



Monitoring report form for CDM project activity
(Version 06.0)

Complete this form in accordance with the instructions attached at the end of this form.

MONITORING REPORT

Title of the project activity	Southern Nicaragua CDM Reforestation Project
UNFCCC reference number of the project activity	3970
Version number of the PDD applicable to this monitoring report	04
Version number of this monitoring report	2.0
Completion date of this monitoring report	26/10/2018
Monitoring period number	2
Duration of this monitoring period	07/01/2012 – 31/12/2017
Monitoring report number for this monitoring report	1
Project Participants	<ul style="list-style-type: none"> - Italy: Government of Italy - Ministry for the Environment, Land and Sea - France: Eco-Carbone S.A.S - Japan: Tokyo Electric Power Company Holdings, Inc., Idemitsu Kosan Co., Ltd., Japan Iron and Steel Federation (JISF), Japan Petroleum Exploration Co., Ltd. (JAPEX), The Okinawa Electric Power Co., Inc. Sumitomo Chemical., Sumitomo Joint Electric Power Co., Ltd., Suntory Holdings Limited - Spain: Kingdom of Spain – Ministry for the Ecological Transition & Ministry of Economy and Business - Luxembourg: Ministry of Sustainable Development and infrastructure
Host Party	Nicaragua Authorized Participants: Novelteak AG
Sectoral scopes	14 - Afforestation and reforestation
Applied methodologies and standardized baselines	AR-AMS0001 ver. 5 "Simplified baseline and monitoring methodologies for small-scale afforestation and reforestation project activities under the clean development mechanism implemented on grasslands or croplands"

Amount of GHG emission reductions or net anthropogenic GHG removals achieved by the project activity in this monitoring period	Amount achieved before 1 January 2013	Amount achieved from 1 January 2013
	0	143,121 tCO ₂ -e
Amount of GHG emission reductions or net anthropogenic GHG removals estimated ex ante for this monitoring period in the PDD	250,315 tCO ₂ -e	

SECTION A. Description of project activity

A.1. General description of project activity

The project consists initially of the reforestation of 813 ha with teak and native wood species in Southern Nicaragua to reduce GHG emissions. The reforestation is carried out on former pasturelands. The objectives of this project are to contribute to the sustainable development of Nicaragua through reforestation to generate sustainable wood supplies to reduce pressure on natural forests and to serve as carbon sink.

This project will contribute to reducing poverty in one of the poorest regions of Central America. Subsistence agriculture and cattle farming are the main economic activities, and do not generate many job opportunities. The project seeks thus to increase the amount of employment opportunities for rural poor and landless and prevent their emigration to neighboring Costa Rica.

This project is the major source of employment for local communities, including jobs on a permanent basis as well as seasonal jobs for tasks such as planting, maintenance, weeding, pruning, fire control, thinning and harvesting. The wages paid to workers are above average wage, which is significantly above the minimal wage. The project also provides training and career opportunities for young people.

The major species planted under the project is teak (*Tectona grandis*), but there are also a variety of valuable native species. Most of these native species have become rare or threatened due to overexploitation of natural forest in Central America. Some are important as fruit, food and habitat for wildlife.

The environmental benefits of the project include prevention of fire and erosion, protection of groundwater, and improvement of soil and microclimate. The project obtained certification in accordance with the criteria laid out by the Forestry Stewardship Council (FSC) in 2007.

The project has a harvest cycle of 18 to 30 years, depending on site quality and species.

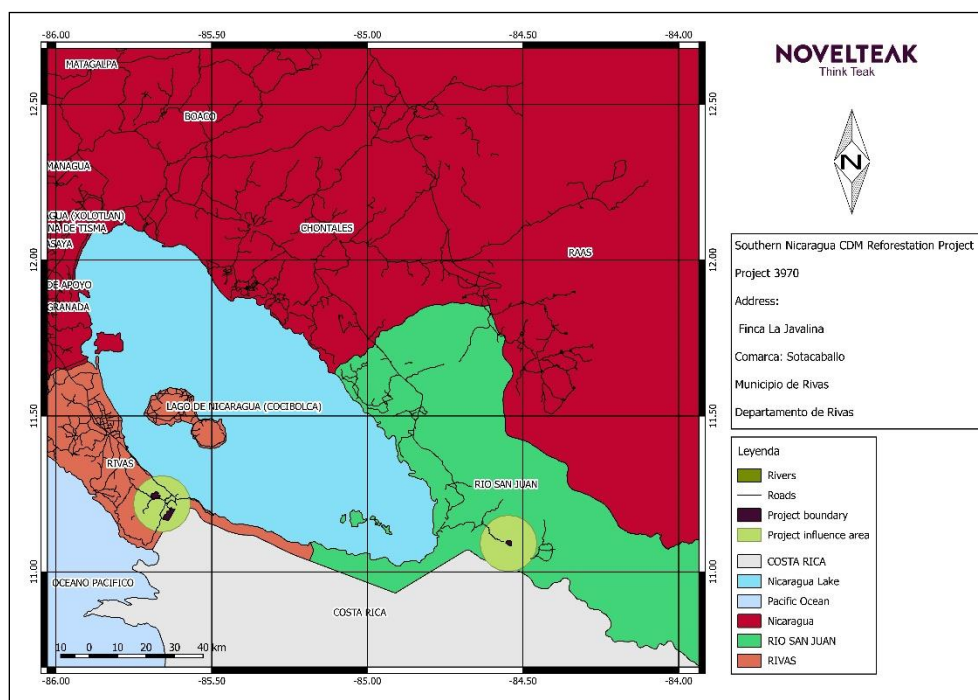
A.2. Location of project activity

The project is located in two municipalities, Cardenas and San Carlos, on different former cattle ranches in Southern Nicaragua. By 2005, three locations were selected for plantation establishment. The first two locations are near the village of Sapoá, in Southwestern Nicaragua between the border with Costa Rica, Lake Nicaragua and the Pacific Ocean. The topography of these sites is hilly with altitudes varying between 50 and 250 m above sea level. The third site is near the village of Esperanza east of Lake Nicaragua on the Rio San Juan, at an altitude of 40-60 m.

The coordinates of the three sites are:

- Site 1: 11°11'05" N, 85°38'14" O
- Site 2: 11°14'42" N, 85°41'02" O
- Site 3: 11°05'34" N, 84°32'40" O.

The exact location of each discrete area of the project area is given by the geographic information system of the project.



A.3. Parties and project participants

Parties involved	Project participants	Indicate if the Party involved wishes to be considered as project participant (Yes/No)
Nicaragua (host)	Novelteak AG (formerly Precious Woods Nicaragua SA)	NO
Italy	Government of Italy – Ministry for the Environment, Land and Sea	YES
France	Eco-Carbone S.A.S	NO
Japan	Tokyo Electric Power Company Holdings, Inc, Idemitsu Kosan Co., Ltd., Japan Iron and Steel Federation (JISF), Japan Petroleum Exploration Co., Ltd.(JAPEX), The Okinawa Electric Power Co., Inc. Sumitomo Chemical., Sumitomo Joint Electric Power Co., Ltd., Suntory Holdings Limited	NO
Spain	Kingdom of Spain – Ministry for the Ecological Transition & Ministry of Economy and Business	YES
Luxembourg	Ministry of Sustainable Development and Infrastructure	YES

A.4. Reference to applied methodologies and standardized baselines

AR-AMS0001 ver. 5 – “Simplified baseline and monitoring methodologies for small-scale afforestation and reforestation project activities under the clean development mechanism implemented on grasslands or croplands”.

Further information regarding the methodology may be found in the following link:
<http://cdm.unfccc.int/methodologies/DB/91OLF4XK2MEDIRIWUQ22X3ZQAOPBWY>

A.5. Crediting period type and duration

Fixed crediting period of 30 years is chosen.

The start date of the project is 04/07/2003, with a crediting period stretching till 03/07/2033.

SECTION B. Implementation of project activity

B.1. Description of implemented project activity

The starting date of the project activity is 04/07/2003, when the planting of the first lot started on Pimienta and Esperanza farms. In the case of Javalina farm, the start of planting was 15/07/2005.

After assessing the unsuccessful area during the first monitoring period, it was decided to replant 59.02 hectares out the 124.08 hectares lost. The remaining area (65.06 ha) was decided to not replant this area and this will lead to a reduction in the project boundary.

Despite the decision taken after the first monitoring period to replant 59 hectares of the 83 hectares lost, this replanting activity was not carried out because, after further considerations, the soil conditions do not fulfill the requirements to sustain a forest plantation.

During this second monitoring period, there were no further losses due to bad growth, as occurred over the first monitoring period.

As a result, the distribution of the plantations it is divided as per the following table:

Farm	2003	2004	2005	2006	2013	TOTAL
Esperanza						
Teak	40.70	114.34	-	-	-	155.02
Native	2.15	7.50	-	-	-	9.65
Pimienta						
Teak	83.57	137.12	0.20	-	-	220.89
Native	4.82	5.31	1.60	-	-	11.68
Javalina						
Teak	-	-	146.17	144.96	59.00	350.07
Native	-	-	0.50	-	-	0.49
TOTAL	131.24	264.27	148.47	144.96	59.00	747.94

Related to the management for these plantations, thinning was applied between the years 2007 and 2010. First management thinning was applied between the years 2010 and 2013; second

management thinning was executed between years 2010 and 2015 and the third thinning started the application in 2015 and will finish in 2018.

No special events occurred, that might affect the applicability of the methodology.

B.2. Post-registration changes**B.2.1. Temporary deviations from the registered monitoring plan, applied methodologies or standardized baselines**

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B.2.2. Corrections

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B.2.3. Changes to the start date of the crediting period

Intentionally left blank

B.2.4. Inclusion of monitoring plan

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B.2.5. Permanent changes to the registered monitoring plan, or permanent deviation of monitoring from the applied methodologies, standardized baselines, or other applied standards or tools

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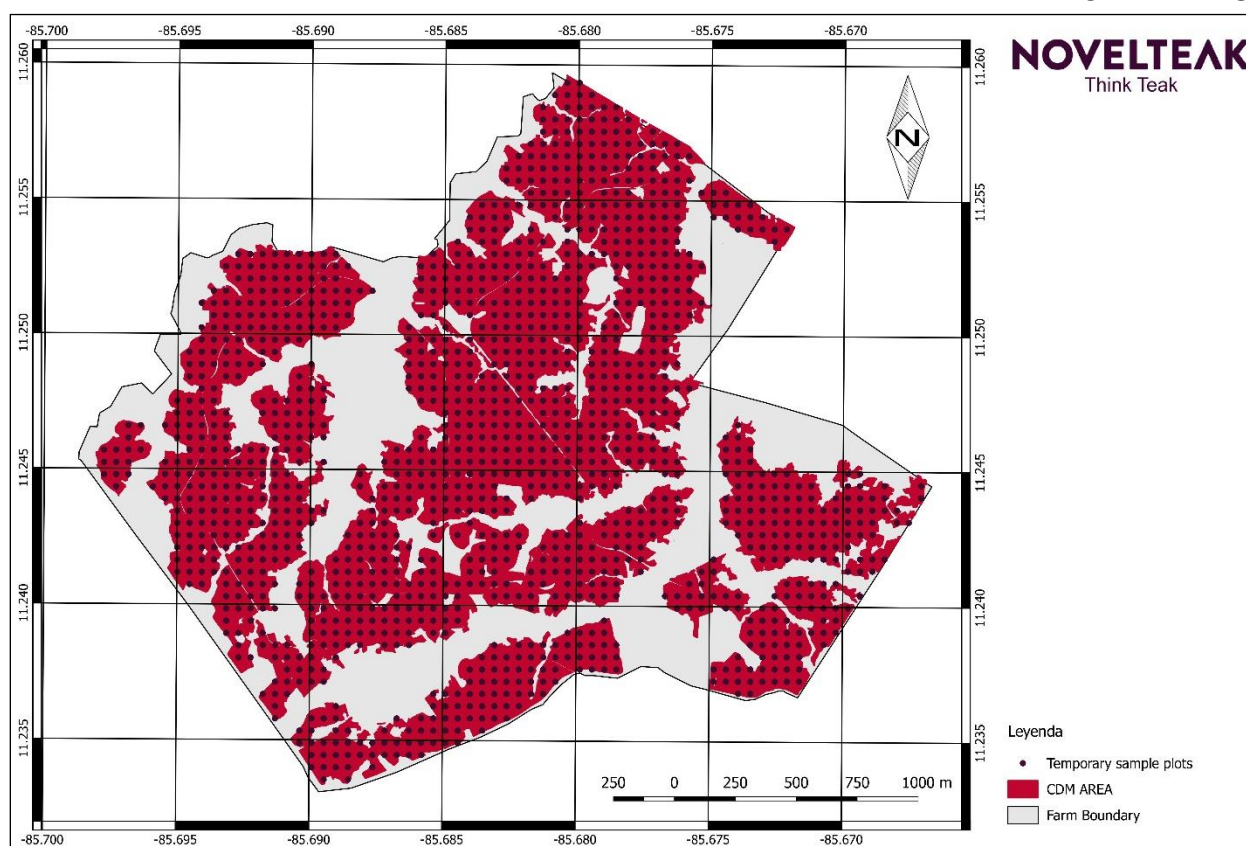
B.2.6. Changes to project design

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SECTION C. Description of monitoring system**Stratification**

The project area is stratified. Parameters for initial stratification are tree species (native species and teak) and planting year (2003 to 2006).

