC,i}$	Carbon stock in soil organic carbon in the project case in stratum *i*; t CO_2-e ha-1
i	1, 2, 3 …*M* strata

t	1, 2, 3, … *t** years elapsed since the start of the REDD project activity

The net carbon stock change as a result of deforestation is equal to the area deforested multiplied by the emission per unit area. Based on the remote sensing analysis described below, no deforestation was detected in the project area therefore no deductions are taken. Measurements of carbon stock for the baseline are described in section 3.2.1.2. An approved methodology deviation (see 2.2.2.3) was used to determine that forest degradation from fuelwood collection and timber harvest is de minimis and set to zero. Equations and parameters used to determine changes in carbon stocks during the monitoring period are as follows:

$$\Delta C_P = \sum_{t=1}^{t^*} \sum_{i=1}^{M} \left(\Delta C_{P,DefPA,i,t} + \Delta C_{P,Deg,i,t} + \Delta C_{P,DistPA,i,t} + GHG_{P-E,i,t} - \Delta C_{P,Enh,i,t} \right)$$

Where:

Parameter	Description	Result
ΔC_P	Net greenhouse gas emissions within the project area under the project scenario; tCO_2e	0
$\Delta C_{P,DefPA,i,t}$	Net carbon stock change as a result of deforestation in the project area in the project case in stratum *i* at time *t*; tCO_2e	0
$\Delta C_{P,Deg,i,t}$	Net carbon stock change as a result of degradation in the project area in the project case in stratum *i* at time *t*; tCO_2e: This source of emissions was found to be de minimis and will not be monitored.	0
$\Delta C_{P,DistPA,i,t}$	Net carbon stock change as a result of natural disturbance in the project area in the project case in stratum *i* at time *t*; tCO_2e	0
$GHG_{P-E,i,t}$	Greenhouse gas emissions as a result of deforestation and degradation activities within the project area in the project case in stratum *i* in year *t*; tCO_2e	0
$\Delta C_{P,Enh,i,t}$	Net carbon stock change as a result of forest growth and sequestration during the project in areas projected to be deforested in the baseline in stratum *i* at time *t*; tCO_2e	0
i	1, 2, 3 …*M* strata	1
t	1, 2, 3, … *t** years elapsed since the start of the REDD project activity	7

The following is a narrative of the calculation for project emissions.

3.2.2.2 Biomass Carbon Stocks for Monitoring Period

Baseline biomass carbon stocks consisted of aboveground biomass and belowground biomass of the forest in the sugarcane conversion area. The mean carbon pool in 2013 was based on field measurements conducted in 2013 and independently verified during validation. For this monitoring period, biomass surveys were conducted in 2021. The dry tropical (900-1500mm rainfall) forest allometric equation for biomass prediction published in Pearson et. al. (2005) was used to predict aboveground biomass (Table 9). A factor of 47% was used to convert biomass to carbon.

Table 9. Equations used for calculating biomass during monitoring period

Classification	Equation: DBH = diameter breast height, D=wood density, H=tree height		Maximum DBH or height
Aboveground Tree Biomass: Pearson et. al. 2005 Tropical Dry (900-1500mm rainfall)	AGB = 0.2035 * $DBH^{2.3196}$		DBH <= 63 cm
Palm aboveground biomass (AGB): Brown 2015	*Chrysophylla stauracantha*	AGB = ((0.8966 * H) – 0.37988)	H 0.45-10.0 m
	Attalea cohune	AGB = (302.6 * ln(H)) + 276.93)	H 0.31-15.7 m
	Sabal mauritiiformis	AGB = ((14.596 * H) + 13.54)	H 0.15-14.53 m
Belowground Biomass	If AGB is > 125 t/ha then BGB = AGB x .24 else BGB = AGB x .2		DBH <= 63.4

Note that trees with a DBH greater than 63 cm, were recorded as having a diameter of 63 cm. This process made the calculations conservative, but more accurate with the selected allometric equation.

The procedure for performing this estimate involved randomly allocating permanent plots in the forest, establishing and marking those plots, and measuring the trees and palms on those plots according to the methodology described in the monitoring plan in the Project Document. The number of plots was determined to capture the likely variability of the forest vegetation with adequate statistical power. The DBH and total height of trees and the height of palms were recorded in the field and transcribed to spreadsheets for calculation of biomass, carbon, and metric tons of CO_2 equivalent. Plots were mathematically averaged to produce a mean by plot. Plot means were averaged to produce a mean for the project. An error rate was produced based on the standard deviation of the plot means. The error rate was used to produce an uncertainty estimate for the inventory for each pool (aboveground biomass and belowground biomass). The combined uncertainty rate for all pools and sources of emissions was found to be 8.58% at validation. During the monitoring period the uncertainty was found to be 9.90%. The total combined uncertainty (CREDD_ERROR) is 6.46%. Based on the allowable uncertainty rate of 15%, no deductions were applied for uncertainty in the baseline or during the monitoring period.

Belowground biomass was estimated based on aboveground biomass using the root-to-shoot ratios indicated in the CP-AB methodology. Belowground biomass, per methodology module BLPL, is treated as if emissions occur steadily over a 10-year period. In the baseline scenario, since 10% of the deforestation is occurring each year and only 10% of the belowground biomass is emitted each year, the emissions model accounts for each annual deforestation event separately and applies 10% of that event per year for 10 years.

Aboveground biomass attributed to palm biomass was included for three common species of palms and calculated AGB based on equations developed on a nearby study site were used to predict biomass (Brown 2015). At Validation, the allometric equation used was evaluated per the methodology by reviewing the source data from which the equation was derived and confirming that the source data is representative of the species and conditions in the project and covers the

range of potential sizes. The R^2 of each model is within the limit set by the methodology (R^2>.8). The range of heights is compared below:

Table 10. Palm equation range and R2.

Species	R^2	Height range of the model	Height range of the inventory	Palms out of Range
cohune (*Attalea cohune*)	0.84	H 0.31-15.7 m	0.4-26.5 meters	2
give-and-take (*Chrysophylla stauracantha*)	0.94	H 0.45-10.0 m	1.0-8.8 meters	0
botan a.k.a sabal (*Sabal mauritiiformis*) and all other palm species found in the inventory.	0.81	H 0.15-14.53 m	1.7-21.9 meters	4

To account for the four palms out of range for the botan model and the two palms out of range for the cohune model, the heights were arbitrarily, and conservatively capped at 15.7 meters for the cohune, and 14.5 meters for sabal thereby excluding those out-of-range palms from the calculation. This process was used for both Validation and this monitoring period.

During this monitoring period, unknown palms were identified during the biomass inventory. As give-and-take (*Chrysophylla stauracantha*), is easy to identify this allometric equation was not used for unknow palms as it is the most conservative. The allometric equation for botan a.k.a sabal (*Sabal mauritiiformis*) was used for unknown palms, or other palms not identified in Table 10 Palm equation range and R2.

The tree biomass pool for the baseline at validation was calculated as 285.78 tCO2e/ha for aboveground tree biomass and 67.24 tCO2e/ha for belowground tree biomass. The sum of the pools equaled 353.02 tCO2e/ha at validation.

During the monitoring period the tree and palm biomass pool for the baseline at validation was calculated as 251.65 tCO_2e/ha for aboveground tree biomass and 57.60 tCO_2e/ha for belowground tree biomass. The sum of the pools equaled 309.25 tCO_2e/ha at during the monitoring period (Table 11).

Table 11. Basic Statistics on Forest Carbon

	Average Biomass [Mg DM ha-1]	Average Carbon [tC/ha]	Average tCO2e [tCO2e/ha]
Mean	179.45	84.34	309.25
Standard Error	10.74	5.05	18.51
Median	180.30	84.74	310.71
Standard Deviation	67.95	31.94	117.10
Minimum	21.82	10.26	37.60
Maximum	319.56	150.19	550.71

	Average Biomass [Mg DM ha-1]	Average Carbon [tC/ha]	Average tCO2e [tCO2e/ha]
n	40.00	40.00	40.00
HWCI	21.71	10.21	37.42

3.2.2.3 LULC Classification and Forest Stratification in the Project Area

A forest/non-forest map of the project area and the leakage area was created for the end of the monitoring period to detect any forest loss or identify new strata (due to unforeseen forest change dynamics).

Description of the Data Sources

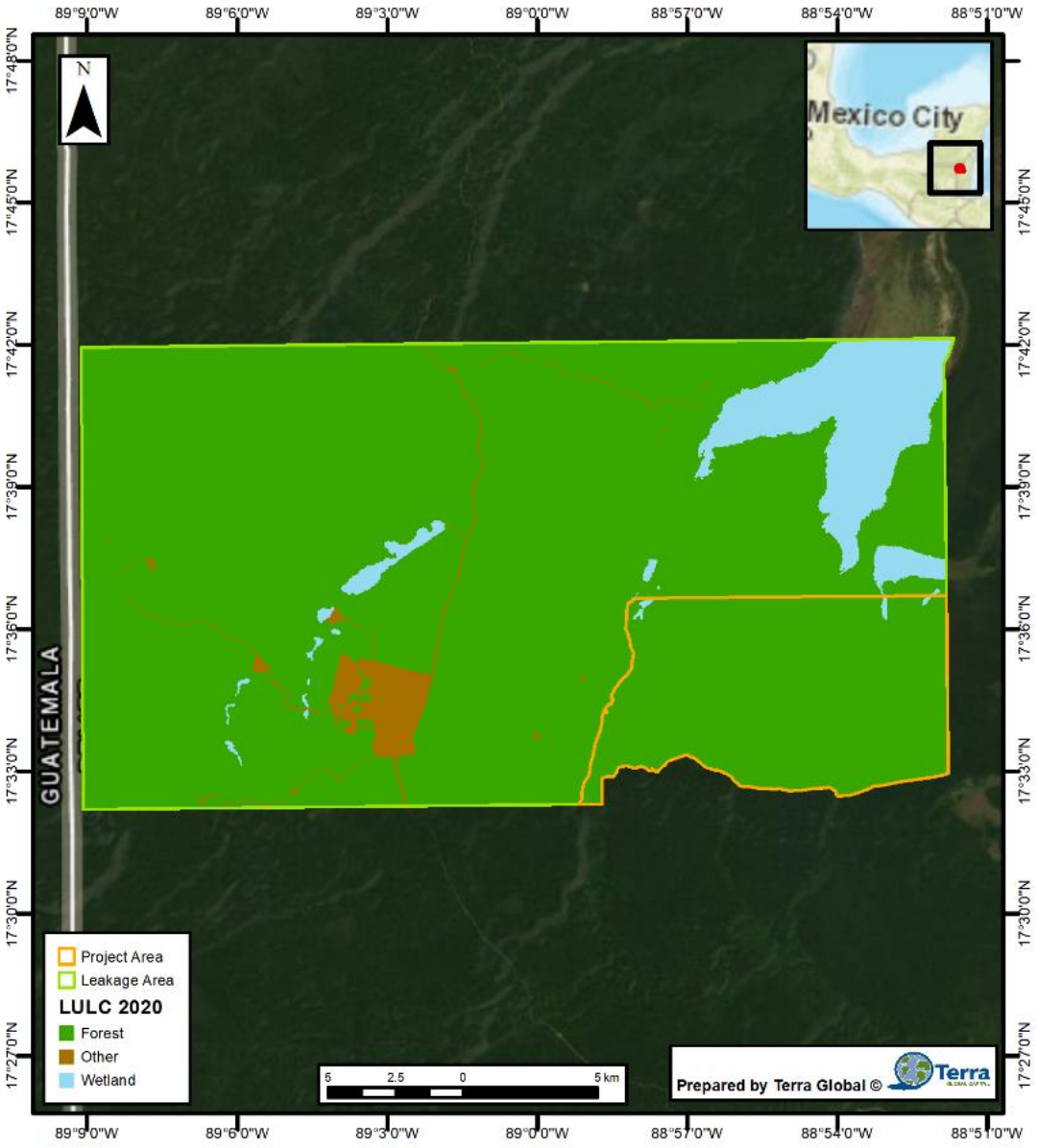
The image used to create the land use map was a Landsat 8 Level 2, Collection 2, Tier 1 image. This dataset contains atmospherically corrected surface reflectance and it was downloaded from Google Earth Engine. Although the project area has high cloud cover throughout the year, it was possible to find one single image without clouds from 2020-04-20. In order to best evaluate the medium-resolution Landsat images, high resolution images from Google Earth were used to assist the image interpreter.

LULC Classification and Forest Stratification

The following steps outline remote sensing procedures that were followed throughout this project and to create the monitoring images used for this monitoring period:

- Analysts interpreted ~400 reference points of Forest, Bajo, Bare, Marsh and Water for one Landsat image 2020-04-20 which were cross-referenced with high-resolution imagery from Google Maps, Microsoft Bing Maps. The reference points were randomly divided into 66% training points and 33% verification points. Additionally, more verification points were generated randomly.
- The calculated indices and band ratios from the composite images in the monitoring period were classified using a machine learning algorithm.
- After classification, the spatial coherence was improved by applying some morphological operations (clumping and sieving, and majority filtering).
- Lastly, the resulting classified image was adjusted manually performing a visual cross-referencing with high-resolution imagery from Google Maps.

A classification accuracy of 90% or better was achieved. Data from field teams conducted during the biomass survey assisted in ground-truthing the classified image. The results of the classification can be seen in Map 7 and Table 15



Map 7. Classified image of the Project Area

Classification Accuracy

Accuracy metrics were calculated based on the randomly selected verification points for the image in the monitoring period. The 33% of reference points that were assigned as verification points were used to assess the accuracy of land use classification. Additionally, more verification points were generated randomly to assess the accuracy, to have a total of 100 points in the project area. The classified images are classified with sufficiently high accuracy, as demonstrated by the accuracy measures and confusion matrix in Table 13.

Table 12. 2020 LULC of the Project Area

	Project Area	
LULC 2020	**Area (ha)**	**Area (%)**
Forest	8,390	99.49%
Water	40	0.48%
Other	2	0.03%
Total	**8,432**	**100.00%**

Table 13. Classification confusion matrix and accuracy for the Project Area

Project Area			
	Bare	**Water**	**Forest**
Bare	1	-	-
Water	-	3	4
Forest	-	1	91
Omission	**100.0%**	**42.9%**	**98.9%**
Commission	**100.0%**	**75.0%**	**95.8%**
Accuracy	**95.0%**		

Table 14. Summary of Project Emissions

	Ex-Post Emissions by Project (tCo2e)		
Year	**Biomass Change (ΔCP,Enh,i,t)**	**Activity Shifting - zero Natural Disturbance (ΔCP,DistPA,i,t)**	**Total Project Emissions (ΔCP)**
2011	-	-	-
2012	-	-	-
2013	-	-	-
2014	39,388	-	39,388
2015	40,624	-	40,624
2016	41,861	-	41,861
2017	43,098	-	43,098
2018	44,335	-	44,335
2019	45,572	-	45,572
2020	46,809	-	46,809
MR2 Total	301,687	-	301,687
Project Total	301,687	-	301,687

3.2.3 Leakage

Although not considered activity sifting leakage under Module VMD0009, forest harvest was monitored within the leakage belt. No deforestation was caused by logging within the Leakage Belt which can be seen in Map 8. 2020 Land cover map of the Leakage Area. No forest degradation occurred due to logging as TFG is an FSC certified company, which must show sustained yield over time. Low-impact single-tree selection harvesting occurred within the leakage

area shown in Map 3. Harvesting Compartments in the larger Laguna Seca Parcel between 2014-2020, and other areas owned by TNC. Monitoring of the impacts of harvesting, including social impacts and environmental impacts are monitored and reported to FSC, which is globally accepted as the most sustainable forestry standard. The underlying reports from social monitoring and monitoring of biodiversity are available to the VVB, and the FSC audit reports are public which can be found on their website www.fsc.org. These reports demonstrate that TFG practiced excellent forestry when they owned the parcel during the monitoring period.

3.2.3.1 Activity Shifting Leakage

Monitoring of activity shifting leakage (deforestation for the purpose of sugarcane agricultural production) took place through the year 2020 since this is the period in the baseline when planned deforestation was to occur. The activity shifting leakage for this project was found that the original baseline deforestation agent, Gallon Jug Agroindustries, did not deforest additional acres in Belize under its control for sugarcane production. Gallon Jug Agroindustries' parcel is shown in Map 5. During the monitoring period, no area was cleared for agriculture as shown in Map 8 (classified images given to the VVB).