In year 4 after planting, the stratification was refined with strata that represent the growth conditions. These strata are mapped based on a grid of geo-referenced systematically distributed circular temporary sample plots of 100 m² with a distance of 50 m between each plot, as shown in the next figure for Javalina farm, with random layout of the grid in accordance with CDM guideline EB68 Annex 31:



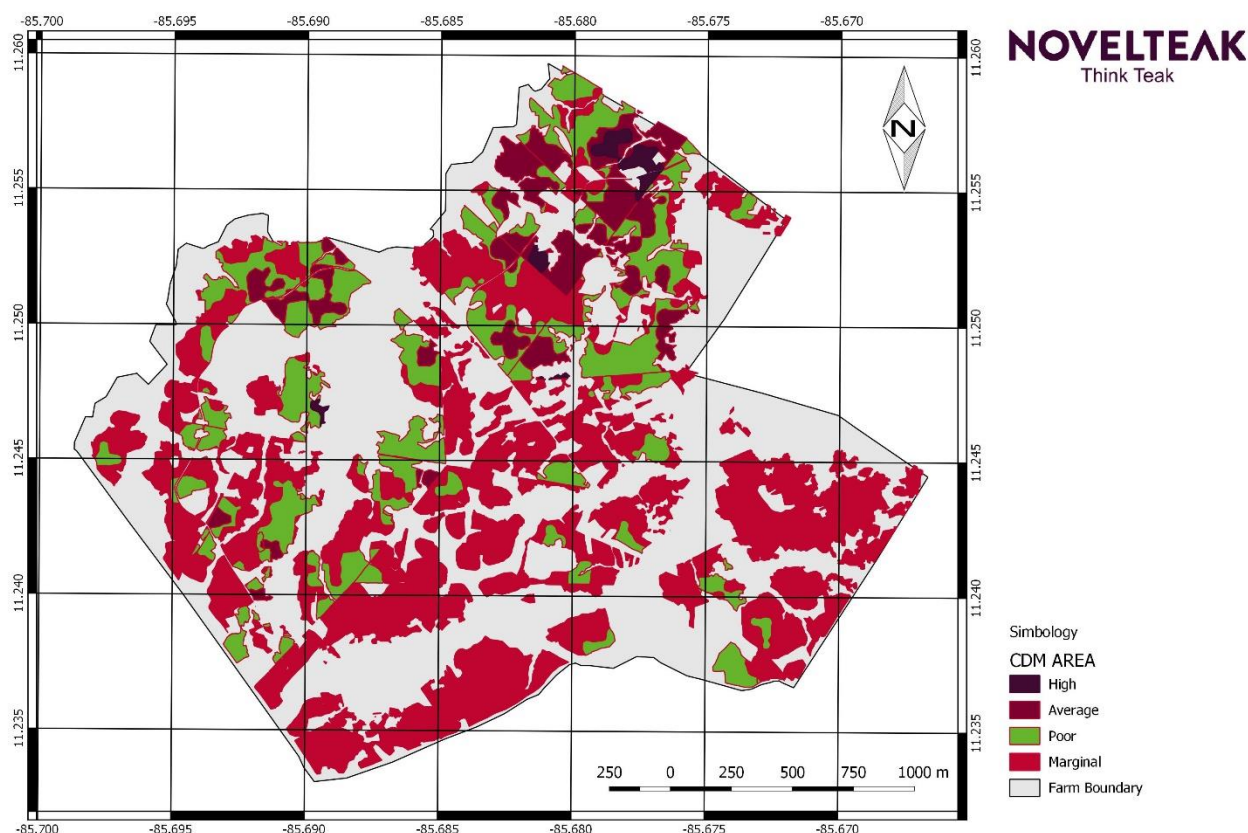
In each plot diameter at breast height (DBH) of every tree is measured. Total aboveground biomass of the tree is calculated as a function of DBH, using an allometric formula. The average aboveground biomass of each plot is then assigned to a growth class. With the help of a GIS computer program with interpolation functionality, a growth map with homogeneous growth conditions is produced.

The final stratification thus separates:

1. Tree species / species group
2. Planting year
3. Growth class

Stratification

Tree species /species group	Planting year	Growth class	Stratum ID
Natives	2003	Average	N03A
Natives	2004	Average	N04A
Natives	2005	Average	N05A
Natives	2006	Average	N06A
Teak	2003	High	T03H
Teak	2003	Marginal	T03M
Teak	2003	Poor	T03P
Teak	2004	Marginal	T04M
Teak	2005	Average	T05A
Teak	2005	Marginal	T05M
Teak	2006	Marginal	T06M
Teak	2006	Poor	T06P
Teak	2013	Marginal	T13M



Calculation of the number of sample plots

For the determination of the number of sample plots per stratum, the Methodical Tool “Calculation of the number of sample plots for measurements within A/R CDM project activities” (Version 2.1.0) is used.

To calculate the number of permanent sample plots used for monitoring, the formula of method II (samples drawn with replacement) of this tool is used. The number of plots per stratum is determined according to a targeted precision level of $\pm 10\%$ of the mean at a 90% confidence level. In the registered PDD, this was originally set to 95%. This was changed following the guidelines from the CDM EB (EB 68, Annex 31) that for all methodologies sets the maximum allowable relative margin of error of the mean, for estimation of aboveground tree biomass, to $\pm 10\%$ at 90% confidence level. The standard deviation within each stratum is derived from the data underlying the growth map.

The resulting number of sample plots is shown in the following table:

Stratum	Ha	Number of plots
N03A	6.97	7
N04A	12.81	14
N05A	2.1	0
N06A	0	0
T03H	48.44	43
T03M	55.28	41
T03P	20.55	22
T04M	251.46	217

T05A	0.2	1
T05M	146.17	131
T06M	113.98	138
T06P	30.98	34
T13M	59	0
Total	747.94	648

Sample plot size

The area of the permanent sample plots is 500 m². The plots are circular.

Permanent sample plot location

The plots are located systematically with a random location of the starting plot, identified prior to establishment using a GIS program, geo-referenced and marked in the field. Series number, stratum and GPS coordinates are registered in a database.

Data record

The measurements are made by two groups of two workers each. They take the DBH of each tree inside of the permanent sample plot, following the procedure of the company for forestry measurements. In this step the field workers have to do a preliminary review, comparing the measurement with the last measurement made.

Then the data on paper are given to the person responsible for digitizing those data in an Excel spreadsheet that contains the last measurements, so that through subtraction this person can know if the value of the DBH is correct or not. After this review, those data are copied and pasted on the SMART - Forms for AR-AMS0001 ver. 5.

To ensure the net anthropogenic GHG removals by sinks are measured and monitored precisely, credibly, verifiably and transparently, a quality assurance and quality control (QA/QC) procedure is implemented.

QA/QC Procedures

a) Reliable field measurements

To ensure reliable field measurements, Standard Operating Procedures (SOPs) for each step of the field measurements, including all detailed phases of the field measurements and provision of documentation for verification purposes, are proposed in this document and will be adjusted periodically.

Training courses on field data collection and data analysis are held for persons involved in the field measurement work. The training courses ensure that each field-team member is fully aware of all procedures and the importance of collecting data as accurately as possible.

b) Verification of field data collection

To verify that plots have been installed and measurements taken correctly,

- Randomly selected plots are re-measured by teams other than those involved in the prior plot measurements.
- Key re-measurement elements include the location of plots and DBH
- The re-measurement data are compared with the original measurement data. Errors assessed in the prior measurements are corrected and recorded and are used to calculate the measurement error.

c) Verification of data entry and analysis

To minimize the possible errors in the process of data entry, the entry of both field data and laboratory data are reviewed by an independent expert team and compared with independent data to ensure that the data are realistic. Communication between all personnel involved in measuring and analyzing data are used to resolve any apparent anomalies before the final analysis of the monitoring data is completed.

d) Data maintenance and archiving

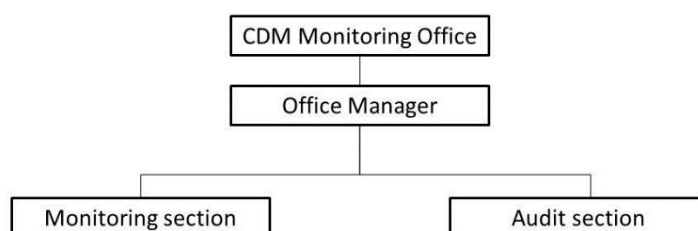
Data archiving takes both electronic and paper forms, and copies of all data are provided to each project participant. All electronic data and reports are copied on durable media such as CDs, and copies of the CDs are stored in multiple locations. The archives include:

- Copies of all original field measurement data, laboratory data, and data analysis spreadsheets;
- Estimates of the carbon stock changes in all pools and non-CO₂ GHG and corresponding calculation spreadsheets;
- GIS products.

All the media will be stored for at least 5 years after verification.

Organizational structure

The structure of the CDM Monitoring Office set up is outlined below:



The information collected and the flow of this information is outlined below

Roles and responsibilities

Office manager / manager of research of Novelteak Nicaragua: Mr. Victor Arce is the responsible person for coordinating and managing the work of the CDM Monitoring Office and is in charge of all matters relevant to the monitoring activity.

Monitoring section: Mr. Alexander Mayorga is responsible for collecting, processing and archiving the data.

Audit section: Mr. Nelson Torres is responsible for auditing the work of the monitoring section.

SECTION D. Data and parameters**D.1. Data and parameters fixed ex ante**

Data/Parameter	Stratum ID
Unit	Alpha numeric

Description	Area that has a particular combination of soil type, climate, existing vegetation and land form
Source of data	Stratification map
Value(s) applied	Stratum 1 - Area planted with teak for harvesting at 30 years Stratum 2 - Area planted with teak for harvesting at 18 years Stratum 3 - Area planted with native tree species
Choice of data or measurement methods and procedures	
Purpose of data/parameter	Actual net GHG removals by sinks (this data are used to calculate the number of sample plots needed in each stratum).
Additional comments	

Data/Parameter	Sub-stratum ID
Unit	Alpha numeric
Description	Area that has a particular year to be planted and a particular site quality under each stratum
Source of data	Stratification map
Value(s) applied	N03A T04M N04A T05A N05A T05M N06A T06M T03H T06P T03M T13M T03P
Choice of data or measurement methods and procedures	
Purpose of data/parameter	Actual net GHG removals by (this data are used to calculate the number of sample plots needed in each stratum).
Additional comments	

Data/Parameter	Confidence level
Unit	%
Description	Is the range of values (calculated in a sample) in which is the true value of the parameter with a given probability.
Source of data	Prescribed in methodology
Value(s) applied	90%
Choice of data or measurement methods and procedures	
Purpose of data/parameter	Actual net GHG removals by sinks (this data is used to calculate the number of sample plots needed in each stratum)
Additional comments	In the registered PDD, this was originally set to 95%. This was changed following the guidelines from the CDM EB (EB 68, Annex 31) that for all methodologies sets the maximum allowable relative margin of error of the mean, for estimation of aboveground tree biomass, to $\pm 10\%$ at 90% confidence level

Data/Parameter	Precision level
Unit	%
Description	Is the probability of error
Source of data	Prescribed in methodology and calculated using data from plot measurements
Value(s) applied	10%
Choice of data or measurement methods and procedures	
Purpose of data/parameter	This data is used to calculate the number of sample plots
Additional comments	In the registered PDD, this was originally set to 5%. This was changed following the guidelines from the CDM EB (EB 68, Annex 31) that for all methodologies sets the maximum allowable relative margin of error of the mean, for estimation of aboveground tree biomass, to $\pm 10\%$ at 90% confidence level

Data/Parameter	Standard deviation of each stratum
Unit	m3
Description	Measure of centralization or dispersion of data
Source of data	Measurements used for the development of growth maps
Value(s) applied	See attached EXCEL sheet 'NPW-ARAMS0001V1 Report'
Choice of data or measurement methods and procedures	
Purpose of data/parameter	Actual net GHG removals by sinks (used for estimating numbers of sample plots of each stratum and substratum).
Additional comments	

Data/Parameter	Number of sample plot
Unit	whole number
Description	Quantity of permanent sample plots established
Source of data	Stratum ID, Sub-stratum ID, Growth maps, Confidence level, Precision level and Standard deviation.
Value(s) applied	648 permanent sample plots
Choice of data or measurement methods and procedures	
Purpose of data/parameter	Actual net GHG removals by sinks (used to calculate the amount of CO ₂ fixed, according to the confidence level).
Additional comments	

Data/Parameter	Sample plot ID
Unit	Alpha numeric
Description	Numeric series ID of each permanent sample plot
Source of data	Project and plot map
Value(s) applied	See attached EXCEL sheet 'NPW-ARAMS0001V1 Report', worksheet 'TreeBiomass'
Choice of data or measurement methods and procedures	
Purpose of data/parameter	Actual net GHG removals by sinks (this data is used to identify each sample plot)
Additional comments	

Data/Parameter	Carbon fraction
Unit	tC (t d.m.) ⁻¹
Description	content of C of the dry matter
Source of data	Default value given by the selected methodology
Value(s) applied	0.5
Choice of data or measurement methods and procedures	
Purpose of data/parameter	Actual net GHG removals by sinks
Additional comments	

D.2. Data and parameters monitored

Data/Parameter	Plot location
Unit	Degrees, minutes and seconds latitude longitude projection (Datum WGS84)
Description	Geographic location of each permanent sample plot.
Measured/calculated/default	Measured
Source of data	Project and plot map and GPS locating
Value(s) of monitored parameter	See annex # 1
Monitoring equipment	GPS Garmin map 76CSx, accuracy of + 3 meters
Measuring/reading/recording frequency	Measuring/reading and record every 5 years
Calculation method (if applicable)	Not applicable
QA/QC procedures	Protocol for measurement and installation of permanent sample plots and design of growth maps in plantations. 2018
Purpose of data/parameter	Actual net GHG removals by sinks (used to find the permanent sample plots, during the measurements)
Additional comments	

Data/Parameter	Trees species
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Unit	Text
Description	Identification of the species of each tree measured
Measured/calculated/default	Measured
Source of data	Project design map
Value(s) of monitored parameter	See annex # 2
Monitoring equipment	
Measuring/reading/recording frequency	Measuring/reading and record every 5 years
Calculation method (if applicable)	Not applicable
QA/QC procedures	Protocol for measurement and installation of permanent simple plots and design of growth maps in plantations. 2018
Purpose of data/parameter	Actual net GHG removals by sinks
Additional comments	

Data/Parameter	Age of plantation
Unit	Year
Description	counted since planted year
Measured/calculated/default	Calculated
Source of data	Plot measurement
Value(s) of monitored parameter	See annex # 3
Monitoring equipment	
Measuring/reading/recording frequency	Measuring/reading and record every 5 years
Calculation method (if applicable)	Age years = (Planting date – measure date)/365
QA/QC procedures	Protocol for measurement and installation of permanent simple plots and design of growth maps in plantations. 2018
Purpose of data/parameter	Actual net GHG removals by sinks
Additional comments	

Data/Parameter	Number of trees
Unit	Number
Description	Quantity of trees include in the sample plots
Measured/calculated/default	Measured
Source of data	Plot measurement

Value(s) of monitored parameter	11662, See attached EXCEL sheet 'NPW-ARAMS0001V1 Report', worksheet 'TreeBiomass'
Monitoring equipment	This parameter can be measured without any equipment
Measuring/reading/recording frequency	Measuring/reading and record every 5 years
Calculation method (if applicable)	
QA/QC procedures	Protocol for measurement and installation of permanent simple plots and design of growth maps in plantations. 2012
Purpose of data/parameter	Actual net GHG removals by sinks
Additional comments	

Data/Parameter	Diameter at breast height (DBH)
Unit	cm
Description	Diameter of each tree inside of the plot at 1,30 m height
Measured/calculated/default	Measured
Source of data	Plot measurement
Value(s) of monitored parameter	See attached EXCEL sheet 'NPW-ARAMS0001V1 Report', worksheet 'TreeBiomass'
Monitoring equipment	Stewe Diameter tape, with accuracy of +0.05 cm
Measuring/reading/recording frequency	Measuring/reading and record every 5 years
Calculation method (if applicable)	
QA/QC procedures	Protocol for measurement and installation of permanent simple plots and design of growth maps in plantations. 2018
Purpose of data/parameter	Actual net GHG removals by sinks
Additional comments	

Data/Parameter	Above ground biomass
Unit	M ³ .ha ⁻¹
Description	Dry matter contained in each tree over the ground
Measured/calculated/default	Calculated
Source of data	Field measurements of DBH
Value(s) of monitored parameter	See attached EXCEL sheet 'NPW-ARAMS0001V1 Report', worksheet 'TreeBiomass'
Monitoring equipment	
Measuring/reading/recording frequency	Measuring/reading and record every 5 years
Calculation method (if applicable)	Calculated using the equations (3) and (4) as per as PDD via DBH
QA/QC procedures	
Purpose of data/parameter	Actual net GHG removals by sinks
Additional comments	

Data/Parameter	Area of stratum
Unit	ha
Description	Actual area of each stratum
Measured/calculated/default	Measured
Source of data	Stratification map and data
Value(s) of monitored parameter	Stratum Area ha N03A 6.97 N04A 12.81 N05A 2.1 N06A 0 T03H 48.44 T03M 55.28 T03P 20.55 T04M 251.46 T05A 0.2 T05M 146.17 T06M 113.98 T06P 30.98 T13M 59
Monitoring equipment	GPS garmin 76csx, accuracy + 3 m
Measuring/reading/recording frequency	Measuring/reading and record every 5 years
Calculation method (if applicable)	
QA/QC procedures	"Protocol for measurement and installation of permanent simple plots and design of growth maps in plantations. 2018"
Purpose of data/parameter	Actual net GHG removals by sinks
Additional comments	

Data/Parameter	Project boundary
Unit	
Description	Boundary of the project verified at the start of the project and at time of each field measurement
Measured/calculated/default	Measured
Source of data	Project map and GPS locating
Value(s) of monitored parameter	See annex 1 and 2
Monitoring equipment	GPS garmin 76csx, accuracy + 3 m
Measuring/reading/recording frequency	Measuring/reading and record every 5 years
Calculation method (if applicable)	
QA/QC procedures	"Protocol for measurement and installation of permanent simple plots and design of growth maps in plantations. 2012"
Purpose of data/parameter	Actual net GHG removals by sinks
Additional comments	

In this section only the values obtained from field measurements are included

D.3. Implementation of sampling plan

The parameter monitored through a sampling plan, was the DBH. To implement this plan was necessary to stratify the areas according species, age and growth. The stratification in terms of species and age were very simple to implement through the information coming from the geographic information system where all the information regarding these factors has been recorded.

The stratification in terms of growth was made using a grid of geo-referenced circular temporary sample plots of 100 m² with a distance of 50 m between every plot. Using the DBH information of those temporary sample plots and the IDW (inverse distance weighting) method, the growth stratification was obtained, resulting in areas for different growth categories according age and species.

The collected information over the temporary sample plots were used to calculate the variation coefficient of each strata in order to calculate the number of permanent sample plots required to achieve a confidence level of 90%.

After the calculation of sample plots needed to achieve the confidence level of 90%, each stratum was divided in all possible 500 square meters sample plots. Then, the first plot in each stratum was randomly selected.

The result of the number of sample plots needed to achieve an error of 10%, is 72, distributed in the different strata as per next table.

Number of sample plots as per strata.

STRATA	AREA	# SAMPLES
N03A	6.97	6
N04A	12.81	9
T03H	48.44	4
T03M	55.28	5
T03P	20.55	2
T04M	251.46	30
T05A	0.2	1
T05M	146.17	7
T06M	113.98	6
T06P	30.98	2

According to the table above, the number of sample plots required to achieve the desired percentage of error is extremely lower than the existing number of sample plots on the project. This situation happens because the sample plots are not only used for the CDM project, besides the sample plots are used to follow up the growth of the plantation and to prescribe the silvicultural treatments.

SECTION E. Calculation of emission reductions or net anthropogenic removals

E.1. Calculation of baseline emissions or baseline net removals

As per the registered PDD, the baseline net GHG removals by sinks for this project are considered as zero.

E.2. Calculation of project emissions or actual net removals

The actual net greenhouse gas removals by sinks in year t are equal to:

$$\Delta C_{ACTUAL,t} = \Delta C_{PROJ,t} - GHG_{PROJ,t}$$

where:

$\Delta C_{ACTUAL,t}$ Actual net greenhouse gas removals by sinks in year t (t CO₂-e/year)

$\Delta C_{PROJ,t}$ Project GHG removals by sinks (t CO₂-e/year)

$GHG_{PROJ,t}$ Project emissions (t CO₂-e/year)

In accordance with the requirements of the methodology, the project emissions are considered insignificant and therefore:

$$GHG_{PROJ,t} = 0$$

The carbon stocks expressed in tCO₂-e shall be based on the following equations:

$$P(t) = \sum_{i=1}^l (P_{A(t)i} + P_{B(t)i}) * A_i * (44/12)$$

where:

$P(t)$ carbon stocks within project boundary at time t achieved by the project (tCO₂e)

$P_{A(t)i}$ carbon stocks in above-ground biomass at time t of stratum i achieved by the project activity during the monitoring interval (t C/ha)

$P_{B(t)i}$ carbon stocks in below-ground biomass at time t of stratum i achieved by the project activity during the monitoring interval (t C/ha)

A_i project activity area of stratum i (ha) i stratum i (l = total number of strata)

The calculations shown below are performed for each stratum.

For above-ground biomass, $P_{A(t)i}$ is calculated per stratum i as follows:

$$P_{A(t)i} = E_{(t)i} * 0.5$$

where:

- $P_{A(t)}$ carbon stocks in above-ground biomass at time t achieved by the project activity during the monitoring interval (t C/ha)
- $E_{(t)i}$ estimate of above-ground biomass at time t achieved by the project activity (t dm/ha)
- 0.5 Carbon fraction of dry matter (t C/t dm) - IPCC default value / AR-AMS0001 ver. 5

Calculation of above-ground biomass

The above-ground tree biomass (kg of dry matter per tree) is determined using the allometric equations relating biomass to DBH given in GPG LULUCF Table 4.A.1 for native species in tropical moist forests and Table 4.A.3 for Teak. The value for teak has been determined in this region by Kanninen and Perez at CATIE, Costa Rica. The value for native species is a general value for tropical moist forest because there are no specific values for most of the species. The results are multiplied with the number of trees per hectare to obtain kg of dry matter per hectare.

For teak: $AGB(t)_{teak} = 0.153 \cdot DBH^{2.382}$

For native species: $AGB(t)_{native} = \exp^{[-2.289 + 2.649 \cdot \ln(DBH) - 0.021 \cdot (\ln(DBH))^2]}$

Biomass per hectare $E_{(t)i} = AGB_{(t)i} \cdot NT_i$

where:

DBH diameter at breast
height NT number of trees
per hectare

Calculation of Below-ground biomass

Below-ground carbon stocks per hectare are determined by one allometric equation for both teak and native species relating belowground biomass to aboveground biomass in tropical forests (GPG LULUCF Table 4.A.4), as follows:

$PB = 0.5 \cdot BGB_i$

$BGB = \exp[-1.085 + 0.9256 \cdot \ln(AGB)]$

Where:

EB estimated below ground biomass per tree
0.5 carbon fraction of dry matter (t C/t dm) (IPCC default value / AR-AMS0001 ver. 5)

The attached spreadsheet 'NPW-ARAMS0001V1 Report' calculates the carbon stock changes by applying actual values (please refer to worksheet 'TreeBiomass').

E.3. Calculation of leakage emissions

As defined in the methodology, leakage is considered to be zero and does not need monitoring if evidence can be provided that the activity shift of the previous owners does not lead to deforestation or if the lands surrounding the areas that receive the activity shift are not forested.

In the registered PDD, it was stated that leakage is expected to be zero and does not need monitoring. This was based on the analysis that the three different project sites had three previous owners, all of them cattle farmers. At project start, interviews with them were conducted. In order to obtain more detailed information on the current status, a second interview was conducted in 2009. The goal was to

evaluate their future plans regarding location and businesses. The following table summarizes the outcome of these interviews¹

Summary of the interviews with previous owners

Site	Previous owner	New planned occupation	Assessment of leakage
Finca Pimienta	Salvador Monterrey	Cattle farming	Mr. Monterrey possessed roughly 300 animals on his lands. 70% were displaced to his other finca, the rest was brought to the slaughterhouse. Mr. Monterrey moved the animals that were not slaughtered to his finca in Nandaime, a region along the Pan-American highway that has been deforested long ago and is traditionally and currently used for grazing. All the lands were already deforested at the time of displacement and used by Mr. Monterrey for cattle farming. No deforestation took place. He
Finca Javalina	Henry Urcuyo	Cattle farming/ Tourism	Mr. Urcuyo still lives in the same area.. As stated in the interview at the site visit of the DOE, all his cattle was brought to the slaughterhouse and was not displaced to another area. He continues being a cattle farmer in the same area but also
Finca Esperanza	Antonio Mendoza	Transport services and some agriculture	Mr. Mendoza stays in the same region. He owned 85 cows. In the second interview which took place in 2009, he stated that he had bought a new finca which was already deforested and used as pasture at

According to the interviews it becomes clear that some animals were dislocated to other areas. The previous owners of the fincas reinvested the money they earned from the sale of their properties into new businesses or other lands. Two of them stay in the same areas. The third one displaced his activities from Rivas to Nandaime where he already possessed farmland before he sold the finca Pimienta. The animals themselves were often not displaced to other grazing areas but to the slaughterhouse.

Based on these findings, leakage is considered as zero for this project.

¹ Please note that these interviews took place during the validation process and have already been discussed in the registered PDD.