Activity shifting leakage was accounted according to the requirements in module VMD0009, using the following equations and parameters:

$$\Delta C_{LK-AS,planned} = \sum_{t=1}^{t^*} \sum_{i=1}^{M} \left((LKA_{planned,i,t} * \Delta C_{BSL,i}) + GHG_{LK,E,i,t} + LK_{peat} \right)$$

Parameter	Description	Result	Result	Result	Result	Result	Result	Result
ΔCLK-AS,planned	Net greenhouse gas emissions due to activity shifting leakage for projects preventing planned deforestation; tCO2-e	0	0	0	0	0	0	0
LKAplanned,i,t	The area of activity shifting leakage in stratum i at time t; ha	0	0	0	0	0	0	0
ΔCBSL,i	Net carbon stock changes in all pools in baseline stratum i; tCO2-e ha-1	22,163	27,704	33,244	38,785	44,326	49,867	55,407
$GHG_{LK,E,i,t}$	Greenhouse gas emissions as a result of leakage of avoided deforestation activities in stratum i in year t; tCO2-e	0	0	0	0	0	0	0
LKpeat,t	Net greenhouse gas emissions due to leakage to peatlands as a result of implementation of a planned deforestation project at time t; tCO2-e	N/A no peat present	N/A no peat present	N/A no peat present	N/A no peat present	N/A no peat present	N/A no peat present	N/A no peat present
I	1, 2, 3, … *M* strata	1	1	1	1	1	1	1
T	1, 2, 3, … *t** years elapsed since the projected start of the REDD project activity	2014	2015	2016	2017	2018	2019	2020

$$WoPR_{i,t} = \sum_{ag=1}^{ag} \frac{HistHA_{i,ag}}{5}$$

Parameter	Result	Description
$WoPR_{i,t}$	8240	Deforestation by the baseline agent of the planned deforestation in stratum *i* in year *t* in the absence of the project; ha: Where there is no history of deforestation and no verifiable plans for controlled lands and future-controlled lands then WoPR must be set to planned baseline rate for the project (D%planned * Aplanned from the planned deforestation baseline module).
$HistHa_{i,ag}$	0	The number of hectares of forest cleared by the baseline agent of the planned deforestation in the five years prior to project implementation in stratum i by agent ag within the country; ha
i	1	1, 2, 3, … *M* strata
ag	1	1, 2, 3, … *ag* agents of deforestation
t	2014-2020	1, 2, 3, … *t** years elapsed since the projected start of the REDD project activity

$$NewR_{i,t} = WoPR_{i,t} - (D\%_{planned,i,t} * A_{planned,i})$$

Parameter	Result	Description
$NewR_{i,t}$	0	New calculated forest clearance in stratum *i* at time *t* by the baseline agent of the planned deforestation where no leakage is occurring; ha
$WoPR_{i,t}$	8240	Deforestation by the baseline agent of the planned deforestation in stratum *i* in year *t* in the absence of the project; ha
$D\%_{planned,i,t}$	100%	Projected annual proportion of land that will be deforested in stratum *i* at year *t;* %
$A_{planned,i}$,	8240	Total area of planned deforestation over the baseline period for stratum *i*; ha
i	1	1, 2, 3, … *M* strata
t	2014-2020	1, 2, 3, … *t** years elapsed since the projected start of the REDD project activity

$$LKA_{planned,i,t} = A_{defLK,i,t} - NewR_{i,t}$$

Parameter	Result	Description
$LKA_{planned,i,t}$	0	The area of activity shifting leakage in stratum i at time t; ha

Parameter	Result	Description
$NewR_{i,t}$	0	New calculated forest clearance in stratum *i* at time *t* by the baseline agent of the planned deforestation where no leakage is occurring; ha
$A_{defLK,i,t}$	0	The total area of deforestation by the baseline agent of the planned deforestation in stratum i at time, t; ha
i	1	1, 2, 3, … *M* strata
t	2014-2020	1, 2, 3, … *t** years elapsed since the projected start of the REDD project activity

Activity shifting leakage can also take the form of biomass burning as a result of deforestation for sugarcane agriculture. The parameters, calculations and results of monitoring follow:

$$GHG_{LK,E,i,t} = E_{BiomassBurn,i,t} + N_2O_{direct-N,i,t}$$

Parameter	Result	Description
$GHG_{LK,E,i,t}$	0	Greenhouse gas emissions as a result of leakage of avoiding deforestation activities in stratum *i* in year *t* (tCO2e)
$E_{biomassburn,i,t}$	0	Non-CO_2 emissions due to biomass burning in stratum *i* in year *t* (tCO2e)
$N_2O_{direct-N,i,t}$	0	Direct N2O emission as a result of nitrogen application on the alternative land use in stratum i in year t (tCO2e); conservatively excluded pool.
i	1	1, 2, 3, … *M* strata (unitless)
t	2014-2020	*1, 2, 3 … t** time elapsed since the start of the project activity (years)

Total leakage effects are calculated as follows:

$$\Delta C_{LK} = \Delta C_{LK-AS,planned} + \Delta C_{LK-AS,unplanned} + \Delta C_{LK-AS,degrad-FW/C} + \Delta C_{LK-ME}$$

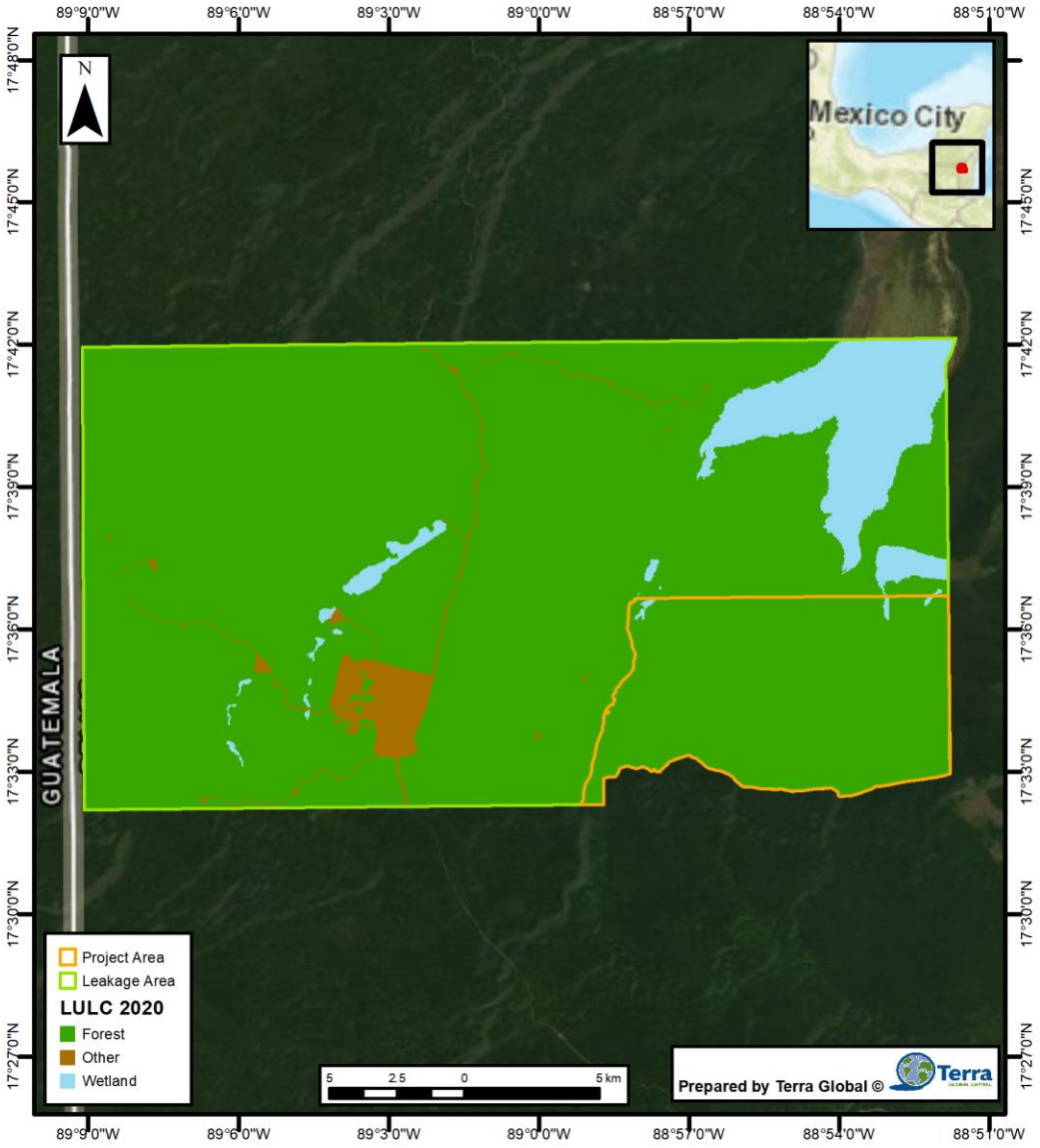
Where:

Parameter	Description	Result
ΔC_{LK}	Net greenhouse gas emissions due to leakage; tCO_2e; note annual reporting of parameter in Table 6.	229,362
$\Delta C_{LK-AS,planned}$	Net greenhouse gas emissions due to activity shifting leakage for projects preventing planned deforestation; tCO_2e (from LK-ASP)	0

Parameter	Description	Result
$\Delta C_{LK\text{-}AS,unplanned}$	Net greenhouse gas emissions due to activity shifting leakage for projects preventing unplanned deforestation; tCO_2e (from LK-ASU): note this is a avoided planned deforestation and this parameter is n/a.	N/A
$\Delta C_{LK\text{-}ME}$	Net greenhouse gas emissions due to market-effects leakage; tCO_2e (from LK-ME).	229,362
$\Delta C_{LK\text{-}AS,degrad\text{-}FW/C}$	Net greenhouse gas emissions due to activity shifting leakage for degradation caused by extraction of wood for fuel; tCO_2e (from LKDFW).	N/A

LULC Classification and Forest Stratification in the Leakage Area

The classification procedure followed to determine the land cover types in the leakage area is described in Section 3.2.2.3. The results of the classification are presented in Map 8 and Table 15.



Map 8. 2020 Land cover map of the Leakage Area

Table 15. 2020 LULC of the Leakage Area

	Leakage Area	
LULC 2020	**Area (ha)**	**Area (%)**
Forest	40,302	88.67%
Water	3,949	8.69%
Other	1,200	2.64%
Total	**45,450**	**100.00%**

Classification Accuracy

Accuracy metrics were calculated based on the randomly selected verification points for the image in the monitoring period. The 33% of reference points that were assigned as verification points were used to assess the accuracy of land use classification. Additionally, more verification points were generated randomly to assess the accuracy, to have a total of 200 in the leakage area. The classified images are classified with sufficiently high accuracy, as demonstrated by the accuracy measures and confusion matrix in Table 16.

Table 16. Classification confusion matrix and accuracy for the Leakage Area

Leakage Area			
	Bare	**Water**	**Forest**
Bare	23	-	-
Water	-	45	2
Forest	3	2	125
Omission	**100.0%**	**95.7%**	**96.2%**
Commission	**88.5%**	**95.7%**	**98.4%**
Accuracy	**96.5%**		

3.2.3.2 Market Leakage

Market effects leakage captures possible emissions from timber harvest that could be generated when the project is removed from the available land base and additional pressure is put on surrounding landowners to provide timber to the market. Market leakage was quantified according to Estimation of emissions from market-effects (LK-ME). Per the requirements of this methodology, this was quantified at project start and deducted from the baseline, which require no on-going monitoring.

Market effects leakage was calculated as a component of baseline emissions as follows:

$$\Delta C_{LK-ME} = LK_{MarketEffects,timber} + LK_{MarketEffects,FW/C}$$

Where:

Parameter	Description	Result
$\Delta C_{LK\text{-}ME}$	Net greenhouse gas emissions due to market-effects leakage (tCO2e)	229,362
$LK_{MarketEffects,timber}$	Total GHG emissions due to market-effects leakage through decreased timber harvest (tCO2e)	229,362
$LK_{MarketEffects,FW/C}$	Total GHG emissions due to market-effects leakage through decreased harvest of fuelwood and charcoal sold into regional and/or national markets (tCO2e); no commercial harvest of charcoal or fuelwood exists in the community.	0
$LK_{MarketEffects,Peat}$	Total GHG emissions due to market-effects leakage through decreased timber, fuelwood and charcoal harvest resulting in increased peatland drainage (tCO2-e); N/A	0

$$LK_{MarketEffects,timber} = \sum_{i=1}^{M} (LF_{ME} * LK_{MAF} * AL_{T,i})$$

Where:

Parameter	Description	Result
$LK_{MarketEffects,timber}$	Total GHG emissions due to market-effects leakage through decreased timber harvest (tCO2e)	91,745
LF_{ME}	Leakage factor for market-effects calculations (dimensionless)	0.4
LK_{MAF}	Leakage management adjustment factor (dimensionless): conservatively set to 1 indicating no effects from leakage area management.	1
$AL_{T,i}$	Summed emissions from timber harvest in stratum *i* in the baseline case potentially displaced through implementation of the project (tCO2e)	229,362
i	1,2,3,…M strata (dimensionless)	1

$$AL_{T,i} = \sum_{i=1}^{i} (C_{BSL,XBT,i\,t})$$

Parameter	Description	Result
$AL_{T,i}$	Summed emissions from timber harvest in stratum *i* in the baseline case laced through implementation of carbon project (tCO2e)	229,362
$C_{BSL,XBT,i,t}$	Carbon emission due to displaced timber harvests in the baseline scenario in stratum *i* in year *t* (tCO2e)	229,362
i	1, 2, 3, … *M* strata (unitless)	1
t	*1, 2, 3 … t** time elapsed since the start of the project activity (years)	10

$$C_{BSL,XBT,i,t} = ([V_{BSL,XE,i,t} * D_{MN} * CF] + [V_{BSL,XE,i,t} * LDF] + [V_{BSL,XE,i,t} * LIF]) * \frac{44}{12}$$

Where:

Parameter	Description	Result
$C_{BSL,XBT,i,t}$	Carbon emission due to timber harvests in the baseline scenario in stratum *i* in year *t* (tCO2e)	229,362
$V_{BSL,EX,i,t}$	Volume of timber projected to be extracted from within the project boundary during the baseline in stratum *i* in year *t* (m^3)	54,176
D_{mn}	Mean wood density of commercially harvested species ($t\ d.m.m^{-3}$)	0.712

Parameter	Description	Result
CF	Carbon fraction of biomass for commercially harvested species *j* (t C t $^{-1}$ d.m.)	0.47
LDF	Logging damage factor (t C m $^{-3}$)	0.53
LIF	Logging infrastructure factor (t C m $^{-3}$)	0.29
i	1, 2, 3, … *M* strata (unitless)	1
t	*1, 2, 3 … t** time elapsed since the start of the project activity (years)	10

Table 17. Leakage parameters by year.

Years (t)	ΔC_{LK-ME}	$\Delta C_{LK-AS,planned}$	Leakage emissions (tCO_2e): ΔC_{LK}
2013	32,766	0	32,766
2014	32,766	0	32,766
2015	32,766	0	32,766
2016	32,766	0	32,766
2017	32,766	0	32,766
2018	32,766	0	32,766
2019	32,766	0	32,766
2020	32,766	0	32,766
MR2 Total	**229,362**		**229,362**
Project Total	**327,660**		**327,660**

3.2.4 Net GHG Emission Reductions and Removals

The T-SIG module was used to determine that three pools of emissions were de minimis as they accounted for less than 5% of the total emissions or avoided emissions for the project.

Baseline Source/Activity	Description	Total GHG emissions baseline	Contribution relative total decreases in C pools and increases in emissions	Contribution relative to net anthropogenic removals by sinks
ΔCBSL,planned Net greenhouse gas emissions in the baseline from planned deforestation; t CO_2-e	Biomass change from planned deforestation	761,303	84.38%	107.99%
Ebiomassburn,i,t	Non-CO_2 Biomass Burning	41,977	4.65%	5.95%
ΔCLK-ME	Net greenhouse gas emissions due to market- effects leakage; t CO_2-e	98,297	10.89%	13.94%
Project Area Degradation ($\Delta C_{P,DegW,i,t}$)	Degradation from fuelwood collection	682	0.08%	0.10%
Project Area Degradation ($\Delta C_{P,SelLog,i,t}$)	Degradation from timber harvest	0	0.00%	0.00%
	Total	902,258	100.00%	127.98%

Based on this analysis at validation emissions from project area degradation due to timber harvest and fuelwood collection are all considered de minimis and excluded from any claims of emissions benefits for the monitoring period. Calculations for ΔCBSL,planned, Ebiomassburn,i,t ΔCLK-ME, $\Delta C_{P,DegW,i,t}$ and $\Delta C_{P,SelLog,i,t}$, may be found in Section 5 of the Project Document.

In the first monitoring report, the VCUs for the Risk Buffer were incorrectly calculated . This is now corrected and shown in Table 18. In addition, the Risk Buffer changed from 27% to 10% during this monitoring period. With these new calculations an additional 146,388 additional VCUs can be issued for MR1.

Table 18. Correction and Buffer Release for MR1

Year	Total Project Emissions (ΔC_P)	Total Baseline Emissions and Reductions (ΔCBSL)	Leakage Deductions (ΔCLK)	Total net GHG emissions ($C_{REDD,t}$)	Total Avoided Emissions minus Uncertainty (Adjusted- $C_{REDD,i,t}$)	2016 Risk M1 Buffer- 27% Per MR1	Net Total VCUs Reported in MR 1	2016 Risk M1 Buffer- 27% Corrected	Corrected VCUs for MR1	2021 Risk Buffer - 10% Per MR2	Revised VCU After Buffer Release for MR1
2011	0	261,777	32,766	229,011	229,011	70,680	158,331	61,833	167,178	22,901	206,110
2012	0	267,760	32,766	234,994	234,994	72,296	162,699	63,448	171,546	23,499	211,495
2013	0	273,743	32,766	240,977	240,977	73,911	167,066	65,064	175,913	24,098	216,879
Totals	0	803,280	98,298	704,982	704,982	216,887	488,096	190,345	514,637	70,498	634,484

Table 19. Total Emission Reductions

Year	Ex-Ante Baseline Emissions (tCo2e)								(tCo2e)			Total Emission Reductions (tCo2e)				
	Biomass Change AGB (ΔCAB_tree,i)	Biomass Change BGB (ΔCBB_tree,i)	Long Term Wood Products Pool (Cwp100,i,t)	Biomass Change (ΔCBSL,i,t)	Non-CO2 Biomass Burning (Ebiomassburn)	Total Baseline Emissions (GHGBSL,E)	Market Leakage Deductions (ΔCLK)	Total Baseline Emissions and Reductions (ΔCBSL, planned,l,t)	Biomass Change (ΔCP,Enh,i,t)	Activity Shifting - zero Natural Disturbance (ΔCP,DistPA,i,t)	Total Project Emissions (ΔCP)	Total net GHG emissions (CREDD,t)	Uncertainty Deduction (CREDD_ERROR,t*)	Total Avoided Emissions minus Uncertainty (Adjusted-CREDD,i,t)	Risk Buffer	Net Total
2014	235,481	22,163	1,162	265,733	13,992	13,992	32,766	279,725	39,388	-	39,388	207,571	-	207,571	20,757	186,814
2015	235,481	27,704	1,452	271,716	13,992	13,992	32,766	285,708	40,624	-	40,624	212,318	-	212,318	21,232	191,086
2016	235,481	33,244	1,743	277,699	13,992	13,992	32,766	291,691	41,861	-	41,861	217,064	-	217,064	21,706	195,357
2017	235,481	38,785	2,033	283,682	13,992	13,992	32,766	297,674	43,098	-	43,098	221,810	-	221,810	22,181	199,629
2018	235,481	44,326	2,324	289,665	13,992	13,992	32,766	303,657	44,335	-	44,335	226,556	-	226,556	22,656	203,900
2019	235,481	49,867	2,614	295,648	13,992	13,992	32,766	309,640	45,572	-	45,572	231,302	-	231,302	23,130	208,172
2020	235,481	55,407	2,905	301,631	13,992	13,992	32,766	315,623	46,809	-	46,809	236,048	-	236,048	23,605	212,443
Project Total	2,354,810	304,740	15,975	2,747,077	139,920	139,920	327,660	2,886,997	301,687	-	301,687	2,257,650	-	2,257,650	372,154	1,885,496

3.3 Optional Criterion: Climate Change Adaptation Benefits

This section is not applicable.

3.3.1 Activities and/or processes implemented for Adaptation (GL1.3)

This section is not applicable.

4 COMMUNITY

4.1 Net Positive Community Impacts

4.1.1 Community Impacts (CM2.1)

Due to the remote nature of the Laguna Seca Property, the only community residing within the Project Zone includes the community of farm workers and managers that live at the center of the property, at Gallon Jug and associated Chan Chich Lodge and Sylvester Village.

In addition, there are communities around the Project Area that were also impacted by project activities, such as improved water coming from the Project Area, and road use for patrols. These communities included Yalbac village, La Gracia and Buena Vista and were identified as communities that could potentially be impacted by the project activities. Although the Project Area is far from these villages, TFG uses public road that runs through these villages (Boomsma, 2019).

These impacts for these community groups, as well as any described potential impacts from the PD and first Monitoring Report are described in the tables below. The project did not undertake the CCB verification during the first monitoring period, however during the second monitoring period, the program was able to collect information on community impacts through a series of social assessments that were conducted in the area as part of the Forest Stewardship Certification (FSC) certification that was undertaken, as well as a follow up household survey conducted in October 2021.