E.4. Calculation of emission reductions or net anthropogenic removals

	Baseline GHG emissions or baseline net GHG removals (t CO ₂ e)	Project GHG emissions or actual net GHG removals (t CO ₂ e)	Leakage GHG emissions (t CO ₂ e)	GHG emission reductions or net anthropogenic GHG removals (t CO ₂ e)		
				Before 01/01/2013	From 01/01/2013	Total amount
Total	0	143,121	0	0	143,121	143,121

E.5. Comparison of emission reductions or net anthropogenic removals achieved with estimates in the registered PDD

Amount achieved during this monitoring period (t CO ₂ e)	Amount estimated ex ante (t CO ₂ e)
143,121	250,315

E.6. Remarks on increase in achieved emission reductions

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ANNEX # 1

SAMPLE PLOT ID	LAT / LONG	SAMPLE PLOT ID	LAT / LONG
La laguna-1	11°05'3" , -84°32'33"	El esfuerzo-295	11°12'25," , -85°37'54,"
Las trozas-4	11°05'7" , -84°32'16"	Sitio 2-370	11°11'37," , -85°37'51,"
Las trozas-7	11°05'9" , -84°32'16"	Pozo-1	11°14'14" , -85°40'23"
La laguna-14	11°05'12" , -84°32'32"	Pozo-2	11°14'14" , -85°40'26"
Las trozas-15	11°05'13" , -84°32'17"	Pozo-3	11°14'17" , -85°40'26"
La laguna-16	11°05'13" , -84°32'32"	Pozo-5	11°14'17" , -85°40'20"
Las trozas-17	11°05'13" , -84°32'23"	Pozo-6	11°14'20" , -85°40'22"
Las trozas-18	11°05'13" , -84°32'19"	Pozo-7	11°14'26" , -85°40'30"
Las trozas-19	11°05'14" , -84°32'30"	Pozo-8	11°14'27" , -85°40'28"
Las trozas-20	11°05'14" , -84°32'29"	Pozo-9	11°14'24" , -85°40'26"
Las trozas-21	11°05'15" , -84°32'29"	Pozo-11	11°14'19" , -85°40'15"
Las trozas-22	11°05'15" , -84°32'17"	Pozo-12	11°14'21" , -85°40'18"
Las trozas-23	11°05'16" , -84°32'29"	Pozo-13	11°14'23" , -85°40'22"
Las trozas-24	11°05'16" , -84°32'22"	Pozo-14	11°14'15" , -85°40'18"
Las trozas-25	11°05'18" , -84°32'33"	Pozo-15	11°14'25" , -85°40'33"
El pozo esperanza-26	11°05'18" , -84°32'42"	Jabalina-18	11°14'2" , -85°41'21"
El pozo esperanza-27	11°05'19" , -84°32'45"	Jabalina-19	11°14'4" , -85°41'19"
El pozo esperanza-29	11°05'20" , -84°32'45"	Jabalina-20	11°14'6" , -85°41'6"
El pozo esperanza-33	11°05'22" , -84°32'44"	Jabalina-21	11°14'6" , -85°41'4"
El pozo esperanza-34	11°05'24" , -84°32'44"	Jabalina-23	11°14'20" , -85°40'46"
El guarumo-35	11°05'24" , -84°32'34"	Jabalina-24	11°14'8" , -85°41'8"
El guarumo-36	11°05'25" , -84°32'29"	Jabalina-25	11°14'10" , -85°41'20"
El guarumo-37	11°05'25" , -84°32'28"	Jabalina-26	11°14'10" , -85°41'1"
El coyote-38	11°05'26" , -84°32'41"	Jabalina-28	11°14'12" , -85°40'58"
El guarumo-39	11°05'26" , -84°32'31"	Jabalina-29	11°14'5" , -85°41'13"
El coyote-40	11°05'27" , -84°32'43"	Jabalina-30	11°14'13" , -85°41'0"
El pozo esperanza-41	11°05'29" , -84°32'53"	Jabalina-31	11°14'16" , -85°40'59"
El nancite-42	11°05'29" , -84°32'29"	Jabalina-32	11°14'13" , -85°40'58"
El pozo esperanza-43	11°05'32" , -84°32'53"	Jabalina-33	11°14'14" , -85°41'27"
El pozo esperanza-44	11°05'32" , -84°32'53"	Jabalina-35	11°14'15" , -85°40'50"

El pozo esperanza-45	11°05'32" , -84°32'58"	Jabalina-36	11°14'18" , -85°41'23"
El pozo esperanza-46	11°05'32" , -84°32'53"	Jabalina-37	11°14'19" , -85°41'19"
El pozo esperanza-47	11°05'34" , -84°32'53"	Jabalina-38	11°14'20" , -85°41'20"
El nancite-53	11°05'29" , -84°32'33"	Jabalina-39	11°14'23" , -85°41'18"
El nancite-54	11°05'29" , -84°32'26"	Jabalina-40	11°14'19" , -85°41'15"
El comando-55	11°05'29" , -84°32'18"	Jabalina-41	11°14'20" , -85°41'13"
El nancite-56	11°05'29" , -84°32'25"	Jabalina-42	11°14'19" , -85°41'12"
El comando-57	11°05'29" , -84°32'23"	Jabalina-43	11°14'21" , -85°41'7"
El nancite-58	11°05'31" , -84°32'36"	Jabalina-46	11°14'21" , -85°41'16"
El nancite-59	11°05'31" , -84°32'33"	Jabalina-47	11°14'19" , -85°40'49"
El guabo-60	11°05'32" , -84°32'43"	Jabalina-48	11°14'21" , -85°41'12"
El nancite-61	11°05'32" , -84°32'33"	Jabalina-50	11°14'22" , -85°41'15"
El nancite-62	11°05'32" , -84°32'30"	Jabalina-51	11°14'22" , -85°41'4"
El guabo-63	11°05'33" , -84°32'39"	Jabalina-52	11°14'23" , -85°41'16"
El nancite-64	11°05'33" , -84°32'27"	Jabalina-53	11°14'24" , -85°41'8"
El nancite-65	11°05'34" , -84°32'36"	Jabalina-54	11°14'23" , -85°41'5"
El guabo-66	11°05'35" , -84°32'52"	Jabalina-55	11°14'24" , -85°41'12"
El nancite-67	11°05'35" , -84°32'33"	Jabalina-56	11°14'25" , -85°40'57"
El comando-68	11°05'35" , -84°32'18"	Jabalina-58	11°14'17" , -85°40'45"
El guabo-69	11°05'36" , -84°32'44"	Jabalinita-62	11°14'39" , -85°41'4"
El guabo-70	11°05'36" , -84°32'48"	Jabalinita-63	11°14'27" , -85°41'9"
El comando-71	11°05'38" , -84°32'17"	Jabalinita-64	11°14'28" , -85°41'1"
El nancite-73	11°05'39" , -84°32'24"	Jabalinita-65	11°14'27" , -85°40'44"
La milpa-74	11°05'40" , -84°32'51"	Jabalinita-66	11°14'27" , -85°41'7"
La milpa-75	11°05'40" , -84°32'48"	Jabalinita-67	11°14'31" , -85°40'59"
El genizaro 2004-76	11°05'41" , -84°33'3"	Jabalinita-68	11°14'28" , -85°41'6"
La milpa-77	11°05'41" , -84°32'48"	Jabalinita-69	11°14'29" , -85°41'7"
El guabo-78	11°05'41" , -84°32'42"	Jabalinita-70	11°14'30" , -85°40'47"
El guabo-79	11°05'41" , -84°32'38"	Jabalinita-71	11°14'31" , -85°40'45"
El nancite-80	11°05'41" , -84°32'33"	Jabalinita-72	11°14'33" , -85°40'57"
El nancite-81	11°05'41" , -84°32'24"	Jabalinita-73	11°14'33" , -85°41'1"
El comando-82	11°05'41" , -84°32'18"	Jabalinita-74	11°14'32" , -85°40'53"
El genizaro 2004-83	11°05'46" , -84°33'4"	Jabalinita-76	11°14'37" , -85°41'5"
La milpa-84	11°05'42" , -84°32'51"	Jabalinita-77	11°14'37" , -85°40'60"
El genizaro 2004-85	11°05'42" , -84°32'59"	Majaste-81	11°14'28" , -85°41'31"
La milpa-86	11°05'42" , -84°32'55"	Majaste-82	11°14'32" , -85°41'26"
El guabo-87	11°05'42" , -84°32'44"	Majaste-83	11°14'34" , -85°41'26"
El guabo-88	11°05'42" , -84°32'39"	Majaste-84	11°14'32" , -85°41'19"
El nancite-89	11°05'42" , -84°32'31"	Majaste-85	11°14'38" , -85°41'12"
El nancite-90	11°05'42" , -84°32'24"	Majaste-86	11°14'34" , -85°41'16"
El nancite-91	11°05'42" , -84°32'23"	Majaste-87	11°14'37" , -85°41'32"
El nancite-92	11°05'43" , -84°32'33"	Majaste-88	11°14'38" , -85°41'29"
El nancite-93	11°05'43" , -84°32'28"	Majaste-89	11°14'31" , -85°41'33"

El nancite-94	11°05'44" , -84°32'22"	Majaste-91	11°14'39" , -85°41'17"
El genizaro 2004-95	11°05'46" , -84°33'9"	Majaste-92	11°14'39" , -85°41'32"
La milpa-96	11°05'45" , -84°32'44"	Majaste-93	11°14'41" , -85°41'24"
El nancite-97	11°05'45" , -84°32'33"	Majaste-94	11°14'43" , -85°41'30"
El comando-98	11°05'45" , -84°32'18"	Majaste-95	11°14'41" , -85°41'28"
La milpa-99	11°05'46" , -84°32'45"	Majaste-97	11°14'17" , -85°41'33"
La milpa-100	11°05'48" , -84°32'35"	Majaste-98	11°14'22" , -85°41'22"
La milpa-101	11°05'48" , -84°32'48"	Majaste-99	11°14'27" , -85°41'29"
La milpa-102	11°05'48" , -84°32'42"	Majaste-100	11°14'28" , -85°41'17"
La milpa-103	11°05'48" , -84°32'20"	Majaste-101	11°14'35" , -85°41'34"
La milpa-104	11°05'48" , -84°32'17"	Majaste-102	11°14'34" , -85°41'27"
El lagarto -105	11°05'49" , -84°33'3"	Majaste-103	11°14'36" , -85°41'12"
La milpa-106	11°05'49" , -84°32'50"	Majaste-104	11°14'38" , -85°41'26"
La milpa-107	11°05'49" , -84°32'42"	Majaste-105	11°14'40" , -85°41'11"
La milpa-108	11°05'49" , -84°32'40"	Majaste-106	11°14'41" , -85°41'11"
La milpa-109	11°05'49" , -84°32'20"	Majaste-109	11°14'34" , -85°41'36"
La milpa-110	11°05'50" , -84°32'52"	Majaste-110	11°14'39" , -85°41'8"
La milpa-111	11°05'50" , -84°32'22"	Majastito-113	11°14'42" , -85°41'52"
La milpa-112	11°05'51" , -84°32'53"	Majastito-114	11°14'45" , -85°41'39"
El lagarto-113	11°05'51" , -84°33'6"	Majastito-115	11°14'35" , -85°41'38"
La milpa-115	11°05'51" , -84°32'55"	Majastito-116	11°14'30" , -85°41'41"
La milpa-116	11°05'52" , -84°32'45"	Majastito-118	11°14'39" , -85°41'43"
La milpa-117	11°05'50" , -84°32'44"	Majastito-120	11°14'40" , -85°41'38"
La milpa-118	11°05'52" , -84°32'21"	Majastito-121	11°14'42" , -85°41'41"
El lagarto-119	11°05'52" , -84°33'7"	Majastito-122	11°14'44" , -85°41'40"
La milpa-120	11°05'52" , -84°32'37"	Majastito-123	11°14'45" , -85°41'50"
La milpa-121	11°05'52" , -84°32'35"	Majastito-124	11°14'44" , -85°41'48"
La milpa-123	11°05'53" , -84°32'48"	Majastito-125	11°14'44" , -85°41'44"
La milpa-124	11°05'53" , -84°32'38"	Majastito-126	11°14'46" , -85°41'49"
La milpa-125	11°05'54" , -84°32'35"	Majastito-127	11°14'47" , -85°41'48"
El puente-126	11°05'55" , -84°32'49"	Rancho-128	11°14'48" , -85°41'26"
La milpa-127	11°05'55" , -84°32'38"	Rancho-129	11°14'49" , -85°41'42"
La milpa-128	11°05'55" , -84°32'33"	Rancho-130	11°14'51" , -85°41'40"
La milpa-129	11°05'55" , -84°32'28"	Rancho-132	11°15'10" , -85°41'33"
El puente-130	11°05'56" , -84°33'3"	Rancho-133	11°14'51" , -85°41'7"
La milpa-131	11°05'56" , -84°32'21"	Rancho-135	11°15'2" , -85°41'35"
El puente-132	11°05'56" , -84°33'2"	Rancho-136	11°15'8" , -85°41'27"
El puente-133	11°05'56" , -84°32'47"	Rancho-137	11°14'56" , -85°41'40"
La milpa-134	11°05'56" , -84°32'29"	Rancho-138	11°14'44" , -85°41'13"
El puente-135	11°05'57" , -84°32'58"	Rancho-140	11°14'43" , -85°41'7"
El puente-136	11°05'57" , -84°32'58"	Rancho-141	11°14'45" , -85°41'25"
El puente-137	11°05'57" , -84°32'50"	Rancho-143	11°14'58" , -85°41'10"
La milpa-138	11°05'57" , -84°32'34"	Rancho-144	11°14'48" , -85°41'8"

La milpa-139	11°05'57" , -84°32'29"	Rancho-148	11°14'51" , -85°41'25"
La milpa-140	11°05'57" , -84°32'28"	Rancho-151	11°14'54" , -85°41'25"
El puente-141	11°05'58" , -84°33'1"	Rancho-152	11°14'48" , -85°41'36"
El puente-143	11°05'58" , -84°32'43"	Rancho-155	11°14'59" , -85°41'37"
El puente-144	11°05'58" , -84°32'41"	Rancho-157	11°15'0" , -85°41'27"
El puente-145	11°05'60" , -84°32'57"	Rancho-158	11°15'5" , -85°41'18"
El puente-146	11°05'59" , -84°32'37"	Rancho-160	11°15'3" , -85°41'37"
El puente-147	11°05'60" , -84°32'45"	Rancho-161	11°15'7" , -85°41'33"
El puente-148	11°05'60" , -84°32'54"	Rancho-162	11°15'3" , -85°41'25"
La milpa-149	11°05'60" , -84°32'25"	Rancho-163	11°15'5" , -85°41'36"
La cruz-2	11°11'36," , -85°37'31,"	Rancho-164	11°14'53" , -85°41'7"
La cruz-3	11°11'36," , -85°37'30,"	Rancho-165	11°15'9" , -85°41'24"
El Chaguite-4	11°11'37," , -85°37'46,"	Rancho-166	11°15'10" , -85°41'24"
El Chaguite-5	11°11'45," , -85°37'41,"	Rancho-168	11°14'56" , -85°41'8"
El Chaguite-7	11°11'40," , -85°37'42,"	Rancho-169	11°15'2" , -85°41'28"
El Chaguite-8	11°11'40," , -85°37'41,"	Rancho-170	11°15'3" , -85°41'22"
La cruz-9	11°11'40," , -85°37'35,"	Rancho-171	11°15'11" , -85°41'21"
La horqueta-10	11°11'41," , -85°37'49,"	Ceiba 1-173	11°14'55" , -85°40'57"
La horqueta-11	11°11'41," , -85°37'48,"	Ceiba 1-174	11°14'59" , -85°40'57"
La cruz-12	11°11'42," , -85°37'32,"	Ceiba 1-175	11°15'0" , -85°41'0"
La cruz-13	11°11'43," , -85°37'27,"	Ceiba 1-176	11°15'1" , -85°40'54"
La horqueta-14	11°11'44," , -85°37'48,"	Ceiba 1-177	11°15'3" , -85°40'60"
El Chaguite-15	11°11'46," , -85°37'40,"	Ceiba 1-178	11°15'3" , -85°40'51"
La cruz-16	11°11'47," , -85°37'30,"	Ceiba 1-179	11°15'5" , -85°40'59"
La horqueta-17	11°11'47," , -85°37'56,"	Ceiba 1-180	11°15'5" , -85°40'54"
El Chaguite-18	11°11'47," , -85°37'39,"	Ceiba 1-181	11°15'5" , -85°40'52"
La horqueta-19	11°11'48," , -85°38'0,6"	Ceiba 1-182	11°15'6" , -85°41'6"
La horqueta-20	11°11'48," , -85°37'59,"	Ceiba 1-183	11°15'6" , -85°40'57"
La horqueta-21	11°11'48," , -85°37'48,"	Ceiba 1-184	11°15'8" , -85°40'59"
El Chaguite-22	11°11'49," , -85°37'41,"	Ceiba 1-185	11°15'9" , -85°41'4"
El Chaguite-23	11°11'49," , -85°37'40,"	Ceiba 1-186	11°15'8" , -85°41'8"
El Chaguite-24	11°11'48," , -85°37'37,"	Ceiba 1-187	11°15'9" , -85°40'57"
La horqueta-25	11°11'50," , -85°38'2,9"	Ceiba 1-188	11°15'11" , -85°40'58"
La horqueta-26	11°11'42," , -85°37'48,"	Ceiba 1-189	11°15'13" , -85°41'0"
El Chaguite-27	11°11'51," , -85°37'37,"	Ceiba 1-190	11°15'13" , -85°41'1"
La cruz-28	11°11'50," , -85°37'29,"	Ceiba 1-191	11°15'15" , -85°41'2"
La cruz-29	11°11'50," , -85°37'28,"	Ceiba 2-192	11°15'7" , -85°40'50"
La cruz-30	11°11'51," , -85°37'25,"	Ceiba 2-193	11°15'8" , -85°40'49"
La cruz-31	11°11'52," , -85°37'22,"	Ceiba 2-194	11°15'8" , -85°40'53"
La cruz-33	11°11'53," , -85°37'26,"	Ceiba 2-195	11°15'9" , -85°40'46"
La cruz-34	11°11'54," , -85°37'27,"	Ceiba 2-196	11°15'10" , -85°40'49"
La cruz-35	11°11'54," , -85°37'23,"	Ceiba 2-197	11°15'11" , -85°40'55"
La cruz-36	11°11'54," , -85°37'20,"	Ceiba 2-198	11°15'12" , -85°40'45"

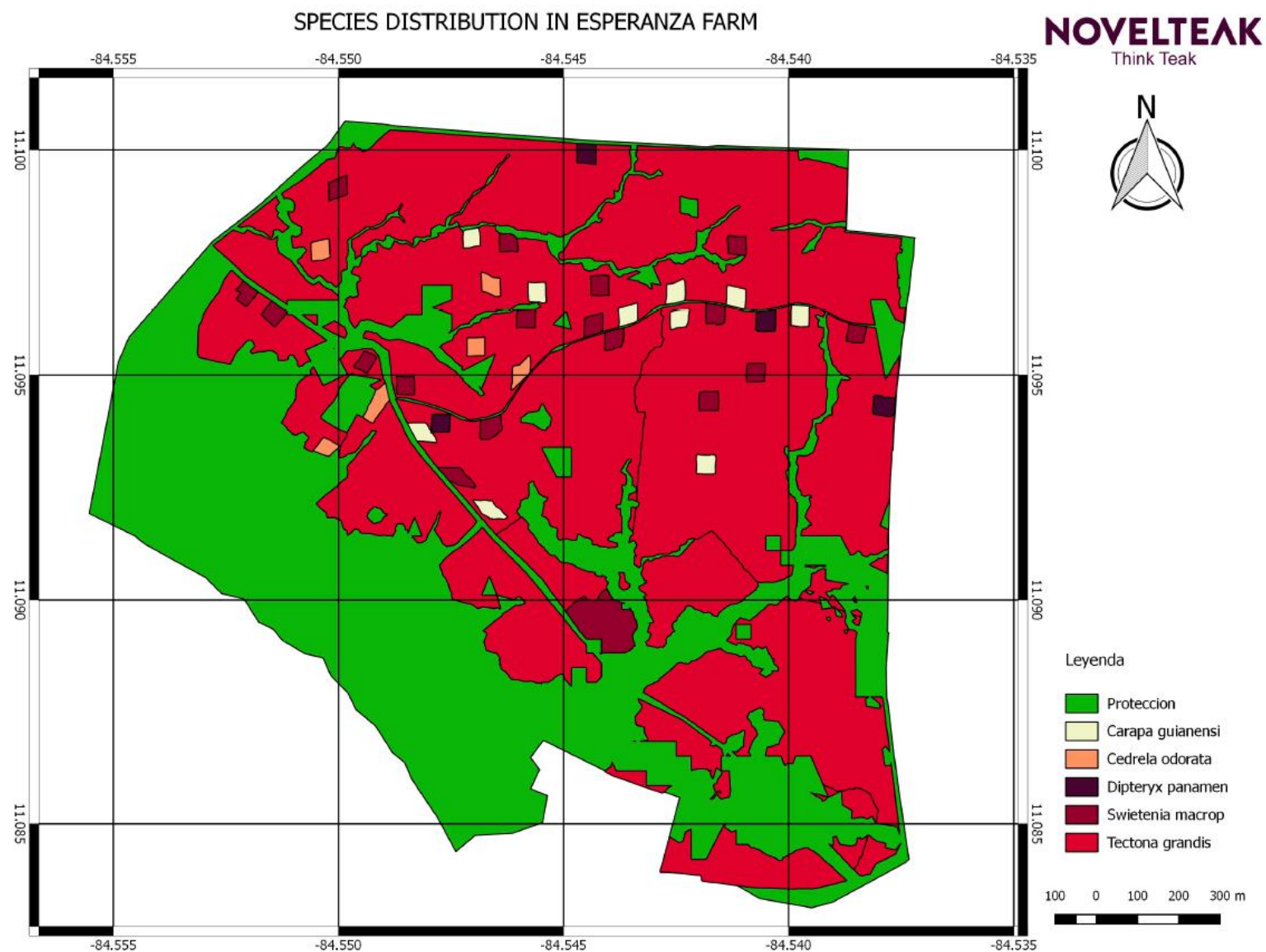
El Chaguite-38	11°11'54," , -85°37'34,"	Ceiba 2-200	11°15'15" , -85°40'46"
La cruz-39	11°11'55," , -85°37'24,"	Ceiba 2-202	11°15'16" , -85°40'57"
La escoba-40	11°12'7,1" , -85°38'13,"	Ceiba 2-203	11°15'18" , -85°41'1"
El campamento-42	11°11'55," , -85°38'1,0"	Ceiba 2-204	11°15'21" , -85°40'56"
La cruz-43	11°11'56," , -85°37'25,"	Ceiba 2-205	11°15'23" , -85°40'57"
La cruz-44	11°11'56," , -85°37'22,"	Ceiba 2-206	11°15'23" , -85°40'55"
La cruz-45	11°11'56," , -85°37'19,"	Ceiba 3-207	11°15'14" , -85°40'42"
El campamento-46	11°12'4,6" , -85°37'56,"	Ceiba 3-208	11°15'17" , -85°40'41"
El pozo pimienta-47	11°11'58," , -85°37'40,"	Ceiba 3-209	11°15'21" , -85°40'42"
La escoba-48	11°12'1,6" , -85°38'7,7"	Ceiba 3-210	11°15'20" , -85°40'38"
El campamento-49	11°12'3,2" , -85°37'57,"	Ceiba 3-211	11°15'23" , -85°40'52"
La escoba-50	11°12'6,4" , -85°38'12,"	Ceiba 3-212	11°15'23" , -85°40'39"
El campamento-51	11°12'4,6" , -85°37'55,"	Ceiba 3-213	11°15'24" , -85°40'35"
El campamento-52	11°12'5,3" , -85°37'43,"	Ceiba 3-214	11°15'25" , -85°40'47"
El pozo pimienta-53	11°12'4,9" , -85°37'35,"	Ceiba 3-215	11°15'25" , -85°40'43"
El pozo pimienta-54	11°12'5,4" , -85°37'32,"	Ceiba 3-216	11°15'26" , -85°40'51"
El pozo pimienta-55	11°12'6,7" , -85°37'20,"	Ceiba 3-217	11°15'25" , -85°40'40"
La escoba-56	11°12'13," , -85°38'1,2"	Ceiba 3-218	11°15'25" , -85°40'35"
El pozo pimienta-57	11°12'7,8" , -85°37'30,"	Ceiba 3-219	11°15'27" , -85°40'46"
El pozo pimienta-58	11°12'7,8" , -85°37'22,"	Ceiba 3-220	11°15'27" , -85°40'41"
La escoba-59	11°12'8,8" , -85°38'11,"	Ceiba 3-221	11°15'28" , -85°40'53"
La escoba-60	11°12'8,9" , -85°38'6,3"	Ceiba 3-222	11°15'28" , -85°40'48"
La escoba-61	11°12'8,4" , -85°37'59,"	Ceiba 3-223	11°15'29" , -85°40'44"
La escoba-62	11°12'9,1" , -85°38'7,4"	Ceiba 3-224	11°15'31" , -85°40'51"
La escoba-63	11°12'9,5" , -85°38'3,6"	Ceiba 3-225	11°15'32" , -85°40'49"
La escoba-64	11°12'10," , -85°37'58,"	Ceiba 3-226	11°15'31" , -85°40'47"
La escoba-65	11°12'13," , -85°38'0,2"	Ceiba 3-227	11°15'34" , -85°40'50"
El porton-66	11°12'10," , -85°37'49,"	Corral-228	11°14'39" , -85°40'48"
El pozo pimienta-67	11°12'9,6" , -85°37'25,"	Corral-229	11°14'40" , -85°40'50"
La escoba-68	11°12'10," , -85°38'13,"	Corral-230	11°14'41" , -85°40'58"
El porton-69	11°12'11," , -85°37'50,"	Corral-231	11°14'42" , -85°41'1"
El pozo pimienta-70	11°12'10," , -85°37'24,"	Corral-233	11°14'43" , -85°40'55"
La escoba-71	11°12'11," , -85°38'11,"	Corral-234	11°14'44" , -85°40'51"
El pozo pimienta-72	11°12'11," , -85°37'41,"	Corral-235	11°14'45" , -85°40'52"
La escoba-73	11°12'12," , -85°38'4,3"	Corral-236	11°14'46" , -85°40'58"
La escoba-74	11°12'12," , -85°38'2,6"	Corral-237	11°14'47" , -85°41'2"
La escoba-75	11°12'13," , -85°37'59,"	Corral-238	11°14'46" , -85°40'56"
La escoba-76	11°12'14," , -85°38'4,0"	Corral-239	11°14'47" , -85°40'55"
La escoba-77	11°12'15," , -85°38'1,6"	Corral-240	11°14'50" , -85°40'60"
El porton-78	11°12'18," , -85°37'56,"	Corral-241	11°14'50" , -85°41'4"
El porton-79	11°12'18," , -85°37'55,"	Corral-242	11°14'50" , -85°40'57"
Frontera-80	11°10'1,2" , -85°38'27,"	Corral-243	11°14'51" , -85°41'2"
Frontera-82	11°10'2,7" , -85°38'37,"	Corral-244	11°14'53" , -85°41'5"