During the Monitoring Period TFG offered many benefits to the local community and to Belize as a whole. Benefits included over a hundred students being given the opportunity to visit the forestry operations at TFG to learn about sustainable timber management and FSC certification. TFG offered three internships for people interested in gaining deep understanding of TFG's operation and learning in-depth forestry skills. These internships were fully funded by TFG, and former interns are active in leading forestry in Belize. In order to support the local school at Gallon Jug, TFG packaged slab ends from their milling operation and sold them to local buyers. All proceeds from the sale of TFG operations went to support the Gallon Jug Elementary School. In October 2021, ERI carried out a household survey to determine community impacts brought on by the program ahead of the monitoring report. The survey was developed by Terra Global and included a team of six interviewers to conduct the survey in Sylvester Village. Interviews were conducted in November 2021. A total of twenty-four interviews were conducted from a total of thirty-one households. The team aimed to complete all households; however, some community members were ill, while others declined. These interviews were conducted with the highest ethical standards, and at times that did not interfere with the work schedules of participants. There were 10 males interviewed and 14 females. 2% of those interviewed were married and 38% are in a common law marriage. 38% in the interviewed population have lived in Sylvester for more than

20 years. The interview population was 67 persons over 24 households, including 46 adults and 21 children.

Terra Global has identified low income and low educational attainment households through a social survey conducted in October 2021. Barriers and risks that may prevent benefits from reaching these more marginalized households or vulnerable groups is managed by gathering critical data, such as access to resources in the project area, benefits received from TFG and participation in program design and monitoring, and feedback from community groups. Terra is then able to determine that more marginalized groups did not experience negative impacts as a result of program activities, but also received the benefits that were made available through the program. The primary ethnic groups surveyed in 2021 included Mestizos (88%) and Mayans (8%). Of these households surveyed, 58% of respondents were women. 46% of respondents did not reach education levels above primary school and 17% reported biweekly income was below $300. These vulnerable groups are identified in the data below for each indicator, where applicable.

Measures taken to identify marginalized or vulnerable groups included disaggregation of the data to demonstrate which households were run by women, had low income (<300 USD/month), or had low educational attainment (did not finish primary education). Through this analysis, we can determine the well-being impacts on these groups more fully and mitigate any negative impacts that occur.

4.1.1.1 Indicator 1: Community Employment

Community Group	TFG employees from local communities of La Gracia, Los Tambos, Spanish Lookout and Buena Vista.
Impact	Local community members experienced an increased economic benefit through formal employment for gate surveillance, and monitoring of operations on Laguna Seca land. TFG recruited local people from existing nearby communities when appropriate. Workers experienced training on first aid, fire safety and management, establishment of permanent sample plots, transportation training, forest patrols, and engaged in knowledge transfer as needed. TFG aimed to increase local capacity and utilize local knowledge of the forest to assist in conducting its operations in a sustainable manner. YRCC has provided employment opportunities to those interested members of neighboring communities, only 27% of the total 65 casual and permanent employees (originating from a total of 13 community members) come from these local communities. During this Monitoring Period, 13 employees directly benefitted from part-time Activities in the Project Area. . Data was not disaggregated by gender or vulnerable group for this indicator and so these are reported in other indicators only. Although 15 security personnel were reported in 2015, (Boomsma, 2019), over the monitoring

	period only 13 were directly involved with project activities for the Laguna Seca Carbon Project and benefit directly from the project.
Type of Benefit/Cost/Risk	The impact was predicted, direct and benefit to these mentioned communities. However, is important to mention that these benefits do not include logging operations benefits.
Change in Well-being	**Well-being indicator 2.1 Increased income levels-Financial Capital** are met with this metric. Please see a comprehensive list of well-being indicators in Section 4.1.2 Negative Community Impact Mitigation (CM2.2) Household income was provided from the Laguna Seca Project that enables communities to participate more in the formal economy and focus on investing in longer term solutions to common challenges. Increase in income generation on the household level, holding this much direct benefit, will also encourage the communities to stay committed to the protection of the Laguna Seca property and focus on developing a conservation mindset for the natural resources they protect.

4.1.1.2 Indicator 2: Provide support for local schools and establish a scholarship fund for high school students

Community Group	Chan Chich Lodge and Sylvester Village high school age students and their parents
Impact	A scholarship fund for local communities made funds available to provide scholarships for attending high school for all qualifying children in the community. This scholarship was supported by Bowen and Bowen Ltd. during the monitoring period, and financial support was not provided by TFG. According to the most recent 2021 data collected, 88% of respondents reported being aware of high school scholarships that were made available. 38% of respondents confirmed that the funding was made available for tuition and 67% felt that the funds were distributed equally among the communities. **% Reported Awareness of High School Scholarship Fund**

% Reported YES to HS Scholarships being offered	88%
% Reported NO to HS Scholarships being offered	4%

% Reported DON'T KNOW to HS Scholarships being offered	8%

Source: (2021 Household Survey, 2021)

% Women Reported Awareness of High School Scholarship Fund

% Women Reported YES to HS Scholarships being offered	75%
% Women Reported NO to HS Scholarships being offered	8%
% Women Reported DON'T KNOW to HS Scholarships being offered	17%

Source: (2021 Household Survey, 2021)

% Vulnerable Group V1 (V1=Low Educational Attainment Respondents) Reported Awareness of High School Scholarship Fund

# Reported YES to HS Scholarships being offered	73%
# Reported NO to HS Scholarships being offered	9%
# Reported DON'T KNOW to HS Scholarships being offered	18%

Source: (2021 Household Survey, 2021)

% Vulnerable Group V2 (V1=Low Educational Attainment Respondents and Low Income (>300 USD/month)

# Reported YES to HS Scholarships being offered	100%
# Reported NO to HS Scholarships being offered	0%
# Reported DON'T KNOW to HS Scholarships being offered	0%

Source: (2021 Household Survey, 2021)

As the scholarship fund was financially supported by Bowen and Bowen Ltd., there were a number of other in-kind donations made on behalf of TFGs companies towards schools and education. Some improvements were done, including building of wooden steps for one school in Buena Vista as well as the establishment of traffic signs near the

	school to slow incoming drivers. Two streets near the school in the Buena Vista village were also graded by the company. More educational benefits are described in this section above.
Type of Benefit/Cost/Risk	This impact is predicted, direct and benefit.
Change in Well-being	**Well-being indicator 3.1 Access to roads, electricity and piped water and 4.2 Increased education levels are met with this metric.** Support of high school education for community members increased the likelihood that the youth would be more informed of the impacts of climate change on their environment and their role in adapting and mitigating the predicted effects.

The first two indicators link directly to the indicated monitored activities that TFG documented would be carried out. Three additional indicators were developed to provide a comprehensive understanding of what other community impacts were described in FSC and social survey reports. These three community impacts that were mentioned included providing in kind donations to communities such as building materials and resources for school libraries, increased protection of high conservation value areas, and increased transportation options into neighboring towns.

4.1.1.3 Indicator 3: In Kind Donations Made to Communities

Community Group	Chan Chich Lodge and Sylvester Village
Impact	In kind donations to communities often times included building materials for housing and enterprise construction, improving existing building maintenance in Sylvester Village, rebuilding and maintenance of a local school in Gallon Jug, and resources for a small library operating from Yalbac Mill to support students of all levels (Boomsma T. , 2015) (Boomsma, 2019).
Type of Benefit/Cost/Risk	This impact is predicted, direct and benefit.
Change in Well-being	**Well-being indicator 3.2 Ownership/access to productive equipment (oxen, tractor, irrigation pump etc.) and 3.3 Housing Quality were met with this impact.**

4.1.1.4 Indicator 4: Increased transportation along road for community.

Community Group	Nearby communities where TFG vehicles travel through including Sylvester Village, Yalbac village, La Gracia and Buena Vista.
Impact	TFG commonly used the Iguana Creek road between the Laguna Seca area and Buena Vista village. There is wear and tear of this road from the traffic and heavy trucks. There

	are traffic accidents on the road and noise and dust pollution as well. TFG drivers come from various villages nearby the Laguna Seca area. Vacancies are usually filled by word of mouth. However, there is no public transit from these villages to the mill, discouraging those without their own vehicles. As the 13 TFG employees who patrol Laguna Seca use this road, as well as other TFG employees, TFG arranged to increase transportation along the road for local residents and community members into town. **% Reported increased access to transportation into town** | # Reported YES to increased access to transportation into town | 100% | Source: (2021 Household Survey, 2021) **% Women Reported increased access to transportation into town** | # Reported YES to increased access to transportation into town | 100% | Source: (2021 Household Survey, 2021) **% Vulnerable Group V1 (V1=Low Educational Attainment Respondents) Reported increased access to transportation into town** | # Reported YES to increased access to transportation into town | 100% | Source: (2021 Household Survey, 2021) **% Vulnerable Group V2 (V1=Low Educational Attainment Respondents and Low Income (>300 USD/month) Reported increased access to transportation into town** | # Reported YES to increased access to transportation into town | 100% | Source: (2021 Household Survey, 2021)
Type of Benefit/Cost/Risk	This impact is actual, indirect and a cost to the overall operations
Change in Well-being	**Well-being indicator 3.1 Access to roads, electricity and piped water and 4.2 Increased education levels are met with this metric.**

	The safe transportation arranged by TFG to increase access to nearby areas for local residents increased their access to roads, and ability to attend employment opportunities nearby more formally, as well as increased attendance to schools for school age children.

The most critical component to the community impacts is that there are no major negative impacts that were presented through the data. Through the data Terra Global is able to determine that a wide range of community specific well-being indicators were met from the impacts of the project.

4.1.2 Negative Community Impact Mitigation (CM2.2)

Any project that seeks to transition from unsustainable natural resource use to sustainable use creates risks to community groups' livelihoods and incomes that were being derived from unsustainable use. For Laguna Seca, TFG mitigated these risks by including communities' employment opportunities and developing reliable income sources as a top priority in program design. A comprehensive description of these mitigation approaches is described in Table 20. Negative Community Impacts and Mitigation Activities.

Table 20. Negative Community Impacts and Mitigation Activities

Potential Negative Community Impact	TFG Mitigation Activity
Increased vulnerability to climate change related disasters with less forest cover	• The pre-season briefings also include sessions on fire safety and management in case of fire events occurring • Field crews were provided training and equipment (goggles, gloves) to protect from heat related events
Limited use of a proper grievance procedure for local community residents provided little communication between community groups and TFG	• The Socio-Economic Assessment from YRCC Stakeholders (Boomsma T. , 2013) reported that there was the adaption of a grievance procedure following the communities' request, including increased advertising of employment vacancies in the villages was introduced after it was communicated to TFG that there was not one in place.
Improper maintenance and consideration for areas of high conservation value (HCVs)	• TFG monitored HCV areas that were identified and addressed their protection of these critical areas by eliminating negative impacts from program design and activities • TFG also included a buffer along streams and wetlands and other areas of HCV, and these areas were excluded from timber harvesting plans (in leakage area).

Sources: (Boomsma T. , Socio-economic assessment of YRCC Stakeholders-Including Laguna Seca, 2013) (Boomsma T. , Laguna Seca: Indigenous Rights and Community Relations, 2015) (Boomsma, 2019) (The Forestland Group, 2018)

4.1.3 Net Positive Community Well-Being (CM2.3, GL1.4)

For each impact indicator described in Section 4.1.1 Community Impacts (CM2.1) , the associated well-being impacts are determined and presented in the table. These well-being indicators demonstrate how community well-being is impacted positively through Program activities based on the results of that impact indicator. Table 21. Well-being Indicators were adopted from the Sustainable Rural Livelihood (SRL) Framework from *A Framework for Research on Sustainability Indicators for Agriculture and Rural Livelihoods* by Phil Woodhouse, David Howlett and Dan Rigby (Phil Woodhouse, February 2000) and used to demonstrate the significant benefits this project produced for the local communities. By determining how many communities or households gained access to biodiversity, roads, electricity and water, educational attainment, employment and higher incomes, we see an overall positive trend in the well-being indicators being impacted by Project Activities.

The project's community impact indicators (Section 4.1.1) are mapped to the Community Well-being Indicators described in Table 21. Well-being Indicators and are used to determine the overall well-being impacts on the communities in the Project Area. By focusing on well-being as defined as natural, physical, human, financial and social capital, we can determine the positive well-being impacts derived from the implementation of Project activities.

Table 21. Well-being Indicators

#	Component of Human Well-being	#	Indicators of Human Well-Being	Map to Community Impact Indicators
1	Natural capital:	1.1	Access to land, water, grazing.	N/A
		1.2	Ownership of herds, trees	N/A
		1.3	Productivity (per unit of land, per unit of water, per unit of inputs)	N/A
		1.4	Soil, water, rangeland, quality	N/A
		1.5	Biodiversity	N/A
2	Financial capital	2.1	Income levels, variability over time, distribution within society	Indicator 1, Indicator 3
		2.2	Financial savings, access to credit	N/A
		2.3	Debt levels	N/A
3	Physical capital	3.1	Access to roads, electricity, piped water	Indicator 2, Indicator 4
		3.2	Ownership/access to productive equipment (oxen, tractor, irrigation pump etc.)	Indicator 3
		3.3	Housing quality	Indicator 3

#	Component of Human Well-being	#	Indicators of Human Well-Being	Map to Community Impact Indicators
4	Human capital	4.1	Total labor	N/A
		4.2	Educational level, skills	Indicator 2, Indicator 4
		4.3	Health levels	N/A
5	Social capital	5.1	Membership of organizations	N/A
		5.2	Support from kin, friends	N/A
		5.3	Accountability of elected representation	N/A

Source: (Phil Woodhouse, February 2000)

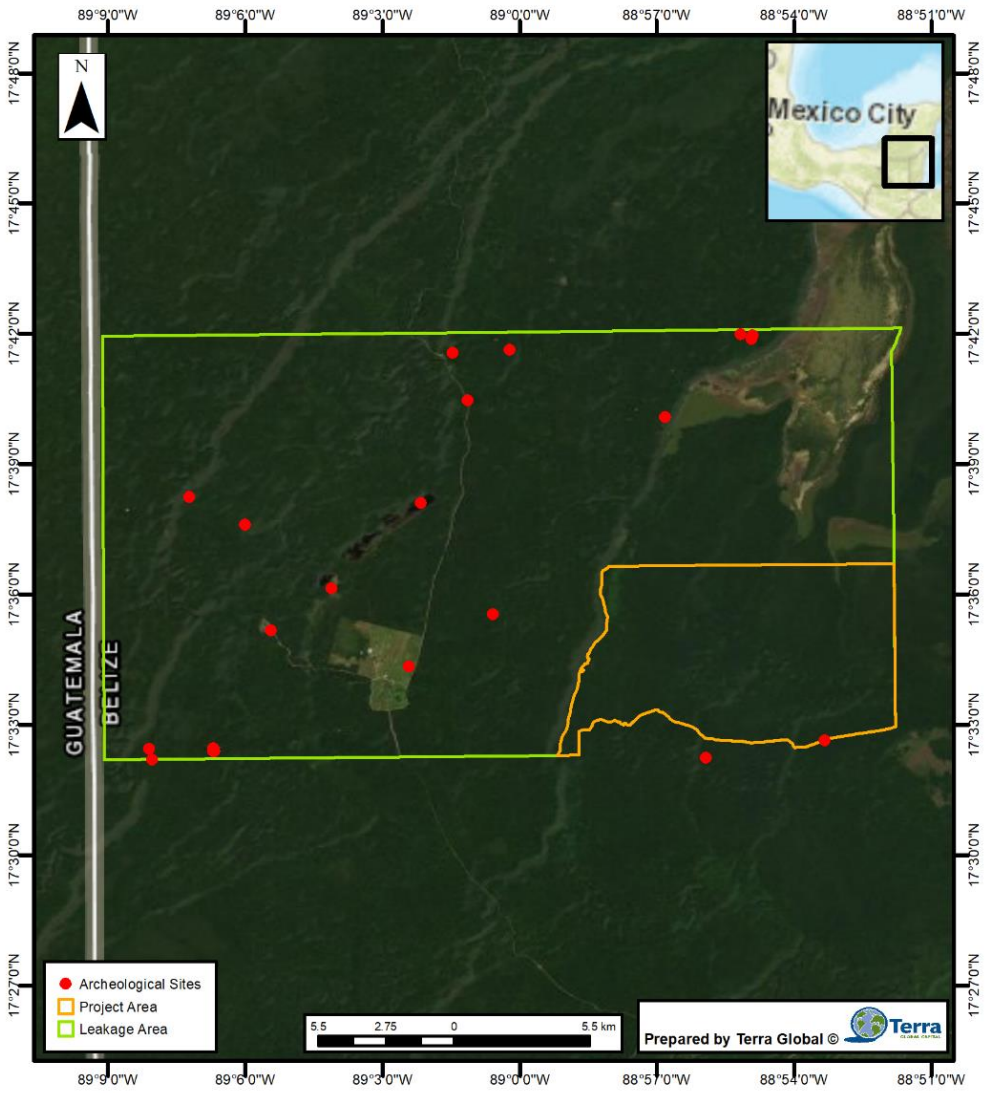
4.1.4 Protection of High Conservation Values (CM2.4)

One of the most apparent and significant contributions TFG made to communities during its implementation of forest management activities was the protection of high conservation value areas within the Laguna Seca boundary. There are sites of special cultural, ecological, economic, religious or spiritual significance present on Laguna Seca land. These sites include Qualm Hill, the seasonal headquarters of the British Honduras Company and Kaxil Uinic, the settlement of Caste War refugees/chiclero camp. Both of these sites are subject to excavations during the 2015 Chan Chich Archaeological Project. There are also various ancient Mayan sites that have been located, and the forest management plans and licenses specify that activities near these sites must be regulated in the event they are encountered during operations (Map 9).

While there are numerous archeological sites within the Yalbac area, the zone most researched is in the southern edge of the Yalbac property, not bordering the Laguna Seca land. However, Hoyuk and Kaxil vinic are two names sites that are just south of the boundary with Gallon Jug. San Jose and Mundiejo are two sites in the northeastern portion of the Yalbac (near the border of Laguna Seca). There are likely many more remains undiscovered in the region (Boomsma T. , Socio-economic assessment of YRCC Stakeholders-Including Laguna Seca, 2013).

Ancient Mayan sites (plazas, ruins, cenotes, causeways) are very common throughout the area. Historically, looting of Mayan archaeological sites was common. The high conservation values on the site are all biodiversity critical components to the program. Patrols that prevent illegal activities and maintain existing high-quality habitats results in this maintenance (2021 Household Survey, 2021).

The Project Description identified protected areas in the Project Zone to include the Rio Bravo Conservation and Management Area, project sites that reside within the Mesoamerican Biological Corridor, considered a Biodiversity Hotspot. The Project area includes IUCN listed species, identified in Section 5 Biodiversity.



Map 9. Community HCV – Archeological sites

4.2 Other Stakeholder Impacts

4.2.1 Mitigation of Negative Impacts on Other Stakeholders (CM3.2)

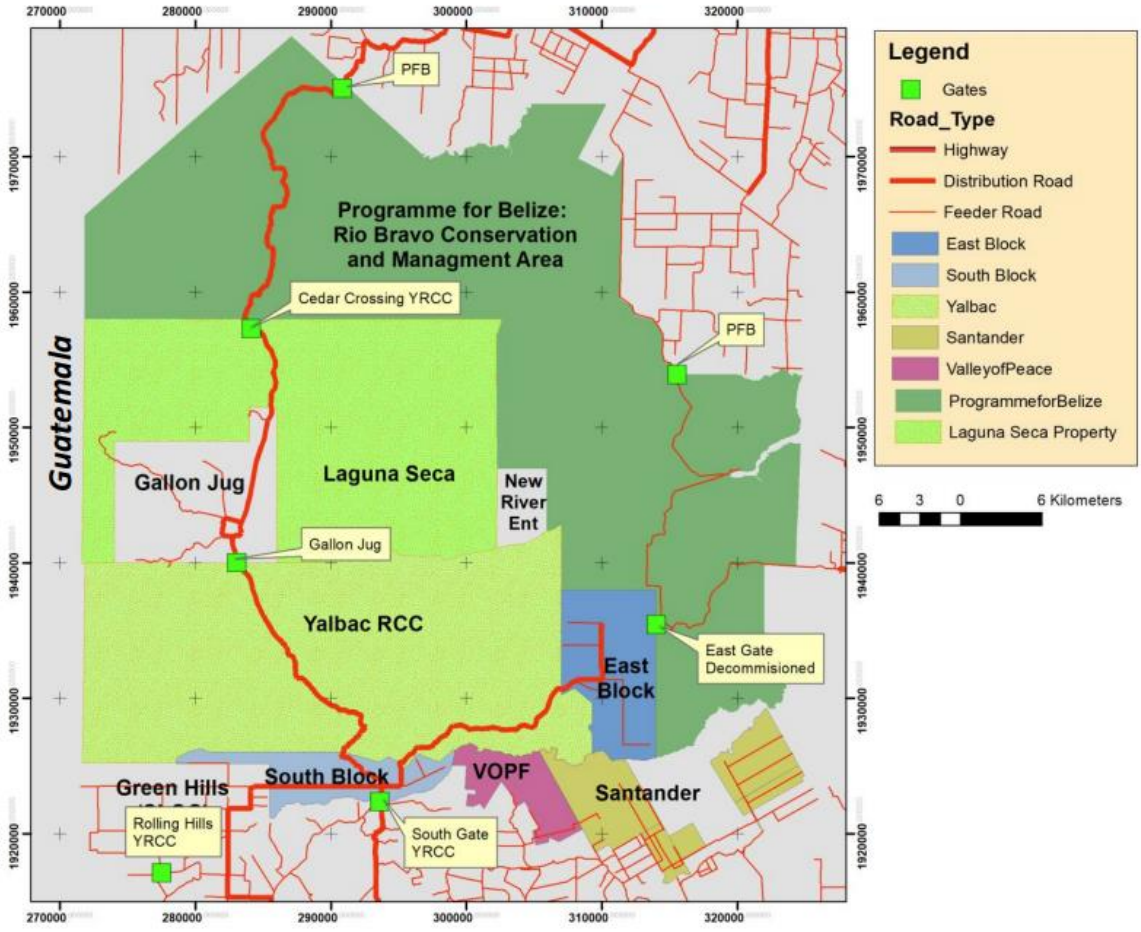
TFG included neighboring landowners and other stakeholders, identified in Section 2.3.3 Informational Meetings with Stakeholders (G3.1), in the program and forest management activities design and implementation. Since all landowners in the greater Laguna Seca area are subject to forestry management regulations including logging under a Long-Term Forestry License, main stakeholders were aware of the implications of the forest management practices employed by TFG and were in communication in the event of any potential negative impacts. According to the 2015 Laguna Seca: Indigenous Rights and Community Relations Report (Boomsma T. , 2015), and based on several interviews with these key stakeholders, did not raise concerns with TFG regarding program activities and implementation and overall felt that their needs were being address when they were raised.

Laguna Seca management is acquainted with the managers of these nearby landholders, including Valley of Peace, Rio Bravo Conservation Area, New River Enterprises, and Spanish Lookout Community, and would encourage regular communication usually by phone to discuss mitigating negative impacts to these stakeholder groups. TFG would include these groups in regular monitoring activities, including informal meetings to discuss any potential issues and address them.

4.2.2 Net Impacts on Other Stakeholders (CM3.3)

The land use activities on the Laguna Seca parcel, primarily the forestry management activities, did not have a negative impact on the neighboring stakeholders, and these activities are not part of the Laguna Seca Verra project #1326. The forest management activities that were taking place were conducted in a sustainable manner with long-term management plans that included specific regulations to prevent over extraction. The carefully monitored forest assisted in protecting the Project Area, as gates and checkpoints helped reduce any illegal activities. Figure 1. Laguna Seca and Surrounding Landholdings, Access Roads and Gates shows the neighboring stakeholders and how the gates reduced access. The conservation of 1326 assisted in protecting the natural environment, including improving watershed quality, biodiversity of tree, plant and animal species, and decrease in illegal activities such as hunting, poaching and timber harvesting, which ultimately provided benefits to neighboring stakeholders and communities (Boomsma, 2019).

Figure 1. Laguna Seca and Surrounding Landholdings, Access Roads and Gates



The transportation of timber to the Yalbac sawmill was identified by village representatives as a primary concern at the beginning of the project in 2013. Although logging is not a project activity, TFG's log trucks were of concern to the community. The logging trucks follow the public road leading from the South Gate via the outskirts of the Yalbac Village, through Buena Vista village to the sawmill. This route was used regularly in the past for this same purpose, and reduced logging in Project Area had a favorable effect on the roads. TFG after learning of these concerns implemented their regular training for driving safety to all drivers hired by the company (Boomsma, 2019) which included employees that patrol the Project Area. The use of the roads has caused some minor damage, but this could also be from increased use as TFG provided transportation for community members into neighboring towns for employment and schooling.

4.3 Community Impact Monitoring

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

The objective of the community monitoring plan developed by TFG was to determine that the community benefits, indicated in the PD as contributions to the Gallon Jug-Chan Chich High School Scholarship Fund and regular formal community employment, were being produced. The monitoring plan included regularly scheduled stakeholder monitoring reports and included several

information interviews to gather inputs and record these benefits. These three monitoring reports were conducted in 2014, 2015 and 2019 by the same hired contractor and were implemented to meet the FSC's standards of compliance. Based on the activities taking place within the boundary of Laguna Seca, stakeholders were determined to be the entities that were directly affected by the logging and transportation of log/milled timber within the area.

Main stakeholders who were interviewed during these monitoring reports included the villages of Buena Vista, Yalbac Village, La Gracia, Spanish Lookout, Sylvester Village, and Gallon Jug. The landholding stakeholders who were interviewed included Programme for Belize, New River Enterprises, The Yalbac sawmill, Gallon Jug Agro-industries, and Spanish Lookout South and East Blocks. The stakeholders for these monitoring reports were often contacted by phone or email and would hold a telephone or in person interview with the contractor. Based on the results of these interviews, a number of key recommendations were made to TFG to mitigate negative impacts on stakeholders and to strengthen relationships for further collaboration.

Methodology included collecting community data in the form of records of funds transferred, records of expenditures for high school scholarships utilized by the community, and community and stakeholder meetings held to receive input regarding the success of the program. Data received was discussed at the community meetings to ensure that community were aware of the transfer of funds.

In the second half of 2021, ERI under the direction of Terra Global conducted a household survey to determine the most up to date understanding of the community impacts of the Project. The survey was developed by Terra Global and implemented by a local contractor. A team of six interviewers were selected to conduct surveys in the Sylvester Community, where the main community impacts would have occurred. Interviews were conducted in November 2021 with a total of 24 interviews out of 31 households surveyed. These interviews were conducted with informed consent and after a review from the local government. This survey provided Terra Global with the most up to date and accurate reading of the community impacts of the program. These impacts are described in detail in Section 4.1.1 Community Impacts (CM2.1) .

To conclude, social surveys in the form of informal interviews were conducted in 2014, 2015 and 2019. In addition, a final social survey in the form of individual household surveys was conducted by ERI in 2021. Data monitored includes Community Employment, support for local schools and education, in kind donations made to communities, and evidence that transportation of logs nearby or through communities was managed safely. Results of monitoring are in section 4.1.1, and are summarized below:

- During this Monitoring Period, 13 employees directly benefitted from full-time Activities in the Project Area.
- Fully funded internships for those interested in forestry operations and educational opportunities for students at University of Belize in the Natural Resources Management Program.
- In-kind donations to Gallon Jug school and other in-kind donations often times included building materials for housing and enterprise construction, improving existing building maintenance in Sylvester Village, rebuilding and maintenance of a local school in Gallon Jug, and resources for a small library operating from Yalbac Mill to support students of all levels.
- All respondents reported an improved access to transportation into town.

4.3.2 Monitoring Plan Dissemination (CM4.3)

For the requirements for their FSC certification, TFG, informed communities, including Sylvester Village of monitoring results showing that the project has delivered net positive benefits. For the surveys conducted in 2014, 2015 and 2019 these results of positive climate, community and biodiversity benefits can be found on the TSC website at: https://fsc.org/en/fsc-public-certificate-search.

As per Belize custom, the information about accessing project documents online, including the summary report, was posted at the Sylvester General Store once the Monitoring Report and the results of monitoring were complete. In addition, UBERI is in communication with all relevant stakeholders to present the VCS/CCB Monitoring Report, gather feedback and notify them of the 30-day comment period so that they could submit commits privately to the CCB via the website CCBstandards@v-c-s.org. All relevant Public Comments submitted to the CCB during the public comment period will be addressed.

4.4 Optional Criterion: Exceptional Community Benefits

This project is not seeking exceptional Community Benefits

5 BIODIVERSITY

5.1 Net Positive Biodiversity Impacts

5.1.1 Biodiversity Changes (B2.1)

The project generates net positive impacts on biodiversity within the project zone over the project lifetime. The project maintains or enhances any high conservation values present in the project zone that are of importance in conserving biodiversity. The objective of the biodiversity monitoring program is to provide evidence that wildlife and other species that prove biodiversity, as well as key trigger species, still inhabit the Project Area. The biodiversity indicators used were habitat preserved, species richness, mature forest habitat, effectiveness of anti-poaching, For species, primary biodiversity indicator used was vertebrate species richness as indicated by during the monitoring period.

Indicators of population trends for each HCV are considered a combination of habitat availability and presence as indicated by detections during monitoring. Maintenance of these species is considered achieved when the habitat is protected, and the species is still detected using the site. The three trigger species, all HCV species as well, are considered highly detectable by tracks/scat, calls, or visibility in the forest. The project is considered effective as these populations continue to be detected by monitoring.

B2.2 Habitat Preserved

Change in Biodiversity	Habitat availability preserved
Units/Measures	Hectares
Monitored Change	The project activities prevent the land use change of the project area from primary forest to sugar cane plantations.

	As the change is positive it implies the preservation of the forest against the baseline scenario where the area would have been transformed to a sugarcane plantation. As a result of the project activities, the actual change was positive resulting in the preservation of the forest and an improvement in forest heath.
Justification of Change	The procedure for performing this estimate involved randomly allocating 40 permanent plots in the forest, establishing and marking those plots, and measuring the trees and palms on those plots according to the methodology described in Section 3.1.3 of the PD. The number of plots was determined to capture the likely variability of the forest vegetation with adequate statistical power.

B1.4 Species Richness

Change in Biodiversity	Vertebrate species richness
Units/Measures	See Table 22. Comparison of Baseline and Project Biodiversity based on IUCN Red List (2012) for selected species found at Laguna Seca. B1.2
Monitored Change	In the without-project scenario nearly a 100% loss in biodiversity would be expected. There is almost no overlap between the species of animals associated with mature forest habitats and sugarcane plantations. Therefore, the predicted change is positive, allowing the project area to maintain its vertebrate species richness. As a result of the project activities, the actual change in the project area was positive. The biodiversity of the project area was preserved resulting in the detection of 139 bird species and 12 large/medium mammals during the 2021 November-December monitoring period. See Table 22 for a complete list of species observed in and around the Project Area.
Justification of Change	The main action taken is to avoid the conversion of the project area to a sugarcane plantation. The multiple patrols that take place every year eliminate potential hunting and illegal removal of tree cover and ensure existing populations and habitat will remain on the site, helping maintain the vertebrate species richness.

B1.4 Mature Forest Habitat

Change in Biodiversity	Preservation of mature forest habitat

Units/Measures	Presence of monkey species is the proxy used for determining the preservation of mature forest habitat.
Monitored Change	Monkey species are indicators of mature forest habitat. The predicted positive change is if mature forest habitat was preserved, monkey species would be found in the area. As a result of the project activities, the change in the project area was positive. Mature forest habitat is still available inferred from the presence of howler monkeys in the project area (see Table 22).
Justification of Change	The main action taken is to avoid the conversion of the project area to a sugarcane plantation. The multiple patrols that take place every year eliminate potential hunting and illegal removal of tree cover and ensure existing populations and habitat will remain on the site, helping maintain the populations of monkey species in the area.

B2.3 Effectiveness of Anti-poaching Activities

Change in Biodiversity	Effectiveness of Anti-poaching Activities
Units/Measures	Presence of Baird's tapir and monkey species is used as a proxy for the effectiveness of anti-poaching activities.
Monitored Change	Patrols and Arrests related to poaching and other illegal activities occurred in the Project Area. Patrol data and anti-poaching information is an indicator that there is active monitoring in the Project Areas. The presence of Baird's tapir and Yucatan black howler in the Project Area indicate the anti-poaching activities have been effective.
Justification of Change	Patrols observed snares and illegal activities. Data gathered during patrols is important, but increased patrolling is an activity that reduces poaching. Regular patrols and arrests ensure that the number of incidences of undetected poaching decreases, which indicates that over time absolute poaching should be reduced.

Table 22. Comparison of Baseline and Project Biodiversity based on IUCN Red List (2012) for selected species found at Laguna Seca. B1.2

Common name	Scientific name	Habitat (extracted from IUCN Red List Database)	Without Project	With Project
Baird's tapir	*Tapirus Bairdii*	"wet tropical rainforest, riparian woodland, monsoon deciduous forest, dry deciduous	Habitat lost. Population lost.	Individuals of Baird's tapir were registered in and around the Project area through tracks, scats, and camera traps (see section 5.3.1 and Table 23). According to the information

Common name	Scientific name	Habitat (extracted from IUCN Red List Database)	Without Project	With Project
		forest, montane cloud forest and paramo"		gathered by Meerman from 2015 to 2018 (Meerman J. , 2019) the daily presence of this species in the Laguna Seca area, based on the number of camera trap day is 0.005 for 2015; 0.005 for 2016; 0.003 for 2017; and 0.029 for 2018. According to information from 2021(see section 5.3.1.2), Baird's tapir has higher trap rates inside the Project Area (6.19), when compared to the Belize Maya Forest (Kelly & Nipko, 2022).
Southern river otter	*Lutra longicaudis*	"Rest and den sites are found in areas with dense vegetation" associated with dense mature forest with thick undergrowth extending close to shore. Both the aboveground root systems of mature or fallen trees and the dense vegetation cover are important components of L. provocax habitat; absence of these key features may result in absence of otters, even if abundance of prey is not limiting"	Habitat lost. Population lost.	The presence of *Lutra longicaudis* around the project area was detected by the camera traps set for the long-term study on jaguar populations by the Virginia Tech (Kelly & Nipko, 2022). While its presence is not recorded in the Project Area, probably because of the lack of water bodies of appropriate size, the preservation of dense mature forests in the area increases the water capture necessary to sustain river otter populations.
Margay	*Leopardus wiedii*	"The margay is strongly associated with forest habitat/tree cover,	Habitat lost. Population lost.	Margay individuals were registered in and around the Project area (see Sections 5.3.1.1 & 5.3.1.4). According to

Common name	Scientific name	Habitat (extracted from IUCN Red List Database)	Without Project	With Project
		both evergreen and deciduous, although it has been occasionally reported outside forested areas"		the information gathered by Meerman from 2015 to 2018 (Meerman J. , 2019), the daily presence of this species in the Laguna Seca area, based on the number of camera trap day is 0.001 for 2015; 0.005 for 2016; 0.002 for 2017; and 0.005 for 2018. According to information from 2021(see section 5.3.1.2), the trap rates of margay inside the Project Area is 0.44 (Kelly & Nipko, 2022).
Geoffrey's Spider Monkey	*Ateles geoffroyi*	"Spider monkeys travel and forage in the upper levels of the forest. They spend much time in the canopy and also use the middle and lower strata but are rarely seen in the understory. In accordance with their use of the highest levels of the forest, they are highly suspensory."	Habitat lost. Population lost.	No spider monkeys were registered during this monitoring period. Because of their social organization of spider monkeys, combined with their arboreal habits and fast movements, their observations quite difficult (Cortes-Ortíz, et al., 2021), for this reason, it is considered that the effective protection of the habitat is a proxy of their presence in the area.
Yucatan Black Howler Monkey	*Alouatta pigra*	"This species occurs in primary terra firma rain forest, riparian forest, seasonally flooded riparian areas, and swamps."	Habitat lost. Population lost.	The habitat was successfully protected, and troops of Yucatán Black Howlers were detected five days out of 18 days the field observations recorded by a trained observer for terrestrial species took place. The maintenance of the species is considered achieved.

Common name	Scientific name	Habitat (extracted from IUCN Red List Database)	Without Project	With Project
Great curassow	*Crax rubra*	"It is restricted to undisturbed humid evergreen forest (also seasonally dry forest in some areas) and mangroves. It is primarily a lowland species but has been recorded at altitudes of up to 1,900 m in Panama."	Habitat lost. Population lost.	Increasing populations of great curassow were registered in and around the Project area through bird surveys, transects, and camera traps (see section 5.3.1). According to the information gathered by Meerman from 2015 to 2018 (Meerman J. , 2019), the daily presence of this species in the Laguna Seca area, based on the number of camera trap day is 0.098 for 2015; 0.082 for 2016; 0.217 for 2017; and 0.299 for 2018. According to information from 2021(see section 5.3.1.2), great curassow has a trap rate of 11.28, the highest trap rate inside the Project Area (Kelly & Nipko, 2022).
Ocellated turkey	*Meleagris ocellata*	It occupies non-flooded mature forest, but associates with seasonally flooded habitat and open areas when breeding	Habitat lost. Population lost.	Several individuals of ocellated turkey were registered in and around the Project area through bird surveys, transects, and camera traps (see Section 5.3.1). According to the information gathered by Meerman from 2015 to 2018 (Meerman J. , 2019), the daily presence of this species in the Laguna Seca area, based on the number of camera trap day is 0.079 for 2015; 0.041 for 2016; 0.077 for 2017; and 0.354 for 2018. According to information from 2021(see section 5.3.1.2), the ocellated turkey has a trap rate of 10.4, the second highest trap rate inside the Project Area (Kelly & Nipko, 2022).

5.1.2 Mitigation Actions (B2.3)

This program is expected to have a positive effect on biodiversity in the project area and its surroundings beyond the life of the project. During the Monitoring Period, no logging took place in the Project Area, and there were no observed negative impacts to biodiversity. Monitoring efforts have also been implemented to ensure that the project activities result in positive impacts to biodiversity. Patrols have been carried out on a routine basis to reduce instances of biodiversity loss.