Frontera-83	11°10'3,2" , -85°38'38,"	Corral-245	11°14'54" , -85°41'3"
Frontera-86	11°10'5,2" , -85°38'37,"	Corral-247	11°14'55" , -85°41'5"
Frontera-88	11°10'6,8" , -85°38'27,"	Corral-248	11°14'57" , -85°41'4"
Frontera-89	11°10'6,7" , -85°38'46,"	Corral-250	11°15'6" , -85°41'8"
Frontera-90	11°10'7,1" , -85°38'24,"	Escondidito-251	11°14'32" , -85°40'41"
Frontera-91	11°10'7,9" , -85°38'45,"	Escondidito-253	11°14'34" , -85°40'44"
Frontera-92	11°10'8,6" , -85°38'44,"	Escondidito-255	11°14'35" , -85°40'40"
Frontera-93	11°10'8,5" , -85°38'39,"	Escondidito-256	11°14'34" , -85°40'38"
Frontera-97	11°10'10," , -85°38'32,"	Escondidito-257	11°14'36" , -85°40'35"
Frontera-98	11°10'11," , -85°38'42,"	Escondidito-258	11°14'37" , -85°40'36"
La presa-103	11°10'55," , -85°37'59,"	Escondidito-260	11°14'38" , -85°40'38"
Frontera-104	11°10'13," , -85°38'22,"	Escondidito-261	11°14'36" , -85°40'42"
Frontera-106	11°10'14," , -85°38'30,"	Escondido-263	11°14'43" , -85°40'47"
el sitio-107	11°10'58," , -85°38'21,"	Escondido-264	11°14'43" , -85°40'45"
Frontera-109	11°10'15," , -85°38'20,"	Escondido-265	11°14'43" , -85°40'38"
Frontera-111	11°10'16," , -85°38'28,"	Escondido-267	11°14'45" , -85°40'36"
El Mojòn-114	11°10'49," , -85°38'9,9"	Escondido-269	11°14'46" , -85°40'46"
El miralagos-117	11°10'20," , -85°38'16,"	Escondido-270	11°14'46" , -85°40'43"
El miralagos-118	11°10'22," , -85°38'20,"	Escondido-271	11°14'46" , -85°40'41"
El miralagos-119	11°10'22," , -85°38'19,"	Escondido-273	11°14'48" , -85°40'47"
El Rincòn-120	11°10'24," , -85°38'37,"	Escondido-275	11°14'49" , -85°40'51"
Frontera-121	11°10'7,1" , -85°38'31,"	Escondido-276	11°14'48" , -85°40'44"
El miralagos-122	11°10'24," , -85°38'24,"	Escondido-281	11°14'50" , -85°40'46"
El miralagos-123	11°10'24," , -85°38'18,"	Escondido-284	11°14'52" , -85°40'43"
El Mojòn-124	11°10'39," , -85°38'8,7"	Escondido-285	11°14'52" , -85°40'55"
El miralagos-125	11°10'26," , -85°38'28,"	Escondido-286	11°14'51" , -85°40'46"
El miralagos-126	11°10'26," , -85°38'17,"	Escondido-287	11°14'53" , -85°40'38"
El miralagos-127	11°10'27," , -85°38'20,"	Genizaro-288	11°14'24" , -85°40'12"
El miralagos-128	11°10'27," , -85°38'14,"	Genizaro-289	11°14'25" , -85°40'17"
El miralagos-129	11°10'27," , -85°38'31,"	Genizaro-290	11°14'26" , -85°40'15"
El Mojòn-130	11°10'29," , -85°38'9,8"	Genizaro-291	11°14'30" , -85°40'10"
El Mojòn-132	11°10'33," , -85°38'7,0"	Genizaro-292	11°14'31" , -85°40'22"
El Mojòn-133	11°10'34," , -85°38'9,9"	Genizaro-293	11°14'32" , -85°40'15"
El Mojòn-134	11°10'34," , -85°38'5,2"	Genizaro-294	11°14'32" , -85°40'7"
Frontera-139	11°10'18," , -85°38'30,"	Genizaro-295	11°14'33" , -85°40'18"
El Mojòn-140	11°10'39," , -85°38'10,"	Genizaro-296	11°14'33" , -85°40'10"
El Mojòn-143	11°10'40," , -85°38'12,"	Genizaro-297	11°14'34" , -85°40'23"
Frontera-144	11°10'14," , -85°38'21,"	Genizaro-299	11°14'35" , -85°40'14"
El Rincòn-145	11°10'24," , -85°38'36,"	Genizaro-300	11°14'35" , -85°40'22"
El Rincòn-146	11°10'25," , -85°38'34,"	Genizaro-301	11°14'35" , -85°40'16"
El Mojòn-149	11°10'46," , -85°38'4,0"	Genizaro-302	11°14'35" , -85°40'8"
El Mojòn-151	11°10'47," , -85°38'3,4"	Genizaro-303	11°14'36" , -85°40'25"
El Mojòn-152	11°10'48," , -85°38'0,1"	Genizaro-304	11°14'36" , -85°40'13"

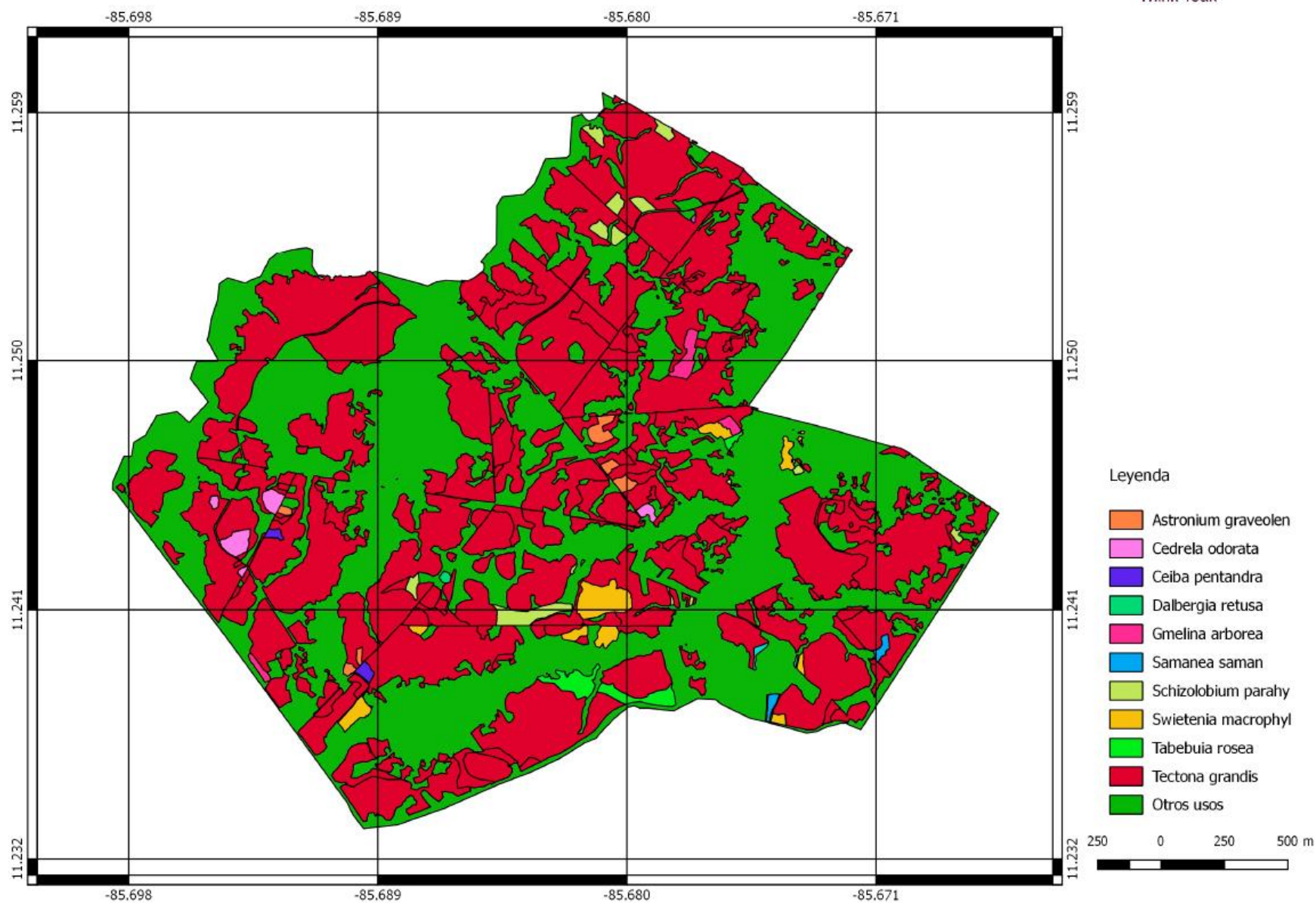
La presa-159	11°10'53," , -85°38'9,9"	Genizaro-305	11°14'38" , -85°40'26"
La presa-160	11°10'53," , -85°38'15,"	Genizaro-306	11°14'38" , -85°40'20"
La presa-161	11°10'54," , -85°38'5,4"	Genizaro-307	11°14'38" , -85°40'9"
La presa-162	11°10'54," , -85°37'56,"	Genizaro-308	11°14'39" , -85°40'33"
El sitio-164	11°10'56," , -85°38'21,"	Genizaro-309	11°14'37" , -85°40'24"
La presa-165	11°10'55," , -85°38'10,"	Genizaro-310	11°14'39" , -85°40'17"
La presa-166	11°10'56," , -85°38'1,2"	Genizaro-311	11°14'39" , -85°40'12"
La presa-168	11°10'56," , -85°38'16,"	Genizaro-312	11°14'40" , -85°40'26"
El dos-169	11°11'3,0" , -85°38'1,8"	Genizaro-313	11°14'40" , -85°40'20"
La presa-170	11°10'56," , -85°38'8,3"	Genizaro-314	11°14'40" , -85°40'9"
La presa-171	11°10'57," , -85°38'2,3"	Genizaro-315	11°14'40" , -85°40'3"
La presa-172	11°10'57," , -85°38'10,"	Genizaro-317	11°14'42" , -85°40'25"
La presa-173	11°10'57," , -85°38'3,6"	Genizaro-319	11°14'41" , -85°40'13"
El sitio-174	11°10'59," , -85°38'19,"	Genizaro-322	11°14'42" , -85°40'20"
El sitio-175	11°10'58," , -85°38'18,"	Jabalinita 2-328	11°14'6" , -85°41'9"
El sitio-176	11°10'58," , -85°38'22,"	Jabalinita 2-329	11°14'6" , -85°41'25"
La presa-177	11°10'58," , -85°38'4,2"	Jabalinita 2-330	11°14'9" , -85°41'23"
La presa-178	11°10'58," , -85°38'0,0"	Jabalinita 2-331	11°14'10" , -85°41'28"
El sitio-180	11°10'59," , -85°38'21,"	Jabalinita 2-332	11°14'12" , -85°41'27"
La presa-181	11°10'59," , -85°38'15"	Jabalinita 2-333	11°14'16" , -85°41'25"
La presa-182	11°11'0,3" , -85°38'13,"	Jabalinita 2-334	11°14'27" , -85°41'13"
La presa-183	11°11'0,2" , -85°38'11,"	Jabalinita 2-335	11°14'39" , -85°41'1"
El dos-190	11°11'3,9" , -85°38'5,4"	Jabalinita 2-336	11°14'41" , -85°41'3"
El dos-193	11°11'4,5" , -85°38'8,3"	Majaste 2-337	11°14'18" , -85°41'30"
El dos-195	11°11'5,2" , -85°37'57,"	Majaste 2-338	11°14'23" , -85°41'36"
El dos-196	11°11'5,8" , -85°37'56,"	Majaste 2-339	11°14'24" , -85°41'34"
El cuido-198	11°11'21," , -85°37'43,"	Majaste 2-340	11°14'27" , -85°41'35"
El dos-201	11°11'8,5" , -85°37'55,"	Majaste 2-341	11°14'28" , -85°41'39"
El dos-203	11°11'10," , -85°38'6,6"	Majaste 2-342	11°14'31" , -85°41'37"
El dos-206	11°11'10," , -85°38'0,7"	Patio-344	11°14'55" , -85°40'46"
El dos-207	11°11'10," , -85°37'59,"	Patio-345	11°14'55" , -85°40'41"
El dos-208	11°11'10," , -85°37'58,"	Patio-346	11°14'56" , -85°40'51"
El dos-209	11°11'11," , -85°37'47,"	Patio-347	11°14'55" , -85°40'43"
El uno-211	11°11'12," , -85°38'11,"	Patio-349	11°14'57" , -85°40'53"
El dos-212	11°11'13," , -85°37'57,"	Patio-350	11°14'56" , -85°40'40"
El dos-213	11°11'12," , -85°37'54,"	Patio-352	11°14'57" , -85°40'49"
El dos-214	11°11'12," , -85°37'53,"	Patio-353	11°14'58" , -85°40'38"
El cuido-215	11°11'27," , -85°37'47,"	Patio-355	11°14'60" , -85°40'51"
El uno-217	11°11'14," , -85°38'4,1"	Patio-356	11°14'60" , -85°40'44"
El uno-218	11°11'15," , -85°38'0,1"	Patio-359	11°15'3" , -85°40'48"
El uno-220	11°11'16," , -85°38'1,6"	Patio-361	11°15'4" , -85°40'42"
El dos-222	11°11'17," , -85°37'46,"	Patio-363	11°15'4" , -85°40'31"
El uno-224	11°11'19," , -85°37'58,"	Patio-365	11°15'7" , -85°40'34"