As defined in the Project Document, the Project Area itself is an area of High Conservation Value, the removal of the threat to clearing for agriculture significantly enhances the biodiversity in the Project Area and Project Zone. Regarding the precautionary principle, the program would expect a nearly 100% loss in biodiversity in the without-project scenario. Therefore, the main objective of the program is to protect the forest.

5.1.3 Net Positive Biodiversity Impacts (B2.2, GL1.4)

In the absence of this Project, the forests of the Project Area would have been cleared for the production of sugar cane. The clearing of these forests would have eliminated the habitat for nearly all of the terrestrial animals residing in the project area and severely decreased the habitat with the project zone, including those that are considered to be endangered by the IUCN. This action would have had adverse impacts on local biodiversity and would eliminate corridors allowing species to travel between different sites across the Selva Maya, resulting in a reduced genetic interchange between surrounding protected areas. The loss of native vegetation and local fauna would severely degrade the value of riparian corridors within the property and impact nutrient composition of the soils, as well as increase erosion, and run-off. The Project Area is part of the Selva Maya and is the largest continuous expanse of tropical rainforest in the Americas after the Amazon (Olivet & Asquith, 2004), connecting the Maya Biosphere reserve with the Rio Bravo Conservation and Management Area. The Project site resides within the Mesoamerican Biological Corridor (Meerman & Sabido, 2001) and is part of a Conservation International Biodiversity Hotspot (Olivet & Asquith, 2004). The Project Area is also included within a Key Biodiversity Area (Meerman J. , 2007). Conserving the Project Area has overwhelming positive biodiversity benefits, on and off-site. Preserving this undisturbed habitat allows for species to migrate north and upslope as they adapt to a changing climate.

5.1.4 High Conservation Values Protected (B2.4)

The project document defines the HCV areas of project area and no HCV areas experienced harm during the Monitoring Period, this is demonstrated by the overwhelming positive effects on biodiversity listed in Section 5.1.1.

5.1.5 Invasive Species (B2.5)

This project supports protection of native forests. Any replanting would be of native species that are not invasive.

5.1.6 Impacts of Non-native Species (B2.6)

Species	NONE

Justification of Use	N/A
Adverse Effect	There were no non-native species planted in this project.

5.1.7 GMO Exclusion (B2.7)

No genetically modified organisms are included in this Project design or activities during the monitoring period including that no genetically modified trees were planted.

5.1.8 Inputs Justification (B2.8)

Name	NONE
Justification of Use	N/A
Adverse Effect	There were no inputs used in this project.

5.2 Offsite Biodiversity Impacts

5.2.1 Negative Offsite Biodiversity Impacts (B3.1) and Mitigation Actions (B3.2)

The Project did not anticipate any offsite negative biodiversity impacts. Offsite impacts were positive since larger habitat and forest areas improves the long-term viability of populations offsite through connectivity of off-site habitats on surrounding conservation lands. Since no negative impacts were identified, there was no need to design mitigation actions.

The forest surrounding the Project Area include the Laguna Seca and Yalbac properties, which were owned by TFG and now belong to TNC. During the monitoring period, the harvesting activities in the land owned by TFG, occurred only because the property belonged to a timber company, who had specific plans for selective harvesting that did not change when the project was implemented. In addition, once the land was bought by TNC, all harvesting activities stopped. This implies that there were no negative effects on biodiversity outside the Project Area.

5.2.2 Net Offsite Biodiversity Benefits (B3.3)

The project area connects the Maya Biosphere reserve with the Rio Bravo Conservation and Management Area creating a continuous forest cover across a biodiverse natural area. Outside of the Project Zone, monocultures of annual crops have very low biodiversity and almost no wildlife presence at all. In the with-out project scenario, the project area would have similar conditions to areas outside of the Project Zone: monocultures of annual crops proving that the net effects of the project on biodiversity is positive.

The Project Area is part of the largest continuous expanse of tropical rainforest in the Americas after the Amazon (Olivet & Asquith, 2004), connecting the Maya Biosphere reserve with the Rio Bravo Conservation and Management Area. It resides within the Mesoamerican Biological Corridor (Meerman & Sabido, 2001), allowing species to travel between different sites across the Selva Maya, allowing genetic interchange, and supporting high levels of species richness, many of which are in the category of Vulnerable and above in the IUCN Red List of Endangered Species. Conserving the Project Area has overwhelming positive biodiversity benefits, on and off-site.

5.3 Biodiversity Impact Monitoring

5.3.1 Biodiversity Monitoring Plan (B4.1, B4.2, GL1.4, GL3.4)

The Monitoring Plan described in the PD is limited, and during this Monitoring Period additional monitoring of biodiversity took place. Biodiversity was monitored though a series of monitoring parameters including the following.

1. Trap rate analysis using camera traps recording detailed multi-year (2013-2019) observations of jaguars and other vertebrates in and around the Project Area,
2. Trap rate analysis within the Project Area in 2021 compared to the Belize Maya Forest
3. vertebrates registered in the Project Area in November-December 2021 by camera traps and by field observations by trained observers (including avian and terrestrial),
4. all-inclusive Biodiversity Reports carried out by TFG over multiple years.

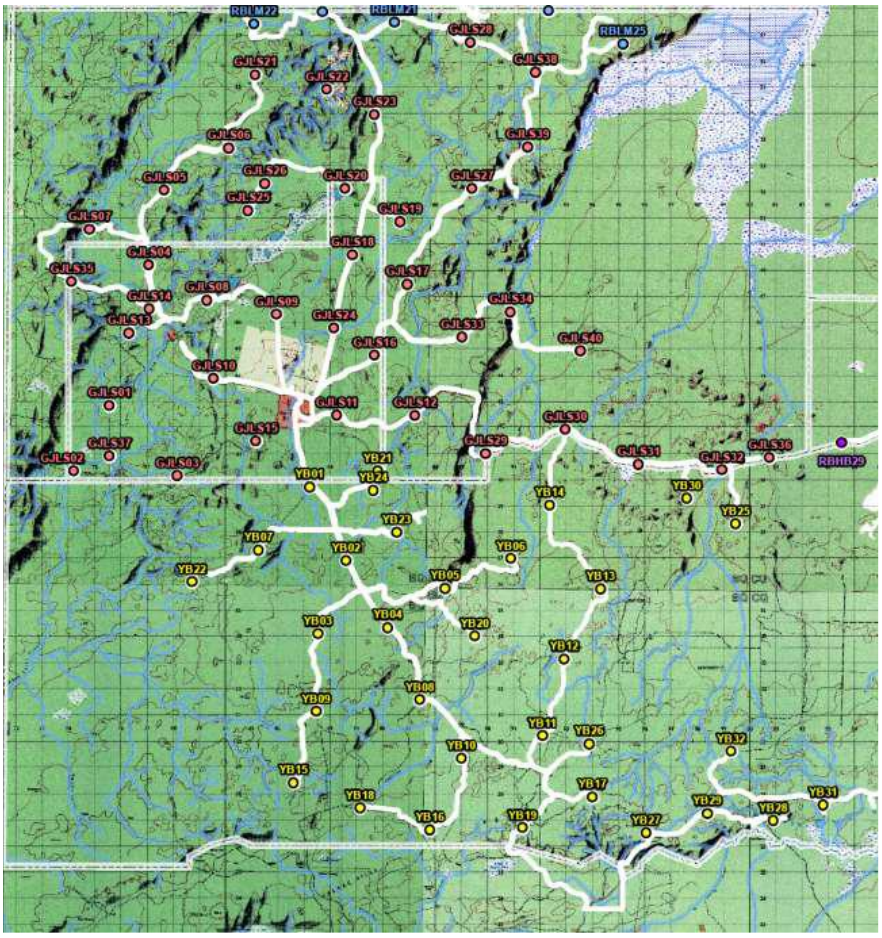
5.3.1.1 Multi-year trap rate analysis of Jaguars and other vertebrates in and around the Project Area

All the information, graphs, and figures in the Section 5.3.1.1 come from a report developed in February 2022 by Marcella J. Kelly and Robert B. Nipko (Kelly & Nipko, 2022), researchers of the Department of Fish and Wildlife Conservation of the Virginia Tech, under agreement with UB ERI. This information includes data collected by them and their research team with remote cameras from 2013-2019 in and around the Project Area. This is part of a long-term jaguar monitoring project to survey for multiple species simultaneously in northern Belize, in the Orange Walk District. The data collected summarizes trapping rates of numerous species and is used to estimate jaguar densities and sex ratios via spatially explicit capture-recapture models. It is part of a long-term monitoring project across sites in Belize now known as the Belize Maya Forest.

Data was divided into two sites previously known as Gallon Jug-Laguna Seca (GJLS), which includes the Project Area, for years 2013-2019, and Yalbac (YB) for years 2014-2019. Trap rates were estimated as the number of photo-capture events of each species, divided by the total number of trap nights per survey. 9-40 camera stations were established per site over the years in a grid-like pattern. Gallon Jug-Laguna Seca (GJLS) surveys began in 2013 and ran until 2019 with 29-40 stations per year. Yalbac (YB) surveys ran from 2014 until 2019 with 9-32 camera stations per year. These sites were surveyed between May-December but generally occurred between May-August. Camera stations were placed 2-3 km apart and they operated 24 hours a day for a period of usually 2-3 months per survey. Each camera station consisted of a pair of cameras on opposing sides of main roads, old logging roads, old trails, new trails, and game trails. Cameras recorded date and time of each photographic “capture”. Stations were checked at 10 to 14-day intervals to ensure proper functioning, to change SD card and batteries, and for camera maintenance.

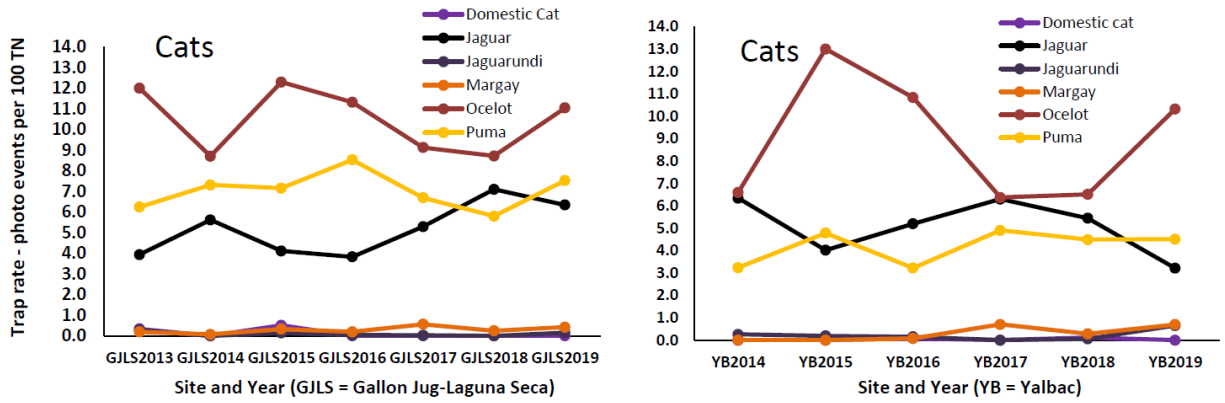
Trap rates were calculated by summing the number of photo-capture events of each species. Images from both opposing cameras at each station were combined into single events to avoid double-counting. Events were considered independent if they were separated by 30 minutes. The total number of trap nights at each camera station that was operational was tallied and summed to calculate total trap nights. Stations were considered active as long as one of the two cameras was operational at each site. The total trap events per species were divided by total nights (TN) per survey and multiplied by 100 to create a trap rate per 100 TN.

Figure 2. Orange dots indicate the locations of camera traps (2 cameras per station) in Gallon Jug and the Laguna Seca areas. Source: (Kelly & Nipko, 2022).



The information gathered with the camera traps allowed to establish the trap rates. The trap rates for cats (felids) were highest. For ocelots ranging across sites and years from 6.3-13.0 photo events per 100 TN and lowest for the small cats (margays, jaguarundis, and domestic cats) ranging from 0 to 0.7 events per 100 TN. The large cats, jaguars and pumas, were similar and ranged from 3.2-8.5 photo events per 100 TN (see Figure 3). Trap rates for cats were variable and did not reveal any directional trends up or down over time at either site, but jaguars and ocelots appeared to display opposing trends to each other at both sites.

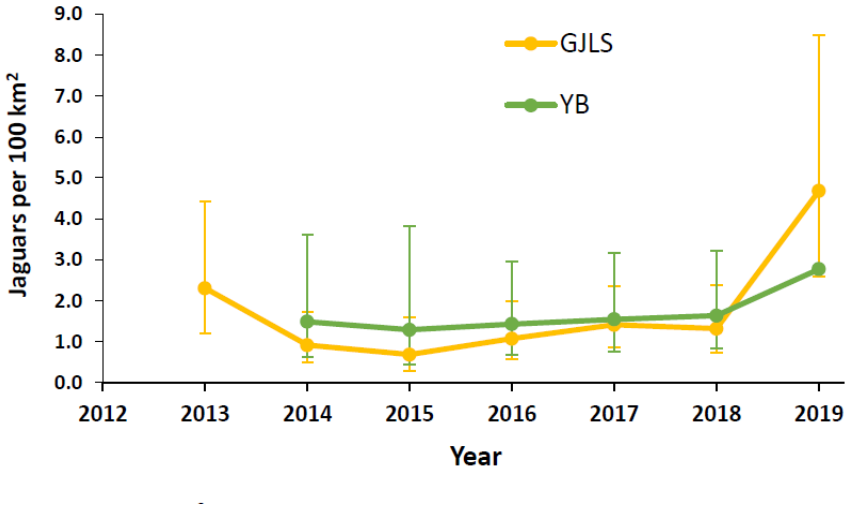
Figure 3. Trap rates for Large Cats



In GJLS, 8-21 unique individual jaguars were photo-captured between 2013 and 2019, while in Yalbac 5-14 unique individuals were photo-captured from 2014-2019. It should be noted that several of these individuals (19.6% of them) were captured in multiple study sites as noted in a previous report. Models developed by the same authors also show that males were always more detectable or moved larger distances.

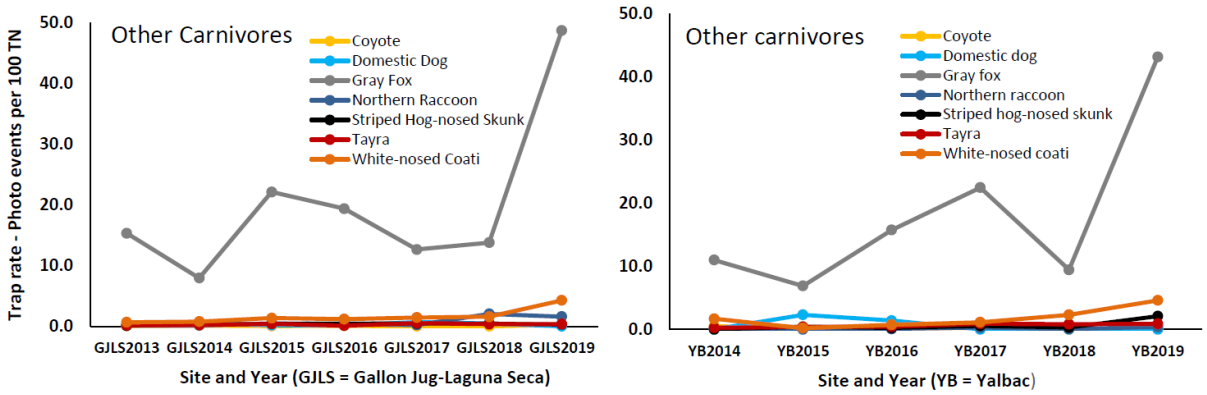
Jaguar density estimates in GJLS ranged from a low of 0.68 jaguars per 100 km2 in 2015 to a high of 4.68 jaguars per 100 km2 in 2019 (see Figure 4). Similarly, YB density estimates were lowest in 2015 at 1.29 jaguars per 100 km2 and highest in 2019 at 2.77 jaguars per 100 km2. However, in all years the CIs between GJLS and YB overlapped each other, indicating there was no real difference in jaguar density between the sites. Interestingly, in 2019, the increase in jaguars in GJLS was substantial and differed from some of the previous years. Confidence intervals on sex ratio estimates generally overlapped 50:50, indicating little support for a sex bias. In GJLS, however, there was one point estimate that was highly female biased in 2015 indicting that 90% of the population that year was female.

Figure 4 Jaguar density in and around the Project Area



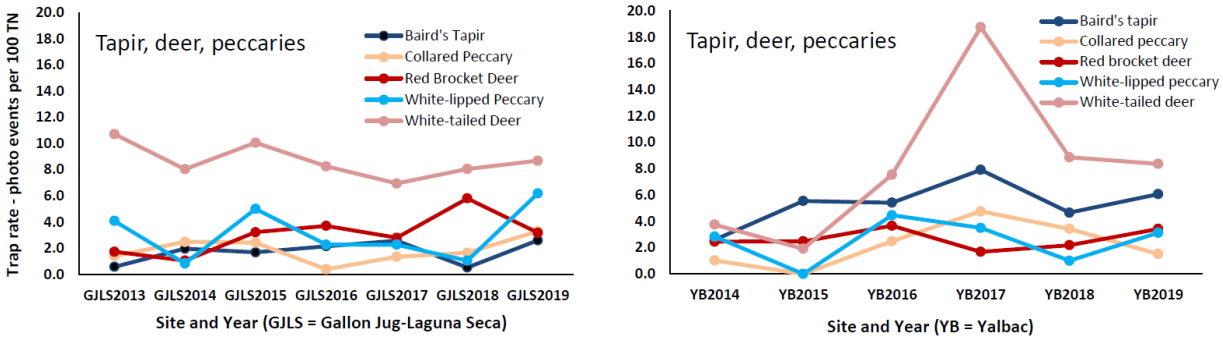
For the "other carnivores" category (see Figure 5), all species had low trap rates at 4.6 events (or lower) per 100 TN, with the exception of the gray fox which was ubiquitous and had trap rates that generally ranged from 6.9 - 22.5. In 2019, however, trap rates for gray foxes doubled to ~45.0 events per 100 TN at both sites.