El cuido-225	11°11'20," , -85°37'39,"	Patio-366	11°15'10" , -85°40'31"
Frontera-229	11°10'18," , -85°38'29,"	Patio-367	11°15'9" , -85°40'39"
El uno-230	11°11'21," , -85°37'54,"	Patio-368	11°15'9" , -85°40'35"
El cuido-231	11°11'21," , -85°37'46,"	Patio-370	11°15'11" , -85°40'42"
El cuido-234	11°11'23," , -85°37'41,"	Patio-371	11°15'10" , -85°40'38"
El uno-235	11°11'24," , -85°37'51,"	Patio-372	11°15'11" , -85°40'40"
El cuido-236	11°11'24," , -85°37'43,"	Patio-373	11°15'11" , -85°40'34"
El uno-237	11°11'24," , -85°37'59,"	Patio-374	11°15'13" , -85°40'21"
El uno-242	11°11'29," , -85°38'9,4"	Patio-375	11°15'15" , -85°40'39"
El miralagos-243	11°10'24," , -85°38'13,"	Patio-376	11°15'16" , -85°40'36"
El uno-244	11°11'27," , -85°38'0,8"	Patio-377	11°15'17" , -85°40'29"
El cuido-245	11°11'29," , -85°37'41,"	Patio-378	11°15'17" , -85°40'25"
El uno-246	11°11'21," , -85°37'53,"	Patio-379	11°15'18" , -85°40'28"
El miralagos-248	11°10'30," , -85°38'13,"	Patio-380	11°15'20" , -85°40'29"
El uno-249	11°11'30," , -85°37'50,"	Patio-381	11°15'20" , -85°40'35"
El cuido-250	11°11'31," , -85°37'45,"	La escoba-376	11° 12' 4" , - 85° 38' 11"
El cuido-251	11°11'30," , -85°37'41,"	El Porton-377	11° 12' 14" , - 85° 37' 52"
El cuido-252	11°11'30," , -85°37'39,"	El campamento-378	11° 12' 10" , - 85° 37' 54"
El uno-256	11°11'31," , -85°37'58,"	El pozo pimienta-379	11° 12' 6" , - 85° 37' 41"
El uno-258	11°11'33," , -85°38'5,0"	El Rótulo-380	11° 12' 1" , - 85° 37' 18"
El uno-260	11°11'33," , -85°37'52,"	El Chaguite-381	11° 11' 41" , - 85° 37' 46"
El cuido-263	11°11'34," , -85°37'42,"	El pozo pimienta-382	11° 12' 0" , - 85° 37' 39"
El cuido-264	11°11'34," , -85°37'41,"	La horqueta-383	11° 11' 52" , - 85° 38' 4"
El cuido-271	11°11'35," , -85°37'39,"	El cuido-384	11° 11' 26" , - 85° 37' 44"
El cuido-275	11°11'37," , -85°37'44,"	El dos-388	11° 11' 2" , - 85° 37' 50"
El Mojòn-277	11°10'34," , -85°38'8,8"	La presa-389	11° 10' 57" , - 85° 37' 53"
Frontera-287	11°10'15," , -85°38'30,"	La presa-390	11° 10' 57" , - 85° 38' 0"
El Rótulo-288	11°11'58," , -85°37'20,"	La presa-391	11° 10' 54" , - 85° 38' 12"
El Rótulo-289	11°12'2,4" , -85°37'20,"	Escondido-395	11° 14' 46" , - 85° 40' 51"
El esfuerzo-290	11°12'18," , -85°38'1,5"	Escondido-396	11° 14' 50" , - 85° 40' 52"
El esfuerzo-291	11°12'19," , -85°37'59,"	El guabo-400	11° 5' 46" , - 84° 32' 45"
El esfuerzo-292	11°12'20," , -85°38'0,4"	La milpa-401	11° 5' 48" , - 84° 32' 44"
El esfuerzo-293	11°12'21," , -85°38'0,6"	El guabo-402	11° 5' 46" , - 84° 32' 40"
El esfuerzo-294	11°12'27," , -85°37'55,"	El nancite-403	11° 5' 46" , - 84° 32' 37"
La milpa-406	11° 5' 48" , - 84° 32' 28"	La milpa-404	11° 5' 55" , - 84° 32' 32"
El guabo-407	11° 5' 41" , - 84° 32' 55"	El comando-405	11° 5' 45" , - 84° 32' 16"

ANNEX # 2



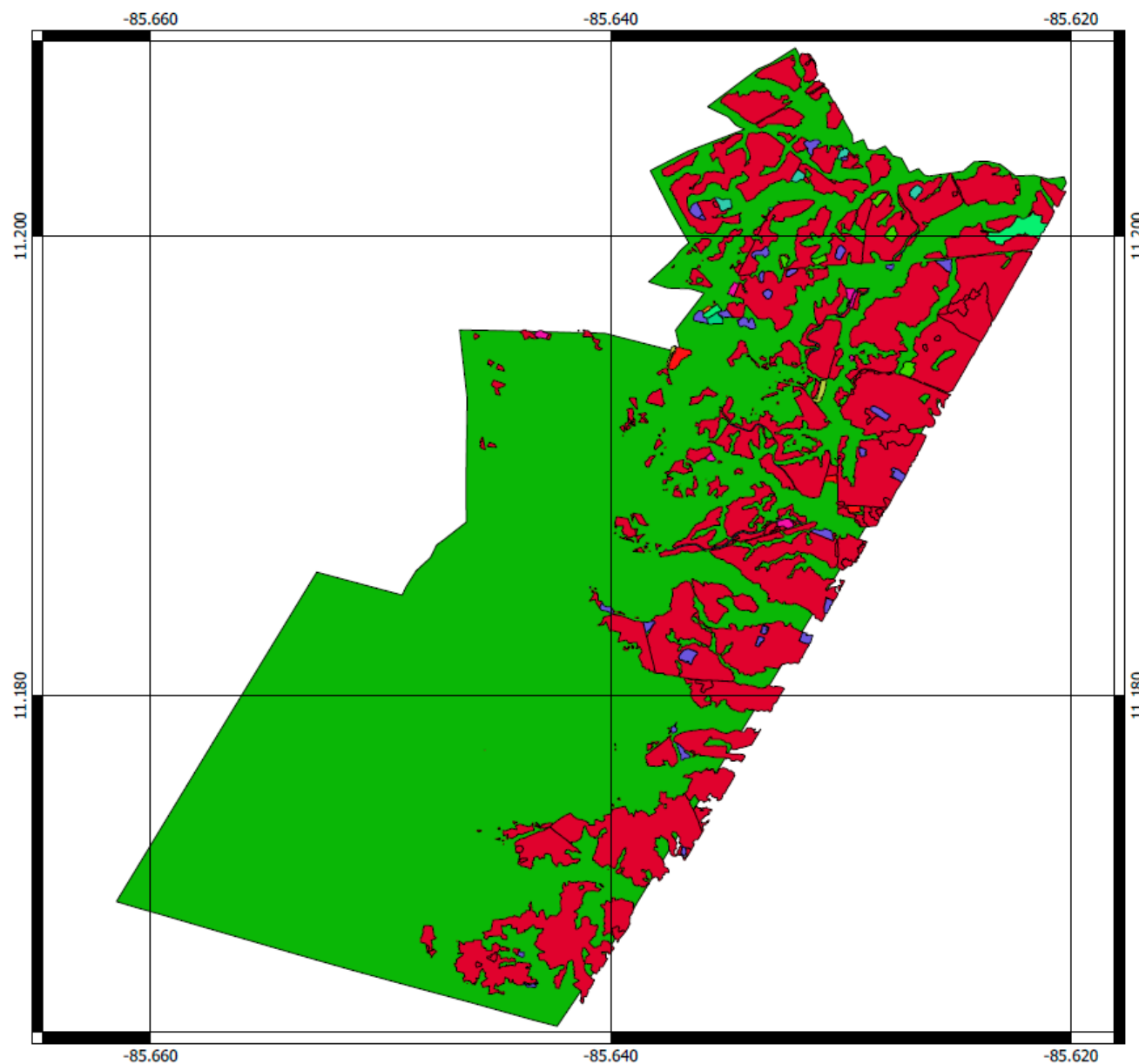
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- Hyeronima alchorneoides
- Platymiscium pleistotachi
- Samanea saman
- Schizolobium parahyba
- Swietenia macrophylla
- Tabebuia rosea
- Tectona grandis
- Otros Usos

500 0 500 m

ANNEX # 3

Permanent sample plot	Age	Permanent sample plot	Age	Permanent sample plot	Age
Ceiba 1-173	11.4	El pozo esperanza-34	14.4	La escoba-56	14.3
Ceiba 1-174	11.4	El pozo esperanza-41	14.4	La escoba-59	14.3
Ceiba 1-175	11.4	El pozo esperanza-43	14.4	La escoba-60	14.4
Ceiba 1-176	11.4	El pozo esperanza-44	14.4	La escoba-61	14.4
Ceiba 1-177	11.4	El pozo esperanza-45	14.4	La escoba-62	14.4
Ceiba 1-178	11.4	El pozo esperanza-46	14.4	La escoba-63	14.3
Ceiba 1-179	11.4	El pozo esperanza-47	14.4	La escoba-64	14.4
Ceiba 1-180	11.4	El pozo pimienta-379	14.3	La escoba-65	14.4
Ceiba 1-181	11.4	El pozo pimienta-382	14.3	La escoba-68	14.4
Ceiba 1-182	11.4	El pozo pimienta-47	14.3	La escoba-71	14.4
Ceiba 1-183	11.4	El pozo pimienta-53	14.3	La escoba-73	14.4
Ceiba 1-184	11.4	El pozo pimienta-54	14.3	La escoba-74	14.4
Ceiba 1-185	11.4	El pozo pimienta-55	14.3	La escoba-75	14.4
Ceiba 1-186	11.4	El pozo pimienta-57	14.3	La escoba-76	14.4
Ceiba 1-187	11.4	El pozo pimienta-58	14.3	La escoba-77	14.4
Ceiba 1-188	11.4	El pozo pimienta-67	14.3	La horqueta-10	14.4
Ceiba 1-189	11.4	El pozo pimienta-70	14.3	La horqueta-11	14.4
Ceiba 1-190	11.4	El pozo pimienta-72	14.3	La horqueta-14	14.4
Ceiba 1-191	11.4	El puente-126	13.4	La horqueta-17	14.4
Ceiba 2-192	11.4	El puente-130	13.4	La horqueta-19	14.4
Ceiba 2-193	11.4	El puente-132	13.4	La horqueta-20	14.4
Ceiba 2-194	11.4	El puente-133	13.4	La horqueta-21	14.4
Ceiba 2-195	11.4	El puente-135	13.4	La horqueta-25	14.4
Ceiba 2-196	11.4	El puente-136	13.4	La horqueta-26	14.4
Ceiba 2-197	11.4	El puente-137	13.4	La horqueta-383	14.4
Ceiba 2-198	11.4	El puente-141	13.4	La laguna-1	14.4
Ceiba 2-200	11.4	El puente-143	13.4	La laguna-14	14.4
Ceiba 2-202	11.4	El puente-144	13.4	La laguna-16	14.4
Ceiba 2-203	11.4	El puente-145	13.4	La milpa-100	14.4
Ceiba 2-204	11.4	El puente-146	13.4	La milpa-101	14.4
Ceiba 2-205	11.4	El puente-147	13.4	La milpa-102	14.4
Ceiba 2-206	11.4	El puente-148	13.4	La milpa-103	14.4
Ceiba 3-207	11.4	El Rincòn-120	13.5	La milpa-104	14.4
Ceiba 3-208	11.4	El Rincòn-145	13.5	La milpa-106	14.4
Ceiba 3-209	11.4	El Rincòn-146	13.5	La milpa-107	11.2
Ceiba 3-210	11.4	El Rótulo-288	13.3	La milpa-108	14.4

Ceiba 3-211	11.4	El Rótulo-289	13.3	La milpa-109	14.4
Ceiba 3-212	11.4	El Rótulo-380	13.3	La milpa-110	14.4
Ceiba 3-213	11.4	el sitio-107	13.5	La milpa-111	13.4
Ceiba 3-214	11.4	El sitio-164	13.5	La milpa-112	13.4
Ceiba 3-215	11.4	El sitio-174	13.5	La milpa-115	13.4
Ceiba 3-216	11.4	El sitio-175	13.5	La milpa-116	13.4
Ceiba 3-217	11.4	El sitio-176	13.5	La milpa-117	13.4
Ceiba 3-218	11.4	El sitio-180	13.5	La milpa-118	13.4
Ceiba 3-219	11.4	El uno-211	13.4	La milpa-120	13.4
Ceiba 3-220	11.4	El uno-217	13.4	La milpa-121	13.4
Ceiba 3-221	11.4	El uno-218	13.4	La milpa-123	13.4
Ceiba 3-222	11.4	El uno-220	13.4	La milpa-124	13.4
Ceiba 3-223	11.4	El uno-224	13.4	La milpa-125	13.4
Ceiba 3-224	11.4	El uno-230	13.4	La milpa-127	13.4
Ceiba 3-225	11.4	El uno-235	13.4	La milpa-128	13.4
Ceiba 3-226	11.4	El uno-237	13.4	La milpa-129	13.4
Ceiba 3-227	11.4	El uno-242	13.4	La milpa-131	13.4
Corral-228	11.4	El uno-244	13.4	La milpa-134	13.4
Corral-229	11.4	El uno-246	13.4	La milpa-138	13.4
Corral-230	11.4	El uno-249	13.4	La milpa-139	13.4
Corral-231	11.4	El uno-256	13.5	La milpa-140	13.4
Corral-233	11.4	El uno-258	13.4	La milpa-149	13.4
Corral-234	11.4	El uno-260	13.4	La milpa-401	13.4
Corral-235	11.4	Escondido-251	11.2	La milpa-404	13.4
Corral-236	11.4	Escondido-253	11.2	La milpa-406	13.4
Corral-237	11.4	Escondido-255	11.2	La milpa-74	13.4
Corral-238	11.4	Escondido-256	11.2	La milpa-75	13.4
Corral-239	11.4	Escondido-257	11.2	La milpa-77	13.4
Corral-240	11.4	Escondido-258	11.2	La milpa-84	13.4
Corral-241	11.4	Escondido-260	11.2	La milpa-86	13.4
Corral-242	11.4	Escondido-261	11.2	La milpa-96	13.4
Corral-243	11.4	Escondido-263	11.2	La milpa-99	13.4
Corral-244	11.4	Escondido-264	11.2	La presa-103	13.4
Corral-245	11.4	Escondido-265	6.26	La presa-159	13.4
Corral-247	11.4	Escondido-267	11.2	La presa-160	13.4
Corral-248	11.4	Escondido-269	11.2	La presa-161	13.4
Corral-250	11.4	Escondido-270	11.2	La presa-162	13.4
El campamento-378	14.3	Escondido-271	11.2	La presa-165	13.4
El campamento-42	14.3	Escondido-273	11.2	La presa-166	13.4
El campamento-46	14.3	Escondido-275	11.2	La presa-168	13.4