Figure 5. Trap rates for other carnivores



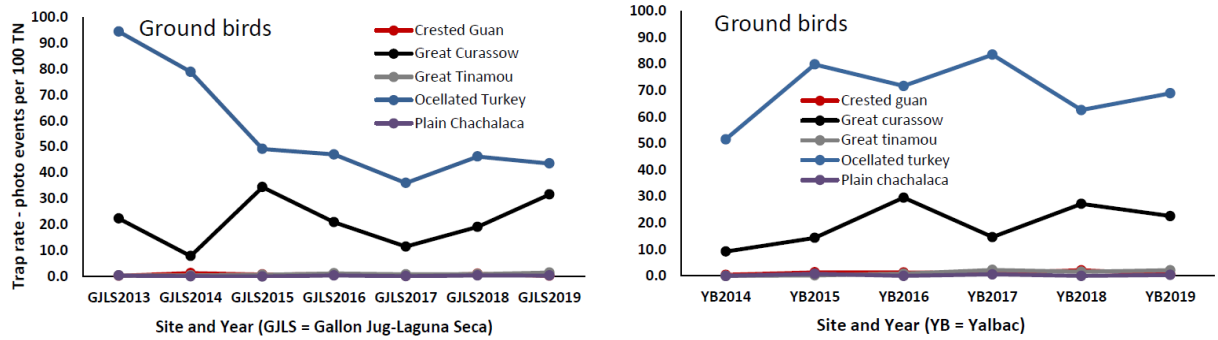
Trap rates for Baird's tapirs, peccaries, and red brocket deer were similar (see Figure 6), mostly ranging from about ~1 to 8 events per 100 TN and exhibited no discernable trends through time. Trap rates for tapirs were higher in YB. White-tailed deer trap rates were always substantially higher than the other species in GJLS (~7-10 events per 100 TN), but they were more similar to the other species in YB, except for a dramatic peak in 2017 when they reached 18.8 events per 100 TN.

Figure 6. Trap rates for Tapir, deer and peccaries



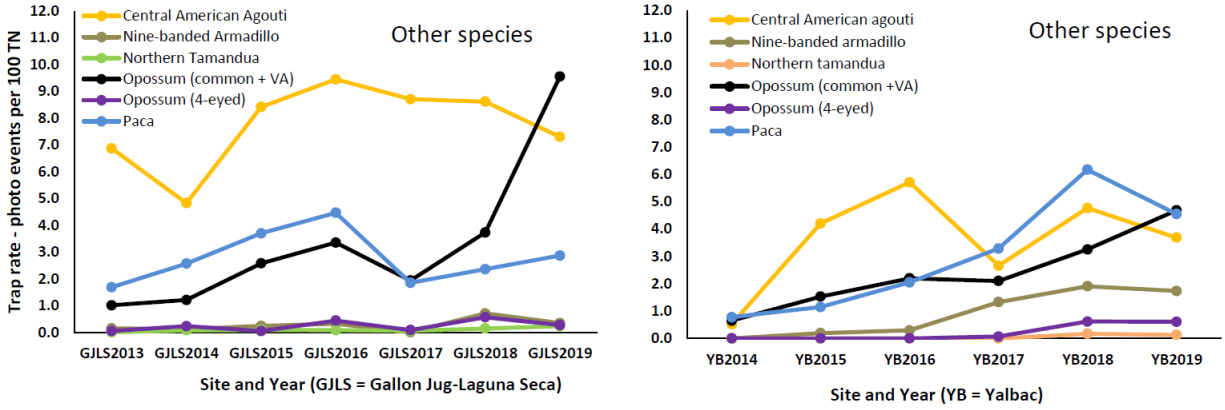
Ground bird trap rates were dominated by ocellated turkeys (36-94 events per 100 TN) and to a lesser extent by great curassows (8-34 events per 100 TN) (see Figure 7). The ocellated turkey had the highest trap rates of any species and was the only species to appear to decline in trapping rate at GJLS, while remaining stable at YB. Trap rate for all other bird species (crested guan, great tinamou, plain chachalaca) were low ranging from 0 to ~2 events per 100 TN).

Figure 7. Trap rates for Ground Birds



Finally, there was enough data to plot trap rates for several other small mammal species (see Figure 8). Agoutis, pacas, and opossums (common and Virginia combined) had trap rates from 0.7-9.6 events per 100 TN across sites. Opossums demonstrated a potential increase in trap rates at both sites over time and pacas potentially are increasing in Yalbac. The other species (nine-banded armadillos, tamanduas, and 4-eyed opossums) had low traps rates (0-1.9 events per 100 TN). Only armadillos showed a potential increase in YB.

Figure 8. Trap rates for other species



As a short summary of the Section 5.3.1.1, for the felids (cats), ocelots had the highest trapping rates followed by pumas and jaguars and they appeared stable over time. Species with higher trap rates than ocelots were gray foxes, white-tailed deer, ocellated turkeys, and agoutis. While there was variation over time and between the sites, most species were stable over time with only ocellated turkey displaying a potential decline at GJLS. For jaguar density estimates, GJLS and YB showed consistent and stable densities of 1-3 jaguars per 100 km2. In 2019, both sites showed a potential increase in jaguar density, especially for the GJLS (to 4.6 jaguars per 100km2). The sex ratio estimates did not appear to differ from a 50:50 ratio except for GJLS in 2015, which was female biased.

5.3.1.2 Trap rate analysis within the Project Area in 2021 compared to the Belize Maya Forest

All the information, graphs, and figures in the Section 5.3.1.2 come from a report developed for Terra Global in February 2022 by Marcella J. Kelly and Robert B. Nipko (Kelly & Nipko, 2022), researchers of the Department of Fish and Wildlife Conservation of the Virginia Tech, under agreement with UB ERI. This report summarizes the data collected in August-October 2021 from camera traps located inside the Project Area and compares it to the data collected from 2013-2019 from the greater Belize Maya Forest (BMF). This is part of a long-term jaguar monitoring project to survey for multiple species simultaneously in northern Belize, in the Orange Walk District.

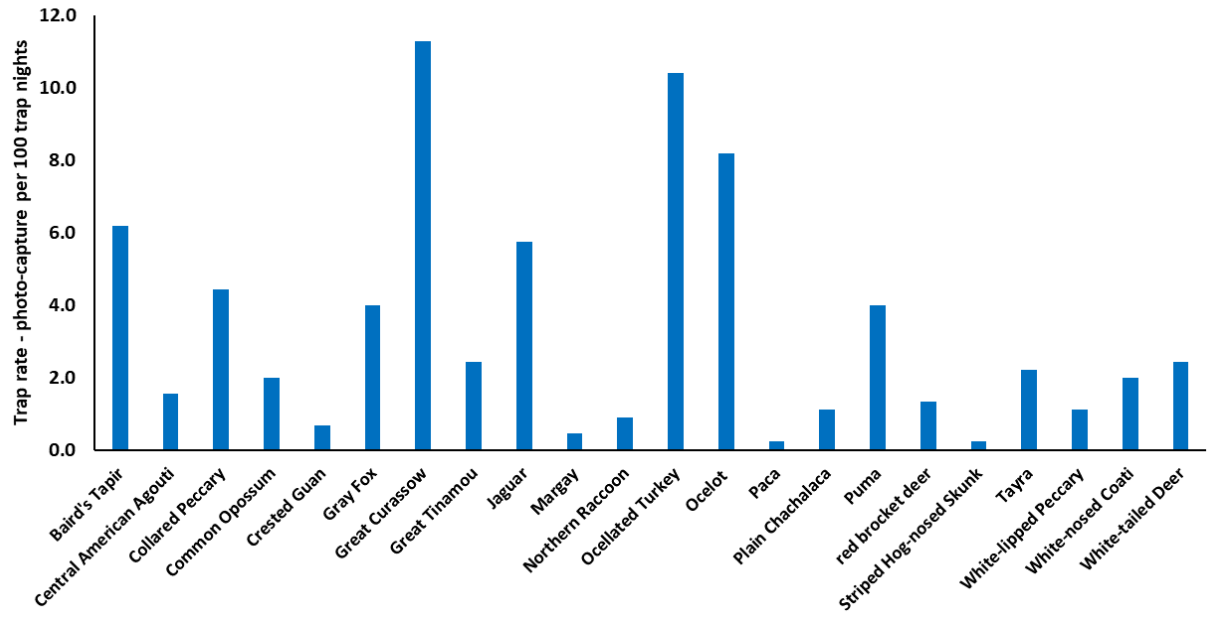
The Project Area had eight camera stations and accumulated 452 trap nights between August and October of 2021. The list of species identified by this method is in Table 23The numbers of individual jaguars were identified, and traps rates were calculated as the number of photo events recorded per 100 trap nights from camera stations were operational, same method as described in section 5.3.1.1. The average trap rates of the greater BMF area (from years 2013-2019) were compared to the trap rates of the species photographed in the Project Area in 2021.

Six different individual jaguars and a total of 22 species were identified inside the Project Area. Three of these were males and three were females, although it is possible that one of the females could be a young male, it was not possible to confirm this individual's sex due to poor quality photos of the individual. Males were photographed at 3 to 6 of the 8 stations, while females were only photographed at 1 to 2 of the 8 stations. Males overlapped other males extensively at the

stations where they occurred, but females did not overlap at all with other females at camera stations.

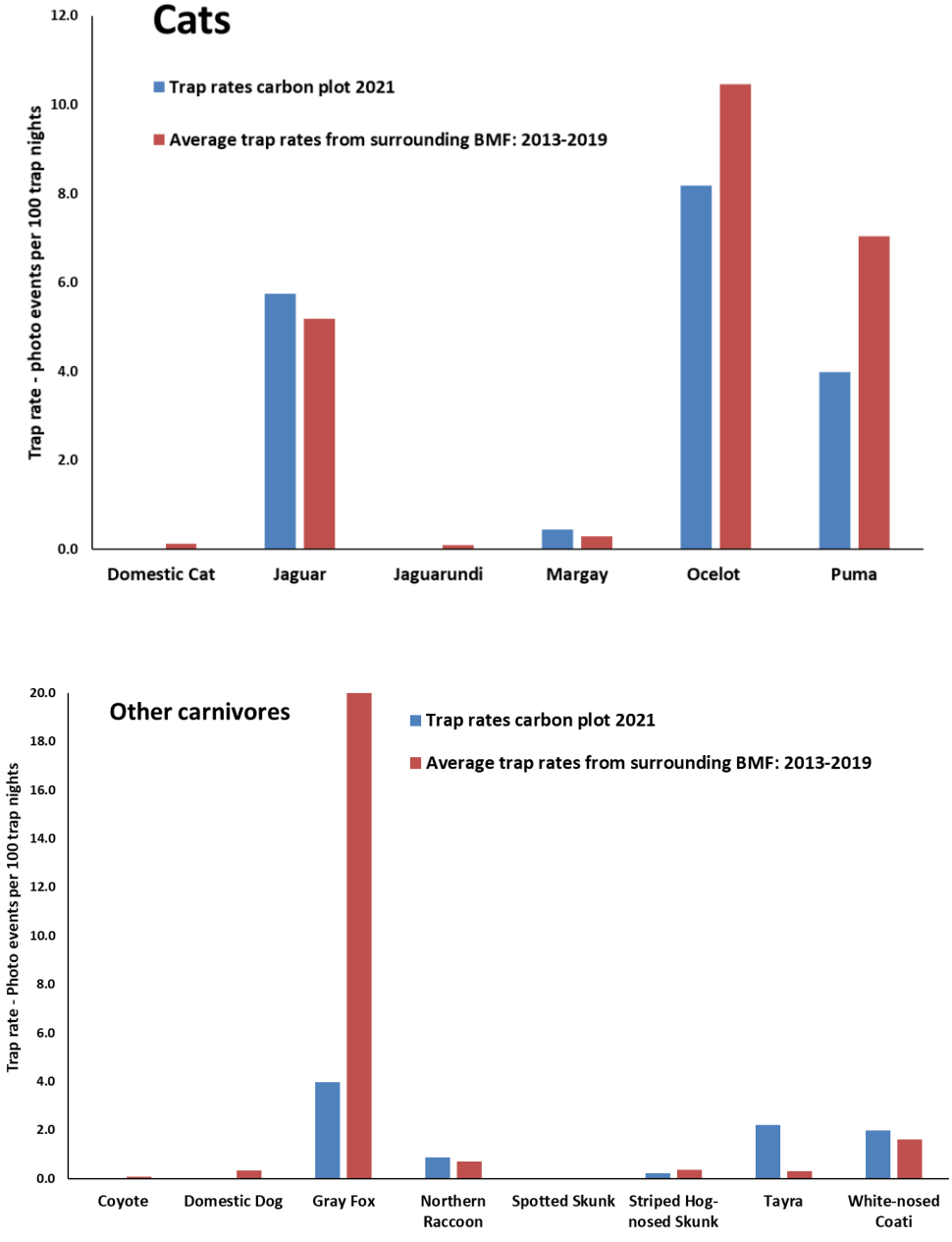
The species with the highest trapping rates per 100 trap nights within the Project Area were the great curassow (11.28), ocellated turkey (10.40) and ocelot (8.19), followed by Baird's tapir (6.19) and jaguar (5.75). The ones with the lowest trap rates were hog-nosed skunks and pacas (both 0.22), margays (0.44), and crested guans (0.66) (see Figure 9).

Figure 9 Trap rates for all species across the 8 camera trapping stations within the Project Area in 2021



For the felids (cats), ocelots had the highest trapping rates followed by pumas and jaguars. Trap rates were higher in the Project Area for jaguars and margays compared to the surrounding BMF area (see Figure 10). For other carnivores, gray foxes had extremely high trap rates in the BMF area compared to the Project Area, but other species were similar to each other (see Figure 10). The fact that no coyotes or domestic dogs were photographed in the Project Area is a good sign, since domestic dogs are invasive, and coyotes are known for thriving in disturbed areas.

Figure 10 Trap rates of wild cats (top panel) and other carnivores (bottom panel) in the Project Area in 2021 compared to the averages from 2013-2019 for the surrounding BMF

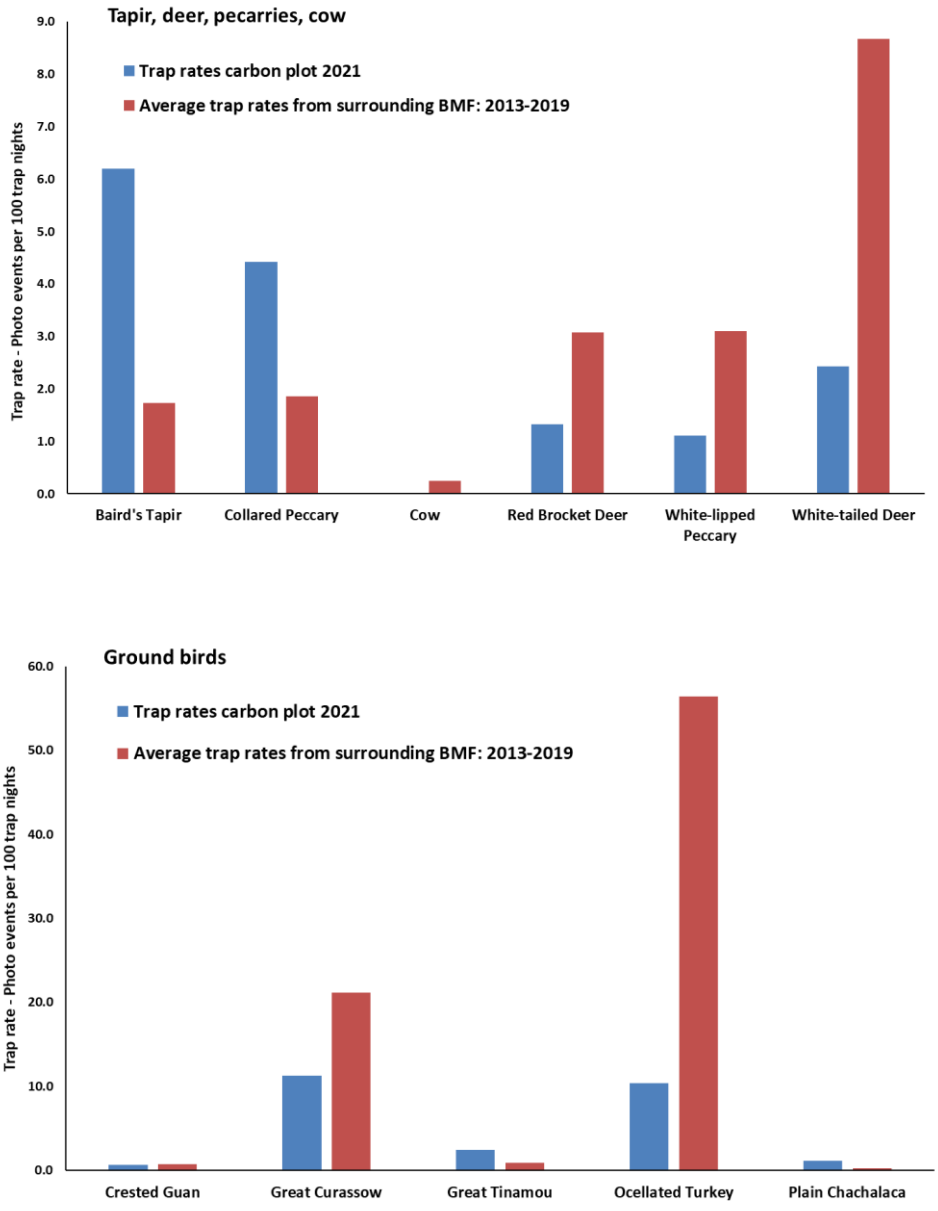


The trap rates for Baird's tapir was substantially higher within the Project Area (at 6.19) compared to BMF (at 1.73). Similarly, collared peccaries were higher in the Project area (4.42) compared to BMF (1.86). White-lipped peccaries, red brocket deer, and white-tailed deer had lower trap rates (see Figure 11).

Great curassows and ocellated turkeys had higher trap rates in the greater BMF area, while great tinamous and plain chachalacas were higher for the Project Area, and crested guans were nearly identical (see Figure 11). Great curassows are usually shy due to over-hunting and habitat loss,

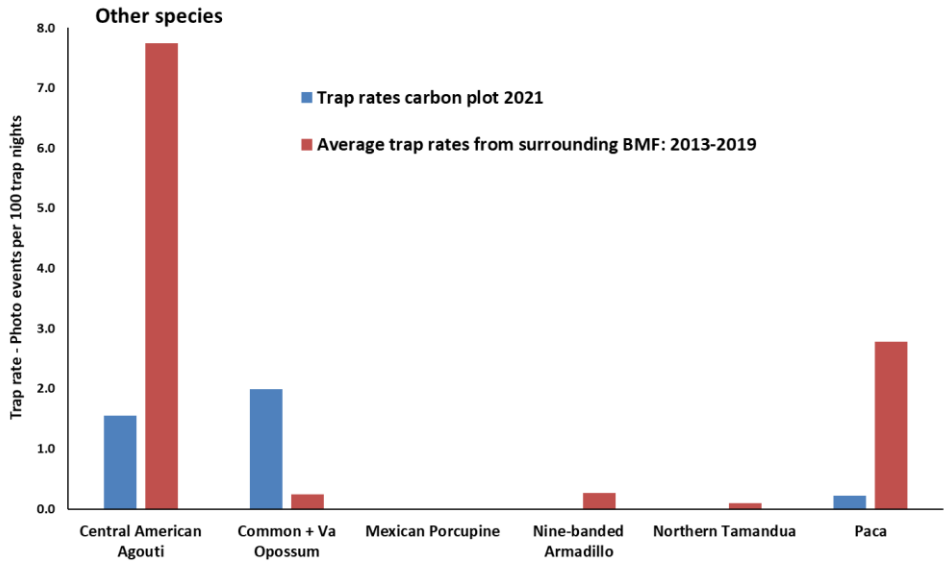
but in the BMF, they are somewhat common (personal observations reported by the Virginia Tech researchers), thus it is encouraging that with protection from hunting they can thrive in additional areas besides interior rainforest.

Figure 11 Trap rates of ungulates (top panel) and ground birds (bottom panel) in the Project Area in 2021 compared to the averages from 2013-2019 for the surrounding BMF



For the remaining species, only opossums were higher in the Project Area and all others had higher trap rates in the BMF area (see Figure 12). No Mexican porcupines, nine-banded armadillos, or northern tamanduas were photographed in the Project Area in 2021. Future surveys will determine trends in trap rates inside the Project Area.

Figure 12 Trap rates of other species in the Project Area in 2021 compared to the averages from 2013-2019 for the surrounding BMF



As a general conclusion of this monitoring method, results show that the majority of species found in the surrounding BMF were also found within the Project Area. In the surrounding BMF, over the span of 7 years we recorded 36 species (not including humans, cows, or horses) using up to 80 different camera stations per survey year. In just one year, with only 8 camera stations in the Project Area, 22 (61%) of these same species were recorded and noted they were widespread across. Additionally, many of the more elusive species (e.g. otters, crocodiles, spotted skunks, long-tailed weasels) were only recorded once or twice in the BMF despite high effort across 7 years. We have no doubt that increasing the numbers of camera traps over the following years, will increase the species count. It should be noted however, that some species are not readily captured in camera traps (arboreal species like margays and monkeys and aquatic ones like crocodiles and otters).

5.3.1.3 Vertebrates registered by trained observers and by camera traps in the Project Area in November-December 2021

The local partner to support the field data collection in the Project Area was The University of Belize, through its Environmental Research Institute (UB ERI). In the same period of time the UB ERI team was conducting the biomass measurements, they registered the vertebrate species observed in the Project Area using camera traps, bird surveys, and casual observations. Below we describe the results and methods used during this monitoring period.

Camera traps

Five double stations with camera traps (two cameras per station for a total of 10 cameras) were set inside the Project Area utilizing the existing points from Virginia Tech's long-term camera trapping survey in the Belize Maya Forest.

Five double stations (two cameras per station for a total of 10 cameras) were deployed on both sides of existing roads and trails inside the Project Area. Cameras were placed and secured on appropriate trees or stakes (when necessary) at approximately 1 m away from the road or trail

and 30-40 cm above ground, with the use of the camera straps that were previously attached. Camera stations were placed with a distance of 2.5-3 Km between each other. A truthing exercise was conducted to ensure the locations of the camera stations were accessible and not prone to flooding. Cameras of each station were not facing each other directly; one of the cameras was facing the trail at a straight angle and the other camera was facing an angle more left or right of the other camera. This was to avoid getting 'blank' pictures due to the flash from both cameras interacting. Any vegetation that could obstruct the picture or trigger the cameras was cleared out.

Bird Survey

One of the components of the biodiversity monitoring included a survey of birds, especially of songbirds that are smaller in size and fly mid to high canopy, so they are not usually caught on camera traps like game birds which are larger in size and do spend some time on the ground. The following bird species list (see Table 23) was developed from surveys conducted during two days by an Avian Biologist and an assistant birder. They recorded all species of birds seen and heard. In only two days of doing this survey the experts were able to register 115 bird species, which represent over 20% of the total of the species in the country. Great curassow (*Crax rubra*) that is listed as Vulnerable in the Red List of the IUCN was registered in the project area.

Terrestrial observations by trained observers

Following the Standards of Operations Procedures, the UB ERI team registered observations of wildlife while walking between the biomass plots in the Project Area. These transects registered anecdotal observations and took place during 18 days from the 4th of November to the 14th of December 2021. A total of 64 species were identified (see Table 23).

Of great importance for the conservation of this area is the presence of the Yucatan black howler (*Alouatta pigra*), a species under the category of Endangered in the IUCN Red List. Troops of Yucatan Black Howlers were detected five different days during the monitoring period. The presence of another Endangered species, the Baird's tapir (*Tapirus Bairdii*) was detected through tracks and scats. The great curassow (*Crax rubra*) listed as Vulnerable in the IUCN Red List was detected 12 of the 18 days the terrestrial observations in transects took place; sometimes as much as 24 individuals were registered in one day.

5.3.1.4 Biodiversity Monitored Annually

Following up on the recommendation in the High Conservation Value Forest Assessment in 2013 (Meerman, W. Usher, & Boomsma, 2013) a biological monitoring program was started within the Yalbac forest in early 2013. Starting in 2015 the monitoring program was also implemented in the Laguna Seca area. Section 6.3.1.4 is a summary of these monitoring reports elaborated by Jan Meerman for the Yalbac Rach & Cattle Corporation and the Forestland Group for the years 2015 (Meerman J. , 2016), 2016 (Meerman J. , 2017), 2017 (Meerman J. , 2018), and 2018 (Meerman J. , 2019).

This research was done using camera traps. Twelve cameras were installed over the two areas, Yalbac and Laguna Seca. Within each zone, an attempt was made to move the cameras around on a bi-monthly basis to increase the level of "randomness" in the data collection. The cameras were typically placed at the side of a trail or logging road at a height of 60-75 cm, overlooking an

area that was mostly free of branches and other debris that might obstruct the movement of animals.

The camera traps were capturing images from April 2015 until December 2018. Approximately, once per two months, the cameras were moved to a next location approximately 0.5 km away from the previous location and data-cards and batteries were changed. In total, during 2018, 2759 camera days were achieved, as well as 2181 in 2017, 2091 in 2016, and 2,993 in 2015. The following image (Figure 13) shows the number of individuals by species captured each year on the camera traps. The next graph (Figure 14) shows the daily presence of species of conservation concern per area/year.

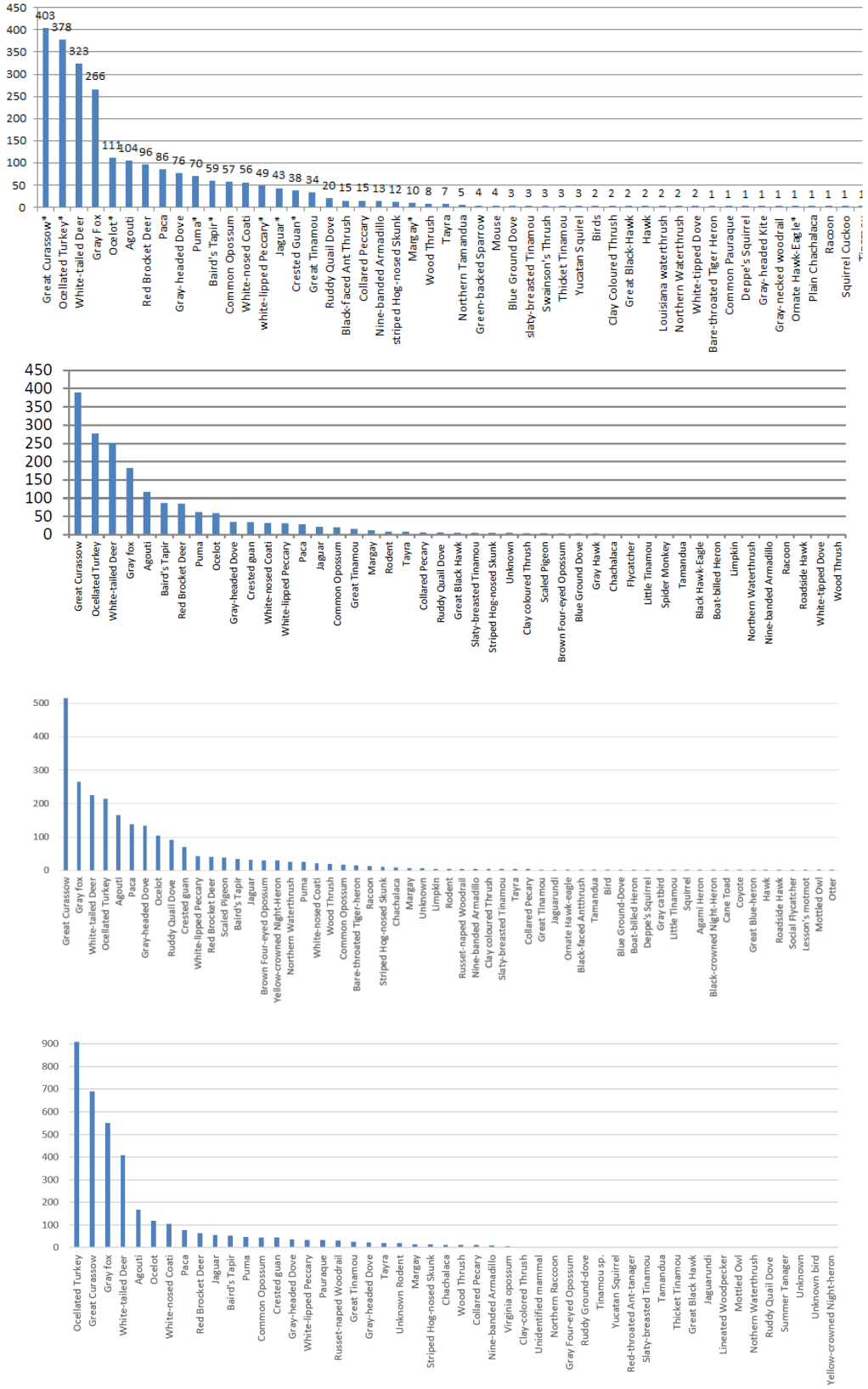


Figure 13 Wildlife individuals recorded by species in the 2015, 2016, 2017, and 2018 seasons. From: Meerman (2016, 2017, 2018, & 2019)

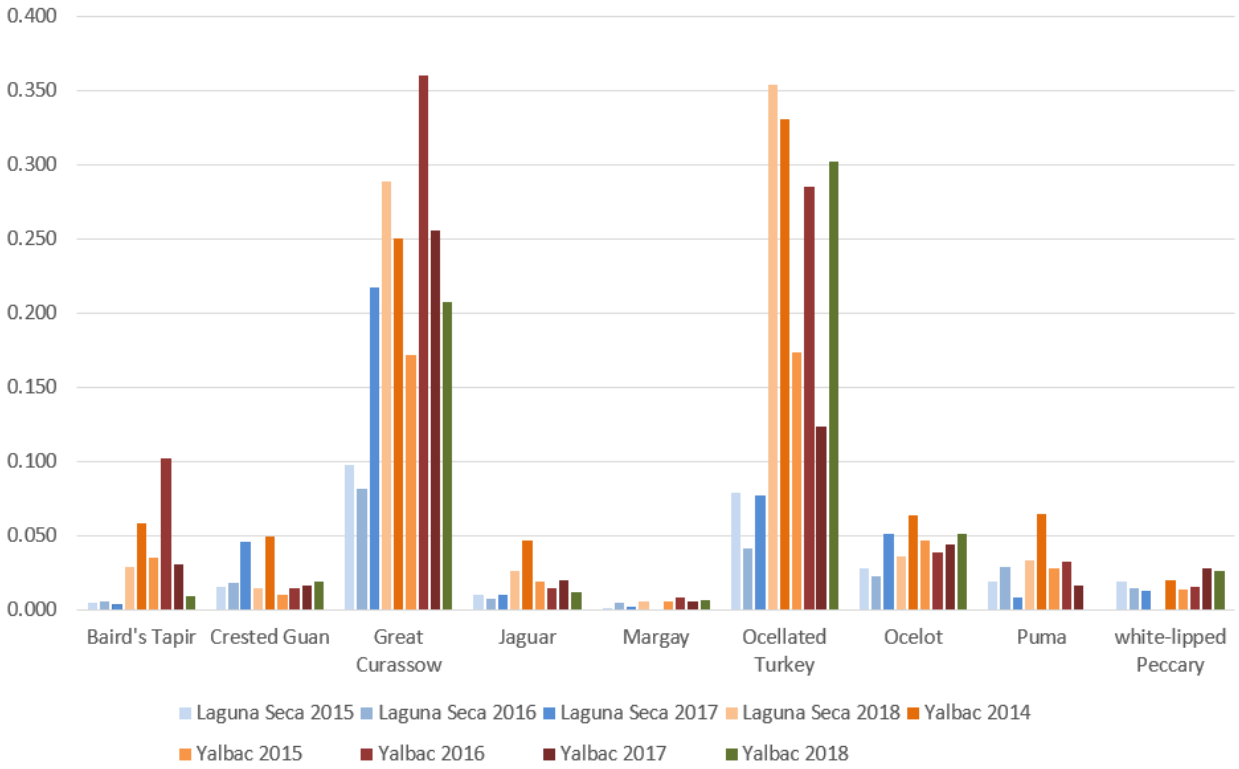


Figure 14 Daily presence of species of conservation concern per area/year. Source: (Meerman J. , 2019)

5.3.2 Biodiversity Monitoring Plan Dissemination (B4.3)

For the requirements for their FSC certification, TFG, informed communities, including Sylvester Village of monitoring results showing that the project has delivered net positive benefits. For the surveys conducted in 2014, 2015 and 2019 these results of positive climate, community and biodiversity benefits can be found on the TSC website at: https://fsc.org/en/fsc-public-certificate-search.

As per Belize custom, the information about accessing project document online, including the summary report, was posted at the Sylvester General Store once the Monitoring Report and the results of monitoring were complete. In addition, UBERI was in communication with all relevant stakeholders to present the VCS/CCB Monitoring Report, gather feedback and notify them of the 30-day comment period so that they could submit commits privately to the CCB via the website CCBstandards@v-c-s.org. All relevant Public Comments submitted to the CCB during the public comment period will be addressed.

5.4 Optional Criterion: Exceptional Biodiversity Benefits

The area of the Laguna Seca Forest Carbon Project is a large private property within the regional Selva Maya. The Selva Maya is the largest continuous expanse of tropical rainforest in the Americas after the Amazon (Olivet & Asquith, 2004). It connects the Maya Biosphere reserve with the Rio Bravo Conservation and Management Area. The Project site resides within the Mesoamerican Biological Corridor (Miller, Chang, & Johnson, 2001) and is part of a Conservation

International Biodiversity Hotspot (Olivet & Asquith, 2004). The project area is also identified as a portion of a Key Biodiversity Area in Belize (Meerman J. , 2007), based on populations of multiple trigger species. The Laguna Seca Forest Carbon Project supports the effort of Belize to achieve the Aichi Target 5: Habitat loss halved or reduced. The project helps limit the net rate of land use change for prioritized natural ecosystems/areas.

Gold Level is achieved by virtue of the significant biodiversity resources conserved on the property including habitat for multiple IUCN listed species and most notably IUCN Endangered Baird's tapir (*Tapirus Bairdii*) and the Yucatan black howler monkey (*Alouatta pigra*). The project provides exceptional biodiversity benefits by virtue of the documented presence of Yucatan Black Howler (*Alouatta pigra*), Baird's tapir (*Tapirus Bairdii*), Ocellated turkey (*Meleagris ocellata*), and Great curassow (*Crax rubra*).

5.4.1 Trigger Species Population Trends (GL3.3)

In the without-project scenario the area would be transformed into a sugar plantation and nearly a 100% loss in biodiversity would be expected. Population trends are not fully understood for the project area, as the area is densely forested however, populations of these species have occurred at the site for many years (Miller & Miller, 2001). Due to project activities, the habitat for these species has been stable for decades. Based on habitat requirements of these species, a complete loss of these populations is expected in the baseline scenario since there is almost no overlap between the species of animals associated with mature forest habitats and sugarcane plantations. Due to project activities, the habitat for these species has been stable for decades, therefore population trends have also been stable. Conserving and protecting the forest should maintain the HCVs. Patrols to prevent illegal hunting and maintaining existing high-quality habitat should result in maintenance of HCVs. Indicators of population trends for each trigger species are considered a combination of habitat availability and presence as indicated by detections during monitoring. Maintenance of these species is considered achieved when the habitat is protected, and the species is still detected using the site. The success in protecting trigger species by the Laguna Seca Project is demonstrated with trap rates for Baird's tapir being higher inside the Project Area than in the surrounding Belize Maya Forest (see section 5.3.1.2).

Trigger Species	Baird's tapir (*Tapirus Bairdii*)
With-project Scenario	The global population declines of *Tapirus Bairdii* are estimated to be greater than 50% in the past three decades (33 years) mainly due to habitat loss and hunting. Globally, causes of past population reduction have not ceased and it is suspected that in next three generations the population will decline by a further 70% from loss of habitat, fragmentation, and hunting pressure (Garcìa, 2016). The main action taken to maintain or enhance the population of *Tapirus Bairdii* is to avoid the conversion of the project area to sugarcane plantation. The Baird's tapir do not generally occupy human dominated or modified habitat types and suffers from persecution near human settlements. *Tapirus Bairdii* is hunted throughout most of its range for pet trade and for bushmeat. Therefore, the multiple patrols that take place

	every year to prevent illegal harvest and hunting help maintain their populations. The habitat was successfully protected, and the presence of the species was detected by scats, several tracks, and camera traps (see Section 5.3.1). Therefore, the maintenance of the species is considered achieved. According to the information gathered by Meerman from 2015 to 2018 (Meerman J. , 2019), the daily presence of this species in the Laguna Seca area, based on the number of camera trap day is 0.005 for 2015; 0.005 for 2016; 0.003 for 2017; and 0.029 for 2018. According to information from 2021(see section 5.3.1.2), Baird's tapir has higher trap rates inside the Project Area (6.19), when compared to the Belize Maya Forest (Kelly & Nipko, 2022)

Trigger Species	Yucatan Black Howler (*Alouatta pigra*)
With-project Scenario	The main action taken to maintain or enhance the population of *Alouatta pigra* is to avoid the conversion of the project area to sugarcane plantation. If forest loss continues at the same rate as the period analyzed by Cortes-Ortiz et al. (2004-2018) (Cortes-Ortíz, Rosales-Meda, & Marsh, 2020), 31% or more of the species' suitable habitat would likely be lost by 2048. *Alouatta pigra* is hunted for pet trade and for bushmeat, that along with loss of habitat places the species in the Endangered category of IUCN. Therefore, the multiple patrols that take place every year to prevent illegal harvest and hunting help maintain the howler monkey populations. The habitat was successfully protected, and troops of Yucatan Black Howlers were detected five days out of 18 days the field observations recorded by a trained observer for terrestrial species took place. The maintenance of the species is considered achieved.

Trigger Species	Geoffrey's Spider Monkey (*Ateles geoffroyi*)
With-project Scenario	Throughout its range, a population reduction of greater than 50% is suspected over the course of 45 years (2018-2063). should forest loss continue at the same rate that has impacted the previous generation (2004-2018), more than a third (34%) of this species' forest habitat is likely to be lost by the year 2063 (Cortes-Ortíz, et al., 2021). The main action taken to maintain or enhance the population of Ateles geoffroyi is to avoid the conversion of the project area to sugarcane plantation, they are highly susceptible to habitat degradation.