El campamento-49	14.3	Escondido-276	11.2	La presa-170	13.4
El campamento-51	14.3	Escondido-281	11.2	La presa-171	13.4
El campamento-52	14.3	Escondido-284	11.2	La presa-172	13.6
El Chaguite-15	14.3	Escondido-285	11.2	La presa-173	13.5
El Chaguite-18	14.3	Escondido-286	11.2	La presa-177	13.6
El Chaguite-22	14.3	Escondido-287	11.2	La presa-178	13.6
El Chaguite-23	14.3	Escondido-395	11.2	La presa-181	13.6
El Chaguite-24	14.3	Escondido-396	11.2	La presa-182	13.6
El Chaguite-27	14.3	Frontera-104	13.4	La presa-183	13.6
El Chaguite-38	14.3	Frontera-106	13.4	La presa-389	13.6
El Chaguite-381	14.4	Frontera-109	13.4	La presa-390	13.6
El Chaguite-4	14.3	Frontera-111	13.4	La presa-391	13.6
El Chaguite-5	14.3	Frontera-121	13.4	Las trozas-15	13.6
El Chaguite-7	14.3	Frontera-139	13.4	Las trozas-17	13.6
El Chaguite-8	14.3	Frontera-144	13.4	Las trozas-18	13.6
El comando-405	13.4	Frontera-229	13.4	Las trozas-19	13.6
El comando-55	13.4	Frontera-287	13.4	Las trozas-20	13.6
El comando-57	13.4	Frontera-80	13.4	Las trozas-21	13.6
El comando-68	13.4	Frontera-82	13.4	Las trozas-22	13.6
El comando-71	13.4	Frontera-83	13.4	Las trozas-23	13.6
El comando-82	13.4	Frontera-86	13.4	Las trozas-24	13.6
El comando-98	13.4	Frontera-88	13.4	Las trozas-25	14.4
El coyote-38	14.4	Frontera-89	13.4	Las trozas-4	14.4
El coyote-40	14.4	Frontera-90	13.4	Las trozas-7	14.4
El cuido-198	13.4	Frontera-91	13.4	Majaste 2-337	14.4
El cuido-215	13.4	Frontera-92	13.4	Majaste 2-338	14.4
El cuido-225	13.4	Frontera-93	13.4	Majaste 2-339	14.4
El cuido-231	13.4	Frontera-97	13.4	Majaste 2-340	14.4
El cuido-234	13.4	Frontera-98	13.4	Majaste 2-341	14.4
El cuido-236	13.4	Genizaro-288	11.2	Majaste 2-342	14.4
El cuido-245	13.5	Genizaro-289	11.3	Majaste-100	14.4
El cuido-250	13.4	Genizaro-290	11.3	Majaste-101	14.4
El cuido-251	13.4	Genizaro-291	11.3	Majaste-102	14.4
El cuido-252	13.4	Genizaro-292	11.3	Majaste-103	14.4
El cuido-263	13.4	Genizaro-293	11.3	Majaste-104	11.2
El cuido-264	13.4	Genizaro-294	11.3	Majaste-105	11.2
El cuido-271	13.4	Genizaro-295	11.3	Majaste-106	11.2
El cuido-275	13.4	Genizaro-296	11.3	Majaste-109	11.2
El cuido-384	13.4	Genizaro-297	11.3	Majaste-110	11.2
El dos-169	13.4	Genizaro-299	11.3	Majaste-81	11.2

El dos-190	13.4	Genizaro-300	11.3	Majaste-82	12.3
El dos-193	14.4	Genizaro-301	11.3	Majaste-83	12.3
El dos-195	13.4	Genizaro-302	11.3	Majaste-84	12.3
El dos-196	13.4	Genizaro-303	11.3	Majaste-85	12.3
El dos-201	13.4	Genizaro-304	11.3	Majaste-86	12.3
El dos-203	13.4	Genizaro-305	11.3	Majaste-87	12.3
El dos-206	13.4	Genizaro-306	11.3	Majaste-88	12.3
El dos-207	13.4	Genizaro-307	11.3	Majaste-89	12.3
El dos-208	13.4	Genizaro-308	11.3	Majaste-91	12.3
El dos-209	13.4	Genizaro-309	11.3	Majaste-92	12.3
El dos-212	13.4	Genizaro-310	11.3	Majaste-93	12.3
El dos-213	13.4	Genizaro-311	11.3	Majaste-94	12.3
El dos-214	13.4	Genizaro-312	11.3	Majaste-95	12.3
El dos-222	13.4	Genizaro-313	11.3	Majaste-97	12.3
El dos-388	13.4	Genizaro-314	11.3	Majaste-98	12.3
El esfuerzo-290	13.1	Genizaro-315	11.3	Majaste-99	12.3
El esfuerzo-291	13.1	Genizaro-317	11.3	Majastito-113	12.3
El esfuerzo-292	13.1	Genizaro-319	11.3	Majastito-114	12.3
El esfuerzo-293	13.1	Genizaro-322	11.3	Majastito-115	12.3
El esfuerzo-294	13.1	Jabalina-18	11.3	Majastito-116	12.3
El esfuerzo-295	13.1	Jabalina-19	11.3	Majastito-118	12.3
El genizaro 2004-76	13.4	Jabalina-20	11.3	Majastito-120	12.3
El genizaro 2004-83	13.4	Jabalina-21	11.3	Majastito-121	12.3
El genizaro 2004-85	13.4	Jabalina-23	11.2	Majastito-122	12.3
El genizaro 2004-95	13.4	Jabalina-24	11.2	Majastito-123	12.3
El guabo-400	13.4	Jabalina-25	11.2	Majastito-124	12.3
El guabo-402	13.4	Jabalina-26	11.2	Majastito-125	12.3
El guabo-407	13.4	Jabalina-28	11.2	Majastito-126	12.3
El guabo-60	13.4	Jabalina-29	11.2	Majastito-127	12.3
El guabo-63	13.4	Jabalina-30	12.4	Patio-344	12.3
El guabo-66	13.4	Jabalina-31	12.4	Patio-345	12.3
El guabo-69	13.4	Jabalina-32	12.4	Patio-346	12.3
El guabo-70	13.4	Jabalina-33	12.4	Patio-347	12.3
El guabo-78	13.4	Jabalina-35	12.4	Patio-349	12.3
El guabo-79	13.4	Jabalina-36	12.4	Patio-350	12.3
El guabo-87	13.4	Jabalina-37	12.4	Patio-352	12.3
El guabo-88	13.4	Jabalina-38	12.4	Patio-353	12.3
El guarumo-35	14.4	Jabalina-39	12.4	Patio-355	12.3
El guarumo-36	14.4	Jabalina-40	12.4	Patio-356	12.3
El guarumo-37	14.4	Jabalina-41	12.4	Patio-359	11.3

El guarumo-39	14.4	Jabalina-42	12.4	Patio-361	11.3
El lagarto -105	13.4	Jabalina-43	12.4	Patio-363	11.3
El lagarto-113	13.4	Jabalina-46	12.4	Patio-365	11.3
El lagarto-119	13.4	Jabalina-47	12.4	Patio-366	11.3
El miralagos-117	13.4	Jabalina-48	12.4	Patio-367	11.3
El miralagos-118	13.4	Jabalina-50	12.4	Patio-368	11.3
El miralagos-119	13.4	Jabalina-51	12.4	Patio-370	11.3
El miralagos-122	13.4	Jabalina-52	12.4	Patio-371	11.3
El miralagos-123	13.4	Jabalina-53	12.4	Patio-372	11.3
El miralagos-125	13.4	Jabalina-54	12.4	Patio-373	11.3
El miralagos-126	13.4	Jabalina-55	12.4	Patio-374	11.3
El miralagos-127	13.4	Jabalina-56	12.4	Patio-375	11.3
El miralagos-128	13.4	Jabalina-58	12.4	Patio-376	11.3
El miralagos-129	13.4	Jabalinita 2-328	12.4	Patio-377	11.3
El miralagos-243	13.4	Jabalinita 2-329	12.4	Patio-378	11.3
El miralagos-248	13.4	Jabalinita 2-330	12.4	Patio-379	11.3
El Mojòn-114	13.6	Jabalinita 2-331	12.4	Patio-380	11.3
El Mojòn-124	13.6	Jabalinita 2-332	12.4	Patio-381	11.3
El Mojòn-130	13.6	Jabalinita 2-333	12.4	Pozo-1	11.3
El Mojòn-132	13.6	Jabalinita 2-334	12.4	Pozo-11	11.3
El Mojòn-133	13.6	Jabalinita 2-335	12.4	Pozo-12	11.3
El Mojòn-134	13.6	Jabalinita 2-336	12.4	Pozo-13	11.3
El Mojòn-140	13.6	Jabalinita-62	12.4	Pozo-14	11.3
El Mojòn-143	13.6	Jabalinita-63	12.4	Pozo-15	11.3
El Mojòn-149	13.6	Jabalinita-64	12.4	Pozo-2	11.3
El Mojòn-151	13.6	Jabalinita-65	12.4	Pozo-3	11.3
El Mojòn-152	13.6	Jabalinita-66	12.4	Pozo-5	11.3
El Mojòn-277	13.6	Jabalinita-67	11.2	Pozo-6	11.3
El nancite-403	13.4	Jabalinita-68	11.2	Pozo-7	11.2
El nancite-42	14.4	Jabalinita-69	11.2	Pozo-8	12.4
El nancite-53	13.4	Jabalinita-70	12.4	Pozo-9	12.4
El nancite-54	13.4	Jabalinita-71	12.4	Rancho-128	12.4
El nancite-56	13.4	Jabalinita-72	12.4	Rancho-129	12.4
El nancite-58	13.4	Jabalinita-73	12.4	Rancho-130	12.4
El nancite-59	13.4	Jabalinita-74	12.4	Rancho-132	12.4
El nancite-61	13.4	Jabalinita-76	12.4	Rancho-133	12.4
El nancite-62	13.4	Jabalinita-77	12.4	Rancho-135	12.4
El nancite-64	13.4	La cruz-12	12.4	Rancho-136	12.4
El nancite-65	13.4	La cruz-13	12.4	Rancho-137	12.4
El nancite-67	13.4	La cruz-16	12.4	Rancho-138	12.4

El nancite-73	13.4	La cruz-2	12.4	Rancho-140	12.4
El nancite-80	13.4	La cruz-28	12.4	Rancho-141	12.2
El nancite-81	13.4	La cruz-29	12.4	Rancho-143	12.2
El nancite-89	13.4	La cruz-3	12.4	Rancho-144	12.2
El nancite-90	13.4	La cruz-30	12.4	Rancho-148	12.2
El nancite-91	13.4	La cruz-31	12.4	Rancho-151	12.2
El nancite-92	13.4	La cruz-33	12.4	Rancho-152	12.2
El nancite-93	13.4	La cruz-34	14.3	Rancho-155	12.2
El nancite-94	13.4	La cruz-35	14.3	Rancho-157	12.2
El nancite-97	13.4	La cruz-36	14.3	Rancho-158	12.2
El Porton-377	14.4	La cruz-39	14.3	Rancho-160	12.2
El porton-66	14.4	La cruz-43	14.3	Rancho-161	12.2
El porton-69	14.4	La cruz-44	14.3	Rancho-162	12.2
El porton-78	14.4	La cruz-45	14.3	Rancho-163	12.2
El porton-79	14.4	La cruz-9	14.3	Rancho-164	12.2
El pozo esperanza-26	14.4	La escoba-376	14.3	Rancho-165	12.2
El pozo esperanza-27	14.4	La escoba-40	14.3	Rancho-166	12.2
El pozo esperanza-29	14.4	La escoba-48	14.3	Rancho-168	12.2
El pozo esperanza-33	14.4	La escoba-50	14.3	Rancho-169	12.2
Sitio 2-370	12.2	Rancho-171	12.2	Rancho-170	12.2