	Spider monkeys are heavily hunted for food, and mostly for trading as pets. Therefore, the multiple patrols that take place every year to prevent illegal harvest and hunting help maintain their populations. Indicators of population trends for each trigger species are considered a combination of habitat availability and presence as indicated by detections during monitoring. Maintenance of these species is considered achieved when the habitat is protected, and the species is still detected using the site. The habitat was successfully protected. No spider monkeys were registered during this monitoring period. Because of their social organization of spider monkeys, combined with their arboreal habits and fast movements, their observations quite difficult (Cortes-Ortíz, et al., 2021), for this reason, it is considered that the effective protection of the habitat is a proxy of their presence in the area.

6 ADDITIONAL PROJECT IMPLEMENTATION INFORMATION

7 ADDITIONAL PROJECT IMPACT INFORMATION

Table 23. List of Species found in the Project Area

Common Name	Scientific Name	IUCN Red List Status	2013-2019 Trap rate study Virginia Tech Section 5.3.1.1	2021 Trap rate study Virginia Tech Section 5.3.1.2	2021 Vertebrates observed by camera traps UB ERI Section 5.3.1.3	2021 Bird survey UB ERI Section 5.3.1.3	2021 Terrestrial observations UB ERI Section 5.3.1.3	2015-2018 Field observations Meerman Section 5.3.1.4
Agouti	*Dasyprocta punctata*	LC	●	●	●		●	●
Barred Forest-Falcon	*Micrastur ruficollis*	LC			●			
Baird's tapir	*Tapirus Bairdii*	EN	●	●	●		●	●
Southern river otter	*Lontra longicaudis*	NT	●					●
Margay	*Leopardus wiedii*	NT		●				●
Yucatan Black Howler Monkey	*Alouatta pigra*	EN					●	
Great curassow	*Crax rubra*	VU	●	●	●	●	●	●
Ocellated turkey	*Meleagris ocellata*	NT	●	●	●	●	●	●
Collared peccary	*Pecari tajacu*	LC	●	●				●
Brown four-eyed opossum	*Metachirus nudicaudatus*	LC	●					●
Common opossum	*Didelphis marsupialis*	LC	●	●	●			●
Cow	*Bos bos*	Not applicable	●					
Coyote	*Canis latrans*	LC	●					
Crested guan	*Penelope purpurascens*	LC	●	●	●	●	●	●
Domestic cat	*Felis catus*	Not applicable	●					

Common Name	Scientific Name	IUCN Red List Status	2013-2019 Trap rate study Virginia Tech Section 5.3.1.1	2021 Trap rate study Virginia Tech Section 5.3.1.2	2021 Vertebrates observed by camera traps UB ERI Section 5.3.1.3	2021 Bird survey UB ERI Section 5.3.1.3	2021 Terrestrial observations UB ERI Section 5.3.1.3	2015-2018 Field observations Meerman Section 5.3.1.4
Domestic dog	*Canis lupus familiaris*	Not applicable	●					
Gray Four-eyed opossum	*Philander opossum*	LC	●					
Gray fox	*Urocyon cinereoargenteus*	LC	●	●	●			●
Great tinamou	*Tinamus major*	LC	●	●	●		●	●
Horse	*Equus caballus*	Not applicable	●					
Human	*Homo sapiens*	Not applicable	●					
Jaguar	*Panthera onca*	NT	●	●	●			●
Jaguarundi	*Puma yagouaroundi*	LC	●					●
Long-tailed weasel	*Mustela frenata*	LC	●					
Morelet's crocodile	*Crocodylus moreletii*	LC	●					
Mexican Porcupine	*Sphiggurus mexicanus*	LC	●					
Nine-banded armadillo	*Dasypus novemcinctus*	LC	●		●			●
Northern raccoon	*Procyon lotor*	LC	●	●				●
Northern tamandua	*Tamandua mexicana*	LC	●					●
Ocelot	*Leopardus pardalis*	LC	●	●	●			●
Paca	*Cuniculus paca*	LC	●	●	●			●
Plain chachalaca	*Ortalis vetula*	LC	●	●		●	●	●
Puma	*Puma concolor*	LC	●	●	●			●
Red brocket deer	*Mazama americana*	DD	●	●	●		●	●
Spotted Skunk	*Spilogale putorius*	VU	●					
Striped hog-nosed skunk	*Conepatus semistriatus*	LC	●	●				●

Common Name	Scientific Name	IUCN Red List Status	2013-2019 Trap rate study Virginia Tech Section 5.3.1.1	2021 Trap rate study Virginia Tech Section 5.3.1.2	2021 Vertebrates observed by camera traps UB ERI Section 5.3.1.3	2021 Bird survey UB ERI Section 5.3.1.3	2021 Terrestrial observations UB ERI Section 5.3.1.3	2015-2018 Field observations Meerman Section 5.3.1.4
Tayra	*Eira barbara*	LC	●	●				●
Virginia Opossum	*Didelphis virginiana*	LC	●					●
White-lipped peccary	*Tayassu pecari*	VU	●	●				●
White-nosed coati	*Nasua narica*	LC	●	●				●
White-tailed deer	*Odocoileus virginianus*	LC	●	●				●
Clay-colored thrush	*Turdus grayi*	LC			●			●
Common Pauraque	*Nyctidromus albicollis*	LC			●	●	●	●
Gray-headed Dove	*Leptotila plumbeiceps*	LC			●	●		●
Great Black Hawk	*Buteogallus urubitinga*	LC			●		●	●
Lesson's Motmot	*Momotus lessonii*	LC			●	●	●	●
Mouse spp.	*Mouse spp*	Not applicable			●			
Ruddy Quail-Dove	*Geotrygon montana*	LC			●	●		●
Rufous-necked Wood Rail	*Aramides axillaris*	LC			●			
Rufous-tailed Jacamar	*Galbula ruficauda*	LC			●	●	●	
Wood thrush	*Hylocichla mustelina*	NT			●	●		●
Yucatan squirrel	*Sciurus yucatanensis*	LC			●			●
Little Tinamou	*Crypturellus soui*	LC				●	●	●
King Vulture	*Sarcaramphus papa*	LC				●		
Bicolored Hawk	*Accipiter bicolor*	LC				●		
White Hawk	*Pseudastur albicollis*	LC				●	●	
Broad-winged Hawk	*Buteo platypterus*	LC				●		
Ornate Hawk-Eagle	*Spizaetus ornatus*	NT				●		
Gray-headed Kite	*Leptodon cayanensis*	LC				●		

Common Name	Scientific Name	IUCN Red List Status	2013-2019 Trap rate study Virginia Tech Section 5.3.1.1	2021 Trap rate study Virginia Tech Section 5.3.1.2	2021 Vertebrates observed by camera traps UB ERI Section 5.3.1.3	2021 Bird survey UB ERI Section 5.3.1.3	2021 Terrestrial observations UB ERI Section 5.3.1.3	2015-2018 Field observations Meerman Section 5.3.1.4
Mottled Owl	*Ciccaba virgate*	LC				●		●
Black-and-white Owl	*Ciccaba nigrolineata*	LC				●		
Northern Potoo	*Nyctibius jamaicensis*	LC				●		
Yucatan Poorwill	*Nyctiphrynus yucatanicus*	LC				●		
Scaled Pigeon	*Patagioenas speciose*	LC				●		
White-tipped Dove	*Leptotila verreauxi*	LC				●	●	
Squirrel Cuckoo	*Piaya cayana*	LC				●	●	
Long-billed Hermit	*Phaethornis longirostris*	LC				●	●	
Stripe-throated Hermit	*Phaethornis striigularis*	LC				●	●	
White-bellied Emerald	*Chlorestes candida*	LC				●		
Rufous-tailed Hummingbird	*Amazilia tzacatl*	LC				●	●	
Slaty-tailed Trogon	*Trogon massena*	LC				●	●	
Black-headed Trogon	*Trogon melanocephalus*	LC				●	●	
Gartered Trogon	*Trogon caligatus*	LC				●	●	
White-whiskered Puffbird	*Malacoptila panamensis*	LC				●		
Tody Motmot	*Hylomanes momotula*	LC				●		
Keel-billed Toucan	*Ramphastos sulfuratus*	LC				●	●	
Golden-olive Woodpecker	*Colaptes rubiginosus*	LC				●	●	
Pale-billed Woodpecker	*Campephilus guatemalensis*	LC				●	●	

Common Name	Scientific Name	IUCN Red List Status	2013-2019 Trap rate study Virginia Tech Section 5.3.1.1	2021 Trap rate study Virginia Tech Section 5.3.1.2	2021 Vertebrates observed by camera traps UB ERI Section 5.3.1.3	2021 Bird survey UB ERI Section 5.3.1.3	2021 Terrestrial observations UB ERI Section 5.3.1.3	2015-2018 Field observations Meerman Section 5.3.1.4
Black-cheeked Woodpecker	*Melanerpes pucherani*	LC				•	•	
Smoky-brown Woodpecker	*Dryobates fumigatus*	LC				•		
Brown-hooded Parrot	*Pyrilia haematotis*	LC				•		
White-crowned Parrot	*Pionus senilis*	LC				•	•	
White-fronted Parrot	*Amazona albifrons*	LC				•	•	
Mealy Parrot	*Amazona farinosa*	NT				•		
Olive-throated Parakeet	*Eupsittula nana*	NT				•	•	
Green Jay	*Cyanocorax yncas*	LC				•		
Barred Antshrike	*Thamnophilus doliatus*	LC				•		
Dot-winged Antwren	*Microrhopias quixensis*	LC				•		
Dusky Antbird	*Cercamocroides tyrannina*	LC				•		
Mayan Antthrush	*Formicarius moniliger*	LC				•		
Ivory-billed Woodcreeper	*Xiphorhynchus flavigaster*	LC				•	•	
Tawny-winged Woodcreeper	*Dendrocincla anabatina*	LC				•		
Olivaceous Woodcreeper	*Sittasomus griseicapillus*	LC				•		
Northern Barred Woodcreeper	*Dendrocolaptes sanctithomae*	LC				•		
Yellow-bellied Tyrannulet	*Ornithion semiflavum*	LC				•		

Common Name	Scientific Name	IUCN Red List Status	2013-2019 Trap rate study Virginia Tech Section 5.3.1.1	2021 Trap rate study Virginia Tech Section 5.3.1.2	2021 Vertebrates observed by camera traps UB ERI Section 5.3.1.3	2021 Bird survey UB ERI Section 5.3.1.3	2021 Terrestrial observations UB ERI Section 5.3.1.3	2015-2018 Field observations Meerman Section 5.3.1.4
Northern Beardless-Tyrannulet	*Camptostoma imberte*	LC				•		
Greenish Elaenia	*Myiopagis viridicata*	LC				•		
Ochre-bellied Flycatcher	*Mionectes oleagineus*	LC				•		
Northern Bentbill	*Oncostoma cinereigulare*	LC				•	•	
Yellow-olive Flycatcher	*Tolmomyias sulphurescens*	LC				•		
Stub-tailed Spadebill	*Platyrinchus cancrominus*	LC				•		
Royal Flycatcher	*Onychorhynchus coronatus*	LC				•		
Eye-ringed Flatbill	*Rhynchocyclus brevirostris*	LC				•		
Bright-rumped Attila	*Attila spadiceus*	LC				•	•	
Dusky-capped Flycatcher	*Myiarchus tuberculifer*	LC				•		
Yucatan Flycatcher	*Myiarchus yucatanensis*	LC				•		
Great Crested Flycatcher	*Myiarchus crinitus*	LC				•		
Rufous Mourner	*Rhytipterna holerythra*	LC				•		
Eastern Wood-Pewee	*Contopus virens*	LC				•		
Yellow-bellied Flycatcher	*Empidonax flaviventris*	LC				•		
Least Flycatcher	*Empidonax minimus*	LC				•		
Sulphur-bellied Flycatcher	*Myiodynaste luteiventris*	LC				•		

Common Name	Scientific Name	IUCN Red List Status	2013-2019 Trap rate study Virginia Tech Section 5.3.1.1	2021 Trap rate study Virginia Tech Section 5.3.1.2	2021 Vertebrates observed by camera traps UB ERI Section 5.3.1.3	2021 Bird survey UB ERI Section 5.3.1.3	2021 Terrestrial observations UB ERI Section 5.3.1.3	2015-2018 Field observations Meerman Section 5.3.1.4
Social Flycatcher	*Myiozetetes similis*	LC				●		
Boat-billed Flycatcher	*Megarynchus pitangua*	LC				●		
Ruddy-tailed Flycatcher	*Terenotriccus erythrurus*	LC				●		
White-collared Manakin	*Manacus candei*	LC				●		
Red-capped Manakin	*Ceratopipra mentalis*	LC				●	●	
Rufous Piha	*Lipaugus unirufus*	LC				●	●	
Northern Schiffornis	*Schiffornis veraepacis*	LC				●	●	
Masked Tityra	*Tityra semifasciata*	LC				●	●	
Rose-throated Becard	*Pachyramphus aglaiae*	LC				●		
Cinnamon Becard	*Pachyramphus cinnamomeus*	LC				●		
Green shrike-Vireo	*Vireolanius pulchellus*	LC				●		
White-eyed Vireo	*Vireo griseus*	LC				●		
Yellow-throated Vireo	*Vireo flavifrons*	LC				●		
Lesser Greenlet	*Pachysylvia decurtata*	LC				●	●	
Tawny-crowned Greenlet	*Tuchiornis ochraceiceps*	LC				●		
Spot-breasted Wren	*Pheugopedius maculipectus*	LC				●	●	
White-bellied Wren	*Uropsila leucogastra*	LC				●	●	
White-breasted Wood-wren	*Henicorhina leucosticta*	LC				●	●	
Long-billed Gnatwren	*Ramphocaenus melanurus*	LC				●		

Common Name	Scientific Name	IUCN Red List Status	2013-2019 Trap rate study Virginia Tech Section 5.3.1.1	2021 Trap rate study Virginia Tech Section 5.3.1.2	2021 Vertebrates observed by camera traps UB ERI Section 5.3.1.3	2021 Bird survey UB ERI Section 5.3.1.3	2021 Terrestrial observations UB ERI Section 5.3.1.3	2015-2018 Field observations Meerman Section 5.3.1.4
Blue-gray Gnatcatcher	*Polioptila caerulea*	LC				●		
White-browed Gnatcatcher	*Polioptila bilineata*	LC				●		
Gray Catbird	*Dumetella carolinensis*	LC				●	●	
Worm-eating Warbler	*Helmitheros vermivorum*	LC				●		
Northern Waterthrush	*Parkesia noveboracensis*	LC				●	●	●
Magnolia Warbler	*Setophaga magnolia*	LC				●	●	
American Redstart	*Setophaga ruticilla*	LC				●		
Hooded Warbler	*Setophaga citrina*	LC				●	●	
Kentucky Warbler	*Geothlypis formosa*	LC				●		
Black-throated Green Warbler	*Setophaga virens*	LC				●		
Black-and-white Warbler	*Mniotilta varia*	LC				●		
Ovenbird	*Seiurus aurocapilla*	LC				●		
Blue-winged Warbler	*Vermivora cyanoptera*	LC				●		
Gray-crowned Warbler	*Phylloscopus tephrocephalus*	LC				●		
Grey-headed Tanager	*Eucometis penicillata*	LC				●		
Summer Tanager	*Piranga rubra*	LC				●	●	●
Red-legged Honeycreeper	*Cyanerpes cyaneus*	LC				●		
Green Honeycreeper	*Chlorophanes spiza*	LC				●		
Black-throated Shrike-Tanager	*Lanio aurantius*	LC				●		

Common Name	Scientific Name	IUCN Red List Status	2013-2019 Trap rate study Virginia Tech Section 5.3.1.1	2021 Trap rate study Virginia Tech Section 5.3.1.2	2021 Vertebrates observed by camera traps UB ERI Section 5.3.1.3	2021 Bird survey UB ERI Section 5.3.1.3	2021 Terrestrial observations UB ERI Section 5.3.1.3	2015-2018 Field observations Meerman Section 5.3.1.4
Green-backed Sparrow	*Arremonops chloronotus*	LC				●		
Red-throated Ant-Tanager	*Habia fuscicauda*	LC				●		●
Black-faced Grosbeak	*Caryothraustes poliogaster*	LC				●		
Blue-black Grosbeak	*Cyanocompsa cyanoides*	LC				●		
Blue Bunting	*Cyanocompsa parellina*	LC				●		
Yellow-throated Euphonia	*Euphonia hirundinacea*	LC				●	●	
Olive-backed Euphonia	*Euphonia gouldi*	LC				●		
red-lored parrot	*Amazona autumnalis*	LC					●	
boa constrictor	*Boa imperator*	LC					●	
short-tailed hawk	*Buteo brachyurus*	LC					●	
blue-ground dove	*Claravis pretiosa*	LC					●	
ruddy ground dove	*Columbina talpacoti*	LC					●	●
lineated woodpecker	*Dryocopus lineatus*	Not available					●	●
bat falcon	*Falco rufigularis*	LC					●	
lesser swallow-tailed swift	*Panyptila cayennensis*	LC					●	
pale-vented pigeon	*Patagioenas cayennensis*	LC					●	
red-billed pigeon	*Patagioenas flavirostris*	LC					●	
short-billed pigeon	*Patagioenas nigrirostris*	LC					●	
montezuma oropendola	*Psarocolius montezuma*	LC					●	

Common Name	Scientific Name	IUCN Red List Status	2013-2019 Trap rate study Virginia Tech Section 5.3.1.1	2021 Trap rate study Virginia Tech Section 5.3.1.2	2021 Vertebrates observed by camera traps UB ERI Section 5.3.1.3	2021 Bird survey UB ERI Section 5.3.1.3	2021 Terrestrial observations UB ERI Section 5.3.1.3	2015-2018 Field observations Meerman Section 5.3.1.4
brown jay	*Psilorhinus morio*	LC					●	
collared aracari	*Pteroglossus torquatus*	LC					●	
black-headed saltator	*Saltator atriceps*	LC					●	
peccary	*Tayassuidae family*	Not applicable					●	
bare-throated tiger heron	*Tigrisoma mexicanum*	LC					●	
Slaty-breasted Tinamou	*Crypturellus boucardi*	LC						●
Russet-naped Wood-rail	*Aramides albiventris*	LC						●
masked tityra	*Tityra semifasciata*	LC						●

8 APPENDICIES

Appendix 1: New Project Areas and Stakeholders

There were no additional New Project Area Instances added during this monitoring period

Appendix 2: Project Risks Table

Project risks are identified in the Non-Permanence Risk Report.

Appendix 3: Additional Information

The following documents are available to the VVB:

VCS Risk Report Template (Commercially Sensitive)

Risk Assessment Excel Tool (Commercially Sensitive)

Biomass Standard Operating Procedures (Commercially Sensitive)

Biomass Data (Commercially Sensitive)

Biodiversity Standard Operating Procedure (Commercially Sensitive)

Standard Operating Procedures for Household Surveys (Commercially Sensitive)

Household Surveys (Commercially Sensitive)

FSC Reports (Commercially Sensitive)

Ownership property transfer from TFG to BMFT (Commercially Sensitive)

TNC Memo (Commercially Sensitive)

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